

# Enthalpies of Vaporization of Organic and Organometallic Compounds, 1880–2002

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A compendium of vaporization enthalpies published within the period 1910–2002 is reported. A brief review of temperature adjustments of vaporization enthalpies from temperature of measurement to the standard reference temperature, 298.15 K, is included as are recently suggested reference materials. Vaporization enthalpies are included for organic, organo-metallic, and a few inorganic compounds. This compendium is the third in a series focusing on phase change enthalpies. Previous compendia focused on fusion and sublimation enthalpies. Sufficient data are presently available for many compounds that thermodynamic cycles can be constructed to evaluate the reliability of the measurements. A protocol for doing so is described. © 2003 American Institute of Physics. [DOI: 10.1063/1.1529214]

Key words: compendium; enthalpies of condensation; evaporation; organic compounds; vaporization enthalpy.

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## 1. Introduction

Vaporization enthalpies are important thermodynamic properties of the condensed phase. Vaporization enthalpies are used frequently in adjusting enthalpies of formation of liquids to the standard state and in evaluating environmental transport properties.<sup>1,2</sup> To the chemical engineer, the magnitude of this property needs to be taken into consideration in designing equipment for chemical processing and synthesis. Thus vaporization enthalpy data are of interest at a variety of temperatures. As a consequence, there is a wealth of information in the literature that covers measurements over a broad range of temperatures. The data covered by this compendium include as much of the spectrum as was available to us.

Our interest in vaporization enthalpies goes back nearly two decades. Our primary focus in measuring vaporization enthalpies was as a means of adjusting enthalpies of formation of liquids to the standard state and in conjunction with fusion enthalpies to adjust solids in a similar fashion.<sup>3</sup> Since then we have focused our attention on their estimation,<sup>4</sup> and assessment.<sup>5</sup> In parallel studies, compilations of available sublimation and fusion enthalpies were also initiated.<sup>6,7</sup> A

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TABLE 1. Recommended reference standards for vaporization enthalpy measurements

Substance	<i>T</i> /K range	Vapor pressure range/Pa	$\Delta_{\text{vap}}H_m$ (298.15 K) kJ mol <sup>-1</sup>	Classification	
C <sub>3</sub> H <sub>8</sub> O	1-propanol <sup>a,d</sup>	333–378	20 E+3–135 E+3	47.45±0.1	Primary
C <sub>5</sub> H <sub>12</sub>	pentane <sup>b,d</sup>	269–315	2.0 E+4–1.2 E+5	26.42±0.1	Primary
C <sub>6</sub> F <sub>6</sub>	hexafluorobenzene <sup>a,d</sup>	290–377	7.5 E+3–2.1 E+5	35.71±0.07	Primary
C <sub>6</sub> H <sub>6</sub>	benzene <sup>a,c,d</sup>	286–383	7.0 E+3–2.3 E+5	33.83±0.07	Primary
C <sub>6</sub> H <sub>14</sub>	hexane <sup>b,d</sup>	286–343	1.2 E+4–1.0 E+5	31.52±0.13	Primary
C <sub>7</sub> H <sub>16</sub>	heptane <sup>b,d</sup>	299–372	6.4 E+3–1.0 E+5	36.57±0.15	Primary
C <sub>8</sub> H <sub>18</sub>	octane <sup>b,d</sup>	326–400	7.7 E+3–1.0 E+5	41.56±0.17	Primary
C <sub>9</sub> H <sub>20</sub>	nonane <sup>b,d</sup>	344–425	6.4 E+3–1.0 E+5	46.55±0.19	Primary
C <sub>10</sub> H <sub>8</sub>	naphthalene <sup>d</sup>	353–434	1.0 E+3–2.3 E+4	55.65±2.8	Secondary
C <sub>10</sub> H <sub>22</sub>	decane <sup>b,d</sup>	268–348	1.7 E+1–3.2 E+3	51.42±0.21	Primary
C <sub>11</sub> H <sub>24</sub>	undecane <sup>b,d</sup>	294–382	4.1 E+1–6.4 E+3	56.58±0.57	Primary
C <sub>12</sub> H <sub>26</sub>	dodecane <sup>b,d</sup>	313–403	5.8 E+1–7.3 E+3	61.52±0.62	Primary
C <sub>13</sub> H <sub>28</sub>	tridecane <sup>b,d</sup>	323–402	4.7 E+1–3.7 E+3	66.68±0.67	Primary
C <sub>14</sub> H <sub>30</sub>	tetradecane <sup>b,d</sup>	344–422	7.6 E+1–4.4 E+3	71.73±0.72	Primary
C <sub>16</sub> H <sub>32</sub>	hexadecane <sup>b,d</sup>	364–452	5.5 E+1–4.7 E+3	81.35±0.81	Primary
C <sub>18</sub> H <sub>38</sub>	octadecane <sup>b,d</sup>	312–590	1.0 E–1–1.0 E+5	91.44±1.83	Primary
C <sub>20</sub> H <sub>42</sub>	eicosane <sup>b,d</sup>	344–380	4.1 E–1–9.1 E+0	101.81±2.0	Primary
H <sub>2</sub> O	water <sup>d</sup>	273–373	6.1 E+1–1.0 E+5	43.99±0.07	Primary

<sup>a</sup>Reference 12.<sup>b</sup>Reference 13.<sup>c</sup>Cancer suspect agent.<sup>d</sup>Reference 5.

reasonably exhaustive version of these databases covering the literature to the present has recently been published and is also available on line at <http://webbook.nist.gov/chemistry/>. Combined with fusion and sublimation enthalpies appropriately adjusted to  $T=298.15$  K, vaporization enthalpies  $\Delta_{\text{vap}}H_m(298.15 \text{ K})$ , complete a thermochemical cycle that can be used to assess the quality of the available data. Application of this thermochemical cycle is illustrated below. A goal of the present contribution has been to provide an exhaustive coverage of the literature from about 1880 to 2002; regrettably however, this compilation is probably still incomplete.

## 2. Reference Materials for Vaporization Enthalpy Measurements

Calibration is a fundamental requirement in every thermochemical measurement of vaporization enthalpy. Regardless of which technique is used, the measurement ultimately depends either directly or indirectly on vapor pressure. Vapor pressures of liquids vary over many orders of magnitude. An experimental technique calibrated with a standard in one pressure or temperature regime does not in itself guarantee the same accuracy in another. Substantial variations in vaporization enthalpy are revealed in the tables that follow. This variance clearly establishes the importance of documenting the accuracy of the measurements through the use of appropriate reference materials that approximate the temperature and pressure regimes of the measurements of interest.

A series of compounds have been recently proposed as reference materials for vaporization enthalpy.<sup>5</sup> These have been classified as primary, secondary, or tertiary reference materials, on the basis of various criteria. The materials classified as primary and secondary reference materials are listed

in Table 1. The temperature range, the corresponding vapor pressures, and the recommended molar vaporization enthalpies at  $T=298.15$  K are also included in the table. Some of these reference materials are solids at  $T=298.15$  K and therefore the vaporization enthalpies are hypothetical values. The reader should consult the literature cited at the bottom of the table to obtain the vaporization enthalpy at the temperature of interest.

## 3. Heat Capacity Adjustments

Vaporization enthalpies, like their sublimation counterparts, are measurements based on mass transport and as such are directly or indirectly dependent upon vapor pressure. The vapor pressure of different liquids at a given temperature can vary many orders of magnitude. In order to obtain a reasonable amount of mass transport, it is frequently necessary to conduct these measurements at temperatures that differ substantially from the standard reference temperature, 298.15 K. The actual temperature of measurement depends on the sensitivity of the instrument or apparatus and the properties of the substance of interest. Vaporization enthalpy measurements are often conducted as a function of temperature.

The magnitude of the vaporization enthalpy is dependent on temperature. Figure 1 and Eqs. (1) and (2) illustrate the origin of this temperature dependence in terms of a thermodynamic cycle. If the heat capacities of the liquid and gas phase are known,  $C_{p_l}$  and  $C_{p_g}$ , respectively, then the vaporization enthalpy at  $T=298.15$  K can be related to the experimental measurements by using Eq. (1). This equation, generally referred to as Kirchhoff's equation, can be used to adjust sublimation enthalpy measurements to any reference temperature. The term  $T_m$  represents either the temperature

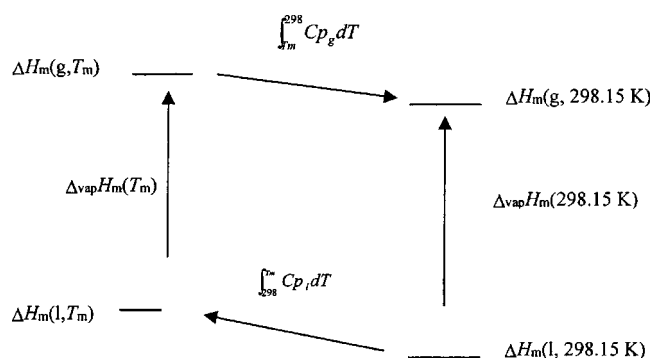


FIG. 1. A thermodynamic cycle for adjusting vaporization enthalpies to  $T = 298.15$  K.

of measurement for calorimetric measurements or the mean temperature of measurement for experiments conducted

$$\Delta_{\text{vap}} H_m(298.15 \text{ K}) = \Delta_{\text{vap}} H_m(T_m) + \int_{298.15}^{T_m} (C_{p_l} - C_{p_g}) dT \quad (1)$$

$$\Delta_{\text{vap}} H_m(298.15 \text{ K}) \approx \Delta_{\text{vap}} H_m(T_m) + (C_{p_l} - C_{p_g})(T_m - 298.15) \quad (2)$$

over narrow ranges of temperature. Treating the heat capacities of the two phases as independent of temperature and integrating Eq. (1) results in Eq. (2). Since the magnitude of the heat capacity of the gas phase is usually smaller than that of the liquid phase ( $l$ ), vaporization enthalpies increase with decreasing temperature.

Experimental heat capacities for many liquids at  $T = 298.15$  K are available.<sup>8</sup> Experimental gas phase heat capacities for compounds that are liquids at  $T = 298.15$  K are unavailable and generally need to be estimated. Gas phase heat capacities can be calculated from statistical mechanics or estimated by group additivity methods. A number of group additivity methods have been developed to estimate gas phase heat capacities.<sup>9,10</sup> However, group values for some functional groups are not available. Equation (3) is an example of an attempt to circumvent the lack of sufficient group values.<sup>11</sup> The term  $C_{p_l}(298.15 \text{ K})$  refers to the heat capacity of the liquid at  $T = 298.15$  K. This term may either be estimated or experimental values may be used if available. The uncertainty associated with the term in brackets in Eq. (3) is  $\pm 30 \text{ J mol}^{-1} (\pm 2\sigma)$

$$(C_{p_l} - C_{p_g})\{T_m - 298.15\} = [10.58 + 0.26C_{p_l}(298.15 \text{ K})](T_m - 298.15). \quad (3)$$

The vaporization enthalpies reported in this compendium have not been adjusted to  $T = 298.15$  K unless done so by the authors reporting the measurements. The vaporization enthalpies are reported at the mean temperature of measurement wherever possible. This allows the reader to verify the reported data and to adjust for temperature in a consistent manner. Authors have applied different methods to adjust for

temperature. In some cases experimental data have been used for  $C_{p_l}$  and in other cases both  $C_{p_l}$  and  $C_{p_g}$  have been estimated. The reader is encouraged to refer to the original literature for details. In an effort to provide some assistance to the reader in this regard, a brief discussion of one of the group additivity methods that are available for estimating the heat capacity of liquids is included below. This is followed by an illustration of how this value can be used in conjunction with Eq. (3) to provide temperature adjustments.

#### 4. Group Additivity Values for $C_{p_l}(298.15 \text{ K})$ Estimations

Tables 2A and 2B lists a set of group values that can be used in estimations of  $C_{p_l}(298.15 \text{ K})$ . The groups and their corresponding values are identified by italics. A hypothetical molecule is given in Fig. 2 that identifies each hydrocarbon group. The functional groups listed in Table 2B are self explanatory. The  $R$  terms in this table represent variable groups and are not included in the value. Values in brackets should be considered as tentative assignments. The use of these group values is illustrated with the examples in Table 3. Estimations of  $C_{p_c}(298.15 \text{ K})$  for these compounds follow the same protocol.

Groups are defined on the basis of their substitution and hybridization patterns. These groups are further subdivided into cyclic, acyclic and aromatic categories. The estimation of  $C_{p_l}(298.15 \text{ K})$  for propionic acid illustrates how directly  $C_p$  values can be estimated. Identification of the appropriate group is important. Although not shown in Table 3, the same protocol is used for estimating  $C_{p_c}(298.15 \text{ K})$ . Estimation of the heat capacity of piperadine is similar. In this case it is important to use the appropriate cyclic group. Once the proper groups are identified, the estimation is direct. Di-*t*-butyl ether is estimated in a similar fashion. Benzothiazole illustrates the estimation of an aromatic molecule containing a heterocyclic ring. The aromatic ring carbons are selected based on their substitution pattern; the sulfur and nitrogen atoms of the thiazole ring are identified as cyclic atoms; the nitrogen atom is identified on the basis of its hybridization and substitution pattern. 2-Methylcyclohexanone is another example of an estimation of a cyclic molecule. This estimation includes the contributions of a cyclic carbonyl, four cyclic methylene groups, a methyl, and a cyclic tertiary methine group. The estimation of limonene illustrate an example of a molecule that contains both cyclic and acyclic double bonds. Additional examples can be found in the literature.<sup>4,11</sup>

Heat capacities calculated according to the protocol just described have been used when necessary in conjunction with Eqs. (4)–(6) to adjust vaporization, sublimation, and fusion enthalpies to 298.15 K. These temperature adjustments are necessary in illustrating the thermochemical cycle described below. Equations (4)–(6) have been used in those cases where the measurements were referenced to some other temperature

TABLE 2. Group values  $\Gamma_l$  and  $\Gamma_c$  for estimating  $C_{p_l}$  (298.15 K) and  $C_{p_c}$  (298.15 K)

(A) Group values for estimating the $C_{p_l}$ (298.15 K) and $C_{p_c}$ (298.15 K) of hydrocarbons. <sup>a</sup>							
Aliphatic groups				Cyclic aliphatic and olefinic groups			
Description of group	Formula	J mol <sup>-1</sup> K <sup>-1</sup>		Description of group	Formula	J mol <sup>-1</sup> K <sup>-1</sup>	
		$\Gamma_l$	$\Gamma_c$			$\Gamma_l$	$\Gamma_c$
primary $sp^3$ C	-CH <sub>3</sub>	34.9	36.6	cyclic secondary $sp^3$ C	-C <sub>c</sub> H <sub>2</sub> -	25.9	24.6
secondary $sp^3$ C	-CH <sub>2</sub> -	31.9	26.9	cyclic tertiary $sp^3$ C	-C <sub>c</sub> HR-	20.6	11.7
tertiary $sp^3$ C	-CHR-	22.4	9	cyclic quaternary $sp^3$ C	-C <sub>c</sub> R <sub>2</sub> -	18.0	6.1
quaternary $sp^3$ C	-CR <sub>3</sub>	14.0	-5	cyclic tertiary $sp^2$ C	-C <sub>c</sub> HR-	21.8	15.9
				cyclic quaternary $sp^2$ C	-C <sub>c</sub> R <sub>2</sub> -	21.2	[4.7]
Olefinic and acetylenic groups				Aromatic groups			
Description of group	Formula	J mol <sup>-1</sup> K <sup>-1</sup>		Description of group	Formula	J mol <sup>-1</sup> K <sup>-1</sup>	
		$\Gamma_l$	$\Gamma_c$			$\Gamma_l$	$\Gamma_c$
secondary $sp^2$ C	=CH <sub>2</sub>	25.8	46	tertiary aromatic $sp^2$ C	=C <sub>a</sub> H-	21.8	17.5
tertiary $sp^2$ C	=CH-	27.8	21.4	quaternary aromatic $sp^2$ C	=C <sub>a</sub> R-	15.3	8.5
quaternary $sp^2$ C	=C-	21.7	6.9	internal quaternary aromatic C	=C <sub>a</sub> R-	[16]	[9.1]
tertiary $sp$ C	≡C-H	34.3	37.1				
quaternary $sp$ C	≡C-	28.9	15.5				
(B) Group values $\Gamma_l$ and $\Gamma_c$ of various functional groups. <sup>b</sup>							
Monodentate functional groups				Acyclic bidentate functional groups			
Description of group	Formula	J mol <sup>-1</sup> K <sup>-1</sup>		Description of group	Formula	J mol <sup>-1</sup> K <sup>-1</sup>	
		$\Gamma_l$	$\Gamma_c$			$\Gamma_l$	$\Gamma_c$
alcohols, phenols	-OH	53.1	23.5	ketones	-CO-	51.5	28
fluorine	-F	16.2	[24.8]	ester	-CO <sub>2</sub> R	63.2	40.3
chlorine	-Cl	30.8	28.7	ether	-O-	29.8	49.8
bromine	-Br	34.6	32.4	secondary $sp^3$ N	-NH-	[51]	-0.3
iodines	-I	39.1	[27.9]	secondary amide	-CONH-	79.9	44.4
nitrile	-CN	47.7	42.3	carbamates	-OCNH-		76.1
carboxylic acid	-CO <sub>2</sub> H	87.4	53.1	sulfides	-S-	40.3	[116]
acid chloride	-COCl	[62.8]	[60.2]	disulfides	-S-S-	[74.5]	41
aldehyde	-(C=O)H	57.7	[84.5]	sulfoxides	-SO-	[83.7]	47.7
isocyanate	-NCO	[58.2]	[52.7]	sulfones	-SO <sub>2</sub> -		88.7
nitro group	-NO <sub>2</sub>	58.6	56.1				
secondary $sp^3$ nitrogen	-NH <sub>2</sub>	51.0	21.6				
primary amides	-CONH <sub>2</sub>	54.4	54.4				
thiols	-SH	49.0	[51.9]				
sulfonamide	-SO <sub>2</sub> NH <sub>2</sub>	104	104				
substituted urea	-NHCONH <sub>2</sub>	82.8	82.8				
Acyclic tridentate functional groups				Acyclic tetradentate functional groups			
Description of group	Formula	J mol <sup>-1</sup> K <sup>-1</sup>		Description of group	Formula	J mol <sup>-1</sup> K <sup>-1</sup>	
		$\Gamma_l$	$\Gamma_c$			$\Gamma_l$	$\Gamma_c$
tertiary $sp^3$ N	-NR <sub>2</sub>	22.0	[31.5]	quaternary silicon	-SiR <sub>2</sub> -	30.9	32.4
tertiary $sp^2$ N	=N-	[44.4]	10.7	quaternary tin	-SnR <sub>2</sub> -	[58.6]	[77.2]
phosphine oxide	-(PO)R-		28.5	quaternary germanium	Ge	[48.1]	[18.9]
Cyclic functional groups							
Description of group	Formula	J mol <sup>-1</sup> K <sup>-1</sup>					
		$\Gamma_l$	$\Gamma_c$				
cyclic ketones	-(CO) <sub>c</sub> -	[46.4]	34.3				
lactones	-CO <sub>2</sub> -	[67.4]	45.2				
cyclic carbonates	-OCO <sub>2</sub> -	[92]	[68.2]				
cyclic anhydrides	-CO <sub>2</sub> CO-		80.3				
cyclic ether	-O <sub>c</sub> -	24.6	9.7				
cyclic sec. $sp^3$ N	-N <sub>c</sub> H-	46.0	23.9				

TABLE 2. Group values  $\Gamma_l$  and  $\Gamma_c$  for estimating  $C_{p_l}$  (298.15 K) and  $C_{p_c}$  (298.15 K)—Continued

Cyclic functional groups		$\text{J mol}^{-1} \text{K}^{-1}$	
Description of group	Formula	$\Gamma_l$	$\Gamma_c$
cyclic tertiary $sp^3$ N	$-\text{N}_c\text{R}-$	28.6	1.2
cyclic tertiary $sp^2$ N	$=\text{N}_c-$	20.7	13.9
cyclic urea	$-\text{NHCONH}-$		63.6
cyclic sec. amide	$-\text{CONH}-$	[92]	46.4
cyclic tertiary amide	$-\text{CONR}-$	[170]	52.7
cyclic imide	$-\text{CONHCO}-$		74.1
cyclic sulfides	$-\text{S}_c-$	33.8	20.3

<sup>a</sup>See Ref. 19.

<sup>b</sup>Values reported in brackets are tentative assignments.

$$\begin{aligned} \Delta_{\text{vap}}H_m(298.15 \text{ K})/\text{J mol}^{-1} \\ \approx \Delta_{\text{vap}}H_m(T_m) + [10.58 + 0.26C_{p_l}(298.15 \text{ K})] \\ \times (T_m - 298.15), \end{aligned} \quad (4)$$

$$\begin{aligned} \Delta_{\text{sub}}H_m(298.15 \text{ K})/\text{J mol}^{-1} \\ \approx \Delta_{\text{sub}}H_m(T_m) + [0.75 + 0.15C_{p_c}(298.15 \text{ K})] \\ \times (T_m - 298.15), \end{aligned} \quad (5)$$

$$\begin{aligned} \Delta_{\text{fus}}H_m(298.15 \text{ K})/\text{J mol}^{-1} \\ \approx \Delta_{\text{fus}}H_m(T_{\text{fus}}) + \{[0.75 + 0.15C_{p_c}(298.15 \text{ K})] \\ \times (T_m - 298.15) - [10.58 + 0.26C_{p_l}(298.15 \text{ K})] \\ \times (T_m - 298.15)\}. \end{aligned} \quad (6)$$

An uncertainty ( $\pm 2\sigma$ ) of one third the temperature adjustment has been associated with the use of Eqs. (5) and (6) in Table 4. The uncertainty has been assigned arbitrarily.

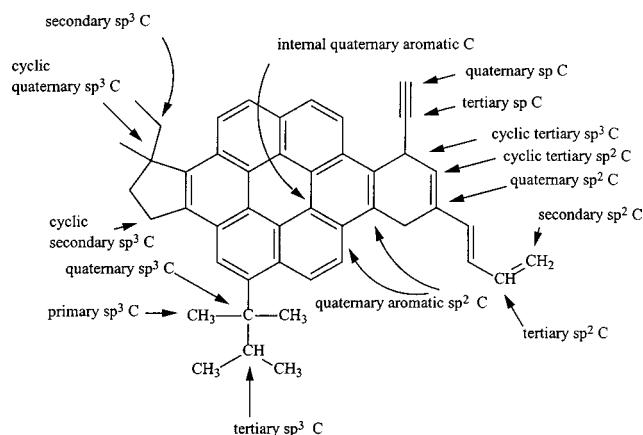


FIG. 2. A hypothetical molecule illustrating the different hydrocarbon groups in estimating  $C_p$ .

## 5. A Thermochemical Cycle: Sublimation, Vaporization, and Fusion Enthalpies

The use of a thermochemical cycle is an extremely effective manner of evaluating the quality of enthalpy data associated with phase changes. It should be emphasized at the start that internal consistency within a cycle does not guarantee that all the data are necessarily of high quality. Sublimation enthalpy is related to the sum of the fusion and vaporization enthalpies, Eq. (7), provided all are referenced to the same temperature. Vaporization enthalpy is the larger of

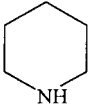
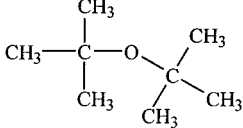
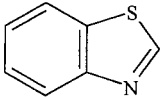
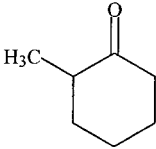
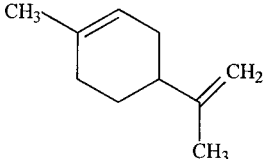
$$\begin{aligned} \Delta_{\text{sub}}H_m(298.15 \text{ K}) = \Delta_{\text{vap}}H_m(298.15 \text{ K}) \\ + \Delta_{\text{fus}}H_m(298.15 \text{ K}) \end{aligned} \quad (7)$$

the two enthalpies on the right hand side of the equation. Since fusion enthalpies of solids usually decrease when adjusted to 298.15 K, the latter contributes a smaller amount to the sublimation enthalpy, particularly if the melting point of the material is high. Thus an accurate vaporization enthalpy can tolerate a less accurately determined fusion enthalpy. This is fortunate since as discussed below, there is a physical basis for variance in fusion enthalpy.

Many solids exhibit polymorphism or undergo solid-solid phase transitions. These may occur unnoticed. Solid-solid phase transitions occurring below  $T = 298.15 \text{ K}$  generally do not pose a problem if the vaporization and sublimation enthalpy measurements are conducted at temperatures above the phase change. Enthalpic differences between polymorphic forms generally tend to be small in relation to solid-gas, liquid-gas transitions. Since the smaller  $\Delta_{\text{fus}}H_m(298.15 \text{ K})$  term in Eq. (7) is the one affected by polymorphism, this phenomena should not have a large effect on the quality of the thermochemical cycle, even if the sublimation and fusion enthalpy measurements are conducted on different polymorphic forms. In many cases the sublimation enthalpy measured directly should compare favorably with the sum of the fusion and vaporization enthalpy. Yet often this is not the case.

The results given in Table 4 illustrate some of the situations that can arise when constructing a thermochemical

TABLE 3. Some estimations of  $C_{p,l}$  (298.15 K) and  $C_{p,c}$  (298.15 K) using group values

CH <sub>3</sub> CH <sub>2</sub> CO <sub>2</sub> H	$C_{p,l}(298.15\text{ K}) = 34.9 + 31.9 + 87.4 = 154.2\text{ J mol}^{-1}\text{ K}^{-1}$ (152.8) <sup>a</sup> $C_{p,c}(298.15\text{ K}) = 116.6\text{ J mol}^{-1}\text{ K}^{-1}$
	$C_{p,l}(298.15\text{ K}) = 5 \cdot 25.9 + 28.6 = 175.5\text{ J mol}^{-1}\text{ K}^{-1}$ (179.9) <sup>b</sup> $C_{p,c}(298.15\text{ K}) = 146.9\text{ J mol}^{-1}\text{ K}^{-1}$
	$C_{p,l}(298.15\text{ K}) = 6 \cdot 34.9 + 2 \cdot 14.0 + 29.8 = 267.2\text{ J mol}^{-1}\text{ K}^{-1}$ (278.2) <sup>b</sup> $C_{p,c}(298.15\text{ K}) = 259.4\text{ J mol}^{-1}\text{ K}^{-1}$
	$C_{p,l}(298.15\text{ K}) = 4 \cdot 21.8 + 2 \cdot 15.3 + 33.8 + 20.7 + 21.8 = 194.1\text{ J mol}^{-1}\text{ K}^{-1}$ (189.5) <sup>b</sup> $C_{p,c}(298.15\text{ K}) = 137.1\text{ J mol}^{-1}\text{ K}^{-1}$
	$C_{p,l}(298.15\text{ K}) = 4 \cdot 25.9 + 34.9 + 20.6 + 46.4 = 205.5\text{ J mol}^{-1}\text{ K}^{-1}$ (204.6) <sup>b</sup> $C_{p,c}(298.15\text{ K}) = 181\text{ J mol}^{-1}\text{ K}^{-1}$
	$C_{p,c}(298.15\text{ K}) = 2 \cdot 34.9 + 3 \cdot 25.9 + 25.8 + 21.7 + 21.8 + 21.2 + 20.6 = 258.6\text{ J mol}^{-1}\text{ K}^{-1}$ (249.0) <sup>b</sup> $C_{p,c}(298.15\text{ K}) = 232.2\text{ J mol}^{-1}\text{ K}^{-1}$

<sup>a</sup>See Ref. 8.<sup>b</sup>See Ref. 14.

cycle based on phase changes. The sublimation enthalpy of *p*-nitroaniline has been measured frequently and reproducibly. The value of  $(100.9 \pm 1.0)\text{ kJ mol}^{-1}$  is the mean value of nine measurements. Two measurements of the fusion and vaporization enthalpy are also available. Both fusion enthalpies are in good agreement with each other; the mean value is reported in Table 4. Comparison of the vaporization enthalpies at  $T = 298.15\text{ K}$  results in values with a  $12\text{ kJ mol}^{-1}$  discrepancy. In this instance the experimental sublimation enthalpy falls halfway between the two values calculated by Eq. (7). The experimental data suggest a vaporization enthalpy of  $85.5\text{ kJ mol}^{-1}$ . This is an instance where the vaporization enthalpies are in disagreement; disagreement between sublimation enthalpies is the more common occurrence.

Data for 1,6-hexanedioic acid represents results that are more typical. The fusion and vaporization enthalpies have been measured once while the sublimation enthalpy has been reported three times. In this instance good agreement is ob-

served between three of the four sublimation values.

Acetanilide provides a different but similar example. The sublimation enthalpies calculated using Eq. (6) are slightly larger than the two direct measurements. The data suggest a vaporization enthalpy of  $73.9$  and a sublimation enthalpy of  $90\text{ kJ mol}^{-1}$  at  $T = 298.15\text{ K}$ .

The vaporization and sublimation enthalpies of 4-chlorobiphenyl have been reported a number of times. One set of sublimation enthalpies cluster around  $83\text{ kJ mol}^{-1}$  and the other around  $75\text{ kJ mol}^{-1}$ . A distinction between these two possibilities is possible by examining the vaporization enthalpies of the isomeric 2- and 3-chlorobiphenyls (see Table 6). The vaporization enthalpies of these isomeric materials would be expected to be similar. On this basis, a vaporization of around  $72\text{ kJ mol}^{-1}$  and a sublimation enthalpy of approximately  $83\text{ kJ mol}^{-1}$  for 4-chlorobiphenyl at  $T = 298.15\text{ K}$  is selected for 4-chlorobiphenyl.

Benzil is a case where all the available data appear to be

TABLE 4. A comparison of experimental sublimation enthalpies and those calculated using Eq. (6); enthalpies in  $\text{kJ mol}^{-1}$ ;  $C_p$  in  $\text{J mol}^{-1} \text{K}^{-1}$  <sup>a</sup>

		$\Delta_{\text{fus}}H_m$ ( $T_{\text{fus}}$ )	$T_{\text{fus}}/\text{K}$	$\Delta_{\text{vap}}H_m$ ( $T_m/\text{K}$ )	$T_m/\text{K}$	$\Delta_{\text{sub}}H_m$ ( $T_m$ )	$T_m/\text{K}$	$C_{p_l}$	$C_{p_c}$	$\Delta_{\text{fus}}H_m$ (298 K)	$\Delta_{\text{vap}}H_m$ (298 K)	$\Delta_{\text{sub}}H_m$ (298 K) [Eq. (6)]	$\Delta_{\text{sub}}H_m$ (298 K) <sup>a</sup>					
C <sub>6</sub> H <sub>6</sub> N <sub>2</sub> O <sub>2</sub>	4-nitroaniline	21.1	420.7	77.9	488	100.7	298	235.8	164.7	15.4±1.9	91.5±4.5	106.9±4.9	100.9					
				70	430							79.5±3.2	94.9±3.7					
C <sub>6</sub> H <sub>10</sub> O <sub>4</sub>	1,6-hexanedioic acid	34.85	426.4	92	447	133.6	298	302.4	213.8	27.6±2.4	105.3±3.5	132.9±4.3	133.6					
						129.3	383											
						140	306.5									132.1±0.9		
C <sub>8</sub> H <sub>9</sub> NO	acetanilide	21.65	387.5	64.8	488	80.6	313.5	239.1	177.0	17.6±1.3	78.6±4.6	96.2±4.7	81.0±0.1					
				66.3	402	87.2	326.5								73.9±2.4	91.4±2.8	88.0±0.3	
C <sub>12</sub> H <sub>9</sub> Cl	4-chlorobiphenyl	13.32	348.6	71.6	298	86	278	272.9	211.7	10.8±0.8	71.6	82.4±0.8	85.3±0.2					
				66.8	368	73.7	326								72.5±1.7	83.3±1.9	74.6±0.3	
				59	384										66.0±2.1	76.8±2.2		
				65.9	466										79.6±4.0	90.4±4.1		
C <sub>14</sub> H <sub>10</sub> O <sub>2</sub>	benzil	23.1	368	69.2	416	98.4	329	351.6	248.0	18.6±1.5	81.2±2.8	99.8±2.2	99.6±2.0					
C <sub>14</sub> H <sub>22</sub> O	2,6-di- <i>t</i> -butylphenol	16.57	310.7	60.4	401	84.6	298	401.8	311.1	15.7±0.3	72.2±2.4	88.0±2.5	84.6					
						81.5	298											
						110.9	298											
						110.9	298											
						110.9	298											
C <sub>16</sub> H <sub>10</sub>	fluoranthene	18.8	383.3	62.3	518	98.3	298	310.5	226.6	14.0±1.6	82.4±5.3	96.4±5.5	98.3					
				86.2	495	84.6	303								104.2±4.7	118.2±5.0	84.8±0.1	
				77.4	398	99.2	298								86.5±2.4	100.5±2.9	99.2	
				102.1	340												103.6±0.5	
C <sub>17</sub> H <sub>34</sub> O <sub>2</sub>	methylhexadecanoate	68.16	307.2	69.6	302	152.3	296	579.6	490.1	67.4±0.3	70.2±0.1	137.6±0.3	152.±0.1					
				82.4	426										54.7±0.2	103.0±3.1	170.6±3.1	
				82.6	393											97.9±2.3	165.3±2.3	
				71.4	437											93.8±3.3	161.2±3.3	
																	125.0±0.2	
				55.35	305.2												157.8±3.1	
									152.6±2.3									
									148.5±3.3									

<sup>a</sup>See Ref. 7.  $\Delta_{\text{fus}}H_m(T_{\text{fus}})$  and  $\Delta_{\text{vap}}H_m(T_m)$  refer to the fusion and vaporization enthalpy at the melting point and mean temperature of measurement; fusion enthalpies are from Chickos *et al.*<sup>9</sup> and Domalski and Hearing<sup>14</sup>; sublimation enthalpies from Chickos and Acree;<sup>7</sup> vaporization enthalpies from Table 6; uncertainties in fusion and vaporization enthalpies ( $\pm 2 \sigma$ ) are those associated with the temperature adjustment only.

internally consistent. The fusion enthalpy reported is the average of two literature values.<sup>14</sup> Similarly with 2,6-di-*t*-butylphenol and fluoranthene. The sublimation enthalpies measured directly and those calculated by Eq. (7) agree within  $\pm 4.0 \text{ kJ mol}^{-1}$ , which is the accuracy typical of many experimental sublimation and vaporization enthalpy measurements.

The scatter of data obtained for methyl hexadecanoate illustrate another common situation that can arise when data from the literature are examined. Two fusion enthalpies and several vaporization enthalpies have been reported which are not in particularly good agreement. Using the value of the sublimation enthalpy as a guide, consistent results are obtained if the fusion enthalpy of  $54.7 \text{ kJ mol}^{-1}$  (298.15 K) is combined with the mean of the last three vaporization enthalpies,  $98.3 \pm 5.3 \text{ kJ mol}^{-1}$ , resulting in a sublimation enthalpy of  $152.9 \pm 5.4 \text{ kJ mol}^{-1}$ .

## 6. Estimation of Vaporization Enthalpies

Vaporization enthalpy is a property that is successfully modeled by various computational methods. Many estimation methods in the chemical engineering literature have been developed to provide vaporization enthalpies near or at

the boiling point and are accurate to a few %. Some require critical constants and other parameters that may have to be estimated themselves. A summary of some of the existing methods and their applications can be found in the book edited by Lyman *et al.*<sup>10</sup> (see also Ref. 15). The estimation of vaporization enthalpy at or near the boiling point continues to be a topic of recurring interest.<sup>16–23</sup>

A number of methods and equations for the estimation of vaporization enthalpies at  $T = 298.15 \text{ K}$  have also been developed. Some model vaporization enthalpies on concepts of group additivity while some are based on other thermodynamic principles.<sup>24–35</sup> Details on the application of some of these methods in estimating vaporization enthalpies are available.<sup>4,10,25</sup>

## 7. Vaporization Enthalpy Compendium

Vaporization enthalpies reported from the 1880s to 2002 are included in Tables 6 and 7. Table 5 contains a listing of the acronyms and abbreviations that are used in both tables. Table 6 contains vaporization enthalpy data for organic compounds; Table 7 contains similar information for a selected number of organometallic and inorganic substances. Information in the tables is organized as described below.

TABLE 5. A list of acronyms and abbreviations used in Tables 6 and 7

A	calculated from the vapor pressure data reported by the method of least squares
B	calculated from the difference of the enthalpies of sublimation at temperature $T$ , and fusion at the melting point
BG	Bourdon gauge
C	calorimetric determination
GC	gas chromatography
GCC	gas chromatography-calorimetry
CGC	correlation gas chromatography
DM	diaphragm manometer
DSC	differential scanning calorimeter
EB	ebullometry
EST	estimated value
GS	gas saturation, transpiration
HG	Heise gauge
HSA	head space analysis
I	isoteniscope
IPM	inclined piston manometry
ME	mass effusion-Knudsen effusion
MG	McLeod gauge
MM	mercury manometer
NA	not available at the time of publication
OM	oil manometer
RG	Rodebush gauge
SG	spoon gauge
STG	strain gauge
T	tensimeter
TE	torsion effusion
UV	ultraviolet absorption

Compounds are arranged according to molecular formula. The compound's name, occasionally a synonym, and the CAS registry number are included on the first line. The range of temperatures studied is the next entry in the table. For measurements performed at a constant temperature or when not specified, this entry is left blank. The vaporization enthalpy at the mean temperature of measurement,  $\Delta_{\text{vap}}H_m(T_m)$ , is the next entry followed by the mean temperature ( $T_m/\text{K}$ ), an acronym or abbreviation briefly describing the type of measurement and the reference to the original work. In some cases the type of measurement was not available, or recorded. In these instances this entry was left blank. If the authors of the work have adjusted their results to 298.15 K, then this information along with the reference is entered on the third line. This information is repeated for multiple measurements. The measurements are arranged in reverse chronological order. Entries for compounds with deuterium substitution are listed after the unlabeled parent.

The authors have made an effort to present the data accurately and without error. Much of the earlier data have been retrieved with the aid of existing compendia that have been published over the years. Most of these compendia include references to the original literature. A notable exception is the very useful reference *Handbook of the Thermodynamics*

*of Organic Compounds* by Stephenson and Malanowski published in 1987 by Elsevier Science Publishing Co. Some of the data included in this compendium, notably for the higher  $n$ -alkanes and haloalkanes, appears to be data that have been estimated.<sup>36,37</sup> Estimated vaporization enthalpies are generally not included in Table 5 unless the data are reported in the Stephenson and Malanowski compendium or the source is identified. The reader should exercise some caution when using data that are not referenced to the primary literature. Additionally, some of the information has originated from non-English language journals with translations occasionally provided by the author's students. These tables, having been compiled over a period of twenty years, have gone through numerous revisions. Some errors have been corrected; however it is unlikely that all of them have been detected. The reader is encouraged to consult the original literature when using this data.

Several sources of data contains vapor pressure data represented in the form of the Antoine equation [Eq. (8)], where  $P$  represents the vapor pressure,  $T$  is the temperature in K, and  $A$ ,  $B$ , and  $C$  are the Antoine constants obtained from treatment of the vapor pressure-temperature data

$$\log_{10} P = A - B/(C + T). \quad (8)$$

Vaporization enthalpies were calculated from the Antoine constants in one of two ways. A Lotus macro was written to calculate vapor pressures using the Antoine constants over a 30 K temperature range; the resulting vapor pressure-temperature data were reformulated in terms of the integrated form of the Clausius-Clapeyron equation. A  $\ln P$  versus  $1/T$  linear regression analysis provided  $\Delta_{\text{vap}}H_m(T_m)/R$  at the mean temperature,  $T_m$ , of the 30 K range. The 30 K temperature range was chosen closest to  $T = 298.15$  K but within the temperature range specified. Alternatively, vaporization enthalpy was calculated using the Antoine constants from the following equation:

$$\Delta_{\text{vap}}H_m(T_m) = 2.303RB[T_m/(T_m + C)]^2. \quad (9)$$

Temperatures were chosen to lie with the range of measurement, often at the mean temperature. In a number of instances, the authors only provide vapor pressure-temperature data. In these instances, a vaporization enthalpy was calculated from the data as described above.

An examination of data in Tables 6 and 7 reveals that many compounds have been measured repeatedly. All the data here are treated equally; there has been no attempt to recommend or identify recommended values. A critical evaluation of the data is beyond the scope of this compendium. However, the reader should be aware of a number of critical reviews that are available. The IUPAC monograph, "Enthalpies of Vaporization of Organic Compounds by Majer and Svoboda"<sup>12</sup> is among the most extensive evaluations available. Others are included in the references associated with Tables 6 and 7. The reader is encouraged to consult these references before deciding on the best value to use.



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
CBrClF <sub>2</sub>	bromochlorodifluoromethane				[353-59-3]
	(268–324)	23.0	(283)	A	[87/5]
	(194–287)	23.1	(272)	A	[87/5]
	(321–403)	22.4	(336)	A	[87/5]
	(403–427)	23.1	(415)	A	[87/5]
	(178–283)	26.0	(193)		[79/12]
CBrCl <sub>3</sub>	bromotrichloromethane				[60/16][84/9]
	(273–387)	35.0	(288)		[75-62-7]
	(294–443)	36.1	(309)	A	[79/12]
CBrF <sub>3</sub>	bromotrifluoromethane				[87/5][70/16]
	(276–340)	17.8	(291)	A	[75-63-8]
	(160–267)	17.7	(252)	A	[87/5]
CBrFO	carbonic bromide fluoride				[79/12]
	(197–256)	22.9	(241)	A	[753-56-0]
CBrN	cyanogen bromide				[87/5]
CBrN <sub>3</sub> O <sub>6</sub>	bromotrinitromethane	45.9	(288)		[506-68-3]
	(273–313)				[54/14][84/9]
CBr <sub>2</sub> F <sub>2</sub>	dibromodifluoromethane	47.8	(326)	A	[560-95-2]
	(318–335)				[87/5][70/10]
CBr <sub>3</sub> F	tribromofluoromethane	26.1	(282)	A	[75-61-6]
	(247–297)				[87/5][59/1]
	(156–218)	18.6	(203)		[79/12][70/16]
CBr <sub>4</sub>	carbon tetrabromide				[48/7]
	(375–463)	48.3	(390)		[353-54-8]
CClFO	carbonic chloride fluoride	34.4	(330)	A	[87/5][48/7]
	(165–211)	22.7	(196)		[558-13-4]
CClF <sub>2</sub> NO	difluorocarbamoyl chloride	48.2	(384)	A	[79/12]
	(157–227)	22.0	(192)		[87/5][47/5]
CClF <sub>3</sub>	chlorotrifluoromethane				[353-49-1]
	(268–302)	16.0	(283)	A	[87/5][64/3]
CClF <sub>3</sub> O	trifluoromethyl hypochlorite				[48/17]
	(133–185)	17.0	(170)	A	[87/5]
	(184–246)	15.7	(231)	A	[87/5]
	(243–271)	15.7	(257)	A	[87/5]
	(145–192)	16.8	(177)	A	[87/5][79/12]
	(124–191)	17.1	(177)	A	[47/5]
	(134–298)	NA			[41/13]
CClF <sub>3</sub> O <sub>2</sub>	peroxyhypochlorous acid, trifluoromethyl ester				[22082-78-6]
	(160–226)	21.2	(211)	A	[87/5]
CClF <sub>3</sub> O <sub>3</sub> S	fluorosulfuric acid, chlorodifluoromethyl ester				[32755-26-3]
	(142–219)	19.6	(204)	A	[87/5]
	(227–309)	32.1	(243)		[87/5]
CClF <sub>3</sub> S	trifluoromethanesulfonyl chloride	23.4	(281)	A	[6069-31-4]
	(228–310)	34.6	(243)	A	[99/16]
	(247–272)	24.5	(260)	A	[87/5][66/15]
CClF <sub>4</sub> N	difluoro(difluorochloromethyl)amine				[421-17-0]
	(209–277)	26.6	(262)	A	[87/5][99/16]
CClF <sub>4</sub> NO <sub>2</sub> S	chloro(trifluoromethyl) sulfamoyl fluoride				[13880-71-2]
	(253–288)	28.8	(273)	A	[87/5]
CClF <sub>4</sub> NO <sub>12</sub> S <sub>4</sub>	fluorosulfuric acid, bis[[fluorosulfonyl]oxy]amino]chloromethylene ester				[19419-95-5]
		42.6	(424)		[87/5][99/16]
CClF <sub>7</sub> S	chlorotetrafluoro (trifluoromethyl) sulfur				[53684-03-0]
	(293–353)	25.9	(323)		[75/21]
CCIN	cyanogen chloride				[42179-04-4]
	(196–286)	32.2	(271)		[99/16]
CCl <sub>2</sub> FNO	dichlorocarbamic fluoride				[506-77-4]
		40.7			[47/5]
					[32751-02-3]
					[72/40]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
CCl <sub>2</sub> F <sub>2</sub>	dichlorodifluoromethane				[75-71-8]
	(282–345)	20.0	(297)	A	[87/5]
	(173–244)	21.4	(229)	A	[87/5]
	(173–240)	21.6	(225)	A	[87/5]
	(236–285)	20.4	(270)	A	[87/5]
	(341–385)	20.5	(356)	A	[87/5]
	(172–279)	22.9	(187)		[79/12]
CCl <sub>2</sub> F <sub>3</sub> N	(154–243)	21.5	(228)		[47/5]
	N,N-difluoro-1,1-dichloro-1-fluoromethylamine				
	(209–277)	27.0	(262)	I	[70/15]
CCl <sub>2</sub> F <sub>3</sub> N	N,N-dichloro-1,1,1-trifluoromethylamine				[13880-73-4]
	(226–291)	25.8	(276)	A	[87/5]
CCl <sub>2</sub> F <sub>3</sub> N	N,1-dichloro-N,1,1-trifluoromethylamine				
	(226–291)	26.4	(258)		[71/17]
CCl <sub>2</sub> F <sub>3</sub> NS	(trifluoromethyl)imidodisulfurous dichloride				[10564-47-3]
	(284–344)	35.4	(298)		[99/16]
	(283–362)	33.7	(298)	A	[87/5]
CCl <sub>2</sub> F <sub>3</sub> P	(trifluoromethyl)dichlorophosphine				[421-58-9]
	(208–276)	29.2	(260)		[64/4]
CCl <sub>2</sub> F <sub>3</sub> PS	dichloro(trifluoromethylthio)phosphine				[18799-78-5]
	(293–363)	31.7	(308)	A	[87/5][99/16]
					[60/25]
CCl <sub>2</sub> O	phosgene				[75-44-5]
	(280–341)	24.5	(295)	A	[87/5]
	(240–281)	25.7	(266)	A	[87/5]
	(338–410)	24.5	(353)	A	[87/5]
	(406–455)	24.4	(421)	A	[87/5]
	(215–248)	27.0	(233)		[48/2]
	(180–273)	25.8	(258)		[47/5]
CCl <sub>3</sub> F	trichlorofluoromethane				[75-69-4]
	(213–301)	28.5	(228)	A	[87/5]
	(213–249)	28.2	(234)	A	[87/5]
	(295–363)	25.6	(310)	A	[87/5]
	(357–429)	24.7	(372)	A	[87/5]
	(424–468)	25.1	(439)	A	[87/5]
	(237–293)	27.3	(251)		[79/12]
	(237–293)	27.1	(276)		[41/4]
		25.2	(290)	C	[41/4]
	(244–334)	26.4	(259)		[40/1]
CCl <sub>3</sub> F <sub>2</sub> N	N,N-difluoro-1,1,1-trichloromethylamine				
	(252–325)	33.4	(267)	I	[87/5][70/15]
CCl <sub>3</sub> F <sub>2</sub> N	N,1,1-trichloro-N,1-difluoromethylamine				
	(273–319)	27.8	(296)		[71/17]
CCl <sub>3</sub> F <sub>2</sub> P	difluoro(trichloromethyl)phosphine				[1112-03-4]
	(289–313)	32.5	(301)	A	[87/5]
CCl <sub>3</sub> NO	trichloronitrosomethane				[3711-49-7]
	(253–333)	32.4	(268)	A	[87/5]
CCl <sub>3</sub> NO <sub>2</sub>	trichloronitromethane				[76-06-2]
	(273–333)	39.3	(288)	A	[87/5]
	(301–449)	38.5	(316)	A	[87/5][70/16]
	(247–385)	40.0	(262)		[47/5]
CCl <sub>4</sub>	carbon tetrachloride				[56-23-5]
	(349–416)	30.4	(364)	A	[87/5]
	(412–497)	29.2	(427)	A	[87/5]
	(494–555)	30.6	(509)	A	[87/5]
		32.4	(298)	C	[80/1]
	(262–349)	33.7	(277)	A, EB	[87/5][72/6]
	(293–351)	32.3	(308)		[59/2]
	(313–338)	31.7	(325)		[53/1]
CFIO	carbonyl fluoride iodide				
	(230–292)	26.1	(277)	A	[87/5]
CFN	cyanogen fluoride				[1495-50-7]
	(201–227)	22.4	(214)	A	[87/5][64/25]
					[70/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
CFNO <sub>3</sub> S	sulfuryl fluoride isocyanate (294–335)	36.5	(309)	A	[1495-51-8] [87/5][99/16]
CFNO <sub>6</sub> S <sub>2</sub>	pyrosulfuryl fluoride isocyanate (330–405)	40.9	(345)	A	[27931-74-4] [87/5][99/16]
CFN <sub>3</sub> O <sub>6</sub>	fluorotrinitromethane (274–358)	34.2	(289)	A, T	[1840-42-2] [87/5][66/13]
CF <sub>2</sub> N <sub>2</sub> OS	cyanimidodisulfuryl fluoride (262–354)	37.2	(277)	A	[19073-57-5] [87/5][99/16]
CF <sub>2</sub> N <sub>2</sub> O <sub>4</sub>	difluorodinitromethane (283–310)	41.4	(296)	A	[1185-11-1] [87/5][73/25]
CF <sub>2</sub> N <sub>2</sub> S	N-cyano-S,S-difluorosulfilimine (271–320)	44.1	(286)	A	[14453-41-9] [87/5][99/16]
CF <sub>2</sub> O	carbonyl fluoride (159–189)	20.0	(174)	A	[353-50-4] [87/5]
CF <sub>2</sub> O <sub>4</sub> S	fluoroformyl fluorosulfate (250–296)	27.3	(281)	A	[7519-54-2] [87/5][99/16]
CF <sub>2</sub> S	thiocarbonyl fluoride (133–211)	19.2	(196)	A	[420-32-6] [87/5][70/16]
	(178–211)	17.4	(196)	A	[87/5][99/16]
CF <sub>3</sub> I	iodotrifluoromethane (188–296)	22.5	(281)	A	[62/33] [2314-97-8] [87/5][70/16]
CF <sub>3</sub> NO	(difluoroamino) carbonyl fluoride (143–217)	21.6	(202)	A, MM	[48/7] [2368-32-3] [87/5][65/23]
CF <sub>3</sub> NO	trifluoronitrosomethane (141–174)	17.1	(159)	A	[334-99-6] [87/5]
CF <sub>3</sub> NOS	S,S,-difluoro-N-(fluoroformyl)-sulfilimine (220–323)	37.3	(235)	A	[3855-41-2] [87/5][99/16]
CF <sub>3</sub> NOS	trifluoromethyl thionitrite (196–215)	25.8	(205)	T	[69/32]
CF <sub>3</sub> NOS	(N-sulfinyl)-trifluoromethylamine (239–289)	27.0	(274)	A	[10564-49-5] [87/5][99/16]
CF <sub>3</sub> NO <sub>2</sub>	trifluoronitromethane (238–243)	21.6	(240)	A	[335-02-4] [87/5]
CF <sub>3</sub> NO <sub>4</sub>	(trifluoromethyl) peroxyxynitrate (193–247)	24.8	(232)	A	[50311-48-3] [87/5]
CF <sub>3</sub> NO <sub>6</sub> S <sub>2</sub>	N-(fluoroformyl)-N,O-bis(fluorosulfonyl) hydroxylamine (325–392)	36.3	(340)	A	[19252-48-3] [87/5][99/16]
CF <sub>4</sub>	carbon tetrafluoride (195–227)	12.1	(212)	A	[75-73-0] [87/5]
	(89–163)	12.3	(148)	A	[87/5]
	(160–197)	11.9	(182)	A	[87/5]
	(116–146)	12.4	(131)		[69/6]
	(93–146)	12.8	(131)		[33/1][87/5]
CF <sub>4</sub> N <sub>2</sub> O	fluoro(trifluoromethyl) diimidoxide (233–267)	27.7	(252)	A	[815-10-1] [87/5]
CF <sub>4</sub> N <sub>2</sub> O <sub>3</sub> S <sub>2</sub>	carbonylbis(imidosulfuryl fluoride) (316–331)	41.3	(323)	A	[25523-80-2] [87/5][99/16]
CF <sub>4</sub> O	hypofluorous acid trifluoromethyl ester (153–194)	15.5	(179)	A	[373-91-1] [87/5][48/1]
CF <sub>4</sub> OS	trifluoromethyl sulfinyl fluoride (204–271)	22.7	(256)	A, I	[812-12-4] [87/5][68/15] [70/16][99/16]
CF <sub>4</sub> O <sub>2</sub>	hydroperoxyfluoric acid trifluoromethyl ester (156–203)	18.7	(188)	A	[34511-13-2] [87/5]
CF <sub>4</sub> O <sub>2</sub> S	trifluoromethane sulfonyl fluoride (226–249)	23.4	(237)	A	[335-05-7] [87/5][99/16]
CF <sub>4</sub> O <sub>2</sub> S	trifluoromethyl fluorosulfonate (194–269)	25.6	(231)		[60/15]

[Note: The table in Ref. [48/1] gives the temperatures in °C; however, all of the equations and graphs in the article suggest that the temperature should be in Kelvin. We have assumed that the tabulated temperatures are in Kelvin; the results closely correspond to the entry in Ref. [87/5].]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
CF <sub>4</sub> O <sub>4</sub> S	trifluoromethylperoxyfluorosulfonate (233–286)	27.7	(259)		[60/15]
CF <sub>4</sub> O <sub>5</sub> S <sub>2</sub>	fluorosulfonic acid trifluoromethane sulfonic acid anhydride (308–338)	32.9	(323)	A	[21595-44-8] [87/5][99/16]
CF <sub>4</sub> O <sub>6</sub> S <sub>2</sub>	trifluoromethyl fluorodisulfate (292–351)	34.4	(321)		[60/15]
CF <sub>5</sub> NO	pentafluoromethoxyamine (167–210)	18.5	(195)	A	[4217-93-0] [87/5][65/19]
CF <sub>5</sub> OPS	phosphorothionic difluoride, S-trifluoromethyl ester (293–353)	23.1	(323)		[52752-66-6] [99/16]
CF <sub>5</sub> OPS	trifluoromethylthiophosphoryl difluoride	23.0			[74/38]
CF <sub>5</sub> O <sub>3</sub> P	trifluoromethoxyphosphoryl difluoride (225–264)	27.4	(245)		[73/37]
CF <sub>5</sub> O <sub>3</sub> P	difluoroperoxyphosphoric acid trifluoromethyl ester (241–280)	32.0	(265)	A	[39125-42-3] [87/5][73/37]
CF <sub>5</sub> PS	trifluoromethyl thiodifluorophosphine	24.3			[74/38]
CF <sub>6</sub> N <sub>2</sub> O <sub>2</sub> S <sub>2</sub>	N,N'-(difluoromethylene)bisimidodisulfuryl fluoride (283–308)	36.0	(295)		[20094-83-1] [68/21]
CF <sub>6</sub> N <sub>2</sub> S <sub>2</sub>	difluoromethane bis(S,S-difluorosulfimine) (230–313)	36.0	(245)	A	[17686-45-2] [87/5][99/16]
CF <sub>6</sub> PS	difluoro(trifluoromethylthio)phosphine (293–353)	22.3	(323)		[52752-65-5] [99/16]
CF <sub>8</sub> OS	pentafluoro(trifluoromethoxy) sulfur (217–262)	24.4	(247)	A	[1873-23-0] [87/5][64/18]
CF <sub>8</sub> S	trifluoro(pentafluorothio)methane (223–252)	20.2	(253)	I	[373-80-8] [01/22]
		23.8	(247)	A	[87/5][99/16]
CF <sub>9</sub> NOS	tetrafluoro(difluoroamino)(trifluoromethoxy) sulfur (257–298)	28.7	(272)	A	[87/5][64/19]
CF <sub>10</sub> O <sub>5</sub> S <sub>2</sub>	[ $\mu$ -(carbonodiperoxato)]decafluoro disulfur	38.1			[60672-59-5] [76/31]
CIN	cyanogen iodide (419–426)	40.0	(423)	A	[506-78-5] [87/5]
		58.3	(313)		[47/5]
CN <sub>4</sub> O <sub>8</sub>	tetranitromethane (286–373)	43.1	(301)	A	[509-14-8] [87/5]
		42.9	(328)	A	[87/5][84/9]
					[52/15]
		46.6	(288)		[87/5][84/9]
					[49/19]
CO	carbon monoxide (68–108)	6.0	(93)	A	[630-08-0] [87/5]
		6.0	(81)		[32/3]
		6.0	(81)	C	[32/3]
COS	carbonyl sulfide (161–284)	20.4	(176)		[463-58-1] [99/16]
		18.3	(299)		[99/16]
		19.5	(209)	A	[87/5]
		19.0±0.1	(214)		[39/5]
		19.5	(209)		[37/2]
CO <sub>2</sub>	carbon dioxide (273–304)	16.7	(288)	A	[124-38-9] [87/5]
		16.4	(258)	A	[87/5]
		16.5	(282)		[72/6]
		25.9	(188)		[56/1]
CS <sub>2</sub>	carbon disulfide (255–354)	28.7	(270)		[75-15-0] [99/16]
		27.1	(369)		[99/16]
		28.5	(275)	A	[87/5]
		27.4	(353)	A	[87/5]
		27.0	(403)	A	[87/5]
		28.7	(505)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(255–318)	28.7	(270)	EB	[72/6][87/5]
	(277–353)	28.1	(292)	EB	[62/2]
		28.1±0.1	(282)	C	[62/2]
		27.5±0.1	(298)	C	[62/2]
		26.7±0.1	(319)	C	[62/2]
		27.7	(298)		[61/25]
	(303–358)	27.6	(318)		[46/4]
CHBrF <sub>2</sub>	bromodifluoromethane				[1511-62-2]
	(194–259)	24.0	(244)	A	[87/5]
	(194–288)	24.7	(209)		[79/12]
CHBr <sub>3</sub>	tribromomethane				[75-25-2]
		46.1±0.1	(298)	C	[72/41]
	(320–412)	42.3	(335)	EB	[72/6][79/12]
	(303–373)	44.0	(318)		[41/7][84/9]
CHClF <sub>2</sub>	chlorodifluoromethane				[75-45-6]
	(275–327)	20.0	(290)	A	[87/5]
	(170–233)	21.3	(218)	A	[87/5]
	(230–275)	20.4	(260)	A	[87/5]
	(324–366)	20.1	(339)	A	[87/5]
	(194–310)	21.8	(209)		[79/12]
	(229–236)	21.0	(232)		[64/2]
		20.2	(232)	C	[57/18]
CHCl <sub>2</sub> F	dichlorofluoromethane				[75-43-4]
	(225–282)	26.1	(267)	A	[87/5]
	(279–344)	25.3	(294)	A	[87/5]
	(341–399)	24.2	(356)	A	[87/5]
	(397–450)	24.1	(412)	A	[87/5]
	(229–236)	U20.9	(233)		[64/2]
	(181–282)	26.2	(267)		[47/5]
	(244–317)	36.7	(259)		[40/1]
CHCl <sub>2</sub> FO <sub>3</sub> S	fluorosulfuric acid, dichloromethyl ester				[42016-50-2]
	(275–293)	36.2	(284)	A	[87/5][99/16]
CHCl <sub>3</sub>	chloroform				[67-66-3]
	(306–427)	30.8	(321)		[95/16]
	(227–269)	31.8	(254)	A	[87/5]
	(333–416)	30.4	(348)	A	[87/5]
	(410–481)	28.9	(425)	A	[87/5]
	(479–523)	30.1	(494)	A	[87/5]
		31.1	(298)	C	[80/1]
	(260–333)	32.5	(275)	EB	[72/6]
	(215–334)	35.0	(230)		[47/5]
	(308–333)	30.9	(320)		[38/5]
CHF <sub>2</sub> I	diiododifluoromethane				[1493-01-2]
	(299–332)	32.9	(314)	A	[87/5][79/12]
					[70/16]
CHFN <sub>2</sub> O <sub>4</sub>	fluorodinitromethane				[7182-87-8]
	(298–338)	43.6	(313)	A	[87/5]
CHFO	formyl fluoride				[1493-02-3]
	(178–235)	24.4	(220)	A	[87/5][64/3]
					[70/16]
CHF <sub>2</sub> I	difluoroiodomethane				[1493-03-4]
	(227–287)	26.0	(272)	A	[87/5][79/12]
					[70/16]
CHF <sub>3</sub>	trifluoromethane				[75-46-7]
	(138–190)	18.1	(175)	A	[87/5]
	(198–298)	16.8	(213)	A	[87/5]
	(146–192)	18.0	(177)		[62/1]
CHF <sub>3</sub> O <sub>2</sub>	trifluoromethyl hydroperoxide				[16156-36-8]
	(248–285)	30.9	(270)	A	[87/5]
CHF <sub>3</sub> O <sub>3</sub> S	trifluoromethylsulfonic acid				[1493-13-6]
	(354–435)	47.7	(369)	A	[87/5][99/16]
CHF <sub>3</sub> S	trifluoromethanethiol				[1493-15-8]
	(167–236)	21.8	(183)		[99/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
CHF <sub>7</sub> S	(167–236)	21.0	(221)	A	[87/5][99/16] [420-67-7]
	(221–292)	27.5	(237)		[99/16]
	(221–293)	25.6	(278)	A	[87/5][99/16] [74-90-8]
CHN	hydrogen cyanide				
	(259–299)	28.1	(274)	A	[87/5]
	(298–457)	27.8	(313)	A	[87/5]
	(257–315)	28.1	(272)		[75/10]
	(259–294)	28.0	(277)		[34/5]
	(257–319)	28.1	(272)		[26/1]
	(265–300)	27.8	(282)		[26/8]
CDN	(256–319)	27.2	(303)	MM	[26/9]
	deuterium cyanide				[3017-23-0]
	(182–282)	26.2	(267)		[47/5]
CHNO	(265–293)	27.6	(279)		[34/5]
	cyanic acid				[420-05-3]
	(233–268)	30.7	(253)	A	[87/5]
CHNS	(197–267)	NA			[38/2]
	thiocyanic acid				[463-56-9]
CHN <sub>3</sub> O <sub>6</sub>	(278–396)	28.0	(293)	A	[87/5]
	trinitromethane				[517-25-9]
CH <sub>2</sub> BrCl	(290–317)	32.6	(303)	A	[87/5][67/25]
	bromochloromethane				[74-95-7]
CH <sub>2</sub> Br <sub>2</sub>	(226–341)	42.0	(241)	A	[87/5]
	(289–341)	33.5	(304)		[59/1][79/12]
	dibromomethane				[74-95-3]
CH <sub>2</sub> ClF		37.0±0.1	(298)	C	[72/41]
	(273–373)	36.5	(288)		[79/12]
	(290–409)	37.2	(305)	A, EST	[87/5][56/16] [70/16]
	(238–371)	37.8	(253)		[47/5]
CH <sub>2</sub> Cl <sub>2</sub>	chlorofluoromethane				[593-70-4]
	(140–264)	23.3	(249)	A	[87/5][70/16]
CH <sub>2</sub> F <sub>2</sub>	dichloromethane				[75-09-2]
		30.6±0.1	(298)	C	[89/10]
	(311–383)	29.0	(326)	A	[87/5]
		28.8	(298)	C	[80/1]
	(264–311)	30.3	(279)	EB	[72/6]
	(303–313)	29.2	(308)		[60/3]
	(233–313)	30.2	(248)		[48/5]
		NA			[46/17]
CH <sub>2</sub> F <sub>3</sub> NS	(186–312)	29.4			[27/2]
	difluoromethane				[75-10-5]
	(256–321)	19.9	(271)	A	[87/5]
	(191–222)	21.2	(207)	A	[87/5]
	(191–258)	20.3	(243)	A	[87/5]
	(316–351)	20.3	(331)	A	[87/5]
	(191–221)	21.2	(206)		[68/5]
CH <sub>2</sub> F <sub>3</sub> NS	(191–242)	20.6	(227)		[68/5]
	1,1,1-trifluoromethanesulfenamide				[1512-33-0]
CH <sub>2</sub> I <sub>2</sub>	(218–291)	34.1	(276)	A	[87/5][99/16] [60/24]
	diiodomethane				[75-11-6]
		45.6	(298)	GC	[94/19]
		49.0	(298)	C	[87/4]
	(293–455)	48.8	(307)		[79/12]
CH <sub>2</sub> O	(356–505)	45.4	(371)	A	[87/5][70/16]
	formaldehyde				[50-00-0]
	(184–251)	24.3	(236)	A	[87/5]
CH <sub>2</sub> O <sub>2</sub>	(173–251)	24.2	(236)		[35/1][87/5]
	formic acid				[64-18-6]
	(300–392)	35.2	(315)	EB	[87/9]
monomer	(283–384)	36.0	(298)	A	[87/5]
		20.1±0.1	(298)	C	[70/8]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		46.3±0.5	(298)	C	[70/8]
	(310–374)	35.2	(325)		[49/1]
		19.9	(298)		[41/10]
		29.6	(303)		[34/8]
	(273–373)	20.3	(315)		[30/8]
	(273–373)	20.9	(338)		[30/8]
		20.4	(315)	C	[30/8]
		21.1	(338)	C	[30/8]
	(273–307)	36.8	(288)		[1894/1]
	(295–374)	47.7	(374)		[1883/1]
CH <sub>3</sub> Br	methyl bromide				[74-83-9]
	(223–278)	25.8	(238)		[79/12]
	(201–296)	24.6	(281)	A, EST	[87/5][61/13]
	(203–277)	25.2	(262)		[47/1]
	(203–278)	25.3	(263)		[38/3]
CH <sub>3</sub> Cl	methyl chloride				[74-87-31]
	(247–310)	22.0	(262)	A	[87/5]
	(368–416)	21.8	(383)	A	[87/5]
	(308–373)	21.0	(323)	A	[87/5]
	(198–278)	22.0	(263)		[48/5]
	(183–250)	22.7	(235)		[47/1]
	(191–249)	23.5	(206)		[46/4]
	(192–249)	22.6	(234)		[40/2]
		20.1	(293)	C	[26/6]
CH <sub>3</sub> Cl <sub>2</sub> P	dichloromethyl phosphine				[676-83-5]
	(229–297)	35.5	(282)	A	[87/5][63/29]
CH <sub>3</sub> F	methyl fluoride				[593-53-3]
	(205–242)	16.9	(227)	A	[87/5]
	(240–288)	16.9	(273)	A	[87/5]
	(141–208)	17.1	(193)	A, EST	[87/5][61/13]
					[70/16]
	(165–217)	16.4	(202)		[87/5][48/15]
					[84/9]
	(170–197)	17.7	(183)	A	[87/5][19/1]
					[84/9]
CH <sub>3</sub> F <sub>2</sub> N	N,N-difluoromethylamine				[753-58-2]
	(203–257)	23.5	(242)	A	[87/5]
		22.9	(257)		[60/19]
CH <sub>3</sub> F <sub>2</sub> NS	methylimidodisulfurous difluoride				[758-20-3]
	(194–258)	28.7	(226)		[99/16]
	(194–258)	28.6	(243)	A	[87/5][99/16]
CH <sub>3</sub> F <sub>2</sub> P	difluoromethyl phosphine				[753-59-3]
	(174–236)	23.4	(221)	A	[87/5]
CH <sub>3</sub> F <sub>2</sub> OPS	difluorothiophosphoric, S-methyl ester				[25237-37-0]
	(236–298)	31.2	(251)	A	[87/5][99/16]
CH <sub>3</sub> F <sub>2</sub> PS <sub>2</sub>	difluorodithiophosphoric acid, methyl ester				[21348-13-0]
	(253–298)	39.0	(268)	A	[87/5][99/16]
CH <sub>3</sub> F <sub>4</sub> NP <sub>2</sub> S <sub>2</sub>	N,N-bis(difluorothiophosphoryl) N-methylamine				[25741-62-2]
	(273–325)	38.7	(288)	A	[87/5][99/16]
CH <sub>3</sub> I	methyl iodide				[74-88-4]
	(228–337)	30.4	(243)	A	[87/5]
	(315–502)	26.5	(330)	A	[87/5]
	(208–227)	31.1	(217)		[82/17]
	(259–314)	29.2	(274)	EB	[72/6][79/12]
	(218–315)	30.4	(233)		[47/5]
	(273–307)	28.2	(288)		[36/2]
CH <sub>3</sub> NO	formamide				[75-12-7]
	(293–377)	70.8	(308)	A	[87/5]
	(415–466)	61.2	(430)	A	[87/5]
		60.2	(298)	A	[85/7][85/6]
	(343–483)	64.0	(358)		[47/5]
CH <sub>3</sub> NOS	N-sulfinyl methanamine				[4291-05-8]
	(252–277)	31.8	(264)	A	[87/5][99/16]
CH <sub>3</sub> NO <sub>2</sub>	methyl nitrite				[624-91-9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
CH <sub>3</sub> NO <sub>2</sub>	(218–273)	22.1	(258)	A	[87/5]
	(154–225)	26.2	(190)		[82/2]
		22.6±0.2			[58/19]
		nitromethane			[75-52-2]
	(313–353)	37.2	(298)	CGC	[95/21]
	(405–476)	35.2	(420)	A	[87/5][67/12]
	(328–410)	36.8	(343)	A	[87/5][54/2]
		37.2±0.1	(318)	C	[54/2]
		36.3±0.1	(335)	C	[54/2]
		35.2±0.1	(353)	C	[54/2]
	34.0±0.1	(374)	C	[54/2]	
	38.3±0.1	(298)	C	[47/11]	
CH <sub>3</sub> NO <sub>3</sub>	methyl nitrate				[598-58-3]
	(273–303)	34.8	(288)	A	[87/5]
CH <sub>4</sub>	methane				[74-82-8]
	(90–120)	8.6	(105)	A	[87/5]
	(115–149)	8.4	(134)	A	[87/5]
	(148–189)	8.7	(174)	A	[87/5]
	(91–127)	8.6	(112)		[72/5][84/9]
	(91–190)	8.5	(175)		[72/5]
		8.1	(137)		[71/28]
	(100–190)	8.6	(175)		[70/4]
		8.2	(112)	C	[61/31]
		7.5	(130)	C	[61/31]
		5.9	(160)	C	[61/31]
		4.0	(180)	C	[61/31]
	(109–189)	8.5	(149)		[61/31]
		8.5±0.1	(99)		[39/5]
	(92–110)	8.6	(101)		[21/1][84/9]
CH <sub>4</sub> F <sub>2</sub> NPS	difluorothiophosphoric acid, N-methylamide				[31411-30-0]
	(273–325)	39.1	(288)	A	[87/5][99/16]
CH <sub>4</sub> N <sub>2</sub>	ammonium cyanide				[12211-52-8]
	(222–305)	47.1	(237)		[47/5]
CH <sub>4</sub> N <sub>2</sub>	methyl diazene				[26981-93-1]
	(195–236)	27.5	(221)	A	[87/5]
CH <sub>4</sub> N <sub>2</sub> O <sub>2</sub>	ammonium carbamate				
	(247–331)	54.1	(262)		[47/5]
CH <sub>4</sub> O	methanol				[67-56-1]
		34.3			[99/32]
	(175–273)	39.2	(258)	A	[87/5]
	(338–487)	36.9	(353)	A	[87/5]
	(188–228)	43.7	(213)	A	[87/5]
	(224–290)	38.9	(275)	A	[87/5]
	(285–345)	38.3	(300)	A	[87/5]
	(335–376)	37.0	(350)	A	[87/5]
	(373–458)	36.1	(388)	A	[87/5]
	(453–513)	35.1	(468)	A	[87/5]
		32.7	(373)	C	[86/17]
		28.1	(423)	C	[86/17]
		20.6	(473)	C	[86/17]
		7.4	(510)	C	[86/17]
	(316–336)	37.5	(331)	EB	[84/26]
	(243–303)	37.8	(298)		[83/14]
	(288–337)	38.3	(303)		[74/9][84/9]
	(337–383)	37.0	(352)		[73/26]
		37.4±0.1	(298)	C	[73/13]
		36.7±0.1	(313)	C	[73/13]
		36.2±0.1	(323)	C	[73/13]
		35.6±0.1	(333)	C	[73/13]
		35.3±0.1	(338)	C	[73/13]
		34.7±0.1	(343)	C	[73/13]
		35.2±0.1	(338)	C	[73/3]
		35.6±0.1	(331)	C	[73/3]
		36.2±0.1	(321)	C	[73/3]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		37.0±0.1	(306)	C	[73/3]
	(275–336)	38.7	(290)	EB	[72/6][87/5]
		37.43±0.02	(298)	C	[71/27]
	(288–357)	38.3	(303)	EB	[70/2]
	(353–483)	36.3	(368)		[67/38]
		37.3±0.1	(298)	C	[66/2]
		37.7±0.1	(298)	C	[63/2]
	(278–323)	38.4	(293)		[60/5]
CH <sub>4</sub> O <sub>2</sub>	methyl hydroperoxide (253–313)	37.7	(268)	A	[3031-73-0] [87/5][51/10]
CH <sub>4</sub> O <sub>3</sub> S	methanesulfonic acid (395–440)	73.9	(410)	A	[75-75-2] [87/5][99/16]
CH <sub>4</sub> S	methyl mercaptan (208–298)	27.2	(223)		[74-93-1] [99/16]
	(267–359)	25.2	(359)	A	[87/5]
	(221–283)	25.7	(268)	A	[87/5]
	(345–424)	23.7	(360)	A	[87/5]
	(414–470)	24.2	(429)	A	[87/5]
		23.8	(298)		[71/28]
	(222–279)	25.8	(264)		[87/5][42/1]
CH <sub>5</sub> N	methylamine (319–381)	24.8	(334)	A	[74-89-5] [87/5]
	(373–430)	23.5	(388)	A	[87/5]
	(263–329)	26.1	(278)	A	[87/5]
	(223–273)	27.2	(258)	A	[87/5][70/16]
	(190–267)	27.4	(252)		[37/10][84/9]
CH <sub>5</sub> NO	N-methylhydroxylamine (293–338)	49.7	(308)	A	[593-77-1] [87/5][70/16]
	(313–338)	49.3	(325)	A	[87/5][57/4] [84/9]
CH <sub>5</sub> NO	O-methylhydroxylamine (228–322)	36.9	(243)	A	[67-62-9] [87/5]
	(210–321)	38.0	(225)		[57/4][84/9]
CH <sub>6</sub> ClN	methylamine hydrochloride (518–593)	114.5	(533)	A	[593-51-1] [87/5]
CH <sub>6</sub> N <sub>2</sub>	methylhydrazine (274–299)	41.8	(286)	A	[60-33-4] [87/5][51/1]
C <sub>2</sub> BrCl <sub>2</sub> F <sub>3</sub> O <sub>4</sub>	perchloric acid, 1,2,2-trifluoro-1-chloro-2-bromoethyl ester (273–294)	42.5	(283)	A	[38217-36-6] [87/5][73/19]
C <sub>2</sub> BrCl <sub>3</sub> O	trichloroacetyl bromide (265–416)	42.6	(280)	A	[34069-94-8] [87/5][47/5]
C <sub>2</sub> BrF <sub>3</sub>	bromotrifluoroethylene (260–340)	25.0	(275)	A	[598-73-2] [87/5]
C <sub>2</sub> BrF <sub>5</sub> O <sub>3</sub> S	2-bromotetrafluoroethyl fluorosulfate (273–298)	33.2	(285)		[63/17]
C <sub>2</sub> BrF <sub>9</sub> S	pentafluoro(1-bromo-1,2,2,2-tetrafluoroethyl) sulfur (294–330)	30.7	(309)	A	[63011-81-4] [87/5][99/16]
C <sub>2</sub> Br <sub>2</sub> ClF <sub>3</sub>	2-chloro-1,2-dibromo-1,1,2-trifluoroethane (343–428)	31.4	(358)	A	[354-51-8] [87/5]
		35.0±0.1	(298)	C	[81/13]
		34.2±0.1	(313)	C	[81/13]
		33.5±0.1	(328)	C	[81/13]
		32.6±0.1	(343)	C	[81/13]
		31.6±0.1	(358)	C	[81/13]
C <sub>2</sub> Br <sub>2</sub> F <sub>4</sub>	1,2-dibromotetrafluoroethane (283–357)	28.5	(298)	A	[124-73-2] [87/5]
	(354–443)	26.9	(369)	A	[87/5]
	(440–488)	27.1	(455)	A	[87/5]
		28.4±0.1	(298)	C	[81/13]
		27.5±0.1	(313)	C	[81/13]
		26.5±0.1	(328)	C	[81/13]
	(246–295)	30.0	(280)		[87/5][70/16]
C <sub>2</sub> ClFN <sub>2</sub>	<i>cis</i> chloro(fluoroimino)acetonitrile (254–320)	31.7	(269)	A	[30915-40-3] [87/5][71/19]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>2</sub> ClFN <sub>2</sub>	<i>trans</i> chloro(fluoroimino)acetonitrile (257–320)	32.7	(272)	A	[30915-39-0] [87/5][71/19]
C <sub>2</sub> ClF <sub>2</sub> NO <sub>2</sub>	chloro(fluorocarbonyl)carbamic fluoride	36.8	(376)		[42016-33-1] [73/21]
C <sub>2</sub> ClF <sub>3</sub>	chlorotrifluoroethylene (206–262)	21.8	(247)	A	[79-38-9] [87/5]
	(298–379)	20.2	(313)	A	[87/5]
	(206–263)	21.7	(248)		[51/2]
	(195–250)	21.9	(235)		[33/2]
C <sub>2</sub> ClF <sub>3</sub> O <sub>2</sub>	chloroformic acid, trifluoromethyl ester (195–273)	24.1	(258)	A	[23213-83-4] [87/5]
C <sub>2</sub> ClF <sub>3</sub> O <sub>4</sub> S	difluorochloroacetic acid, fluorosulfuric acid anhydride (265–352)	39.8	(280)	A	[6069-32-5] [87/5][66/15]
C <sub>2</sub> ClF <sub>4</sub> NO	chloro(trifluoromethyl)carbamic fluoride	28.9	(310)		[99/16] [42016-31-9] [73/21]
C <sub>2</sub> ClF <sub>4</sub> NO <sub>4</sub> S	fluorosulfuric acid, chloro(trifluoromethyl)carbamic acid anhydride	28.5	(398)		[42016-34-2] [73/21]
C <sub>2</sub> ClF <sub>5</sub>	chloropentafluoroethane (262–317)	19.7	(277)	A	[76-15-3] [87/5]
	(234–265)	20.1	(250)	A	[87/5]
	(312–353)	19.7	(327)	A	[87/5]
	(178–234)	20.9	(219)		[66/4]
	(176–235)	20.9	(220)	A	[87/5][55/1]
		19.4±0.1	(234)	C	[55/1]
C <sub>2</sub> ClF <sub>5</sub> O	hypochlorous acid, pentafluoroethyl ester (193–248)	25.0	(233)	A	[22675-67-8] [87/5][73/22]
C <sub>2</sub> ClF <sub>5</sub> OS	pentafluoroethanesulfinyl chloride (273–338)	32.7	(288)	A	[39937-08-1] [87/5][64/22] [99/16]
C <sub>2</sub> ClF <sub>5</sub> O <sub>3</sub> S	2-chlorotetrafluoroethyl fluorosulfate (248–330)	32.9	(289)		[63/17]
C <sub>2</sub> ClF <sub>5</sub> O <sub>6</sub> S <sub>2</sub>	1,2,2-trifluoro-1-chloro-1,2-ethanediol <i>bis</i> (fluorosulfate) (308–406)	53.2	(323)	A	[1957-17-1] [87/5][99/16]
C <sub>2</sub> ClF <sub>6</sub> NOS	(pentafluoroethyl)imidodisulfurous chloride fluoride	35.6	(326)	I	[74366-11-3] [80/10]
C <sub>2</sub> ClF <sub>6</sub> P	<i>bis</i> (trifluoromethyl) chlorophosphine (193–273)	27.8	(258)		[650-52-2] [64/4][84/9]
C <sub>2</sub> ClF <sub>6</sub> PS <sub>2</sub>	chloro <i>bis</i> (trifluoromethylthio)phosphine (293–373)	33.0	(333)		[60/25]
C <sub>2</sub> ClF <sub>6</sub> NP	[ <i>bis</i> (trifluoromethyl)amino]trifluorochlorophosphorous(V) (223–273)	26.4	(248)		[66/23]
C <sub>2</sub> ClF <sub>9</sub> S	2-chlorotetrafluoroethylsulfur pentafluoride	28.3	(320)		[646-63-9] [61/21][99/16]
C <sub>2</sub> Cl <sub>2</sub> F <sub>2</sub>	1,2-dichloro-1,2-difluoroethylene (191–294)	27.9	(279)	A	[598-88-9] [87/5]
	(240–294)	27.2	(279)		[33/3]
C <sub>2</sub> Cl <sub>2</sub> F <sub>2</sub> N <sub>2</sub>	dichloro(difluoroamino)acetonitrile (238–341)	26.8	(253)	A	[30913-21-4] [87/5][71/19]
C <sub>2</sub> Cl <sub>2</sub> F <sub>2</sub> O	fluorodichloroacetyl fluoride (208–273)	21.8	(258)	A	[354-18-7] [87/5]
C <sub>2</sub> Cl <sub>2</sub> F <sub>3</sub> NO	N,N'-dichloro-2,2,2-trifluoroacetamide	40.9			[32751-03-4] [72/40]
C <sub>2</sub> Cl <sub>2</sub> F <sub>3</sub> NOS	S,S-dichloro-N-(trifluoroacetyl) sulfilimine (306–333)	44.2	(319)	A	[24433-67-8] [87/5][69/22] [99/16]
C <sub>2</sub> Cl <sub>2</sub> F <sub>3</sub> NO <sub>2</sub> S	(trifluoromethyl)sulfonyl carbonimidic dichloride (312–405)	44.1	(327)	A	[51587-33-8] [87/5][99/16]
C <sub>2</sub> Cl <sub>2</sub> F <sub>4</sub>	1,1-dichloro-1,2,2,2-tetrafluoroethane (231–373)	23.5	(246)	A	[374-07-2] [87/5][70/16]
		23.2	(233)	BG	[55/20]
		22.5	(273)	BG	[55/20]
		20.8	(313)	BG	[55/20]
		17.7	(353)	BG	[55/20]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>2</sub> Cl <sub>2</sub> F <sub>4</sub>	1,2-dichloro-1,1,2,2-tetrafluoroethane				[76-14-2]
	(277–391)	24.3	(292)	A	[87/5]
	(210–277)	25.1	(262)	A	[87/5]
	(178–277)	25.3	(261)		[47/5]
C <sub>2</sub> Cl <sub>2</sub> F <sub>4</sub> O <sub>4</sub>	perchloric acid, 1,1,2,2-tetrafluoro-2-chloroethyl ester	32.6	(279)	A	[38126-28-2] [87/5][73/19]
C <sub>2</sub> Cl <sub>2</sub> F <sub>5</sub> NS	S,S-dichloro-N-(pentafluoroethyl) sulfilimine	37.4	(312)	A	[10564-48-4] [87/5][99/16]
C <sub>2</sub> Cl <sub>2</sub> F <sub>8</sub> NP	[bis(trifluoromethyl)amino]difluorodichlorophosphorous (V)	32.9	(293)		[66/33]
C <sub>2</sub> Cl <sub>3</sub> F <sub>3</sub>	1,1,1-trichloro-2,2,2-trifluoroethane				[354-58-5]
		28.1±0.1	(298)	C	[80/9]
		27.2±0.1	(313)	C	[80/9]
		26.3±0.1	(328)	C	[80/9]
	(297–319)	28.9	(308)		[80/9]
C <sub>2</sub> Cl <sub>3</sub> F <sub>3</sub>		29.2	(298)	A	[87/5][63/6]
	1,1,2-trichloro-1,2,2-trifluoroethane				[76-13-1]
	(273–319)	28.3	(288)	A	[87/5]
	(238–364)	30.9	(253)	A	[87/5]
	(360–473)	26.9	(375)	A	[87/5]
	(297–317)	28.8	(307)	A	[87/5]
		28.4±0.1	(298)	C	[80/9]
		27.5±0.1	(313)	C	[80/9]
		26.6±0.1	(328)	C	[80/9]
		28.2±0.4	(298)		[74/5]
	(273–318)	28.2	(288)		[63/6]
(248–356)	30.8	(263)		[40/1]	
(243–353)	NA			[39/7]	
C <sub>2</sub> Cl <sub>3</sub> F <sub>3</sub>	trichlorotrifluoroethane	30.5	(263)		[38/4]
C <sub>2</sub> Cl <sub>3</sub> F <sub>3</sub> O <sub>4</sub>	perchloric acid, 1,2,2-trifluoro-1,2-dichloroethyl ester	26.9	(284)	A	[38126-27-1] [87/5]
C <sub>2</sub> Cl <sub>3</sub> N	trichloroacetonitrile				[545-06-2]
	(289–357)	35.1	(304)	A	[87/5][70/16]
	(289–356)	34.7	(304)		[54/4]
C <sub>2</sub> Cl <sub>4</sub>	tetrachloroethylene				[127-18-4]
	(307–393)	38.4	(322)		[95/13]
	(310–393)	38.7	(325)	A	[87/5][72/6]
	(300–380)	38.9	(315)		[70/3][84/9]
	(333–373)	37.6	(348)		[67/30]
C <sub>2</sub> Cl <sub>4</sub> F <sub>2</sub>		39.6±0.1	(298)	C	[60/1]
	1,2-difluorotetrachloroethane				[76-12-0]
		34.6±0.1	(308)	C	[92/11]
		34.1±0.1	(315)	C	[92/11]
		33.6±0.1	(323)	C	[92/11]
		33.1±0.1	(330)	C	[92/11]
		32.6±0.1	(338)	C	[92/11]
	(301–365)	36.6	(316)	A	[87/5]
	(235–293)	36.4	(278)	A	[87/5]
	(312–362)	34.0	(327)	A	[87/5]
(283–364)	32.7	(298)		[33/4]	
C <sub>2</sub> Cl <sub>4</sub> F <sub>2</sub> O <sub>3</sub> S	2-fluorotetrachloroethyl fluorosulfate	42.0	(329)		[63/17]
C <sub>2</sub> Cl <sub>4</sub> F <sub>2</sub> O <sub>4</sub>	perchloric acid, 1,2-difluoro-1,2,2-trichloroethyl ester	30.2	(283)	A	[38126-29-3] [87/5][73/19]
C <sub>2</sub> Cl <sub>4</sub> F <sub>4</sub> N <sub>2</sub>	1,2-bis(dichloroamino)tetrafluoroethane	43.1			[72/40]
C <sub>2</sub> Cl <sub>4</sub> F <sub>6</sub> OS	pentafluoro(2-fluoro-1,1,2,2-tetrachloroethoxy)sulfur	42.8	(329)	A	[762-90-3] [87/5][62/19]
C <sub>2</sub> Cl <sub>4</sub> O	tetrachloroethylene oxide	36.9	(323)	A	[16650-10-5] [87/5]
C <sub>2</sub> Cl <sub>4</sub> O	trichloroacetyl chloride	38.3	(320)	A	[76-02-8] [87/5][59/1] [70/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>2</sub> Cl <sub>6</sub>	hexachloroethane				[67-12-11]
	(460–513)	40.3	(475)	A	[87/5]
	(345–460)	51.2	(360)	A	[87/5][70/16]
	(305–458)	53.7	(320)		[47/5]
C <sub>2</sub> D <sub>4</sub> O	ethylene oxide—d <sub>4</sub> oxide (230–273)	27.6	(258)		[6552-57-4] [52/2][84/9]
C <sub>2</sub> FNO <sub>2</sub>	fluorocarbonyl isocyanate (228–264)	33.5	(249)	A	[15435-14-0] [87/5][67/31]
C <sub>2</sub> F <sub>2</sub> N <sub>2</sub> O	difluorocarbonylamidic amide	29.7	(383)		[32837-63-1] [73/23]
C <sub>2</sub> F <sub>2</sub> N <sub>2</sub> O <sub>2</sub>	difluorocarbonisocyanidic amide	33.9	(327)		[32837-64-2] [73/23]
C <sub>2</sub> F <sub>2</sub> N <sub>4</sub> O <sub>8</sub>	1,2-difluoro-1,1,2,2-tetranitroethane (297–323)	62.8	(310)	A	[20165-39-3] [87/5][73/25]
C <sub>2</sub> F <sub>2</sub> O <sub>2</sub>	oxalyl fluoride (264–272)	29.7	(268)		[359-40-0] [87/5]
C <sub>2</sub> F <sub>2</sub> O <sub>4</sub>	bis(fluorocarbonyl)peroxide (226–266)	30.6	(251)		[692-74-0] [62/3][84/9]
C <sub>2</sub> F <sub>3</sub> N	trifluoroacetonitrile				[353-85-5]
	(151–206)	19.3	(191)	A	[87/5]
	(141–203)	19.2	(188)	A	[87/5]
	(197–241)	18.5	(226)	A	[87/5]
	(282–336)	17.4	(309)	A	[87/5]
	(272–311)	17.4	(287)	A	[87/5]
(142–206)	19.2	(191)		[61/2]	
C <sub>2</sub> F <sub>3</sub> NO	trifluoromethyl isocyanate (195–228)	22.5	(213)	A	[460-49-1] [87/5]
C <sub>2</sub> F <sub>3</sub> NO	trifluoronitrosoethylene (247–250)	25.7	(248)	A	[2713-04-4] [87/5]
C <sub>2</sub> F <sub>3</sub> NOS	trifluoromethanesulfinyl cyanide	40.2	(352)	I	[61951-27-7] [77/17]
C <sub>2</sub> F <sub>3</sub> NOS	trifluoromethylsulphenyl isocyanate (231–293)	27.9	(278)	A	[691-03-2] [87/5][99/16]
C <sub>2</sub> F <sub>3</sub> NO <sub>2</sub> S	2,2,2-trifluoro-N-sulfinylacetamide (267–302)	36.4	(282)	A	[63/42] [26454-68-2] [87/5][99/16]
C <sub>2</sub> F <sub>3</sub> NO <sub>2</sub> S <sub>2</sub>	trifluoromethanesulfonyl isothiocyanate (297–385)	41.0	(312)	A	[51587-30-5] [87/5][99/16]
C <sub>2</sub> F <sub>3</sub> NO <sub>3</sub> S	trifluoromethanesulfonyl isocyanate (275–345)	36.9	(290)	A	[30227-06-6] [87/5][99/16]
C <sub>2</sub> F <sub>3</sub> NS	thiocyanic acid, trifluoromethyl ester (226–294)	32.6	(279)	A	[690-24-4] [87/5][99/16]
C <sub>2</sub> F <sub>3</sub> N <sub>3</sub> O <sub>6</sub>	1,1,2-trifluoro-1,2,2-trinitroethane (313–353)	57.7	(328)	A	[63/42] [20165-38-2] [87/5][73/25]
C <sub>2</sub> F <sub>4</sub>	tetrafluoroethylene				[116-14-3]
	(197–273)	16.8	(258)	A	[87/5]
	(273–306)	16.6	(288)	A	[87/5]
	(142–208)	18.6	(193)	A	[87/5][53/2] [84/9]
C <sub>2</sub> F <sub>4</sub> N <sub>2</sub>	tetrafluoroaminoacetic, nitrile (193–238)	23.9	(223)	A	[5131-88-4] [87/5]
C <sub>2</sub> F <sub>4</sub> N <sub>2</sub> O <sub>3</sub>	1,1,2,2-tetrafluoro-1-nitro-2-nitrosoethane (233–293)	28.8	(278)	A	[679-08-3] [87/5]
C <sub>2</sub> F <sub>4</sub> N <sub>2</sub> O <sub>4</sub>	1,1,2,2-tetrafluoro-1,2-dinitroethane				[356-16-1]
	(303–343)	67.8	(323)		[73/25]
	(259–333)	34.7	(274)	A, I	[87/5][57/19]
C <sub>2</sub> F <sub>4</sub> N <sub>2</sub> O <sub>6</sub> S <sub>2</sub>	1,2-bis(fluoroformyl)-1,2-bis(fluorosulfonyl)hydrazine (273–296)	49.8	(284)	A	[19252-50-7] [87/5][99/16]
C <sub>2</sub> F <sub>4</sub> O	trifluoroacetyl fluoride (161–215)	20.9	(200)	A	[354-34-7] [87/5][72/2]
C <sub>2</sub> F <sub>4</sub> O <sub>2</sub> S	trifluoroethylene sulfonyl fluoride (270–313)	27.0	(285)	A	[684-106] [87/5][99/16]
C <sub>2</sub> F <sub>4</sub> O <sub>3</sub>	fluoroperoxyformic acid, trifluoromethyl ester				[16118-40-4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>2</sub> F <sub>4</sub> O <sub>4</sub> S	(194–249)	27.3	(234)	A	[87/5]
	trifluoroacetyl fluorosulfate				[5762-53-8]
	(262–321)	34.3	(277)	A	[87/5][66/17]
C <sub>2</sub> F <sub>4</sub> S <sub>2</sub>	(250–320)	34.9	(265)		[66/4]
	perfluoro-1-3-dithietane				[73/38]
C <sub>2</sub> F <sub>5</sub> I	pentafluoroiodoethane (248–283)	20.8	(268)	A	[354-64-3] [87/5]
C <sub>2</sub> F <sub>5</sub> NO	pentafluoroacetamide	23.8	(252)	HG	[32822-49-4] [71/18]
C <sub>2</sub> F <sub>5</sub> NO	pentafluoronitrosoethane (193–227)	20.9	(212)	A	[354-72-3] [87/5]
C <sub>2</sub> F <sub>5</sub> NOS	carbamothioic acid, difluoro-S-(trifluoromethyl) ester	23.0	(315)		[32837-66-4] [73/23]
C <sub>2</sub> F <sub>5</sub> NOS	S,S-difluoro-N-(trifluoroacetyl) sulfilimine (240–282)	34.4	(267)	A	[24433-65-6] [87/5][69/22]
					[99/16]
C <sub>2</sub> F <sub>5</sub> NOS	1,1,1-trifluoro-N-(fluoroformyl)methanesulfinimidyl fluoride (276–323)	38.9	(291)	A	[28103-61-9] [87/5][99/16]
C <sub>2</sub> F <sub>5</sub> NOS	1,1,2,2,2-pentafluoro-N-sulfinyl ethylamine (245–303)	29.0	(260)	A	[10564-50-8] [87/5][99/16]
C <sub>2</sub> F <sub>5</sub> NO <sub>4</sub> S	(fluorosulfonyl)(trifluoromethoxy)carbamoyl fluoride (277–290)	30.3	(283)		[19252-49-4] [99/16]
C <sub>2</sub> F <sub>5</sub> N <sub>3</sub> O <sub>3</sub>	fluoro(1,1,2,2-tetrafluoro-2-nitroethyl)-2-diimide oxide (257–350)	38.0	(272)	A	[755-68-0] [87/5]
C <sub>2</sub> F <sub>6</sub>	hexafluoroethane				[76-16-4]
	(172–200)	17.3	(186)	A	[87/5]
	(180–196)	17.1	(188)		[48/3]
C <sub>2</sub> F <sub>6</sub> IN	N-iodo-bis(trifluoromethyl)amine (261–318)	28.5	(276)	A	[5764-87-4] [87/5]
C <sub>2</sub> F <sub>6</sub> IP	bis(trifluoromethyl)phosphinous iodide				[359-64-8]
	(273–320)	33.2	(288)		[64/4][84/9]
C <sub>2</sub> F <sub>6</sub> N <sub>2</sub>	hexafluoroazomethane (205–242)	22.9	(227)	A	[372-63-4] [87/5]
C <sub>2</sub> F <sub>6</sub> N <sub>2</sub> O	hexafluoroazoxymethane (274–281)	27.2	(277)	A	[371-56-2] [87/5]
C <sub>2</sub> F <sub>6</sub> N <sub>2</sub> O <sub>2</sub>	1,1,1-trifluoro-N-(nitrosooxy)-N-(trifluoromethyl)methanamine (245–285)	26.8	(270)	A	[359-75-1] [87/5]
C <sub>2</sub> F <sub>6</sub> N <sub>2</sub> O <sub>2</sub>	N-nitroso-O,N-bis(trifluoromethyl)hydroxylamine (272–283)	25.4	(277)	A	[87/5]
C <sub>2</sub> F <sub>6</sub> OS	bis(trifluoromethyl)sulfoxide (248–303)	27.9	(263)	A	[30341-37-8] [87/5][99/16]
C <sub>2</sub> F <sub>6</sub> OS	pentafluoroethyl sulfinyl fluoride (234–293)	28.5	(278)	A, I	[20621-31-2] [87/5][68/15]
C <sub>2</sub> F <sub>6</sub> OS <sub>2</sub>	S-trifluoromethyl-(trifluoromethyl)thiosulfinate (293–353)	30.7	(323)		[63548-94-7] [99/16]
	methanesulfonothioic acid, trifluoro-S-(trifluoromethyl) ester	27.8	(329)	I	[76/18]
C <sub>2</sub> F <sub>6</sub> O <sub>2</sub> S	perfluoroethyl fluorosulfate (250–300)	28.8	(275)		[63/17]
C <sub>2</sub> F <sub>6</sub> O <sub>3</sub>	bis(trifluoromethyl) trioxide (193–248)	24.3	(233)	A	[17118-18-9] [87/5]
C <sub>2</sub> F <sub>6</sub> O <sub>3</sub> S	trifluoromethanesulfonic acid, trifluoromethyl ester (238–294)	29.4	(252)		[3582-05-6] [99/16]
	(238–294)	27.6	(279)	A	[87/5][65/18]
	bis(trifluoromethyl)sulfate (219–304)	28.7	(262)		[60/15]
C <sub>2</sub> F <sub>6</sub> O <sub>5</sub> S	peroxysulfuric acid, bis(trifluoromethyl) ester (253–319)	32.0	(268)		[41765-14-4] [99/16]
C <sub>2</sub> F <sub>6</sub> O <sub>6</sub> S <sub>2</sub>	tetrafluoroethylene glycol, bis(fluorosulfate) (295–378)	43.7	(310)	A	[1479-53-4] [87/5][70/16]
C <sub>2</sub> F <sub>6</sub> O <sub>7</sub> S <sub>2</sub>	bis(trifluoromethyl) disulfate				[99/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>2</sub> F <sub>6</sub> S	(328–357)	38.3	(342)		[60/15]
	<i>bis</i> (trifluoromethyl) sulfide				[371-78-8]
C <sub>2</sub> F <sub>6</sub> S <sub>2</sub>		23.6			[52/22]
	<i>bis</i> (trifluoromethyl) disulfide				[372-64-5]
C <sub>2</sub> F <sub>7</sub> N		28.8			[52/22]
	perfluorodimethylamine				[359-62-6]
C <sub>2</sub> F <sub>7</sub> N	(199–230)	21.4	(215)	A	[87/5]
	(203–233)	18.6	(218)	A	[87/5][49/27]
C <sub>2</sub> F <sub>7</sub> NOS	perfluoroethylamine				[354-80-3]
	(171–236)	20.8	(221)	A	[87/5][70/16]
C <sub>2</sub> F <sub>7</sub> NO <sub>3</sub> S	(pentafluoroethyl)imidodisulfuryl fluoride				[59617-28-6]
		30.7			[76/29]
C <sub>2</sub> F <sub>7</sub> NO <sub>12</sub> S <sub>4</sub>	fluorosulfuric acid, 1,1,2,2-tetrafluoro-2-(difluoroamino)ethyl ester				[4188-34-5]
	(276–326)	31.1	(291)	A	[87/5][99/16]
C <sub>2</sub> F <sub>8</sub> NOP	fluorosulfuric acid, 1-[ <i>bis</i> [(fluorosulfonyl)oxo]amino]-2,2,2-trifluoro-ethylidene ester				[53684-02-9]
		43.4	(418)		[75/21]
C <sub>2</sub> F <sub>8</sub> NOP	[ <i>bis</i> (difluoromethyl)amino] difluorophosphine oxide				
	(233–278)	30.4	(255)		[66/33]
C <sub>2</sub> F <sub>8</sub> OS	phosphorous <i>bis</i> (trifluoromethyl)nitroxide difluoride				
		28.0	(288)		[73/24]
C <sub>2</sub> F <sub>8</sub> OS	difluoro- <i>oxo-bis</i> -(trifluoromethyl) sulfur				[33716-15-3]
	(239–299)	22.4	(254)	A	[87/5][99/16]
C <sub>2</sub> F <sub>8</sub> OS		28.4			[71/34]
	pentafluoro(trifluoroacetyl) sulfur				[82390-51-0]
C <sub>2</sub> F <sub>8</sub> O <sub>3</sub> S	(162–290)	26.6	(177)		[99/16]
	pentafluoro (trifluoroethaneperoxoato) sulfur				[60672-61-9]
C <sub>2</sub> F <sub>8</sub> S		28.0			[76/31]
	trifluorovinyl sulfur pentafluoride				[1186-51-2]
C <sub>2</sub> F <sub>8</sub> S		25.1	(292)		[61/21]
	difluoro <i>bis</i> (trifluoromethyl) sulfur				[30341-38-9]
C <sub>2</sub> F <sub>10</sub> OS		28.8			[71/34]
	pentafluoro(pentafluoroethoxy) sulfur				
C <sub>2</sub> F <sub>10</sub> O <sub>2</sub> S	(245–287)	27.6	(272)	A	[87/5][62/19]
	tetrafluoro- <i>bis</i> (trifluoromethoxy) sulfur				[2004-38-8]
C <sub>2</sub> F <sub>10</sub> O <sub>3</sub> S	(246–302)	29.9	(261)	A	[87/5][64/18]
	(trifluoromethoxy)[(trifluoromethyl)dioxy] sulfur tetrafluoride				[41938-43-6]
C <sub>2</sub> F <sub>10</sub> O <sub>3</sub> S <sub>2</sub>	(255–317)	32.5	(270)		[99/16]
	pentafluoro[1,2,2,2-tetrafluoro-1-[(fluorosulfonyl)oxy]ethyl] sulfur				[68010-32-2]
C <sub>2</sub> F <sub>10</sub> S		34.8			[78/23]
	<i>trans</i> tetrafluoro- <i>bis</i> (trifluoromethyl) sulfur				[42179-02-2]
C <sub>2</sub> F <sub>11</sub> NS	(233–293)	23.3	(278)	A	[87/5][99/16]
	[ <i>bis</i> (trifluoromethyl)amino] sulfur pentafluoride				[13888-13-6]
C <sub>2</sub> F <sub>12</sub> S <sub>2</sub>	(233–306)	29.3	(248)	A	[87/5][66/21]
					[99/16]
C <sub>2</sub> N <sub>2</sub>	perfluoro-1,3-dithietane octafluoride				[73/38]
		35.6			[460-19-5]
C <sub>2</sub> N <sub>2</sub>	cyanogen				
	(240–253)	24.5	(246)	A	[87/5]
C <sub>2</sub> HBr	(246–273)	23.9	(257)		[25/1]
	(246–273)	23.5	(267)		[25/1]
C <sub>2</sub> HBrClF <sub>3</sub>	bromoacetylene				[593-61-3]
	(214–273)	25.6	(273)	A	[87/5]
C <sub>2</sub> HBrClF <sub>3</sub>	2-bromo-2-chloro-1,1,1-trifluoroethane				[151-67-7]
	(298–323)	30.0	(310)	A	[87/5]
C <sub>2</sub> HBrClF <sub>3</sub>		29.6±0.3	(298)		[81/5]
		29.6±0.1	(298)	C	[80/9]
C <sub>2</sub> HBrClF <sub>3</sub>		28.7±0.1	(313)	C	[80/9]
		27.8±0.1	(328)	C	[80/9]
C <sub>2</sub> HBrClF <sub>3</sub>		26.8±0.1	(343)	C	[80/9]
	(227–318)	34.3	(242)		[65/6]
C <sub>2</sub> HBrClF <sub>3</sub>	(222–329)	33.2	(237)	A	[87/5][63/7]
					[70/16]
C <sub>2</sub> HBrClF <sub>3</sub>	1-bromo-2-chloro-1,1,2-trifluoroethane				[354-06-3]
		30.0±0.1	(298)	C	[81/13]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>2</sub> HBrF <sub>8</sub> S	(1-bromo-2,2,2-trifluoroethyl)sulfur pentafluoride	29.0±0.1	(313)	C	[81/13]
		28.1±0.1	(328)	C	[81/13]
		27.2±0.1	(343)	C	[81/13]
C <sub>2</sub> HBrF <sub>8</sub> S		32.0			[82390-50-9] [82/19]
C <sub>2</sub> HBr <sub>2</sub> FO <sub>2</sub>	dibromofluoroacetic acid (403–468)	60.2	(418)	A	[353-99-1] [87/5]
C <sub>2</sub> HBr <sub>3</sub> O	tribromoacetaldehyde (291–447)	47.8	(306)	A	[115-17-3] [87/5][47/5]
C <sub>2</sub> HCl	chloroacetylene (204–238)	21.8	(223)	A	[593-63-5] [87/5]
C <sub>2</sub> HClF <sub>2</sub>	1,1-difluoro-2-chloroethene	23.5	(233)	BG	[359-10-4] [55/20]
		21.4	(273)	BG	[55/20]
		18.5	(313)	BG	[55/20]
		14.1	(353)	BG	[55/20]
C <sub>2</sub> HClF <sub>6</sub> OS	<i>trans</i> [(2-chloro-2-fluorovinyl)oxy] sulfur pentafluoride	36.8			[20407-78-7] [68/17]
C <sub>2</sub> HClF <sub>6</sub> OS	<i>cis</i> [(2-chloro-2-fluorovinyl)oxy] sulfur pentafluoride	34.3			[20407-79-8] [68/17]
C <sub>2</sub> HClF <sub>8</sub> OS	(2-chloro-1,2,2-trifluoroethoxy) sulfur pentafluoride	33.3			[20334-47-8] [68/17]
C <sub>2</sub> HClF <sub>12</sub> O <sub>2</sub> S	[(2-chloro-2,2-difluoroethylidene)dioxy]bis(pentafluoro)sulfur	39.0			[20563-90-0] [68/17]
C <sub>2</sub> HClF <sub>8</sub> S	(1,1,2-trifluoro-2-chloroethyl) sulfur pentafluoride (279–323)	30.2	(294)	A	[22756-13-4] [87/5][99/16]
C <sub>2</sub> HCl <sub>2</sub> F <sub>3</sub>	1,1,1-trifluoro-2,2-dichloroethane (243–448)	26.6±0.3	(298)		[306-83-2] [02/1]
		28.7	(258)	MM	[92/19]
C <sub>2</sub> HCl <sub>2</sub> F <sub>3</sub>	1,1,2-trifluoro-1,2-dichloroethane	26.8±0.3	(298)		[354-23-4] [02/1]
C <sub>2</sub> HCl <sub>3</sub>	trichloroethylene (297–360)	34.2	(313)		[79-01-6] [95/14]
		34.5±0.1	(298)	C	[80/1]
		34.6	(295)		[87/5][70/16]
		36.2	(305)		[44/1]
		35.6	(313)		[12/1][84/9]
C <sub>2</sub> HCl <sub>3</sub> F <sub>2</sub> O <sub>3</sub> S	fluorosulfuric acid, 2-fluoro-1,1,2-trichloroethyl ester (317–353)	36.6	(332)	A	[42087-88-7] [87/5][99/16]
C <sub>2</sub> HCl <sub>3</sub> O	trichloroacetaldehyde (235–371)	36.6	(250)	A	[75-87-6] [87/5][47/5]
C <sub>2</sub> HCl <sub>3</sub> O <sub>2</sub>	trichloroacetic acid (326–473)	65.0	(341)	A	[76-03-9] [87/5][70/16]
		57.2	(400)		[59/1]
C <sub>2</sub> HCl <sub>4</sub> FS	(dichloromethyl)(fluorodichloromethyl) sulfide (322–352)	46.5	(337)	A	[87/5][99/16] [76-01-7]
C <sub>2</sub> HCl <sub>5</sub>	pentachloroethane (274–434)	40.9	(289)	A	[87/5]
		45.5	(313)		[30/1]
C <sub>2</sub> HF <sub>3</sub> O <sub>2</sub>	trifluoroacetic acid (285–345)	35.9	(300)	A	[76-05-1] [87/5][62/4]
					[70/16][84/9]
C <sub>2</sub> HF <sub>5</sub>	pentafluoroethane	22.8	(175)	C	[354-33-6] [99/26]
		21.9	(190)	C	[99/26]
		20.9	(205)	C	[99/26]
		20.3	(215)	C	[99/26]
C <sub>2</sub> HF <sub>5</sub> O	pentafluorodimethyl ether (216–238)	22.3	(239)	I	[3822-68-2] [01/22]
		19.3	(260)	EB	[96/6]
		17.6	(280)	EB	[96/6]
		15.6	(300)	EB	[96/6]
		20.4	(255)	A	[92/12]
C <sub>2</sub> HF <sub>6</sub> NOS	S,S-bis(trifluoromethyl)sulfoximine				[34556-22-4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>2</sub> HF <sub>6</sub> NS <sub>2</sub>	<i>bis</i> (trifluoromethane) sulphenimide (243–293)	35.1	(346)	I	[72/25]
C <sub>2</sub> HF <sub>6</sub> OPS	<i>bis</i> (trifluoromethyl) thiophosphinic acid (283–324)	36.5	(268)		[60/24]
C <sub>2</sub> HF <sub>6</sub> PS	<i>bis</i> (trifluoromethyl)(mercapto)phosphine (269–304)	38.3	(298)	A	[35814-49-4] [87/5]
C <sub>2</sub> HF <sub>6</sub> PS <sub>2</sub>	<i>bis</i> (trifluoromethyl) thiophosphinous acid (217–280)	30.7	(286)		[64/31]
C <sub>2</sub> HF <sub>7</sub> S	(2,2-difluoroethenyl) pentafluoro sulfur 27.7	32.9	(265)	A	[1486-19-7] [87/5][99/16] [58636-78-5] [78/23]
C <sub>2</sub> HF <sub>9</sub> S	pentafluoro (1,2,2,2-tetrafluoroethyl) sulfur 28.0				[63011-80-3] [78/23]
C <sub>2</sub> H <sub>2</sub>	acetylene (258–308)	16.3	(273)	A	[74-86-2] [87/5]
	(192–308)	16.7	(207)	A	[87/5]
	(192–225)	16.7	(210)	A	[87/5]
	(215–308)	17.0	(214)		[71/28]
	(193–207)	16.4	(230)		[64/15]
C <sub>2</sub> H <sub>2</sub> Br <sub>2</sub>	<i>cis</i> 1,2-dibromoethylene (299–351)	16.8	(200)		[56/1][84/9] [590-11-4] [87/5][50/2] [70/16]
C <sub>2</sub> H <sub>2</sub> Br <sub>2</sub>	<i>trans</i> 1,2-dibromoethylene (277–344)	40.6	(314)	A	[590-12-5] [87/5][70/16]
	(277–343)	35.2	(310)	A	[87/5][70/16]
C <sub>2</sub> H <sub>2</sub> Br <sub>2</sub> Cl <sub>2</sub>	1,2-dibromo-1,1-dichloroethane (354–519)	42.9	(292)		[50/2][84/9] [75-81-0]
C <sub>2</sub> H <sub>2</sub> Br <sub>2</sub> Cl <sub>2</sub>	1,2-dibromo-1,2-dichloroethane (320–379)	45.9	(369)	A	[87/5][70/16] [683-68-1]
C <sub>2</sub> H <sub>2</sub> Br <sub>4</sub>	1,1,1,2-tetrabromoethane (331–473)	45.9	(335)	A	[87/5]
C <sub>2</sub> H <sub>2</sub> Br <sub>4</sub>	1,1,2,2-tetrabromoethane (413–573)	61.5	(346)	A	[630-16-0] [87/5][47/5] [79-27-6]
C <sub>2</sub> H <sub>2</sub> ClFO	chloroacetyl fluoride (273–333)	56.9	(428)	A	[87/5][70/16] [359-14-8]
C <sub>2</sub> H <sub>2</sub> ClFO	fluoroacetyl chloride (273–333)	38.0	(288)	A, GS	[87/5][48/14] [70/16] [359-06-8]
C <sub>2</sub> H <sub>2</sub> ClFO	fluoroacetyl chloride (273–333)	36.7	(288)	A, GS	[87/5][48/14] [70/16] [57169-80-9]
C <sub>2</sub> H <sub>2</sub> ClF <sub>3</sub> O <sub>2</sub> S	chlorosulfurous acid, 2,2,2-trifluoroethyl ester 36.0				[75/41]
C <sub>2</sub> H <sub>2</sub> ClF <sub>7</sub> S	(2-chloro-2,2-difluoroethyl)pentafluoro sulfur 32.9				[68010-35-5] [78/23]
C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	1,1-dichloroethylene (245–305)	28.4	(260)	A	[75-35-4] [87/5][59/2] [70/16]
C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	<i>cis</i> 1,2-dichloroethylene (332–495)	29.3	(347)	A	[156-59-2] [87/5]
	(273–334)	31.5	(288)	A	[87/5][70/16]
	(292–335)	31.6	(307)		[51/3]
	(273–356)	31.8	(288)		[47/4]
C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	<i>trans</i> 1,2-dichloroethylene (321–473)	29.0	(336)	A	[156-60-5] [87/5]
	(273–319)	30.1	(288)		[83/2]
	(263–323)	30.4	(278)		[87/5][70/16]
	(235–358)	31.4	(250)		[47/4]
C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub> F <sub>2</sub>	1,2-dichloro-1,1-difluoroethane (323–493)	27.8	(338)	A	[1649-08-7] [87/5]
C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub> F <sub>6</sub> OS	(1,2-dichloro-2-fluoroethoxy)pentafluoro sulfur (temperature not given)	38.8			[20334-44-5] [68/17]
C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub> F <sub>6</sub> OS	(2,2-dichloro-2-fluoroethoxy)pentafluoro sulfur (temperature not given)	38.5			[20334-45-6] [68/17]
C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub> O	chloroacetyl chloride				[79-04-9]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub> O <sub>2</sub>	(253–379)	45.0	(268)	A	[87/5][70/16]	
	(301–380)	40.8	(316)		[59/1]	
	(290–373)	44.1	(305)		[35/5]	
C <sub>2</sub> H <sub>2</sub> Cl <sub>4</sub>	dichloroacetic acid (317–468)	55.7	(332)	A	[79-43-6] [87/5][47/5]	
	1,1,1,2-tetrachloroethane	45.7±0.1	(298)		C	[630-20-6] [80/1]
C <sub>2</sub> H <sub>2</sub> Cl <sub>4</sub>	(316–447)	40.1	(331)	A	[87/5][70/16]	
	(332–403)	39.2	(347)		[49/1]	
	1,1,2,2-tetrachloroethane	40.4	(392)		A	[79-34-5] [87/5]
(377–419)	40.8	(394)	[84/20]			
(377–418)	40.1	(398)	[78/21]			
C <sub>2</sub> H <sub>2</sub> Cl <sub>4</sub> S		39.0	(415)	C	[77/30]	
		45.8±0.2	(298)		[72/41]	
	(328–464)	41.9	(343)		A	[87/5][70/16]
	(298–403)	47.7	(313)			[50/1]
	(304–419)	45.7	(319)			[30/1]
C <sub>2</sub> H <sub>2</sub> Cl <sub>4</sub> S	<i>bis</i> (dichloromethyl) sulfide (355–462)	47.6	(370)	A	[51174-93-7] [87/5]	
	C <sub>2</sub> H <sub>2</sub> FN	fluoroacetonitrile (273–333)	38.1		(288)	A, GS
C <sub>2</sub> H <sub>2</sub> F <sub>2</sub>	1,1-difluoroethene	13.2	(233)	BG	[70/16] [75-38-7]	
		9.5	(273)		BG	[55/20] [55/20]
C <sub>2</sub> H <sub>2</sub> F <sub>4</sub>	1,1,1,2-tetrafluoroethane (221–246)	23.7	(249)	I	[811-97-2] [01/22]	
		26.4	(180)		[98/24]	
		25.0	(200)		[98/24]	
		23.8	(220)		[98/24]	
		22.7	(240)		[98/24]	
		22.0	(294)		[92/16]	
C <sub>2</sub> H <sub>2</sub> F <sub>4</sub> O <sub>2</sub> S	fluorosulfurous acid, 2,2,2-trifluoroethyl ester	33.6			[75/41]	
		33.8	(277)	A, SG	[462-57-7] [87/5][58/10]	
C <sub>2</sub> H <sub>2</sub> F <sub>6</sub> P <sub>2</sub>	1,2- <i>bis</i> -(trifluoromethyl) diphosphine (233–292)	33.8	(277)	A, SG	[65227-29-4] [78/23]	
		29.3				[590-26-1]
C <sub>2</sub> H <sub>2</sub> F <sub>8</sub> S	pentafluoro (2,2,2-trifluoroethyl) sulfur	46.5	(317)	A	[87/5][70/16]	
		47.3	(317)		[50/2]	
		42.3	(365)		A	[590-27-2] [87/5][70/16]
43.8	(365)	[50/2]				
C <sub>2</sub> H <sub>2</sub> I <sub>2</sub>	<i>cis</i> 1,2-diiodoethylene (302–425)	46.5	(317)	A	[463-51-4] [87/5][69/7]	
		47.3	(317)		[593-60-2]	
C <sub>2</sub> H <sub>2</sub> I <sub>2</sub>	<i>trans</i> 1,2-diiodoethylene (350–403)	42.3	(365)	A	[87/5][70/16]	
		43.8	(365)		[50/2]	
		20.4±0.1	(209)		A, MM	[87/5][69/7]
C <sub>2</sub> H <sub>2</sub> O	ketene (159–224)	20.4±0.1	(209)	A, MM	[87/5][69/7]	
		27.3	(239)		A	[593-60-2] [87/5][70/16]
		24.8	(274)		[37/4][84/9]	
C <sub>2</sub> H <sub>3</sub> Br	vinyl bromide (224–319)	27.3	(239)	A	[34/1][84/9] [506-96-7]	
		24.8	(274)		[87/5]	
		26.9	(270)		[69/3]	
C <sub>2</sub> H <sub>3</sub> BrO	acetyl bromide (289–334)	29.5	(304)	A	[79-08-3] [87/5]	
		31.4	(290)		[69/3]	
C <sub>2</sub> H <sub>3</sub> BrO <sub>2</sub>	bromoacetic acid (327–481)	57.2	(342)	A	[78-74-0] [87/5][70/16]	
		50.5	(383)		A	[87/5][70/16]
C <sub>2</sub> H <sub>3</sub> Br <sub>3</sub>	1,1,2-tribromoethane (368–511)	50.5	(383)	A	[47/5]	
		52.9	(321)		[75-01-4] [67/35]	
		22.7	(265)		[67/11]	
C <sub>2</sub> H <sub>3</sub> Cl	vinyl chloride (243–288)	22.7	(265)	A	[87/5][59/1]	
		22.9	(258)		[70/16]	
		23.3	(245)			

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>2</sub> H <sub>3</sub> ClF <sub>2</sub>	1-chloro-1,1-difluoroethane				[75-68-3]	
	(225–285)	24.2	(240)	EB	[93/6]	
	(248–390)	22.7	(263)	A	[87/5][70/16]	
		24.0	(233)	BG	[55/20]	
		21.9	(273)	BG	[55/20]	
C <sub>2</sub> H <sub>3</sub> ClF <sub>3</sub> N	N-chloro-N,1,1-trifluoroethanamine				[16276-45-2]	
	(220–294)	30.8	(279)	BG	[87/5][67/28]	
	C <sub>2</sub> H <sub>3</sub> ClF <sub>3</sub> P	chloromethyl(trifluoromethyl)phosphine				[4669-76-5]
		(236–294)	30.9	(279)		[87/5]
C <sub>2</sub> H <sub>3</sub> ClO	acetyl chloride				[75-36-5]	
	(273–323)	24.5	(288)	A	[87/5]	
	(267–324)	31.5	(282)	A	[87/5][59/1]	
C <sub>2</sub> H <sub>3</sub> ClO <sub>2</sub>	chloroacetic acid				[79-11-8]	
	(336–463)	61.1	(351)	A	[87/5]	
	(377–463)	56.8	(392)	A	[87/5][59/1]	
					[70/16]	
C <sub>2</sub> H <sub>3</sub> Cl <sub>2</sub> F	1,1-dichloro-1-fluoroethane				[1717-00-6]	
	(250–450)	28.7	(265)		[97/25]	
	(270–312)	27.8	(285)	EB	[92/17]	
C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub>	1,1,1-trichloroethane				[71-55-6]	
	(295–372)	32.3	(310)	A	[87/5]	
	(349–408)	30.5	(364)	A	[87/5]	
	(399–487)	29.4	(414)	A	[87/5]	
	(479–545)	29.5	(494)	A	[87/5]	
		32.5 ± 0.1	(298)	C	[80/1]	
		32.4	(344)		[77/30]	
	(196–298)	37.6	(211)		[73/7]	
		32.5 ± 0.1	(298)	C	[72/41]	
C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub>	1,1,2-trichloroethane				[79-00-5]	
	(316–384)	38.6	(331)	A	[87/5]	
		40.2 ± 0.1	(298)	C	[80/1]	
		40.3 ± 0.1	(298)	C	[72/41]	
	(302–428)	38.2	(317)		[87/5][70/16]	
C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub> O <sub>2</sub>	chloral hydrate				[302-17-0]	
	(300–348)	38.4	(324)	EB	[94/16]	
	(325–370)	49.6	(340)	A	[87/5]	
C <sub>2</sub> H <sub>3</sub> F	vinyl fluoride				[75-02-5]	
	(124–201)	16.6	(186)	A	[87/5][47/5]	
C <sub>2</sub> H <sub>3</sub> FN <sub>2</sub> O <sub>3</sub>	2-fluoro-2,2-dinitroethanol				[17003-75-7]	
C <sub>2</sub> H <sub>3</sub> FO	acetyl fluoride				[68/12]	
	(195–281)	14.3	(266)	A	[557-99-3]	
C <sub>2</sub> H <sub>3</sub> F <sub>2</sub> O	acetyl hypofluorite				[78948-09-1]	
	(209–253)	35.6 ± 2.4	(231)		[85/16]	
C <sub>2</sub> H <sub>3</sub> FO <sub>2</sub>	fluoroacetic acid				[144-49-0]	
	(293–443)	52.3	(308)	A	[87/5][70/16]	
C <sub>2</sub> H <sub>3</sub> F <sub>3</sub>	(293–443)	53.6	(308)	T	[55/2]	
	1,1,1-trifluoroethane				[420-46-2]	
	(236–280)	18.1	(240)	EB	[96/14]	
	(236–280)	17.5	(250)	EB	[96/14]	
	(236–280)	16.7	(260)	EB	[96/14]	
	(236–280)	15.9	(270)	EB	[96/14]	
		18.9	(233)	BG	[55/20]	
		16.4	(273)	BG	[55/20]	
	13.8	(303)	BG	[55/20]		
	8.7	(333)	BG	[55/20]		

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(174–226)	20.5	(211)		[44/3]
C <sub>2</sub> H <sub>3</sub> F <sub>3</sub> N <sub>2</sub>	1,1,1-trifluoroazomethane (240–273)	19.2±0.1	(224)	C	[44/3]
C <sub>2</sub> H <sub>3</sub> F <sub>3</sub> O	trifluoromethyl methyl ether (233–313)	26.4	(258)	A	[690-21-1] [87/5]
C <sub>2</sub> H <sub>3</sub> F <sub>3</sub> O	2,2,2-trifluoroethanol (276–302)	22.5	(248)	A	[421-14-7] [92/12]
	(298–328)	45.9	(289)	A	[75-89-8] [87/5]
	(298–328)	44.0	(313)	A	[87/5][70/16]
	(273–298)	41.5	(313)	MM	[73/5]
		44.5	(285)	MM	[67/4]
C <sub>2</sub> H <sub>3</sub> F <sub>3</sub> O <sub>2</sub> S	methanesulfinic acid, trifluoromethyl ester	31.8	(346)		[30957-42-7] [71/20]
C <sub>2</sub> H <sub>3</sub> F <sub>5</sub> O <sub>3</sub> S	(ethaneperoxoato) pentafluoro sulfur (217–377)	36.2	(297)		[60672-60-8] [99/16][76/31]
C <sub>2</sub> H <sub>3</sub> F <sub>5</sub> S	vinylsulfur pentafluoride	28.5	(314)		[61/22]
C <sub>2</sub> H <sub>3</sub> IO	acetyl iodide (276–302)	37.1	(289)	A	[507-02-8] [87/5][69/3]
C <sub>2</sub> H <sub>3</sub> N	acetonitrile	33.0	(298)		[75-05-8] [83/5]
	(288–362)	33.8	(303)		[74/10]
	(314–355)	33.3	(329)	A, EB	[87/5][71/4]
	(299–343)	34.8	(315)	BG	[71/2]
	(273–323)	34.2	(288)		[68/24]
	(280–300)	33.9	(290)		[65/2]
C <sub>2</sub> H <sub>3</sub> NO	methyl isocyanate (265–308)	29.9	(280)	A	[624-83-9] [87/5]
	(253–310)	31.7	(268)	A	[87/5]
C <sub>2</sub> H <sub>3</sub> NO <sub>5</sub>	acetyl nitro peroxide (277–330)	34.6	(292)	A	[2278-22-0] [87/5]
C <sub>2</sub> H <sub>3</sub> NS	methyl thiocyanate (259–406)	40.7	(274)	A	[556-64-9] [87/5][47/5] [99/16]
C <sub>2</sub> H <sub>3</sub> NS	methyl isothiocyanate (309–392)	37.4	(324)	A	[556-61-6] [87/5][99/16]
	(283–323)	37.3	(298)		[35/3][84/9]
C <sub>2</sub> H <sub>4</sub>	ethylene	14.0	(267)	A	[74-85-1] [87/5]
	(170–273)	13.7	(258)	A	[87/5]
	(120–170)	14.4	(155)	A	[87/5]
	(169–211)	13.7	(196)	A	[87/5]
	(209–254)	13.6	(239)	A	[87/5]
	(120–182)	14.1	(167)	A	[87/5][70/16]
	(150–190)	14.0	(175)		[50/3]
	(148–174)	14.3	(161)		[40/3]
	(124–171)	14.4	(156)		[37/5]
C <sub>2</sub> H <sub>4</sub> BrCl	1-bromo-1-chloroethane (290–356)	33.1	(305)	A	[593-96-4] [87/5]
	(237–356)	46.7	(252)		[47/5]
C <sub>2</sub> H <sub>4</sub> BrCl	1-bromo-2-chloroethane	37.6±0.1	(308)	C	[107-04-0] [92/11]
		37.3±0.1	(315)	C	[92/11]
		36.9±0.1	(323)	C	[92/11]
		36.6±0.1	(330)	C	[92/11]
		36.4±0.1	(338)	C	[92/11]
	(244–379)	39.5	(259)		[47/5]
C <sub>2</sub> H <sub>4</sub> Br <sub>2</sub>	1,1-dibromoethane (301–421)	39.6	(316)	EST	[557-91-5] [87/5][56/16] [70/16]
C <sub>2</sub> H <sub>4</sub> Br <sub>2</sub>	1,2-dibromoethane	41.7±0.1	(308)	C	[106-93-4] [92/11]
		41.7±0.1	(315)	C	[92/11]
		41.6±0.1	(323)	C	[92/11]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		41.5±0.1	(330)	C	[92/11]
		41.4±0.1	(338)	C	[92/11]
	(283–317)	41.8	(298)	A	[87/5]
	(316–488)	40.0	(331)	A	[87/5]
	(404–578)	37.4	(419)	A	[87/5]
	(285–298)	49.6	(291)	MM, A	[57/1]
	(325–404)	39.6	(340)		[49/1]
	(246–404)	31.1	(261)		[47/5]
C <sub>2</sub> H <sub>4</sub> ClF	1-chloro-2-fluoroethane (288–327)	32.1	(303)	A	[762-50-5] [87/5]
C <sub>2</sub> H <sub>4</sub> ClN <sub>3</sub>	1-chloro-2-azidoethane (273–333)	43.8	(288)	A	[53422-48-3] [87/5]
C <sub>2</sub> H <sub>4</sub> Cl <sub>2</sub>	1,1-dichloroethane (326–345)	33.5	(336)		[75-34-3] [87/15]
	(323–535)	29.2	(338)	A	[87/5]
	(363–535)	28.2	(378)	A	[87/5]
	(234–290)	30.6±0.1	(298)	C	[72/41]
	(213–330)	31.9	(275)		[56/2]
	(258–365)	34.4	(228)		[47/5]
		32.2	(273)	EST	[87/5][56/16] [70/16]
C <sub>2</sub> H <sub>4</sub> Cl <sub>2</sub>	1,2-dichloroethane				[107-06-2]
		34.4	(298)	GC	[94/19]
		35.1±0.1	(298)	C	[89/10]
	(356–558)	31.1	(371)	A	[87/5]
	(279–374)	34.8	(294)	A	[87/5]
	(368–524)	31.1	(383)	A	[87/5]
	(523–561)	40.8	(538)	A	[87/5]
	(301–357)	34.7	(316)		[82/7]
		35.2±0.1	(298)	C	[80/1]
	(279–434)	34.8	(294)		[87/5][70/16]
		34.7			[56/25][38/12]
	(243–372)	37.5	(258)		[29/1]
C <sub>2</sub> H <sub>4</sub> Cl <sub>2</sub> S	bis(chloromethyl)sulfide (320–430)	45.1	(335)	A	[3592-44-7] [87/5][99/16]
C <sub>2</sub> H <sub>4</sub> FNO <sub>3</sub>	2-fluoroethyl nitrate (273–333)	38.3	(288)	GS	[763-97-3] [87/5][48/14]
C <sub>2</sub> H <sub>4</sub> F <sub>2</sub>	1,1-difluoroethane (218–248)	22.7	(249)	I	[75-37-6] [01/22]
	(303–333)	22.1	(318)		[99/29]
	(219–273)	23.3	(234)	EB	[93/6]
	(250–386)	21.8	(265)	A	[87/5]
	(193–275)	22.1	(260)	A, EST	[87/5][56/16] [70/16]
		21.8	(233)	BG	[55/20]
		20.4	(273)	BG	[55/20]
		17.8	(313)	BG	[55/20]
		12.9	(353)	BG	[55/20]
	(161–247)	23.8	(232)		[47/5]
C <sub>2</sub> H <sub>4</sub> F <sub>3</sub> NS	1,1,1-trifluoro-N-methyl methanesulfenamide (223–294)	33.6	(279)	A	[62067-12-3] [87/5][60/24]
C <sub>2</sub> H <sub>4</sub> F <sub>3</sub> OP	(trifluoromethyl)phosphinous acid, methyl ester (194–291)	29.4	(276)	A	[6395-71-7] [87/5]
C <sub>2</sub> H <sub>4</sub> F <sub>3</sub> OP	methyl(trifluoromethyl)phosphine oxide (305–322)	50.7	(313)		[26348-89-0] [70/26]
C <sub>2</sub> H <sub>4</sub> F <sub>6</sub> OS	pentafluoro(2-fluoroethoxy) sulfur (290–364)	39.3	(305)	A	[87/5][62/19] [99/16]
C <sub>2</sub> H <sub>4</sub> I <sub>2</sub>	1,2-diiodoethane				[624-73-7]
		49.8	(298)	GC	[94/19]
	(371–526)	47.7	(386)	A	[87/5][70/16]
C <sub>2</sub> H <sub>4</sub> N <sub>2</sub> O <sub>4</sub>	1,1-dinitroethane (303–363)	51.0	(318)	A	[600-40-8] [87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>2</sub> H <sub>4</sub> N <sub>2</sub> O <sub>6</sub>	ethylene glycol dinitrate (283–535)	70.5	(298)	A	[628-96-6] [87/5]
	(343–465)	55.3	(358)	A	[87/5]
	(240–298)	68.3	(255)		[87/5][77/6]
	(278–390)	62.3±0.4			[41/1]
	(293–323)	68.6±0.4			[38/1]
C <sub>2</sub> H <sub>4</sub> O	acetaldehyde (293–377)	26.0	(308)	A	[75-07-0] [87/5]
	(293–345)	26.3	(308)		[77/24]
	(272–294)	27.6	(283)	A	[87/5][70/16]
	(273–307)	27.0	(307)		[50/4]
C <sub>2</sub> H <sub>4</sub> O	ethylene oxide (oxirane) (283–385)	25.9	(298)	A	[75-21-8] [87/5]
	(239–284)	26.8	(269)	A	[87/5][59/1] [70/16]
	(223–284)	26.8	(269)	A	[87/5][49/4]
	(268–313)	26.9	(290)		[37/7]
C <sub>2</sub> D <sub>4</sub> O	ethylene oxide-d <sub>4</sub> oxide (230–273)	27.6	(258)		[6552-57-4] [52/2][84/9]
C <sub>2</sub> H <sub>4</sub> OS	thioacetic acid (307–360)	35.2	(333)		[507-09-5] [99/16]
C <sub>2</sub> H <sub>4</sub> O <sub>2</sub>	acetic acid (345–383)	39.1	(360)	EB	[64-19-7] [01/15]
	(391–550)	37.9	(406)	A	[87/5]
	(290–396)	42.0	(305)	A	[87/5]
	(391–447)	38.7	(406)	A	[87/5]
	(437–535)	38.1	(452)	A	[87/5]
	(525–593)	38.8	(540)	A	[87/5]
		43.0	(308)		[83/13]
		41.6	(304)	A	[87/5][70/16]
	monomer	23.3±0.1	(298)	C	[70/8]
		51.6±1.6	(298)	C	[70/8]
C <sub>2</sub> H <sub>4</sub> O <sub>2</sub>	(325–391)	40.3	(340)		[59/1]
	(303–399)	41.6	(318)	MM	[54/3]
	methyl formate (279–305)	29.6	(292)	A	[107-31-3] [87/5]
	(305–443)	28.4	(320)	A	[87/5]
		28.7±0.1	(293)	C	[76/14]
		27.9±0.1	(305)	C	[76/14]
		27.4±0.1	(313)	C	[76/14]
	(261–305)	30.1	(283)	BG	[71/2]
	(294–304)	52.7	(299)		[28/1][84/9]
					[68-11-1]
C <sub>2</sub> H <sub>4</sub> O <sub>2</sub> S	mercaptoacetic acid (333–427)	56.8	(348)	A	[87/5][99/16]
C <sub>2</sub> H <sub>4</sub> O <sub>3</sub>	ethylene ozonide (273–289)	34.8	(281)	A	[87/5][56/18]
C <sub>2</sub> H <sub>4</sub> O <sub>3</sub>	hydroxyacetic acid (350–375)	51.8	(362)	A	[79-14-1] [87/5]
C <sub>2</sub> H <sub>4</sub> O <sub>3</sub>	peroxyacetic acid (273–383)	44.2	(288)	A	[79-21-0] [87/5][70/16]
C <sub>2</sub> H <sub>4</sub> S	ethylene sulfide (291–361)	30.5	(306)	A	[420-12-2] [87/5][52/3]
		30.3	(298)		[99/16] [71/28]
C <sub>2</sub> H <sub>5</sub> Br	ethyl bromide (334–504)	26.9	(349)	A	[74-96-4] [87/5]
	(326–454)	26.6	(341)	A	[87/5]
	(452–503)	31.0	(467)	A	[87/5]
		27.6±0.1	(305)	C	[77/8]
		27.0±0.1	(312)	C	[77/8]
		26.2±0.1	(323)	C	[77/8]
	(225–333)	30.6	(240)	EST	[87/5][61/13] [70/16]
	(301–348)	27.9	(316)		[30/3][84/9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>2</sub> H <sub>5</sub> Cl	ethyl chloride				[75-00-3]
	(285–344)	25.1	(300)	A	[87/5]
	(334–413)	24.4	(349)	A	[87/5]
	(403–460)	24.4	(418)	A	[87/5]
	(207–305)	27.8	(222)	A, EST	[87/5][61/13]
	(218–285)	25.9	(270)		[70/16]
		24.8	(294)	C	[48/6]
					[26/6]
C <sub>2</sub> H <sub>5</sub> ClO	2-chloroethanol				[107-07-3]
	(328–401)	43.3	(343)	A	[87/5]
	(323–363)	46.9	(338)		[73/9]
	(363–403)	39.1	(378)		[73/9]
	(269–401)	45.7	(284)		[47/5]
C <sub>2</sub> H <sub>5</sub> ClO	methyl(chloromethyl)ether				[107-30-2]
	(290–332)	32.2	(305)	A	[87/5]
C <sub>2</sub> H <sub>5</sub> ClO <sub>2</sub> S	ethane sulfonyl chloride				[594-44-5]
	(349–449)	47.7	(364)		[99/16]
	(233–263)	56.4	(248)	A	[87/5][99/16]
C <sub>2</sub> H <sub>5</sub> Cl <sub>2</sub> P	dichloroethyl phosphine				[1498-40-4]
	(313–385)	36.8	(328)	A	[87/5]
C <sub>2</sub> H <sub>5</sub> Cl <sub>2</sub> OP	ethylphosphonic dichloride				
		42.7±4.2			[56/23][82/15]
C <sub>2</sub> H <sub>5</sub> F	ethyl fluoride				[353-36-6]
	(200–235)	20.7	(236)	I	[01/22]
	(275–353)	20.2	(290)	A	[87/5]
	(235–280)	20.5	(265)	A	[87/5]
	(343–375)	20.7	(358)	A	[87/5]
	(170–255)	4.2	(240)		[75/10]
	(173–251)	20.8	(236)	EST	[87/5][61/13]
				[70/16]	
	(156–241)	22.0	(226)		[47/5]
C <sub>2</sub> H <sub>5</sub> FO	2-fluoroethanol				[371-62-0]
	(273–333)	44.1	(288)	GS	[87/5][48/14]
					[70/16]
C <sub>2</sub> H <sub>5</sub> FO <sub>3</sub> S	ethyl fluorosulfonate				[371-69-7]
	(273–333)	38.5	(288)	GS	[87/5][48/14]
					[70/16]
C <sub>2</sub> H <sub>5</sub> F <sub>2</sub> N	N,N-difluoroethylamine				[758-18-9]
	(241–259)	27.3	(250)	A	[87/5]
		25.7	(288)		[60/19]
C <sub>2</sub> H <sub>5</sub> F <sub>3</sub> NP	methyl(trifluoromethyl)phosphinic acid amide				[4669-74-3]
	(238–294)	36.8	(279)		[87/5]
C <sub>2</sub> H <sub>5</sub> I	ethyl iodide				[75-03-6]
	(313–353)	31.7	(298)	CGC	[95/21]
		31.9±0.1	(298)	C	[68/1]
	(249–369)	33.6	(264)	EST	[87/5][61/13]
	(219–345)	34.7	(234)		[47/5]
	(254–293)	32.0	(278)		[44/4]
	(303–333)	31.7	(318)		[29/2]
C <sub>2</sub> H <sub>5</sub> N	aziridine				[151-56-4]
	(274–303)	34.9	(288)	A	[87/5]
C <sub>2</sub> H <sub>5</sub> NO	acetaldehyde oxime				[107-29-9]
	(288–388)	48.0	(303)	A	[87/5]
C <sub>2</sub> H <sub>5</sub> NO	acetamide				[60-35-5]
	(381–492)	63.8	(396)	A	[87/5]
	(338–495)	60.9	(353)		[47/5]
C <sub>2</sub> H <sub>5</sub> NO	N-methylformamide				[123-39-7]
	(340–440)	53.8	(355)		[96/28]
	(340–440)	54.4±1.3	(298)		[96/28]
	(310–391)	54.5	(325)	A	[87/5]
		56.2	(298)	A	[85/7][86/5]
	(369–472)	53.4	(384)	A	[87/5][61/3]
					[70/16]
C <sub>2</sub> H <sub>5</sub> NO <sub>2</sub>	ethyl nitrite				[109-95-5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(252–276)	25.7	(264)	A	[87/5][37/3]
		27.8			[34/6]
C <sub>2</sub> H <sub>5</sub> NO <sub>2</sub>	methyl carbamate (333–388)	45.7	(348)	A	[598-55-0] [87/5]
C <sub>2</sub> H <sub>5</sub> NO <sub>2</sub>	nitroethane (324–388)	38.6	(339)	EB	[79-24-3] [87/5][56/15]
	(252–387)	41.3	(267)		[70/16] [47/5]
		38.0			[34/6] [625-58-1]
C <sub>2</sub> H <sub>5</sub> NO <sub>3</sub>	ethyl nitrate (273–361)	37.0	(288)	A	[87/5][70/16]
	(273–343)	37.3	(288)		[57/2]
	(273–333)	37.0	(288)		[56/3]
		38.5			[34/6] [871-31-8]
C <sub>2</sub> H <sub>5</sub> N <sub>3</sub>	azidoethane (296–320)	31.5	(308)	A	[87/5][70/16]
	(253–298)	28.9	(268)	A	[87/5][64/5] [84/9]
C <sub>2</sub> H <sub>5</sub> N <sub>3</sub> O	2-azidoethanol	33.9 ± 1.3			[1517-05-1] [97/26]
C <sub>2</sub> H <sub>5</sub> N <sub>3</sub> O <sub>2</sub>	bis(nitrosomethyl)amine (276–426)	43.5	(291)		[87/5][47/5]
C <sub>2</sub> H <sub>6</sub>	ethane (273–305)	15.3	(288)	A	[74-84-0] [87/5]
	(154–185)	15.7	(170)	A	[87/5]
	(95–129)	17.7	(114)	A	[87/5]
	(185–229)	14.9	(214)	A	[87/5]
	(228–274)	14.9	(259)	A	[87/5]
	(91–144)	17.1	(129)		[73/11]
		14.7	(210)		[71/28]
		14.7	(184)		[37/14]
	(136–200)	15.3	(185)		[26/2]
C <sub>2</sub> H <sub>6</sub> BrF <sub>4</sub> NS	bromotetrafluoro(N-methylmethanaminato) sulfur	38.1	(372)	I	[63324-17-4] [77/15]
C <sub>2</sub> H <sub>6</sub> ClF <sub>4</sub> NS	chlorotetrafluoro(N-methylmethanaminato) sulfur	36.0	(359)	I	[63324-16-3] [77/15]
C <sub>2</sub> H <sub>6</sub> CIP	chlorodimethyl phosphine (273–306)	32.9	(288)	A	[811-62-1] [87/5][58/11]
C <sub>2</sub> H <sub>6</sub> Cl <sub>2</sub> NP	(dimethylamino)dichlorophosphine	40.8 ± 0.7	(298)	STG	[683-85-2] [95/2]
C <sub>2</sub> H <sub>6</sub> FN	fluorodimethylamine (249–273)	29.9	(261)	A	[14722-43-1] [87/5]
C <sub>2</sub> H <sub>6</sub> FO <sub>3</sub> P	dimethylfluorophosphate (273–333)	44.4	(288)	A, GS	[5954-50-7] [87/5][48/14]
C <sub>2</sub> H <sub>6</sub> F <sub>2</sub> NP	(dimethylamino)difluorophosphine (263–313)	29.3	(288)	I	[64/30]
C <sub>2</sub> H <sub>6</sub> F <sub>3</sub> NOS	(dimethylamino)trifluoroxyo sulfur (313–357)	44.9	(335)		[22519-52-4] [68/22]
C <sub>2</sub> H <sub>6</sub> F <sub>3</sub> NS	(dimethylamino) sulfur trifluoride (296–327)	40.5	(311)	A	[3880-03-3] [87/5][99/16]
C <sub>2</sub> H <sub>6</sub> F <sub>4</sub> NP	(dimethylamino) tetrafluorophosphorane	37.1			[66/31]
C <sub>2</sub> H <sub>6</sub> N <sub>2</sub>	azomethane (195–273)	26.4	(258)	A	[503-28-6] [87/5]
	(209–236)	25.3	(222)	A	[87/5]
C <sub>2</sub> H <sub>6</sub> N <sub>2</sub>	methyllumonium cyanide (251–295)	49.1	(280)	A	[87/5][73/10]
C <sub>2</sub> H <sub>6</sub> N <sub>2</sub> S	sulfur diimide, dimethyl (248–298)	37.2	(263)	A	[13849-02-0] [87/5][99/16]
C <sub>2</sub> H <sub>6</sub> O	dimethyl ether (183–265)	22.6	(250)	A	[115-10-6] [87/5]
	(180–249)	22.8	(234)	A	[87/5]
	(293–360)	21.2	(308)	A	[87/5]
	(349–400)	21.1	(364)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>2</sub> H <sub>6</sub> O	(241–303)	22.2	(256)	A	[87/5]	
	(171–248)	18.5	(298)		[76/2]	
	(171–248)	21.4	(248)		[76/2]	
	(195–248)	22.7	(233)		[41/3]	
		21.5±0.1	(248)	C	[41/3]	
	ethanol					[64-17-5]
		38.9				[99/32]
	(323–357)	39.3	(338)			[99/30]
	(309–343)	40.7	(321)	EB		[95/9]
	(309–343)	42.4	(298)	EB		[95/9]
	(342–357)	40.5	(357)			[90/10]
		35.2	(393)	C		[89/15]
		30.6	(423)	C		[89/15]
		25.7	(453)	C		[89/15]
		21.8	(473)	C		[89/15]
		17.3	(493)	C		[89/15]
		14.2	(503)	C		[89/15]
		40.9	(320)	C		[88/19]
		40.4	(328)	C		[88/19]
		40.2	(335)	C		[88/19]
		39.4	(344)	C		[88/19]
		38.8	(351)	C		[88/19]
	(320–359)	41.3	(335)	A		[87/5]
	(210–271)	45.6	(256)	A		[87/5]
	(193–223)	44.0	(208)	A		[87/5]
	(320–359)	41.3	(335)	A		[87/5]
	(349–374)	40.1	(361)	A		[87/5]
(370–464)	39.1	(385)	A		[87/5]	
(459–514)	36.1	(474)	A		[87/5]	
(292–353)	42.5	(307)	A		[87/5]	
(243–303)	42.3	(298)			[83/14]	
(271–373)	42.9	(286)			[73/26]	
	42.26±0.02	(298)	C		[71/27]	
	41.0±0.1	(320)	C		[70/20]	
	40.0±0.1	(335)	C		[70/20]	
	38.7±0.1	(351)	C		[70/20]	
(293–366)	42.5	(308)	A, EB		[87/5][70/2]	
(288–348)	42.4	(303)			[67/10]	
	42.3±0.1	(298)	C		[66/2]	
	42.2±0.1	(298)	C		[63/2]	
(298–351)	42.2	(313)			[49/5]	
	40.0	(351)			[34/7]	
(286–351)	54.1	(301)			[1883/1]	
C <sub>2</sub> H <sub>6</sub> OS	dimethyl sulfoxide				[67-68-5]	
	(377–483)	48.6	(392)		[99/16]	
	(353–383)	48.1	(368)	TGA	[87/18]	
	(305–464)	51.7	(320)	A	[87/5]	
	(298–318)	52.3	(308)		[74/36]	
	(325–442)	50.6	(340)	MM	[72/8][84/9]	
	(303–423)	52.1	(318)		[72/35]	
	(293–323)	52.5	(308)		[69/25]	
C <sub>2</sub> H <sub>6</sub> OS	2-mercaptoethanol				[60-24-2]	
	(293–440)	54.1	(308)	A	[87/5][70/16]	
					[99/16]	
C <sub>2</sub> H <sub>6</sub> O <sub>2</sub>	ethylene glycol				[107-21-1]	
		65.6±0.3	(298)	C	[88/14]	
	(363–408)	57.4	(385)	TGA	[87/18]	
	(323–473)	65.2	(338)	A	[87/5]	
	(363–418)	62.5	(378)	A	[87/5]	
	(323–473)	64.0	(338)		[52/5]	
	(363–403)	61.1	(383)		[35/4]	
	(403–470)	57.3	(436)		[35/4]	
	(395–459)	63.5	(410)		[1901/1]	
C <sub>2</sub> H <sub>6</sub> O <sub>2</sub>	ethyl hydroperoxide				[3031-74-1]	



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(253–363)	64.0	(268)	A	[87/5][51/10] [70/16]
C <sub>2</sub> H <sub>6</sub> O <sub>2</sub> S	dimethyl sulfone (387–523)	56.0	(404)	A	[67-71-0] [87/5][70/16] [99/16]
C <sub>2</sub> H <sub>6</sub> O <sub>4</sub> S	dimethyl sulfate (340–470)	46.7	(355)	A	[77-78-1] [87/5][99/16]
C <sub>2</sub> H <sub>6</sub> S	dimethyl sulfide	28.5±0.1			[75-18-3] [97/30]
		27.9±0.6	(298)	C	[89/12]
	(268–319)	28.9	(283)	A	[87/5]
	(307–379)	27.7	(322)	A	[87/5]
	(372–453)	26.6	(387)	A	[87/5]
	(447–503)	26.7	(462)	A	[87/5]
		27.5	(298)		[81/12]
		27.7	(298)		[71/28]
		28.8±0.1	(276)	C	[57/10]
		27.9±0.1	(292)	C	[57/10]
		27.0±0.1	(310)	C	[57/10]
	(287–318)	28.2	(302)	EB	[52/9]
	(251–293)	28.9	(278)		[42/2]
		28.9	(310)		[35/2]
C <sub>2</sub> H <sub>6</sub> S	ethyl mercaptan (ethanethiol)				[75-08-1]
	(273–313)	28.4	(288)	A	[87/5]
	(303–375)	27.5	(318)	A	[87/5]
	(265–448)	26.3	(380)	A	[87/5]
	(442–499)	26.6	(457)	A	[87/5]
		27.3	(298)		[71/28]
	(273–339)	28.4	(288)		[66/5]
	(273–339)	28.4	(288)	A, EB	[87/5][52/6] [66/5]
		28.7	(306)		[35/2]
C <sub>2</sub> H <sub>6</sub> S <sub>2</sub>	1,2-ethanedithiol				[540-63-6] [62/11]
C <sub>2</sub> H <sub>6</sub> S <sub>2</sub>	dimethyl disulfide	44.7	(298)		[624-92-0]
		38.5±0.6	(298)	C	[89/12]
	(297–402)	37.8	(312)	A	[87/5]
		37.8±0.1	(298)	C	[85/2]
		37.8	(298)		[81/12]
		38.4	(298)		[71/28]
		36.0±0.1	(341)	C	[58/8]
		34.9±0.1	(360)	C	[58/8]
		33.7±0.1	(383)	C	[58/8]
	(321–388)	36.7	(336)	EB	[52/9]
	(334–401)	36.2	(349)		[50/5]
	(288–333)	38.2	(303)		[50/5]
C <sub>2</sub> H <sub>7</sub> N	dimethylamine				[124-40-3]
	(277–360)	27.0	(292)	A	[87/5]
	(358–438)	23.8	(373)	A	[87/5]
	(202–279)	28.4	(264)	A	[87/5][39/1] [84/9]
C <sub>2</sub> H <sub>7</sub> N	ethyl amine				[75-04-7]
	(213–297)	29.0	(282)	A	[87/5]
	(290–449)	27.2	(305)	A	[87/5]
	(291–387)	27.6	(306)	A	[87/5]
	(377–456)	25.9	(392)	A	[87/5]
	(275–288)	29.1	(281)		[62/5]
	(190–290)	28.9	(275)		[47/5]
C <sub>2</sub> H <sub>7</sub> NO	N,N-dimethylhydroxyl amine (290–363)	45.7	(305)	A	[5725-96-2] [87/5][57/4] [84/9]
C <sub>2</sub> H <sub>7</sub> NO	N,O-dimethylhydroxyl amine (228–316)	34.3	(243)	A	[1117-97-1] [87/5][57/4] [84/9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>2</sub> H <sub>7</sub> NO	2-aminoethanol				[141-43-5]
	(310–444)	61.7	(325)	A	[87/5]
	(379–443)	54.7	(394)		[59/1]
	(273–301)	U50.8	(287)	A, GS	[57/25]
C <sub>2</sub> H <sub>7</sub> O <sub>3</sub> P	(338–443)	58.9	(353)		[50/1][84/9]
	dimethyl phosphite				[868-85-9]
	(346–456)	39.5			[93/20]
C <sub>2</sub> H <sub>8</sub> ClN	(382–480)	38.7	(361)	A	[87/5][70/16]
	dimethylammonium chloride				[506-59-2]
	(429–533)	95.6	(444)	A	[87/5]
C <sub>2</sub> H <sub>8</sub> ClN	(533–569)	143.9	(548)	A	[87/5]
	ethylammonium chloride				[557-66-4]
	(382–480)	34.3	(397)	A	[87/5]
C <sub>2</sub> H <sub>8</sub> N <sub>2</sub>	1,1-dimethylhydrazine				[57-14-7]
	(267–303)	34.1	(284)		[00/18]
	(238–292)	36.5	(277)	A	[87/5][53/3]
C <sub>2</sub> H <sub>8</sub> N <sub>2</sub>					[84/9]
	1,2-dimethylhydrazine				[540-73-8]
	(274–297)	41.0	(286)	A	[87/5][51/15]
C <sub>2</sub> H <sub>8</sub> N <sub>2</sub>					[84/9]
	ethylenediamine				[107-15-3]
	(303–391)	43.9	(318)	A	[87/5]
	(284–419)	45.9	(299)	A, IPM	[87/5][75/4]
		45.0±0.1	(298)	C	[69/2]
C <sub>3</sub> BrClF <sub>6</sub> O <sub>4</sub>		46.0±0.2	(298)	IPM	[65/8][70/11]
		45.6	(314)		[34/2][84/9]
	perchloric acid, 1,1,2,3,3,3-hexafluoro-2-bromopropyl ester				[38126-26-0]
	(273–293)	38.1	(283)	A	[87/5][73/19]
					[6129-62-0]
C <sub>3</sub> BrF <sub>5</sub> O	2-bromo-2,3,3,3-tetrafluoropropionyl fluoride				[87/5]
	(224–282)	30.2	(267)	A	
C <sub>3</sub> BrF <sub>6</sub> NO	N,N-bis(trifluoromethyl) carbamoyl bromide				[87/5]
	(233–293)	30.7	(278)	A	
C <sub>3</sub> BrF <sub>9</sub> N <sub>2</sub>	N-bromo-tris(trifluoromethyl)hydrazine				[66/31]
	(283–333)	36.8	(308)		
C <sub>3</sub> BrF <sub>10</sub> NS	bromotrifluoro[1,1,1,2,3,3,3-heptafluoro-2-propanaminoato(2-)] sulfur				[62977-73-5]
		35.1	(394)	I	[77/15]
C <sub>3</sub> Br <sub>2</sub> F <sub>6</sub> O	(trifluoromethyl)(1,2-dibromo-1,2,2-trifluoroethyl) ether				[2356-57-2]
	(299–335)	34.6	(314)	A	[87/5]
C <sub>3</sub> Br <sub>3</sub> F <sub>6</sub> NO	1,1,1,1',1',1'-hexafluoro-N-(tribromomethoxy)dimethylamine				[29528-78-7]
	(297–338)	28.9	(312)	A	[87/5]
C <sub>3</sub> ClF <sub>4</sub> NO <sub>2</sub>	chloro(trifluoroacetyl)carbamic fluoride				[42016-32-0]
		39.3	(371)		[73/21]
C <sub>3</sub> ClF <sub>5</sub> O	chloropentafluoroacetone				[79-53-8]
	(232–303)	27.3	(247)	A	[87/5][64/6]
					[84/9]
C <sub>3</sub> ClF <sub>5</sub> O	2-chloro-2,3,3,3-tetrafluoropropionyl fluoride				[28627-00-1]
	(195–273)	23.9	(258)	A	[87/5]
C <sub>3</sub> ClF <sub>6</sub> NO <sub>2</sub>	O-(chloroformyl)-N,N-bis(trifluoromethyl)hydroxylamine				[15496-01-2]
	(227–286)	34.5	(271)	A	[87/5]
C <sub>3</sub> ClF <sub>6</sub> NS	chloro(hexafluoroisopropylideneimino) sulfur				[72/22]
		37.7	(368)	I	
C <sub>3</sub> ClF <sub>7</sub> O	heptafluoroisopropyl hypochlorite				[22675-68-9]
	(196–287)	26.7	(272)	A	[87/5]
	(194–273)	22.7	(258)	A	[87/5]
C <sub>3</sub> ClF <sub>8</sub> N	N-chloro-N-1,2,2,2-pentafluoro-1-(trifluoromethyl)ethylamine				[33757-13-0]
	(240–311)	28.8	(255)	A	[87/5][71/17]
C <sub>3</sub> ClF <sub>8</sub> NOS	(heptafluoropropyl)imidosulfuryl chloride fluoride				[74366-14-6]
		26.7	(346)	I	[80/10]
C <sub>3</sub> ClF <sub>10</sub> NS	chlorotrifluoro[1,1,1,2,3,3,3-heptafluoro-2-propanaminoato(2-)] sulfur				[62977-71-3]
		33.5	(391)	I	[77/15]
C <sub>3</sub> Cl <sub>2</sub> F <sub>5</sub> N	2,2-difluoro-1,2-dichloro-N-(trifluoromethyl)ethylideneimine				[87/5]
	(283–318)	31.2	(298)	A	
C <sub>3</sub> Cl <sub>2</sub> F <sub>6</sub>	1,2-dichlorohexafluoropropane				[661-97-2]
	(296–307)	28.1	(301)		[80/9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		26.9±0.1	(298)	C	[80/9]
		25.9±0.1	(313)	C	[80/9]
C <sub>3</sub> Cl <sub>2</sub> F <sub>6</sub> N <sub>2</sub>	<i>bis</i> (trifluoromethyl)aminocarbylamine chloride (267–339)	35.0	(303)		[66/32]
C <sub>3</sub> Cl <sub>2</sub> F <sub>6</sub> O	hypochlorous acid, 2-chloro-1,1,2,3,3,3-hexafluoropropyl ester (273–293)	29.6	(283)	A	[22675-69-0] [87/5]
C <sub>3</sub> Cl <sub>2</sub> F <sub>7</sub> N	<i>N,N</i> -dichloro-1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethylamine (299–344)	32.7	(314)	A	[32751-04-5] [87/5][71/17]
C <sub>3</sub> Cl <sub>2</sub> F <sub>7</sub> NS	<i>S,S</i> -dichloro- <i>N</i> -[tetrafluoro-1-(trifluoromethyl)ethyl]sulfilimine (313–347)	39.3	(328)	A	[26454-66-0] [87/5][70/27]
C <sub>3</sub> Cl <sub>2</sub> F <sub>7</sub> NS	C <sub>3</sub> F <sub>7</sub> N=SCl <sub>2</sub>	25.9	(361)	I	[80/10]
C <sub>3</sub> Cl <sub>2</sub> F <sub>7</sub> P	dichloro(heptafluoropropyl)phosphine (273–348)	33.5	(310)		[59/21]
C <sub>3</sub> Cl <sub>3</sub> F <sub>5</sub> O	chlorodifluoromethyl 2,2-dichloro-1,1,2-trifluoroethyl ether (302–350)	33.4	(317)	A	[37136-24-6] [87/5]
		33.8±0.5	(298)	EB	[76/15]
C <sub>3</sub> Cl <sub>5</sub> F <sub>3</sub> O	trichloromethyl 2,2-dichloro-1,1,2-trifluoroethyl ether (341–423)	42.2	(356)	A	[428-73-9] [87/5]
		45.7±0.7	(298)	EB	[76/15]
C <sub>3</sub> Cl <sub>6</sub>	hexachloropropylene (366–510)	54.8±0.4	(298)	EB	[1888-71-7] [97/7]
		49.3	(397)	A	[87/5][70/16]
C <sub>3</sub> F <sub>3</sub> N <sub>2</sub> P	dicyano(trifluoromethyl)phosphine (291–334)	45.6	(306)	A	[58310-46-6] [87/5]
C <sub>3</sub> F <sub>3</sub> N <sub>3</sub>	2,4,6-trifluoro-1,3,5-triazine (277–344)	38.8	(292)	A	[675-14-9] [87/5]
C <sub>3</sub> F <sub>4</sub>	tetrafluoropropyne (179–218)	18.8	(203)	A	[20174-11-2] [87/5]
C <sub>3</sub> F <sub>4</sub> O <sub>2</sub> S <sub>2</sub>	ethane(dithioperoxy)acid, fluoro-oxo-trifluoromethyl ester	34.9	(385)	I	[58936-60-0] [76/18]
C <sub>3</sub> F <sub>5</sub> N	2,2-difluoro-3-(trifluoromethyl)-2 <i>H</i> -aziridine (193–298)	24.0	(283)	A	[3291-42-7] [87/5]
C <sub>3</sub> F <sub>5</sub> N	2,3-difluoro-2-(trifluoromethyl)-2 <i>H</i> -aziridine (193–298)	24.3	(283)	A	[3291-41-6] [87/5]
C <sub>3</sub> F <sub>6</sub>	perfluoropropene (233–293)	21.9	(278)	A	[116-15-4] [87/5][52/7]
					[70/16][84/9]
C <sub>3</sub> F <sub>9</sub> N <sub>2</sub> OS	<i>N</i> -cyano- <i>S,S</i> - <i>bis</i> (trifluoromethyl)sulfoximine	30.8	(382)	I	[34556-28-0] [72/25]
C <sub>3</sub> F <sub>6</sub> O	hexafluoroacetone (232–313)	22.3	(247)	A	[425-82-1] [92/12]
C <sub>3</sub> F <sub>6</sub> O	perfluoroacetone (195–246)	23.6	(231)	A	[116-16-5] [87/5][67/9]
		22.3	(253)		[84/9]
		23.1	(229)		[64/6][84/9] [55/21]
C <sub>3</sub> F <sub>6</sub> O	trifluoromethyl trifluorovinyl ether (208–241)	22.9	(226)	A	[1187-93-5] [87/5]
C <sub>3</sub> F <sub>6</sub> O	pentafluoropropionyl hypofluorite (214–248)	25.8	(233)	A	[5930-63-2] [87/5]
C <sub>3</sub> F <sub>6</sub> O <sub>2</sub>	1,3-perfluorodioxolane (234–367)	22.3	(249)	A	[92/12]
C <sub>3</sub> F <sub>6</sub> O <sub>4</sub> S	pentafluoropropionic fluorosulfuric acid anhydride (252–335)	39.2	(267)	A	[51689-98-6] [87/5][66/15]
C <sub>3</sub> F <sub>6</sub> O <sub>7</sub> S <sub>2</sub>	hydroacrylic acid, tetrafluoroanhydride with fluorosulfuric acid, fluorosulfate (308–403)	49.4	(323)		[6378-48-9] [99/16]
C <sub>3</sub> F <sub>7</sub> I <sub>2</sub> P	diiodo(heptafluoropropyl)phosphine (313–393)	39.6	(353)		[59/21]
C <sub>3</sub> F <sub>7</sub> NO	heptafluoropropionamide	27.2	(279)	HG	[32822-50-7] [71/18]
C <sub>3</sub> F <sub>7</sub> NOS	1,1,1,2,3,3,3-heptafluoro- <i>N</i> -sulfinyl-2-propanamine (252–280)	34.1	(266)	A	[26454-67-1] [87/5][99/16] [70/27]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>3</sub> F <sub>7</sub> NOS	1,1,2,2,3,3,3-heptafluoro-N-sulfinyl-1-propanamine	26.3	(325)		[74366-13-5] [80/10]
C <sub>3</sub> F <sub>7</sub> NS	2,2,2-trifluoro-N-[(trifluoromethyl)thio]ethanimidoyl fluoride	28.0	(305)	I	[62067-06-5] [77/18]
C <sub>3</sub> F <sub>7</sub> NO <sub>2</sub>	perfluoro-1-nitropropane (247–296)	28.5	(281)	A	[423-33-6] [87/5]
C <sub>3</sub> F <sub>8</sub>	perfluoropropane (193–237)	21.6	(222)	A	[76-19-7] [87/5][67/5]
	(213–259)	20.9	(244)		[63/4]
C <sub>3</sub> F <sub>8</sub> N <sub>2</sub> O <sub>2</sub>	N-[(difluoroamino)carbonyloxy]-1,1,1-trifluoro-N-(trifluoromethyl)-methanamine	31.4	(310)		[32837-67-5] [73/23]
C <sub>3</sub> F <sub>8</sub> OS	pentafluoroethyl trifluoromethyl sulfur	32.5			[33622-17-2] [71/34]
C <sub>3</sub> F <sub>8</sub> S	pentafluoroethyl trifluoromethyl sulfide	28.8			[33547-10-3] [71/34]
C <sub>3</sub> F <sub>9</sub> N	perfluorotrimethylamine (193–263)	23.9	(248)	A	[432-03-1] [87/5]
C <sub>3</sub> F <sub>9</sub> NO	1,1,1-trifluoro-N-(trifluoromethoxy)-N-(trifluoromethyl)methanamine (226–268)	27.0	(253)	A	[671-63-6] [87/5]
C <sub>3</sub> F <sub>9</sub> NOS	[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]imidisulfuryl fluoride	28.7			[59617-29-7] [76/29]
C <sub>3</sub> F <sub>9</sub> NOS <sub>2</sub>	S,S-bis(trifluoromethyl)-N-[(trifluoromethyl)thio]sulfoximine	31.2	(360)	I	[34556-26-8] [72/25]
C <sub>3</sub> F <sub>9</sub> NO <sub>2</sub> S <sub>2</sub>	S,S-bis(trifluoromethyl)-N-[(trifluoromethyl)sulfinyl]sulfoximine	37.2	(388)	I	[34556-27-9] [72/25]
C <sub>3</sub> F <sub>9</sub> NO <sub>2</sub> S <sub>3</sub>	1,1,1-trifluoro-N,N-bis(trifluoromethyl)thio]methanesulfonamide (288–403)	43.5	(303)	A	[29749-02-8] [87/5][99/16]
C <sub>3</sub> F <sub>9</sub> N <sub>3</sub> O	nitrosotris(trifluoromethyl)hydrazine (279–300)	29.5	(289)	A	[87/5]
	(233–294)	33.5	(263)		[66/32]
C <sub>3</sub> F <sub>9</sub> N <sub>3</sub> O <sub>2</sub>	nitrotris(trifluoromethyl)hydrazine (293–321)	31.6	(307)	A	[10405-30-8] [87/5]
C <sub>3</sub> F <sub>9</sub> P	tris(trifluoromethyl)phosphine (248–285)	24.7	(270)	A	[432-04-2] [87/5]
C <sub>3</sub> F <sub>9</sub> PS	bis(trifluoromethyl)trifluoromethylthiophosphine (242–293)	32.5	(267)		[62/32]
C <sub>3</sub> F <sub>9</sub> PS	tris(trifluoromethyl)phosphine sulfide (282–308)	29.1	(295)		[64/32]
C <sub>3</sub> F <sub>9</sub> PS <sub>2</sub>	(trifluoromethyl)dithiophosphite acid, bis(trifluoromethyl) ester (273–296)	37.9	(284)	A	[36121-49-0] [87/5][99/16]
C <sub>3</sub> F <sub>10</sub> OS	difluoro(oxo(trifluoromethyl)(pentafluoroethyl) sulfur (291–324)	30.6	(306)	A	[33564-24-8] [87/5][99/16]
C <sub>3</sub> F <sub>10</sub> O <sub>3</sub> S	pentafluoro (pentafluoropropaneperoxoato) sulfur	34.4			[60672-62-0] [76/31]
C <sub>3</sub> F <sub>10</sub> S	[2,2-difluoro-(1-trifluoromethyl)ethenyl] pentafluoro sulfur	30.0			[68010-33-3] [78/23]
C <sub>3</sub> F <sub>10</sub> S	difluoro(pentafluoroethyl)(trifluoromethyl) sulfur	29.2			[31222-06-7] [71/34]
C <sub>3</sub> F <sub>11</sub> NO <sub>3</sub> S <sub>2</sub>	trifluoro(trifluorosulfato-O)[1,1,1,2,3,3,3-heptafluoro-2-propanaminoato(2-)] sulfur	33.5	(391)	I	[65844-08-8] [77/15]
C <sub>3</sub> F <sub>12</sub> O <sub>3</sub> S <sub>2</sub>	pentafluoro [2,2,2-trifluoro-1-(fluorosulfonyl)oxo]-1-(trifluoromethyl)-ethyl] sulfur	37.2			[68010-30-0] [78/23]
C <sub>3</sub> HClF <sub>6</sub> O <sub>2</sub> S	chlorosulfurous acid, 2,2,2-trifluoro-1-(trifluoromethyl)ethyl ester	36.7			[57169-81-0] [75/21]
C <sub>3</sub> HClF <sub>10</sub> S	[1-(chlorodifluoromethyl)-2,2,2-trifluoroethyl] pentafluorosulfur	31.2			[68010-36-6] [78/23]
C <sub>3</sub> HCl <sub>7</sub>	1,1,1,2,2,3,3-heptachloropropane (413–473)	34.8	(428)	A	[594-89-8] [87/5][49/10] [70/16]
C <sub>3</sub> HF <sub>3</sub>	3,3,3-trifluoropropyne (138–213)	21.5	(198)	A	[661-54-1] [87/5]
C <sub>3</sub> HF <sub>6</sub> N	2,2,3-trifluoro-3-fluoromethylaziridine (268–298)	30.2	(283)	A	[3291-64-3] [87/5]
C <sub>3</sub> HF <sub>7</sub>	1,1,1,2,3,3,3-heptafluoropropane				[431-89-0]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(278–308)	22.7	(293)		[02/24]
	(293–353)	22.6	(308)		[02/4]
	(237–370)	22.3	(250)		[92/12]
	(237–370)	14.5	(300)		[92/12]
	(237–370)	12.5	(325)		[92/12]
C <sub>3</sub> HF <sub>7</sub> O	trifluoromethyl 1 <i>H</i> -pentafluoroethyl ether (232–313)	27.3	(247)	A	[2356-61-8] [92/12]
C <sub>3</sub> HF <sub>7</sub> O <sub>2</sub> S	fluorosulfurous acid, 2,2,2-trifluoro-1-(trifluoromethyl)ethyl ester	33.8			[52225-56-6] [75/41]
C <sub>3</sub> HF <sub>8</sub> NOS	S-(pentafluoroethyl)-S-(trifluoromethyl)sulfoximine	36.3	(358)	I	[34556-23-5] [72/25]
C <sub>3</sub> HF <sub>9</sub> N <sub>2</sub>	<i>tris</i> (trifluoromethyl)hydrazine (238–307)	29.9	(273)		[66/32]
C <sub>3</sub> HF <sub>11</sub> S	pentafluoro [2,2,2-trifluoro-1-(1-trifluoromethyl)ethyl] sulfur	30.1			[68010-34-4] [78/23]
C <sub>3</sub> HN	cyanoacetylene (279–315)	28.1	(294)	A	[1070-71-9] [87/5]
C <sub>3</sub> H <sub>2</sub> ClF <sub>5</sub> O	1-chloro-1,2,2-trifluoro-2-(difluoromethoxy)ethane (274–351)	33.8	(289)		[13838-16-9] [88/5]
	(290–329)	32.9	(305)	A	[87/5]
		32.6±0.1	(298)	C	[84/7]
		31.3±0.1	(313)	C	[84/7]
		30.2±0.1	(328)	C	[84/7]
		29.1±0.1	(343)	C	[84/7]
C <sub>3</sub> H <sub>2</sub> ClF <sub>5</sub> O	2-chloro-1,1,1-trifluoro-2-(difluoromethoxy)ethane (280–344)	31.7	(295)		[26675-46-7] [88/5]
	(283–312)	31.9	(297)	A	[87/5]
C <sub>3</sub> H <sub>2</sub> Cl <sub>2</sub> F <sub>4</sub>	3,3-dichloro-1,1,1,3-tetrafluoropropane (297–333)	31.7	(312)	A	[64712-27-2] [87/5]
C <sub>3</sub> H <sub>2</sub> Cl <sub>2</sub> F <sub>4</sub> O	2-chloro-1,1,2-trifluoroethyl chlorofluoromethyl ether	37.5±0.1	(298)	C	[37031-38-2] [84/2]
		36.4±0.1	(313)	C	[84/2]
		35.3±0.1	(328)	C	[84/2]
		34.1±0.1	(343)	C	[84/2]
		32.9±0.1	(353)	C	[84/2]
C <sub>3</sub> H <sub>2</sub> Cl <sub>3</sub> F <sub>3</sub>	1,1,1-trichloro-3,3,3-trifluoropropane (320–365)	35.2	(335)		[7125-84-0] [87/5]
C <sub>3</sub> H <sub>2</sub> Cl <sub>4</sub>	1,1,2,3-tetrachloropropylene (347–416)	42.9	(362)	A	[60320-18-5] [87/5]
C <sub>3</sub> H <sub>2</sub> D <sub>5</sub> N	(ring-perdeuterocyclopropyl)amine (283–330)	31.7	(298)		[153557-95-0] [93/22]
C <sub>3</sub> H <sub>2</sub> FNOS	fluoroacetyl isothiocyanate (273–353)	49.3	(288)	A	[459-71-2] [87/5][70/16] [99/16]
C <sub>3</sub> H <sub>2</sub> F <sub>6</sub>	1,1,1,3,3,3-hexafluoropropane (283–323)	24.5	(303)	A	[690-39-1] [00/23]
C <sub>3</sub> H <sub>2</sub> F <sub>6</sub> N <sub>2</sub> S	amino (hexafluoroisopropylideneimino) sulfur	37.7	(388)	I	[72/22]
C <sub>3</sub> H <sub>2</sub> F <sub>6</sub> N <sub>2</sub> S	2,2,2-trifluoro-N-[(trifluoromethyl)thiol]ethanimidamide (322–390)	39.8	(337)	A, I	[62067-09-8] [87/5][77/18] [99/16]
C <sub>3</sub> H <sub>2</sub> F <sub>6</sub> O	2-(difluoromethoxy)-1,1,1,2-tetrafluoroethane (274–311)	24.9	(293)	I	[57041-67-5] [96/16]
C <sub>3</sub> H <sub>2</sub> F <sub>6</sub> O	1,1,1,3,3,3-hexafluoro-2-propanol (294–330)	40.2	(309)	A, MM	[920-66-1] [87/5][73/5]
	(294–330)	41.6	(298)	MM	[73/5]
	(273–296)	47.3	(284)		[67/10]
C <sub>3</sub> H <sub>2</sub> F <sub>6</sub> O <sub>2</sub> S	trifluoromethanesulfinic acid, 2,2,2-trifluoromethyl ester	36.8	(363)		[30957-44-9] [71/20]
C <sub>3</sub> H <sub>2</sub> F <sub>8</sub> N <sub>2</sub> S	S,S-difluoro-N-[1-amino-2,2,2-trifluoro-1-(trifluoromethyl)ethyl] sulfilimine (295–313)	38.7	(304)	A	[2433-66-1] [87/5][69/22] [99/16]
C <sub>3</sub> H <sub>2</sub> O <sub>3</sub>	vinylene carbonate (308–350)	46.9	(323)	A	[872-36-6] [87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>3</sub> H <sub>3</sub> Cl	(308–400)	41.3		MM	[71/1]
	1-chloro-1-propyne				[7747-84-4]
C <sub>3</sub> H <sub>3</sub> Cl <sub>2</sub> F <sub>3</sub>	(200–289)	28.3	(274)	A	[87/5]
	1,1-dichloro-3,3,3-trifluoropropane				[460-69-5]
C <sub>3</sub> H <sub>3</sub> Cl <sub>2</sub> F <sub>3</sub> O	(301–342)	33.7	(316)	A	[87/5]
	2-chloro-1,1,2-trifluoroethyl chloromethyl ether				[428-92-2]
		42.4±0.1	(298)	C	[84/7]
		41.2±0.1	(313)	C	[84/7]
		40.1±0.1	(328)	C	[84/7]
		39.0±0.1	(343)	C	[84/7]
C <sub>3</sub> H <sub>3</sub> Cl <sub>3</sub> O <sub>2</sub>		37.8±0.1	(358)	C	[84/7]
	methyl trichloroacetate				
C <sub>3</sub> H <sub>3</sub> Cl <sub>5</sub>		48.3±0.1	(298)	C	[72/41]
	1,1,2,2,3-pentachloropropane				[16714-68-4]
C <sub>3</sub> H <sub>3</sub> F <sub>3</sub>	(365–447)	46.3	(380)	A	[87/5][70/16]
	3,3,3-trifluoro-1-propene				[677-21-4]
C <sub>3</sub> H <sub>3</sub> F <sub>4</sub> I	(283–363)	22.0	(298)	A	[87/5]
	1,1,1,2-tetrafluoro-3-iodopropane				[1737-76-4]
C <sub>3</sub> H <sub>3</sub> F <sub>4</sub> I	(295–356)	28.4	(310)	A	[87/5]
	1,1,1,3-tetrafluoro-3-iodopropane				[460-74-2]
C <sub>3</sub> H <sub>3</sub> F <sub>4</sub> NO <sub>2</sub>	(301–356)	31.2	(316)	A	[87/5]
	methoxy (trifluoromethyl)carbamic fluoride				
C <sub>3</sub> H <sub>3</sub> F <sub>5</sub>		27.8			[79/28]
	1,1,2,2,3-pentafluoropropane				[679-86-7]
C <sub>3</sub> H <sub>3</sub> F <sub>5</sub>	(258–353)	30.2	(273)	A	[02/25]
	1,1,1,2,2-pentafluoropropane				[1814-88-6]
C <sub>3</sub> H <sub>3</sub> F <sub>5</sub> O	(232–283)	22.9	(268)	A	[87/5][70/16]
	(233–379)	23.0	(248)		[67/7]
	2,2,3,3,3-pentafluoro-1-propanol				[422-05-9]
C <sub>3</sub> H <sub>3</sub> F <sub>5</sub> O	(273–297)	47.0	(285)	A, MM	[87/5][67/4]
		44.4	(298)	MM	[84/9]
		41.3	(298)		[73/5][67/4]
	1,1,2,2-tetrafluoro-1-(fluoromethoxy)ethane				[67/3]
C <sub>3</sub> H <sub>3</sub> F <sub>5</sub> O	(288–317)	33.5	(303)	I	[37031-31-5]
	N-methyl-S,S-bis(trifluoromethyl)sulfoximine				[02/19]
C <sub>3</sub> H <sub>3</sub> F <sub>6</sub> NOS		30.7	(338)	I	[34556-25-7]
	N,N-bis(trifluoromethyl)methanesulfenamide				[72/25]
C <sub>3</sub> H <sub>3</sub> F <sub>6</sub> NS	(269–309)	31.1	(284)	A	[87/5]
	bis(trifluoromethyl)phosphinic acid, methyl ester				[25439-11-6]
C <sub>3</sub> H <sub>3</sub> F <sub>6</sub> O <sub>2</sub> P	(258–313)	40.5	(273)	A	[87/5]
	bis(trifluoromethyl) methylthiophosphine				
C <sub>3</sub> H <sub>3</sub> F <sub>6</sub> PS	(273–321)	36.9	(297)	T	[64/31]
	bis(trifluoromethyl)dithiophosphinic acid, methyl ester				[18799-79-6]
C <sub>3</sub> H <sub>3</sub> F <sub>6</sub> PS <sub>2</sub>	(273–344)	41.5	(288)	A	[87/5][99/16]
	acrylonitrile				[107-13-1]
C <sub>3</sub> H <sub>3</sub> N	(257–352)	33.6	(272)	A	[87/5]
	(283–343)	31.6	(298)	A	[87/5]
	(222–351)	35.5	(237)		[64/9]
	(293–343)	32.9	(308)		[64/7]
	(273–353)	32.6			[45/6]
C <sub>3</sub> H <sub>3</sub> NO	oxazole				[288-42-6]
	(293–344)	34.6	(308)	A	[87/5]
C <sub>3</sub> H <sub>3</sub> NO		32.5±0.1	(298)	C	[78/4]
	isoxazole				[288-14-2]
	(314–404)	37.2±0.2	(298)	EB	[96/4]
C <sub>3</sub> H <sub>3</sub> NO <sub>2</sub>		36.5±0.1	(298)	C	[78/4]
	cyanofornic acid, methyl ester				[17640-15-2]
C <sub>3</sub> H <sub>3</sub> NS	(273–333)	39.3	(288)	A	[87/5][70/16]
	thiazole				[288-47-1]
C <sub>3</sub> H <sub>3</sub> NS	(333–393)	39.7	(348)	A	[87/5]
	(336–391)	38.9	(351)	A	[87/5][69/4]
	allene				[463-49-0]
C <sub>3</sub> H <sub>4</sub>	(136–274)	22.6	(259)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>3</sub> H <sub>4</sub>	(193–246)	19.9	(231)	A	[87/5]
	(153–238)	21.3	(223)		[47/5]
	(138–189)	22.9	(174)		[40/3][84/9]
	(203–236)	20.9	(220)	MM	[30/5]
	(200–260)	21.5	(245)		[21/2][84/9]
	1-propyne				[74-99-7]
	(183–257)	23.0	(242)	A	[87/5]
	(257–402)	20.8	(272)	A	[87/5]
	(303–361)	21.2	(318)	A	[87/5]
	(359–402)	21.9	(374)	A	[87/5]
	(249–306)	23.2	(264)	A	[87/5]
		22.1	(275)		[71/28]
	(162–255)	23.9	(240)		[67/13]
	(323–400)	21.6	(338)		[62/29]
	(194–250)	23.4	(235)		[33/8][84/9]
	(200–260)	21.4	(230)		[21/3]
C <sub>3</sub> H <sub>4</sub> Br <sub>2</sub>	2,3-dibromopropylene				[513-31-5]
	(267–415)	43.1	(282)	A	[87/5][47/5]
C <sub>3</sub> H <sub>4</sub> Br <sub>4</sub>	1,2,2,3-tetrabromopropane				[54268-02-9]
	(418–580)	57.7	(433)	A	[87/5][70/16]
C <sub>3</sub> H <sub>4</sub> ClFO <sub>3</sub>	carbonochloridic acid, 2-fluoroethyl ester				[462-27-1]
	(273–333)	46.6	(288)	GS	[87/5][48/14]
					[70/16]
C <sub>3</sub> H <sub>4</sub> ClF <sub>3</sub>	1-chloro-3,3,3-trifluoropropane				[460-35-5]
	(297–315)	29.9	(306)	A	[87/5]
	(301–341)	33.7	(316)		[72/7]
C <sub>3</sub> H <sub>4</sub> ClF <sub>3</sub> O	2-chloro-1,1,2-trifluoroethyl methyl ether				[425-87-6]
		34.4±0.1	(298)	C	[84/2]
		33.4±0.1	(313)	C	[84/2]
		31.1±0.1	(343)	C	[84/2]
C <sub>3</sub> H <sub>4</sub> ClF <sub>3</sub> O <sub>2</sub> S	trifluoromethanesulfinic acid, 2-chloroethyl ester				[61915-99-9]
	(320–403)	40.5	(335)	I	[87/5][77/17]
					[99/16]
C <sub>3</sub> H <sub>4</sub> Cl <sub>2</sub> F <sub>2</sub> O	2,2-dichloro-1,1-difluoro-1-methoxyethane				[76-38-0]
	(279–378)	40.3	(294)	A	[87/5]
C <sub>3</sub> H <sub>4</sub> Cl <sub>2</sub> O	1,1-dichloroacetone				[513-88-2]
	(292–382)	35.8	(307)	A	[87/5][70/5]
C <sub>3</sub> H <sub>4</sub> Cl <sub>2</sub> O	1,3-dichloroacetone				[534-07-6]
	(348–445)	49.6	(363)	A	[87/5][70/5]
C <sub>3</sub> H <sub>4</sub> Cl <sub>2</sub> O <sub>2</sub>	methyl dichloroacetate				[116-54-1]
		47.7±0.1	(298)	C	[72/41]
	(331–481)	44.9	(346)	A	[87/5][70/16]
	(276–416)	47.2	(291)		[47/5]
C <sub>3</sub> H <sub>4</sub> Cl <sub>4</sub>	1,1,1,2-tetrachloropropane				[812-03-3]
	(331–469)	42.3	(346)	A	[87/5][70/16]
C <sub>3</sub> H <sub>4</sub> Cl <sub>4</sub>	1,1,1,3-tetrachloropropane				[1070-78-6]
	(300–377)	57.8	(315)	A	[87/5]
C <sub>3</sub> H <sub>4</sub> Cl <sub>4</sub>	1,2,2,3-tetrachloropropane				[13116-53-5]
	(346–415)	42.8	(361)	A	[87/5]
C <sub>3</sub> H <sub>4</sub> F <sub>2</sub> O <sub>2</sub>	methyl difluoroacetate				[432-53-4]
	(273–333)	41.9	(288)	GS	[87/5][48/14]
					[70/16]
C <sub>3</sub> H <sub>4</sub> F <sub>4</sub> O	2-difluoromethoxy-1,1-difluoroethane				[32778-16-8]
	(288–328)	32.9	(303)	I	[02/19]
C <sub>3</sub> H <sub>4</sub> F <sub>4</sub> O	2,2,3,3-tetrafluoro-1-propanol				[76-37-9]
	(303–380)	47.9	(318)	A	[87/5]
	(298–333)	50.3	(313)	MM	[73/5]
	(298–333)	53.6	(298)	MM	[73/5]
C <sub>3</sub> H <sub>4</sub> O	acrolein				[107-02-8]
	(250–306)	32.3	(265)	A	[87/5]
	(304–325)	30.9	(314)		[79/15]
	(208–326)	33.5	(223)	A	[87/5][47/5]
C <sub>3</sub> H <sub>4</sub> O	propargyl alcohol (2-propyn-1-ol)				[107-19-7]
	(293–387)	42.0	(308)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>3</sub> H <sub>4</sub> O <sub>2</sub>	acrylic acid				[79-10-7]
		53.1±4.2	(298)	C	[96/8]
	(341–414)	45.3	(356)	A	[87/5][73/14]
C <sub>3</sub> H <sub>4</sub> O <sub>2</sub>	(293–343)	32.7	(308)		[64/7]
	$\beta$ -propiolactone (2-oxetanone)				[127-17-3]
	(324–435)	46.4	(339)	A	[87/5]
C <sub>3</sub> H <sub>4</sub> O <sub>3</sub>		47.0±0.1	(298)	C	[66/19]
	ethylene carbonate				[96-49-1]
	(381–437)	59.6	(396)	A	[87/5]
C <sub>3</sub> H <sub>4</sub> O <sub>3</sub>	(368–449)	60.3	(383)	EB	[82/8]
	(368–449)	56.3	(423)	EB	[82/8]
	(368–433)	55.0	(433)	EB	[82/8]
	pyruvic acid				[127-17-3]
C <sub>3</sub> H <sub>4</sub> O <sub>3</sub>	(294–438)	51.4	(309)	A	[87/5][47/5]
	trithiocarbonic acid, cyclic ethylene ester				[822-38-8]
C <sub>3</sub> H <sub>4</sub> S <sub>3</sub>	(294–303)	82.9	(298)		[99/16]
	allyl bromide				[106-95-6]
C <sub>3</sub> H <sub>5</sub> Br	(297–338)	32.2	(312)	A, EB	[87/5][77/8]
		31.7±0.1	(318)	C	[77/8]
		31.0±0.1	(330)	C	[77/8]
		30.4±0.1	(341)	C	[77/8]
C <sub>3</sub> H <sub>5</sub> Br	<i>cis</i> 1-bromopropylene				[590-14-7]
	(257–366)	32.0	(272)	A	[87/5][70/16]
C <sub>3</sub> H <sub>5</sub> Br	<i>trans</i> 1-bromopropylene				[590-14-7]
	(262–372)	32.5	(277)	A	[87/5][70/16]
C <sub>3</sub> H <sub>5</sub> Br <sub>3</sub>	1,2,3-tribromopropane				[96-11-7]
	(390–595)	50.8	(405)	A	[87/5]
	(400–478)	50.2	(415)		[49/1][84/9]
C <sub>3</sub> H <sub>5</sub> Cl	allyl chloride				[107-05-1]
	(203–318)	33.1	(218)	A	[87/5]
C <sub>3</sub> H <sub>5</sub> Cl	(286–317)	30.0	(301)		[44/5][84/9]
	1-chloropropene				[590-21-6]
	(191–310)	29.5	(206)		[47/5]
C <sub>3</sub> H <sub>5</sub> Cl	<i>cis</i> 1-chloropropene				[16136-84-8]
	(276–332)	27.9	(291)		[01/19]
	(237–338)	29.2	(252)	A	[87/5][70/16]
C <sub>3</sub> H <sub>5</sub> Cl	<i>trans</i> 1-chloropropene				[16136-85-9]
	(277–340)	28.5	(292)		[01/19]
	(241–343)	29.7	(256)	A	[87/5][70/16]
C <sub>3</sub> H <sub>5</sub> Cl	2-chloropropene				[557-98-2]
	(229–327)	28.0	(244)	A	[87/5][70/16]
C <sub>3</sub> H <sub>5</sub> ClO	epichlorohydrin				[106-89-8]
	(256–391)	42.9	(272)		[47/5]
C <sub>3</sub> H <sub>5</sub> ClO	chloroacetone				[78-95-5]
	(316–392)	40.1	(331)	A	[87/5]
C <sub>3</sub> H <sub>5</sub> ClO <sub>2</sub>	methyl chloroacetate				[96-34-4]
		46.7±0.1	(298)	C	[72/41]
	(318–402)	45.5	(333)	A	[87/5][67/6]
					[84/9]
C <sub>3</sub> H <sub>5</sub> ClO <sub>2</sub>	(298–403)	46.7	(313)		[28/2][84/9]
	ethylchloroformate				[541-41-3]
	(281–286)	38.7±0.2	(283)	BG	[80/2]
C <sub>3</sub> H <sub>5</sub> Cl <sub>3</sub>	(281–286)	37.8±0.2	(298)	BG	[80/2]
	1,1,1-trichloropropane				[7789-89-1]
	(244–382)	38.8	(259)	A	[87/5][47/5]
C <sub>3</sub> H <sub>5</sub> Cl <sub>3</sub>	1,1,3-trichloropropane				[20395-25-9]
	(328–464)	41.8	(343)	A	[87/5][70/16]
C <sub>3</sub> H <sub>5</sub> Cl <sub>3</sub>	1,2,3-trichloropropane				[96-18-4]
		47.8±0.1	(298)	C	[89/10]
	(337–477)	43.0	(352)	A	[87/5][70/16]
C <sub>3</sub> H <sub>5</sub> FO	(282–431)	46.8	(297)		[47/5]
	1,2-epoxy-3-fluoropropane				[503-09-3]
	(273–333)	39.9	(288)	A, GS	[87/5][48/14]
				[70/16]	



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>3</sub> H <sub>5</sub> FO <sub>2</sub>	methyl fluoroacetate (273–333)	42.7	(288)	A, GS	[453-18-9] [87/5][48/14] [70/16]
C <sub>3</sub> H <sub>5</sub> F <sub>3</sub> O	1,1,2-trifluoro-1-methoxyethane (276–317)	31.1	(291)	I	[428-66-0] [02/19]
C <sub>3</sub> H <sub>5</sub> F <sub>3</sub> O	1,1,1-trifluoro-2-propanol (292–333)	44.2	(307)	A, MM	[374-01-6] [87/5][73/5] [84/9]
C <sub>3</sub> H <sub>5</sub> F <sub>3</sub> O <sub>2</sub> S	trifluoromethylsulfonic acid, trifluoromethyl ester (294–333)	44.8 37.2	(298) (370)	MM	[73/5] [30957-43-8] [71/20]
C <sub>3</sub> H <sub>5</sub> F <sub>3</sub> S <sub>2</sub>	ethyl(trifluoromethyl) disulfide (253–303)	33.8	(268)	A	[691-05-4] [87/5][99/16]
C <sub>3</sub> H <sub>5</sub> N	propionitrile (288–371)	36.1	(303)	A	[107-12-0] [87/5]
	(308–363)	36.7	(326)	BG	[71/2]
	(189–295)	36.5	(280)		[56/5][84/9]
	(308–370)	35.9	(323)		[49/1][84/9]
C <sub>3</sub> H <sub>5</sub> NO	acrylamide (357–413)	61.5	(372)	A	[79-06-1] [87/5]
	(373–413)	76.5	(388)	A	[87/5]
C <sub>3</sub> H <sub>5</sub> NO	methoxyacetone (285–316)	41.7±0.6	(298)	GS	[1738-36-9] [95/11]
C <sub>3</sub> H <sub>5</sub> NO	2-cyanoethanol (331–494)	53.4	(346)	A	[109-78-4] [87/5]
C <sub>3</sub> H <sub>5</sub> NO	2-propenal oxime (303–381)	42.2	(318)	A	[5314-33-0] [87/5]
C <sub>3</sub> H <sub>5</sub> NO <sub>2</sub>	1-nitropropylene (301–373)	37.1	(337)		[3156-70-5] [84/22]
	(273–333)	44.1	(288)	A	[87/5][70/16]
C <sub>3</sub> H <sub>5</sub> NO <sub>2</sub>	2-nitropropylene (273–333)	38.2	(288)	A	[4749-28-4] [87/5][70/16]
C <sub>3</sub> H <sub>5</sub> NS	ethyl isothiocyanate (283–404)	40.2	(298)	A	[542-85-8] [87/5]
	(283–323)	39.8	(298)		[35/3][84/9]
C <sub>3</sub> H <sub>5</sub> NS	ethyl thiocyanate (358–422)	44.2	(373)	A	[542-90-5] [87/5][99/16]
C <sub>3</sub> H <sub>5</sub> N <sub>3</sub> O <sub>9</sub>	glycerol trinitrate (293–373)	104.5	(308)	A	[55-63-0] [87/5]
	(400–524)	58.6	(415)		[47/5]
C <sub>3</sub> H <sub>5</sub> P	2-propynylphosphine (228–273)	36.8	(250)		[114596-02-0] [88/13]
C <sub>3</sub> H <sub>6</sub>	cyclopropane (195–225)	21.8	(210)		[75-19-4] [97/19]
	(358–398)	20.4	(373)	A	[87/5]
	(297–359)	19.9	(312)	A	[87/5]
	(188–239)	20.3	(224)	A	[87/5]
	(239–298)	19.9	(254)	A	[87/5]
	(183–241)	21.1	(226)		[46/1][84/9]
C <sub>3</sub> H <sub>6</sub>	propylene (297–363)	18.7	(312)	A	[115-07-1] [87/5]
	(104–161)	22.2	(146)	A	[87/5]
	(228–271)	18.7	(256)	A	[87/5]
	(270–327)	18.5	(285)	A	[87/5]
	(325–363)	18.8	(340)	A	[87/5]
	(161–242)	19.2	(227)	A	[87/5][70/16]
	(298–423)	18.7	(360)		[53/17]
	(166–226)	19.6	(211)		[39/2]
	(236–283)	19.3	(268)		[21/2][84/9]
C <sub>3</sub> H <sub>6</sub> BrCl	1-bromo-3-chloropropane (326–488)	42.0	(341)	A	[109-70-6] [87/5][70/16]
C <sub>3</sub> H <sub>6</sub> BrNO	2-bromo-2-nitrosopropane (239–356)	41.0	(254)	A	[7119-91-7] [87/5][70/16]
C <sub>3</sub> H <sub>6</sub> Br <sub>2</sub>	1,1-dibromopropane				[598-17-4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(322–449)	42.5	(337)	A, EST	[87/5][56/16] [70/16]
C <sub>3</sub> H <sub>6</sub> Br <sub>2</sub>	1,2-dibromopropane (312–403) (310–400)	41.4 42.2	(327) (298)	A	[78-75-1] [87/5] [91/2][75/16]
	(329–456)	42.3±0.7	(298)	EB	[75/15]
	(266–415)	44.6	(344)	A	[87/5][70/16]
C <sub>3</sub> H <sub>6</sub> Br <sub>2</sub>	1,3-dibromopropane	42.8	(281)		[47/5] [109-64-8]
		47.6	(298)	GC	[94/19]
		47.3±0.1	(308)	C	[92/11]
		46.7±0.1	(315)	C	[92/11]
		46.1±0.1	(323)	C	[92/11]
		45.5±0.1	(330)	C	[92/11]
		44.8±0.1	(338)	C	[92/11]
	(307–437)	46.6	(322)	A	[87/5]
	(351–487)	47.8	(366)	A	[87/5][70/16]
	(283–440)	45.3	(298)		[47/5]
C <sub>3</sub> H <sub>6</sub> Br <sub>2</sub> O	2,3-dibromo-1-propanol (330–492)	57.3	(345)	A	[96-13-9] [87/5][47/5]
C <sub>3</sub> H <sub>6</sub> Cl <sub>2</sub>	1,1-dichloropropane (310–360) (282–399)	35.2 35.5	(298) (297)	A, EST	[78-99-9] [67/11][91/2] [87/5][56/16]
C <sub>3</sub> H <sub>6</sub> Cl <sub>2</sub>	1,2-dichloropropane (294–406) (300–370)	38.4±0.3 36.3	(298) (298)	EB	[70/16] [78-87-5] [97/8] [91/2]
		36.1±0.1	(298)	C	[89/10]
	(239–373)	39.4	(254)	A	[87/5]
	(321–369)	34.7	(336)		[49/1]
	(288–373)	34.3	(303)		[33/5]
C <sub>3</sub> H <sub>6</sub> Cl <sub>2</sub>	1,3-dichloropropane				[142-28-9]
		41.0	(298)	GC	[94/19]
	(330–400)	41.0	(298)		[87/11][91/2]
		40.6±0.1	(298)	C	[89/10]
	(307–435)	39.0	(322)	A	[87/5][70/16]
C <sub>3</sub> H <sub>6</sub> Cl <sub>2</sub>	2,2-dichloropropane (295–340) (267–378)	32.1 33.2	(298) (282)	A A	[594-20-7] [87/11][91/2] [87/5][70/16]
C <sub>3</sub> H <sub>6</sub> Cl <sub>2</sub> O	2,3-dichloro-1-propanol (384–419)	48.5	(399)	A	[616-23-9] [87/5]
C <sub>3</sub> H <sub>6</sub> Cl <sub>2</sub> O	1,3-dichloro-2-propanol (301–448)	50.4	(316)	A	[96-23-1] [87/5][47/5]
C <sub>3</sub> H <sub>6</sub> F <sub>2</sub>	1,1-difluoropropane (219–311)	27.2	(234)	A, EST	[430-81-5] [87/5][56/16]
C <sub>3</sub> H <sub>6</sub> F <sub>2</sub>	2,2-difluoropropane (211–302)	25.6	(226)	A	[70/16] [420-45-1] [87/5][70/16]
C <sub>3</sub> H <sub>6</sub> F <sub>2</sub> O	1,1-difluoro-2-methoxyethane (288–322)	31.8	(303)	I	[461-57-4] [02/19]
C <sub>3</sub> H <sub>6</sub> F <sub>3</sub> NS	N,N-dimethyl-trifluoromethanesulfphenamide (223–295)	30.2	(259)		[60/24]
C <sub>3</sub> H <sub>6</sub> F <sub>3</sub> NS	dimethyl(trifluoromethylthio)amine (273–329)	31.1	(288)	A	[62067-13-4] [87/5][99/16]
C <sub>3</sub> H <sub>6</sub> F <sub>3</sub> OP	methyl(trifluoromethyl)phosphinous acid, methyl ester (232–285)	33.9	(258)		[26348-84-5] [70/26]
C <sub>3</sub> H <sub>6</sub> F <sub>3</sub> OP	dimethyl(trifluoromethyl)phosphine oxide (347–360)	52.4	(353)		[26348-91-4] [70/26]
C <sub>3</sub> H <sub>6</sub> F <sub>3</sub> O <sub>2</sub> P	(trifluoromethyl)phosphonic acid, dimethyl ester (237–318)	37.4	(252)	A	[684-56-0] [87/5][61/14]
C <sub>3</sub> H <sub>6</sub> F <sub>3</sub> PS	methyl(trifluoromethyl)phosphinothious acid, methyl ester (273–313)	38.4	(293)		[26348-86-7] [70/26]
C <sub>3</sub> H <sub>6</sub> F <sub>3</sub> PS	dimethyl(trifluoromethyl)phosphine sulfide (323–357)	47.2	(340)		[26348-92-5] [70/26]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>3</sub> H <sub>6</sub> I <sub>2</sub>	1,3-diiodopropane	54.1	(298)	GC	[627-31-6] [94/19]
C <sub>3</sub> H <sub>6</sub> N <sub>2</sub> O <sub>4</sub>	1,1-dinitropropane (323–383)	57.9	(338)	A	[601-76-3] [87/5]
C <sub>3</sub> H <sub>6</sub> N <sub>2</sub> O <sub>4</sub>	2,2-dinitropropane (363–553)	46.3	(378)	A	[595-49-3] [87/5]
C <sub>3</sub> H <sub>6</sub> N <sub>2</sub> O <sub>6</sub>	1,2-propanediol dinitrate (288–328)	63.8	(303)	A	[6423-43-4] [87/5][70/16]
C <sub>3</sub> H <sub>6</sub> N <sub>2</sub> O <sub>6</sub>	1,3-propanediol dinitrate (293–313)	74.3 ± 4.6	(303)	A, GS	[3457-90-7] [87/5][57/5]
C <sub>3</sub> H <sub>6</sub> N <sub>6</sub> O <sub>6</sub>	hexahydro-1,3,5-trinitro-1,3,5-triazine (503–523)	84.4	(513)	A	[121-82-4] [87/5]
C <sub>3</sub> H <sub>6</sub> O	2-propen-1-ol (323–373)	47.3	(298)	CGC	[107-18-6] [95/21]
C <sub>3</sub> H <sub>6</sub> O	oxetane	29.8	(298)	C	[503-30-0] [81/8]
C <sub>3</sub> H <sub>6</sub> O	acetone (329–488)	29.9	(344)	A	[67-64-1] [87/5]
	(178–243)	32.9	(228)	A	[87/5]
	(203–269)	33.8	(254)	A	[87/5]
	(323–379)	30.6	(338)	A	[87/5]
	(374–464)	29.5	(389)	A	[87/5]
	(457–508)	29.7	(472)	A	[87/5]
		26.1	(373)	C	[86/18]
		21.7	(423)	C	[86/18]
		15.3	(473)	C	[86/18]
		9.2	(498)	C	[86/18]
	(285–329)	31.9	(300)	EB	[86/10]
	(305–333)	31.8	(319)		[84/23]
	(259–351)	32.8	(274)	A	[87/5][74/6] [75/8]
		31.3	(298)		[75/8]
	(261–328)	32.7	(276)	A, EB	[87/5][72/6]
	(278–293)	32.6	(285)		[63/25]
	(310–329)	31.1	(319)		[57/3]
	(204–339)	35.0	(253)	MG	[26/7]
	(204–339)	32.1	(293)	MG	[26/7]
	(204–339)	30.7	(313)	MG	[26/7]
C <sub>3</sub> H <sub>6</sub> O	allyl alcohol (310–340)	44.6	(325)		[107-18-6] [02/45]
	(253–370)	46.7	(268)	A	[87/5]
		NA			[36/2]
	(283–313)	44.8	(298)		[35/3]
C <sub>3</sub> H <sub>6</sub> O	methyl vinyl ether (278–412)	23.4	(293)	A	[107-25-5] [87/5]
C <sub>3</sub> H <sub>6</sub> O	propanal (263–373)	31.5	(278)		[123-38-6] [77/24]
	(286–321)	NA	(301)		[74/8]
		28.3	(321)		[72/4]
		29.4	(303)		[72/4]
		30.3	(286)		[72/4]
		29.6	(298)		[72/4]
	(290–322)	30.3	(305)	A	[87/5][70/16]
	(250–330)	31.9	(265)	EB	[87/5][51/8]
C <sub>3</sub> H <sub>6</sub> O	propylene oxide (225–308)	31.6	(240)	A	[75-56-9] [87/5][70/16]
	(292–345)	28.5	(307)		[66/3]
		27.9	(298)	C	[62/28]
	(249–308)	30.1	(264)		[59/1]
	(285–322)	28.2	(303)		[37/7]
	(243–306)	32.9	(273)		[35/5]
C <sub>3</sub> H <sub>6</sub> O <sub>2</sub>	1,3-dioxolane (305–347)	34.6	(326)		[646-06-0] [89/3]
	(280–323)	35.8	(295)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(321–357)	33.7	(339)		[82/3]
	(306–346)	33.7	(326)		[80/18]
	(280–355)	34.1	(296)		[68/2][84/9]
		35.6±0.4			[59/23]
C <sub>3</sub> H <sub>6</sub> O <sub>2</sub>	ethyl formate				[109-94-4]
	(300–326)	31.4	(313)		[93/8]
	(327–498)	29.9	(342)	A	[87/5]
		31.6±0.1	(304)	C	[76/14]
		30.9±0.1	(313)	C	[76/14]
		29.8±0.1	(328)	C	[76/14]
	(213–336)	35.8	(228)	A	[87/5][70/16]
C <sub>3</sub> H <sub>6</sub> O <sub>2</sub>	methyl acetate				[79-20-9]
	(260–351)	34.1	(275)	A	[87/5]
		32.3±0.1	(298)	C	[80/13]
		29.5±0.1	(343)	C	[80/13]
	(308–338)	31.8	(323)	DTA	[80/8]
		32.6±0.1	(298)	C	[79/1]
		32.2±0.1	(304)	C	[77/12]
		31.6±0.1	(313)	C	[77/12]
		30.5±0.1	(328)	C	[77/12]
		30.3±0.1	(331)	C	[77/12]
		32.5	(295)		[76/8]
		30.2	(330)		[76/8]
	(273–318)	34.5	(296)	BG	[71/2]
	(274–329)	33.4	(289)	A	[87/5][65/3]
					[70/16]
C <sub>3</sub> H <sub>6</sub> O <sub>2</sub>	propionic acid				[79-09-4]
	(353–393)	54.9	(298)	CGC	[95/21]
	(343–419)	47.0	(358)	A	[87/5]
	(414–511)	60.6	(429)	A	[87/5]
	(345–401)	46.4	(360)	A	[87/5]
		56.0	(303)		[83/13]
monomer		31.1±0.1	(298)	C	[70/8]
		55±2	(298)	C	[70/8]
	(328–437)	48.3	(343)		[81/11]
C <sub>3</sub> H <sub>6</sub> O <sub>3</sub>	2-methoxyacetic acid				[625-45-6]
	(325–477)	54.5	(340)	A	[87/5][47/5]
C <sub>3</sub> H <sub>6</sub> O <sub>3</sub>	methyl glycolate				[96-35-5]
	(326–381)	52.5±6.3	(298)	EB	[96/5]
	(282–425)	47.4	(297)	A	[87/5][47/4]
C <sub>3</sub> H <sub>6</sub> O <sub>3</sub>	dimethylcarbonate				[616-38-6]
	(326–411)	36.4	(341)		[02/23]
	(311–397)	37.7±0.2	(298)	EB	[97/7][97/6]
C <sub>3</sub> H <sub>6</sub> O <sub>3</sub>	peroxypropionic acid				[4212-43-5]
	(273–393)	43.2	(288)	A	[87/5][51/10]
					[70/16]
C <sub>3</sub> H <sub>6</sub> O <sub>3</sub>	propylene ozonide				[87/5][56/18]
	(261–296)	36.9	(281)	A	[110-88-3]
C <sub>3</sub> H <sub>6</sub> O <sub>3</sub>	1,3,5-trioxane				[87/5][65/4]
	(329–386)	40.0	(344)	A	[1072-43-1]
C <sub>3</sub> H <sub>6</sub> S	2-methylthiirane				[87/5][70/16]
	(272–423)	34.6	(287)		[99/16]
C <sub>3</sub> H <sub>6</sub> S	thiacyclobutane (thietane)				[287-27-4]
	(275–393)	36.5	(290)		[99/16]
		35.8	(298)		[71/28]
	(321–404)	34.6	(336)	A, EB	[87/5][53/8]
					[66/5]
C <sub>3</sub> H <sub>7</sub> Br	1-bromopropane				[106-94-5]
	(301–344)	31.8	(316)	A, EB	[87/5][77/8]
		31.1±0.1	(322)	C	[77/8]
		30.5±0.1	(332)	C	[77/8]
		30.1±0.1	(339)	C	[77/8]
		29.3±0.1	(352)	C	[77/8]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>3</sub> H <sub>7</sub> Br	(250–368)	31.9±0.1 34.1	(298) (265)	C A, EST	[66/2] [87/5][61/13] [70/16]
	(220–344)	35.5	(235)		[47/5]
	(273–303)	32.6	(288)		[06/1][84/9]
	2-bromopropane				[75-26-3]
	(323–363)	30.6	(298)	CGC	[95/21]
	(236–328)	32.1	(251)	A	[87/5]
	(299–332)	30.1	(314)	EB	[87/5][77/8]
		29.8±0.1	(305)	C	[77/8]
		29.2±0.1	(318)	C	[77/8]
		28.5±0.1	(330)	C	[77/8]
C <sub>3</sub> H <sub>7</sub> Cl		28.0±0.1	(338)	C	[77/8]
		30.2±0.1	(298)	C	[66/2]
	(211–333)	33.4	(226)		[47/5]
	(273–303)	30.9	(288)		[06/1][84/9]
	1-chloropropane				[540-54-5]
C <sub>3</sub> H <sub>7</sub> Cl	(250–320)	29.0	(298)		[84/9][91/2]
		28.5±0.2	(298)	C	[77/1]
	(248–320)	31.0	(263)	A	[87/5][69/5] [70/16]
	(205–319)	33.1	(219)		[47/5]
C <sub>3</sub> H <sub>7</sub> Cl	2-chloropropane				[75-29-6]
	(239–310)	30.2	(254)	A	[87/5]
	(194–309)	30.6	(209)		[47/5]
C <sub>3</sub> H <sub>7</sub> ClO	(273–303)	27.3	(288)		[06/1][84/9]
	1-chloro-2-propanol				[127-00-4]
	(308–399)	45.0±2.2	(340)	EB	[02/14]
C <sub>3</sub> H <sub>7</sub> ClO	(308–399)	42.2±1.9	(380)	EB	[02/14]
	2-chloro-1-propanol				[78-89-7]
C <sub>3</sub> H <sub>7</sub> ClO <sub>2</sub>	(316–399)	45.0	(331)	A	[87/5]
	3-chloro-1,2-propanediol				[96-24-2]
C <sub>3</sub> H <sub>7</sub> ClO <sub>2</sub> S	(343–409)	66.6	(358)		[96/13]
	1-propanesulfonyl chloride				[10147-36-1]
	(273–362)	52.3	(288)		[99/16]
	(362–464)	49.9	(377)		[99/16]
C <sub>3</sub> H <sub>7</sub> ClS	(243–273)	60.1	(258)	A	[87/5][99/16]
	methyl(2-chloroethyl) sulfide				
C <sub>3</sub> H <sub>7</sub> F	(293–333)	42.4	(308)	A, GS	[87/5][48/9] [70/16]
	1-fluoropropane				[460-13-9]
	(196–289)	24.0	(274)	A, EST	[87/5][61/13] [70/16]
C <sub>3</sub> H <sub>7</sub> F	2-fluoropropane				[420-26-8]
	(190–264)	23.7	(249)	A	[87/5]
C <sub>3</sub> H <sub>7</sub> I	1-iodopropane				[107-08-4]
	(171–271)	37.8	(256)	A	[87/5]
		36.3±0.1	(298)	C	[68/1]
	(271–402)	36.8	(286)	A, EST	[87/5][61/13] [70/16]
C <sub>3</sub> H <sub>7</sub> I	(237–375)	37.0	(252)		[47/5]
	2-iodopropane				[75-30-9]
	(313–353)	34.0	(298)	CGC	[95/21]
	(173–262)	36.7	(247)	A	[87/5]
C <sub>3</sub> H <sub>7</sub> N		34.1±0.1	(298)	C	[68/1]
	(230–363)	36.3	(244)		[47/5]
	cyclopropylamine				[765-30-0]
C <sub>3</sub> H <sub>7</sub> N		31.3±0.4			[71/36]
	allylamine				[107-11-9]
	(273–303)	33.0	(288)	A	[87/5]
C <sub>3</sub> H <sub>7</sub> N	(273–324)	32.6	(288)	A	[87/5]
	azetidine				[503-29-7]
C <sub>3</sub> H <sub>7</sub> NO	(273–303)	32.6	(288)	A	[87/5]
	acetone oxime				[127-06-0]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>3</sub> H <sub>7</sub> NO	(338–352) propionamide	51.4	(345)	A	[87/5] [79-05-0]
	(338–486) N,N-dimethyl formamide	60.3	(353)		[47/5] [68-12-2]
C <sub>3</sub> H <sub>7</sub> NO	(301–426)	49.2	(316)	A	[87/5]
		46.9	(298)	A	[85/7][85/6]
	(318–423)	42.5	(370)		[79/21]
	(331–425)	56.7	(346)		[74/7][84/9]
	(303–363)	46.7	(318)		[68/3]
C <sub>3</sub> H <sub>7</sub> NO	N-ethylformamide	58.4	(298)	A	[627-45-2] [85/7][85/6]
C <sub>3</sub> H <sub>7</sub> NO	N-methylacetamide				[79-16-3]
	(353–428)	62.0	(368)		[93/2]
	(333–443)	59.6	(348)	A	[87/5]
	(353–479)	53.5	(368)	A	[87/5] [68/3]
C <sub>3</sub> H <sub>7</sub> NO	propionaldehyde oxime				[627-39-4]
(313–339)	51.2	(326)	A	[87/5]	
C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub>	ethyl carbamate				[51-79-6]
	(338–457)	56.6	(353)	A	[87/5][47/5]
C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub>	isopropyl nitrite				[541-42-4]
(253–268)	26.0	(260)	A	[87/5][37/3]	
C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub>	1-nitropropane				[108-03-2]
	(313–353)	43.9	(298)	CGC	[95/21]
	(293–405)	42.6	(308)	A, EB	[87/5][56/15] [70/16]
C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub>	(331–404)	40.6	(346)		[49/1]
	2-nitropropane				[79-46-9]
	(313–353)	43.9	(298)	CGC	[75/21]
	(284–394)	40.9	(299)	A, EB	[87/5][47/5] [56/15][70/16]
C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub>	propyl nitrite				[543-67-9]
(253–268)	28.3	(260)	A	[87/5][37/3]	
C <sub>3</sub> H <sub>7</sub> NO <sub>3</sub>	isopropyl nitrate				[1712-64-7]
(273–343)	35.3 ± 0.1 39.7	(288)	DSC A	[99/12] [87/5][57/2] [70/16]	
C <sub>3</sub> H <sub>7</sub> NO <sub>3</sub>	propyl nitrate				[627-13-4]
(273–343)	41.7	(288)	A	[87/5][57/2] [70/16]	
C <sub>3</sub> H <sub>7</sub> N <sub>3</sub>	1-azidopropane				[22293-25-0]
(253–298)	31.1	(268)	A	[87/5][64/5] [84/9]	
C <sub>3</sub> H <sub>7</sub> N <sub>3</sub>	2-azidopropane				[691-57-6]
(253–298)	33.2	(268)	A	[87/5][64/5] [84/9]	
C <sub>3</sub> H <sub>7</sub> P	2-propenylphosphine				[81637-99-2]
(210–273)	32.7	(241)		[88/13]	
C <sub>3</sub> H <sub>8</sub>	propane				[74-98-6]
	(278–332)	18.8	(293)	A	[87/5]
	(165–248)	19.5	(233)	A	[87/5]
	(104–165)	22.1	(150)	A	[87/5]
	(231–281)	19.0	(266)	A	[87/5]
	(329–369)	19.2	(344)	A	[87/5]
	(312–367)	18.9	(327)		[80/1]
		18.77	(256)		[71/28]
	(166–231)	20.0	(216)		[38/4]
C <sub>3</sub> H <sub>8</sub> N <sub>2</sub>	dimethyl ammonium cyanide				
(251–295)	49.0	(280)		[87/5][73/10]	
C <sub>3</sub> H <sub>8</sub> N <sub>2</sub> S	1,3-dimethylthiourea				
(342–375)	93 ± 4.0	(359)	ME, TE	[94/21]	
C <sub>3</sub> H <sub>8</sub> O	methyl ethyl ether				[540-67-0]
	(281–433)	30.1	(296)	A	[87/5]
	(216–299)	37.0	(231)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>3</sub> H <sub>8</sub> O	(281–438)	37.1	(296)	A	[87/5]
	(278–281)	NA			[67/7]
	(182–280)	26.3	(265)		[47/5]
	1-propanol				[71-23-8]
		41.2	(371)		[00/24]
		35.2	(423)		[00/24]
		29.4	(453)		[00/24]
		21.0	(498)		[00/24]
		11.4	(528)		[00/24]
	(323–373)	49.2	(298)	CGC	[95/21]
	(303–370)	47.0	(318)		[95/14]
	(360–377)	42.9	(375)		[90/10]
	(200–228)	48.0	(214)	A	[87/5]
	(356–376)	43.5	(366)	A	[87/5]
	(369–407)	42.3	(384)	A	[87/5]
	(401–482)	40.1	(416)	A	[87/5]
	(478–507)	36.5	(492)	A	[87/5]
	(243–303)	46.3	(298)		[83/14]
	(275–373)	49.3	(290)		[73/26]
		46.4±0.1	(313)	C	[73/13]
		45.7±0.1	(323)	C	[73/13]
		44.9±0.1	(333)	C	[73/13]
		44.0±0.1	(343)	C	[73/13]
		43.2±0.1	(353)	C	[73/13]
		42.4±0.1	(363)	C	[73/13]
		47.49±0.02	(298)	C	[71/27]
	(333–377)	44.7	(348)	EB	[70/2][87/5]
	(292–370)	46.9	(307)	DTA	[69/5]
	(288–348)	46.7	(303)		[67/10]
		47.3±0.1	(298)	C	[66/2]
	(338–378)	44.3	(353)	EB	[63/8]
		46.6	(298)	C	[63/2]
	(405–537)	40.7	(420)		[63/20]
(343–385)	44.1	(358)		[61/18]	
	43.9±0.1	(343)	C	[61/18]	
	42.3±0.1	(360)	C	[61/18]	
	41.2±0.1	(370)	C	[61/18]	
	40.3±0.1	(378)	C	[61/18]	
	39.7±0.1	(384)	C	[61/18]	
(321–367)	45.5	(366)		[59/3]	
	43.2	(354)		[57/21]	
C <sub>3</sub> H <sub>8</sub> O	2-propanol				[67-63-0]
	(322–355)	43.2	(337)		[02/26]
		39.8	(355)		[00/25]
		29.7	(423)		[00/25]
		23.7	(453)		[00/25]
		16.5	(483)		[00/25]
		10.5	(503)		[00/25]
		40.4			[99/32]
(300–355)	44.8	(315)			[95/14]
(195–228)	50.3	(213)	A		[87/5]
(347–368)	42.0	(355)	A		[87/5]
(350–383)	41.3	(365)	A		[87/5]
(379–461)	39.2	(394)	A		[87/5]
(453–508)	35.3	(468)	A		[87/5]
(273–374)	45.7	(288)			[73/26]
(325–362)	43.1	(340)	A, EB		[87/5][70/2]
	45.34±0.02	(298)	C		[71/27]
(288–348)	45.5	(303)			[67/10]
	45.2±0.1	(298)	C		[66/2]
	42.7±0.1	(330)	C		[64/23]
	41.0±0.1	(346)	C		[64/23]
	39.8±0.1	(355)	C		[64/23]
	38.9±0.1	(363)	C		[64/23]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(329–363)	42.8	(344)	EB	[63/8]
		44.0	(298)	C	[63/2]
	(395–508)	39.1	(410)		[63/20]
		43.2	(324)	C	[63/28]
		41.7	(339)	C	[63/28]
		39.8	(355)	C	[63/28]
	(354–420)	41.1	(369)		[55/4]
	(273–363)	44.4	(298)		[28/5]
C <sub>3</sub> H <sub>8</sub> OS <sub>2</sub>	2,3-dimercaptopropanol				[59-52-9]
	(353–413)	61.2	(382)		[99/16][87/5]
C <sub>3</sub> H <sub>8</sub> O <sub>2</sub>	2-methoxyethanol				[109-86-4]
	(333–423)	42.8	(348)	A	[87/5]
		45.2±0.2	(298)	C	[71/5]
	(329–396)	42.9	(344)		[56/6]
C <sub>3</sub> H <sub>8</sub> O <sub>2</sub>	dimethoxymethane				[109-87-5]
	(273–316)	31.2	(288)	A	[87/5]
	(273–318)	29.8	(288)	A	[87/5]
	(296–314)	30.3	(305)		[76/20]
	(273–308)	30.1	(288)		[49/2]
C <sub>3</sub> H <sub>8</sub> O <sub>2</sub>	1,2-propanediol				[57-55-6]
	(365–496)	60.0±0.3	(380)	EB	[02/17]
	(365–496)	56.2±0.2	(420)	EB	[02/17]
	(365–496)	52.0±0.3	(460)	EB	[02/17]
	(365–496)	47.5±0.6	(500)	EB	[02/17]
	(318–461)	58.6	(333)	A	[87/5][47/5]
	(353–403)	58.2	(378)		[35/4]
	(403–460)	56.0	(431)		[35/4]
C <sub>3</sub> H <sub>8</sub> O <sub>2</sub>	1,3-propanediol				[504-63-2]
		72.4±0.3	(298)	C	[88/14]
	(332–448)	57.2	(347)	A	[87/5][47/5]
	(383–433)	63.3	(408)		[35/4]
	(433–488)	60.4	(460)		[35/4]
C <sub>3</sub> H <sub>8</sub> O <sub>2</sub>	propylene glycol				[87/18]
	(373–408)	66.5	(413)	TGA	[56-81-5]
C <sub>3</sub> H <sub>8</sub> O <sub>3</sub>	glycerol				[88/10]
		91.7±0.9	(298)	C	[87/5]
	(469–563)	78.5	(484)	A	[87/5]
	(291–341)	86.8	(316)	ME	[77/11]
		67.5	(343)	GC	[77/34]
		66.8	(353)	GC	[77/34]
		66.2	(363)	GC	[77/34]
		65.5	(373)	GC	[77/34]
		64.8	(383)	GC	[77/34]
	(293–343)	85.8	(308)	ME	[87/5][62/18]
					[70/16]
	(456–553)	86.0	(471)		[1886/1]
C <sub>3</sub> H <sub>8</sub> S	ethyl methyl sulfide				[624-89-5]
	(253–363)	33.7	(268)		[99/16]
		31.5	(298)		[81/12]
	(296–373)	31.8	(311)	A, EB	[87/5][51/4]
		31.8	(298)		[71/28]
					[66/5][54/11]
		30.3	(338)		[35/2]
C <sub>3</sub> H <sub>8</sub> S	1-propanethiol				[107-03-9]
	(254–364)	33.7	(269)		[99/16]
		31.9	(298)		[71/28]
	(297–375)	31.8	(312)	A, EB	[87/5][56/7]
					[66/5][54/11]
		31.6±0.1	(303)	C	[56/7]
		30.7±0.1	(320)	C	[56/7]
		29.5±0.1	(341)	C	[56/7]
	(284–340)	31.5	(312)		[33/7]
C <sub>3</sub> H <sub>8</sub> S	2-propanethiol				[75-33-2]
	(242–348)	31.9	(257)		[99/16]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		29.5	(298)		[71/28]
	(283–358)	30.1	(298)	A, EB	[87/5][54/2] [66/5][54/11]
C <sub>3</sub> H <sub>8</sub> S <sub>2</sub>	1,3-propanedithiol (338–446)	50.9	(353)		[109-80-8] [99/16]
	(377–446)	41.6	(398)	A	[87/5]
		49.7	(298)		[62/11]
C <sub>3</sub> H <sub>9</sub> N	isopropylamine				[75-31-0]
		28.4	(298)		[79/9]
		27.2	(313)		[79/9]
	(277–334)	29.7	(292)	A, EB, IPM	[87/5][68/4] [70/16]
C <sub>3</sub> H <sub>9</sub> N	propylamine				[107-10-8]
		31.3	(298)		[79/9]
		30.1	(313)		[79/9]
		28.9	(328)		[79/9]
	(296–350)	31.3	(311)	A, EB, IPM	[87/5][68/4] [70/16]
C <sub>3</sub> H <sub>9</sub> N	trimethylamine (333–403)	23.0	(368)		[75-50-3] [50/9]
	(273–313)	24.1	(288)		[45/1]
	(193–276)	24.6	(261)	A	[87/5][44/6]
		24.5	(250)	C	[44/6]
C <sub>3</sub> H <sub>9</sub> NO	2-(methylamino)ethanol (340–461)	57.0±0.5	(298)	EB	[109-83-1] [97/8]
C <sub>3</sub> H <sub>9</sub> NO	1-amino-2-propanol (306–431)	51.6	(321)	A	[78-96-6] [87/5]
C <sub>3</sub> H <sub>9</sub> NO	N-methoxy dimethyl amine (trimethylhydroxylamine) (194–297)	28.0	(282)	A	[5669-39-6] [87/5][57/4]
C <sub>3</sub> H <sub>9</sub> NO	2-methoxyethyl amine (278–318)	38.8	(293)	A	[109-85-3] [87/5]
C <sub>3</sub> H <sub>9</sub> O <sub>3</sub> P	methylphosphonic acid, dimethyl ester (336–408)	64.0	(351)	A	[756-79-6] [87/5][55/5]
C <sub>3</sub> H <sub>9</sub> O <sub>3</sub> P	trimethyl phosphite (302–342)	42.5	(317)	EB	[121-45-9] [90/9]
	(422–494)	32.8	(437)	A	[87/5]
C <sub>3</sub> H <sub>9</sub> O <sub>4</sub> P	trimethyl phosphate (296–466)	48.8	(311)	A	[512-56-1] [87/5][47/5]
C <sub>3</sub> H <sub>9</sub> P	trimethyl phosphine (248–310)	28.9	(263)	A	[594-09-2] [87/5]
		28.0±2.1			[57/23][62/15]
C <sub>3</sub> H <sub>10</sub> N <sub>2</sub>	1,3-diaminopropane				[109-76-2]
		50.2±0.1	(298)	C	[69/2]
C <sub>3</sub> H <sub>10</sub> N <sub>2</sub>	( <i>dl</i> ) 1,2-propanediamine (293–393)	42.2	(308)	A	[78-90-0] [87/5]
	(242–293)	47.2	(278)	A, IPM	[87/5][75/4]
	(242–293)	43.9±0.2	(298)	IPM	[75/4]
		44.2±0.2	(298)	IPM	[65/8][70/11]
C <sub>3</sub> H <sub>10</sub> N <sub>2</sub>	trimethylhydrazine (257–287)	34.6	(272)		[1741-01-1] [55/6]
		33.4±0.1	(292)	C	[55/6]
C <sub>3</sub> N <sub>2</sub> O	carbonyl cyanide (250–291)	37.5	(276)	A	[1115-12-4] [87/5][48/16]
C <sub>3</sub> O <sub>2</sub>	carbon suboxide (161–249)	26.2	(234)	A	[504-64-3] [87/5][65/5]
C <sub>3</sub> S <sub>2</sub>	carbon subsulfide (287–383)	45.1	(302)	A	[627-34-9] [87/5]
C <sub>4</sub> BrClF <sub>9</sub> N	1,1,2-trifluoro-2-chloro-2-bromo-N,N-bis(trifluoromethyl)ethylamine (329–364)	33.1	(344)	A	[87/5]
C <sub>4</sub> BrF <sub>6</sub> N	2-bromo-N,N-bis(trifluoromethyl)ethynylamine (311–329)	30.4	(320)	A	[22130-38-7] [87/5]
C <sub>4</sub> BrF <sub>8</sub> N	N,N-bis(trifluoromethyl)-2,2-difluoro-1-bromovinylamine (293–320)	31.2	(320)	A	[17727-57-4] [87/5]
C <sub>4</sub> BrF <sub>9</sub> O <sub>3</sub> S	2-bromo-2-fluorosulfatooctafluorobutane				

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(313–372)	43.5	(342)		[66/18]
C <sub>4</sub> BrF <sub>10</sub> N	1,1,2,2-tetrafluoro-2-bromo-N,N-bis(trifluoromethyl)ethylamine (289–329)	30.4	(304)	A	[87/5]
C <sub>4</sub> Br <sub>2</sub> Cl <sub>2</sub> F <sub>6</sub>	1,4-dibromo-2,3-dichloro-1,1,2,3,4,4-hexafluorobutane	47.7 ± 0.1	(308)	C	[375-42-8] [92/11]
		46.9 ± 0.1	(315)	C	[92/11]
C <sub>4</sub> Br <sub>2</sub> F <sub>9</sub> N	1,2-dibromo-1,2,2-trifluoro-N,N-bis(trifluoromethyl)ethylamine (326–366)	34.3	(341)	A	[17725-58-5] [87/5]
C <sub>4</sub> ClF <sub>8</sub> N	2-chloro-1,2-difluoro-N,N-bis(trifluoromethyl)vinylamine (273–312)	29.1	(288)	A	[13747-22-3] [87/5]
C <sub>4</sub> ClF <sub>10</sub> N	N-chloro-1,1,2,2,2-pentafluoro-N-(pentafluoroethyl)ethanamine	27.2	(325)		[54566-79-9] [75/19]
C <sub>4</sub> ClF <sub>10</sub> N	N-chloro-1,1,1,2,3,3,3-heptafluoro-N-(trifluoromethyl)-2-propanamine	28.9	(325)		[53684-04-1] [75/21]
C <sub>4</sub> ClF <sub>12</sub> NS	chlorodifluoro[1,1,1,2,3,3,3-heptafluoro-2-propanaminato(2-)]-(trifluoromethyl) sulfur	37.7	(402)		[62609-69-2] [77/15]
C <sub>4</sub> Cl <sub>2</sub> F <sub>6</sub>	1,4-dichloro-hexafluoro-2-butene (279–330)	34.0	(294)	A	[20972-44-5] [87/5]
C <sub>4</sub> Cl <sub>2</sub> F <sub>6</sub>	<i>cis</i> 2,3-dichloro-hexafluoro-2-butene (298–341)	32.5	(313)	A	[2418-22-6] [87/5]
C <sub>4</sub> Cl <sub>2</sub> F <sub>6</sub>	<i>trans</i> 2,3-dichloro-hexafluoro-2-butene (298–340)	32.2	(313)	A	[2418-21-5] [87/5]
C <sub>4</sub> Cl <sub>2</sub> F <sub>7</sub> N	2,3,4,4-tetrafluoro-2,3-dichloro-(trifluoromethyl)azetidine (273–333)	32.6	(288)	A	[87/5]
C <sub>4</sub> Cl <sub>3</sub> F <sub>7</sub>	2,3,3-trichloroheptafluorobutane	33.3			[335-44-4] [59/28]
		35.6	(298)		[59/28]
	(302–446)	36.4	(317)	MM, A	[87/5][56/12] [457-20-0]
C <sub>4</sub> Cl <sub>4</sub> F <sub>4</sub>	1,2,3,4-tetrachlorotetrafluoro-1-butene (362–414)	39.4	(377)	A	[87/5]
C <sub>4</sub> Cl <sub>4</sub> F <sub>6</sub> O	trichloromethyl 2-chloro-1,1,2,3,3,3-hexafluoropropyl ether (325–403)	40.3	(340)	A	[61136-57-0] [87/5]
		42.8 ± 0.7	(298)	EB	[76/15]
C <sub>4</sub> Cl <sub>6</sub>	perchloro-1,3-butadiene (343–484)	58.6	(358)	A	[87-68-3] [87/5]
	(343–473)	60.4	(358)		[71/22][84/9]
C <sub>4</sub> Cl <sub>6</sub> O <sub>3</sub>	trichloroacetic anhydride (329–496)	56.0	(344)	A	[4124-31-6] [87/5][47/5]
C <sub>4</sub> F <sub>6</sub> O <sub>3</sub>	trifluoroacetic anhydride (271–312)	34.7	(286)	A	[407-25-0] [87/5][62/4] [71/21]
C <sub>4</sub> F <sub>6</sub>	hexafluoro-1,3-butadiene (273–343)	25.9	(288)		[685-63-2] [02/6]
C <sub>4</sub> F <sub>7</sub> NO	4,4-difluoro-3-(difluoromethylene)-2-(trifluoromethyl)-1,2-oxazetidine (238–283)	31.1	(268)	A	[87/5]
C <sub>4</sub> F <sub>7</sub> NO	3,6-dihydro-2,2,3,3,5,6,6-heptafluoro-2 <i>H</i> -1,4-oxazine (249–293)	27.3	(278)	A	[4777-13-3] [87/5]
C <sub>4</sub> F <sub>7</sub> NO <sub>3</sub> S	fluorosulfuric ester 3,3,3-trifluoro-2-(trifluoromethyl)lactonitrile (262–320)	31.2	(277)	A	[26404-53-5] [87/5]
C <sub>4</sub> F <sub>8</sub>	perfluoro-1-butene (203–279)	28.9	(264)	A	[357-26-6] [87/5][71/21]
	(250–293)	U14.4	(265)		[47/14][84/9]
C <sub>4</sub> F <sub>8</sub>	perfluorocyclobutane (289–348)	23.5	(304)	A	[115-25-3] [87/5]
	(343–388)	23.2	(358)	A	[87/5]
	(233–388)	25.0	(248)		[67/14]
	(234–269)	25.0	(254)		[62/22][84/9]
	(233–274)	24.9	(259)	A	[87/5][54/5]
C <sub>4</sub> F <sub>8</sub> N <sub>2</sub> O <sub>2</sub> S	N,N'-bis(trifluoroacetyl)sulfur difluorodiimide (328–383)	43.5	(355)		[78/22]
C <sub>4</sub> F <sub>8</sub> N <sub>2</sub> O <sub>3</sub>	perfluoro-2-(tetrafluoro-2-nitroethyl)-1,2-oxazetidine (273–343)	31.0	(288)	A	[87/5]
C <sub>4</sub> F <sub>8</sub> OS	perfluorotetramethylene sulfoxide	37.1			[42060-63-9] [73/38]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> F <sub>8</sub> O <sub>2</sub> S	perfluorotetramethylene sulfone	31.1			[42060-64-0] [73/38]
C <sub>4</sub> F <sub>8</sub> O <sub>4</sub> S	heptafluorobutyric acid and fluorosulfuric acid anhydride (268–352)	44.8	(283)	A	[6069-35-8] [87/5][66/15]
C <sub>4</sub> F <sub>8</sub> S	perfluorotetramethylene sulfide	26.9			[706-76-3] [73/38]
C <sub>4</sub> F <sub>8</sub> S <sub>2</sub>	perfluoro-1,4-dithiane	33.0			[710-65-6] [73/38]
C <sub>4</sub> F <sub>9</sub> N	1,1,1-trifluoro-N-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-methanamine	22.2	(288)		[453-22-5] [75/21]
C <sub>4</sub> F <sub>9</sub> N	perfluoro[N,N-dimethyl(vinylamine)] (257–280)	27.5	(268)	A	[13821-49-3] [87/5]
C <sub>4</sub> F <sub>9</sub> N	perfluoro[N-methyl(propylidineamine)] (245–280)	26.6	(265)	A	[87/5]
C <sub>4</sub> F <sub>9</sub> N	perfluoro[N-propyl(methylenamine)] (250–291)	28.3	(276)	A	[87/5]
C <sub>4</sub> F <sub>9</sub> NO	nonafluorobutyramide	29.7	(306)	HG	[32822-51-8] [71/18]
C <sub>4</sub> F <sub>9</sub> NO	2,2,4,4,5,5-hexafluoro-3-(trifluoromethyl)oxazolidine (253–293)	27.4	(278)	A	[87/5]
C <sub>4</sub> F <sub>9</sub> NO	perfluoro[2,4-bis(trifluoromethyl)-1,2-oxazetidine] (266–289)	25.9	(278)	A	[87/5]
C <sub>4</sub> F <sub>9</sub> NOS	1,1,1-trifluoro-N-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-methanesulfinamide	36.4	(361)	I	[31340-35-9] [72/24]
C <sub>4</sub> F <sub>9</sub> NO <sub>2</sub>	O-(trifluoroacetyl)-N,N-bis(trifluoromethyl)hydroxylamine (234–296)	30.5	(281)	A	[15496-02-3] [87/5]
C <sub>4</sub> F <sub>9</sub> NO <sub>2</sub> S	N-(trifluoroacetyl)-S,S-bis(trifluoromethyl)sulfoximine	35.1	(363)	I	[34556-29-1] [72/25]
C <sub>4</sub> F <sub>9</sub> NS	1,1,1-trifluoro-N-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-methanesulfenamide	31.4	(324)	I	[31340-34-8] [72/24]
C <sub>4</sub> F <sub>10</sub>	perfluorobutane (272–327)	24.2	(287)	A	[355-25-9] [87/5]
	(233–273)	24.2	(258)	A	[87/5]
	(323–386)	23.1	(338)	A	[87/5]
	(233–383)	21.0	(293)		[58/4]
	(233–383)	17.1	(333)		[58/4]
	(233–260)	25.8	(247)		[52/16][84/9]
C <sub>4</sub> F <sub>10</sub> OS	heptafluoropropyl trifluoromethyl sulfoxide	33.6			[33622-18-3] [71/34]
C <sub>4</sub> F <sub>10</sub> OS	bis(pentafluoroethyl) sulfoxide	35.1			[33622-19-4] [71/34]
C <sub>4</sub> F <sub>10</sub> O <sub>3</sub> S	fluorosulfuric acid, perfluoro(1-methylpropyl) ester (294–342)	33.8	(309)	A	[5762-52-7] [87/5]
C <sub>4</sub> F <sub>10</sub> O <sub>6</sub> S <sub>2</sub>	1,1,1,2,3,4,4,4-octafluoro-2,3-bis(fluorosulfato)butane (316–393)	30.1	(331)	A	[2261-44-1] [87/5][64/22]
	(392–411)	27.1	(401)	A	[87/5][64/22]
C <sub>4</sub> F <sub>10</sub> S	perfluoroetramethylene sulfur difluoride	41.5			[42069-60-6] [73/38]
C <sub>4</sub> F <sub>10</sub> S	heptafluoropropyl trifluoromethyl sulfide	27.7			[33547-11-4] [71/34]
C <sub>4</sub> F <sub>11</sub> NOS	difluoro(1,1,1,3,3,3-hexafluoro-2-propaniminato)oxo(trifluoromethyl) sulfur	35.1	(396)	I	[62609-62-5] [77/19]
C <sub>4</sub> F <sub>11</sub> NS	fluoro(trifluoromethyl)[2,2,2,1-tetrafluoro-1-(trifluoromethyl)ethyl]-imino sulfur (300–333)	32.4	(315)	A, I	[37826-43-0] [87/5][72/21]
C <sub>4</sub> F <sub>12</sub> N <sub>2</sub> O	perfluoro(2,3-dimethyl)-4-oxo-diazepentane (276–308)	32.0	(291)	A	[87/5][71/21]
C <sub>4</sub> F <sub>12</sub> N <sub>2</sub> O	perfluoro(2,4-dimethyl)-4-oxo-diazepentane (288–318)	30.1	(303)	A	[87/5][71/21]
C <sub>4</sub> F <sub>12</sub> N <sub>2</sub> S	difluorobis[1,1,2,2,2-pentafluorothanaminato] sulfur	37.0			[4101-59-1] [76/29]
C <sub>4</sub> F <sub>12</sub> OS	difluoroobis(pentafluoroethyl) sulfur (284–341)	33.8	(299)		[33564-25-9] [99/16]
C <sub>4</sub> F <sub>12</sub> O <sub>2</sub> S	bis(trifluoromethyl)bis(trifluoromethoxy) sulfur (273–325)	29.3	(288)	A, I	[63465-11-2] [87/5][77/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> F <sub>12</sub> O <sub>3</sub> S	oxobis(trifluoromethyl)bis(trifluoromethoxy) sulfur (273–335)	33.4	(288)	A, I	[78/14] [66632-46-0] [87/5][78/14]
C <sub>4</sub> F <sub>12</sub> P <sub>2</sub> S	di[bis(trifluoromethyl)phosphino] sulfide (273–335)	42.2	(304)	T	[64/31]
C <sub>4</sub> F <sub>12</sub> P <sub>4</sub>	1,2,3,4-tetrakis(trifluoromethyl)tetraphosphetane (313–375)	43.2	(328)	A, SG	[393-02-2] [87/5][58/10]
C <sub>4</sub> F <sub>12</sub> S	difluorobis(pentafluoroethyl) sulfur (284–341)	34.0 32.2	(299)	A	[33622-15-0] [87/5] [71/34]
C <sub>4</sub> F <sub>12</sub> S	difluoro(heptafluoropropyl) (trifluoromethyl) sulfur	32.8			[31206-31-2] [71/34]
C <sub>4</sub> F <sub>13</sub> NOS	trifluoro[1,1,1,2,3,3,3-heptafluoro-2-propanaminoato(2-)]-(trifluoromethanolato) sulfur	33.9	(389)	I	[65844-09-9] [78/14]
C <sub>4</sub> F <sub>15</sub> N <sub>2</sub> O <sub>2</sub> P	phosphorous bis[bis(trifluoromethyl)nitroxide] difluoride (303–370)	37.6	(336)		[73/24]
C <sub>4</sub> F <sub>16</sub> S <sub>2</sub>	hexadecafluoro-octahydro-1,4-dithiane (323–408)	40.5	(365)		[4556-31-4] [99/16][73/38]
C <sub>4</sub> N <sub>4</sub>	dicyanoacetylene (295–350)	27.3	(310)	A	[1071-98-3] [87/5]
C <sub>4</sub> HBrF <sub>7</sub> N	1-bromo-2-fluoro-N,N-bis(trifluoromethyl)vinylamine (321–342)	29.8	(331)	A	[25273-49-8] [87/5]
C <sub>4</sub> HBrF <sub>9</sub> N	2-bromo-1,1,2-trifluoro-N,N-bis(trifluoromethyl)ethylamine (308–342)	31.9	(323)	A	[87/5]
C <sub>4</sub> HBrF <sub>9</sub> N	2-bromo-1,2,2-trifluoro-N,N-bis(trifluoromethyl)ethylamine (301–332)	33.8	(316)	A	[4905-96-8] [87/5]
C <sub>4</sub> HBr <sub>2</sub> F <sub>6</sub> N	trans 1,2-dibromo-N,N-bis(trifluoromethyl)vinylamine (355–382)	33.4	(369)	A	[87/5]
C <sub>4</sub> HCl <sub>2</sub> F <sub>5</sub> O <sub>2</sub>	3,4-dichloro-2,2,3,4,4-pentafluorobutyric acid (373–456)	54.8	(388)	A	[375-07-5] [87/5][57/17]
C <sub>4</sub> HF <sub>5</sub>	3,3,4,4,4-pentafluoro-1-butyne (203–261)	23.6	(246)	A	[7096-51-7] [87/5]
C <sub>4</sub> HF <sub>6</sub> N	N,N-bis(trifluoromethyl)ethynylamine (229–271)	26.0	(256)	A	[13747-21-2] [87/5]
C <sub>4</sub> HF <sub>7</sub> O <sub>2</sub>	perfluorobutyric acid (310–426)	50.1 ± 0.2	(320)	EB	[375-22-4] [02/21]
	(310–426)	45.9 ± 0.2	(360)	EB	[02/21]
	(310–426)	41.0 ± 0.5	(400)	EB	[02/21]
	(329–493)	47.8	(344)	A	[87/5]
	(353–393)	47.3	(368)	A	[87/5]
C <sub>4</sub> HF <sub>8</sub> N	N,N-bis(trifluoromethyl)-1,2-difluorovinylamine (276–296)	28.8	(286)	A	[13747-24-5] [87/5]
C <sub>4</sub> HF <sub>8</sub> N	N,N-bis(trifluoromethyl)-2,2-difluorovinylamine (274–291)	27.7	(282)	A	[13747-23-4] [87/5]
C <sub>4</sub> HF <sub>8</sub> NO	2,2,3,3,3,5,5,6,6-octafluoromorpholine (273–323)	32.7	(288)	A	[375-17-7] [87/5]
C <sub>4</sub> HF <sub>8</sub> NOS	2,2,3,3,4,4,5,5-octafluoro-1,1,2,3,4,5-hexahydro-1-iminothiophene-1-oxide	28.0	(397)		[77589-47-0] [81/15]
C <sub>4</sub> HF <sub>9</sub> N <sub>2</sub> OS	1,1,1-trifluoro-N-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-methanesulfonimidamide	37.2	(388)	I	[62609-65-8] [77/19]
C <sub>4</sub> HF <sub>9</sub> O <sub>2</sub> S	trifluoromethanesulfinic acid, 2,2,2-trifluoro-1-(trifluoromethyl)ethyl ester	39.3	(362)	HG	[52225-50-0] [74/25]
C <sub>4</sub> HF <sub>10</sub> N	1,1,1,2,3,3,3-heptafluoro-N-(pentafluoroethyl)ethanamine	26.4	(306)		[54566-81-3] [75/19]
C <sub>4</sub> HF <sub>10</sub> N	1,1,1,2,3,3,3-heptafluoro-N-(trifluoromethyl)-2-propanamine	28.1	(309)		[53684-05-2] [75/21]
C <sub>4</sub> HF <sub>10</sub> NOS	S,S-bis(pentafluoroethyl)sulfoximine	35.6	(366)	I	[34556-24-6] [72/25]
C <sub>4</sub> H <sub>2</sub>	1,3-butadiyne (237–283)	26.1	(268)	A	[460-12-8] [87/5][71/21]
	(191–282)	26.4	(267)		[47/5]
	(188–234)	33.4	(219)		[33/10][84/9]
	(195–273)	25.4	(258)		[26/3][84/9]
C <sub>4</sub> H <sub>2</sub> BrF <sub>6</sub> N	1-bromo-N,N-bis(trifluoromethyl)vinylamine				[19451-87-7]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>2</sub> BrF <sub>6</sub> N	(288–327)	32.8	(303)	A	[87/5]
	<i>cis</i> 2-bromo-N,N-bis(trifluoromethyl)vinylamine				[19483-21-7]
C <sub>4</sub> H <sub>2</sub> BrF <sub>6</sub> N	(314–346)	29.7	(329)	A	[87/5]
	<i>trans</i> 2-bromo-N,N-bis(trifluoromethyl)vinylamine				[19483-20-6]
C <sub>4</sub> H <sub>2</sub> BrF <sub>8</sub> N	(314–341)	30.0	(327)	A	[87/5]
	2-bromo-1,2-difluoro-N,N-bis(trifluoromethyl)ethylamine				[6857-63-2]
C <sub>4</sub> H <sub>2</sub> BrF <sub>8</sub> N	(323–348)	32.4	(328)	A	[87/5]
	2-bromo-2,2-difluoro-N,N-bis(trifluoromethyl)ethylamine				[6857-63-2]
C <sub>4</sub> H <sub>2</sub> Br <sub>2</sub> S	(313–348)	33.6	(328)	A	[87/5]
	3,4-dibromothiophene				[3141-26-2]
C <sub>4</sub> H <sub>2</sub> Cl <sub>2</sub> O <sub>2</sub>	(333–374)	32.1	(348)	A, I	[87/5][71/3]
	<i>trans</i> fumaroyl chloride				[99/16]
C <sub>4</sub> H <sub>2</sub> Cl <sub>2</sub> S	(288–433)	45.6	(303)	A	[627-53-4]
	2,5-dichlorothiophene				[87/5][47/5]
C <sub>4</sub> H <sub>2</sub> Cl <sub>2</sub> S	(323–425)	49.9	(338)		[99/16]
	(323–425)	36.2	(338)		[99/16]
	(323–425)	40.7	(338)		[81/24]
	(333–374)	33.7	(348)	A, I	[87/5][71/3]
					[99/16]
C <sub>4</sub> H <sub>2</sub> F <sub>4</sub>	1,1,4,4-tetrafluoro-1,3-butadiene				[407-70-5]
	(239–271)	22.4	(256)	A	[87/5]
C <sub>4</sub> H <sub>2</sub> F <sub>8</sub>	1,1,1,2,2,3,3,4-octafluorobutane				[662-35-1]
	(260–278)	28.9	(269)	EB	[97/22]
C <sub>4</sub> H <sub>2</sub> F <sub>8</sub> O	2-difluoromethoxy-1,1,1,3,3,3-hexafluoropropane				[26103-08-2]
	(283–315)	31.1	(298)	I	[02/19]
C <sub>4</sub> H <sub>2</sub> F <sub>6</sub> OS	trifluorothioacetic acid S-(1,2,2-trifluoroethyl) ester				[35709-12-7]
	(282–322)	34.3	(297)	A	[87/5][99/16]
C <sub>4</sub> H <sub>2</sub> F <sub>6</sub> O <sub>2</sub>	trifluoroacetic acid, 2,2,2-trifluoroethyl ester				[407-38-5]
		31.8	(330)	HG	[73/20]
C <sub>4</sub> H <sub>2</sub> F <sub>7</sub> S	<i>cis</i> 2-fluoro-N,N-bis(trifluoromethyl)vinylamine				[25273-51-2]
	(289–311)	29.1	(300)	A	[87/5]
C <sub>4</sub> H <sub>2</sub> F <sub>7</sub> S	<i>trans</i> 2-fluoro-N,N-bis(trifluoromethyl)vinylamine				[25211-47-6]
	(273–295)	28.5	(284)	A	[87/5]
C <sub>4</sub> H <sub>2</sub> F <sub>8</sub> O	1,1,1,2,2,3,3-heptafluoro-3-(fluoromethoxy)propane				[184899-81-8]
	(283–316)	31.0	(298)	I	[02/19]
C <sub>4</sub> H <sub>2</sub> N <sub>2</sub> O <sub>4</sub> S	2,4-dinitrothiophene				[5347-12-6]
	(388–523)	59.7	(403)	A	[87/5][71/21]
C <sub>4</sub> H <sub>2</sub> N <sub>2</sub> O <sub>4</sub> S	2,5-dinitrothiophene				[99/16]
	(388–523)	59.6	(403)		[59434-05-8]
C <sub>4</sub> H <sub>2</sub> O <sub>3</sub>	maleic anhydride				[108-31-6]
	(336–475)	49.1	(351)	A	[87/5]
	(326–350)	54.8			[49/28]
	(317–475)	56.7	(332)		[47/5]
C <sub>4</sub> H <sub>3</sub> BrF <sub>7</sub> N	2-bromo-2-fluoro-N,N-bis(trifluoromethyl)ethylamine				[25237-12-1]
	(329–255)	30.9	(342)	A	[87/5]
C <sub>4</sub> H <sub>3</sub> BrS	2-bromothiophene				[1003-09-4]
	(333–373)	27.9	(348)	A, I	[87/5][71/3]
C <sub>4</sub> H <sub>3</sub> BrS	3-bromothiophene				[99/16]
	(333–373)	28.9	(348)	A, I	[872-31-1]
C <sub>4</sub> H <sub>3</sub> ClF <sub>6</sub> O <sub>2</sub> S	chlorosulfurous acid, 2,2,2-trifluoro-1-methyl-1-(trifluoromethyl)ethyl ester				[57169-82-1]
		39.7			[75/41]
C <sub>4</sub> H <sub>3</sub> ClS	2-chlorothiophene				[96-43-5]
	(313–401)	34.7	(328)		[99/16]
	(320–401)	36.9	(335)		[99/16][81/24]
	(333–374)	34.4	(348)	A, I	[87/5][71/3]
C <sub>4</sub> H <sub>3</sub> Cl <sub>3</sub> OS	2,3,3-trichloro-2-propenethioic acid, O-methyl ester				[99/16]
	(383–423)	64.8		GC	[76619-91-5]
C <sub>4</sub> H <sub>3</sub> F <sub>5</sub> OS	trifluoroacetic acid, S-(2,2-difluoroethyl) ester				[80/24]
	(282–322)	39.3	(297)	A	[35709-11-6]
					[87/5][99/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>3</sub> F <sub>6</sub> NO <sub>2</sub>	N,N-bis(trifluoromethyl)acetamide-N-oxide (268–336)	40.6	(283)	A	[22743-78-8] [87/5]
C <sub>4</sub> H <sub>3</sub> F <sub>6</sub> O <sub>2</sub> P	bis(trifluoromethyl)acetoxyposphine (273–313)	41.0	(288)		[64/4][84/9] [375-01-9]
C <sub>4</sub> H <sub>3</sub> F <sub>7</sub> O	2,2,3,3,4,4,4-heptafluoro-1-butanol (273–298)	43.6	(286)	A, MM	[87/5][71/21] [67/4]
C <sub>4</sub> H <sub>3</sub> F <sub>7</sub> O	1-(2,2-difluoroethoxy)-1,1,2,2,2-pentafluoroethane (288–318)	31.5	(303)	I	[171182-95-9] [02/19]
C <sub>4</sub> H <sub>3</sub> F <sub>7</sub> O	1,1,2,2-tetrafluoro-1-(2,2,2-trifluoroethoxy)ethane (283–329)	34.0	(298)	I	[306-78-0] [02/19]
C <sub>4</sub> H <sub>3</sub> F <sub>7</sub> O	1,1,2,2-tetrafluoro-3-(trifluoromethoxy)propane (288–319)	31.3	(303)	I	[1683-81-4] [02/19]
C <sub>4</sub> H <sub>3</sub> F <sub>7</sub> O	1,1,1,3,3,3-hexafluoro-2-fluoromethoxypropane (288–331)	34.1	(303)	I	[28523-86-6] [02/19]
C <sub>4</sub> H <sub>3</sub> F <sub>7</sub> O	3-(difluoromethoxy)-1,1,1,2,2-pentafluoropropane (283–319)	31.2	(298)	I	[56860-81-2] [02/19]
C <sub>4</sub> H <sub>3</sub> F <sub>7</sub> O <sub>2</sub> S	fluorosulfurous acid, 2,2,2-trifluoro-1-methyl-1-(trifluoromethyl)ethyl ester 36.4				[57169-83-2] [75/41]
C <sub>4</sub> H <sub>3</sub> IS	2-iodothiophene (333–374)	29.0	(348)	A, I	[3437-95-4] [87/5][71/3] [99/16]
C <sub>4</sub> H <sub>3</sub> NO <sub>2</sub> S	2-nitrothiophene (378–443)	48.6	(393)		[609-40-5] [99/16]
	(321–498)	50.4	(336)	A	[87/5]
C <sub>4</sub> H <sub>4</sub>	1-butene-3-yne (180–278)	26.0	(236)	A	[689-97-4] [87/5][47/5]
C <sub>4</sub> H <sub>4</sub> BrF <sub>6</sub> N	2-bromo-N,N-bis(trifluoromethyl)ethylamine (323–356)	31.0	(338)	A	[1683-83-6] [87/5]
C <sub>4</sub> H <sub>4</sub> Cl <sub>2</sub>	1,2-dichloro-1,3-butadiene (260–308)	33.3	(275)	A	[3574-40-1] [87/5]
C <sub>4</sub> H <sub>4</sub> Cl <sub>2</sub>	2,3-dichloro-1,3-butadiene (299–368)	33.8	(314)	A	[1653-19-6] [87/5]
C <sub>4</sub> H <sub>4</sub> Cl <sub>2</sub> O <sub>2</sub>	succinyl chloride (312–466)	54.7	(327)	A	[543-20-4] [87/5][47/5]
C <sub>4</sub> H <sub>4</sub> Cl <sub>2</sub> O <sub>3</sub>	chloroacetic acid anhydride (340–490)	61.8	(355)	A	[541-88-8] [87/5][47/5]
C <sub>4</sub> H <sub>4</sub> Cl <sub>4</sub> O <sub>2</sub> S	3,3,4,4-tetrachlorotetrahydrothiophene-1,1-dioxide (303–348)	88.6	(318)	A	[3737-41-5] [87/5][99/16]
C <sub>4</sub> H <sub>4</sub> F <sub>4</sub> OS	trifluorothioacetic acid, S-(2-fluoroethyl) ester (282–322)	41.4	(297)	A	[35709-10-5] [87/5][99/16]
C <sub>4</sub> H <sub>4</sub> F <sub>6</sub> N <sub>2</sub> S	2,2,2-trifluoro-N-methyl-N'-(trifluoromethyl)thio]ethanimidamide (339–387)	34.9	(354)	A, I	[62067-10-1] [87/5][77/18] [99/16]
C <sub>4</sub> H <sub>4</sub> F <sub>6</sub> O	3-difluoromethoxy-1,1,2,2-tetrafluoropropane (283–349)	35.9	(298)	I	[35042-99-0] [02/19]
C <sub>4</sub> H <sub>4</sub> F <sub>6</sub> O	1,1,1,3,3,3-hexafluoro-2-methoxypropane (283–324)	32.6	(298)	I	[13171-18-1] [02/19]
C <sub>4</sub> H <sub>4</sub> F <sub>6</sub> O	1,1,1-trifluoro-2-(1,1,2-trifluoroethoxy)ethane (283–338)	35.4	(298)	I	[25449-61-0] [02/19]
C <sub>4</sub> H <sub>4</sub> F <sub>6</sub> O	1,1,1-trifluoro-2-(2,2,2-trifluoroethoxy)ethane (283–337)	35.0	(298)	I	[333-36-8] [02/19]
C <sub>4</sub> H <sub>4</sub> F <sub>6</sub> O	1-(1,1-difluoroethoxy)-1,1,2,2-tetrafluoroethane (288–352)	38.1	(303)	I	[50807-77-7] [02/19]
C <sub>4</sub> H <sub>4</sub> F <sub>6</sub> O	1,1,1,2,3,3-hexafluoro-3-methoxypropane (288–327)	32.4	(303)	I	[382-34-3] [02/19]
C <sub>4</sub> H <sub>4</sub> F <sub>6</sub> O	1,1,2,2,3,3-hexafluoro-1-methoxypropane (288–341)	34.5	(303)	I	[160620-20-2] [02/19]
C <sub>4</sub> H <sub>4</sub> F <sub>6</sub> O <sub>2</sub> S	trifluoromethanesulfinic acid, 2,2,2-trifluoro-1-methylethyl ester 36.8		(375)	HG	[52225-48-6] [74/25]
C <sub>4</sub> H <sub>4</sub> N <sub>2</sub>	pyrazine (354–426)	36.5 ± 0.2	(380)	EB	[290-37-9] [02/17]
	(354–426)	34.1 ± 0.4	(420)	EB	[02/17]
	(332–373)	37.9	(352)		[95/4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>4</sub> N <sub>2</sub>	pyrimidine	49.8±0.3	(298)	C	[289-95-2] [62/37]
C <sub>4</sub> H <sub>4</sub> N <sub>2</sub>	pyridazine	53.5±0.4	(298)	C	[289-80-5] [62/37]
C <sub>4</sub> H <sub>4</sub> N <sub>4</sub> O <sub>7</sub>	furazandimethanol dinitrate				[57449-43-1]
	(399–433)	58.7	(414)	A	[87/5][75/18]
C <sub>4</sub> H <sub>4</sub> N <sub>4</sub> O <sub>8</sub>	furazandimethanol dinitrate, 2-oxide				[57449-44-2]
	(413–453)	64.3	(428)	A	[87/5][75/18]
C <sub>4</sub> H <sub>4</sub> O	furan				[110-00-9]
	(238–356)	30.2	(253)	A	[87/5]
	(227–323)	28.2	(298)		[70/36]
	(275–334)	28.6	(290)		[52/17][84/9]
C <sub>4</sub> H <sub>4</sub> O <sub>2</sub>	diketene				[674-82-8]
	(297–388)	42.9	(312)	A	[87/5]
		42.9±0.1	(298)	C	[68/19]
C <sub>4</sub> H <sub>4</sub> O <sub>3</sub>	succinic anhydride				[108-30-5]
	(401–534)	57.3	(416)	A	[87/5]
C <sub>4</sub> H <sub>4</sub> O <sub>4</sub>	1,4-dioxane-2,5-dione				[502-97-6]
	(376–513)	50.4	(391)	A	[87/5][47/5]
C <sub>4</sub> H <sub>4</sub> S	thiophene				[110-02-1]
	(267–381)	35.8	(282)		[99/16]
	(333–373)	34.8	(348)	I	[71/3]
		34.6	(298)		[71/28]
	(300–366)	34.1	(315)	EB	[52/9]
	(311–393)	33.7	(326)		[49/7]
		33.6±0.1	(319)	C	[49/7]
		32.7±0.1	(336)	C	[49/7]
		31.5±0.1	(357)	C	[49/7]
	(344–363)	32.6	(353)		[45/8]
C <sub>4</sub> H <sub>5</sub> Cl	2-chloro-1,3-butadiene				[126-99-8]
	(243–263)	29.6	(253)	A	[87/5]
	(279–333)	29.6	(294)	A	[87/5][71/21]
	(293–333)	30.9	(308)		[64/7][84/9]
C <sub>4</sub> H <sub>5</sub> ClO	methacryloyl chloride				[920-46-7]
	(313–372)	36.1	(328)	A	[87/5]
C <sub>4</sub> H <sub>5</sub> ClO <sub>3</sub>	ethyl chloroglyoxylate				[4755-77-5]
	(268–408)	44.9	(283)		[47/5]
C <sub>4</sub> H <sub>5</sub> Cl <sub>3</sub> O <sub>2</sub>	ethyl trichloroacetate				[515-84-4]
	(293–440)	49.0	(308)	A	[87/5]
		51.0±0.1	(298)	C	[72/41]
	(317–368)	47.5	(332)		[59/9][84/9]
C <sub>4</sub> H <sub>5</sub> Cl <sub>5</sub>	1,2,2,3,4-pentachlorobutane				[2431-52-9]
	(368–498)	62.6	(383)	A	[87/5][68/29]
C <sub>4</sub> H <sub>5</sub> F <sub>2</sub> I	1,1-difluoro-4-iodo-1-butene				
	(318–342)	40.6	(330)	A	[87/5]
C <sub>4</sub> H <sub>5</sub> F <sub>3</sub> O	vinyl 2,2,2-trifluoroethyl ether				[406-90-6]
	(293–317)	32.0	(305)	A	[87/5]
C <sub>4</sub> H <sub>5</sub> F <sub>3</sub> OS	trifluorothioacetic acid, S-ethyl ester				[383-64-2]
	(273–313)	42.0	(288)	A	[87/5]
C <sub>4</sub> H <sub>5</sub> F <sub>3</sub> O <sub>2</sub>	trifluoroacetic acid, ethyl ester				[383-63-1]
		34.7	(335)	HG	[73/20]
C <sub>4</sub> H <sub>5</sub> F <sub>5</sub>	1,1,1,3,3-pentafluorobutane				[406-58-6]
	(303–358)	29.2	(318)		[02/12]
C <sub>4</sub> H <sub>5</sub> F <sub>5</sub> O	1,1,1,2,2-pentafluoro-3-methoxypropane				[378-16-5]
	(283–321)	31.6	(298)	I	[02/19]
C <sub>4</sub> H <sub>5</sub> F <sub>5</sub> O	1-(difluoromethoxy)-1,1,2-trifluoroethane				[69948-24-9]
	(283–316)	31.7	(298)	I	[02/19]
C <sub>4</sub> H <sub>5</sub> F <sub>6</sub> OP	ethyl bis(trifluoromethyl)phosphinite				
	(248–328)	33.2	(288)		[59/21]
C <sub>4</sub> H <sub>5</sub> N	3-butenitrile				[109-75-1]
	(293–417)	40.3	(308)	A	[87/5]
		40.0	(298)		[69/14]
	(254–392)	41.6	(268)		[47/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>5</sub> N	(E) 2-butenitrile	40.0	(298)		[627-26-9] [69/14]
C <sub>4</sub> H <sub>5</sub> N	(Z) 2-butenitrile	38.9	(298)		[1190-76-7] [69/14]
C <sub>4</sub> H <sub>5</sub> N	<i>cis</i> crotonitrile (297–405)	37.1	(312)	A	[1190-76-7] [87/5]
	(244–381)	39.0	(259)		[47/5]
C <sub>4</sub> H <sub>5</sub> N	<i>trans</i> crotonitrile (292–420)	39.7	(307)	A	[627-26-7] [87/5]
	(254–395)	40.5	(268)		[47/5]
C <sub>4</sub> H <sub>5</sub> N	methacrylonitrile (273–373)	36.5	(288)	A	[126-98-7] [87/5]
	(229–363)	35.4	(243)		[47/5]
C <sub>4</sub> H <sub>5</sub> N	cyclopropylcyanide (310–391)	41.9±0.1	(298)	C	[5500-21-0] [82/5]
	(310–391)	39.4	(325)	BG	[71/2]
	(310–391)	39.8±0.4	(298)	BG	[71/2]
C <sub>4</sub> H <sub>5</sub> N	pyrrole (285–329)	42.5	(300)		[109-97-7] [92/18]
	(313–373)	41.9	(328)	I	[71/3]
	(338–440)	42.5	(353)	A, EB, IPM	[87/5][68/4] [67/10]
		41.8			[61/26]
	(333–373)	41.9	(348)		[47/5]
C <sub>4</sub> DH <sub>4</sub> N	N-deutero pyrrole (285–329)	42.9	(300)		[10162-82-0] [92/18]
C <sub>4</sub> H <sub>5</sub> NO	3-methylisoxazole	39.8±0.2	(298)	C	[30842-90-1] [78/9]
C <sub>4</sub> H <sub>5</sub> NO	5-methylisoxazole	39.7±0.2	(298)	C	[5765-44-6] [78/9]
C <sub>4</sub> H <sub>5</sub> NO <sub>2</sub>	methyl cyanoacetate (292–322)	66.2±0.9	(298)	GS	[105-34-0] [95/11]
	(385–573)	54.9	(400)	A	[87/5][71/21]
C <sub>4</sub> H <sub>5</sub> NO <sub>2</sub>	succinimide (416–561)	66.9	(431)	A	[123-56-8] [87/5]
	(388–560)	73.5	(403)		[47/5]
C <sub>4</sub> H <sub>5</sub> NS	allyl isothiocyanate (277–323)	47.6		GC	[57-06-7] [97/27]
	(370–430)	56.8	(385)	A	[87/5]
	(283–323)	42.1	(298)		[35/3][84/9] [99/16]
C <sub>4</sub> H <sub>5</sub> NS	2-methylthiazole (353–402)	39.4	(368)		[3581-87-1] [87/5][99/16]
	(342–404)	40.0	(357)	A	[87/5][69/29]
C <sub>4</sub> H <sub>5</sub> NS	4-methylthiazole (346–408)	40.8	(361)	A	[693-95-8] [87/5]
		43.8±0.2	(298)	C	[66/35]
C <sub>4</sub> H <sub>5</sub> N <sub>7</sub> O <sub>12</sub>	2,2,2-trinitro-N-(2,2,2-trinitroethyl)ethanamine (337–349)	80.8	(343)	A	[34880-53-0] [87/5]
C <sub>4</sub> H <sub>6</sub>	1,2-butadiene (243–291)	25.3	(276)	A	[590-19-2] [87/5]
	(204–243)	26.4	(228)	A	[87/5]
		23.9	(298)		[71/28]
	(184–291)	25.2	(276)		[47/5]
		24.6±0.1	(273)	C	[47/13]
C <sub>4</sub> H <sub>6</sub>	1,3-butadiene (270–318)	23.0	(285)	A	[106-99-0] [87/5]
	(193–213)	25.7	(203)	A	[87/5]
	(213–276)	23.6	(261)	A	[87/5]
	(315–382)	22.4	(330)	A	[87/5]
	(380–425)	22.9	(395)	A	[87/5]
		21.1	(298)		[71/28]
	(198–271)	23.7	(256)		[33/11][84/9]
	(191–249)	24.7	(235)		[32/1][84/9]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>6</sub>	1-butyne (205–289)	26.0	(274)	A	[107-00-6]
		23.7	(298)		[87/5]
		25.8±0.1	(263)	C	[71/28]
		24.5±0.1	(281)		[50/10]
C <sub>4</sub> H <sub>6</sub>	2-butyne (240–308)	29.0	(255)	A	[503-17-3]
		26.7	(298)		[87/5]
		26.9±0.1	(291)	C	[71/28]
C <sub>4</sub> H <sub>6</sub>	cyclobutene (206–275)	24.7	(260)	A	[822-35-2]
		24.6	(260)		[87/5]
C <sub>4</sub> H <sub>6</sub> ClFO <sub>2</sub>	2-chloroethyl fluoroacetate (273–333)	56.4	(288)	A, GS	[41/8][84/9]
C <sub>4</sub> H <sub>6</sub> ClF <sub>3</sub> O	2-chloro-1,1,2-trifluoroethyl ethyl ether	37.5±0.1	(298)	C	[87/5][48/14]
		36.5±0.1	(313)		[71/21]
		35.3±0.1	(328)		[310-71-4]
		34.2±0.1	(343)		[84/7]
		32.9±0.1	(358)		[84/7]
C <sub>4</sub> H <sub>6</sub> Cl <sub>2</sub>	3,4-dichloro-1-butene (320–396)	38.0	(335)	A	[760-23-6]
C <sub>4</sub> H <sub>6</sub> Cl <sub>2</sub>	<i>trans</i> 1,3-dichloro-2-butene (306–401)	39.3	(321)	A	[87/5]
C <sub>4</sub> H <sub>6</sub> Cl <sub>2</sub>	<i>trans</i> 1,4-dichloro-2-butene (340–379)	45.6	(355)	A	[7415-31-8]
C <sub>4</sub> H <sub>6</sub> Cl <sub>2</sub> O <sub>2</sub>	2-chloroethyl chloroacetate (319–478)	53.3	(334)	A	[87/5]
C <sub>4</sub> H <sub>6</sub> Cl <sub>2</sub> O <sub>2</sub>	ethyl dichloroacetate	50.6±0.1	(298)	C	[110-57-6]
		46.2	(298)		[87/5]
C <sub>4</sub> H <sub>6</sub> Cl <sub>4</sub>	1,2,3,3-tetrachlorobutane (349–464)	54.2	(364)	A	[3848-12-2]
C <sub>4</sub> H <sub>6</sub> FN	4-fluorobutyronitrile (273–333)	45.2	(288)	A, GS	[87/5][47/5]
C <sub>4</sub> H <sub>6</sub> F <sub>2</sub> O <sub>2</sub>	2-fluoroethyl fluoroacetate (273–333)	55.1	(288)	A, GS	[535-15-9]
C <sub>4</sub> H <sub>6</sub> F <sub>3</sub> I	1,1,1-trifluoro-3-iodobutane (304–321)	32.4	(312)	A	[72/41]
C <sub>4</sub> H <sub>6</sub> F <sub>3</sub> I	1,1,1-trifluoro-3-iodo-2-methylpropane (298–368)	30.4	(313)	A	[87/5][48/14]
C <sub>4</sub> H <sub>6</sub> F <sub>3</sub> NO <sub>3</sub>	methyl N-trifluoromethyl-N-methoxyurethane	39.0			[71/21]
C <sub>4</sub> H <sub>6</sub> F <sub>4</sub> O	1-ethoxy-1,1,2,2-tetrafluoroethane (283–330)	33.0	(298)	I	[540-87-4]
C <sub>4</sub> H <sub>6</sub> F <sub>4</sub> O	1,1,2,2-tetrafluoro-3-methoxypropane (293–347)	35.2	(308)	I	[87/5]
C <sub>4</sub> H <sub>6</sub> F <sub>6</sub> N <sub>2</sub> O	1,1-dimethyl-2,2-bis(trifluoromethyl)hydrazine-2-oxide (287–356)	36.4	(302)	A	[26653-47-4]
C <sub>4</sub> H <sub>6</sub> F <sub>6</sub> P <sub>2</sub> S	methyl(trifluoromethyl)phosphinothious acid, anhydrosulfide (316–342)	46.7	(329)		[87/5]
C <sub>4</sub> H <sub>6</sub> N <sub>2</sub> O	dimethylfurazan (353–427)	51.1	(368)	A	[79/28]
C <sub>4</sub> H <sub>6</sub> N <sub>2</sub> O <sub>2</sub>	dimethylfurazan-2-oxide (353–493)	57.0	(368)	A	[512-51-6]
C <sub>4</sub> H <sub>6</sub> N <sub>4</sub> O <sub>8</sub>	1,1,1,3-tetranitro-2-methylpropane (304–327)	75.7	(316)	A	[02/19]
C <sub>4</sub> H <sub>6</sub> N <sub>4</sub> O <sub>11</sub>	2-nitro-2-hydroxymethyl-1,3-propanedioltrinitrate (313–353)	72.9	(328)	A	[60598-17-6]
C <sub>4</sub> H <sub>6</sub> O	<i>trans</i> crotonaldehyde (314–411)	36.6±0.1	(320)	EB	[02/19]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>6</sub> O	(314–411)	34.5±0.2	(360)	EB	[02/15]
	(314–411)	32.1±0.5	(400)	EB	[02/15]
	crotonaldehyde				[4170-30-3]
		37.3±0.4	(298)	C	[96/8]
		38.8	(325)	EB	[94/16]
		35.1±0.5	(332)		[88/4]
C <sub>4</sub> H <sub>6</sub> O	(288–376)	35.1±0.5	(332)		[88/4]
	(304–377)	37.3	(319)		[79/15]
	(306–376)	36.8	(321)	A	[87/5][73/23]
					[84/9]
					[1191-95-3]
C <sub>4</sub> H <sub>6</sub> O	cyclobutanone				[1191-95-3]
	(301–344)	37.7	(322)	EB	[94/16]
	(283–313)	38.4	(298)	A	[87/5]
	(317–380)	36.3	(332)	A, EB	[87/5][76/10]
C <sub>4</sub> H <sub>6</sub> O	(249–298)	38.5	(273)		[42/7][84/9]
	divinyl ether				[109-93-3]
	(253–323)	29.2	(268)	A	[87/5]
C <sub>4</sub> H <sub>6</sub> O	(253–323)	26.1	(301)	I	[33/13]
	methyl vinyl ketone				[78-94-4]
	(279–355)	32.9	(294)	A	[87/5]
C <sub>4</sub> H <sub>6</sub> O	(300–355)	33.6	(315)	A	[87/5]
	2,3-dihydrofuran				[1191-99-7]
	(302–260)	30.8±0.1	(300)	EB	[02/21]
C <sub>4</sub> H <sub>6</sub> OS	(302–360)	28.6±0.3	(340)	EB	[02/21]
	divinyl sulfoxide				[1115-15-7]
		51.2±0.9	(298)	C	[89/12]
C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	cyclopropane carboxylic acid				[1759-53-1]
	(357–473)	58.9±0.3	(340)	EB	[02/21]
	(357–473)	55.7±0.2	(380)	EB	[02/21]
	(357–473)	52.4±0.2	(420)	EB	[02/21]
	(357–473)	48.8±0.4	(460)	EB	[02/21]
C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	2,3-butanedione (biacetyl)				[431-03-8]
	(273–348)	38.5	(288)	A, I	[87/5][72/12]
	(273–293)	39.6±0.2	(283)		[54/8]
C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	<i>cis</i> 2-butenic acid				[503-64-0]
	(306–445)	55.8	(321)	A	[87/5][47/5]
C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	<i>trans</i> 2-butenic acid				[107-93-7]
	(353–458)	56.7	(368)	A	[87/5][47/5]
C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	2-butyne-1,4-diol				[110-65-6]
	(418–520)	69.0	(433)	A	[87/5][66/14]
C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	$\gamma$ -butyrolactone				[71/21]
	(378–406)	49.5±0.1	(392)	EB	[96-48-0]
	(378–406)	55.2±1.3	(298)	EB	[91/7]
	(345–370)	51.8±0.6	(357)	MM	[91/7]
	(345–370)	55.6±1.4	(298)	MM	[91/7]
	(392–474)	48.2	(407)	A	[87/5]
		54.4±0.4	(298)	C	[90/1]
					[79-41-4]
C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	2-methyl-2-propenoic acid				[79-41-4]
	(321–435)	47.5±0.4	(298)	C	[96/8]
	(298–434)	53.9	(336)	A	[87/5]
C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	(298–434)	51.6	(313)	A	[87/5][47/5]
	methyl acrylate				[96-33-3]
	(316–354)	34.2	(331)	A	[87/5]
	(299–337)	28.8	(314)	BG	[71/2]
C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	(229–353)	38.0	(244)		[47/5]
	vinyl acetate				[108-05-4]
	(294–346)	34.4	(309)	A	[87/5][71/21]
C <sub>4</sub> H <sub>6</sub> O <sub>2</sub> S					[63/21][84/9]
	diacetyl sulfide				[3232-39-1]
	(325–355)	54.2	(340)		[99/16]
C <sub>4</sub> H <sub>6</sub> O <sub>2</sub> S	(325–355)	50.9	(340)	A	[87/5]
	divinyl sulfone				[77-77-0]
		56.4±0.9	(298)	C	[89/12]
	56.5±0.8	(298)		[69/24]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>6</sub> O <sub>3</sub>	acetic anhydride				[108-24-7]
	(349–429)	43.3	(364)	EB	[87/6]
	(413–526)	47.6	(428)	A	[87/5]
	(320–413)	45.5	(335)	A	[87/5][71/21]
C <sub>4</sub> H <sub>6</sub> O <sub>3</sub>	(336–412)	44.2	(351)		[59/1]
	propylene carbonate				[108-32-7]
	(412–466)	54.4	(427)	A	[87/5]
	(368–462)	57.8	(383)	EB	[82/8]
	(368–462)	55.2	(423)	EB	[82/8]
	(368–462)	53.0	(443)	EB	[82/8]
C <sub>4</sub> H <sub>6</sub> O <sub>4</sub>	(293–353)	55.2	(323)		[72/37]
	(323–370)	33.8	(338)	A, MM	[87/5][71/1]
	dimethyl oxalate				[553-90-2]
C <sub>4</sub> H <sub>6</sub> S	(347–485)	44.7	(416)	HG, EB	[88/3]
	(293–437)	48.8	(308)	A	[87/5][47/5]
C <sub>4</sub> H <sub>6</sub> S	2-vinylthiirane				[5954-75-6]
C <sub>4</sub> H <sub>6</sub> S	(273–335)	38.7	(288)	A	[87/5][99/16]
	divinyl sulfide				[627-51-0]
C <sub>4</sub> H <sub>7</sub> Br		38.3±0.7	(298)	C	[89/12]
	<i>cis</i> 1-bromo-1-butene				[31849-78-2]
C <sub>4</sub> H <sub>7</sub> Br	(280–397)	35.1	(295)	A	[87/5][71/21]
	(229–359)	36.5	(244)		[47/5]
C <sub>4</sub> H <sub>7</sub> Br	<i>trans</i> 1-bromo-1-butene				[32620-08-9]
C <sub>4</sub> H <sub>7</sub> Br	(234–368)	36.1	(249)	A	[87/5][47/5]
	2-bromo-1-butene				[23074-36-4]
C <sub>4</sub> H <sub>7</sub> Br	(276–391)	34.5	(291)	A	[87/5][71/21]
	(226–354)	36.1	(241)		[47/5]
C <sub>4</sub> H <sub>7</sub> Br	<i>cis</i> 2-bromo-2-butene				[3017-71-8]
C <sub>4</sub> H <sub>7</sub> Br	(234–367)	36.5	(249)	A	[87/5][47/5]
	<i>trans</i> 2-bromo-2-butene				[3017-68-3]
C <sub>4</sub> H <sub>7</sub> BrO	(228–359)	35.7	(243)	A	[87/5][47/5]
	1-bromo-2-butanone				[816-40-0]
C <sub>4</sub> H <sub>7</sub> BrO	(322–428)	49.9	(337)	A	[87/5]
	(279–420)	47.7	(294)		[47/5]
C <sub>4</sub> H <sub>7</sub> BrO	3-bromo-2-butanone				[814-75-5]
C <sub>4</sub> H <sub>7</sub> BrO	(306–409)	46.4	(321)	A	[87/5]
	isobutyl bromide				[2736-37-0]
C <sub>4</sub> H <sub>7</sub> Br <sub>3</sub>	(286–436)	45.7	(301)	A	[87/5][47/5]
	1,3-dibromo-2-(bromomethyl)propane				[87/5]
C <sub>4</sub> H <sub>7</sub> Br <sub>3</sub>	(475–660)	66.1	(490)	A	[87/5]
	1,1,2-tribromobutane				[3675-68-1]
C <sub>4</sub> H <sub>7</sub> Br <sub>3</sub>	(361–490)	49.4	(376)	A	[87/5]
	1,2,2-tribromobutane				[3675-69-2]
C <sub>4</sub> H <sub>7</sub> Br <sub>3</sub>	(356–487)	48.4	(371)	A	[87/5]
	(314–486)	50.7	(329)		[47/5]
C <sub>4</sub> H <sub>7</sub> Br <sub>3</sub>	1,2,3-tribromobutane				[632-05-3]
	(394–546)	54.1	(409)	A	[87/5][71/21]
C <sub>4</sub> H <sub>7</sub> Br <sub>3</sub>	(318–489)	51.3	(333)		[47/5]
	1,2,4-tribromobutane				[38300-67-3]
C <sub>4</sub> H <sub>7</sub> Br <sub>3</sub>	(390–541)	53.5	(405)	A	[87/5][71/21]
	2,2,3-tribromobutane				[62127-47-3]
C <sub>4</sub> H <sub>7</sub> Cl	(311–480)	51.7	(326)	A	[87/5][47/5]
	1-chloro-2-methyl-1-propene				[513-37-1]
C <sub>4</sub> H <sub>7</sub> Cl	(285–343)	33.2	(300)	A	[87/5]
	3-chloro-2-methyl-1-propene				[563-47-3]
C <sub>4</sub> H <sub>7</sub> ClO	(285–348)	33.3	(300)	A	[87/5]
	1-chloro-2-butanone				[616-27-3]
C <sub>4</sub> H <sub>7</sub> ClO	(307–411)	49.2	(322)	A	[87/5][71/21]
	3-chloro-2-butanone				[4091-39-8]
C <sub>4</sub> H <sub>7</sub> ClO	(313–389)	38.8	(328)	A	[87/5]
	3-chloro-2-butene-1-ol				[40605-42-3]
C <sub>4</sub> H <sub>7</sub> ClO <sub>2</sub>	(345–437)	50.0	(360)	A	[87/5]
	propyl chloroformate				[109-61-5]
	(293–303)	40.7±0.4	(298)		[90/12]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>7</sub> ClO <sub>2</sub>	ethyl chloroacetate (274–418)	40.7±0.4	(298)	C	[90/12]
		45.0	(289)	A	[105-39-5] [87/5]
		49.5±0.1	(298)	C	[72/41]
C <sub>4</sub> H <sub>7</sub> ClS	2-butene-3-chloro-1-thiol (341–397)	48.5	(313)		[28/2][84/9]
		48.2	(356)	A	[87/5]
C <sub>4</sub> H <sub>7</sub> Cl <sub>2</sub> O <sub>4</sub> P	dimethyl-(2,2-dichlorovinyl) phosphate (283–387)	68.0	(298)	A	[62-73-7] [87/5]
C <sub>4</sub> H <sub>7</sub> Cl <sub>3</sub>	1,2,3-trichlorobutane (273–442)	41.3	(288)	A	[18338-40-4] [87/5][47/5]
C <sub>4</sub> H <sub>7</sub> FOS	2-fluoroethyl thioacetate (273–333)	44.7	(288)	A, GS	[462-31-7] [87/5][48/14]
C <sub>4</sub> H <sub>7</sub> FO <sub>2</sub>	ethyl fluoroacetate (273–333)	41.9	(288)	A, GS	[459-72-3] [87/5][48/14]
					[71/21]
C <sub>4</sub> H <sub>7</sub> F <sub>3</sub>	1,1,1-trifluorobutane (226–320)	28.1	(241)	A	[460-34-4] [87/5][71/21]
C <sub>4</sub> H <sub>7</sub> IO <sub>2</sub>	ethyl iodoacetate (301–362)	52.1	(316)	A	[623-48-3] [87/5][47/3]
C <sub>4</sub> H <sub>7</sub> N	isobutyronitrile (324–354)	35.9	(339)		[78-82-0] [79/18]
		37.5	(321)	BG	[71/2]
					[109-74-0]
C <sub>4</sub> H <sub>7</sub> N	butyronitrile (303–493)	39.2±0.1	(298)	C	[82/5]
		38.8	(318)	EB	[71/4]
		37.7	(347)	A, EB	[87/5][47/5] [73/12]
C <sub>4</sub> H <sub>7</sub> NO	acetone cyanohydrin (355–393)	106.5	(370)	A	[75-86-5] [87/5]
C <sub>4</sub> H <sub>7</sub> NO	2-hydroxybutyronitrile (314–452)	57.9	(329)	A	[4476-02-2] [87/5][47/5]
C <sub>4</sub> H <sub>7</sub> NO	2-methyl-2-oxazoline	39.1±0.3	(298)	C	[1120-64-5] [76/27]
					[79-39-0]
C <sub>4</sub> H <sub>7</sub> NO	methacrylamide (390–418)	86.3	(404)	A	[87/5]
C <sub>4</sub> H <sub>7</sub> NO	ethoxyacetone nitrile (273–313)	46.5±0.3	(298)	GS	[62957-60-2] [95/11]
C <sub>4</sub> H <sub>7</sub> NO	3-methoxypropionitrile (328–438)	47.6	(343)	A	[33695-59-9] [87/5]
C <sub>4</sub> H <sub>7</sub> NO	2-pyrrolidone	73.6±1.3	(298)	EB, BG	[616-45-5] [98/14]
		41.7±0.6		A	[95/26]
		69.1±0.5	(298)	C	[90/1]
		60.0	(410)	A	[87/5]
					[625-77-4]
C <sub>4</sub> H <sub>7</sub> NO <sub>2</sub>	diacetamide (368–496)	59.7	(383)	A	[87/5]
		64.6	(358)		[47/5]
					[2783-12-2]
C <sub>4</sub> H <sub>7</sub> NO <sub>2</sub>	2-nitro-1-butene (273–333)	44.0	(288)	A	[87/5][71/21]
C <sub>4</sub> H <sub>7</sub> N <sub>3</sub> O <sub>9</sub>	1,2,4-butanetriol trinitrate (293–313)	60.0±11.3	(303)	A, GS	[6859-60-5] [87/5][57/11]
C <sub>4</sub> H <sub>8</sub>	1-butene (200–274)	23.3	(259)	A	[87/5]
		28.3	(177)	A	[87/5]
		22.8	(282)	A	[87/5]
		22.0	(357)	A	[87/5]
		22.5	(282)	A	[87/5]
		20.1	(298)		[71/28]
		25.3	(202)		[46/7]
		24.5	(219)		[46/7]
		23.3	(242)		[46/7]
		21.9	(267)		[46/7]
					[40/3][84/9]
			(216–273)	23.2	(258)

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>8</sub>	<i>cis</i> 2-butene				[590-18-1]
	(221–290)	24.4	(275)	A	[87/5]
	(276–325)	24.0	(291)	A	[87/5]
	(324–386)	23.6	(339)	A	[87/5]
	(383–431)	23.6	(398)	A	[87/5]
C <sub>4</sub> H <sub>8</sub>	<i>trans</i> 2-butene				[71/28]
	(195–267)	22.1	(298)		[42/8][84/9]
		25.3	(252)		[624-64-6]
	(205–287)	23.9	(272)	A	[87/5]
	(273–315)	23.6	(288)	A	[87/5]
C <sub>4</sub> H <sub>8</sub>		23.3	(328)	A	[87/5]
	(313–385)	23.2	(397)	A	[87/5]
	(382–428)	21.3	(298)		[71/28]
		22.8 ± 0.1	(274)	C	[45/3]
	(203–274)	24.2	(259)		[45/3][84/9]
C <sub>4</sub> H <sub>8</sub>		23.9	(268)		[40/3][84/9]
	(205–283)				[287-23-0]
C <sub>4</sub> H <sub>8</sub>	cyclobutane				[87/5]
C <sub>4</sub> H <sub>8</sub>	(198–287)	25.2	(272)	A	[53/12][84/9]
	(217–285)	25.2	(270)		[594-11-6]
C <sub>4</sub> H <sub>8</sub>	methylcyclopropane				[87/5][47/5]
C <sub>4</sub> H <sub>8</sub>	(177–278)	24.8	(263)	A	[115-11-7]
					[87/5]
	(212–279)	23.1	(264)	A	[87/5]
	(266–313)	22.7	(281)	A	[87/5]
	(310–376)	22.2	(325)	A	[87/5]
C <sub>4</sub> H <sub>8</sub>		22.3	(386)	A	[87/5]
	(371–418)	20.6	(298)		[71/28]
		22.2	(350)		[42/6]
	(303–398)	22.2	(350)		[40/3][84/9]
	(216–273)	22.8	(258)		[51070-66-7]
C <sub>4</sub> H <sub>8</sub> BrClO	2-bromoethyl 2-chloroethyl ether				[87/5][47/5]
C <sub>4</sub> H <sub>8</sub> Br <sub>2</sub>		53.3	(324)	A	[62168-25-6]
	(309–469)				[87/5][56/16]
C <sub>4</sub> H <sub>8</sub> Br <sub>2</sub>	1,1-dibromobutane				[71/21]
	(342–477)	45.8	(357)	A, EST	[533-98-2]
					[87/5]
	(338–425)	43.5	(353)	A	[75/16][75/15]
	(330–425)	45.9	(298)		[75/15]
C <sub>4</sub> H <sub>8</sub> Br <sub>2</sub>		45.6 ± 0.7	(298)	EB	[87/5][47/5]
	(281–439)	42.8	(296)	A	[41/6]
	(273–333)	45.1	(300)		[107-80-2]
					[87/5]
C <sub>4</sub> H <sub>8</sub> Br <sub>2</sub>	1,3-dibromobutane				[110-52-1]
C <sub>4</sub> H <sub>8</sub> Br <sub>2</sub>	(351–450)	44.7	(366)	A	[94/19]
					[87/5][71/21]
	(375–520)	52.6	(298)	GC	[47/5]
C <sub>4</sub> H <sub>8</sub> Br <sub>2</sub>		51.4	(390)	A	[5780-13-2]
	(305–470)	49.4	(320)		[87/5][47/5]
					[598-71-0]
C <sub>4</sub> H <sub>8</sub> Br <sub>2</sub>	<i>meso</i> 2,3-dibromobutane				[87/5]
C <sub>4</sub> H <sub>8</sub> Br <sub>2</sub>	(274–431)	41.7	(289)	A	[594-34-3]
					[74/2]
C <sub>4</sub> H <sub>8</sub> Br <sub>2</sub>	<i>threo</i> 2,3-dibromobutane				[87/5][47/5]
C <sub>4</sub> H <sub>8</sub> Br <sub>2</sub>	(278–434)	40.9	(293)	A	[28148-04-1]
					[87/5][47/5]
C <sub>4</sub> H <sub>8</sub> Br <sub>2</sub>	1,2-dibromo-2-methylpropane				[5414-19-7]
	(244–422)	43.3 ± 0.1	(259)	C	[541-33-3]
		33.3		A	[91/2]
C <sub>4</sub> H <sub>8</sub> Br <sub>2</sub>					[87/5]
	(287–448)	45.1	(302)	A	[87/5][47/5]
C <sub>4</sub> H <sub>8</sub> Br <sub>2</sub> O	<i>bis</i> (2-bromoethyl) ether				[87/5][47/5]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>		55.1	(335)	A	[541-33-3]
	(320–486)				[91/2]
		39.5	(298)		[87/5]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>	1,1-dichlorobutane				[87/5]
	(310–390)	38.7	(319)	A	[77/14]
	(304–386)	39.4 ± 0.6	(298)	EB	[87/5][56/16]
		38.8	(318)	EST	[616-21-7]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>					[92/7]
	(303–428)	38.8	(318)	EST	
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>	1,2-dichlorobutane				
		40.1 ± 0.1	(298)	C	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		40.2±0.1	(298)	C	[89/10]
	(312–394)	39.0	(327)	A	[87/5]
	(310–390)	40.4	(298)		[82/2][91/2]
		40.1±0.6	(298)	EB	[75/16]
	(249–397)	38.1	(264)	A	[87/5][47/5]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>	1,3-dichlorobutane				[1190-22-3]
		42.2±0.1	(298)	C	[92/7]
	(320–400)	42.3	(298)		[91/2]
		42.3±1.8	(298)	C	[90/11]
	(318–407)	40.5	(333)	A	[87/5]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>	1,4-dichlorobutane				[110-56-2]
		46.7	(298)	GC	[94/19]
		46.5±0.1	(298)	C	[92/7]
	(325–425)	46.4	(298)		[91/2]
		46.4±0.1	(298)	C	[90/11]
		46.4±0.1	(298)	C	[89/10]
	(336–425)	43.4	(351)	A	[87/5][71/21]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>	2,2-dichlorobutane				[4279-22-5]
		36.3±0.1	(298)	C	[92/7]
	(300–370)	36.7	(298)		[91/2]
	(293–376)	36.4	(308)	A	[87/5]
		33.7±0.6	(298)	EB	[77/14]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>	<i>meso</i> 2,3-dichlorobutane				
		38.4	(298)	C	[92/7][93/18]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>	( <i>dl</i> ) 2,3-dichlorobutane				
		39.7	(298)	C	[93/18]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>	2,3-dichlorobutane				[7581-97-7]
	(247–389)	39.6	(262)	A	[87/5]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>	1,1-dichloro-2-methylpropane				[598-76-5]
	(242–379)	38.7	(257)	A	[87/5]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>	1,2-dichloro-2-methylpropane				[594-37-6]
	(247–381)	40.4	(262)	A	[87/5][47/5]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>	1,3-dichloro-2-methylpropane				[616-19-3]
	(270–408)	45.1	(285)	A	[87/5][47/5]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub> O	<i>bis</i> (2-chloroethyl) ether				[111-44-4]
	(297–452)	49.8	(312)	A	[87/5][47/5]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub> S	<i>bis</i> (2-chloroethyl) sulfide				[505-60-2]
	(288–358)	59.6	(303)	A, MM	[87/5][47/6]
					[84/9]
	(353–393)	50.3	(373)		[43/8]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub> S <sub>3</sub>	<i>bis</i> (2-chloroethyl) trisulfide				[19149-77-0]
	(293–333)	68.2	(308)	A, GS	[87/5][48/9]
					[99/16]
C <sub>4</sub> H <sub>8</sub> F <sub>2</sub>	1,1-difluorobutane				[353-81-1]
	(246–347)	31.0	(261)	A, EST	[87/5][56/16]
					[71/21]
C <sub>4</sub> H <sub>8</sub> F <sub>2</sub>	2,2-difluorobutane				[353-81-1]
	(238–336)	30.0	(253)	A	[87/5][71/21]
C <sub>4</sub> H <sub>8</sub> F <sub>2</sub> O <sub>4</sub> S	<i>bis</i> (2-fluoroethyl) sulfate				[381-46-4]
	(273–333)	63.9	(288)	A, GS	[87/5][48/14]
					[99/16]
C <sub>4</sub> H <sub>8</sub> I <sub>2</sub>	1,4-diiodobutane				[628-21-7]
		59.0	(298)	GC	[94/19]
C <sub>4</sub> H <sub>8</sub> N <sub>2</sub>	(dimethylamino)acetonitrile				[926-64-7]
	(277–307)	45.4±0.6		GS	[97/10]
C <sub>4</sub> H <sub>8</sub> N <sub>2</sub>	1,4,5,6-tetrahydropyrimidine				[1606-49-1]
	(330–395)	75.6±2.0	(298)	IPM	[96/4]
C <sub>4</sub> H <sub>8</sub> N <sub>2</sub> O <sub>6</sub>	1,3-butanediol dinitrate				[6423-44-5]
	(293–313)	71.4±7.1	(303)	A, GS	[87/5][57/5]
C <sub>4</sub> H <sub>8</sub> N <sub>2</sub> O <sub>6</sub>	1,4-butanediol dinitrate				[3457-91-8]
	(293–313)	57.4±0.8	(303)	A, GS	[87/5][57/5]
C <sub>4</sub> H <sub>8</sub> N <sub>2</sub> O <sub>7</sub>	diethyleneglycol dinitrate				[693-21-0]
	(293–333)	94.3	(308)	A	[87/5]
C <sub>4</sub> H <sub>8</sub> O	2-butanone				[78-93-3]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(294–342)	34.6	(309)	A	[87/5]
	(353–403)	32.5	(368)	A	[87/5]
	(397–479)	31.6	(412)	A	[87/5]
	(473–537)	31.1	(488)	A	[87/5]
		34.8±0.1	(298)	C	[83/3]
		34.5±0.1	(298)	C	[79/1]
	(258–362)	35.6	(273)		[78/20]
		34.7	(298)		[75/8]
	(315–363)	33.9	(330)	A, EB, GS	[87/5][75/8]
		33.8±0.1	(314)	C	[61/17]
		32.3±0.1	(338)	C	[61/17]
		31.3±0.1	(352)	C	[61/17]
		30.5±0.1	(363)	C	[61/17]
		30.0±0.1	(370)	C	[61/17]
	(314–370)	33.9	(329)		[47/5]
C <sub>4</sub> H <sub>8</sub> O	2-methyl-2-propen-1-ol (323–373)	51.9	(298)	CGC	[513-42-8] [95/21]
C <sub>4</sub> H <sub>8</sub> O	3-buten-1-ol				[627-27-0]
		50.9±0.1	(313)	C	[96/9]
		48.8±0.1	(328)	C	[96/9]
		46.7±0.1	(343)	C	[96/9]
C <sub>4</sub> H <sub>8</sub> O	( <i>dl</i> ) 3-buten-2-ol (304–370)	39.2	(319)	A	[6118-14-5] [87/5]
C <sub>4</sub> H <sub>8</sub> O	butyraldehyde (313–353)	33.2	(298)	CGC	[123-72-8] [95/21]
	(293–349)	34.2	(308)	A	[87/5]
	(330–348)	32.9	(339)	EB	[63/15]
	(304–347)	33.3	(319)		[59/5][84/9]
	(258–353)	33.9	(306)		[38/7]
C <sub>4</sub> H <sub>8</sub> O	( <i>dl</i> ) 1,2-epoxybutane (254–347)	24.7	(269)	A	[106-88-7] [87/5]
C <sub>4</sub> H <sub>8</sub> O	1,2-epoxy-2-methylpropane (2,2-dimethyloxirane) (204–329)	30.6	(219)	A	[558-30-5] [87/5][47/5]
C <sub>4</sub> H <sub>8</sub> O	ethyl vinyl ether (223–309)	29.5	(238)	A	[109-92-2] [87/5]
C <sub>4</sub> H <sub>8</sub> O	isobutyraldehyde (313–353)	32.3	(298)	CGC	[78-84-2] [95/21]
	(313–324)	31.4	(318)		[84/30]
	(309–337)	31.8	(324)		[76/20]
	(333–347)	33.4	(340)	EB	[63/15]
	(283–337)	32.8	(298)	A	[87/5][59/5] [64/21]
C <sub>4</sub> H <sub>8</sub> O	2-methoxy-1-propene (281–309)	28.3±0.1	(295)		[116-11-0] [88/4]
C <sub>4</sub> H <sub>8</sub> O	<i>cis</i> methyl propenyl ether (293–318)	30.6	(305)	A	[4188-68-5] [87/5]
C <sub>4</sub> H <sub>8</sub> O	<i>trans</i> methyl propenyl ether (293–322)	29.5	(307)	A	[4188-69-6] [87/5]
C <sub>4</sub> H <sub>8</sub> O	tetrahydrofuran (273–339)	33.1	(288)	A	[109-99-9] [87/5]
	(399–479)	29.0	(414)	A	[87/5]
	(467–541)	29.6	(482)	A	[87/5]
		32.0	(298)	C	[81/8]
	(235–340)	32.5±0.2	(288)		[76/16]
	(302–339)	30.8	(320)		[75/33]
	(273–308)	32.8	(288)		[70/22][84/9]
	(296–373)	31.9	(311)		[70/23][84/9]
	(224–360)	32.9	(298)		[70/36]
C <sub>4</sub> H <sub>8</sub> OS	1,4-oxathiane (342–411)	42.1	(378)		[15980-15-1] [99/16]
	(342–411)	44.8	(357)	A	[87/5]
C <sub>4</sub> H <sub>8</sub> OS	S-ethyl thiolacetate	40.0±0.2	(298)	C	[625-60-5] [66/2]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	2-methyl-1,3-dioxolane (270–308)	43.0±0.6		GS	[497-26-7] [98/21][02/32]
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	<i>cis</i> 2-butene-1,4-diol (373–508)	74.7	(388)	A	[6117-80-2] [87/5]
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	1,1-dimethoxyethene (303–362)	39.6	(333)		[95/29]
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	butanoic acid (391–429)	50.3	(406)	EB	[107-92-6] [01/15]
	(278–308)	58.5±0.3	(293)	GS	[00/6]
	(278–308)	58.2±0.3	(298)	GS	[00/6]
	(353–393)	60.7	(298)	CGC	[95/21]
	(437–592)	47.7	(452)	A	[87/5]
	(301–358)	51.1	(316)	A	[87/5]
	(355–453)	53.2	(370)	A	[87/5][71/21]
monomer		40.5±0.1	(298)	C	[70/8]
		58±4	(298)	C	[70/8]
	(363–436)	52.0	(378)		[49/1][84/9]
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	1,3-dioxane				[505-22-6]
		39.1±0.1	(298)	C	[82/9]
		35.6±0.4			[59/23]
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	1,4-dioxane (285–375)	38.0	(300)	A	[123-91-1] [87/5]
	(329–372)	36.5	(350)		[84/20]
		38.6±0.1	(298)	C	[82/9]
	(293–398)	37.3	(308)		[63/22][84/9]
	(283–353)	37.0	(318)		[36/6]
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	ethyl acetate (300–390)	34.1	(315)		[141-78-6] [97/11]
	(313–353)	35.0	(298)	CGC	[95/21]
	(271–373)	36.7	(286)		[81/11][84/9]
		35.6±0.1	(298)	C	[80/13]
		34.6±0.1	(313)	C	[80/13]
		31.4±0.1	(343)	C	[80/13]
		33.8±0.1	(326)	C	[77/12]
		33.4±0.1	(331)	C	[77/12]
		32.4±0.1	(344)	C	[77/12]
		31.9±0.1	(351)	C	[77/12]
		31.0±0.1	(363)	C	[77/12]
		34.0	(320)		[76/8]
		31.9	(350)		[76/8]
		35.1±0.2	(298)	C	[66/2]
	(288–351)	35.7	(303)	A	[87/5][65/3]
					[71/21]
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	3-hydroxy-2-butanone (273–418)	38.4	(288)	A	[513-86-0] [87/5]
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	2-methylpropanoic acid (278–308)	55.8±0.3	(293)	GS	[79-31-2] [00/6]
	(278–308)	55.5±0.3	(298)	GS	[00/6]
	(344–445)	51.6	(359)	EB	[87/9]
	(288–428)	50.9	(303)	A	[87/5]
	(428–562)	45.4	(443)	A	[87/5]
	(228–243)	53.4±3	(398)	TE	[79/4]
monomer		35.5±0.1	(298)	C	[70/8]
		53±4	(298)	C	[70/8]
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	isopropyl formate (221–342)	34.5	(236)	A	[625-55-8] [87/5][47/5]
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	methyl propionate (313–363)	28.9	(298)	CGC	[922-67-8] [95/21]
		35.6±0.4	(298)	GC	[87/17]
	(231–353)	39.1	(246)	A	[87/5]
	(353–486)	32.8	(368)	A	[87/5]
		35.9±0.1	(298)	C	[80/13]
		34.9±0.1	(313)	C	[80/13]
		36.3±0.3	(298)	GCC	[80/5]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>		35.8±0.1	(298)	C	[79/1]
		34.2±0.1	(326)	C	[77/12]
		33.8±0.1	(331)	C	[77/12]
		32.8±0.1	(344)	C	[77/12]
		32.1±0.1	(355)	C	[77/12]
		31.5±0.1	(363)	C	[77/12]
	(293–353)	35.9	(308)	A	[87/5][65/3]
	propyl formate				[110-74-7]
	(302–353)	35.3	(317)		[93/8]
	(354–518)	32.7	(369)	A	[87/5]
	(230–355)	36.8	(245)	A	[87/5]
		37.5±0.1	(298)	C	[80/13]
		36.5±0.1	(313)	C	[80/13]
		35.8±0.1	(326)	C	[76/14]
		35.4±0.1	(331)	C	[76/14]
	34.4±0.1	(344)	C	[76/14]	
	33.8±0.1	(351)	C	[76/14]	
	33.5±0.1	(355)	C	[76/14]	
	32.9±0.1	(363)	C	[76/14]	
	(299–355)	35.6	(314)		[28/1][84/9]
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub> S	allyl methyl sulfone				[16215-14-8]
	(405–450)	68.2	(420)	A	[87/5][99/16]
C <sub>4</sub> H <sub>8</sub> O <sub>2</sub> S	tetrahydrothiophene-1,1-dioxide (sulfolane)				[126-33-0]
	(423–529)	59.0	(438)		[99/16]
	(364–529)	53.7	(379)		[99/16]
	(424–542)	67.8±0.8	(298)	EB	[97/8]
	(373–453)	58.2	(413)	TGA	[87/18]
	(303–328)	31.0	(315)	A	[87/5]
	(413–558)	58.7	(428)	A	[87/5]
	(360–400)	54.5	(380)		[84/18]
C <sub>4</sub> H <sub>8</sub> O <sub>3</sub>	ethoxyacetic acid				[627-03-2]
	(280–310)	69.1	(295)	A	[87/5]
C <sub>4</sub> H <sub>8</sub> O <sub>3</sub>	2-methoxy-1,3-dioxolane				[19693-75-5]
	(278–308)	46.4±0.8	(298)	GS	[02/32]
	(278–308)	46.8±0.8		GS	[95/7]
C <sub>4</sub> H <sub>8</sub> O <sub>3</sub>	ethyl glycolate				[623-50-7]
	(287–432)	47.1	(302)	A	[87/5][47/5]
C <sub>4</sub> H <sub>8</sub> O <sub>3</sub>	2-hydroxyisobutyric acid				[594-61-6]
	(371–485)	67.5	(386)	A	[87/5]
C <sub>4</sub> H <sub>8</sub> O <sub>3</sub>	methyl 3-hydroxypropionate				[6149-41-3]
	(330–343)	60.0	(336)	A	[87/5]
C <sub>4</sub> H <sub>8</sub> O <sub>3</sub>	methoxyacetic acid, methyl ester				[6290-49-9]
	(285–310)	39.3	(297)	A	[87/5]
C <sub>4</sub> H <sub>8</sub> O <sub>3</sub>	( <i>dl</i> ) methyl lactate				[547-64-8]
	(313–418)	44.7	(328)	A	[87/5]
C <sub>4</sub> H <sub>8</sub> O <sub>3</sub>	peroxybutyric acid				[13122-71-9]
	(273–393)	45.5	(288)	A	[87/5][71/21]
C <sub>4</sub> H <sub>8</sub> S	2,2-dimethylthiirane				[3772-13-2]
	(273–473)	37.0	(288)	A	[87/5][71/21]
					[99/16]
C <sub>4</sub> H <sub>8</sub> S	2-ethylthiirane				[3195-86-6]
	(298–450)	39.7	(313)	A	[87/5][71/21]
C <sub>4</sub> H <sub>8</sub> S	tetrahydrothiophene				[110-01-0]
	(331–401)	37.7	(346)	EB	[71/28]
	(343–434)	37.1	(358)	A, EB	[52/9]
					[87/5][52/10]
					[66/5]
C <sub>4</sub> H <sub>8</sub> S <sub>2</sub>	1,3-dithiane				[505-23-7]
		66.9±0.4		GC	[89/16]
C <sub>4</sub> H <sub>8</sub> S <sub>2</sub>	1,4-dithiane				[505-29-3]
	(389–437)	48.7	(404)		[99/16]
		68.9±0.5		GC	[89/16]
	(388–437)	47.9	(403)	A	[87/5]
C <sub>4</sub> H <sub>9</sub> Br	1-bromobutane				[109-65-9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(323–363)	36.4	(298)		[95/21]
	(340–370)	36.4	(298)		[91/2]
	(338–373)	34.6	(353)	A, EB	[87/5][77/8]
		35.6±0.1	(322)	C	[77/8]
		34.9±0.1	(332)	C	[77/8]
		34.5±0.1	(339)	C	[77/8]
		33.7±0.1	(352)	C	[77/8]
		33.0±0.1	(366)	C	[77/8]
		36.6±0.1	(298)	C	[68/1]
		36.7±0.1	(298)	C	[66/2]
	(273–400)	37.5	(288)	A, EST	[87/5][61/13] [71/21]
	(293–343)	33.5	(308)		[29/2][84/9]
C <sub>4</sub> H <sub>9</sub> Br	2-bromobutane				[78-76-2]
	(281–403)	33.9	(296)	A	[87/5][71/21]
		34.5±0.1	(298)	C	[68/1]
		34.8±0.1	(298)	C	[66/2]
C <sub>4</sub> H <sub>9</sub> Br	1-bromo-2-methylpropane				[78-77-3]
	(305–363)	34.1	(320)	A, EB	[87/5][77/8]
		33.1±0.1	(330)	C	[77/8]
		32.6±0.1	(341)	C	[77/8]
		32.0±0.1	(353)	C	[77/8]
		31.4±0.1	(366)	C	[77/8]
	(281–404)	34.0	(296)	A	[87/5][71/21]
		34.9±0.1	(298)	C	[68/1]
C <sub>4</sub> H <sub>9</sub> Br	2-bromo-2-methylpropane				[507-19-7]
	(248–346)	31.4	(263)	A	[87/5]
	(270–345)	31.0	(298)		[87/9][91/2]
	(298–323)	31.5	(313)		[69/10]
		31.8±0.1	(298)	C	[68/1]
	(273–346)	31.2	(288)		[51/5][84/9]
C <sub>4</sub> H <sub>9</sub> BrO	1-bromo-2-butanol				[2482-57-7]
	(296–418)	58.4	(311)	A	[87/5][47/5]
C <sub>4</sub> H <sub>9</sub> Cl	1-chlorobutane				[109-69-3]
	(260–350)	33.5	(298)		[84/9][91/2]
		33.5±0.1	(298)	C	[81/4]
		32.7±0.1	(313)	C	[81/4]
		31.8±0.1	(328)	C	[81/4]
		30.9±0.1	(343)	C	[81/4]
		30.0±0.1	(358)	C	[81/4]
		29.4±0.1	(358)	C	[81/4]
	(256–352)	35.6	(271)	DTA	[69/5]
		33.5±0.1	(298)	C	[68/1]
	(257–389)	35.0	(272)	A, EST	[87/5][61/13] [71/21]
	(293–343)	37.2	(308)		[29/2][84/9]
C <sub>4</sub> H <sub>9</sub> Cl	2-chlorobutane				[78-86-4]
	(315–341)	30.9	(328)	EB	[96/27]
	(266–377)	33.1	(281)	A	[87/5]
		31.5±0.1	(298)	C	[81/4]
		30.7±0.1	(313)	C	[81/4]
		29.9±0.1	(328)	C	[81/4]
		29.1±0.1	(343)	C	[81/4]
		28.2±0.1	(358)	C	[81/4]
		31.6±0.1	(298)	C	[68/1]
	(273–312)	31.8	(288)		[28/3][84/9]
C <sub>4</sub> H <sub>9</sub> Cl	1-chloro-2-methylpropane				[513-36-0]
	(219–342)	36.1	(234)	A	[87/5][47/5]
		31.7±0.1	(298)	C	[68/1]
C <sub>4</sub> H <sub>9</sub> Cl	2-chloro-2-methylpropane				[507-20-0]
	(313–353)	28.6	(298)	CGC	[95/21]
	(253–358)	32.3	(268)	A	[87/5][71/21]
	(295–323)	27.8	(309)	A	[87/5][69/10]
	(295–323)	27.0	(310)		[69/10][84/9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>4</sub> H <sub>9</sub> ClO <sub>2</sub>	(254–324)	29.0±0.1	(298)	C	[68/1]	
		29.1	(269)		[47/5]	
C <sub>4</sub> H <sub>9</sub> ClO <sub>2</sub> S	2-(2-chloroethoxy)ethanol (326–469)	59.8	(341)	A	[628-89-7] [87/5][47/5]	
	butyl sulfonyl chloride (283–373)	55.7	(298)		[99/16]	
C <sub>4</sub> H <sub>9</sub> ClS	(373–474)	52.9	(388)	A	[99/16]	
	(253–283)	60.2	(268)		[87/5][99/16]	
	ethyl (2-chloroethyl) sulfide (293–333)	44.4	(308)		A, GS	[693-07-2] [87/5][48/9] [71/21]
C <sub>4</sub> H <sub>9</sub> F	1-fluorobutane (222–326)	30.1	(237)	A, EST	[2366-52-1] [87/5][61/13]	
					[71/21]	
C <sub>4</sub> H <sub>9</sub> F	2-fluorobutane (233–329)	29.2	(248)	A	[359-01-3] [87/5][71/21]	
	2-fluoro-2-methylpropane (222–315)	27.6	(237)		[353-61-7] [87/5][71/21]	
C <sub>4</sub> H <sub>9</sub> FO	4-fluoro-1-butanol (323–343)	64.0	(333)	A	[372-93-0] [87/5]	
					[542-69-8]	
C <sub>4</sub> H <sub>9</sub> I	1-iodobutane (313–353)	40.3	(298)	CGC	[95/21]	
	(313–353)	39.7	(298)	CGC	[95/21]	
		40.6±0.1	(298)	C	[68/1]	
	(292–431)	39.9	(307)	A, EST	[87/5][61/13] [71/21]	
C <sub>4</sub> H <sub>9</sub> I	2-iodobutane (313–353)	37.9	(298)	CGC	[513-48-4] [95/21]	
	(313–353)	38.8	(298)	CGC	[95/21]	
		38.5±0.1	(298)	C	[68/1]	
C <sub>4</sub> H <sub>9</sub> I	1-iodo-2-methylpropane (256–393)	41.1	(271)	A	[513-38-2] [87/5][47/5]	
		38.8±0.1	(298)		C	[68/1]
C <sub>4</sub> H <sub>9</sub> I	2-iodo-2-methylpropane (313–353)	37.0	(298)	CGC	[558-17-8] [95/21]	
	(236–294)	34.8	(279)		A	[87/5][71/21]
		35.4±0.1	(298)	C	[68/1]	
					[123-75-1]	
C <sub>4</sub> H <sub>9</sub> N	pyrrolidine (273–313)	38.4	(288)	A	[87/5]	
	(316–394)	35.8	(331)		EB, IPM	[87/5][59/4] [68/4]
		35.8±0.1	(322)		C	[59/4]
C <sub>4</sub> H <sub>9</sub> NO		34.5±0.1	(340)	C	[59/4]	
		33.0±0.1	(360)	C	[59/4]	
	(294–360)	37.3	(309)	C	[59/10][84/9]	
	2-butanone oxime (308–425)	53.7	(323)	A	[96-29-7] [87/5]	
	(318–343)	55.5	(330)		[87/5]	
C <sub>4</sub> H <sub>9</sub> NO	N-ethylacetamide	64.9±0.2	(298)	C	[625-50-3] [84/6]	
	buyraldehyde oxime (313–343)	55.8	(328)		A	[110-69-0] [87/5]
C <sub>4</sub> H <sub>9</sub> NO	butyramide (397–504)	64.0	(412)	A	[541-35-5] [87/5]	
	N,N-dimethylacetamide (371–423)	45.1	(386)		A	[127-19-5] [87/5]
C <sub>4</sub> H <sub>9</sub> NO		50.2	(298)	A	[85/7][85/6]	
	(297–438)	67.9	(312)		[74/7][84/9]	
	(303–363)	45.2	(318)	A	[87/5][68/3]	
	N-methylpropionamide	66.9±1.3	(298)	EB, BG	[1187-58-2] [98/14]	
C <sub>4</sub> H <sub>9</sub> NO		64.9±0.3	(298)	A	[84/6]	
	(303–363)	54.4	(318)		[87/5][68/3]	
	morpholine					[110-91-8]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(274–303)	45.6±0.4	(288)	GS	[98/13]
	(274–303)	45.0±0.4	(298)	GS	[98/13]
	(313–343)	44.3	(328)	TGA	[87/18]
	(273–318)	45.3	(288)	A	[87/5]
	(317–443)	42.3	(332)	A	[87/5]
C <sub>4</sub> H <sub>9</sub> NO <sub>2</sub>	( <i>dl</i> ) 2-aminobutyric acid (400–418)	132.0	(409)	A	[2835-81-6] [87/5]
C <sub>4</sub> H <sub>9</sub> NO <sub>2</sub>	S 2-aminobutyric acid (449–462)	162.5	(455)	A	[1492-24-6] [87/5]
C <sub>4</sub> H <sub>9</sub> NO <sub>2</sub>	sec-butyl nitrite (267–287)	29.6	(277)	A	[924-43-6] [87/5][37/3]
C <sub>4</sub> H <sub>9</sub> NO <sub>2</sub>	<i>tert</i> -butyl nitrite (267–337)	30.8	(282)	A	[540-80-7] [87/5][37/3]
C <sub>4</sub> H <sub>9</sub> NO <sub>2</sub>	lactic acid N-methyl amide (359–415)	72.7	(374)	A	[87/5]
C <sub>4</sub> H <sub>9</sub> NO <sub>2</sub>	N-methyl carbamic acid, ethyl ester (299–443)	51.7	(314)	A	[105-40-8] [87/5][47/5]
C <sub>4</sub> H <sub>9</sub> NO <sub>2</sub>	2-methyl-1-nitropropane (347–415)	41.1	(362)	A, EB	[625-74-1] [87/5][56/15] [71/21]
C <sub>4</sub> H <sub>9</sub> NO <sub>2</sub>	2-methyl-2-nitropropane (334–401)	39.1	(349)	EB	[594-70-7] [87/5][56/15] [71/21]
C <sub>4</sub> H <sub>9</sub> NO <sub>2</sub>	1-nitrobutane (313–353)	47.0	(298)	CGC	[627-05-4] [95/21]
	(357–426)	42.7	(372)	A, EB	[87/5][56/15] [71/21]
C <sub>4</sub> H <sub>9</sub> NO <sub>2</sub>	( <i>dl</i> ) 2-nitrobutane (345–413)	40.3	(360)	A, EB	[600-24-8] [87/5][56/15] [71/21]
C <sub>4</sub> H <sub>9</sub> NO <sub>2</sub>	propyl carbamate (325–468)	61.6	(340)	A	[627-12-3] [87/5][47/5]
C <sub>4</sub> H <sub>9</sub> NO <sub>3</sub>	butyl nitrate (273–343)	44.1	(288)	A	[928-45-0] [87/5][71/21] [57/2]
C <sub>4</sub> H <sub>9</sub> NO <sub>3</sub>	isobutyl nitrate (273–343)	42.8	(288)	A	[543-29-3] [87/5][71/21] [57/2]
C <sub>4</sub> H <sub>9</sub> N <sub>3</sub> O <sub>2</sub>	<i>bis</i> (nitrosoethyl)amine (291–450)	46.4	(306)	A	[87/5]
C <sub>4</sub> H <sub>9</sub> P	allymethylphosphine (242–291)	34.4	(276)	A	[62778-93-2] [87/5]
C <sub>4</sub> H <sub>9</sub> P	3-butenylphosphine (252–295)	34.5	(273)		[114596-01-9] [88/13]
C <sub>4</sub> H <sub>9</sub> P	phospholane (257–347)	37.4	(272)	A	[3466-00-0] [87/5]
C <sub>4</sub> H <sub>10</sub>	butane (300–315)	22.9	(308)		[106-97-8] [97/16]
	(195–292)	23.4	(277)	A	[87/5]
	(273–321)	23.2	(288)	A	[87/5]
	(316–383)	22.6	(331)	A	[87/5]
	(375–425)	22.8	(390)	A	[87/5]
	(135–213)	27.0	(198)	A	[87/5][73/11]
		22.4	(298)		[71/28]
	(206–279)	23.1	(264)		[45/4][84/9]
	(195–273)	23.9	(258)		[40/10][84/9]
C <sub>4</sub> H <sub>10</sub>	2-methylpropene (isobutene) (303–333)	21.5	(318)		[75-28-5] [99/29]
	(186–280)	22.4	(265)	A	[87/5]
	(121–187)	26.9	(172)	A	[87/5]
	(263–306)	21.9	(278)	A	[87/5]
	(301–366)	21.4	(316)	A	[87/5]
	(361–408)	21.6	(376)	A	[87/5]
	(277–344)	21.6	(292)		[76/19][84/9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>10</sub> F <sub>3</sub> NOS	(188–262)	21.3	(286)		[71/28]
	(diethylamino)trifluoroxy sulfur	22.6	(247)		[40/11][84/9]
C <sub>4</sub> H <sub>10</sub> F <sub>3</sub> NS	(329–354)	49.5	(341)	A	[26458-94-6] [87/5][99/16]
	(N-ethylethaneaminato)trifluoro sulfur				[38078-09-0]
C <sub>4</sub> H <sub>10</sub> N <sub>2</sub>	(318–340)	45.2	(329)	A	[87/5][99/16]
	piperazine				[275-02-5]
C <sub>4</sub> H <sub>10</sub> N <sub>2</sub> O <sub>2</sub>	(417–460)	50.1 ± 1.9	(298)	EB	[97/7]
	diethylnitramine				[7119-92-8]
C <sub>4</sub> H <sub>10</sub> O	(338–378)	49.7	(358)		[58/22]
	1-butanol				[71-36-3]
C <sub>4</sub> H <sub>10</sub> O	(357–389)	46.0	(372)	EB	[01/15]
		38.2	(423)		[00/20]
		29.6	(473)		[00/20]
		20.8	(523)		[00/20]
		44.1			[99/32]
	(323–373)	52.5	(298)	CGC	[95/21]
	(315–390)	49.9	(330)		[95/13]
	(364–403)	45.3	(379)		[93/7]
	(283–323)	55.2	(298)		[92/9]
	(376–399)	45.3	(387)	A	[87/5]
	(323–413)	50.1	(338)	A	[87/5]
	(413–550)	41.9	(428)	A	[87/5]
	(209–251)	51.6	(236)	A	[87/5]
	(376–397)	45.4	(386)	A	[87/5]
	(391–429)	43.8	(406)	A	[87/5]
	(415–501)	41.9	(430)	A	[87/5]
	(497–563)	37.4	(512)	A	[87/5]
	(243–303)	51.7	(298)		[83/14]
	(329–391)	49.0	(344)		[82/13]
		52.1	(298)	C	[82/6]
	(288–404)	55.0	(303)		[73/26]
		49.5 ± 0.1	(333)	C	[73/13]
		48.6 ± 0.1	(343)	C	[73/13]
		47.5 ± 0.1	(353)	C	[73/13]
		46.4 ± 0.1	(363)	C	[73/13]
		52.34 ± 0.02	(298)	C	[71/27]
	(351–397)	47.2	(366)	EB	[87/5][70/2]
	(295–391)	53.0	(310)	DTA	[69/5]
		52.3 ± 0.1	(298)	C	[66/2]
	47.2 ± 0.1	(356)	C	[65/16]	
	45.4 ± 0.1	(381)	C	[65/16]	
	43.1 ± 0.1	(391)	C	[65/16]	
(419–563)	42.1	(434)		[63/20]	
(362–398)	46.6	(377)	EB	[63/8]	
	51.0 ± 0.1	(298)	C	[63/2]	
(337–390)	48.3	(352)		[59/11][84/9]	
(314–390)	48.3	(352)		[1898][84/9]	
C <sub>4</sub> H <sub>10</sub> O	2-butanol				[78-92-2]
	(306–373)	47.7	(321)		[95/13]
	(303–403)	49.3	(318)	A	[87/5]
	(359–381)	43.2	(370)	A	[87/5]
	(372–524)	47.9	(387)	A	[87/5]
	(210–303)	57.5	(225)	A	[87/5]
	(359–380)	43.2	(369)	A	[87/5]
	(368–404)	42.0	(383)	A	[87/5]
	(395–485)	39.6	(410)	A	[87/5]
	(476–536)	35.0	(491)	A	[87/5]
	(307–373)	47.8	(322)		[82/13]
	(293–380)	53.2	(308)		[78/20]
	(319–372)	44.1	(334)		[75/23]
	(280–314)	50.2	(295)		[75/1]
	(298–393)	48.1	(313)		[73/26]
		49.74 ± 0.02	(298)	C	[71/27]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>4</sub> H <sub>10</sub> O	(323–373)	46.3	(338)		[69/19][84/9]	
		49.7±0.1	(298)	C	[66/2]	
	(422–538)	38.4	(437)		[63/20]	
	(345–381)	44.1	(360)	EB	[63/8]	
		48.5	(298)	C	[63/2]	
	(340–379)	44.7	(355)	EB	[87/5][62/15]	
					[70/2]	
		45.3±0.1	(340)	C	[62/15]	
		43.3±0.1	(355)	C	[62/15]	
		41.9±0.1	(365)	C	[62/15]	
		40.8±0.1	(372)	C	[62/15]	
	2-methyl-1-propanol					[78-83-1]
	(350–400)	45.4	(365)	EB	[93/5]	
	(313–411)	49.5	(328)	A	[87/5]	
	(381–524)	46.0	(396)	A	[87/5]	
	(202–243)	55.0	(228)	A	[87/5]	
	(369–389)	44.2	(379)	A	[87/5]	
	(383–416)	42.6	(398)	A	[87/5]	
	(401–493)	41.1	(416)	A	[87/5]	
	(483–548)	36.2	(498)	A	[87/5]	
		50.8±0.1	(298)	C	[84/5]	
		49.7±0.1	(313)	C	[84/5]	
		48.3±0.1	(328)	C	[84/5]	
		45.0±0.1	(358)	C	[84/5]	
	(320–382)	48.1	(335)		[82/13]	
	(293–388)	52.6	(308)		[73/26]	
		50.79±0.02	(298)	C	[71/27]	
	46.2±0.1	(347)	C	[70/20]		
	44.2±0.1	(363)	C	[70/20]		
	41.9±0.1	(381)	C	[70/20]		
(342–389)	46.2	(357)	A, EB	[87/5][70/2]		
(333–381)	47.0	(348)		[69/19][84/9]		
	50.8±0.1	(298)	C	[66/2]		
(423–548)	40.1	(438)		[63/20]		
(353–388)	45.2	(368)	EB	[63/8]		
	49.8	(298)	C	[63/2]		
C <sub>4</sub> H <sub>10</sub> O	2-methyl-2-propanol				[75-65-0]	
	(321–359)	43.4	(336)		[99/30]	
	(323–373)	45.4	(298)	CGC	[95/21]	
	(299–375)	46.2	(314)	A	[87/5]	
	(347–363)	41.4	(355)	A	[87/5]	
	(356–480)	43.2	(371)	A	[87/5]	
	(347–363)	41.4	(355)	A	[87/5]	
	(357–461)	39.8	(372)	A	[87/5]	
	(453–506)	33.6	(468)	A	[87/5]	
		46.2±0.1	(303)	C	[84/5]	
		44.9±0.1	(313)	C	[84/5]	
		43.0±0.1	(328)	C	[84/5]	
		41.0±0.1	(343)	C	[84/5]	
		37.2±0.1	(368)	C	[84/5]	
	(306–357)	44.7	(321)		[82/13]	
	(293–376)	46.5	(308)		[73/26]	
		46.94±0.02	(298)	C	[71/27]	
	(313–355)	44.2	(328)		[69/19][84/9]	
		46.6±0.1	(298)	C	[66/2]	
	(333–363)	42.1	(348)	EB	[63/18]	
		42.5±0.1	(330)	C	[63/18]	
		41.3±0.1	(340)	C	[63/18]	
		40.4±0.1	(346)	C	[63/18]	
		40.0±0.1	(349)	C	[63/18]	
		39.0±0.1	(356)	C	[63/18]	
	(329–363)	42.6	(344)	EB	[87/5][70/2]	
					[63/18]	
	44.9	(298)	C	[63/2]		

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>10</sub> O	(373–506)	38.7	(388)		[63/20]
	(293–363)	44.7	(323)		[28/5]
	diethyl ether				[60-29-7]
	(286–329)	28.1	(301)	A	[87/5]
	(307–457)	26.9	(322)	A	[87/5]
	(305–360)	27.5	(320)	A	[87/5]
	(351–420)	26.6	(366)	A	[87/5]
	(417–467)	26.7	(432)	A	[87/5]
		27.1±0.1	(298)	C	[80/3]
C <sub>4</sub> H <sub>10</sub> O	(250–329)	27.2	(298)		[76/2]
	(250–329)	29.5	(265)	A	[87/5][72/9]
					[76/2]
	(213–293)	28.4	(278)		[22/2]
	isopropyl methyl ether				[598-53-8]
	(250–325)	28.8	(265)	A	[87/5]
		26.4±0.1	(298)	C	[80/3]
	(260–325)	28.4	(275)	A	[87/5][76/2]
		26.4	(298)		[76/2]
C <sub>4</sub> H <sub>10</sub> O	methyl propyl ether				[557-17-5]
	(325–407)	27.2	(340)	A	[87/5]
	(401–476)	26.7	(416)	A	[87/5]
	(273–321)	30.7	(288)	A	[87/5]
		27.6±0.1	(298)	C	[80/3]
	(253–328)	29.7	(268)	A	[87/5][76/2]
		27.5	(298)		[76/2]
		27.9±0.2	(298)	C	[75/3]
		29.7	(288)		[10/1][84/9]
C <sub>4</sub> H <sub>10</sub> O <sub>2</sub>	(±) 1,2-butanediol				[26171-83-5]
C <sub>4</sub> H <sub>10</sub> O <sub>2</sub>	(372–506)	71.6±0.8	(298)	EB	[96/3]
	(±) 1,3-butanediol				[107-88-0]
	(365–518)	74.5±1.0	(298)	EB	[96/3]
	(362–483)	67.6	(377)	A	[87/5]
	(373–423)	59.7	(398)		[35/4]
C <sub>4</sub> H <sub>10</sub> O <sub>2</sub>	(423–480)	58.1	(451)		[35/4]
	1,4-butanediol				[110-63-4]
		79.3±0.5	(298)	C	[88/14]
	(380–510)	72.0	(395)	A	[87/5]
	( <i>dl</i> ) 2,3-butanediol				[513-85-9]
C <sub>4</sub> H <sub>10</sub> O <sub>2</sub>	(348–457)	62.5	(363)	A	[87/5]
	(317–455)	58.4	(332)		[47/5]
	(353–403)	57.9	(378)		[35/4]
	(303–456)	55.7	(380)		[35/4]
	<i>meso</i> 2,3-butanediol				[46/12]
C <sub>4</sub> H <sub>10</sub> O <sub>2</sub>	(413–453)	54.6	(433)		[46/12]
	( <i>l</i> ) 2,3-butanediol				[46/12]
C <sub>4</sub> H <sub>10</sub> O <sub>2</sub>	(413–453)	52.6	(433)		[46/12]
	diethylperoxide				[628-37-5]
C <sub>4</sub> H <sub>10</sub> O <sub>2</sub>	(253–333)	29.0	(268)	A	[87/5][51/10]
					[71/21]
	1,1-dimethoxyethane				[534-15-6]
C <sub>4</sub> H <sub>10</sub> O <sub>2</sub>		36.4±0.1	(298)	C	[70/17]
	(273–333)	33.4	(288)	A	[87/5][49/2]
					[71/21]
	1,2-dimethoxyethane				[110-71-4]
C <sub>4</sub> H <sub>10</sub> O <sub>2</sub>	(305–392)	36.8±0.2	(298)	EB	[96/5]
	(238–298)	39.4	(253)	A	[87/5]
	(238–363)	39.1	(253)	A	[87/5]
	(225–366)	33.9	(240)		[47/5]
C <sub>4</sub> H <sub>10</sub> O <sub>2</sub>	2-ethoxyethanol				[110-80-5]
	(310–385)	47.4	(325)	EB	[01/17]
	(323–353)	45.9	(338)	TGA	[87/18]
		48.2±0.1	(298)	C	[71/5]
	(336–408)	44.7	(351)	A	[87/5][56/6]
C <sub>4</sub> H <sub>10</sub> O <sub>2</sub> S	<i>bis</i> (2-hydroxyethyl) sulfide				[111-48-8]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>10</sub> O <sub>3</sub>	(368–483)	27.1	(383)	A	[87/5]
	(315–558)	28.3	(330)		[47/5]
	diethylene glycol				[111-46-6]
	(410–539)	66.9±0.3	(420)	EB	[02/15]
	(410–539)	63.1±0.3	(460)	EB	[02/15]
	(410–539)	59.2±0.3	(500)	EB	[02/15]
	(410–539)	55.1±0.5	(540)	EB	[02/15]
	(373–453)	66.5	(413)	TGA	[87/18]
	(364–518)	59.8	(379)	A	[87/5]
C <sub>4</sub> H <sub>10</sub> O <sub>3</sub>	(412–513)	66.8	(427)		[81/17][84/9]
	(403–513)	69.2	(418)		[27/1][84/9]
	1,2,3-butanetriol				[4435-50-1]
C <sub>4</sub> H <sub>10</sub> O <sub>3</sub>	(375–537)	68.1	(390)		[47/5]
	orthoformic acid trimethyl ester				[149-73-5]
C <sub>4</sub> H <sub>10</sub> O <sub>3</sub> S	(273–358)	39.0	(288)	A	[87/5]
		38.1±0.8	(298)		[71/26]
	diethyl sulfite				[623-81-4]
C <sub>4</sub> H <sub>10</sub> O <sub>4</sub>	(283–431)	44.7			[75/43]
		44.5	(298)	A	[87/5][47/5]
	<i>meso</i> erythritol				[99/16]
C <sub>4</sub> H <sub>10</sub> O <sub>4</sub>	(397–428)	113.6±1.1	(412)	TE	[149-32-6]
	(394–401)	93.3	(397)	A	[90/16]
C <sub>4</sub> H <sub>10</sub> O <sub>4</sub> S	diethyl sulfate				[87/5]
	(413–484)	50.1	(428)	A	[64-67-5]
C <sub>4</sub> H <sub>10</sub> S	(320–482)	54.9	(335)		[87/5]
	1-butanethiol				[47/5][99/16]
		36.5	(298)		[109-75-5]
	(323–409)	35.0	(338)	A, EB	[71/28]
					[87/5][57/7]
C <sub>4</sub> H <sub>10</sub> S		34.7±0.1	(330)	C	[66/5]
		33.6±0.1	(350)	C	[57/7]
		32.2±0.1	(371)	C	[57/7]
	( <i>dl</i> ) 2-butanethiol				[57/7]
		34.1	(298)		[513-53-1]
	(310–395)	33.2	(325)	A, EB	[71/28]
					[87/5][58/7]
		32.9±0.1	(318)	C	[66/5]
C <sub>4</sub> H <sub>10</sub> S		32.3±0.1	(329)	C	[58/7]
		31.8±0.1	(337)	C	[58/7]
		30.6±0.1	(358)	C	[58/7]
	2-methyl-1-propanethiol				[513-44-0]
		34.6	(298)		[71/28]
	(314–399)	33.6	(329)	A, EB	[87/5][58/6]
					[66/5]
C <sub>4</sub> H <sub>10</sub> S		33.3±0.1	(321)	C	[58/6]
		32.3±0.1	(340)	C	[58/6]
		31.0±0.1	(361)	C	[58/6]
	<i>tert</i> -butyl mercaptan				[75-66-1]
	(275–293)	30.1	(284)		[98/25]
C <sub>4</sub> H <sub>10</sub> S		30.8	(298)		[71/28]
	(293–373)	30.9	(308)	A, EB	[87/5][53/7]
					[66/5]
C <sub>4</sub> H <sub>10</sub> S	diethyl sulfide				[352-93-2]
		35.8±0.7	(298)	C	[89/12]
		35.5	(298)		[81/12]
		35.8	(298)		[71/28]
	(318–396)	34.4	(333)	A, EB	[87/5][52/11]
					[66/5]
C <sub>4</sub> H <sub>10</sub> S	(309–371)	34.8	(324)	EB	[52/9]
	(233–361)	37.5	(248)		[47/5]
		33.5	(364)		[35/2]
	methyl isopropyl sulfide				[1551-21-9]
	34.1	(298)		[71/28]	



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference				
C <sub>4</sub> H <sub>10</sub> S	methyl propyl sulfide (298–368)	33.0±0.1	(318)	C	[55/12]				
		32.0±0.1	(336)	C	[55/12]				
		30.7±0.1	(358)	C	[55/12]				
		33.8	(313)	A, EB	[87/5][52/9] [3877-15-4]				
		36.2	(298)		[71/28]				
C <sub>4</sub> H <sub>10</sub> S <sub>2</sub>	1,4-butanedithiol (347–469)	35.3	(323)	A, EB	[87/5][52/9]				
		34.5±0.1	(328)	C	[57/7]				
		33.4±0.1	(347)	C	[57/7]				
		32.1±0.1	(369)	C	[57/7]				
C <sub>4</sub> H <sub>10</sub> S <sub>2</sub>	diethyl disulfide (383–423)	50.9	(362)	A	[1191-08-8] [87/5][99/16]				
		55.3	(298)		[62/11]				
		54.9	(298)		[62/11]				
		44.8	(298)	CGC	[110-81-6] [95/21]				
		45.4±0.8	(298)	C	[89/12]				
		45.7	(302)	A	[87/5]				
		45.2±0.1	(298)	C	[85/2]				
		45.2	(298)		[81/12]				
		45.6	(298)		[71/28]				
		40.9	(388)	EB	[87/5][66/5] [52/12]				
C <sub>4</sub> H <sub>11</sub> N	butyl amine (323–373) (313–350)	41.5	(374)	EB	[52/9] [109-73-9]				
		35.6	(298)	CGC	[95/21]				
		34.7	(328)	A	[87/5]				
		35.7±0.2	(298)	C	[85/2]				
		35.5	(311)	EB	[79/9]				
		35.7±0.1	(298)	C	[79/9]				
		34.7±0.1	(313)	C	[79/9]				
		33.5±0.1	(323)	C	[79/9]				
		32.4±0.1	(343)	C	[79/9]				
		31.1±0.1	(358)	C	[79/9]				
C <sub>4</sub> H <sub>11</sub> N	<i>(dl)</i> 2-aminobutane (264–371)	35.7±0.1	(298)	C	[69/2]				
		34.1	(279)	A	[13952-84-6] [87/5][71/21]				
		C <sub>4</sub> H <sub>11</sub> N	sec-butylamine (300–335)	32.4	(315)	EB	[13952-84-6] [79/9]		
				32.7±0.1	(298)	C	[79/9]		
				31.6±0.1	(313)	C	[79/9]		
				30.5±0.1	(328)	C	[79/9]		
				29.4±0.1	(343)	C	[79/9]		
				32.6±0.1	(298)	C	[69/2] [78-81-9]		
				C <sub>4</sub> H <sub>11</sub> N	isobutylamine (248–347)	37.6	(263)		[87/5]
						33.9±0.1	(298)	C	[79/9]
32.7±0.1	(313)					C	[79/9]		
31.6±0.1	(328)					C	[79/9]		
33.5	(313)	EB	[79/9]						
33.8±0.1	(298)	C	[69/2]						
C <sub>4</sub> H <sub>11</sub> N	<i>tert</i> -butylamine (292–349)	33.9±0.2	(298)	IPM	[65/8][70/11] [75-64-9]				
		29.6±0.1	(298)	C	[69/2]				
		30.1	(307)	A, EB, IPM	[87/5][68/4] [109-89-7]				
C <sub>4</sub> H <sub>11</sub> N	diethylamine (302–328) (325–437) (431–496)	31.2	(315)	A	[87/5]				
		30.4	(340)	A	[87/5]				
		28.4	(446)	A	[87/5]				
		31.3±0.1	(298)	C	[79/9]				
		30.2±0.1	(313)	C	[79/9]				
		29.1±0.1	(328)	C	[79/9]				
		28.0±0.1	(343)	C	[79/9]				
		31.2±0.1	(298)	C	[69/2]				

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>11</sub> N	(273–333)	32.7±0.2	(298)	I	[69/16]
	(292–313)	31.8	(307)		[65/24][84/9]
	(304–323)	31.5	(319)		[62/23][84/9]
C <sub>4</sub> H <sub>11</sub> N	N-methyl isopropyl amine				[4747-21-1]
		30.7±0.1	(298)	C	[79/8]
		29.5±0.1	(313)	C	[79/8]
		27.1±0.1	(343)	C	[79/8]
C <sub>4</sub> H <sub>11</sub> NO	(293–319)	30.9	(306)	EB	[79/8]
	2-(dimethylamino)ethanol				[108-01-0]
	(350–387)	43.2	(365)	A	[87/5]
C <sub>4</sub> H <sub>11</sub> NO	(323–408)	42.7	(338)	A	[87/5]
	3-methoxypropylamine				[5332-73-0]
C <sub>4</sub> H <sub>11</sub> NO <sub>2</sub>	(278–390)	44.5	(293)	A	[87/5]
	2,2'-iminodiethanol				[111-42-2]
C <sub>4</sub> H <sub>11</sub> NO <sub>2</sub>	(463–582)	69.0	(478)		[59/1]
	diethanolamine				[111-42-2]
	(423–542)	74.4	(438)	A	[87/5]
C <sub>4</sub> H <sub>11</sub> NO <sub>2</sub> S	(376–454)	77.0	(391)		[69/20][84/9]
	(466–514)	70.6	(481)		[59/1][84/9]
	N,N-dimethylethanesulfonamide				[6338-68-7]
C <sub>4</sub> H <sub>11</sub> O <sub>3</sub> P	(384–517)	54.3	(399)	A	[87/5]
	diethylphosphite				[762-04-9]
C <sub>4</sub> H <sub>11</sub> O <sub>3</sub> P	(338–471)	38.1	(353)	A	[87/5]
	dimethyl ethylphosphonate				[87/5][55/5]
C <sub>4</sub> H <sub>12</sub> ClN	(333–410)	70.1	(348)		[84/9]
	butylammonium chloride				[3858-78-4]
C <sub>4</sub> H <sub>12</sub> ClN	(489–508)	62.1	(498)	A	[87/5]
	diethylamine hydrochloride				[660-68-4]
C <sub>4</sub> H <sub>12</sub> ClN <sub>2</sub> P	(513–558)	177.6	(528)		[87/5]
	bis(dimethylamino)chlorophosphine				[95/2]
C <sub>4</sub> H <sub>12</sub> FN <sub>2</sub> OP	45.9±1.2		(298)	STG	[115-26-4]
	bis(dimethylamido)fluorophosphate				[87/5]
C <sub>4</sub> H <sub>12</sub> NP	(312–350)	50.4	(327)	A	[683-84-1]
	dimethyl(dimethylamino)phosphine				[87/5]
C <sub>4</sub> H <sub>12</sub> N <sub>2</sub>	(264–372)	36.8	(279)	A	[87/5]
	( <i>dl</i> ) 1,2-butanediamine				[4426-48-6]
	(251–293)	50.2	(278)		[87/5][75/4]
	(251–293)	46.9	(298)	IPM	[75/4]
C <sub>4</sub> H <sub>12</sub> N <sub>2</sub>	46.3±0.2		(298)	IPM	[65/8][70/11]
	2-methyl-1,2-propanediamine				[811-93-8]
	(256–293)	47.2	(278)	IPM	[87/5][75/4]
	(256–293)	43.5±0.2	(298)	IPM	[75/4]
C <sub>4</sub> H <sub>12</sub> N <sub>2</sub>	43.6±0.2		(298)	IPM	[65/8][70/11]
	tetramethylhydrazine				[6415-12-9]
	(290–346)	32.9	(305)	T	[87/5][57/20]
C <sub>4</sub> H <sub>12</sub> N <sub>2</sub> O	N-(2-hydroxyethyl)ethylenediamine				[111-41-1]
	(383–517)	62.8	(398)	A	[87/5]
C <sub>4</sub> H <sub>12</sub> N <sub>2</sub> OS	tetramethyl sulfurous diamide				[3768-60-3]
	(320–351)	41.9	(335)	A	[87/5][99/16]
C <sub>4</sub> H <sub>12</sub> N <sub>2</sub> OS	N,N,N',N'-tetramethylsulfamide				[3768-63-6]
	(358–495)	53.2	(373)	A	[87/5][99/16]
C <sub>4</sub> H <sub>12</sub> N <sub>2</sub> S	tetramethylsulfoxylic diamide				[2129-20-6]
	(301–326)	40.4	(313)	A	[87/5]
C <sub>4</sub> H <sub>13</sub> N <sub>3</sub>	2,2'-diaminodiethylamine				[111-40-0]
	(371–521)	63.4±0.7	(298)	EB	[99/7]
C <sub>4</sub> H <sub>13</sub> N <sub>3</sub>	dimethylene triamine				[111-40-0]
	(371–441)	54.8	(386)	A	[87/5]
C <sub>5</sub> BrF <sub>12</sub> N	1,1,2,3,3,3-hexafluoro-2-bromo-N,N-bis(trifluoromethyl)-propylamine				[87/5]
	(324–351)	30.2	(337)	A	[87/5]
C <sub>5</sub> ClF <sub>5</sub>	1-chloro-2,3,4,5,5-pentafluoro-1,3-cyclopentadiene				[30221-57-9]
	(273–303)	31.0	(288)	A	[87/5]
C <sub>5</sub> ClF <sub>5</sub>	5-chloro-1,2,3,4,5-pentafluoro-1,3-cyclopentadiene				[30221-56-8]
	(283–323)	28.7	(298)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> ClF <sub>10</sub> N	2,2,2-trifluoro-N-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethylidene]ethanimidoyl chloride	28.6	(361)		[54120-14-8] [75/19]
C <sub>5</sub> ClF <sub>12</sub> N	N-chloro-1,1,2,3,3,3-heptafluoro-N-(pentafluoroethyl)-2-propanamine	28.6	(346)		[54566-78-8] [75/19]
C <sub>5</sub> Cl <sub>2</sub> F <sub>6</sub>	1,2-dichlorohexafluorocyclopentene	33.0			[706-79-6] [59/28]
C <sub>5</sub> Cl <sub>2</sub> F <sub>9</sub> N	1,1-dichloro-2,2,2-trifluoro-N-[2,2,2-trifluoro-1-(trifluoromethyl)-ethylidene]ethanamine	36.5	(298)		[59/28]
C <sub>5</sub> Cl <sub>5</sub> F <sub>7</sub> O	(1,1,2-trifluoro-2,2-dichloroethyl)(2,2,3,3-tetrafluoro-1,1,3-trichloropropyl) ether	31.2	(361)		[54566-77-7] [75/19]
C <sub>5</sub> Cl <sub>5</sub> F <sub>7</sub> O	(362–449)	45.3	(377)	A	[61196-11-0] [87/5]
C <sub>5</sub> Cl <sub>6</sub>	hexachlorocyclopentadiene	50.7±0.8	(298)	EB	[76/15]
C <sub>5</sub> Cl <sub>6</sub>	(335–512)	53.7	(350)	A	[77-47-4] [87/5]
C <sub>5</sub> Cl <sub>8</sub>	octachlorocyclopentene	67.4			[77/26]
C <sub>5</sub> F <sub>5</sub> N	perfluoropyridine	83.4			[706-78-5] [77/26]
C <sub>5</sub> F <sub>5</sub> N	(273–363)	36.3	(288)	A	[700-16-3] [87/5][61/9]
C <sub>5</sub> F <sub>8</sub>	perfluoro-1,2-pentadiene				[72/20]
C <sub>5</sub> F <sub>8</sub>	(262–276)	26.1	(269)	A	[21972-01-1] [87/5]
C <sub>5</sub> F <sub>9</sub> N	3,3,3-trifluoro-N,N-bis(trifluoromethyl)-1-propylamine	24.9	(285)	A	[19451-91-3] [87/5]
C <sub>5</sub> F <sub>9</sub> N	2,3,4,5-tetrahydroonafluoropyridine	29.3	(264)	A	[714-37-4] [87/5]
C <sub>5</sub> F <sub>9</sub> NO	2,2,2-trifluoro-N-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-acetamide	29.3	(264)	A	[87/5]
C <sub>5</sub> F <sub>9</sub> NO	(249–310)	32.1	(319)		[52225-57-7] [74/24]
C <sub>5</sub> F <sub>9</sub> NO	3,3,4,5,6,6-hexafluoro-3,6-dihydro-2-trifluoromethyl-2H-1,2-oxazine	31.4	(278)	A	[4827-67-2] [87/5]
C <sub>5</sub> F <sub>9</sub> NO <sub>3</sub> S	nonafluoro-1-butanefluoronyl isocyanate	48.2	(324)	A	[34805-64-6] [87/5]
C <sub>5</sub> F <sub>10</sub>	perfluorocyclopentane				[376-77-2]
C <sub>5</sub> F <sub>10</sub>	(285–297)	27.0	(291)	A	[87/5]
C <sub>5</sub> F <sub>10</sub>	(290–330)	25.6	(298)		[84/9][91/2]
C <sub>5</sub> F <sub>10</sub>	(290–329)	26.3	(298)		[56/10]
C <sub>5</sub> F <sub>10</sub> N <sub>2</sub> O <sub>2</sub>	decafluoroglutaramide	35.6	(368)	HG	[32822-52-9] [71/18]
C <sub>5</sub> F <sub>10</sub> N <sub>2</sub> O <sub>2</sub>	1-nitrodecafluoropiperadine	29.6	(298)	A	[1840-07-9] [87/5]
C <sub>5</sub> F <sub>10</sub> O <sub>2</sub>	carbonofluoridic acid, 2,2,2-trifluoro-1,1-bis(trifluoromethyl)ethyl ester	32.2	(290)	A	[55064-79-4] [87/5][75/22]
C <sub>5</sub> F <sub>10</sub> O <sub>3</sub> S	perfluorocyclopentyl fluorosulfate				[63/17]
C <sub>5</sub> F <sub>10</sub> O <sub>3</sub> S	(255–360)	36.6	(307)		[741-20-8]
C <sub>5</sub> F <sub>10</sub> O <sub>6</sub> S <sub>2</sub>	octafluorocyclopentane-1,2-bis(fluorosulfate)	49.5	(349)		[72/20][87/5] [99/16]
C <sub>5</sub> F <sub>11</sub> N	perfluoropiperidine				[836-77-1]
C <sub>5</sub> F <sub>11</sub> N	(302–355)	30.0	(317)	A	[87/5][63/19] [72/20]
C <sub>5</sub> F <sub>11</sub> N	octafluoro-1-(trifluoromethyl)pyrrolidine	29.4	(264)	A	[2344-10-7] [87/5]
C <sub>5</sub> F <sub>11</sub> NO	N,2,2,2-tetrafluoro-N-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]-acetamide	32.6	(332)		[52225-65-7] [74/24]
C <sub>5</sub> F <sub>12</sub>	perfluoro-2-methylbutane				[594-21-2]
C <sub>5</sub> F <sub>12</sub>	(290–340)	26.3	(298)		[84/9][91/2]
C <sub>5</sub> F <sub>12</sub>	(228–308)	31.0	(243)	A	[87/5][67/15]
C <sub>5</sub> F <sub>12</sub>	(290–337)	27.4	(298)		[56/10]
C <sub>5</sub> F <sub>12</sub>	perfluoropentane				[678-26-2]
C <sub>5</sub> F <sub>12</sub>	(280–340)	26.6	(298)		[84/9][91/2]
C <sub>5</sub> F <sub>12</sub>	(221–303)	31.1	(236)	A	[87/5][67/15]
C <sub>5</sub> F <sub>12</sub>	(288–338)	27.5	(298)		[56/10]
C <sub>5</sub> F <sub>12</sub> N <sub>2</sub>	[2,2,2-trifluoro-1,1-bis(trifluoromethyl)ethyl](trifluoromethyl)diazene	23.7	(309)		[53684-06-3] [75/21]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> F <sub>12</sub> O <sub>2</sub>	<i>bis</i> (pentafluoroethoxy)difluoromethane (246–299)	32.7	(261)	A	[20822-11-1] [87/5]
C <sub>5</sub> F <sub>12</sub> O <sub>2</sub> S	trifluoromethanesulfinic acid, 2,2,2-trifluoro-1,1-bis(trifluoromethyl) ethyl ester	37.7	(355)	HG	[52225-54-4] [74/25]
C <sub>5</sub> F <sub>12</sub> O <sub>4</sub> S	pentafluoro(2,2,3,3,4,4,5-heptafluoro-5-oxopentaneperoxoato) sulfur	39.2			[60672-63-1] [76/31]
C <sub>5</sub> F <sub>13</sub> N	N-(trifluoromethyl) <i>bis</i> (pentafluoroethyl)amine (298–319)	30.2 29.4±0.4	(308) (298)	A	[1481-55-6] [87/5] [77/13]
C <sub>5</sub> F <sub>13</sub> NS	N-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]-S,S- <i>bis</i> (trifluoro-methyl)sulfilimine (314–360)	31.3	(329)	A	[37826-44-1] [87/5][99/16]
C <sub>5</sub> F <sub>14</sub> N <sub>2</sub> O	1-[difluoro(trifluoromethoxy)methyl]-1,2,2- <i>tris</i> (trifluoromethyl)-hydrazine (302–311)	34.7	(306)	A	[17636-89-4] [87/5]
C <sub>5</sub> F <sub>14</sub> N <sub>2</sub> O	1,1-difluoro-N-(trifluoromethoxy)-N,N',N'- <i>tris</i> (trifluoromethyl)-methanediamine (282–323)	33.7	(297)	A	[17636-88-3] [87/5]
C <sub>5</sub> F <sub>14</sub> OS	pentafluoro[(nonafluorocyclopentyl)oxyl] sulfur (300–361)	36.1	(315)	A	[736-59-4] [87/5][99/16]
C <sub>5</sub> F <sub>15</sub> N	N-(trifluoromethyl) <i>bis</i> (pentafluoroethyl)amine (298–319)	29.4±0.4	(298)		[758-48-5] [77/20]
C <sub>5</sub> F <sub>15</sub> NS	difluoro[1,1,1,2,3,3,3-heptafluoro-2-propanaminoto(2-)-] <i>bis</i> (trifluoromethyl) sulfur	32.2	(375)	I	[65844-10-2] [78/14]
C <sub>5</sub> F <sub>15</sub> P <sub>5</sub>	1,2,3,4,5- <i>pentakis</i> (trifluoromethyl)pentaphospholane (319–435)	51.8	(334)	A, SG	[745-23-3] [87/5][58/10]
C <sub>5</sub> O <sub>2</sub>	pentacarbon dioxide (186–273)	4.6	(258)	A	[51799-36-1] [87/5][37/1]
C <sub>5</sub> HClF <sub>8</sub> O <sub>2</sub>	trifluoroacetic acid, 1-(chlorodifluoromethyl)-2,2,2-trifluoroethyl ester	37.2	(338)	HG	[52225-55-5] [74/25]
C <sub>5</sub> HF <sub>10</sub> NO	2,2,2-trifluoro-N-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]-acetamide	42.3	(367)		[74/24] [376-65-8]
C <sub>5</sub> HF <sub>9</sub>	nonafluorocyclopentane (289–348)	29.6	(304)	A	[87/5][56/10] [56/10]
C <sub>5</sub> HF <sub>9</sub> IN	<i>cis</i> 3,3,3-trifluoro-1-iodo-N,N- <i>bis</i> (trifluoromethyl)propenylamine (343–366)	31.3	(354)	A	[20257-34-5] [87/5]
C <sub>5</sub> HF <sub>9</sub> IN	<i>trans</i> 3,3,3-trifluoro-1-iodo-N,N- <i>bis</i> (trifluoromethyl)propenylamine (345–368)	35.0	(356)	A	[20257-35-6] [87/5]
C <sub>5</sub> HF <sub>9</sub> O <sub>2</sub>	trifluoroacetic acid, 2,2,2-1-(trifluoromethyl)ethyl ester	28.5	(321)	HG	[42031-15-2] [73/20]
C <sub>5</sub> HF <sub>10</sub> N	2,2,3,3,4,4,5,5,6,6-decafluoropiperidine (273–313)	32.7	(288)	A	[559-31-9] [87/5]
C <sub>5</sub> HF <sub>12</sub> N	1,1,1,2,3,3,3-heptafluoro-N-(pentafluoroethyl)-2-propanamine	29.8	(325)		[54566-80-2] [75/19]
C <sub>5</sub> HN <sub>3</sub>	ethylenetricarbonitrile (313–343)	66.0	(328)	A, MG	[997-76-2] [87/5][63/1]
C <sub>5</sub> H <sub>2</sub> BrF <sub>8</sub> N	2-bromo-3,3-difluoro-N,N- <i>bis</i> (trifluoromethyl)allylamine (336–367)	33.8	(351)	A	[19451-93-5] [87/5]
C <sub>5</sub> H <sub>2</sub> F <sub>6</sub> O <sub>2</sub>	1,1,1,5,5,5-hexafluoropentan-2,4-dione (273–330)	33.1 30.6±0.1	(301) (298)	GS	[1522-22-1] [98/5] [97/2][75/2] [78/18]
C <sub>5</sub> H <sub>2</sub> F <sub>9</sub> N	<i>trans</i> 3,3,3-trifluoro-N,N- <i>bis</i> (trifluoromethyl)propenylamine (287–319)	28.2	(302)	A	[25273-42-1] [87/5]
C <sub>5</sub> H <sub>2</sub> F <sub>9</sub> NOS	2,2,2-trifluoro-N-[(trifluoromethyl)thio]ethanimidic acid, 2,2,2-trifluoroethyl ester	35.8	(373)	I	[62067-07-6] [77/18]
C <sub>5</sub> H <sub>2</sub> F <sub>9</sub> NS	2,2,2-trifluoro-N-[2,2,2-trifluoro-1-(trifluoromethyl)ethyl]ethane-thioamide	36.9			[57682-29-8] [75/42]
C <sub>5</sub> H <sub>2</sub> F <sub>10</sub> O	1,1,1,2,2,3,3-heptafluoro-3-(2,2,2-trifluoroethoxy)propane (288–325)	31.5	(303)	I	[142469-08-7] [02/19]
C <sub>5</sub> H <sub>2</sub> F <sub>10</sub> O	1,1,1,2,4,4,4-heptafluoro-2-(trifluoromethoxy)butane (288–323)	31.8	(303)	I	[347148-74-7] [02/19]
C <sub>5</sub> H <sub>2</sub> F <sub>10</sub> O	1,1,1,2,2-pentafluoro-3-(pentafluoroethoxy)propane (288–320)	31.2	(303)	I	[155653-44-4] [02/19]
C <sub>5</sub> H <sub>3</sub> BrF <sub>9</sub> N	2-bromo-3,3,3-trifluoro-N,N- <i>bis</i> (trifluoromethyl)propylamine				[19451-92-4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>3</sub> F <sub>6</sub> N	(342–365)	34.2	(353)	A	[87/5]
	N,N-bis(trifluoromethyl)-1-propynylamine (295–312)	31.1	(303)	A	[25237-11-0] [87/5]
C <sub>5</sub> H <sub>3</sub> F <sub>7</sub> O <sub>2</sub>	methyl perfluorobutyrate	34.5			[77/28][78/19]
C <sub>5</sub> H <sub>3</sub> F <sub>8</sub> NOS	2,2,3,3,4,4,5,5-octafluoro-1,1,2,3,4,5-hexahydro-1-(methylimino)-thiophene-1-oxide	33.9	(330)		[77589-48-1] [81/15]
C <sub>5</sub> H <sub>3</sub> F <sub>9</sub> N <sub>2</sub> OS	1,1,1-trifluoro-N'-methyl-N-[2,2,2-trifluoro-1-(trifluoromethyl)-ethylidene]methanesulfonimidamide	32.6	(417)	I	[62609-63-6] [77/19]
C <sub>5</sub> H <sub>3</sub> F <sub>9</sub> O	1,1,2,2-tetrafluoro-3-(pentafluoroethoxy)propane (288–336)	34.0	(303)	I	[176310-27-3] [02/19]
C <sub>5</sub> H <sub>3</sub> F <sub>9</sub> O	1-(2,2-difluoroethoxy)-1,1,2,2,3,3,3-heptafluoropropane (288–340)	34.8	(303)	I	[176310-28-4] [02/19]
C <sub>5</sub> H <sub>3</sub> F <sub>9</sub> O	1,1,1,2,2-pentafluoro-3-(1,1,2,2-tetrafluoroethoxy)propane (293–343)	35.6	(308)	I	[50807-74-4] [02/19]
C <sub>5</sub> H <sub>3</sub> F <sub>9</sub> O	1,1,1,2,4,4-hexafluoro-2-(trifluoromethoxy)butane (283–332)	33.8	(298)	I	[02/19]
C <sub>5</sub> H <sub>3</sub> F <sub>9</sub> O	1,1,1,3,3,3-hexafluoro-2-methoxy-2-(trifluoromethyl)propane (288–326)	31.3	(303)	I	[66670-22-2] [02/19]
C <sub>5</sub> H <sub>3</sub> F <sub>9</sub> O	1,1,1,2,3,3-hexafluoro-3-(2,2,2-trifluoroethoxy)propane (293–346)	36.1	(308)	I	[993-95-3] [02/19]
C <sub>5</sub> H <sub>3</sub> F <sub>9</sub> O	1,1,1,2,3,3-hexafluoro-4-(trifluoromethoxy)butane (288–338)	34.0	(303)	I	[69948-43-2] [02/19]
C <sub>5</sub> H <sub>3</sub> F <sub>9</sub> O <sub>2</sub> S	trifluoromethanesulfinic acid, 2,2,2-trifluoro-1-methyl-1-(trifluoromethyl)ethyl ester	34.3	(385)	HG	[52225-51-1] [74/25]
C <sub>5</sub> H <sub>3</sub> N <sub>3</sub>	2,2-dicyanopropionitrile (293–333)	55.2		B	[10359-20-3] [94/5]
C <sub>5</sub> H <sub>4</sub> BrF <sub>6</sub> N	<i>cis</i> 2-bromo-N,N-bis(trifluoromethyl)propenylamine (346–367)	35.3	(356)	A	[25273-47-6] [87/5]
C <sub>5</sub> H <sub>4</sub> BrF <sub>6</sub> N	<i>trans</i> 2-bromo-N,N-bis(trifluoromethyl)propenylamine (336–360)	33.3	(348)	A	[25273-48-7] [87/5]
C <sub>5</sub> H <sub>4</sub> BrN	2-bromopyridine	54.4 ± 1.3	(298)	C	[109-04-6] [97/3]
C <sub>5</sub> H <sub>4</sub> BrN	3-bromopyridine	52.1 ± 1.3	(298)	C	[626-55-1] [97/3]
C <sub>5</sub> H <sub>4</sub> ClN	(289–447)	47.4	(304)	A	[87/5][47/5]
	2-chloropyridine	51.0 ± 1.2	(298)	C	[109-09-1] [97/4]
C <sub>5</sub> H <sub>4</sub> ClN	(286–444)	53.0	(301)	A	[87/5][47/5]
	3-chloropyridine	47.9 ± 1.1	(298)	C	[626-60-8] [97/4]
C <sub>5</sub> H <sub>4</sub> F <sub>4</sub> N <sub>4</sub> O <sub>10</sub>	bis(2-fluoro-2,2-dinitroethyl)difluoroformal (323–357)	72.7	(340)		[97/12]
C <sub>5</sub> H <sub>4</sub> F <sub>7</sub> I	1,1,1,2,2,3,3-heptafluoro-5-iodopentane (317–386)	38.7	(332)	A	[1513-88-8] [87/5]
C <sub>5</sub> H <sub>4</sub> F <sub>8</sub> O	1,1,2,2-tetrafluoro-3-(1,1,2,2-tetrafluoroethoxy)propane (293–366)	40.2	(308)	I	[16627-68-2] [02/19]
C <sub>5</sub> H <sub>4</sub> F <sub>8</sub> O	1,1,1,3,3-pentafluoro-3-methoxy-2-trifluoromethylpropane (288–343)	34.5	(303)	I	[382-26-3] [02/19]
C <sub>5</sub> H <sub>4</sub> F <sub>9</sub> N	3,3,3-trifluoro-N,N-bis(trifluoromethyl)propylamine (290–333)	31.0	(305)	A	[19451-89-9] [87/5]
C <sub>5</sub> H <sub>4</sub> N <sub>2</sub>	<i>cis</i> 2-methyl-2-butenedinitrile (395–467)	58.5	(410)	A	[37580-43-1] [87/5][72/20]
C <sub>5</sub> H <sub>4</sub> N <sub>2</sub>	<i>trans</i> 2-methyl-2-butenedinitrile (339–411)	47.9	(354)	A	[37580-44-2] [87/5][72/20]
C <sub>5</sub> H <sub>4</sub> N <sub>4</sub>	1,2,4-triazolo[1,5-a]pyrimidine (370–523)	82.5 ± 13.1	(298)	EB	[275-02-5] [97/7]
C <sub>5</sub> H <sub>4</sub> O <sub>2</sub>	2-furfuraldehyde (357–435)	44.7	(372)	A	[98-01-1] [87/5]
	(329–433)	48.2	(344)		[50/1][84/9]
	(365–443)	47.6	(380)		[26/4][84/9]
C <sub>5</sub> H <sub>4</sub> O <sub>2</sub> S	2-thiophene carboxylic acid (314–323)	96.9 (sub)	(319)		[527-72-0] [99/16]
C <sub>5</sub> H <sub>4</sub> O <sub>3</sub>	citraconic anhydride				[616-02-4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>5</sub> H <sub>5</sub> Cl <sub>3</sub> OS	(320–487)	53.3	(335)	A	[87/5][47/5]	
	2,3,3-trichloro-2-propenethioic acid, O-ethyl ester (383–423)	66.9		GC	[76619-92-6] [80/24]	
C <sub>5</sub> H <sub>5</sub> F <sub>3</sub> O <sub>2</sub>	1,1,1-trifluoropentane-2,4-dione	37.2 ± 0.2	(298)		[367-57-7] [97/2][75/2] [78/18]	
C <sub>5</sub> H <sub>5</sub> F <sub>6</sub> NO	N,N-bis(trifluoromethyl)allylamine-N-oxide (254–328)	33.1	(269)	A	[22743-77-7] [87/5]	
C <sub>5</sub> H <sub>5</sub> F <sub>6</sub> NO	1-methoxy-N,N-bis(trifluoromethyl)vinylamine (321–343)	32.4	(332)	A	[22130-39-8] [87/5]	
C <sub>5</sub> H <sub>5</sub> F <sub>6</sub> NO	cis 2-methoxy-N,N-bis(trifluoromethyl)vinylamine (341–362)	32.5	(351)	A	[22298-35-7] [87/5]	
C <sub>5</sub> H <sub>5</sub> F <sub>6</sub> NO <sub>2</sub>	N,N-bis(trifluoromethyl)propionamide-N-oxide (278–361)	42.1	(293)	A	[22743-66-4] [87/5]	
C <sub>5</sub> H <sub>5</sub> F <sub>7</sub> O	1,1,1,2-tetrafluoro-2-(trifluoromethoxy)butane (283–319)	30.3	(298)	I	[200501-98-0] [02/19]	
C <sub>5</sub> H <sub>5</sub> F <sub>7</sub> O	1-ethoxy-1,1,2,2,3,3,3-heptafluoropropane (288–323)	31.0	(303)	I	[22052-86-4] [02/19]	
C <sub>5</sub> H <sub>5</sub> F <sub>7</sub> O	1,1,1,2,2,3,3,3-heptafluoro-4-methoxybutane (293–344)	34.6	(308)	I	[376-98-7] [02/19]	
C <sub>5</sub> H <sub>5</sub> N	cis 1-cyano-1,3-butadiene	40.7	(348)		[54/17]	
		38.3	(408)		[54/17]	
C <sub>5</sub> H <sub>5</sub> N	cis 2,4-pentadienenitrile (318–383)	41.4	(333)	A	[2180-69-0] [87/5][72/20]	
C <sub>5</sub> H <sub>5</sub> N	bicyclo[1.1.0]butane-1-carbonitrile (307–349)	48.0	(319)	BG	[16955-35-4] [71/2]	
C <sub>5</sub> H <sub>5</sub> N	pyridine	40.16 ± 0.06	(298)		[110-86-1] [96/25]	
		(323–373)	40.4	(298)	CGC	[95/21]
		(295–388)	39.9	(310)	EB	[90/6]
		(296–353)	39.7	(311)	A	[87/5]
		(348–434)	37.3	(363)	A	[87/5]
		(431–558)	35.0	(446)	A	[87/5]
		(552–620)	34.0	(567)	A	[87/5]
		(298–333)	39.6	(313)		[86/9]
			40.2	(298)	C	[84/4]
			39.4	(313)	C	[84/4]
			38.5	(328)	C	[84/4]
			37.7	(343)	C	[84/4]
			36.3	(368)	C	[84/4]
		(340–426)	37.6	(355)	EB	[87/5][57/11]
			37.5 ± 0.1	(346)	C	[57/11]
			36.4 ± 0.1	(366)	C	[57/11]
			35.1 ± 0.1	(388)	C	[57/11]
C <sub>5</sub> H <sub>5</sub> NO <sub>2</sub>	2-cyanoacrylic acid, methyl ester (258–283)	38.4	(335)	MG	[53/4]	
C <sub>5</sub> H <sub>5</sub> NO <sub>2</sub>	2-cyanoacrylic acid, methyl ester (258–283)	57.8	(270)	A	[137-05-3] [87/5][69/11]	
					[72/20]	
C <sub>5</sub> H <sub>6</sub>	1,3-cyclopentadiene (271–314)	28.2	(286)		[542-92-7] [67/27][84/9]	
		(291–314)	28.1	(302)	A, MM	[87/5][65/28]
		(291–314)	28.4 ± 0.3	(298)	MM	[65/28]
		(273–287)	29.7	(298)		[65/28][33/12]
C <sub>5</sub> H <sub>6</sub>	ethynylcyclopropane (290–320)	31.1	(305)	A	[6746-94-7] [87/5]	
C <sub>5</sub> H <sub>6</sub>	isopropenylacetylene	27.2			[78-80-8] [77/25]	
C <sub>5</sub> H <sub>6</sub> ClN	4-chloro-3-pentenenitrile (349–433)	63.9	(364)	A	[32366-08-8] [87/5]	
C <sub>5</sub> H <sub>6</sub> Cl <sub>2</sub> O <sub>2</sub>	glutaryl chloride (329–490)	55.9	(344)	A	[2873-74-7] [87/5][47/5]	
C <sub>5</sub> H <sub>6</sub> F <sub>2</sub> N <sub>4</sub> O <sub>10</sub>	bis(2-fluoro-2,2-dinitroethyl)formal (323–365)	85.1	(344)		[97/12]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>6</sub> F <sub>6</sub> N <sub>2</sub> S	2,2,2-trifluoro-N,N-dimethyl-N'-[(trifluoromethyl)thio]-ethanimidamide	40.4	(400)	I	[62067-11-2] [77/18]
C <sub>5</sub> H <sub>6</sub> F <sub>6</sub> O	1,1,1,2,3,3-hexafluoro-4-methoxybutane (293–360)	37.0	(308)	I	[58705-93-4] [02/19]
C <sub>5</sub> H <sub>6</sub> F <sub>6</sub> N <sub>2</sub> S	dimethylamino(hexafluoroisopropylideneimino) sulfur	39.7	(383)	I	[72/22]
C <sub>5</sub> H <sub>6</sub> F <sub>6</sub> O <sub>2</sub> S	trifluoromethanesulfinic acid, 2,2,2-trifluoro-1,1-dimethylethyl ester	35.6	(388)	HG	[52225-49-7] [74/25]
C <sub>5</sub> H <sub>6</sub> F <sub>6</sub> O <sub>3</sub> S <sub>2</sub>	3,3-bis[(trifluoromethyl)sulfonyl]-1-propanol (333–418)	32.8	(348)	A, I	[61915-97-7] [87/5][77/17] [99/16]
C <sub>5</sub> H <sub>6</sub> N <sub>2</sub>	dimethylmalononitrile (322–413)	47.5	(337)	A	[7321-55-3] [87/5][67/20]
C <sub>5</sub> H <sub>6</sub> N <sub>2</sub>	2-methylpyrazine (288–392)	42.4	(340)		[109-08-0] [95/4]
C <sub>5</sub> H <sub>6</sub> N <sub>2</sub>	glutaronitrile (364–560)	60.1	(379)	A	[544-13-8] [87/5]
C <sub>5</sub> H <sub>6</sub> O	2-methylfuran (277–303)	66.8	(290)	A	[87/5][72/20]
C <sub>5</sub> H <sub>6</sub> O	2-methylfuran (289–337)	32.4	(304)		[534-22-5] [02/30]
C <sub>5</sub> H <sub>6</sub> O	2-methylfuran (251–338)	34.4	(266)	A	[87/5]
C <sub>5</sub> H <sub>6</sub> O	2-methylfuran (288–303)	32.5	(295)		[72/20]
C <sub>5</sub> H <sub>6</sub> O	2-methylfuran (333–373)	30.9	(348)		[71/3][84/9]
C <sub>5</sub> H <sub>6</sub> O	2-methylfuran (215–360)	32.2	(298)		[70/36]
C <sub>5</sub> H <sub>6</sub> O <sub>2</sub>	5-methyl-2(3H)-furanone (324–442)	40.3	(339)	A	[591-12-8] [87/5]
C <sub>5</sub> H <sub>6</sub> O <sub>2</sub>	(dl) 5-methyl-2(5H)-furanone (356–481)	48.2	(371)	A	[591-11-7] [87/5]
C <sub>5</sub> H <sub>6</sub> O <sub>2</sub>	furfuryl alcohol (304–443)	53.6	(319)	A	[98-00-0] [87/5][47/4]
C <sub>5</sub> H <sub>6</sub> O <sub>2</sub>	5-hydroxy-3-pentyn-2-one (273–333)	64.4	(288)	A	[15441-65-3] [87/5][72/20]
C <sub>5</sub> H <sub>6</sub> O <sub>3</sub>	glutaric anhydride (373–560)	60.9	(388)	A	[108-55-4] [87/5][47/5]
C <sub>5</sub> H <sub>6</sub> O <sub>3</sub>	(dl) monomethylsuccinic anhydride (342–521)	59.3	(357)	A	[4100-80-5] [87/5][47/5]
C <sub>5</sub> H <sub>6</sub> S	2-methylthiophene (333–373)	36.8	(348)	I	[554-14-3] [71/3][84/9]
C <sub>5</sub> H <sub>6</sub> S	2-methylthiophene (324–391)	38.7	(298)		[71/28]
C <sub>5</sub> H <sub>6</sub> S	2-methylthiophene (324–391)	37.2	(339)	A, EB	[87/5][52/9] [99/16]
C <sub>5</sub> H <sub>6</sub> S	3-methylthiophene (326–398)	36.8	(357)		[616-44-4] [99/16]
C <sub>5</sub> H <sub>6</sub> S	3-methylthiophene (333–373)	37.4	(348)	I	[71/3][84/9]
C <sub>5</sub> H <sub>6</sub> S	3-methylthiophene (327–399)	39.5	(298)		[71/28]
C <sub>5</sub> H <sub>6</sub> S	3-methylthiophene (327–399)	37.5	(342)	A, EB	[87/5][52/9]
C <sub>5</sub> H <sub>7</sub> ClO <sub>3</sub>	acetic acid, chlorooxo, propyl ester (282–396)	52.7	(297)	A	[54166-91-5] [87/5][47/5]
C <sub>5</sub> H <sub>7</sub> FO <sub>2</sub>	allyl fluoroacetate (273–333)	48.9	(288)	A, GS	[87/5][48/14] [72/20]
C <sub>5</sub> H <sub>7</sub> N	cyclobutanecarbonitrile (328–402)	44.3	(298)	C	[4426-11-3] [83/6]
C <sub>5</sub> H <sub>7</sub> N	cyclobutanecarbonitrile (328–402)	39.6	(347)	BG	[71/2]
C <sub>5</sub> H <sub>7</sub> N	cyclobutanecarbonitrile (328–402)	40.0±0.4	(298)	BG	[71/2]
C <sub>5</sub> H <sub>7</sub> N	2-ethylacrylonitrile (244–387)	37.1	(259)		[87/5][47/5]
C <sub>5</sub> H <sub>7</sub> N	angelic acid, nitrile (265–413)	42.8	(280)	A	[20068-02-4] [87/5][47/5]
C <sub>5</sub> H <sub>7</sub> N	1-methylpyrrole (333–373)	38.0	(343)	I	[96-54-8] [71/3]
C <sub>5</sub> H <sub>7</sub> N	1-methylpyrrole (321–423)	39.0	(336)	A, EB, IPM	[87/5][68/4] [72/20]
C <sub>5</sub> H <sub>7</sub> N	(Z) 2-pentenitrile				[25899-50-7]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>7</sub> N	(E) 3-pentenitrile	43.2	(298)		[69/14] [16529-66-1]
C <sub>5</sub> H <sub>7</sub> N	(E) 2-pentenitrile	44.8	(298)		[69/14] [26294-98-4]
C <sub>5</sub> H <sub>7</sub> N	tiglic acid, nitrile (247–395)	44.9	(298)		[69/14] [30574-97-1]
C <sub>5</sub> H <sub>7</sub> NO	4-oxo-pentanitrile (293–473)	37.4	(262)	A	[87/5][47/5] [927-56-0]
C <sub>5</sub> H <sub>7</sub> NO <sub>2</sub>	ethyl cyanoacetate (340–479)	52.3	(308)	A	[87/5] [105-56-6]
C <sub>5</sub> H <sub>7</sub> NS	isothiocyanic acid, 3-butenyl ester (342–443)	66.9	(355)	A	[87/5][47/5] [3386-97-8]
C <sub>5</sub> H <sub>7</sub> NS	2,4-dimethylthiazole (357–421)	45.2	(357)	A	[87/5][99/16] [541-58-2]
C <sub>5</sub> H <sub>8</sub>	bicyclo[2.1.0]pentane (296–315)	28.0±0.5 28.6	(298) (305)	EB A	[185-94-4] [98/17][96/18] [87/5]
C <sub>5</sub> H <sub>8</sub>	spiropentane (276–344)	28.6 28.3±0.1 27.5±0.1 26.7±0.1	(291) (283) (298) (312)	A C C C	[157-40-4] [87/5][50/7] [50/7] [50/7] [50/7]
C <sub>5</sub> H <sub>8</sub>	vinylcyclopropane (289–310)	28.9	(299)	A	[693-86-7] [87/5]
C <sub>5</sub> H <sub>8</sub>	cyclopentene (249–318) (289–318) (230–293)	29.9 24.8 28.4	(264) (299) (300)	A MM	[142-29-0] [87/5] [50/6] [41/6]
C <sub>5</sub> H <sub>8</sub>	methylenecyclobutane (290–316) (292–306)	26.1 29.1	(303) (299)	A A	[1120-56-5] [87/5] [87/5][78/5] [78/17] [74/3]
C <sub>5</sub> H <sub>8</sub>	3-methyl-1,2-butadiene (227–253) (252–323)	27.7±0.4 31.0 29.9	(298) (240) (267)	EB A A	[598-25-4] [87/5] [87/5] [71/28] [69/12] [69/12]
C <sub>5</sub> H <sub>8</sub>	2-methyl-1,3-butadiene (221–254) (254–316)	28.0 31.6 29.0	(298) (230) (291)	IPM EB	[71/28] [69/12] [69/12]
C <sub>5</sub> H <sub>8</sub>	2-methyl-1,3-butadiene (221–254) (254–316)	29.4 28.3 26.4 31.5 27.3 27.4	(239) (269) (298) (225) (299) (288)	A A IPM MM	[78-79-5] [87/5] [87/5] [71/28] [69/12] [50/6] [38/7]
C <sub>5</sub> H <sub>8</sub>	3-methyl-1-butyne (218–320)	30.2 25.8	(233) (298)	A	[598-23-2] [87/5] [71/28]
C <sub>5</sub> H <sub>8</sub>	1,2-pentadiene (231–249) (249–331)	31.6 30.6	(240) (264)	A A	[591-95-7] [87/5] [87/5]
C <sub>5</sub> H <sub>8</sub>	1,2-pentadiene (213–245) (285–319)	28.7 32.2 29.1	(298) (231) (300)	IPM MM	[71/28] [69/12] [50/6]
C <sub>5</sub> H <sub>8</sub>	<i>cis</i> 1,3-pentadiene (255–326) (230–255)	30.1 31.2	(270) (242)	A A	[1574-41-0] [87/5] [87/5]
C <sub>5</sub> H <sub>8</sub>	<i>cis</i> 1,3-pentadiene (213–242) (289–318)	28.3 31.9 28.8	(298) (230) (304)	IPM MM	[71/28] [69/12] [50/6]
C <sub>5</sub> H <sub>8</sub>	<i>trans</i> 1,3-pentadiene (228–256)	30.7	(242)	A	[2004-41-0] [87/5]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>8</sub>	(256–324)	29.5	(271)	A	[87/5]
		27.8	(298)		[71/28]
	(213–242)	31.3	(230)	IPM	[69/12]
	(292–316)	28.3	(304)	MM	[50/6]
	1,4-pentadiene				[591-93-5]
	(216–236)	29.1	(226)	A	[87/5]
	(236–307)	28.1	(251)	A	[87/5]
		25.2	(298)		[71/28]
C <sub>5</sub> H <sub>8</sub>	(213–230)	29.3	(221)	IPM	[69/12]
	(288–300)	26.5	(293)	MM	[50/6]
	(194–255)	28.4	(240)		[40/3]
	2,3-pentadiene				[591-96-8]
	(234–258)	32.3	(246)	A	[87/5]
C <sub>5</sub> H <sub>8</sub>	(258–330)	31.1	(273)	A	[87/5]
		29.5	(298)		[71/28]
	(213–247)	33.2	(232)	IPM	[69/12]
	(298–322)	29.6	(310)	MM	[50/6]
C <sub>5</sub> H <sub>8</sub>	1-pentyne				[627-19-0]
	(229–315)	31.8	(244)	A	[87/5]
C <sub>5</sub> H <sub>8</sub>		28.4	(298)		[71/28]
	2-pentyne				[627-21-4]
	(240–329)	33.1	(255)	A	[87/5]
C <sub>5</sub> H <sub>8</sub> Br <sub>2</sub>		30.8	(298)		[71/28]
	<i>trans</i> 1,2-dibromocyclopentane				[10230-26-9]
C <sub>5</sub> H <sub>8</sub> Br <sub>4</sub>		47.9	(288)	A	[87/5][41/6]
	pentarythritol tetrabromide				[3229-00-3]
C <sub>5</sub> H <sub>8</sub> ClFO <sub>2</sub>		61.0	(452)	A	[87/5]
	3-chloro-4-fluorobutyric acid, methyl ester				[273-333]
C <sub>5</sub> H <sub>8</sub> ClFO <sub>2</sub>		54.5	(288)	GS	[87/5][48/14]
					[72/20]
C <sub>5</sub> H <sub>8</sub> ClF <sub>3</sub> O	2-chloro-1,1,2-trifluoroethyl isopropyl ether				
		39.2	(298)	C	[84/2]
		38.1	(313)	C	[84/2]
C <sub>5</sub> H <sub>8</sub> ClF <sub>3</sub> O		37.0	(324)	C	[84/2]
	2-chloro-1,1,1-trifluoroethyl propyl ether				
		41.0	(298)	C	[84/7]
		39.9	(313)	C	[84/7]
		38.7	(328)	C	[84/7]
C <sub>5</sub> H <sub>8</sub> Cl <sub>2</sub> O		37.5	(343)	C	[84/7]
		36.2	(358)	C	[84/7]
	3,3- <i>bis</i> (chloromethyl)oxetane				[78-71-7]
		56.0±0.4	(298)	C	[71/25]
					[2467-10-9]
C <sub>5</sub> H <sub>8</sub> Cl <sub>4</sub>	1,1,1,5-tetrachloropentane				
	(340–432)	61.7	(355)	A	[87/5]
C <sub>5</sub> H <sub>8</sub> F <sub>2</sub> O <sub>3</sub>	<i>bis</i> (2-fluoroethyl)carbonate				
	(273–333)	61.5	(288)	GS	[87/5][48/14]
C <sub>5</sub> H <sub>8</sub> N <sub>2</sub>					[72/20]
	1,3-dimethyl-2-imidazolidinone				[80-73-9]
	(355–498)	54.3	(375)	EB	[87/2]
C <sub>5</sub> H <sub>8</sub> N <sub>2</sub>		48.5	(450)	EB	[87/2]
	1-ethylimidazole				[7098-07-9]
C <sub>5</sub> H <sub>8</sub> N <sub>2</sub>		66.0±3.9	(298)	C	[99/1]
	1-ethylpyrazole				[2817-71-2]
C <sub>5</sub> H <sub>8</sub> O		53.3±2.4	(298)	C	[99/1]
	cyclopentanone				[120-93-2]
		42.1±0.2	(298)		[91/17]
		43.2±0.3		GC	[89/16]
	(317–427)	40.6	(332)		[87/7]
C <sub>5</sub> H <sub>8</sub> O	(293–404)	42.6	(308)	A	[87/5]
	(338–416)	39.6	(353)	A, EB	[87/5][76/10]
		42.7±0.1	(298)	C	[68/17]
	(273–299)	43.6	(286)		[42/7]
	2-ethylacrolein				[922-63-4]
		36.8±0.4	(298)	C	[96/8]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>8</sub> O	cyclopropyl methyl ketone (361–387)	37.6	(374)	A	[765-43-5] [87/5]
		39.4			[84/17]
		39.4±0.1	(298)	C	[83/6]
C <sub>5</sub> H <sub>8</sub> O	dihydro-2 <i>H</i> -pyran (273–288)	32.2	(280)	A	[25512-65-6] [87/5][72/20] [58/23]
C <sub>5</sub> H <sub>8</sub> O	<i>trans</i> 2-methyl-2-butenal (248–390)	39.2	(263)	A	[497-03-0] [87/5][47/5]
C <sub>5</sub> H <sub>8</sub> O	3-methyl-3-buten-2-one (313–371)	26.2	(328)	A	[814-78-8] [87/5][72/20]
C <sub>5</sub> H <sub>8</sub> O	2-methyl-3-butyn-2-ol (333–377)	41.0	(353)	A	[115-19-5] [99/33]
		43.9	(337)	A	[87/5][72/20]
		49.5	(309)		[84/9][50/11]
C <sub>5</sub> H <sub>8</sub> O	1-penten-3-one (303–376)	36.7	(318)	A	[1629-58-9] [87/5]
C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	glutaraldehyde (347–382)	51.4	(362)		[111-30-8] [98/15]
		56.2	(342)		[98/15]
C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	methyl cyclopropanecarboxylate (273–313)	42.6±0.4		GS	[2868-37-3] [98/22]
		41.3±0.1	(298)	C	[83/6]
C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	acetylacetone (307–414)	39.2	(322)	EB	[123-54-6] [85/4]
		35.2	(393)	A, I, EB	[87/5][72/38]
		42.7	(303)	A, EB	[87/5]
		41.8±0.2	(298)	C	[70/9]
		43.2	(298)	C	[70/9]
84% enol 100% enol	(297–398)	39.4	(347)		[69/31]
C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	<i>cis</i> 2-methyl-2-butenic acid (361–458)	61.8	(376)	A	[565-63-9] [87/5]
C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	2-ethylpropenoic acid	52.1±0.4	(298)	C	[3586-58-1] [96/8]
		62.2	(335)	A	[3586-58-1] [87/5][47/5]
C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	4-oxovaleraldehyde (levulinaldehyde) (301–460)	48.8	(316)	A	[626-96-0] [87/5][47/5]
C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	3-methylcrotonic acid (363–473)	57.7	(378)	A	[541-47-9] [87/5]
C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	2-ethyl acrylate (243–372)	41.4	(258)		[140-88-5] [47/5]
C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	2-propenoic acid, ethyl ester	39.2			[140-88-5] [75/39]
		38.8±0.1	(300)	EB	[80-62-6] [02/16]
C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	methyl methacrylate (295–386)	36.3±0.2	(340)	EB	[02/16]
		33.3±0.4	(380)	EB	[02/16]
		37.9	(308)	A	[87/5]
		37.7	(333)		[84/31]
		38.0	(320)		[84/9]
		40.1			[75/39]
39.0	(327)		[56/8]		
C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	<i>trans</i> 2-methyl-2-butenic acid (350–453)	61.2	(365)	A	[80-59-1] [87/5]
C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	tetrahydro-2 <i>H</i> -pyran-2-one ( $\delta$ -valerolactone) (393–428)	52.4±0.2	(410)	EB	[542-28-9] [91/7]
		60.2±1.3	(298)	EB	[91/7]
		58.0±0.4	(298)	C	[90/1]
		48.6	(387)		[30/6]
C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	<i>dl</i> $\gamma$ -valerolactone (310–480)	54.8±0.4	(298)	C	[108-29-2] [90/1]
		53.5	(325)	A	[87/5][47/5]
C <sub>5</sub> H <sub>8</sub> O <sub>3</sub>	4-oxopentanoic acid				[123-76-2]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>8</sub> O <sub>3</sub>	(375–519) methyl acetoacetate	74.4	(390)	A	[87/5][47/5] [105-45-3]
	(289–446)	45.4	(304)	A	[87/5]
C <sub>5</sub> H <sub>8</sub> O <sub>4</sub>	dimethyl malonate				[108-59-8]
	(351–460)	52.9±0.2	(360)	EB	[02/20]
	(351–460)	49.5±0.2	(400)	EB	[02/20]
	(351–460)	46.1±0.3	(440)	EB	[02/20]
	(278–308)	61.8±0.8	(293)	GS	[92/13]
	(374–620)	50.0	(497)	EB, HG	[88/3]
C <sub>5</sub> H <sub>8</sub> O <sub>4</sub>	(308–454) glutaric acid	53.7	(323)	A	[87/5] [110-94-1]
	(428–576)	98.1	(443)	A	[87/5][47/5]
C <sub>5</sub> H <sub>8</sub> O <sub>4</sub>	diacetoxymethane				[628-51-3]
	(334–443)	50.6	(349)	A	[87/5]
C <sub>5</sub> H <sub>9</sub> BrO	3-bromo-2-pentanone				[815-48-5]
C <sub>5</sub> H <sub>9</sub> Cl	(273–333) cyclopentyl chloride	45.2	(288)	A	[87/5][72/20] [930-28-9]
		38.8±0.4	(298)	C	[93/17]
C <sub>5</sub> H <sub>9</sub> ClO <sub>2</sub>	(322–387) isopropyl chloroacetate	37.4	(337)	A, EB	[87/5][70/7] [105-48-6]
	(308–425)	44.3	(323)		[28/2][84/9]
C <sub>5</sub> H <sub>9</sub> ClO <sub>2</sub>	2-chloropropionic acid, ethyl ester				[535-13-7]
C <sub>5</sub> H <sub>9</sub> ClO <sub>2</sub>	(279–420) 2-chloropropionic acid, ethyl ester	46.5	(294)	A	[87/5][47/5] [623-71-2]
	(316–358)	56.0	(331)	A	[87/5]
C <sub>5</sub> H <sub>9</sub> ClS	(2-chloroethyl) allyl sulfide				[19155-35-2]
	(293–333)	50.2	(308)	A, GS	[87/5][49/8] [72/20][99/16]
C <sub>5</sub> H <sub>9</sub> Cl <sub>3</sub> O	3-chloro-2,2-bis(chloromethyl)-1-propanol				[813-99-0]
C <sub>5</sub> H <sub>9</sub> FOS	(404–450) 4-fluorothiobutyric acid, methyl ester	79.6	(419)	A	[87/5] [63732-24-1]
	(273–333)	52.4	(288)	A, GS	[87/5][48/14] [72/20][99/16]
C <sub>5</sub> H <sub>9</sub> FO <sub>2</sub>	4-fluorobutyric acid, methyl ester				[87/5][48/14]
C <sub>5</sub> H <sub>9</sub> FO <sub>2</sub>	(273–333) isopropyl fluoroacetate	47.3	(288)	A, GS	[72/20] [406-06-4]
	(273–333)	44.3	(288)	A, GS	[87/5][48/14]
C <sub>5</sub> H <sub>9</sub> FO <sub>3</sub>	3-fluoro-2-hydroxybutyric acid, methyl ester				[87/5][48/14]
C <sub>5</sub> H <sub>9</sub> N	(273–333) pivalonitrile	62.3	(288)	GS	[72/20] [630-18-2]
	(299–365)	37.0	(318)	BG	[71/2]
C <sub>5</sub> H <sub>9</sub> N	(313–371)	36.5	(328)	A, I	[87/5][67/16]
	(313–371)	37.8	(298)	I	[67/16]
	2-methylbutyronitrile				[18936-17-9]
C <sub>5</sub> H <sub>9</sub> N	(274–313) valeronitrile	42.5±0.3		GS	[94/5] [110-59-8]
	(313–418)	42.3	(328)	A	[87/5]
C <sub>5</sub> H <sub>9</sub> NO		44.3	(298)		[69/14] [872-50-4]
	N-methyl-2-pyrrolidone				[96/12]
	(330–373)	53.1	(345)	GS	[87/2]
	(340–476)	53.4	(350)	EB	[87/2]
C <sub>5</sub> H <sub>9</sub> NO	(340–476)	47.7	(425)	EB	[87/2]
	(333–473)	49.3	(403)		[79/21] [111-36-4]
C <sub>5</sub> H <sub>9</sub> NO	butyl isocyanate				[87/5]
C <sub>5</sub> H <sub>9</sub> NO	(273–389) isobutyl isocyanate	46.8	(288)	A	[87/5] [1873-29-6]
	(273–376)	44.2	(288)	A	[87/5]
C <sub>5</sub> H <sub>9</sub> NO	N-methyl methacrylamide				[3887-02-3]
C <sub>5</sub> H <sub>9</sub> NO	(355–489) 1-methyl-2-pyrrolidinone	60.9	(370)	A	[87/5] [872-50-4]
	(361–477)	49.2	(376)	A	[87/5][72/20]
	(291–299)	55.3	(295)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>9</sub> NO	<i>cis</i> 2-pentenoic acid amide (343–384)	74.8	(358)	A	[15856-96-9] [87/5]
C <sub>5</sub> H <sub>9</sub> NO	$\alpha$ -methoxyisobutyronitrile (261–285)	37.4±0.8	(298)	GS	[76474-09-4] [95/11]
C <sub>5</sub> H <sub>9</sub> NO	2-ethoxypropanenitrile (348–445)	46.7	(363)	A, EB	[14631-45-9] [87/5][76/12]
C <sub>5</sub> H <sub>9</sub> NO	2-piperidone (293–312)	74.5	(302)	A	[675-20-7] [87/5]
C <sub>5</sub> H <sub>9</sub> NO	2-ethyl-2-oxazoline	44.2±0.4	(298)	C	[10431-98-8] [76/27]
C <sub>5</sub> H <sub>9</sub> NO <sub>2</sub>	N-formylmorpholine (375–423)	56.9 52.7	(416) (399)	TGA	[4394-85-8] [89/7] [87/18]
C <sub>5</sub> H <sub>9</sub> N <sub>3</sub> O <sub>7</sub>	2-ethoxy-1,1,1-trinitropropane (293–310)	57.7	(301)	A	[26459-85-8] [87/5]
C <sub>5</sub> H <sub>9</sub> N <sub>3</sub> O <sub>9</sub>	2-hydroxymethyl-2-methyl-1,3-propanediol trinitrate (299–345)	88.1	(314)	A	[3032-55-1] [87/5]
C <sub>5</sub> H <sub>9</sub> N <sub>3</sub> O <sub>9</sub>	1,2,5-pentanetriol trinitrate (293–313)	41.7±2.1	(303)	A, GS	[98071-55-7] [87/5][57/5]
C <sub>5</sub> H <sub>10</sub>	1,1-dimethylcyclopropane	25.1±0.8	(298)	EB	[1630-94-0] [74/3]
C <sub>5</sub> H <sub>10</sub>	cyclopentane (280–331)	29.2	(295)	A	[287-92-3] [87/5]
	(322–384)	28.0	(337)	A	[87/5]
	(381–455)	27.2	(396)	A	[87/5]
	(452–511)	27.5	(467)	A	[87/5]
		28.5	(298)		[71/28]
		28.5±0.1	(298)	C	[59/8]
		27.9±0.1	(310)	C	[59/8]
		27.3±0.1	(322)	C	[59/8]
		27.4	(323)		[46/11]
	(289–323)	29.0	(304)	MM	[45/2]
		29.2	(298)	C	[43/4]
C <sub>5</sub> H <sub>10</sub>	1-pentene (218–311)	29.1	(233)	A	[109-67-1] [87/5]
	(286–304)	26.7	(295)	MM	[50/6]
		25.5	(298)		[71/28]
	(273–334)	26.9	(288)		[49/12]
		26.2±0.1	(284)	C	[49/12]
		25.5±0.1	(298)	C	[49/12]
		25.2±0.1	(303)	C	[49/12]
C <sub>5</sub> H <sub>10</sub>	<i>cis</i> 2-pentene (234–318)	29.8	(249)	A	[627-20-3] [87/5]
		26.8	(298)		[71/28]
	(274–341)	28.1	(289)	EB	[50/8]
C <sub>5</sub> H <sub>10</sub>	<i>trans</i> 2-pentene (251–341)	28.8	(266)	A	[646-04-8] [87/5]
		26.7	(298)		[71/28]
	(274–341)	28.0	(289)	EB	[50/8]
C <sub>5</sub> H <sub>10</sub>	2-methyl-1-butene (240–336)	28.5	(255)	A	[563-46-2] [87/5]
		25.9	(298)		[71/28]
	(274–336)	27.3	(289)		[49/12]
		25.9±0.1	(298)	C	[49/12]
		25.5±0.1	(304)	C	[49/12]
C <sub>5</sub> H <sub>10</sub>	3-methyl-1-butene (237–324)	26.3	(252)	A	[563-45-1] [87/5]
		23.9	(298)		[71/28]
	(273–324)	25.4	(288)	EB	[50/8]
C <sub>5</sub> H <sub>10</sub>	2-methyl-2-butene (271–343)	28.4	(286)	A	[515-35-9] [87/5]
		27.1	(298)		[71/28]
	(276–344)	28.3	(291)		[49/12]
		27.5±0.1	(290)	C	[49/12]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>10</sub> Br <sub>2</sub>	1,1-dibromopentane (360–501)	27.1 ± 0.1	(298)	C	[49/12]
		26.3 ± 0.1	(312)	C	[49/12]
		48.8	(375)	A, EST	[13320-56-4] [87/5][56/16] [72/20]
C <sub>5</sub> H <sub>10</sub> Br <sub>2</sub>	1,2-dibromopentane (348–465) (350–450)	46.5	(363)	A	[3234-49-9] [87/5]
		49.0	(298)		[75/15][91/2]
		49.2 ± 0.8	(298)	EB	[75/15]
		48.8	(307)	A	[87/5][47/5]
C <sub>5</sub> H <sub>10</sub> Br <sub>2</sub>	1,4-dibromopentane (377–524)	51.8	(392)	A	[626-87-9] [87/5][72/20]
C <sub>5</sub> H <sub>10</sub> Br <sub>2</sub>	1,5-dibromopentane (396–549)	54.4	(411)	A	[111-24-0] [87/5][72/20]
C <sub>5</sub> H <sub>10</sub> Cl <sub>2</sub>	1,1-dichloropentane (340–410) (325–457)	44.3	(298)	A	[820-55-3] [87/12][91/2]
		42.0	(340)	A, EST	[87/5][56/16] [72/20]
					[1674-33-5]
C <sub>5</sub> H <sub>10</sub> Cl <sub>2</sub>	1,2-dichloropentane (330–420) (332–418)	44.4	(298)		[91/2]
		41.9	(347)	A	[87/5]
		43.8 ± 0.7	(298)	EB	[75/16]
C <sub>5</sub> H <sub>10</sub> Cl <sub>2</sub>	1,4-dichloropentane (350–440) (348–443)	48.9	(298)		[626-92-6] [91/2]
		45.0	(363)	A	[87/5]
		48.1 ± 0.8	(298)	EB	[75/16]
C <sub>5</sub> H <sub>10</sub> Cl <sub>2</sub>	1,5-dichloropentane (360–450) (362–453)	52.2	(298)		[628-76-2] [91/2]
		47.2	(377)	A	[87/5]
		51.3 ± 0.8	(298)	EB	[75/16]
C <sub>5</sub> H <sub>10</sub> Cl <sub>2</sub> O	(2-chloroethyl) (2-chloroisopropyl) ether (297–453)	49.7	(312)	A	[52250-75-6] [87/5][47/5]
C <sub>5</sub> H <sub>10</sub> Cl <sub>2</sub> O	(2-chloroethyl) (2-chloropropyl) ether (302–467)	49.3	(317)	A	[42434-29-7] [87/5][47/5]
C <sub>5</sub> H <sub>10</sub> Cl <sub>2</sub> O <sub>2</sub>	bis(2-chloroethoxy) methane (326–488)	54.2	(341)	A	[111-91-1] [87/5][47/5]
C <sub>5</sub> H <sub>10</sub> F <sub>2</sub>	1,1-difluoropentane (268–378)	34.4	(283)	A, EST	[62127-40-6] [87/5][56/16] [72/20]
					[371-65-3]
C <sub>5</sub> H <sub>10</sub> F <sub>2</sub>	2,2-difluoropentane (262–367)	33.7	(277)	A	[87/5][72/20]
C <sub>5</sub> H <sub>10</sub> F <sub>2</sub>	3,3-difluoropentane (262–368)	33.8	(277)	A	[358-03-2] [87/5][72/20]
C <sub>5</sub> H <sub>10</sub> F <sub>2</sub> O <sub>2</sub>	bis(2-fluoroethoxy) methane (273–333)	52.3	(288)	A, GS	[373-40-0] [87/5][48/14] [72/20]
C <sub>5</sub> H <sub>10</sub> N <sub>2</sub>	3-(dimethylamino)propionitrile (330–445) (331–407) (290–317)	42.2 ± 0.1			[1738-25-6] [92/20]
		45.9	(345)	A	[87/5]
		52.4	(346)	A	[87/5]
		44.1 ± 0.2			[84/28]
		47.3			[77/29]
C <sub>5</sub> H <sub>10</sub> N <sub>2</sub> O	1-nitrosopiperidine (333–383)	47.7	(348)	A	[100-75-4] [87/5]
C <sub>5</sub> H <sub>10</sub> N <sub>2</sub> O <sub>6</sub>	1,5-pentanediol dinitrate (293–313)	78.9 ± 5.9	(303)	A, GS	[3457-92-9] [87/5][57/5] [72/20]
					[25385-63-1]
C <sub>5</sub> H <sub>10</sub> N <sub>2</sub> O <sub>6</sub>	2,4-pentanediol dinitrate (293–313)	60.6 ± 5.9	(303)	A, GS	[87/5][57/5] [72/20]
C <sub>5</sub> H <sub>10</sub> N <sub>2</sub> O <sub>6</sub>	1-(methoxymethoxy)-2,2-dinitropropane (293–333)	71.3	(308)	A	[67727-92-8] [87/5]
C <sub>5</sub> H <sub>10</sub> O	allyl ethyl ether (244–401)	34.6	(259)	A	[557-31-3] [87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>10</sub> O	1-penten-3-ol	49.9±0.1	(313)	C	[616-25-1] [96/9]
		48.4±0.1	(328)	C	[96/9]
		46.8±0.1	(343)	C	[96/9]
C <sub>5</sub> H <sub>10</sub> O	3,3-dimethyl-2-propen-1-ol (348–372)	48.7	(360)		[89/8]
C <sub>5</sub> H <sub>10</sub> O	2-methyl-3-buten-2-ol (290–372)	43.1±0.1	(331)		[115-18-4] [88/4]
C <sub>5</sub> H <sub>10</sub> O	3-buten-3-methyl-1-ol (338–409)	55.6	(353)	A	[763-32-6] [87/5]
C <sub>5</sub> H <sub>10</sub> O	( <i>dl</i> ) 3-buten-3-methyl-2-ol (358–379)	41.0	(368)	A	[87/5]
C <sub>5</sub> H <sub>10</sub> O	cyclopentanol (323–373) (346–437) (283–321) (283–323) (279–314)	57.1	(298)	CGC	[96-41-3] [95/21]
		52.7	(361)	A, EB	[87/7]
		56.1	(298)	A	[87/5]
		56.4	(298)	A	[87/5]
		57.1	(294)		[75/1]
		57.5±0.2 57.5±0.3	(298) (298)	C C	[68/17] [66/2]
C <sub>5</sub> H <sub>10</sub> O	tetrahydropyran (335–412) (273–362) (273–288)	33.2	(350)		[142-68-7] [00/12]
		35.0	(288)	A	[87/5]
		35.0	(281)		[72/20][58/23]
C <sub>5</sub> H <sub>10</sub> O	2-methyltetrahydrofuran (283–353)	34.0	(298)	A	[96-47-9] [87/5]
		33.7	(298)		[70/36]
C <sub>5</sub> H <sub>10</sub> O	3-methyl-2-butanone (311–369) (363–415) (405–500)  (328–377)	35.5	(326)	A	[563-80-4] [87/5]
		33.8	(378)	A	[87/5]
		32.6	(420)	A	[87/5]
		36.8	(298)	C	[83/3]
		35.0	(343)		[87/5][75/8]
		36.9	(298)		[75/8]
		35.0±0.1	(327)	C	[67/39]
		33.8±0.1 32.3±0.1	(346) (367)	C C	[67/39] [67/39]
C <sub>5</sub> H <sub>10</sub> O	2-pentanone (336–422) (416–501) (487–561)	36.1	(351)	A	[107-87-9] [87/5]
		33.7	(431)	A	[87/5]
		33.3	(502)	A	[87/5]
		38.4	(298)	C	[83/3]
		38.3±0.3	(298)	GCC	[79/7]
		38.4	(298)		[75/8]
		39.5	(283)	EB	[66/12]
		36.5	(344)	A, GS, EB	[87/5][75/8] [65/7][72/20]
		36.1±0.1	(335)	C	[61/17]
		34.4±0.1	(360)	C	[61/17]
		33.4±0.1	(375)	C	[61/17]
C <sub>5</sub> H <sub>10</sub> O	3-pentanone (290–375) (329–426) (421–502) (494–561)	32.8±0.1	(386)	C	[61/17]
		32.2±0.1	(394)	C	[61/17]
		35.9±0.2	(332)		[96-22-0] [88/4]
		36.6	(344)	A	[87/5]
		33.7	(436)	A	[87/5]
		33.3	(509)	A	[87/5]
		38.5	(298)	C	[83/3]
		38.7±0.3	(298)	GCC	[79/7]
		38.6	(298)		[75/8]
		36.1±0.1	(335)	C	[67/39]
34.9±0.1	(354)	C	[67/39]		
33.5±0.1	(375)	C	[67/39]		
(329–384)	36.6	(344)	A, GS, EB	[87/5][75/8]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>10</sub> O	(283–323)	36.9	(303)		[65/7][72/20] [37/9]
	pentanal				[110-62-3]
	(313–353)	38.3	(298)	CGC	[95/21]
	(290–385)	U50.0	(305)	A	[87/5]
C <sub>5</sub> H <sub>10</sub> O		38.1±0.1	(298)		[81/18]
	(305–377)	37.3	(320)		[79/15]
C <sub>5</sub> H <sub>10</sub> O	pivaldehyde				[630-19-3]
	(308–336)	34.2	(322)		[89/2]
C <sub>5</sub> H <sub>10</sub> O	3,3-dimethyloxetane				[6921-35-3]
C <sub>5</sub> H <sub>10</sub> OS		33.9±0.3	(298)	C	[71/25]
	S-propyl thiolacetate				[2307-10-0]
C <sub>5</sub> H <sub>10</sub> OS		44.1±0.2	(298)	C	[66/2]
	S-isopropyl thiolacetate				[926-73-8]
C <sub>5</sub> H <sub>10</sub> OS		42.3±0.2	(298)	C	[66/2]
	1-(methylthio)-2-(vinylloxy)ethane				[6607-53-0]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	(316–347)	47.5	(331)	A	[87/5][99/16]
	tetrahydrofurfuryl alcohol				[97-99-4]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	(393–453)	46.2	(408)	A	[87/5]
	(333–443)	46.5	(388)		[79/21]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	2,2-dimethyl-1,3-dioxolane				[2916-31-6]
	(278–318)	41.1±0.2		GS	[98/21][02/32]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	4-methyl-1,3-dioxane				[1120-97-4]
	(273–313)	43.7±0.3		GS	[98/21][02/32]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	1-methoxy-2-butanone				[50741-70-3]
	(297–408)	44.9	(312)	A	[87/5][34/3] [72/20]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	3-hydroxy-3-methyl-2-butanone				[115-22-0]
	(317–419)	41.1	(332)	A	[87/5][72/20] [50/11]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	4-hydroxy-3-methyl-2-butanone				[3393-64-4]
	(375–528)	58.3	(390)	A	[87/5][72/20]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	(317–458)	59.0	(332)		[47/5]
	butyl formate				[592-84-7]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	(295–380)	37.9	(310)	A	[87/5]
		41.3±0.1	(298)	C	[80/13]
		40.1±0.1	(313)	C	[80/13]
		39.0±0.1	(328)	C	[80/13]
		38.7±0.1	(346)	C	[76/14]
		38.1±0.1	(355)	C	[76/14]
		37.3±0.1	(363)	C	[76/14]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	sec butyl formate				[589-40-2]
	(238–367)	37.7	(253)	A	[87/5]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	ethyl propionate				[105-37-3]
	(315–420)	36.7	(330)		[97/11]
	(372–538)	34.4	(387)	A	[87/5]
		39.3±0.1	(298)	C	[80/13]
		38.2±0.1	(313)	C	[80/13]
		36.6±0.1	(336)	C	[77/12]
		36.0±0.1	(344)	C	[77/12]
		35.5±0.1	(351)	C	[77/12]
		34.5±0.1	(363)	C	[77/12]
		39.1±0.1	(298)	C	[72/3]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	(306–372)	38.2	(321)	A	[87/5][65/3] [72/20]
	isobutyl formate				[542-55-2]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	(371–507)	36.6	(386)	A	[87/5]
	(240–372)	38.6	(255)	A	[87/5][47/5]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	isopropyl acetate				[108-21-4]
	(313–353)	37.0	(298)	CGC	[95/21]
		37.2±0.2	(298)	C	[66/2]
	(235–362)	38.8	(250)	A	[87/5][47/5]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	(273–363)	36.3	(288)	A	[29/5]
	methyl butyrate				[623-42-7]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		36.9	(350)		[02/27]
		41.1±0.2	(284)		[02/27]
		40.6±0.2	(298)		[02/27]
	(349–384)	36.4	(364)		[90/10]
		39.0±0.4	(298)	GC	[87/17]
	(375–545)	34.2	(390)	A	[87/5]
		39.8±0.3	(298)	GCC	[80/5]
		39.3±0.2	(298)	C	[79/1]
	(246–375)	42.8	(261)	A	[87/5][47/5]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	methyl isobutyrate (366–533)	33.7	(381)	A	[547-63-7] [87/5]
		37.3	(298)		[U/1][85/6]
	(239–366)	40.1	(254)		[87/5][47/5]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	propyl acetate (313–363)	37.7	(298)	CGC	[109-60-4] [95/21]
	(333–372)	37.0	(348)		[93/8]
	(374–542)	34.8	(389)	A	[87/5]
	(322–383)	38.1	(327)	DTA	[80/8]
		39.8±0.1	(298)	C	[80/13]
		38.6±0.1	(313)	C	[80/13]
		35.3±0.1	(343)	C	[80/13]
		36.9±0.1	(336)	C	[77/12]
		36.4±0.1	(344)	C	[77/12]
		35.8±0.1	(351)	C	[77/12]
		34.8±0.1	(363)	C	[77/12]
		36.9	(335)		[76/8]
		33.9	(375)		[76/8]
		39.1±0.2	(298)	C	[66/2]
	(312–374)	38.2	(327)	A	[87/5][65/3] [72/20]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	trimethylacetic acid (pivalic acid) (344–472)	57.6±0.2	(320)	EB	[75-98-9] [02/16]
	(344–472)	54.4±0.2	(360)	EB	[02/16]
	(344–472)	50.9±0.2	(400)	EB	[02/16]
	(344–472)	47.0±0.4	(440)	EB	[02/16]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	valeric acid (pentanoic acid) (283–313)	63.0±9.5	(298)	GS	[109-52-4] [00/6]
	(353–393)	65.9	(298)	CGC	[95/21]
	(373–465)	57.9	(388)	EB	[87/9]
	(375–523)	58.0	(390)	A	[87/5]
	(243–266)	62.4±3	(298)	TE	[79/4]
C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	3-methylbutanoic acid (isovaleric acid) (293–323)	60.7±0.3	(308)	GS	[503-74-2] [00/6]
	(293–323)	61.2±0.3	(298)	GS	[00/6]
	(364–464)	55.8	(379)	A, EB	[87/9]
	(307–448)	56.6	(322)	A	[87/5]
	(243–259)	57.5±3	(298)	TE	[79/4]
monomer		46.9±0.2	(298)	C	[70/8]
	(360–377)	45.9	(375)		[1894/1]
C <sub>5</sub> H <sub>10</sub> O <sub>3</sub>	diethyl carbonate (352–403)	39.7	(367)		[105-58-8] [02/31]
	(308–400)	40.9	(323)	A	[87/5]
		43.6±0.2	(298)	C	[73/3]
	(308–368)	39.1		MM	[71/1]
	(263–399)	44.3	(278)		[47/5]
C <sub>5</sub> H <sub>10</sub> O <sub>3</sub>	ethylene glycol methyl ethyl acetate (343–417)	50.3±0.1	(298)	C	[110-49-6] [70/17]
		44.3	(358)	A	[87/5][57/6] [72/20]
C <sub>5</sub> H <sub>10</sub> O <sub>3</sub>	(dl) ethyl lactate (308–426)	49.2	(323)	A	[97-64-3] [87/5]
	(324–427)	51.3	(339)	A	[87/5]
C <sub>5</sub> H <sub>10</sub> O <sub>3</sub>	3-hydroxypropionic acid, ethyl ester (338–356)	62.2	(347)	A	[623-72-3] [87/5]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>10</sub> O <sub>3</sub>	3-methoxypropionic acid, methyl ester (350–438)	43.4	(370)	A	[3852-09-3] [87/5]
C <sub>5</sub> H <sub>10</sub> O <sub>3</sub>	1,3,6-trioxacyclooctane	48.8±0.2	(298)	C	[1779-19-7] [82/9]
C <sub>5</sub> H <sub>10</sub> O <sub>4</sub>	glycerol, 1-monoacetate (385–458)	74.0	(400)	A	[106-61-6] [87/5][72/20]
C <sub>5</sub> H <sub>10</sub> S	allyl ethyl sulfide (300–327)	38.9	(313)	A, EB	[5296-62-8] [87/5][62/16]
C <sub>5</sub> H <sub>10</sub> S	(300–327)	39.3	(298)		[99/16] [62/16]
C <sub>5</sub> H <sub>10</sub> S	cyclopentanethiol (354–446)	38.2	(369)		[1679-07-8] [99/16]
C <sub>5</sub> H <sub>10</sub> S	(348–446)	38.4	(363)	A, EB	[87/5][61/7] [66/5]
C <sub>5</sub> H <sub>10</sub> S		37.9±0.1	(361)	C	[61/7]
C <sub>5</sub> H <sub>10</sub> S		36.7±0.1	(381)	C	[61/7]
C <sub>5</sub> H <sub>10</sub> S		35.3±0.1	(405)	C	[61/7]
C <sub>5</sub> H <sub>10</sub> S	2-methyltetrahydrothiophene (303–433)	40.6	(318)		[1795-09-1] [99/16]
C <sub>5</sub> H <sub>10</sub> S		41.8	(298)		[71/28]
C <sub>5</sub> H <sub>10</sub> S		41.3±0.1	(298)		[72/11][66/5]
C <sub>5</sub> H <sub>10</sub> S	(335–447)	39.0	(350)	A, EB	[87/5][66/5]
C <sub>5</sub> H <sub>10</sub> S	(341–411)	38.7	(356)		[52/9]
C <sub>5</sub> H <sub>10</sub> S	3-methyltetrahydrothiophene (307–439)	41.3	(322)		[4740-00-5] [99/16]
C <sub>5</sub> H <sub>10</sub> S		42.7	(298)		[71/28]
C <sub>5</sub> H <sub>10</sub> S		42.1±0.1	(298)		[72/11][66/5]
C <sub>5</sub> H <sub>10</sub> S	(340–453)	39.6	(355)	A, EB	[87/5][66/5]
C <sub>5</sub> H <sub>10</sub> S	(346–422)	39.3	(361)		[52/9]
C <sub>5</sub> H <sub>10</sub> S	pentamethylene sulfide (310–443)	41.4	(325)		[1613-51-0] [99/16]
C <sub>5</sub> H <sub>10</sub> S		42.8	(298)		[71/28]
C <sub>5</sub> H <sub>10</sub> S	(347–423)	39.5	(362)	A, EB	[87/5][52/9]
C <sub>5</sub> H <sub>11</sub> Br	1-bromopentane (323–363)	40.9	(298)	CGC	[110-53-2] [95/21]
C <sub>5</sub> H <sub>11</sub> Br		41.4±0.1	(298)	C	[68/1]
C <sub>5</sub> H <sub>11</sub> Br		41.1±0.1	(298)	C	[66/2]
C <sub>5</sub> H <sub>11</sub> Br	(293–443)	41.0	(308)	A, EST	[87/5][61/13] [72/20]
C <sub>5</sub> H <sub>11</sub> Br	( <i>dl</i> ) sec-pentylbromide, 2-bromopentane (303–432)	37.5	(318)	A	[107-81-3] [87/5][72/20]
C <sub>5</sub> H <sub>11</sub> Br	2-bromopentane (323–363)	38.5	(298)	CGC	[107-81-3] [95/21]
C <sub>5</sub> H <sub>11</sub> Br	3-bromopentane (304–434)	37.7	(319)	A	[1809-10-5] [87/5][72/20]
C <sub>5</sub> H <sub>11</sub> Br	1-bromo-2,2-dimethylpropane (293–420)	35.6	(308)	A	[630-17-1] [87/5][72/20]
C <sub>5</sub> H <sub>11</sub> Br	1-bromo-2-methylbutane (306–436)	37.9	(321)	A	[10422-35-2] [87/5][72/20]
C <sub>5</sub> H <sub>11</sub> Br	1-bromo-3-methylbutane (306–436)	37.9	(321)	A	[107-82-4] [87/5][72/20]
C <sub>5</sub> H <sub>11</sub> Br	(253–393)	41.0	(268)		[47/5]
C <sub>5</sub> H <sub>11</sub> Br	2-bromo-2-methylbutane (295–422)	36.4	(310)	A	[507-36-8] [87/5][72/20]
C <sub>5</sub> H <sub>11</sub> Br	2-bromo-3-methylbutane (301–430)	37.2	(316)	A	[18295-25-5] [87/5][72/20]
C <sub>5</sub> H <sub>11</sub> Cl	1-chloropentane (313–353)	38.8	(298)	CGC	[543-59-9] [95/21]
C <sub>5</sub> H <sub>11</sub> Cl		38.2	(298)	C	[81/4]
C <sub>5</sub> H <sub>11</sub> Cl		37.3	(313)	C	[81/4]
C <sub>5</sub> H <sub>11</sub> Cl		36.5	(328)	C	[81/4]
C <sub>5</sub> H <sub>11</sub> Cl		35.6	(343)	C	[81/4]
C <sub>5</sub> H <sub>11</sub> Cl		34.6	(358)	C	[81/4]
C <sub>5</sub> H <sub>11</sub> Cl		34.0	(363)	C	[81/4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		38.2±0.1	(298)	C	[68/1]
	(277–421)	38.7	(292)	A, EST	[87/5][61/13]
					[72/20]
	(283–323)	36.2	(303)		[37/9]
C <sub>5</sub> H <sub>11</sub> Cl	2-chloropentane				[625-29-6]
		36.0	(298)	C	[81/4]
		35.2	(313)	C	[81/4]
		34.4	(328)	C	[81/4]
		33.5	(358)	C	[81/4]
		31.9	(368)	C	[81/4]
	(289–409)	36.2	(304)	A	[87/5][72/20]
C <sub>5</sub> H <sub>11</sub> Cl	3-chloropentane				[616-20-6]
	(289–410)	36.5	(304)	A	[87/5][72/20]
C <sub>5</sub> H <sub>11</sub> Cl	1-chloro-2,2-dimethylpropane				[753-89-9]
	(279–395)	34.9	(294)	A	[87/5][72/20]
C <sub>5</sub> H <sub>11</sub> Cl	( <i>dl</i> ) 1-chloro-2-methylbutane				[616-13-7]
	(300–374)	35.4	(315)	A	[87/5][72/20]
C <sub>5</sub> H <sub>11</sub> Cl	2-chloro-2-methylbutane				[594-36-5]
	(280–396)	35.0	(295)	A	[87/5][72/20]
C <sub>5</sub> H <sub>11</sub> Cl	2-chloro-3-methylbutane				[631-65-2]
	(285–405)	35.9	(300)	A	[87/5][72/20]
C <sub>5</sub> H <sub>11</sub> Cl	1-chloro-3-methylbutane				[107-84-6]
	(313–353)	38.1	(298)	CGC	[95/21]
		36.2	(298)	C	[81/4]
		35.4	(313)	C	[81/4]
		34.6	(328)	C	[81/4]
		33.7	(343)	C	[81/4]
		32.8	(358)	C	[81/4]
		32.3	(368)	C	[81/4]
C <sub>5</sub> H <sub>11</sub> ClO <sub>2</sub> S	1-pentanesulfonyl chloride				[6303-18-0]
	(293–387)	58.5	(308)		[99/16]
	(387–492)	55.1	(402)		[99/16]
	(263–293)	60.5	(278)	A	[87/5][99/16]
C <sub>5</sub> H <sub>11</sub> Cl <sub>2</sub> N	N-methyl- <i>bis</i> (2-chloroethyl)amine				[51-75-2]
	(273–333)	54.6	(288)	A	[87/5]
C <sub>5</sub> H <sub>11</sub> F	1-fluoropentane				[592-50-7]
	(245–373)	33.7	(260)	EST	[87/5][61/13]
					[72/20]
C <sub>5</sub> H <sub>11</sub> F	1-fluoro-2-methylbutane				[10086-64-3]
	(287–329)	30.7	(302)	A	[87/5][72/20]
C <sub>5</sub> H <sub>11</sub> F	2-fluoro-2-methylbutane				[661-53-0]
	(249–341)	31.8	(264)	A	[87/5][72/20]
C <sub>5</sub> H <sub>11</sub> I	1-iodopentane				[628-17-1]
	(313–353)	44.4	(298)	CGC	[95/21]
		45.3±0.1	(298)	C	[68/1]
	(312–473)	43.1	(327)	A, EST	[87/5][61/13]
					[72/20]
C <sub>5</sub> H <sub>11</sub> I	1-iodo-2-methylbutane				[616-14-8]
	(339–406)	39.8	(354)	A	[87/5][72/20]
C <sub>5</sub> H <sub>11</sub> I	1-iodo-3-methylbutane				[541-28-6]
	(313–353)	42.2	(298)	CGC	[95/21]
	(270–422)	43.5	(285)	A	[87/5][47/5]
C <sub>5</sub> H <sub>11</sub> I	2-iodo-2-methylbutane				[594-38-7]
	(308–398)	40.4	(323)	A	[87/5][72/20]
C <sub>5</sub> H <sub>11</sub> N	cyclopentylamine				[1003-03-8]
	(317–419)	38.3	(332)	EB	[87/5][75/5]
	(317–419)	40.2±0.4	(298)	EB	[75/7]
C <sub>5</sub> H <sub>11</sub> N	1-methylpyrrolidine				[120-94-5]
	(270–298)	35.0±0.7	(284)	GS	[98/12]
	(270–298)	34.2±0.7	(298)	GS	[98/12]
	(273–315)	33.7	(288)	A	[87/5]
C <sub>5</sub> H <sub>11</sub> N	piperidine				[110-89-4]
		36.6	(338)		[88/7]
		35.3	(357)		[88/7]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>11</sub> NO	(315–417) N,N-diethylformamide	37.6	(330)	A, EB, IPM	[87/5][68/4] [617-84-5]
		50.3	(298)		[85/7][85/6]
C <sub>5</sub> H <sub>11</sub> NO	(303–363) N-isopropylacetamide	48.9	(318)	A	[87/5][68/3] [1118-69-0]
		66.4±0.3	(298)	C	[84/6]
C <sub>5</sub> H <sub>11</sub> NO	N-propylacetamide	69.8±0.2	(298)	C	[5331-48-6] [84/6]
C <sub>5</sub> H <sub>11</sub> NO	N,N-dimethylpropionamide (326–424)	53.5	(341)	A	[758-96-3] [87/5]
		52.9			[77/29]
C <sub>5</sub> H <sub>11</sub> NO	N-methyl-2-methylpropionamide	67.1±0.2	(298)	C	[84/6]
C <sub>5</sub> H <sub>11</sub> NO	N-methylmorpholine (274–304)	40.2±0.3	(288)	GS	[109-02-4] [98/13]
	(274–304)	39.6±0.3	(298)	GS	[98/13]
	(323–363)	33.6	(343)	TGA	[87/18]
	(297–389)	38.4	(312)	A	[87/5]
	(276–390)	40.0	(291)	A	[87/5]
C <sub>5</sub> H <sub>11</sub> NO	1-(dimethylamino)-2-propanone (298–338)	43.6±0.3	(298)	GS	[15364-56-4] [94/3]
C <sub>5</sub> H <sub>11</sub> NO	3-pentanone oxime (318–425)	55.8	(333)	A	[1188-11-0] [87/5]
C <sub>5</sub> H <sub>11</sub> NO <sub>2</sub>	methyl 2-(N,N-dimethylamino)ethanoate (278–308)	43.9±0.4	(293)	GS	[92/13]
C <sub>5</sub> H <sub>11</sub> NO <sub>2</sub>	1-nitropentane (278–318)	50.3±0.2	(298)	GS	[628-05-7] [97/5]
C <sub>5</sub> H <sub>11</sub> NO <sub>2</sub>	isobutyl carbamate (356–479)	58.8	(371)	A	[543-28-2] [87/5][47/5]
C <sub>5</sub> H <sub>11</sub> NO <sub>2</sub>	N,N-dimethyl lactamide (351–417)	73.7	(366)	A	[31502-31-5] [87/5]
C <sub>5</sub> H <sub>11</sub> NO <sub>3</sub>	isopentyl nitrate (278–421)	47.0	(293)	A	[543-87-3] [87/5][47/5]
C <sub>5</sub> H <sub>11</sub> P	phosphorinane (294–345)	39.9	(309)	A, T	[4743-40-2] [87/5][66/9]
C <sub>5</sub> H <sub>12</sub>	pentane (308–423)	26.7	(323)		[109-66-0] [02/34]
		26.4	(298)		[94/12]
	(223–352)	29.8	(238)	A	[87/5]
	(143–223)	32.3	(208)	A	[87/5]
	(350–422)	26.1	(365)	A	[87/5]
	(418–470)	26.2	(433)	A	[87/5]
		26.6±0.1	(298)	C	[82/6]
		26.4	(298)	C	[81/9]
		25.5	(310)		[77/31]
		23.0	(350)		[77/31]
		19.7	(390)		[77/31]
		15.1	(430)		[77/31]
		8.5	(460)		[77/31]
	(216–296)	26.2	(298)		[75/32]
	(269–341)	27.9	(284)	EB	[87/5][74/11] [71/28]
	26.4	(298)		[47/7]	
(286–310)	27.4	(298)	MM	[45/2]	
	26.2	(298)		[40/15]	
C <sub>5</sub> DH <sub>11</sub>	1-deuteropentane (223–303)	26.2	(298)		[75/32]
C <sub>5</sub> DH <sub>11</sub>	3-deuteropentane (213–294)	26.3	(298)		[75/32]
C <sub>5</sub> D <sub>12</sub>	pentane—d <sub>12</sub> (205–298)	26.0	(298)		[2031-90-5] [75/32]
C <sub>5</sub> H <sub>12</sub>	2,2-dimethylpropane (neopentane) (268–313)	24.0	(283)	A	[463-82-1] [87/5]
	(312–385)	23.1	(327)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>5</sub> H <sub>12</sub>	(382–433)	23.1	(397)	A	[87/5]	
		21.8	(298)	C	[81/9]	
		22.2	(290)		[77/32]	
		19.5	(330)		[77/32]	
		16.2	(370)		[77/32]	
	(257–293)	11.1	(410)		[77/32]	
		24.3	(272)		[75/26][84/9]	
	(343–433)	22.8	(358)		[73/28][84/9]	
		21.85	(298)		[71/28]	
		22.8±0.1	(283)		[36/8]	
		2-methylbutane (isopentane)				[78–78–4]
		(255–323)	26.9	(270)		[91/15]
		(216–323)	28.5	(231)	A	[87/5]
		(300–460)	25.2	(315)	A	[87/5]
		(320–391)	25.2	(335)	A	[87/5]
	(385–416)	24.8	(400)	A	[87/5]	
	(412–460)	25.3	(427)	A	[87/5]	
		24.4	(310)		[77/33]	
		21.5	(350)		[77/33]	
		18.0	(390)		[77/33]	
		12.9	(430)		[77/33]	
		24.8	(298)		[71/28]	
	(190–300)	30.2	(205)		[47/5]	
	(289–301)	26.2	(295)	MM	[45/2]	
		25.0	(298)	C	[42/5]	
C <sub>5</sub> H <sub>12</sub> ClF <sub>3</sub> N <sub>2</sub> S	chlorobis(N-methylmethanaminato)(trifluoromethyl) sulfur				[63265-71-4]	
		38.1	(368)	I	[77/15]	
C <sub>5</sub> H <sub>12</sub> ClF <sub>3</sub> N <sub>2</sub> OS	chlorobis(N-methylmethanaminato)oxo(trifluoromethyl) sulfur				[63265-73-6]	
		40.2	(477)	I	[77/15]	
C <sub>5</sub> H <sub>12</sub> NO <sub>3</sub> PS <sub>2</sub>	phosphorodithioic acid, O,O-dimethyl-S-[2-(methylamino)-2-oxoethyl] ester				[60-51-5]	
	(283–390)	95.0	(298)	A	[87/5]	
C <sub>5</sub> H <sub>12</sub> N <sub>2</sub>	methyl butyldiazene				[4426-46-4]	
		36.4±0.2	(298)	C	[78/3]	
C <sub>5</sub> H <sub>12</sub> N <sub>2</sub>	N-methylpiperazine				[109-01-3]	
	(274–319)	46.7	(289)	A	[87/5]	
C <sub>5</sub> H <sub>12</sub> N <sub>2</sub> O	1,1,3,3-tetramethylurea				[632-22-4]	
	(320–450)	41.7	(450)	A, EB	[87/2]	
	(320–450)	52.2	(325)	A, EB	[87/2]	
C <sub>5</sub> H <sub>12</sub> N <sub>2</sub> S	1,3-diethylthiourea				[105-55-5]	
	(351–384)	101±3.0	(368)	ME, TE	[94/21]	
C <sub>5</sub> H <sub>12</sub> O	1-methoxybutane				[628-28-4]	
	(293–367)	32.5	(308)	A	[87/5]	
		32.4	(398)	C	[80/3]	
	(265–367)	32.4	(298)		[76/2]	
	(265–367)	29.6	(343)		[76/2]	
		32.5±0.1	(298)	C	[75/3]	
	(296–342)	32.4	(311)	EB	[69/15]	
C <sub>5</sub> H <sub>12</sub> O	1-ethoxypropane				[628-32-0]	
	(264–359)	33.0	(279)	A	[87/5][76/2]	
		31.4	(298)	C	[80/3]	
	(264–359)	31.4	(298)		[76/2]	
	(264–359)	29.0	(336)		[76/2]	
		31.4±0.1	(298)	C	[75/3]	
	(293–335)	31.6	(308)		[69/15]	
C <sub>5</sub> H <sub>12</sub> O	ethyl isopropyl ether				[625-54-7]	
		30.0	(298)	C	[80/3]	
C <sub>5</sub> H <sub>12</sub> O	methyl <i>tert</i> -butyl ether				[1634-04-4]	
	(300–328)	29.9	(314)		[02/26]	
	(315–365)	29.6	(330)		[98/9]	
	(300–411)	31.2	(315)	EB	[94/10]	
	(287–326)	30.4	(302)		[91/3]	
		29.8	(298)	C	[80/3]	
	(287–351)	30.2	(302)	A	[87/5][76/2]	
		29.6	(298)		[76/2]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference		
C <sub>5</sub> H <sub>12</sub> O	1-pentanol	27.9	(328)		[76/2]		
		30.4±0.1	(298)	C	[75/3]		
						[71-41-0]	
			44.4	(411)		[00/26]	
			40.1	(448)		[00/26]	
			36.1	(473)		[00/26]	
			31.7	(498)		[00/26]	
			26.4	(523)		[00/26]	
			22.0	(548)		[00/26]	
			14.1	(573)		[00/26]	
			7.1	(586)		[00/26]	
			43.5			[99/32]	
			(323–373)	57.8	(298)	CGC	[95/21]
			(323–373)	57.4	(298)	CGC	[95/21]
			(335–410)	51.5	(350)		[94/7]
			(388–420)	47.2	(403)	A	[87/5]
			(326–411)	54.3	(341)	A	[87/5]
			(408–441)	45.4	(423)	A	[87/5]
				55.7±0.2	(313)	C	[85/1]
				54.4±0.2	(328)	C	[85/1]
				53.0±0.2	(343)	C	[85/1]
				51.2±0.2	(358)	C	[85/1]
			(343–303)	55.4	(298)		[83/14]
	(310–411)	55.0	(325)		[73/26]		
		50.5±0.1	(362)	C	[70/20]		
		49.2±0.1	(374)	C	[70/20]		
		47.0±0.1	(392)	C	[70/20]		
		44.4±0.1	(411)	C	[70/20]		
	(347–429)	51.6	(362)	EB	[87/5][70/2]		
	(307–411)	56.2	(322)	DTA	[69/5]		
		56.9±0.2	(298)	C	[66/2]		
C <sub>5</sub> H <sub>12</sub> O	2-pentanol				[6032-29-7]		
		(323–373)	53.6	(298)	CGC	[95/21]	
		(274–393)	58.9	(289)	A	[87/5]	
			54.2±0.2	(298)	C	[85/1]	
			52.7±0.2	(313)	C	[85/1]	
			50.9±0.2	(328)	C	[85/1]	
			49.0±0.2	(343)	C	[85/1]	
			46.9±0.1	(358)	C	[85/1]	
			45.4±0.1	(368)	C	[85/1]	
			(322–393)	50.3	(337)		[84/10]
			(298–393)	54.0	(313)		[73/26]
				53.0	(298)	C	[63/2]
			(298–383)	53.7	(313)		[35/6][84/9]
C <sub>5</sub> H <sub>12</sub> O	3-pentanol				[584-02-1]		
		(245–390)	59.9	(260)	A	[87/5]	
		(317–389)	49.6	(332)		[84/10]	
		(279–318)	53.6	(294)		[75/1]	
		(294–389)	50.2	(319)		[73/26]	
	52.9	(298)	C	[63/2]			
C <sub>5</sub> H <sub>12</sub> O	2-methyl-1-butanol				[137-32-6]		
		(330–405)	51.2	(345)		[94/7]	
		(338–402)	49.8	(353)	A	[87/5]	
		(317–403)	53.9	(332)	A	[87/5]	
		(249–319)	58.5	(264)	A	[87/5][79/16]	
		(307–403)	56.1	(322)		[73/26]	
			54.1	(298)	C	[63/2]	
		(302–410)	43.4	(317)		[57/13][84/9]	
	(298–393)	56.7	(313)		[84/9][35/6]		
C <sub>5</sub> H <sub>12</sub> O	2-methyl-2-butanol				[75-85-4]		
		(274–306)	51.5±0.3	(298)	GS	[01/7]	
		(323–373)	50.5	(298)	CGC	[95/21]	
		(308–375)	47.3	(323)		[94/7]	
		(280–375)	49.0	(295)	A	[87/5]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>12</sub> O	(323–376)	45.8	(338)	A	[87/5]
		50.1±0.2	(298)	C	[85/1]
		48.4±0.2	(313)	C	[85/1]
		46.4±0.2	(328)	C	[85/1]
		44.2±0.1	(343)	C	[85/1]
		42.0±0.1	(358)	C	[85/1]
		40.3±0.1	(368)	C	[85/1]
	(298–375)	52.8	(313)		[73/26]
		49.2	(298)	C	[63/2]
	(298–364)	48.5	(313)		[35/6]
	C <sub>5</sub> H <sub>12</sub> O	3-methyl-1-butanol			
(323–373)		55.3	(298)	CGC	[95/21]
(325–385)		47.2	(340)		[94/7]
(303–412)		57.1	(318)		[87/5]
		55.2±0.2	(303)	C	[85/1]
		54.2±0.2	(313)	C	[85/1]
		52.9±0.2	(328)	C	[85/1]
		51.4±0.2	(343)	C	[85/1]
		49.7±0.2	(358)	C	[85/1]
(298–426)		56.5	(313)		[73/26]
		54.3	(298)	C	[63/2]
C <sub>5</sub> H <sub>12</sub> O	3-methyl-2-butanol				[598-75-4]
	(280–301)	51.6±0.3	(298)	GS	[01/7]
	(280–375)	49.0	(295)	A	[87/5]
	(298–384)	52.7	(313)		[73/26]
C <sub>5</sub> H <sub>12</sub> O	( <i>dl</i> ) 3-methyl-2-butanol				[598-75-4]
	(293–385)	46.4	(308)	A	[87/5]
C <sub>5</sub> H <sub>12</sub> O	2,2-dimethyl-1-propanol				[75-84-3]
	(274–312)	51.8±0.3	(298)	GS,B	[01/7]
C <sub>5</sub> H <sub>12</sub> O <sub>2</sub>	(330–387)	47.5	(345)	A	[87/5]
	1-ethoxy-2-methoxyethane				[5137-45-1]
C <sub>5</sub> H <sub>12</sub> O <sub>2</sub>		39.8±0.1	(298)	C	[70/17]
	2,2-dimethoxypropane				[77-76-9]
	(272–301)	37.6±0.4	(298)	GS	[02/32]
	(272–301)	38.2±0.4		GS	[98/21]
	(299–348)	35.3	(324)	EB	[94/16]
C <sub>5</sub> H <sub>12</sub> O <sub>2</sub>	(292–357)	33.4±0.2	(325)		[88/4]
	2-isopropoxyethanol				[109-59-1]
		50.1±0.1	(298)	C	[71/7]
	(341–413)	45.1	(356)	A	[87/5][57/6]
C <sub>5</sub> H <sub>12</sub> O <sub>2</sub>					[72/20]
	2-propoxyethanol				[2807-30-9]
		52.1±0.1	(298)	C	[71/5]
C <sub>5</sub> H <sub>12</sub> O <sub>2</sub>	(350–422)	46.3	(365)	A	[87/5][57/6]
					[72/20]
	formaldehyde diethyl acetal (diethoxymethane)				[462-95-3]
	(273–361)	36.1	(288)	A	[87/5]
C <sub>5</sub> H <sub>12</sub> O <sub>2</sub>		35.7±0.2	(298)	C	[69/18]
	2-methyl-1,3-butanediol				[684-84-4]
C <sub>5</sub> H <sub>12</sub> O <sub>2</sub>	(399–561)	62.4	(414)	A	[87/5]
	3-methyl-1,3-butanediol				[2568-33-4]
C <sub>5</sub> H <sub>12</sub> O <sub>2</sub>	(346–475)	60.3	(361)	A	[87/5]
	2,2-dimethyl-1,3-propanediol				[126-30-7]
C <sub>5</sub> H <sub>12</sub> O <sub>2</sub>	(400–480)	79.4	(415)	A	[87/5]
	1,5-pentanediol				[111-29-5]
		86.8±0.5	(298)	C	[88/14]
C <sub>5</sub> H <sub>12</sub> O <sub>3</sub>	(391–479)	78.6	(406)	A	[87/5]
	<i>tert</i> -butyldioxymethanol				[17742-78-8]
C <sub>5</sub> H <sub>12</sub> O <sub>3</sub>		59.6±2.4			[83/11]
	diethylene glycol, methyl ether				[111-77-3]
C <sub>5</sub> H <sub>12</sub> O <sub>3</sub>	(385–466)	51.9	(400)	A	[87/5][57/6]
					[72/20]
C <sub>5</sub> H <sub>12</sub> O <sub>3</sub>	2,3,4-pentanetriol				

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>12</sub> O <sub>4</sub>	(428–600) tetramethoxymethane	78.9	(443)		[47/5] [1850-14-2]
	(304–387)	41.2	(319)		[80/15]
C <sub>5</sub> H <sub>12</sub> O <sub>5</sub>	(418–465) adonitol	111.1±1.5	(443)	TE	[488-81-3] [90/16]
	(414–461) D-arabinitol	110.1±1.5	(440)	TE	[90/16]
C <sub>5</sub> H <sub>12</sub> O <sub>5</sub>	(406–460) xylitol	111.1±0.8	(433)	TE	[87-99-0] [90/16]
	(288–418) 3-methyl-2-thiapentane	38.5	(303)		[10359-64-5] [99/16]
C <sub>5</sub> H <sub>12</sub> S	(288–411) 4-methyl-2-thiapentane	36.9	(303)		[5008-69-5] [99/16]
	(297–423) butyl methyl sulfide	(301–330)	40.4	(312)	
		35.3	(315)	A	[87/5]
		40.5	(298)		[81/12]
		41.0	(298)		[71/28]
		40.9±0.8	(298)	GC	[64/7]
		38.1	(313)	EB	[62/17]
		38.0	(358)	A, EB	[87/5][61/8] [66/5]
C <sub>5</sub> H <sub>12</sub> S	(276–397) methyl <i>tert</i> -butyl sulfide	36.5	(291)		[6163-64-0] [99/16]
		35.9	(298)		[71/28]
	(305–411)	35.1	(320)	A, EB	[87/5][62/9] [66/5]
	(284–406) ethyl isopropyl sulfide	38.1	(299)		[5145-99-3] [99/16]
37.8		(298)		[81/12]	
38.5		(298)		[71/28]	
37.9±0.8		(298)	GC	[64/17]	
(296–325)		38.1	(313)	EB	[62/17]
(319–391)		36.3	(334)	A, EB	[87/5][52/9] [4110-50-3]
C <sub>5</sub> H <sub>12</sub> S	(293–418) ethyl propyl sulfide	39.8	(308)		[99/16]
		40.0	(298)		[81/12]
		39.5	(298)	C	[81/8]
	(331–398)	37.8	(346)	A, EB	[87/5][52/9] [110-66-7]
	(300–426) 1-pentanethiol	40.6	(315)		[99/16]
41.1		(298)		[71/28]	
37.1±0.1		(356)	C	[65/14]	
36.4±0.1		(376)	C	[65/14]	
34.9±0.1		(400)	C	[65/14]	
(347–440)		38.1	(362)	A, EB	[87/5][52/11] [66/5]
C <sub>5</sub> H <sub>12</sub> S		(287–412) 2-pentanethiol	38.4	(302)	
	37.8		(361)	A	[87/5]
	(347–435)				[616-31-9] [99/16]
C <sub>5</sub> H <sub>12</sub> S	(288–413) 3-pentanethiol	38.3	(303)		[99/16]
					[1878-18-8] [99/16]
C <sub>5</sub> H <sub>12</sub> S	(293–418) 2-methyl-1-butaneethiol	39.2	(308)		[99/16]
		39.9±0.1	(298)		[72/11][66/5]
	39.7	(298)		[71/28]	
	(324–432)	37.6	(339)	A, EB	[87/5][66/5] [541-31-1]
C <sub>5</sub> H <sub>12</sub> S	(292–418) 3-methyl-1-butaneethiol	39.3	(307)		[99/16]
		39.7	(298)		[71/28]
	39.9±0.1	(298)		[72/11][66/5]	
	(323–431)	37.7	(338)	A, EB	[87/5][66/5] [1679-09-0]
C <sub>5</sub> H <sub>12</sub> S	(276–398) 2-methyl-2-butaneethiol	36.3	(291)		[99/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		35.6	(298)		[71/28]
	(320–411)	34.3	(335)	A, EB	[87/5][62/10]
		33.8±0.1	(330)	C	[62/10]
		32.7±0.1	(350)	C	[62/10]
		31.4±0.1	(372)	C	[62/10]
C <sub>5</sub> H <sub>12</sub> S	3-methyl-2-butanethiol (285–409)	37.7	(300)		[2084-18-6] [99/16]
		37.5±0.1	(298)		[72/11][66/5]
		37.7	(298)		[71/28]
C <sub>5</sub> H <sub>12</sub> S	(315–422)	36.2	(330)	A, EB	[87/5][66/5]
	2,2-dimethyl-1-propanethiol (280–403)	36.9	(295)		[1679-08-9] [99/16]
		36.4±0.1	(298)		[72/11][66/5]
		36.8	(298)		[71/28]
	(292–416)	36.2	(307)	A, EB	[87/5][66/5]
	(213–415)	42.1	(230)	EB, IPM	[66/5]
C <sub>5</sub> H <sub>12</sub> S <sub>2</sub>	1,5-pentanedithiol (363–491)	51.6	(378)	A	[928-98-3] [87/5][99/16]
		59.3	(298)		[62/11]
C <sub>5</sub> H <sub>12</sub> S <sub>2</sub>	ethyl isopropyl disulfide (369–426)	42.5	(384)		[53966-36-2] [99/16]
	(363–427)	42.9	(378)	A, EB	[87/5][52/9]
C <sub>5</sub> H <sub>12</sub> S <sub>2</sub>	ethyl propyl disulfide (373–414)	44.0	(388)	A, EB	[30453-31-7] [87/5][52/9]
					[99/16]
C <sub>5</sub> H <sub>13</sub> N	N-ethylisopropylamine				[19961-27-4]
		33.1±0.1	(298)	C	[79/8]
		32.1±0.1	(313)	C	[79/8]
		31.0±0.1	(328)	C	[79/8]
		28.8±0.1	(358)	C	[79/8]
	(303–342)	33.4	(318)	EB	[79/8]
C <sub>5</sub> H <sub>13</sub> N	N,N-diethylmethylamine (283–339)	31.8	(298)	A	[616-39-7] [87/5]
C <sub>5</sub> H <sub>13</sub> N	N-methylbutylamine (283–313)	38.1	(298)	A	[110-68-9] [87/5]
C <sub>5</sub> H <sub>13</sub> N	<i>tert</i> -butylmethylamine (270–288)	32.3±1.4	(297)		[14610-37-8] [97/21]
C <sub>5</sub> H <sub>13</sub> N	pentylamine (298–417)	39.0	(313)	A	[110-58-7] [87/5][72/20]
		40.1±0.1	(298)	C	[69/2]
C <sub>5</sub> H <sub>13</sub> NO <sub>2</sub>	methyl diethanolamine (390–520)	73.0	(405)	A	[105-59-9] [87/5]
C <sub>5</sub> H <sub>13</sub> NO <sub>2</sub> S	N,N-diethyl methanesulfonamide (384–528)	52.1	(399)	A	[2374-61-0] [87/5]
C <sub>5</sub> H <sub>13</sub> NS	N-methyl- <i>tert</i> -butylsulfenamide (329–397)	41.9	(364)		[99/16] [80-70-6]
C <sub>5</sub> H <sub>13</sub> N <sub>3</sub>	1,1,3,3-tetramethylguanidine	46.9			[67/29]
C <sub>5</sub> H <sub>13</sub> O <sub>3</sub> P	diethyl methylphosphonate (343–402)	51.8	(358)	A	[683-08-9] [87/5][72/20]
		56.5±4.2			[56/23][82/15]
C <sub>5</sub> H <sub>14</sub> NP	trimethylphosphine-N-ethylimine	61.5±4.2			[60/23][82/15]
C <sub>5</sub> H <sub>14</sub> N <sub>2</sub>	N,N-dimethyl-1,3-propanediamine (303–366)	45.7	(318)	A	[111-33-1] [87/5]
	(303–408)	42.0	(318)	A	[87/5]
		52.7			[77/29]
C <sub>5</sub> H <sub>14</sub> N <sub>2</sub>	<i>bis</i> (dimethylamino)methane (273–348)	32.3	(310)		[51-80-9] [65/29]
C <sub>6</sub> BrF <sub>5</sub>	bromopentafluorobenzene (400–522)	38.2	(415)	A	[344-04-7] [87/5][72/20]
	(414–522)	38.0	(429)	EB	[69/11]
C <sub>6</sub> BrF <sub>15</sub> N <sub>2</sub> S	<i>bis</i> [1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]diimidodisulfuryl bromide fluoride	41.0	(476)	I	[62977-74-6] [77/15]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> ClF <sub>15</sub> N <sub>2</sub> S	<i>bis</i> [1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]diimidodisulfuryl chloride fluoride	37.2	(458)	I	[62977-72-4] [77/15]
C <sub>6</sub> ClF <sub>5</sub>	chloropentafluorobenzene (290-550) (348-402) (307-417)	41.3 37.7 40.0	(298) (363) (322)	A	[344-07-0] [91/2] [87/5]
		37.7±0.1 36.4±0.1 34.8±0.1	(349) (369) (391)		[87/5][68/10] [68/26] [68/26]
	(403-547)	35.2	(418)	EB	[66/11]
C <sub>6</sub> ClF <sub>13</sub> N <sub>2</sub>	1-chloro-1',2,2,2,2',2'-heptafluoro-1,1'- <i>bis</i> (trifluoromethyl)-azoethane (297-355)	33.3	(312)	A	[33757-14-1] [87/5][71/17]
C <sub>6</sub> ClF <sub>14</sub> P	<i>bis</i> (heptafluoropropyl) chlorophosphine (283-373)	37.5	(328)		[59/21]
C <sub>6</sub> Cl <sub>2</sub> F <sub>12</sub> N <sub>2</sub> S	<i>bis</i> (2-chlorohexafluoroisopropylimino) sulfur	43.5	(404)	I	[72/22]
C <sub>6</sub> Cl <sub>3</sub> F <sub>3</sub>	1,3,5-trichloro-2,4,6-trifluorobenzene (364-496) (364-550)	49.2 53.8	(379) (298)	A	[319-88-0] [87/5] [84/9][91/2]
C <sub>6</sub> Cl <sub>3</sub> F <sub>14</sub> P	trichloro <i>bis</i> (heptafluoropropyl)phosphorane (323-393)	40.1	(358)		[59/21]
C <sub>6</sub> Cl <sub>3</sub> N <sub>3</sub> O <sub>6</sub>	1,3,5-trichloro-2,4,6-trinitrobenzene (503-543) (503-543)	68.9 43.2	(518) (518)	A	[2631-68-7] [87/5][68/14] [72/20]
C <sub>6</sub> Cl <sub>4</sub> O <sub>2</sub>	2,3,5,6-tetrachloro-1,4-benzoquinone (chloranil) (343-435)	88.5	(358)		[118-75-2] [47/5]
C <sub>6</sub> Cl <sub>6</sub>	hexachlorobenzene	74.4±0.7	(298)	GS	[118-74-1] [01/1]
	(413-453)	76.8	(298)	GC	[94/22]
	(258-313)	81.3		GC	[94/23]
	(343-453)	68.6	(398)	GC	[90/2]
	(502-589)	68.7	(517)	A	[87/5]
	(387-582)	60.5	(402)		[47/5]
C <sub>6</sub> F <sub>6</sub>	hexafluorobenzene (318-376) (403-516) (278-354) (348-389) (384-462) (458-517) (290-510)	34.4 31.8 36.5 33.2 32.2 31.8 35.6	(333) (425) (293) (363) (399) (473) (298)	EB  A A A	[392-56-3] [90/7] [88/20] [87/5] [87/5] [87/5] [87/5]
	(293-323)	35.7	(298)	C	[82/11][91/2] [81/8]
	(278-321)	35.7	(308)		[80/23]
	(363-516)	36.2	(292)	MM	[69/9]
	(275-387)	32.2	(378)	EB	[66/11]
	(293-356)	36.5	(293)		[65/8]
	(293-358)	35.1	(308)		[64/16]
	(293-358)	35.5	(308)		[46/5][84/9]
C <sub>6</sub> F <sub>7</sub> NOS	N-(pentafluorophenyl)imidodisulfuryl fluoride (309-355)	45.3	(332)		[20094-84-2] [68/21]
C <sub>6</sub> F <sub>7</sub> OP	pentafluorophenoxydifluorophosphine (310-363)	42.4	(325)		[76/28]
C <sub>6</sub> F <sub>7</sub> O <sub>2</sub> P	pentafluorophenoxyphosphoryl difluoride (323-367)	46.4	(338)		[76/28]
C <sub>6</sub> F <sub>8</sub>	perfluoro(2-methyl-3-methylenecyclobutene) (243-306)	31.0	(258)	A	[87/5]
C <sub>6</sub> F <sub>11</sub> NO	2,2,3,3,3-pentafluoro-N-[2,2,2-trifluoro-1-(trifluoromethyl)-ethylidene]propanamide	32.7	(338)		[52225-58-8] [74/24]
C <sub>6</sub> F <sub>11</sub> NO <sub>2</sub> S	2,2,3,3,4,4,5,5-octafluoro-1,1,2,3,4,5-hexahydro-1-[(trifluoroacetyl)-imino]thiophene-1-oxide	33.9	(383)		[77589-41-4] [81/16]
C <sub>6</sub> F <sub>12</sub>	perfluoromethylcyclopentane	30.68	(298)	EB	[98/18]
C <sub>6</sub> F <sub>12</sub>	perfluorocyclohexane (373-457)	28.0	(388)		[355-68-0] [88/20]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> F <sub>12</sub>	(350-451)	28.1	(365)	A	[87/5]
	(336-394)	29.6	(351)		[57/11][84/9]
C <sub>6</sub> F <sub>12</sub> N <sub>2</sub>	perfluoro(1,2-dimethylcyclobutane)	32.1	(257)	A	[2994-71-0]
	(242-318)				[87/5]
C <sub>6</sub> F <sub>12</sub> N <sub>2</sub> OS	N,N,N,N-tetrakis(trifluoromethyl)-1,2-ethynylendiamine	32.1	(316)	A	[19451-96-8]
	(305-328)				[87/5]
C <sub>6</sub> F <sub>12</sub> N <sub>2</sub> O <sub>2</sub> S	1,1,1,3,3,3-hexafluoro-2-isocyanato-N-[2,2,2-trifluoro-1-(trifluoro-methyl)ethylidene]-2-propanamine	39.3	(375)	I	[34619-84-6]
	(242-318)				[72/24]
C <sub>6</sub> F <sub>12</sub> N <sub>2</sub> O <sub>2</sub> S	1,1,1-trifluoro-N'-(trifluoroacetyl)-N-[2,2,2-trifluoro-1-(trifluoromethyl)-ethylidene]methanesulfonimidamide	32.6	(404)	I	[62609-66-9]
	(242-318)				[77/19]
C <sub>6</sub> F <sub>12</sub> N <sub>2</sub> S	bis[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]sulfoxylic diamide	40.6	(391)	I	[31340-33-7]
	(242-318)				[72/24]
C <sub>6</sub> F <sub>12</sub> N <sub>2</sub> S <sub>2</sub>	bis(hexafluoroisopropylideneimino) disulfide	46.0	(417)	I	[72/22]
	(242-318)				[788-40-9]
C <sub>6</sub> F <sub>12</sub> O	perfluoro(methoxycyclopentane)	38.6	(261)	A	[87/5][72/20]
	(246-330)				[24165-10-4]
C <sub>6</sub> F <sub>12</sub> O <sub>2</sub>	trifluoroacetic acid, 2,2,2-trifluoro-1,1-bis(trifluoromethyl)ethyl ester	34.3	(279)	A	[87/5][75/22]
	(264-298)				[73/20]
C <sub>6</sub> F <sub>12</sub> O <sub>4</sub>	carbonoperoxoic acid, O-[2,2,2-trifluoro-1,1-bis(trifluoromethyl)ethyl]-O,O-(trifluoromethyl) ester ester	33.1	(329)	HG	[55100-93-1]
	(273-315)				[87/5][75/22]
C <sub>6</sub> F <sub>13</sub> NS	2,2,2-trifluoro-N-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]-ethanimidothioic acid, trifluoromethyl ester	35.3	(288)	A	[53120-07-9]
	(273-315)				[75/20]
C <sub>6</sub> F <sub>14</sub>	perfluorohexane	34.4	(276)	A	[355-42-0]
	(261-334)				[87/5]
	(285-340)				[84/9][91/2]
	(433-449)				[87/5][78/8]
	(303-330)				[58/12][84/9]
	(284-342)				[52/1]
C <sub>6</sub> F <sub>14</sub>	perfluoro-2-methylpentane	31.4	(298)	A	[335-04-4]
	(280-340)				[84/9][91/2]
	(253-329)				[87/5][67/15]
C <sub>6</sub> F <sub>14</sub>	(277-341)	32.5	(292)	A	[84/9]
	perfluoro-3-methylpentane				[52/1][84/9]
	(282-333)				[865-71-4]
C <sub>6</sub> F <sub>14</sub>	perfluoro-2,3-dimethylbutane	31.6	(298)	A	[354-96-1]
	(260-340)				[84/9][91/2]
	(262-333)				[87/5][67/15]
C <sub>6</sub> F <sub>14</sub> IP	bis(heptafluoropropyl) iodophosphine	41.6	(313)	A	[84/9]
	(273-353)				[59/21]
C <sub>6</sub> F <sub>14</sub> N <sub>2</sub> S	bis[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl] sulfur diimide	38.5	(340)	A	[34451-12-2]
	(325-378)				[87/5][72/21]
C <sub>6</sub> F <sub>14</sub> O	perfluorodipropyl ether	31.2±0.4	(298)	EB	[356-62-7]
	(306-327)				[89/13]
C <sub>6</sub> F <sub>15</sub> N	perfluorotriethylamine	34.0±0.4	(298)	EB	[359-70-6]
	(297-343)				[95/20]
	(320-334)				[95/20]
	(317-349)				[87/5]
C <sub>6</sub> F <sub>15</sub> NO	1,1,1,2,3,3,3,3-heptafluoro-N-(pentafluoroethyl)-N-(trifluoroethyl)-2-propanamine	27.1	(338)	A	[54566-82-4]
	(297-343)				[75/19]
C <sub>6</sub> F <sub>15</sub> O <sub>4</sub> S <sub>2</sub>	2,2,4,4-tetrafluoro-1,1,3,3-tetrahydro-1,1,3,3-tetrakis(trifluoromethoxy)-1,3-dithietane	37.2	(404)	I	[63441-15-6]
	(297-343)				[77/16]
C <sub>6</sub> F <sub>16</sub> N <sub>2</sub> S	bis[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]diimidodisulfonyl fluoride	35.8	(421)	A	[59617-31-1]
	(297-343)				[76/29]
C <sub>6</sub> F <sub>16</sub> S	difluorobis[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl] sulfur	36.6	(328)	A	[1423-18-3]
	(273-383)				[87/5][99/16]
C <sub>6</sub> F <sub>20</sub> N <sub>3</sub> O <sub>3</sub> P	phosphorous tris[bis(trifluoromethyl)nitroxide] difluoride	39.3	(421)	A	[73/24]
	(297-343)				[16419-78-6]
C <sub>6</sub> N <sub>2</sub>	dicyanobutadiyne				

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> HBrF <sub>12</sub> N <sub>2</sub>	(341-369)	30.2	(355)	A	[87/5]
	1-bromo-N,N,N',N'-tetrakis(trifluoromethyl)vinylendiamine				[19451-95-7]
C <sub>6</sub> HClF <sub>11</sub> NO	(348-371)	32.3	(359)	A	[87/5]
	N-[1-chloro-2,2,2-trifluoro-1-(trifluoromethyl)ethyl]-2,2,3,3,3-pentafluoropropanamide	40.8	(381)		[52225-62-4] [74/24]
C <sub>6</sub> HCl <sub>2</sub> N <sub>3</sub> O <sub>6</sub>	1,3-dichloro-2,4,6-trinitrobenzene				[1630-09-7]
	(504-563)	46.9	(519)	A	[87/5][72/20]
C <sub>6</sub> HCl <sub>3</sub> F <sub>8</sub> O <sub>2</sub>	(504-533)	80.4			[68/14]
	octafluoro-3,5,6-trichlorohexanoic acid				[2106-54-9]
C <sub>6</sub> HCl <sub>5</sub>	(373-505)	64.2	(388)	A	[87/5][72/20] [57/17]
	pentachlorobenzene				[608-93-5]
C <sub>6</sub> HCl <sub>5</sub> O	(413-453)	66.0	(357)		[99/20]
	(371-549)	67.7	(298)	GC	[94/22]
		62.1	(386)	A	[87/5][47/5]
C <sub>6</sub> HF <sub>5</sub>	pentachlorophenol				[87-86-5]
	(463-507)	69.0	(478)	A	[87/5][72/20]
C <sub>6</sub> HF <sub>5</sub> O	pentafluorobenzene				[363-72-4]
	(358-397)	33.5	(373)	A	[87/5]
	(393-479)	32.6	(408)	A	[87/5]
	(473-531)	32.2	(488)	A	[87/5]
	(290-510)	36.2	(298)		[82/11][91/2]
	(322-368)	34.8	(337)		[87/5][68/10]
	(373-530)	32.0	(388)	EB	[66/11]
	(298-356)	35.7	(313)		[64/16]
C <sub>6</sub> HF <sub>5</sub> O	(298-358)	35.7	(313)		[46/5][84/9]
	pentafluorophenol				[771-61-9]
C <sub>6</sub> HF <sub>12</sub> NO	(323-455)	52.2±0.4	(298)	EB	[97/6]
	(378-428)	44.2	(393)	A	[87/5][68/10]
C <sub>6</sub> HF <sub>12</sub> NOS	2,2,3,3,3-pentafluoro-N-[1,2,2,-tetrafluoro-1-(trifluoromethyl)ethyl]-propanamide				[52225-64-6]
		41.3	(368)		[74/24]
C <sub>6</sub> H <sub>2</sub> BrCl <sub>3</sub> O	2,2,2-trifluoro-N-[(trifluoromethyl)thio]ethanimidic acid, 2,2,2-trifluoro-1-(trifluoromethyl)ethyl ether	33.6	(364)	I	[77/18]
	3-bromo-2,4,6-trichlorophenol				[87/5][47/5]
C <sub>6</sub> H <sub>2</sub> ClN <sub>3</sub> O <sub>6</sub>	(385-579)	67.1	(400)	A	[88-88-0]
	1-chloro-2,4,6-trinitrobenzene				[87/5][68/14]
C <sub>6</sub> H <sub>2</sub> Cl <sub>3</sub> F	(473-543)	63.1	(488)	A	[36556-33-9]
	1-fluoro-2,4,6-trichlorobenzene				[87/5]
C <sub>6</sub> H <sub>2</sub> Cl <sub>3</sub> NO <sub>2</sub>	(344-489)	41.1	(359)	A	[89-69-0]
	2,4,5-trichloro-1-nitrobenzene				[87/5]
C <sub>6</sub> H <sub>2</sub> Cl <sub>4</sub>	(427-560)	56.7	(442)	A	[634-66-2]
	1,2,3,4-tetrachlorobenzene				[94/22]
	(413-453)	60.1	(298)	GC	[87/5][47/5]
C <sub>6</sub> H <sub>2</sub> Cl <sub>4</sub>	(341-527)	56.7	(356)	A	[634-90-2]
	1,2,3,5-tetrachlorobenzene				[94/22]
C <sub>6</sub> H <sub>2</sub> Cl <sub>4</sub>	(413-453)	60.7	(298)	GC	[87/5][47/5]
	(331-519)	51.1	(346)	A	[95-94-3]
C <sub>6</sub> H <sub>2</sub> Cl <sub>4</sub> O	1,2,4,5-tetrachlorobenzene				[94/22]
	(413-453)	60.7	(298)	GC	[87/5][47/5]
C <sub>6</sub> H <sub>2</sub> Cl <sub>4</sub> O <sub>2</sub>	(419-518)	52.0	(434)	A	[58-90-2]
	2,3,4,6-tetrachlorophenol				[87/5][47/5]
C <sub>6</sub> H <sub>2</sub> F <sub>4</sub>	(373-548)	64.8	(388)	A	[1198-55-6]
	3,4,5,6-tetrachloro-1,2-benzenediol				[99/13]
C <sub>6</sub> H <sub>2</sub> F <sub>4</sub>	(293-323)	77.9	(308)	CGC	[551-62-2]
	1,2,3,4-tetrafluorobenzene				[84/9][91/2]
C <sub>6</sub> H <sub>2</sub> F <sub>4</sub>	(300-390)	37.5	(298)		[87/5][75/27]
	(300-392)	36.8	(315)	A	[84/9]
	(279-323)	37.0	(294)	MM	[87/5][69/9]
C <sub>6</sub> H <sub>2</sub> F <sub>4</sub>	1,2,3,5-tetrafluorobenzene				[2367-82-0]
	(385-416)	32.4	(400)	A	[87/5]
	(290-380)	36.0	(298)		[84/9][91/2]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(287-382)	36.0	(302)	A	[87/5][75/27] [84/9]
C <sub>6</sub> H <sub>2</sub> F <sub>4</sub>	(279-323)	36.0	(294)	MM	[87/5][69/9] [327-54-8]
	1,2,4,5-tetrafluorobenzene				[84/9][91/2]
	(290-390)	37.2	(298)		
	(390-488)	33.1	(405)	A	[87/5]
	(488-543)	32.6	(503)	A	[87/5]
	(293-390)	36.8	(308)	A	[87/5][75/27] [89/4]
C <sub>6</sub> H <sub>2</sub> F <sub>12</sub> O	1,1,1,2,2,3,3,3-heptafluoro-3-(2,2,3,3,3-pentafluoropropoxy)-propane				[176310-30-8]
	(288-344)	34.8	(303)	I	[02/19]
C <sub>6</sub> H <sub>2</sub> F <sub>12</sub> O <sub>3</sub> S	<i>bis</i> (1,1,1,3,3,3-hexafluoro-2-propanol) sulfite				[53517-89-9] [75/43]
	42.4				
C <sub>6</sub> H <sub>2</sub> F <sub>14</sub> NP	amino <i>bis</i> (heptafluoropropyl)phosphine				[59/21]
	(293-393)	38.7	(343)		
C <sub>6</sub> H <sub>3</sub> BrCl <sub>2</sub> O	2-bromo-4,6-dichlorophenol				[45524-77-0]
	(357-541)	58.6	(372)	A	[87/5][47/5] [97-00-7]
C <sub>6</sub> H <sub>3</sub> ClN <sub>2</sub> O <sub>4</sub>	1-chloro-2,4-dinitrobenzene				[87/5]
	(430-590)	80.5	(445)	A	[99-54-7]
C <sub>6</sub> H <sub>3</sub> Cl <sub>2</sub> NO <sub>2</sub>	3,4-dichloro-1-nitrobenzene				[87/5]
	(417-515)	55.5	(432)	A	[120-82-1] [99/20]
C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub>	1,2,4-trichlorobenzene				
		55.8	(290)		
	(391-490)	49.5	(406)	EB	[98/8]
	(413-453)	57.6	(298)	GC	[94/22]
		55.5 ± 0.1	(298)	C	[87/13]
	(279-298)	47.0	(288)	RG	[49/11]
	(311-486)	49.3	(326)		[47/5]
C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub>	1,2,3-trichlorobenzene				[87-61-6] [99/20]
		54.5	(325)		
	(413-453)	57.2	(298)	GC	[94/22]
	(258-313)	54.3		GC	[94/23]
	(293-383)	53.5	(308)	A	[87/5]
	(313-492)	47.4	(328)	A	[87/5][47/5] [108-70-3]
C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub>	1,3,5-trichlorobenzene				
		50.3 ± 0.1	(375)	DM	[01/8]
	(338-415)	51.7	(337)		[99/20]
	(413-453)	59.0	(298)	GC	[94/22]
	(336-482)	48.8	(351)	A	[87/5][47/5] [95-95-4]
C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub> O	2,4,5-trichlorophenol				
		54.5	(360)	A	[87/5][47/5]
C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub> O	2,4,6-trichlorophenol				
		58.8	(364)	A	[88-06-2] [87/5][47/5]
C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub> O <sub>2</sub>	3,4,5-trichloro-1,2-benzenediol				
		79.3	(308)	CGC	[56961-20-7] [99/13]
C <sub>6</sub> H <sub>3</sub> F <sub>3</sub>	1,3,5-trifluorobenzene				
		33.9	(298)		[372-38-3] [84/9][91/2]
	(280-320)	34.5	(294)	A, MM	[87/5][69/9] [72/20]
	(279-350)				
C <sub>6</sub> H <sub>3</sub> F <sub>9</sub> O <sub>2</sub>	trifluoroacetic acid, 2,2,2-trifluoro-1-methyl-1-(trifluoromethyl)ethyl ester				[42031-16-3]
		33.5	(338)	HG	[73/20]
C <sub>6</sub> H <sub>3</sub> F <sub>9</sub> O <sub>2</sub>	acetic acid, 2,2,2-trifluoro-1,1- <i>bis</i> (trifluoromethyl)ethyl ester				[24165-09-1]
		40.1	(288)	A	[87/5][75/22]
C <sub>6</sub> H <sub>3</sub> F <sub>10</sub> NS	2,2,2-trifluoro-N-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]-ethanimidithioic acid, methyl ester				[54120-08-0]
		31.6	(383)		[75/20]
C <sub>6</sub> H <sub>3</sub> F <sub>11</sub> O	1,1,1,2,2,3,3-heptafluoro-3-(2,2,3,3-tetrafluoropropoxy)propane				[176310-29-5]
		37.2	(303)	I	[02/19]
C <sub>6</sub> H <sub>3</sub> F <sub>11</sub> O	1,1,1,2,2,3,3,4,4,5,5-undecafluoro-5-methoxypentane				[181214-74-4]
		36.6	(303)	I	[02/19]
C <sub>6</sub> H <sub>3</sub> F <sub>11</sub> O	1,1,1,2,3,3,4,4-octafluoro-4-methoxy-2-(trifluoromethyl)butane				[203783-56-6]
		36.0	(303)	I	[02/19]
C <sub>6</sub> H <sub>3</sub> F <sub>11</sub> O	1,1,1,2,3,3-hexafluoro-3-(2,2,3,3,3-pentafluoropropoxy)propane				[290-28-8]
		38.4	(308)	I	[02/19]
C <sub>6</sub> H <sub>3</sub> N <sub>3</sub> O <sub>6</sub>	1,2,3-trinitrobenzene				[603-13-4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(523–573)	60.3	(538)	A	[87/5][68/14] [72/20]
C <sub>6</sub> H <sub>3</sub> N <sub>3</sub> O <sub>6</sub>	1,2,4-trinitrobenzene (523–573)	82.6	(538)	A	[610-31-1] [87/5][68/14] [72/20]
C <sub>6</sub> H <sub>3</sub> N <sub>3</sub> O <sub>6</sub>	1,3,5-trinitrobenzene (475–585)	70.3	(490)	A	[99-35-4] [87/5][68/14] [72/20]
C <sub>6</sub> H <sub>3</sub> N <sub>3</sub> O <sub>7</sub>	2,4,6-trinitrophenol (picric acid) (468–598)	106.4	(483)	A	[88-89-1] [87/5]
C <sub>6</sub> H <sub>4</sub> BrCl	1-bromo-3-chlorobenzene (252–469)	52.2	(267)	A	[108-37-2] [87/5][72/20]
C <sub>6</sub> H <sub>4</sub> BrCl	1-bromo-4-chlorobenzene (333–470)	49.1	(348)	A	[106-39-8] [87/5]
	(305–470)	49.7	(320)	A	[47/5]
C <sub>6</sub> H <sub>4</sub> Br <sub>2</sub>	1,2-dibromobenzene (388–568)	50.1	(403)	A	[583-53-9] [87/5][72/20]
C <sub>6</sub> H <sub>4</sub> Br <sub>2</sub>	1,3-dibromobenzene (417–500)	48.3	(432)	A	[108-36-1] [87/5]
C <sub>6</sub> H <sub>4</sub> Br <sub>2</sub>	1,4-dibromobenzene (373–493)	49.9	(388)	A	[106-37-6] [87/5][72/20]
C <sub>6</sub> H <sub>4</sub> ClF	1-chloro-3-fluorobenzene (273–403)	37.4	(288)	A	[625-98-9] [87/5]
C <sub>6</sub> H <sub>4</sub> ClI	1-chloro-4-iodobenzene (333–500)	56.5	(348)	A	[352-33-0] [87/5]
C <sub>6</sub> H <sub>4</sub> ClNO <sub>2</sub>	1-chloro-2-nitrobenzene (420–516)	52.1	(435)	EB	[88-73-3] [84/21]
C <sub>6</sub> H <sub>4</sub> ClNO <sub>2</sub>	1-chloro-3-nitrobenzene (414–506)	51.5	(429)	EB	[121-73-3] [84/21]
C <sub>6</sub> H <sub>4</sub> ClNO <sub>2</sub>	1-chloro-4-nitrobenzene (385–515)	51.3	(400)	A	[100-00-5] [87/5]
C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub>	1,2-dichlorobenzene				[95-50-1]
		51.2	(256)		[99/20]
	(363–454)	44.5	(376)	EB	[98/8]
	(256–287)	50.8	(271)		[96/19]
	(413–453)	50.9	(298)	GC	[94/22]
	(258–313)	51.2		GC	[94/23]
	(373–453)	44.0	(388)	A	[87/5]
	(360–450)	49.9	(298)		[84/9][91/2]
	(301–343)	50.0	(322)	GS	[82/1]
C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub>	1,3-dichlorobenzene				[541-73-1]
		50.4	(248)		[99/20]
	(357–448)	44.1	(372)	EB	[98/8]
	(250–274)	50.0	(262)		[96/19]
	(413–453)	53.9	(298)	GC	[94/22]
	(360–450)	47.0	(298)		[84/9][91/2]
	(348–513)	44.7	(363)		[87/5][72/20]
C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub>	1,4-dichlorobenzene				[106-46-7]
		46.4	(326)		[99/20]
	(358–448)	44.2	(373)	EB	[98/8]
	(413–453)	54.8	(298)	GC	[94/22]
	(258–313)	U35.0		GC	[94/23]
	(341–448)	45.0	(356)	A	[87/5]
	(370–450)	47.8	(298)		[84/9][91/2]
C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub> O	2,4-dichlorophenol (326–483)	60.8	(341)	A	[128-83-2] [87/5][47/5] [75/17]
C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub> O	2,6-dichlorophenol (333–493)	57.9	(348)	A	[87-65-0] [87/5][47/5]
C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub> O <sub>2</sub>	4,5-dichloro-1,2-benzenediol (293–323)	70.5	(308)	CGC	[3428-24-8] [99/13]
C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub> O <sub>3</sub>	vinyl mucochlorate (273–333)	63.9	(288)	A	[87/5]
C <sub>6</sub> H <sub>4</sub> Cl <sub>3</sub> N	2,4,6-trichloroaniline				[634-93-5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>4</sub> F <sub>2</sub>	(407–535)	92.9	(422)	A	[87/5][47/5]
	1,2-difluorobenzene				[367-11-3]
	(300–400)	36.2	(298)		[84/9][91/2]
	(304–403)	35.5	(319)	EB	[63/23][84/9]
C <sub>6</sub> H <sub>4</sub> F <sub>2</sub>		34.6 ± 0.1	(327)	C	[63/23]
		33.5 ± 0.1	(345)	C	[63/23]
		32.2 ± 0.1	(367)	C	[63/23]
	1,3-difluorobenzene				[372-18-9]
C <sub>6</sub> H <sub>4</sub> F <sub>2</sub>	(310–400)	34.6	(298)		[80/11][91/2]
	1,4-difluorobenzene				[540-36-3]
C <sub>6</sub> H <sub>4</sub> F <sub>10</sub> O	(300–400)	35.8	(298)		[80/11][91/2]
	1,1,1,2,3,3-hexafluoro-3-(2,2,3,3-tetrafluoropropoxy)propane				[65064-78-0]
C <sub>6</sub> H <sub>4</sub> INO <sub>2</sub>	(293–379)	42.3	(308)	I	[02/19]
	2-iodo-1-nitrobenzene				[609-73-4]
C <sub>6</sub> H <sub>4</sub> I <sub>2</sub>	(433–563)	59.9	(448)	A	[87/5]
	1,4-diiodobenzene			A	[624-38-4]
C <sub>6</sub> H <sub>4</sub> N <sub>2</sub>	(402–560)	52.6	(417)		[87/5]
	nicotinic acid nitrile				[100-54-9]
C <sub>6</sub> H <sub>4</sub> N <sub>2</sub> O <sub>4</sub>	(453–479)	45.0	(466)	A	[87/5][72/20]
	1,2-dinitrobenzene				[528-29-0]
C <sub>6</sub> H <sub>4</sub> N <sub>2</sub> O <sub>4</sub>	(454–593)	60.0	(469)	A	[87/5][72/20]
	1,3-dinitrobenzene				[99-65-0]
C <sub>6</sub> H <sub>4</sub> N <sub>2</sub> O <sub>4</sub>	(336–379)	96.7	(351)	A	[87/5]
	1,4-dinitrobenzene				[100-25-4]
C <sub>6</sub> H <sub>4</sub> O <sub>2</sub>	(445–572)	60.3	(460)	A	[87/5][72/20]
	1,4-benzoquinone				[106-51-4]
C <sub>6</sub> H <sub>4</sub> S <sub>4</sub>	(388–402)	47.8	(395)	A	[87/5]
	tetrathiafulvene				[31366-25-3]
C <sub>6</sub> H <sub>5</sub> Br	(331–355)	95.3	(343)		[99/16]
	bromobenzene				[108-86-1]
	(330–430)	44.8	(298)		[84/9][91/2]
		44.0	(293)	C	[75/37]
	(333–463)	42.3	(348)	A	[87/5][72/20]
		44.5 ± 0.1	(298)	C	[68/1]
C <sub>6</sub> H <sub>5</sub> BrO	(329–427)	42.4	(344)		[55/22]
	2-bromophenol				[95-56-7]
C <sub>6</sub> H <sub>5</sub> BrO		50.2			[86/10]
	3-bromophenol				[591-20-8]
C <sub>6</sub> H <sub>5</sub> BrO	(410–510)	73.5	(425)	A	[87/5]
		55.2			[86/10]
	4-bromophenol				[106-41-2]
C <sub>6</sub> H <sub>5</sub> BrO	(390–511)	58.8	(405)	A	[87/5]
		58.6			[86/10]
C <sub>6</sub> H <sub>5</sub> BrS	2-bromobenzenethiol				[6320-02-1]
		50.6			[86/10]
C <sub>6</sub> H <sub>5</sub> BrS	3-bromobenzenethiol				[86/10]
		51.1			[106-53-6]
C <sub>6</sub> H <sub>5</sub> BrS	4-bromobenzenethiol				[86/10]
		52.3			[108-90-7]
C <sub>6</sub> H <sub>5</sub> Cl	chlorobenzene				[95/21]
	(313–353)	40.3	(298)	CGC	[94/22]
	(413–453)	43.9	(298)	GC	[94/23]
	(258–313)	48.1		GC	[89/16]
		40.6 ± 0.3			[87/5]
	(405–597)	35.4	(420)	A	[84/9][91/2]
	(335–405)	41.0	(298)		[68/1]
		41.0 ± 0.1	(298)	C	[87/5][52/18]
	(333–405)	38.8	(348)		[84/9]
		37.3	(278)	ME	[40/12]
C <sub>6</sub> H <sub>5</sub> ClO	(253–303)				[95-57-8]
	2-chlorophenol				[95/12]
	(337–447)	47.0	(352)		[66/10]
		45.2			[87/5]
	(354–448)	47.2	(369)		

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>5</sub> ClO	(333–449)	50.1	(348)	A	[87/5][74/15]
	(285–447)	45.2	(300)		[47/5]
C <sub>6</sub> H <sub>5</sub> ClO	3-chlorophenol				[108-43-0]
		52.3			[86/10]
C <sub>6</sub> H <sub>5</sub> ClO	(317–487)	53.1	(332)	A	[87/5][47/5]
	4-chlorophenol				[106-48-9]
C <sub>6</sub> H <sub>5</sub> ClS	(373–493)	60.6	(388)	A	[87/5]
		54.0			[86/10]
C <sub>6</sub> H <sub>5</sub> ClS	(323–493)	52.8	(338)		[47/5]
	2-chlorobenzenethiol				[6320-03-2]
C <sub>6</sub> H <sub>5</sub> ClS		47.7			[86/10]
	3-chlorobenzenethiol				[2037-31-2]
C <sub>6</sub> H <sub>5</sub> ClS		48.5			[86/10]
	4-chlorobenzenethiol				[106-54-7]
C <sub>6</sub> H <sub>5</sub> ClO <sub>2</sub>		48.5			[86/10]
	4-chloro-1,2-benzenediol				[2138-22-9]
C <sub>6</sub> H <sub>5</sub> ClO <sub>2</sub> S	(293–323)	70.2	(308)	CGC	[99/13]
	benzenesulfonyl chloride				[98-09-9]
C <sub>6</sub> H <sub>5</sub> Cl <sub>2</sub> N	(339–524)	54.4	(354)		[99/16]
	(338–525)	57.2	(353)	A	[87/5][47/5]
C <sub>6</sub> H <sub>5</sub> Cl <sub>2</sub> N	3,4-dichloroaniline				[95-76-1]
	(420–545)	58.6	(435)	A	[87/5]
C <sub>6</sub> H <sub>5</sub> Cl <sub>2</sub> O <sub>2</sub> P	phenyl dichlorophosphate				[770-12-7]
	(339–513)	63.6	(354)	A	[87/5][47/5]
C <sub>6</sub> H <sub>5</sub> F	fluorobenzene				[462-06-6]
	(358–530)	31.9	(373)	A	[87/5]
	(373–419)	31.8	(388)	A	[87/5]
	(414–501)	31.0	(429)	A	[87/5]
	(497–561)	30.9	(512)	A	[87/5]
	(255–360)	34.5	(298)		[84/9][91/2]
	(312–394)	33.6	(327)	EB	[87/5][56/19]
		33.5±0.1	(318)	C	[56/19]
		32.4±0.1	(337)	C	[56/19]
		31.2±0.1	(358)	C	[56/19]
C <sub>6</sub> H <sub>5</sub> FO		29.7±0.1	(382)	C	[56/19]
	3-fluorophenol				[372-20-3]
C <sub>6</sub> H <sub>5</sub> FO	(373–451)	50.3	(388)	A	[87/5]
	4-fluorophenol				[371-41-5]
C <sub>6</sub> H <sub>5</sub> F <sub>8</sub> NOS	(360–460)	48.8	(375)	A	[87/5]
	1-(ethylimino)-2,2,3,3,4,4,5,5-octafluoro-1,1,2,3,4,5-hexahydro-thiophene-1-oxide				[77984-30-6]
C <sub>6</sub> H <sub>5</sub> F <sub>9</sub> O		31.4	(333)		[81/15]
	1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane				[163702-05-4]
C <sub>6</sub> H <sub>5</sub> I	(293–350)	34.2	(308)	I	[02/19]
	iodobenzene				[591-50-4]
C <sub>6</sub> H <sub>5</sub> I	(313–353)	47.4	(298)	CGC	[95/21]
	(462–679)	41.1	(477)	A	[87/5]
C <sub>6</sub> H <sub>5</sub> I	(320–460)	48.9	(298)		[84/9][91/2]
	(273–358)	51.4	(288)	A	[87/5][72/20]
C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>	(358–543)	46.0	(373)	A	[87/5][72/20]
	nitrobenzene				[98-95-3]
C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>	(313–353)	54.5	(298)	CGC	[95/21]
	(291–305)	56.1±1.7	(298)	ME	[71/10]
C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>		55.0	(298)		[71/9]
	(279–296)	54.7	(287)	A	[87/5][72/20]
C <sub>6</sub> H <sub>5</sub> NO <sub>3</sub>					[60/18]
	(407–483)	48.5	(422)		[52/19][84/9]
C <sub>6</sub> H <sub>5</sub> NO <sub>3</sub>	(369–481)	48.9	(425)		[33/15]
	2-nitrophenol				[88-75-5]
C <sub>6</sub> H <sub>5</sub> N <sub>3</sub>	(366–490)	55.9	(381)	A	[87/5]
	(322–357)	54.4	(337)	A	[47/5]
C <sub>6</sub> H <sub>5</sub> N <sub>3</sub>	phenyl azide				[622-37-3]
	(348–368)	45.2	(358)	A	[87/5][72/20]
C <sub>6</sub> H <sub>6</sub>	benzene				[71-43-2]
	(305–345)	33.2	(320)		[02/45]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(258–313)	35.6		GC	[94/23]
	(296–377)	33.5	(311)	EB	[90/7]
		33.9±0.2		GC	[89/16]
		33.4	(307)	C	[88/19]
		33.1	(314)	C	[88/19]
		32.4	(324)	C	[88/19]
		31.9	(332)	C	[88/19]
		31.4	(344)	C	[88/19]
		30.6	(353)	C	[88/19]
	(279–377)	34.4	(294)	A	[87/5]
	(353–422)	31.5	(368)	A	[87/5]
	(420–502)	30.2	(435)	A	[87/5]
	(501–562)	30.3	(516)	A	[87/5]
		30.8	(352)		[83/12]
		30.5	(361)		[83/12]
		30.2	(366)		[83/12]
	(313–373)	35.3	(343)		[83/8]
		31.0	(350)		[77/30]
		33.8±0.1	(298)	C	[73/13]
		33.0±0.1	(313)	C	[73/13]
		32.2±0.1	(328)	C	[73/13]
		31.8±0.1	(333)	C	[73/13]
		31.4±0.1	(343)	C	[73/13]
		30.9±0.1	(353)	C	[73/13]
		32.6±0.4	(313)	DSC	[71/23]
		32.5±0.5	(328)	DSC	[71/23]
		33.9	(298)		[71/28]
		31.6±0.4	(345)	DSC	[71/23]
		34.1	(293)		[49/20]
	(284–354)	34.1	(299)		[49/6]
		33.8	(298)	C	[47/7]
	(282–354)	34.1	(297)		[46/4]
		31.2	(294)		[46/8]
	(288–354)	34.1	(303)	MM	[45/2]
	(298–373)	33.4	(313)	EB	[41/9]
	(273–348)	34.5	(288)		[40/5]
		34.0	(298)		[27/3]
C <sub>6</sub> D <sub>6</sub>	benzene—d <sub>6</sub> (283–352)	34.2	(298)		[1076-43-3] [53/10]
C <sub>6</sub> H <sub>6</sub>	1,5-hexadien-3-yne (223–357)	40.4	(238)	A	[87/5] [821-08-9]
C <sub>6</sub> H <sub>6</sub>	1,3-hexadien-5-yne (223–303)	44.0	(238)	A	[10420-90-3] [87/5]
C <sub>6</sub> H <sub>6</sub>	2,4-hexadiyne (364–408)	42.5	(298)	EB	[2809-69-0] [86/1]
C <sub>6</sub> H <sub>6</sub> ClN	2-chloroaniline (397–482)	50.7	(412)	A	[95-51-2] [87/5]
	(287–336)	58.2±1.4	(311)	TE, ME	[85/11]
	(294–330)	57.1±1.0	(312)	TE, ME	[85/11]
C <sub>6</sub> H <sub>6</sub> ClN	3-chloroaniline (398–573)	53.6	(413)	A	[108-42-9] [87/5][72/20]
	(292–346)	60.3±0.6	(319)	TE, ME	[85/11]
	(304–342)	61.0±0.8	(323)	TE, ME	[85/11]
C <sub>6</sub> H <sub>6</sub> ClN	4-chloroaniline (363–505)	52.2	(378)	A	[106-47-8] [87/5]
C <sub>6</sub> H <sub>6</sub> Cl <sub>4</sub>	α-3,4,5,6-tetrachlorocyclohexene (353–399)	58.0	(368)	A	[41992-55-6] [87/5]
C <sub>6</sub> H <sub>6</sub> Cl <sub>6</sub>	α-hexachlorocyclohexane (343–453)	68.5	(398)	GC	[319-84-6] [90/2]
C <sub>6</sub> H <sub>6</sub> Cl <sub>6</sub>	β-hexachlorocyclohexane (343–453)	70.5	(398)	GC	[58-69-9] [90/2]
C <sub>6</sub> H <sub>6</sub> F <sub>8</sub> O	1,1,2,2,3,3,4,4-octafluoro-5-methoxypentane (293–396)	44.8	(308)	I	[77527-96-9] [02/19]
C <sub>6</sub> H <sub>6</sub> F <sub>9</sub> N <sub>3</sub> S	N-[N,N'-dimethyl-S-(trifluoromethyl)sulfonodiimidoyl]-1,1,1,3,3,3-hexafluoro-2-propanimine				[63265-76-9]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>6</sub> N <sub>2</sub>	3-hexenedinitrile (353–448)	32.6	(426)	I	[77/15]
		49.4	(368)	A	[1119-85-3] [87/5]
C <sub>6</sub> H <sub>6</sub> N <sub>2</sub> O <sub>2</sub>	2-nitroaniline (423–553)	59.3	(438)	A	[88-74-4] [87/5]
		64.8	(392)		[47/5]
C <sub>6</sub> H <sub>6</sub> N <sub>2</sub> O <sub>2</sub>	3-nitroaniline (443–578)	64.9	(458)	A	[99-09-2] [87/5]
		77.9	(488)	A	[100-01-6] [87/5]
C <sub>6</sub> H <sub>6</sub> N <sub>2</sub> O <sub>2</sub>	4-nitroaniline (473–538)	70.0	(430)		[47/5]
		70.0	(430)		[108-95-2]
C <sub>6</sub> H <sub>6</sub> O	phenol (363–391)	53.2	(378)	EB	[01/17]
		58.8	(298)	CGC	[95/21]
		49.5	(470)	A	[87/5]
		57.4	(329)	A	[87/5]
		50.9	(402)	A	[87/5]
		46.8	(464)	A	[87/5]
		43.8	(535)	A	[87/5]
		51.1			[86/10]
		51.3	(398)	EB, GS	[87/5][60/4] [72/20]
		51.4	(395)		[49/1][84/9]
C <sub>6</sub> H <sub>6</sub> O <sub>2</sub>	1,2-dihydroxybenzene (catechol) (395–519)	63.1	(410)	A	[39/4]
		61.2	(393)	GC	[120-80-9] [87/5]
C <sub>6</sub> H <sub>6</sub> O <sub>2</sub>	1,3-dihydroxybenzene (resorcinol) (419–550)	74.3	(434)	A	[75/24]
		74.3	(407)	GC	[108-46-3] [87/5]
C <sub>6</sub> H <sub>6</sub> O <sub>2</sub>	1,4-dihydroxybenzene (hydroquinone) (392–463)	74.3	(407)	GC	[87/5][75/24]
		70.5	(463)	A	[123-31-9] [87/5]
C <sub>6</sub> H <sub>6</sub> O <sub>3</sub>	1,2,3-trihydroxybenzene (448–559)	70.5	(463)	A	[87/5]
		69.5	(440)	A	[87-66-1] [87/5][55/9]
C <sub>6</sub> H <sub>6</sub> O <sub>4</sub>	butynedioic acid, dimethyl ester (273–460)	56.3	(288)	A	[87/5][72/20]
		56.3	(288)	A	[87/5][72/20]
C <sub>6</sub> H <sub>6</sub> S	benzenethiol (thiophenol) (333–471)	45.9	(348)		[108-98-5] [99/16]
		43.5			[86/10]
		43.1	(400)	A, EB	[87/5][66/5] [56/13]
		43.8±0.1	(375)	C	[56/13]
		42.6±0.1	(395)	C	[56/13]
		41.8±0.1	(407)	C	[56/13]
C <sub>6</sub> H <sub>7</sub> Cl <sub>3</sub> OS	2,3,3-trichloro-2-propenethioic acid, O-propyl ester (383–433)	41.3±0.1	(417)	C	[56/13]
		44.3	(339)		[55/9][84/9]
		69.4		GC	[76619-93-7] [80/24]
		69.4		GC	[80/24]
		69.4		GC	[15760-35-7]
C <sub>6</sub> H <sub>7</sub> N	3-methylenecyclobutanecarbonitrile (348–435)	45.9	(366)	BG	[71/2]
		45.9	(366)	BG	[71/2]
C <sub>6</sub> H <sub>7</sub> N	bicyclo[2.1.0]pentane-1-carbonitrile (332–390)	41.8	(343)	BG	[31357-71-8] [71/2]
		41.8	(343)	BG	[71/2]
C <sub>6</sub> H <sub>7</sub> N	aniline (350–499)	51.0±0.2	(360)	EB	[62-53-3] [02/14]
		48.0±0.2	(400)	EB	[02/14]
		45.2±0.2	(440)	EB	[02/14]
		42.2±0.4	(480)	EB	[02/14]
		45.8	(444)		[92/1]
		52.2	(288)	A	[87/5]
		53.6	(319)	A	[87/5]
		48.6	(388)	A	[87/5]
		46.3	(470)	A	[87/5]
		51.4	(350)		[79/23]
		54.0	(319)		[62/7]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>6</sub> H <sub>7</sub> N	2-methylpyridine	53.0	(333)	C	[62/7]	
	(308–441)	41.2±0.1	(320)	EB	[109-06-8] [99/24]	
	(308–441)	38.8±0.1	(360)	EB	[99/24]	
	(308–441)	36.4±0.1	(400)	EB	[99/24]	
	(308–441)	33.7±0.3	(440)	EB	[99/24]	
	(323–373)	43.6	(298)	CGC	[95/21]	
	(292–403)	42.0	(307)	EB	[90/6]	
	(209–245)	46.9	(230)	A	[87/5]	
	(429–537)	36.5	(444)	A	[87/5]	
	(521–621)	35.4	(536)	A	[87/5]	
		42.5±0.1	(298)	C	[84/4]	
		41.6±0.1	(313)	C	[84/4]	
		40.7±0.1	(328)	C	[84/4]	
		39.8±0.1	(343)	C	[84/4]	
		38.3±0.1	(368)	C	[84/4]	
	(352–445)	39.1	(367)	EB, IPM	[87/5][68/4]	
	(352–442)	39.1	(367)	EB	[87/5][63/11]	
		38.8±0.1	(359)	C	[63/11]	
		37.7±0.1	(379)	C	[63/11]	
		36.2±0.1	(402)	C	[63/11]	
(337–403)	39.8	(352)	MG	[53/4]		
C <sub>6</sub> H <sub>7</sub> N	3-methylpyridine				[108-99-6]	
	(314–457)	43.2±0.1	(320)	EB	[99/24]	
	(314–457)	40.9±0.1	(360)	EB	[99/24]	
	(314–457)	38.6±0.1	(400)	EB	[99/24]	
	(314–457)	36.1±0.2	(440)	EB	[99/24]	
	(374–458)	40.1	(389)	A	[87/5]	
	(450–570)	37.7	(465)	A	[87/5]	
	(561–645)	36.8	(576)	A	[87/5]	
		44.6±0.1	(298)	C	[84/4]	
		43.6±0.1	(313)	C	[84/4]	
		42.7±0.1	(328)	C	[84/4]	
		42.0±0.1	(343)	C	[84/4]	
		40.4±0.1	(368)	C	[84/4]	
	(347–458)	41.3	(362)	EB, IPM	[87/5][68/4]	
	(347–458)	41.3	(362)	EB	[87/5][63/12]	
		40.2±0.1	(372)	C	[63/12]	
		38.9±0.1	(393)	C	[63/12]	
		37.4±0.1	(417)	C	[63/12]	
	(354–418)	41.0	(369)	MG	[53/4]	
	C <sub>6</sub> H <sub>7</sub> N	4-methylpyridine				[108-89-4]
(328–459)		43.4±0.1	(320)	EB	[99/24]	
(328–459)		41.1±0.1	(360)	EB	[99/24]	
(328–459)		38.8±0.1	(400)	EB	[99/24]	
(328–459)		36.2±0.2	(440)	EB	[99/24]	
(323–373)		44.7	(298)	CGC	[95/21]	
(348–460)		41.4	(363)	A	[87/5]	
(348–347)		42.1	(347)	A	[87/5]	
(381–460)		40.0	(396)	A	[87/5]	
(452–573)		37.9	(467)	A	[87/5]	
(564–646)		37.2	(579)	A	[87/5]	
		44.9±0.1	(298)	C	[84/4]	
		43.9±0.1	(313)	C	[84/4]	
		42.9±0.1	(328)	C	[84/4]	
		42.1±0.1	(343)	C	[84/4]	
		44.8±0.1	(298)	C	[81/8]	
(348–459)		41.4	(363)	EB, IPM	[87/5][68/4]	
(350–418)		41.3	(365)	MG	[53/4]	
C <sub>6</sub> H <sub>7</sub> N		2-cyclopentene-1-carbonitrile				[26555-56-5]
			44.9±0.1	(298)	C	[70/21]
C <sub>6</sub> H <sub>7</sub> NO	2-methoxypyridine				[1628-89-3]	
	(304–338)	40.5	(319)	A	[87/5]	
C <sub>6</sub> H <sub>7</sub> NO	1-methyl-2(1 <i>H</i> )-pyridone				[694-85-9]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>7</sub> NS	(353–399) 4-(methylthio)pyridine	60.2	(368)	A	[87/5] [22581-72-2]
	(346–383)	55.8	(361)	A	[87/5]
C <sub>6</sub> H <sub>8</sub>	<i>cis</i> , anti, <i>cis</i> -tricyclo[3.1.0.0 <sup>2,4</sup> ]hexane				
	(273–329)	30.6	(293)		[79/3]
C <sub>6</sub> H <sub>8</sub>	(273–329)	29.7	(313)		[79/3]
	1,3-cyclohexadiene				[592-57-4]
	(307–364)	32.6	(322)	A, EB	[87/5][73/12]
C <sub>6</sub> H <sub>8</sub>	(304–322)	32.4	(313)	MM	[74/4]
	1,4-cyclohexadiene				[628-41-1]
	(304–360)	34.0	(319)	A	[87/5]
C <sub>6</sub> H <sub>8</sub>	(304–322)	33.9	(313)	MM	[74/4]
	<i>cis</i> 1,3,5-hexatriene				[2612-46-6]
	(306–323)	33.3	(314)	A, MM	[87/5][74/4]
C <sub>6</sub> H <sub>8</sub> ClN	3-methylpyridine hydrochloride (420–471)	68.7	(435)	A	[14401-92-4] [87/5]
C <sub>6</sub> H <sub>8</sub> ClN	4-methylpyridine hydrochloride (437–473)	64.7	(452)	A	[14401-93-5] [87/5]
C <sub>6</sub> H <sub>8</sub> Cl <sub>2</sub> O <sub>4</sub>	ethylene glycol, <i>bis</i> chloroacetate (385–557)	73.9	(400)	A	[6941-69-1] [87/5][47/5]
C <sub>6</sub> H <sub>8</sub> N <sub>2</sub>	2,5-dimethylpyrazine (303–411)	44.5	(357)		[123-32-0] [95/4]
	adiponitrile (348–523)	58.7	(363)	A	[111-69-3] [87/5]
C <sub>6</sub> H <sub>8</sub> N <sub>2</sub>	2-methylaminopyridine (308–323)	49.0	(316)	A	[4597-87-9] [87/5]
C <sub>6</sub> H <sub>8</sub> N <sub>2</sub>	3-methylaminopyridine (313–343)	57.2	(326)	A	[18364-47-1] [87/5]
C <sub>6</sub> H <sub>8</sub> N <sub>2</sub>	4-methylaminopyridine (313–343)	54.1	(328)	A	[1121-58-0] [87/5]
C <sub>6</sub> H <sub>8</sub> N <sub>2</sub>	1,3-diaminobenzene (372–559)	63.7	(387)	A	[108-45-2] [87/5][47/5]
	phenyl hydrazine (413–518)	57.3	(428)	A	[100-63-0] [87/5][72/20]
C <sub>6</sub> H <sub>8</sub> N <sub>2</sub>	(345–517)	59.2	(360)		[47/5]
	(378–465)	57.2	(393)	T	[42/4]
	2-cyclohexen-1-one (335–481)	49.5 ± 0.4	(298)	EB	[930-68-7] [97/8]
C <sub>6</sub> H <sub>8</sub> O	2,5-dimethylfuran (271–308)	32.3 ± 0.3	(290)	GS	[625-36-3] [98/2]
	(271–308)	31.8 ± 0.3	(298)	GS	[98/2]
	methyl bicyclo[1.1.0]butane-1-carboxylate (299–377)	37.3	(318)	BG	[4935-01-7] [71/2]
C <sub>6</sub> H <sub>8</sub> O <sub>3</sub>	2,2-dimethylsuccinic acid anhydride (334–493)	57.3	(349)	A	[17347-61-4] [87/5][47/5]
	2-methylglutaric acid anhydride (366–556)	60.7	(381)	A	[31468-33-4] [87/5][47/5]
C <sub>6</sub> H <sub>8</sub> O <sub>4</sub>	dimethyl fumarate (361–466)	53.8	(376)	A	[624-49-7] [87/5]
	dimethyl maleate (385–421)	52.0	(400)	A	[624-48-6] [87/5]
C <sub>6</sub> H <sub>8</sub> O <sub>4</sub>	(318–478)	53.9	(334)		[47/5]
	2,3-dimethylthiophene (353–473)	39.4	(368)	A	[632-16-6] [87/5][72/20]
C <sub>6</sub> H <sub>8</sub> S	2,4-dimethylthiophene (323–493)	41.4	(338)	A	[638-00-6] [87/5][72/20]
					[99/16]
C <sub>6</sub> H <sub>8</sub> S	2,5-dimethylthiophene (333–374)	39.7	(348)	I, A	[638-02-8] [87/5][71/3]
					[99/16]
C <sub>6</sub> H <sub>8</sub> S	3,4-dimethylthiophene (328–478)	41.1	(343)	A	[632-15-5] [87/5][72/20]
					[99/16]
C <sub>6</sub> H <sub>8</sub> S	2-ethylthiophene				[872-55-9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(333–374)	39.7	(348)	I, A	[87/5][71/3] [99/16]
C <sub>6</sub> H <sub>8</sub> S	3-ethylthiophene (318–473)	40.7	(333)	A	[1795-01-3] [87/5][72/20]
C <sub>6</sub> H <sub>9</sub> F <sub>3</sub> O <sub>2</sub>	butyl trifluoroacetate (343–377)	37.8	(358)	A, EB	[367-64-6] [87/5][69/13]
C <sub>6</sub> H <sub>9</sub> N	cyclopentanecarbonitrile				[4254-02-8]
		48.1±0.1	(298)	C	[83/6]
		43.4±0.1	(298)		[73/6]
	(340–418)	40.9	(359)	BG	[71/2]
		43.5±0.1	(298)	C	[70/21]
C <sub>6</sub> H <sub>9</sub> N	2,5-dimethylpyrrole (373–443)	49.5	(388)	A, IPM, EB	[625-84-3] [87/5][68/4]
C <sub>6</sub> H <sub>9</sub> NO <sub>2</sub>	ethyl 2-cyanopropionate (283–323)	58.6±0.3	(298)	GS	[1572-99-2] [95/11]
C <sub>6</sub> H <sub>9</sub> P	trivinylphosphine (289–334)	33.7	(304)		[3746-01-8] [57/15][84/9]
C <sub>6</sub> H <sub>10</sub>	<i>cis</i> bicyclo[3.1.0]hexane (273–300)	33.7	(286)	A	[285-58-5] [87/5]
		33.5±0.4	(298)		[70/30]
C <sub>6</sub> H <sub>10</sub>	cyclohexene (312–356)	32.6	(327)		[110-83-8] [01/12]
	(285–357)	33.5±0.5	(298)	EB	[96/4]
	(309–365)	32.7	(324)	A, EB	[87/5][73/12]
	(305–322)	33.1	(308)	MM	[74/4]
		32.7±0.1	(313)	C	[73/13]
		32.2±0.1	(323)	C	[73/13]
		31.7±0.1	(333)	C	[73/13]
		31.2±0.1	(343)	C	[73/13]
		30.7±0.1	(353)	C	[73/13]
	(285–357)	33.7	(300)	MM	[50/6]
	(229–292)	32.6	(300)		[41/6]
C <sub>6</sub> H <sub>10</sub>	1-methylcyclopentene				[693-89-0]
		32.6±0.2	(298)	GCC	[79/17]
	(268–403)	33.4	(283)	A	[87/5][72/20]
C <sub>6</sub> H <sub>10</sub>	3-methylcyclopentene				[1120-62-3]
		31.0±0.2	(298)	GCC	[79/17]
	(263–392)	32.1	(278)	A	[87/5][72/20]
C <sub>6</sub> H <sub>10</sub>	4-methylcyclopentene (271–403)	33.2	(286)	A	[1759-81-5] [87/5][72/20]
C <sub>6</sub> H <sub>10</sub>	1,3-dimethylcyclobutene (269–296)	31.3	(282)	A	[1489-61-8] [87/5]
C <sub>6</sub> H <sub>10</sub>	2,3-dimethyl-1,3-butadiene (273–342)	32.2	(288)	A	[513-81-5] [87/5][55/3]
C <sub>6</sub> H <sub>10</sub>	<i>trans</i> 1,3-hexadiene (299–319)	32.1	(309)	A, MM	[592-48-3] [87/5][74/4]
C <sub>6</sub> H <sub>10</sub>	<i>trans</i> 1,4-hexadiene (304–323)	30.2	(313)	A, MM	[7319-00-8] [87/5][74/4]
C <sub>6</sub> H <sub>10</sub>	1,5-hexadiene (299–333)	29.4	(314)	A	[592-42-7] [87/5]
	(300–319)	28.6	(308)		[74/4]
	(273–333)	30.5	(288)	A	[87/5][55/3] [72/20]
C <sub>6</sub> H <sub>10</sub>	<i>trans trans</i> 2,4-hexadiene (304–354)	33.2	(319)	A	[5194-51-4] [87/5]
	(305–323)	33.2	(308)	MM	[74/4]
C <sub>6</sub> H <sub>10</sub>	1-hexyne (250–290)	33.5	(270)	MM	[693-02-7] [81/19]
	(237–287)	34.2	(262)	HSA	[81/19]
	(265–391)	33.4	(280)	A	[87/5][72/20]
C <sub>6</sub> H <sub>10</sub>	3-hexyne (253–354)	30.5	(268)	A	[764-35-2] [87/5]
	(253–298)	31.6	(275)	T	[65/13]
C <sub>6</sub> H <sub>10</sub> Br <sub>2</sub>	<i>trans</i> 1,2-dibromocyclohexane				[7429-37-0]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>10</sub> ClFO <sub>2</sub>	(350–416)	53.3	(365)	A	[87/5]
	3-fluorobutyric acid, 2-chloroethyl ester (273–333)	60.4	(288)	A	[87/5][72/20]
C <sub>6</sub> H <sub>10</sub> ClF <sub>3</sub> O	2-chloro-1,1,2-trifluoroethyl butyl ether				[358-36-1]
		45.1±0.1	(298)	C	[84/2]
		43.9±0.1	(313)	C	[84/2]
		42.8±0.1	(328)	C	[84/2]
C <sub>6</sub> H <sub>10</sub> Cl <sub>2</sub>	1,1-dichlorocyclohexane (335–444)	43.5	(350)	A	[2108-92-1] [87/5]
	<i>cis</i> 1,2-dichlorocyclohexane (364–480)	45.8	(379)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> Cl <sub>2</sub>	<i>trans</i> 1,2-dichlorocyclohexane (344–462)	45.8	(359)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> Cl <sub>2</sub>	1,4-dichlorocyclohexane (353–406)	47.8	(368)	A	[19398-57-3] [87/5]
C <sub>6</sub> H <sub>10</sub> Cl <sub>2</sub> O <sub>2</sub>	isobutyl dichloroacetate (301–456)	51.4	(316)	A	[37079-08-6] [87/5][47/5]
C <sub>6</sub> H <sub>10</sub> F <sub>2</sub> O <sub>2</sub>	3-fluorobutyric acid, 2-fluoroethyl ester (273–333)	54.8	(288)	A	[87/5][72/20]
C <sub>6</sub> H <sub>10</sub> O	cyclopentenyl methyl ether (274–313)	42.3±0.8	(294)	GS	[98/2]
	(274–313)	42.1±0.8	(298)	GS	[98/2]
C <sub>6</sub> H <sub>10</sub> O	2,3-dihydro-4-methyl-2 <i>H</i> -pyran (304–392)	38.1	(319)	A	[12655-16-2] [87/5][68/16] [84/9]
	methylenetetrahydro-2 <i>H</i> -pyran (339–382)	36.8	(354)	A	[35656-02-1] [87/5]
C <sub>6</sub> H <sub>10</sub> O	cyclohexanone (343–383)	46.2	(298)	CGC	[108-94-1] [95/21]
	(343–383)	46.9	(298)	CGC	[95/21]
	(343–383)	46.7	(298)	CGC	[95/21]
	(318–428)	44.0	(333)		[93/2]
		44.4±0.1	(308)	C	[92/8]
		44.0±0.1	(313)	C	[92/8]
		43.4±0.1	(323)	C	[92/8]
		43.1±0.1	(328)	C	[92/8]
		42.2±0.1	(338)	C	[92/8]
		41.8±0.1	(343)	C	[92/8]
		41.4±0.1	(348)	C	[92/8]
		42.3±0.2		GC	[89/16]
	(345–458)	42.2	(360)	EB	[87/7]
	(395–426)	40.4	(410)		[84/19]
(362–439)	41.5	(377)	A, EB	[87/5][73/12]	
C <sub>6</sub> H <sub>10</sub> O	(273–298)	45.1±0.1	(298)	C	[68/17]
		40.3	(286)		[38/6]
	5-hexen-2-one (317–440)	42.1±0.1	(320)	EB	[109-49-9] [02/21]
	(317–440)	39.4±0.2	(360)	EB	[02/21]
	(317–440)	36.6±0.3	(400)	EB	[02/21]
	(317–440)	33.5±0.6	(440)	EB	[02/21]
C <sub>6</sub> H <sub>10</sub> O	(449–561)	34.6	(464)	A	[87/5]
	mesityl oxide	35.2	(401)		[1898/2][97/18]
C <sub>6</sub> H <sub>10</sub> O	[Note: May be a mixture of 2-methyl-1-penten-4-one and 4-methyl-3-penten-2-one] 2-methyl-1-penten-4-one (389–461)	36.9	(404)	A	[3744-02-3] [87/5]
	(286–461)	41.9	(298)		[75/8]
	(306–398)	41.1	(321)	MM	[87/5][47/9] [72/20]
	4-methyl-3-penten-2-one (303–442)	42.7±0.3	(298)	EB	[141-79-7] [97/18]
C <sub>6</sub> H <sub>10</sub> O	(303–442)	41.4±0.3	(320)	EB	[97/18]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(303–442)	39.1±0.3	(360)	EB	[97/18]
	(303–442)	36.5±0.3	(400)	EB	[97/18]
	(303–442)	33.5±0.6	(440)	EB	[97/18]
	(343–383)	44.8	(298)	CGC	[95/21]
	(399–471)	37.8	(414)	A	[87/5]
	(292–471)	43.3	(298)		[75/4]
	(313–405)	41.5	(328)	MM	[87/5][47/9] [72/20]
C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	methyl cyclobutanecarboxylate				[765-85-5]
		44.2±0.2		GS	[98/22]
		44.7±0.1	(298)	C	[83/6]
	(319–378)	41.4	(340)	BG	[71/2]
C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	cyclopropanecarboxylic acid ethyl ester				
	(278–308)	44.0±0.5		GS	[98/22]
C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	allyl glycidyl ether				[106-92-3]
	(323–420)	47.0	(338)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	butyric acid, vinyl ester				[123-20-6]
	(365–387)	39.3	(376)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	4-vinyl-1,3-dioxane				[1072-96-4]
	(306–416)	54.5	(321)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	caprolactone				[502-44-3]
	(395–436)	54.0±0.2	(415)	EB	[91/7]
	(395–436)	62.0±1.3	(298)	EB	[91/7]
C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	ethyl crotonate				[10544-63-5]
	(329–420)	47.1	(344)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	ethyl methacrylate				[97-63-2]
	(285–390)	38.3	(300)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	5,5-dimethyldihydro-2(3 <i>H</i> )-furanone				[3123-97-5]
	(311–480)	52.7	(326)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	propyl acrylate				[925-60-0]
	(287–395)	37.9	(302)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	2,5-hexanedione				[110-13-4]
	(386–474)	50.1	(401)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>3</sub>	<i>cis/trans</i> 2,5-dimethoxy-2,5-dihydrofuran				
		44.2±0.3	(298)	CGC	[00/9]
C <sub>6</sub> H <sub>10</sub> O <sub>3</sub>	cyclohexene ozonide				[284-22-0]
	(276–311)	74.2	(291)	A	[87/5]
	(353–403)	58.6	(378)		[77/9]
C <sub>6</sub> H <sub>10</sub> O <sub>3</sub>	ethyl acetoacetate				[141-97-9]
	(301–454)	52.5	(316)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>3</sub>	methyl levulinate				[624-45-3]
	(312–471)	50.4	(327)	A	[87/5][47/5]
		51.1	(410)		[31/1]
C <sub>6</sub> H <sub>10</sub> O <sub>3</sub>	propionic anhydride				[123-62-6]
	(293–440)	48.2	(308)	A	[87/5]
	(341–440)	52.2	(356)		[1883/1]
C <sub>6</sub> H <sub>10</sub> O <sub>3</sub>	ethyl 3-oxobutanoate				[141-97-9]
		54.2±1.0	(298)	C	[95/6]
		55.0			[75/39]
C <sub>6</sub> H <sub>10</sub> O <sub>4</sub>	1,1-diacetoxyethane				[542-10-9]
	(343–438)	49.7	(358)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>4</sub>	2-acetoxypropionic acid, methyl ester				[6284-75-9]
	(337–445)	52.9	(352)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>4</sub>	3-acetoxypropionic acid, methyl ester				[38003-42-8]
	(343–358)	68.0	(350)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>4</sub>	diethyl oxalate				[95-92-1]
	(343–457)	53.9	(358)	A	[87/5]
	(320–459)	62.3	(335)	A	[87/5][47/5]
C <sub>6</sub> H <sub>10</sub> O <sub>4</sub>	dimethyl succinate				[106-65-0]
	(340–470)	49.3	(364)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>4</sub>	ethylene glycol diacetate				[111-55-7]
	(311–464)	55.2	(326)	A	[87/5]
		61.0±0.1	(298)	C	[70/17]
	(373–463)	57.6	(388)		[26/5][84/9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>10</sub> O <sub>4</sub>	dimethyl methylmalonate (278–308)	57.8±0.8	(293)	GS	[92/13]
C <sub>6</sub> H <sub>10</sub> O <sub>4</sub>	adipic acid (432–611)	92.0	(447)	A	[124-04-9] [87/5][47/5]
C <sub>6</sub> H <sub>10</sub> O <sub>5</sub>	( <i>l</i> ) glucosane (468–528)	92.2	(483)	A	[498-07-7] [87/5][64/1] [72/20]
C <sub>6</sub> H <sub>10</sub> O <sub>5</sub>	( <i>l</i> ) malic acid, dimethyl ester (348–516)	58.7	(363)	A	[617-55-0] [87/5][47/5]
C <sub>6</sub> H <sub>10</sub> O <sub>5</sub>	methyl[1-(methoxycarbonyl)ethyl]carbonate (358–483)	55.9	(373)	A	[87/5]
C <sub>6</sub> H <sub>10</sub> O <sub>6</sub>	( <i>d</i> ) dimethyl tartrate (322–365)	76.4	(337)	A, ME	[608-68-4] [87/5][54/6]
C <sub>6</sub> H <sub>10</sub> O <sub>6</sub>	( <i>dl</i> ) dimethyl tartrate (375–553)	66.0	(390)		[47/5]
C <sub>6</sub> H <sub>10</sub> O <sub>6</sub>	( <i>dl</i> ) dimethyl tartrate (373–555)	62.5	(388)	A	[609-69-5] [87/5][47/5]
C <sub>6</sub> H <sub>10</sub> S	diallyl sulfide (263–411)	46.6	(278)		[592-88-1] [99/16]
C <sub>6</sub> H <sub>10</sub> S	diallyl sulfide (263–412)	43.2	(278)	A	[87/5][47/5]
C <sub>6</sub> H <sub>11</sub> Br	bromocyclohexane (347–439)	42.8	(362)		[108-85-0] [97/15]
C <sub>6</sub> H <sub>11</sub> BrO <sub>2</sub>	ethyl 2-bromo-2-methylpropionate (283–437)	45.4	(298)	A	[600-00-0] [87/5][47/5]
C <sub>6</sub> H <sub>11</sub> Cl	chlorocyclohexane (313–353)	41.8	(298)	CGC	[542-18-7] [95/21]
C <sub>6</sub> H <sub>11</sub> Cl	1-chloro-1-methylcyclopentane	40.7±0.1	(298)	C	[95/18]
C <sub>6</sub> H <sub>11</sub> Cl	1-chloro-1-methylcyclopentane	42.9±0.6	(298)	C	[94/20]
C <sub>6</sub> H <sub>11</sub> Cl	1-chloro-1-methylcyclopentane (350–416)	39.3	(365)	A	[87/5]
C <sub>6</sub> H <sub>11</sub> Cl	1-chloro-1-methylcyclopentane	39.7±0.1	(297)	C	[6196-85-6] [97/20]
C <sub>6</sub> H <sub>11</sub> ClO	diethylacetyl chloride (313–412)	39.4	(328)	A	[2736-40-5] [87/5]
C <sub>6</sub> H <sub>11</sub> ClO	3-ethyl-3-(chloromethyl)oxetane	49.7±0.2	(298)	C	[2177-22-2] [71/25]
C <sub>6</sub> H <sub>11</sub> ClO <sub>2</sub>	chloroacetic acid, sec-butyl ester (290–441)	49.6	(305)	A	[17696-64-9] [87/5]
C <sub>6</sub> H <sub>11</sub> ClO <sub>2</sub>	chloroacetic acid, isobutyl ester (293–323)	43.9	(308)	A	[13361-38-8] [87/5]
C <sub>6</sub> H <sub>11</sub> F	fluorocyclohexane (271–301)	37.5±0.3	(298)	GS	[372-46-3] [97/14]
C <sub>6</sub> H <sub>11</sub> F	fluorocyclohexane (316–373)	35.0	(331)	A	[87/5]
C <sub>6</sub> H <sub>11</sub> FO <sub>2</sub>	2-fluorohexanoic acid (387–411)	80.9	(399)	A	[1578-57-0] [87/5]
C <sub>6</sub> H <sub>11</sub> I	iodocyclohexane (313–353)	48.3	(298)	CGC	[626-62-0] [95/21]
C <sub>6</sub> H <sub>11</sub> I	iodocyclohexane (358–408)	43.0	(383)	A, I	[87/5][56/26]
C <sub>6</sub> H <sub>11</sub> N	hexanenitrile (371–442)	43.3	(386)	A, EB	[628-73-9] [87/5][73/12]
C <sub>6</sub> H <sub>11</sub> N	hexanenitrile (344–441)	44.6	(359)	EB	[71/4]
C <sub>6</sub> H <sub>11</sub> N	4-methylvaleronitrile (332–430)	35.7	(347)	A	[542-54-1] [87/5]
C <sub>6</sub> H <sub>11</sub> NO	cyclohexanone oxime (370–385)	63.1±1.0	(378)	EB	[100-64-1] [02/20]
C <sub>6</sub> H <sub>11</sub> NO	cyclohexanone oxime (371–446)	58.7±0.6	(368)	C	[92/6]
C <sub>6</sub> H <sub>11</sub> NO	cyclohexanone oxime (371–446)	59.5±0.5			[92/6]
C <sub>6</sub> H <sub>11</sub> NO	$\epsilon$ -caprolactam (350–568)	69.2±0.3	(360)	EB	[105-60-2] [02/17]
C <sub>6</sub> H <sub>11</sub> NO	$\epsilon$ -caprolactam (350–568)	65.7±0.3	(400)	EB	[02/17]
C <sub>6</sub> H <sub>11</sub> NO	$\epsilon$ -caprolactam (350–568)	62.3±0.2	(440)	EB	[02/17]
C <sub>6</sub> H <sub>11</sub> NO	$\epsilon$ -caprolactam (350–568)	59.0±0.2	(480)	EB	[02/17]
C <sub>6</sub> H <sub>11</sub> NO	$\epsilon$ -caprolactam (350–568)	55.7±0.3	(520)	EB	[02/17]
C <sub>6</sub> H <sub>11</sub> NO	$\epsilon$ -caprolactam (350–568)	52.4±0.5	(560)	EB	[02/17]
C <sub>6</sub> H <sub>11</sub> NO	$\epsilon$ -caprolactam (373–543)	62.3	(388)	A	[87/5]
C <sub>6</sub> H <sub>11</sub> NO	<i>cis</i> 2-hexenoic acid amide				[820-99-5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>11</sub> NO	(343–383) 1-methyl-2-piperidone	61.7	(358)	A	[87/5] [931-20-4]
	(341–385) 2,3,4,5-tetrahydro-6-methoxypyridine	55.4	(356)	A	[87/5] [5693-62-9]
C <sub>6</sub> H <sub>11</sub> NO	(292–338) nitrocyclohexane	42.8	(307)	A	[87/5] [1122-60-7]
C <sub>6</sub> H <sub>11</sub> NO <sub>2</sub>	(298–318) 1-aminocyclopentanecarboxylic acid	54.7±0.6	(298)	GS	[97/5] [52-52-8]
C <sub>6</sub> H <sub>11</sub> NO <sub>2</sub>	(443–468) lactic acid N-allyl amide	123.3	(455)	A	[87/5]
C <sub>6</sub> H <sub>11</sub> NO <sub>2</sub>	(359–419) ethyl acetamidoacetate	78.2	(374)	A	[87/5] [1906-82-7]
C <sub>6</sub> H <sub>11</sub> NO <sub>3</sub>	(383–466) 2-piperidinethione	69.4	(398)	A	[87/5][72/20] [13070-07-0]
C <sub>6</sub> H <sub>11</sub> NS	(363–370) 2,3,4,5-tetrahydro-(methylthio)pyridine	63.3	(366)	A	[87/5] [19766-29-1]
C <sub>6</sub> H <sub>11</sub> NS	(313–351) ethylcyclobutane	52.6	(328)	A	[87/5] [4806-61-5]
C <sub>6</sub> H <sub>12</sub>		31.2±0.2	(298)	C	[83/6]
		32.6±0.8	(298)	EB	[74/3] [110-82-7]
C <sub>6</sub> H <sub>12</sub>	cyclohexane (300–345)	32.7	(315)		[02/45]
	(360–470)	32.2	(375)		[93/3]
C <sub>6</sub> H <sub>12</sub>	(313–336)	31.9	(324)	EB	[95/9]
	(313–336)	33.1	(298)	EB	[95/9]
C <sub>6</sub> H <sub>12</sub>		32.3	(314)	C	[88/19]
		31.1	(332)	C	[88/19]
C <sub>6</sub> H <sub>12</sub>		30.3	(345)	C	[88/19]
		30.0	(355)	C	[88/19]
C <sub>6</sub> H <sub>12</sub>	(353–414)	30.9	(368)	A	[87/5]
	(412–491)	29.6	(427)	A	[87/5]
C <sub>6</sub> H <sub>12</sub>	(489–553)	29.6	(504)	A	[87/5]
		33.0±0.1	(298)	C	[82/18]
C <sub>6</sub> H <sub>12</sub>		33.0	(298)		[81/12]
		33.0±0.1	(298)	C	[79/13]
C <sub>6</sub> H <sub>12</sub>		32.3±0.1	(313)	C	[79/13]
		31.2±0.1	(333)	C	[79/13]
C <sub>6</sub> H <sub>12</sub>		31.0±0.1	(338)	C	[79/13]
		30.4±0.1	(348)	C	[79/13]
C <sub>6</sub> H <sub>12</sub>		30.1±0.1	(353)	C	[79/13]
		32.2±0.1	(313)	C	[73/13]
C <sub>6</sub> H <sub>12</sub>		31.9±0.1	(323)	C	[73/13]
		31.1±0.1	(333)	C	[73/13]
C <sub>6</sub> H <sub>12</sub>		30.6±0.1	(343)	C	[73/13]
		30.1±0.1	(354)	C	[73/13]
C <sub>6</sub> H <sub>12</sub>		32.9±0.3	(298)	ME	[72/33]
		32.9	(298)		[71/7]
C <sub>6</sub> H <sub>12</sub>		33.0	(298)		[71/28]
	(303–343)	32.5	(318)		[68/6]
C <sub>6</sub> H <sub>12</sub>	(298–348)	32.9	(313)		[67/21]
	(316–354)	32.8	(331)		[65/9]
C <sub>6</sub> H <sub>12</sub>		31.4±0.1	(324)	C	[51/2]
		30.4±0.1	(346)	C	[51/2]
C <sub>6</sub> H <sub>12</sub>		33.0	(298)	C	[47/7]
		30.1	(354)		[46/11]
C <sub>6</sub> H <sub>12</sub>	(293–355)	32.9	(308)	A, MM	[87/5][45/2]
		33.3±0.1	(298)	C	[43/5] [27/3]
C <sub>6</sub> D <sub>12</sub>	cyclohexane-d <sub>12</sub> (283–353)	33.1	(298)		[1735-17-7] [53/10]
	C <sub>6</sub> H <sub>12</sub> methylcyclopentane				[96-37-7] [71/28]
C <sub>6</sub> H <sub>12</sub>		31.6	(298)		[71/28]
		31.3±0.1	(304)	C	[59/8]
C <sub>6</sub> H <sub>12</sub>		30.2±0.1	(326)	C	[59/8]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>12</sub>		29.1±0.1	(345)	C	[59/8]
		31.6±0.1	(298)	C	[47/7]
	(288–346)	31.9	(303)	A, MM	[87/5][45/2] [592-41-6]
	1-hexene				[01/12]
	(300–337)	30.6	(315)		[87/5]
	(273–343)	31.6	(288)	A	[71/28]
C <sub>6</sub> H <sub>12</sub>	(289–337)	30.6	(298)		[56/9]
	(289–337)	31.0	(304)	MM	[50/6]
	<i>cis</i> 2-hexene				[7688-21-3]
	(278–343)	32.2	(293)	A	[87/5]
C <sub>6</sub> H <sub>12</sub>		31.5	(298)		[71/28]
	(298–342)	31.5	(298)		[56/9]
	<i>trans</i> 2-hexene				[4050-45-7]
C <sub>6</sub> H <sub>12</sub>	(283–342)	32.2	(298)	A	[87/5]
		31.6	(298)		[71/28]
	(292–341)	31.5	(298)		[56/9]
C <sub>6</sub> H <sub>12</sub>	<i>cis</i> 3-hexene				[7642-09-3]
	(276–348)	32.1	(291)	A	[87/5]
		31.3	(298)		[71/28]
C <sub>6</sub> H <sub>12</sub>	(185–340)	31.3	(298)		[56/7]
	<i>trans</i> 3-hexene				[13269-52-8]
	(278–341)	32.3	(293)	A	[87/5]
C <sub>6</sub> H <sub>12</sub>		31.6	(298)		[71/28]
	(291–341)	31.5	(298)		[56/7]
	2-methyl-1-pentene				[763-29-1]
C <sub>6</sub> H <sub>12</sub>	(272–341)	31.6	(287)	A	[87/5]
		30.5	(298)		[71/28]
	(300–335)	30.5	(298)		[56/9]
C <sub>6</sub> H <sub>12</sub>	3-methyl-1-pentene				[760-20-3]
	(265–333)	30.0	(280)	A	[87/5]
		28.6	(298)		[71/28]
C <sub>6</sub> H <sub>12</sub>	(287–328)	28.6	(298)		[56/9]
	4-methyl-1-pentene				[691-37-2]
	(310–360)	28.6±0.2	(298)	EB	[97/18]
	(310–360)	27.4±0.3	(320)	EB	[97/18]
	(310–360)	26.2±0.4	(340)	EB	[97/18]
	(310–360)	24.9±0.5	(360)	EB	[97/18]
C <sub>6</sub> H <sub>12</sub>	(265–333)	30.1	(280)	A	[87/5]
		28.7	(298)		[71/28]
	(287–328)	28.7	(298)		[56/7]
	2-methyl-2-pentene				[625-27-4]
	(277–346)	32.4	(292)	A	[87/5]
		31.6	(298)		[71/28]
C <sub>6</sub> H <sub>12</sub>	(292–341)	31.6	(298)		[56/7]
	<i>cis</i> 3-methyl-2-pentene				[922-62-3]
	(277–347)	32.2	(292)	A	[87/5]
C <sub>6</sub> H <sub>12</sub>		31.3	(298)		[71/28]
	(300–344)	32.1	(298)		[56/9]
	<i>trans</i> 3-methyl-2-pentene				[616-12-6]
C <sub>6</sub> H <sub>12</sub>	(280–349)	32.8	(295)	A	[87/5]
		32.1	(298)		[71/28]
	(292–341)	31.3	(298)		[56/9]
C <sub>6</sub> H <sub>12</sub>	<i>cis</i> 4-methyl-2-pentene				[691-38-3]
	(267–330)	30.8	(282)	A	[87/5]
		29.5	(298)		[71/28]
C <sub>6</sub> H <sub>12</sub>	(300–330)	29.5	(298)		[56/9]
	<i>trans</i> 4-methyl-2-pentene				[674-76-0]
	(269–337)	31.2	(284)	A	[87/5]
C <sub>6</sub> H <sub>12</sub>		30.0	(298)		[71/28]
	(291–332)	30.0	(298)		[56/9]
	2,3-dimethyl-1-butene				[563-78-0]
C <sub>6</sub> H <sub>12</sub>	(267–335)	30.5	(282)	A	[87/5]
		29.2	(298)		[71/28]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>12</sub>	(289–329)	29.2	(298)		[56/9]
	3,3-dimethyl-1-butene				[558-37-2]
	(254–316)	28.6	(269)	A	[87/5]
C <sub>6</sub> H <sub>12</sub>		26.6	(298)		[71/28]
	(281–315)	26.6	(298)		[56/9]
	2,3-dimethyl-2-butene				[563-79-1]
	(289–347)	32.6	(298)		[56/9]
		32.5	(298)		[71/28]
	(282–348)	33.1	(297)	A	[87/5][55/3]
		32.9±0.1	(292)	C	[55/13]
	32.0±0.1	(308)	C	[55/13]	
	30.9±0.1	(326)	C	[55/13]	
	29.7±0.1	(346)	C	[55/13]	
C <sub>6</sub> H <sub>12</sub>	2-ethyl-1-butene				[760-21-4]
C <sub>6</sub> H <sub>12</sub> Br <sub>2</sub>	(289–338)	31.0	(298)		[56/9]
	1,1-dibromohexane				[58133-26-9]
C <sub>6</sub> H <sub>12</sub> ClNO	(378–526)	51.6	(393)	A, EST	[87/5][56/16]
					[72/20]
C <sub>6</sub> H <sub>12</sub> Cl <sub>2</sub>	4-(2-chloroethyl)morpholine				[3240-94-6]
	(273–333)	53.8	(288)	A	[87/5][72/20]
C <sub>6</sub> H <sub>12</sub> Cl <sub>2</sub>	1,1-dichlorohexane				[62017-16-7]
	(330–440)	48.7	(298)		[87/12][91/2]
	(345–484)	45.1	(360)	A, EST	[87/5][56/16]
C <sub>6</sub> H <sub>12</sub> Cl <sub>2</sub>	( <i>dl</i> ) 1,2-dichlorohexane				[72/20]
	(350–440)	48.8	(298)		[2162-92-7]
	(352–442)	44.9	(367)	A	[91/2]
	47.9±0.7	(298)	EB	[87/5]	
C <sub>6</sub> H <sub>12</sub> Cl <sub>2</sub>	1,6-dichlorohexane				[75/16]
C <sub>6</sub> H <sub>12</sub> Cl <sub>2</sub> O	(380–480)	56.3	(298)		[2163-00-0]
	<i>bis</i> (2-chloro-1-methylethyl) ether				[88/11][91/2]
C <sub>6</sub> H <sub>12</sub> Cl <sub>2</sub> O <sub>2</sub>	(302–456)	53.6	(317)	A	[108-60-1]
	<i>bis</i> (2-chloroethyl)acetaldehyde acetal				[87/5][47/5]
C <sub>6</sub> H <sub>12</sub> Cl <sub>3</sub> N	(329–486)	59.4	(344)	A	[14689-97-5]
	<i>tris</i> (2-chloroethyl)amine				[87/5][47/5]
C <sub>6</sub> H <sub>12</sub> Cl <sub>3</sub> O <sub>4</sub> P	(273–333)	65.0	(288)	A, GS	[555-77-1]
	<i>tris</i> (2-chloroethyl)phosphate				[87/5][48/13]
C <sub>6</sub> H <sub>12</sub> F <sub>2</sub>	(293–445)	36.7	(308)	A	[72/20]
	1,1-difluorohexane				[87/5][72/20]
C <sub>6</sub> H <sub>12</sub> F <sub>3</sub> OP	(290–407)	37.7	(305)	A, EST	[62127-41-7]
					[87/5][56/16]
C <sub>6</sub> H <sub>12</sub> F <sub>3</sub> PS					[72/20]
	methyl (trifluoromethyl)phosphinous acid, <i>tert</i> -butyl ester				[70/26]
C <sub>6</sub> H <sub>12</sub> F <sub>3</sub> PS	(273–329)	39.7	(296)		[26348-87-8]
	methyl (trifluoromethyl)phosphinothious acid, <i>tert</i> -butyl ester				[70/26]
C <sub>6</sub> H <sub>12</sub> F <sub>4</sub> N <sub>2</sub>	(296–337)	43.2	(312)		[16096-76-7]
	<i>N,N,N',N'</i> -tetrafluoro-2-methyl-1,2-pentanediamine				[87/5][63/9]
C <sub>6</sub> H <sub>12</sub> N <sub>2</sub>	(253–293)	42.8	(278)	A, IPM	[62/13]
	(diethylamino)acetonitrile				[3010-02-4]
C <sub>6</sub> H <sub>12</sub> N <sub>2</sub> O	(283–318)	49.9±0.3		GS	[97/10]
	1,3-dimethyl-3,4,5,6-tetrahydro-2(1 <i>H</i> )pyrimidinone				[7226-23-5]
C <sub>6</sub> H <sub>12</sub> N <sub>2</sub> O <sub>2</sub>	(370–520)	58.0	(400)	EB	[87/2]
	tetramethyl monothiooxamide				
C <sub>6</sub> H <sub>12</sub> N <sub>2</sub> O <sub>2</sub>		59	(508)	TGA, DSC	[02/36]
	tetramethyloxamide				
C <sub>6</sub> H <sub>12</sub> N <sub>2</sub> O <sub>6</sub>		52.5	(460)	TGA, DSC	[02/36]
	2,5-dinitroxyhexane				
C <sub>6</sub> H <sub>12</sub> N <sub>2</sub> O <sub>8</sub>	(293–313)	54.4	(303)	B,GS	[57/5][72/20]
	triethylene glycol dinitrate				[111-22-8]
C <sub>6</sub> H <sub>12</sub> N <sub>2</sub> S <sub>2</sub>	(303–348)	88.3	(318)	A	[87/5][72/20]
	tetramethyl dithiooxamide				[35840-78-9]
C <sub>6</sub> H <sub>12</sub> O		60.5	(533)	TGA, DSC	[02/36]
	( <i>dl</i> ) 2,5-dimethyltetrahydrofuran				[100-38-9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>6</sub> H <sub>12</sub> O	(278–370) 1,2-epoxyhexane	35.4	(293)	A	[87/5] [1436-34-6]	
	(300–390)	43.1	(315)	A	[87/5][69/21] [84/9]	
C <sub>6</sub> H <sub>12</sub> O	2-methyl-2,3-epoxypentane (306–369)	40.6	(321)	A	[1192-22-9] [87/5]	
C <sub>6</sub> H <sub>12</sub> O	allyl isopropyl ether (253–415)	36.1	(268)	A	[6140-80-3] [87/5]	
		36.8	(244)	A	[87/5][47/5] [1471-03-0]	
C <sub>6</sub> H <sub>12</sub> O	allyl propyl ether (261–428)	37.5	(276)	A	[87/5]	
		36.4	(249)	A	[87/5][47/5]	
C <sub>6</sub> H <sub>12</sub> O	butyl vinyl ether (311–403)	36.7±0.2	(298)	EB	[111-34-2] [96/5]	
		36.5	(298)	CGC	[95/21]	
		36.1	(284)	A	[87/5]	
C <sub>6</sub> H <sub>12</sub> O	isobutyl vinyl ether (266–357)	37.4	(281)	A	[109-53-5] [87/5]	
C <sub>6</sub> H <sub>12</sub> O	cyclohexanol (390–430)	49.8	(405)		[108-93-0] [02/9]	
		62.0±0.3	(298)	C	[99/6]	
		63.5±0.7	(298)	EB	[97/8]	
		61.3	(298)	CGC	[95/21]	
		55.0	(365)	EB	[87/7]	
		59.9	(333)	A	[87/5]	
		62.7	(315)	A	[87/5]	
		49.3	(418)		[84/19]	
		58.4	(318)		[84/27]	
		60.4	(309)		[75/1]	
		62.0±0.9	(298)		[75/1]	
		62.0±0.2	(298)	C	[68/17]	
		62.0±0.3	(298)		[66/2]	
(307–422)	54.8	(322)		[46/4]		
C <sub>6</sub> H <sub>12</sub> O	1-methylcyclopentanol (354–407)	45.7	(369)	A	[1462-03-9] [87/5]	
C <sub>6</sub> H <sub>12</sub> O	5-hexen-1-ol	60.2±0.1	(298)	C	[821-41-0] [96/9]	
		58.0±0.1	(343)	C	[96/9]	
		55.7±0.1	(358)	C	[96/9]	
C <sub>6</sub> H <sub>12</sub> O	<i>(dl)</i> 3-methyl-2-pentanone (286–400)	39.8	(301)	A	[565-61-7] [87/5]	
		41.5	(298)	A	[87/5]	
		36.5	(400)	A	[87/5]	
		41.2	(298)		[75/8]	
C <sub>6</sub> H <sub>12</sub> O	2-hexanone (293–411)	43.1±0.1	(298)	C	[591-78-6] [92/8]	
		42.5±0.1	(308)	C	[92/8]	
		41.6±0.1	(323)	C	[92/8]	
		40.7±0.1	(338)	C	[92/8]	
		40.1±0.1	(348)	C	[92/8]	
		39.5±0.1	(358)	C	[92/8]	
		40.8	(308)	A	[87/5]	
		43.8	(294)	A	[87/5]	
		41.5	(325)	A	[87/5]	
		36.7	(436)	A	[87/5]	
		36.1	(528)	A	[87/5]	
		43.1±0.1	(298)	C	[83/3]	
		43.0±0.3	(298)	GCC	[79/7]	
		(307–482)	42.9	(298)		[75/8]
		42.2±0.1	(298)	C	[70/19]	
		(280–400)	53.8	(295)		[47/5]
		C <sub>6</sub> H <sub>12</sub> O	3-hexanone (408–517)	36.5	(423)	A
35.4	(526)			A	[87/5]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>6</sub> H <sub>12</sub> O	3,3-dimethyl-2-butanone (pinacolone)	40.6±0.1	(298)	C	[83/3]	
		42.3±0.3	(298)	GCC	[79/7]	
		(348–413)	38.9	(363)	A	[87/5][75/8]
			42.3	(298)		[75/8]
		(292–406)	42.2	(307)	A	[87/5][72/20]
			41.9±0.2	(298)	C	[70/19]
			38.4±0.1	(354)	C	[67/39]
			37.0±0.1	(374)	C	[67/39]
			35.4±0.1	(396)	C	[67/39]
		(349–406)	38.8	(364)	GS, EB	[65/7]
						[75-97-8]
			37.8±0.1	(308)	C	[92/8]
			37.5±0.1	(313)	C	[92/8]
			36.9±0.1	(323)	C	[92/8]
			36.7±0.1	(328)	C	[92/8]
	35.8±0.1	(338)	C	[92/8]		
	35.4±0.1	(343)	C	[92/8]		
	35.0±0.1	(348)	C	[92/8]		
	(311–381)	36.9	(326)	A	[87/5]	
	(363–400)	34.9	(378)	A	[87/5]	
	(396–509)	33.8	(411)	A	[87/5]	
	(491–567)	33.1	(506)	A	[87/5]	
	(289–402)	38.3	(304)	A	[87/5][75/8]	
		38.3	(298)		[75/8]	
		37.9±0.1	(298)	C	[70/19]	
C <sub>6</sub> H <sub>12</sub> O	4-methyl-2-pentanone				[108-10-1]	
		40.1±0.1	(308)	C	[92/8]	
		39.0±0.1	(323)	C	[92/8]	
		38.0±0.1	(338)	C	[92/8]	
		37.4±0.1	(348)	C	[92/8]	
	(309–416)	39.2	(324)		[88/6]	
	(281–400)	42.5	(296)	A	[87/5]	
	(349–389)	37.0	(365)	EB	[85/12]	
		42.5±0.1	(298)	C	[83/3]	
	(282–456)	41.0	(298)		[75/8]	
	(294–390)	41.2	(309)	A	[87/5][52/14]	
C <sub>6</sub> H <sub>12</sub> O	2-methyl-3-pentanone				[565-69-5]	
	(300–387)	43.4	(315)	A	[87/5]	
	(280–387)	41.0	(295)	A	[87/5]	
	(377–450)	36.2	(392)	A	[87/5]	
	(280–452)	40.5	(298)		[75/8]	
		39.8±0.2	(298)	C	[70/18]	
C <sub>6</sub> H <sub>12</sub> O	hexanal				[66-25-1]	
		42.3±0.1	(298)		[81/18]	
	(315–402)	41.0	(330)		[79/15]	
C <sub>6</sub> H <sub>12</sub> OS	S-butyl thiolacetate				[926-47-2]	
		48.1±0.2	(298)	C	[66/2]	
C <sub>6</sub> H <sub>12</sub> OS	S-tert-butyl thiolacetate				[999-90-6]	
		42.9±0.2	(298)	C	[66/2]	
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	2-ethyl-2-methyl-1,3-dioxolane				[126-39-6]	
	(274–313)	44.8±0.3	(298)	GS	[02/32]	
	(274–313)	43.1±0.3		GS	[98/21]	
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	2-propyl-1,3-dioxolane				[3390-13-4]	
	(278–313)	45.3±0.3	(298)	GS	[98/21][02/29]	
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	4-ethyl-1,3-dioxane				[1121-61-5]	
	(362–412)	39.3	(377)	A	[87/5]	
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	2,4-dimethyl-1,3-dioxane				[766-20-1]	
	(274–313)	44.9±0.6	(298)	GS	[02/32]	
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	4,4-dimethyl-1,3-dioxane				[766-15-4]	
	(333–407)	37.1	(348)	A	[87/5][68/16]	
	(363–406)	38.8	(378)		[69/8]	
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	cis 4,5-dimethyl-1,3-dioxane				[2391-24-4]	
	(353–410)	48.5	(368)	A	[87/5]	
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	trans 4,5-dimethyl-1,3-dioxane				[1121-20-6]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	(353–408) 2-hydroxymethyltetrahydropyran	39.1	(368)	A	[87/5] [100-72-1]
	(344–460)	49.0	(359)	A	[87/5]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	1,1-dimethoxycyclobutane				[4415-90-1]
	(274–313)	42.0±0.3	(298)	GS	[02/32]
	(273–313)	42.3±0.3		GS	[98/21]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	(301–348) [(1-methylethoxy)methyl]oxirane	42.6	(325)	EB	[94/16] [4016-14-2]
		43.5±2.1			[87/14]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	(propoxymethyl)oxirane	48.5±0.4			[3126-95-2] [87/14]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	1,1-dimethoxy-3-butene (305–334)	42.0	(320)	EB	[94/16]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	butyl acetate				[123-86-4]
		42.4	(298)	GC	[97/13]
	(313–363)	42.7	(298)	CGC	[95/21]
	(313–353)	43.1	(298)	CGC	[95/21]
		41.0±0.5	(298)	GC	[87/17]
		43.0±0.1	(313)	C	[80/13]
		41.7±0.1	(328)	C	[80/13]
		40.6±0.1	(343)	C	[80/13]
		39.4±0.1	(358)	C	[80/13]
	(326–404)	41.3	(341)	DTA	[80/8]
		43.6±0.5	(298)	GCC	[80/5]
		43.7±0.2	(298)	GCC	[80/5]
	(341–399)	40.5	(356)	A, EB	[87/5][69/13]
		43.6±0.2	(298)	C	[66/2]
	(332–399)	40.8	(347)	A	[87/5][64/24] [84/9]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	diacetone alcohol (301–388)	37.5	(398)		[61/23] [123-42-2]
		47.5	(316)	A, I	[87/5][52/14] [123-42-2]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	4-hydroxy-4-methyl-2-pentanone				[75/39]
	(295–441)	51.0	(310)		[47/5]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	ethyl butyrate				[105-54-4]
	(330–435)	39.4	(345)		[97/11]
	(332–393)	40.2	(347)		[93/8]
	(310–336)	42.1±0.1	(323)	EB	[91/7]
	(310–336)	43.7±1.3	(298)	EB	[91/7]
	(263–404)	48.3	(278)	A	[87/5]
		42.0±0.1	(298)	C	[66/2]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	(254–394) ethyl isobutyrate	41.8	(270)		[47/5] [97-62-1]
	(383–483)	36.0	(398)	A	[87/5]
		39.8±0.1	(298)	C	[66/2]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	(249–393) isobutyl acetate	44.1	(264)	A	[87/5][47/5] [110-19-0]
	(252–391)	39.8	(267)	A	[87/5][47/5]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	<i>tert</i> -butyl acetate				[540-88-5]
		38.0±0.2	(298)	C	[66/2][96/11] [598-98-1]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	methyl 2,2-dimethylpropanoate (313–363)				
		37.7	(298)	CGC	[95/21]
		39.0±0.5	(298)	GC	[87/17]
		38.8	(298)		[U/1][85/6]
		39.7±0.3	(298)	GCC	[80/5]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	(299–356) isopentyl formate	35.2	(319)	BG	[71/2] [110-45-2]
	(255–397)	38.9	(270)	A	[87/5]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	methyl isovalerate (254–390)	41.2	(269)	A	[556-24-1] [87/5][47/5]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	methyl valerate				[624-24-8]
		41.3	(350)		[02/27]
	43.7±0.2	(298)		[02/27]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(297–411)	42.5	(312)	A	[87/5]
		43.3±0.5	(298)	GC	[87/17]
		46.1±0.3	(298)	GCC	[80/5]
		44.1±0.1	(298)	GCC	[80/5]
		43.1±0.1	(298)	C	[77/1]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	propyl propionate (378–406)	37.6	(392)		[106-36-5] [94/15]
	(336–394)	39.9	(351)		[93/8]
	(259–396)	43.1	(274)	A	[87/5][47/5]
		42.1±0.1	(313)	C	[80/13]
		41.1±0.1	(328)	C	[80/13]
		40.0±0.1	(343)	C	[80/13]
		38.8±0.1	(358)	C	[80/13]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	hexanoic acid (297–328)	68.4±0.9	(313)	GS	[142-62-1] [00/6]
	(297–328)	69.2±0.9	(298)	GS	[00/6]
	(353–393)	71.3	(298)	CGC	[95/21]
		70.9	(271)		[82/4]
	(270–280)	73.2±2.0	(298)	TE	[79/4]
	(335–487)	65.9	(350)	A	[87/5][72/20]
	(371–452)	66.6	(386)		[57/16][84/9]
		64.6	(367)	I	[43/7]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	2-ethyl butyric acid (373–466)	58.2	(388)	A	[88-09-5] [87/5]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	4-methylvaleric acid (339–481)	91.7	(354)	A	[646-07-1] [87/5]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	2,2-dimethylbutanoic acid (364–498)	59.4±0.3	(370)	EB	[595-37-9] [02/14]
	(364–498)	54.6±0.3	(410)	EB	[02/14]
	(364–498)	50.0±0.4	(450)	EB	[02/14]
	(364–498)	46.0±0.7	(490)	EB	[02/14]
C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	3,3-dimethylbutanoic acid (283–325)	63.6±0.9	(304)	GS	[1070-83-3] [00/6]
	(283–325)	64.0±0.9	(298)	GS	[00/6]
C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>	1-hexene ozonide (353–373)	43.9	(363)	MM	[767-09-9] [77/9]
C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>	sec-butyl glycolate (301–451)	52.3	(316)	A	[87/5][47/5]
C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>	2,4,6-trimethyl-1,3,5-trioxane (323–396)	41.5	(338)	A	[123-63-7] [87/5]
		41.4±0.4			[59/23]
C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>	glycerol 1-monoallyl ether (323–383)	74.7	(338)	A	[87/5][72/20]
C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>	2-ethoxyacetic acid, ethyl ester (330–430)	46.1	(345)	A	[817-95-8] [87/5]
C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>	3-ethoxypropionic acid, methyl ester (320–432)	44.3	(335)	A	[14144-33-3] [87/5][72/20]
C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>	2-ethoxyethanol acetate (322–430)	50.9	(337)	A	[111-15-9] [87/5]
		52.7±0.1	(298)	C	[70/17]
	(330–468)	52.6±0.4	(298)	EB	[66/3]
C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>	3-hydroxypropionic acid, propyl ester (350–375)	60.9	(362)	A	[87/5]
C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>	3-methoxypropionic acid, ethyl ester (313–432)	44.6	(328)	A	[10606-42-5] [87/5]
C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>	propyl lactate (334–442)	52.1	(349)	A	[616-09-1] [87/5]
C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>	ethoxymethyl propionate	49.9±0.1	(298)	C	[54078-53-4] [74/37]
C <sub>6</sub> H <sub>12</sub> O <sub>4</sub>	( <i>dl</i> ) glycerol 1-propionate (388–456)	75.8	(403)	A	[624-47-5] [87/5][72/20]
C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>	<i>myo</i> -inositol (497–524)	119.0±1.4	(519)	TE	[90/16]
C <sub>6</sub> H <sub>12</sub> S	cyclopentyl methyl sulfide				[7133-36-0]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>12</sub> S	(354–473)	45.1±0.1 41.7	(298) (369)	A, EB	[72/11][66/5] [87/5][66/5] [5161-13-7]
	<i>cis</i> 2,5-dimethyltetrahydrothiophene (311–444)	41.7	(326)		[99/16]
C <sub>6</sub> H <sub>12</sub> S	(349–427)	39.7	(364)	A, EB	[87/5][52/9]
	<i>trans</i> 2,5-dimethyltetrahydrothiophene (348–396)	39.3	(363)	EB	[5161-14-8] [87/5][52/9] [99/16]
C <sub>6</sub> H <sub>12</sub> S	2-ethyltetrahydrothiophene (333–488)	42.6	(348)	A	[1551-32-2] [87/5][72/20] [99/16]
C <sub>6</sub> H <sub>12</sub> S	3-ethyltetrahydrothiophene (343–503)	43.1	(358)	A	[62184-67-2] [87/5][72/20] [99/16]
C <sub>6</sub> H <sub>12</sub> S	2-methyltetrahydro-2 <i>H</i> -thiopyrane (317–455)	42.1	(332)	A, EB	[5161-16-0] [99/16]
C <sub>6</sub> H <sub>12</sub> S	(356–438)	40.2	(371)		[87/5][52/9]
	3-methyltetrahydro-2 <i>H</i> -thiopyrane (321–460)	42.5	(336)	A, EB	[5258-50-4] [99/16]
C <sub>6</sub> H <sub>12</sub> S	(361–435)	40.7	(376)		[87/5][52/9]
	4-methyltetrahydro-2 <i>H</i> -thiopyrane (321–461)	42.8	(336)	A, EB	[5161-17-1] [99/16]
C <sub>6</sub> H <sub>13</sub> Br	(361–441)	40.8	(376)		[87/5][52/9]
	2-bromo-3,3-dimethylbutane (315–449)	39.5	(330)	A	[26356-06-9] [87/5][72/20]
C <sub>6</sub> H <sub>12</sub> S	cyclohexanethiol	44.9	(298)	C	[1569-69-3] [81/8]
		44.6±0.1	(298)	A, EB	[72/11][66/5]
C <sub>6</sub> H <sub>13</sub> Br	1-bromohexane (323–363)	41.2	(370)		[87/5][66/5] [99/16]
		45.5	(298)	CGC	[111-25-1] [95/21]
C <sub>6</sub> H <sub>13</sub> Br	(333–456)	46.1±0.1	(298)	C	[68/1]
		45.6±0.1	(298)	C	[66/2]
C <sub>6</sub> H <sub>13</sub> Br	(333–456)	43.2	(348)	A, EST	[87/5][61/13] [72/20]
		( <i>dl</i> ) 2-bromohexane (303–416)	43.8	(318)	A
C <sub>6</sub> H <sub>13</sub> Br	2-bromo-4-methylpentane (315–448)	29.3	(330)	A	[30310-22-6] [87/5][72/20]
C <sub>6</sub> H <sub>13</sub> Cl	1-chlorohexane (290–410)	42.0	(298)	C	[544-10-5] [84/9][91/2]
		42.8±0.1	(298)		[81/4]
C <sub>6</sub> H <sub>13</sub> Cl	(288–409)	40.5±0.1	(328)	C	[81/4]
		40.0±0.1	(343)	C	[81/4]
C <sub>6</sub> H <sub>13</sub> Cl	(288–409)	39.0±0.1	(358)	C	[81/4]
		38.4±0.1	(368)	C	[81/4]
C <sub>6</sub> H <sub>13</sub> Cl	(288–409)	43.5	(303)	A, DTA	[87/5][69/5] [72/20]
		42.8±0.1	(298)	C	[68/1]
C <sub>6</sub> H <sub>13</sub> Cl	( <i>dl</i> ) 2-chlorohexane (300–399)	40.9	(315)	A	[638-28-8] [87/5]
C <sub>6</sub> H <sub>13</sub> Cl	2-chloro-2,3-dimethylbutane (301–426)	38.0	(316)	A	[594-57-0] [87/5][72/20]
C <sub>6</sub> H <sub>13</sub> Cl	( <i>dl</i> ) 2-chloro-3,3-dimethylbutane (300–425)	38.0	(315)	A	[5750-00-5] [87/5][72/20]
C <sub>6</sub> H <sub>13</sub> ClO <sub>2</sub> S	1-hexanesulfonyl chloride (273–304)	60.7	(288)	C	[14532-24-2] [99/16]
		61.7	(318)		[99/16]
		57.2	(415)		[99/16]
C <sub>6</sub> H <sub>13</sub> Cl <sub>2</sub> N	N-ethyl- <i>bis</i> (2-chloroethyl)amine (273–333)	54.9	(288)	A, GS	[13426-57-8] [87/5][48/13] [72/20]
C <sub>6</sub> H <sub>13</sub> F	1-fluorohexane				[373-14-8]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(273–388)	36.9	(288)	A, EST	[87/5][61/13] [72/20]
C <sub>6</sub> H <sub>13</sub> F	3-fluorohexane (281–393)	36.8	(296)	A	[52688-75-2] [87/5][72/20]
C <sub>6</sub> H <sub>13</sub> I	1-iodohexane (331–485)	49.8±0.1 46.2	(298) (346)	C A, EST	[638-45-9] [68/1] [87/5][61/13] [72/20]
C <sub>6</sub> H <sub>13</sub> N	cyclohexylamine (363–407)	40.6 42.7±0.1 40.7±0.1 39.6±0.1 42.8±0.1	(378) (313) (343) (358) (298)	C C C C	[108-91-8] [87/5] [79/9] [79/9] [79/9] [75/9]
	(333–408)	40.8	(348)	A	[87/5][72/20]
	(334–401)	40.8	(349)		[60/17][84/9]
C <sub>6</sub> H <sub>13</sub> N	hexahydro-1 <i>H</i> -azepine (348–423)	37.7	(363)	A	[111-49-9] [87/5]
	(312–411)	40.4	(327)	A	[87/5][72/20]
C <sub>6</sub> H <sub>13</sub> N	( <i>dl</i> ) 2-methylpiperidine (323–431)	38.2	(338)	EB, IPM	[109-05-7] [87/5][68/4]
C <sub>6</sub> H <sub>13</sub> NO	N-ethylmorpholine (274–313)	42.3±0.3	(294)	GS	[100-74-3] [98/13]
	(274–313)	42.1±0.3	(298)	GS	[98/13]
C <sub>6</sub> H <sub>13</sub> N	N-methylpiperidine (273–380)	37.3 36.7±0.1	(288) (298)	A	[626-67-5] [87/5] [79/14][98/18]
C <sub>6</sub> H <sub>13</sub> NO	N,N-diethylacetamide	54.1	(298)	A	[127-19-5] [85/7][85/6]
C <sub>6</sub> H <sub>13</sub> NO	N-butylacetamide	75.0±0.3	(298)	C	[1119-49-9] [84/6]
C <sub>6</sub> H <sub>13</sub> NO	N,N-dimethyl butyramide (251–432)	50.8 55.2	(366)	A	[760-79-2] [87/5] [77/29]
C <sub>6</sub> H <sub>13</sub> NO <sub>2</sub>	methyl 2-(N,N-dimethylamino)propanoate (278–306)	46.1±1.1	(290)	GS	[92/13]
C <sub>6</sub> H <sub>13</sub> NO <sub>2</sub>	ethyl 2-(N,N-dimethylamino)ethanoate (278–308)	47.6±0.8	(293)	GS	[92/13]
C <sub>6</sub> H <sub>13</sub> NO <sub>2</sub>	N-isopropyl lactamide (369–407)	69.9	(384)	A	[87/5]
C <sub>6</sub> H <sub>13</sub> NO <sub>2</sub>	N-propyl lactamide (373–423)	74.0	(388)	A	[87/5]
C <sub>6</sub> H <sub>14</sub>	hexane (283–323)	31.5±0.1 31.5 32.1 31.3±0.3	(298) (298) (298)	C C	[110-54-3] [96/18] [94/12] [92/9]
	(238–298)	34.9	(253)	GC	[89/16]
	(189–259)	35.7	(244)	A	[87/5]
	(298–343)	31.5	(313)	A	[87/5]
	(341–377)	30.1	(356)	A	[87/5]
	(374–451)	29.3	(389)	A	[87/5]
	(445–508)	29.4 26.6 22.5 15.7 8.9 31.6	(460) (373) (423) (473) (498) (298)	A C C C C	[87/5] [85/17] [85/17] [85/17] [85/17] [U/1][85/6]
	(298–338)	30.9	(313)		[84/15]
		31.6±0.1	(298)	C	[79/13]
		30.7±0.1	(313)	C	[79/13]
		29.5±0.1	(333)	C	[79/13]
		28.2±0.1	(353)	C	[79/13]
	(300–321)	31.6	(310)		[74/4][84/9]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>6</sub> H <sub>14</sub>	(178–265)	32.5	(250)		[73/11]	
		31.55	(298)		[71/28]	
		30.9±0.1	(309)	C	[47/12]	
		29.8±0.1	(328)	C	[47/12]	
		31.5±0.1	(298)	C	[47/7]	
	(286–343)	32.0	(301)	A, MM	[87/5][45/2]	
		31.0±0.2	(298)	C	[43/3]	
		30.5±0.2	(313)	C	[43/3]	
		29.0±0.2	(333)	C	[43/3]	
		28.2±0.2	(353)	C	[43/3]	
	C <sub>6</sub> H <sub>14</sub>	2-methylpentane (301–333)	30.0	(316)		[107-83-5] [02/5]
			29.7	(325)		[98/9]
		(293–335)	30.5	(308)	A	[87/5]
			29.9	(298)		[71/28]
(286–334)		29.9±0.1	(298)	C	[49/8]	
		28.7±0.1	(318)	C	[49/8]	
		27.8±0.1	(333)	C	[49/8]	
		29.9±0.1	(298)	C	[47/7]	
		30.4	(301)	MM	[45/2]	
		29.8±0.2	(293)	C	[43/3]	
		29.0±0.2	(313)	C	[43/3]	
		27.6±0.2	(333)	C	[43/3]	
26.9±0.2		(353)	C	[43/3]		
C <sub>6</sub> H <sub>14</sub>		3-methylpentane (316–361)	29.9	(331)		[96-14-0] [99/28]
	30.5		(308)	A	[87/5]	
	(293–338)	30.3±0.1	(298)	C	[79/13]	
		29.5±0.1	(313)	C	[79/13]	
		28.3±0.1	(333)	C	[79/13]	
		27.0±0.1	(353)	C	[79/13]	
		30.3	(298)		[71/28]	
		30.0±0.1	(303)	C	[49/8]	
		28.8±0.1	(324)	C	[49/8]	
		28.1±0.1	(336)	C	[49/8]	
	30.3±0.1	(298)	C	[47/7]		
	C <sub>6</sub> H <sub>14</sub>	(288–337)	30.2	(303)	MM	[45/2]
			29.1	(298)		[79-29-8] [71/28]
		(287–332)	29.2±0.1	(296)	C	[49/8]
28.9±0.1			(303)	C	[49/8]	
28.3±0.1			(313)	C	[49/8]	
27.3±0.1			(331)	C	[49/8]	
29.6			(302)	MM	[45/2]	
29.2±0.1			(293)	C	[43/3]	
28.2±0.1			(313)	C	[43/3]	
27.0±0.1			(333)	C	[43/3]	
26.1±0.1		(353)	C	[43/3]		
C <sub>6</sub> H <sub>14</sub>		2,2-dimethylbutane (273–318)	27.7	(298)		[75-83-2] [71/28]
			28.7	(288)		[49/2][84/9]
		27.8±0.1	(296)	C	[47/12]	
	26.3±0.1	(323)	C	[47/12]		
	29.2	(274)		[46/2]		
C <sub>6</sub> H <sub>14</sub> FO <sub>3</sub> P	(288–323)	28.3	(303)	MM	[45/2]	
		29.4	(288)	A	[55-91-4] [87/5]	
C <sub>6</sub> H <sub>14</sub> NO	(308–343)	77.3±0.7	(326)	GS	[02/28]	
		78.8±0.7	(298)	GS	[02/28]	
C <sub>6</sub> H <sub>14</sub> N <sub>2</sub>	(295–305)	39.9±0.4	(298)	C	[821-67-0] [76/3]	
		39.5	(300)	UV	[74/32]	
		41.1			[68/20][74/32]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>14</sub> N <sub>2</sub>	diisopropyldiazene (296–308)	35.9±0.4	(298)	C	[3880-49-7] [76/3]
		36.1	(302)	UV	[74/32]
		37.7		I	[74/32]
		34.9			[68/28][74/32]
C <sub>6</sub> H <sub>14</sub> N <sub>2</sub>	1,4-diaminocyclohexane (383–473)	48.2	(398)	A	[3114-70-3] [87/5]
C <sub>6</sub> H <sub>14</sub> N <sub>2</sub>	1,4-dimethylpiperazine (270–309) (270–309) (276–405)	44.3±0.3	(289)	GS	[106-58-1] [98/13]
		43.8±0.3	(298)	GS	[98/13]
		41.6	(291)	A	[87/5]
C <sub>6</sub> H <sub>14</sub> N <sub>2</sub>	2,5-dimethylpiperazine (437–609)	48.4	(452)	A	[106-55-8] [87/5]
C <sub>6</sub> H <sub>14</sub> N <sub>2</sub>	propylhydrazone acetone (288–318)	44.0	(300)		[80/20]
C <sub>6</sub> H <sub>14</sub> N <sub>2</sub>	isopropylhydrazone acetone (288–323)	44.6	(303)		[80/20]
C <sub>6</sub> H <sub>14</sub> N <sub>2</sub> O	dipropyldiazene N-oxide	51.7±0.1	(298)	C	[17697-55-1] [81/7]
C <sub>6</sub> H <sub>14</sub> O	butyl ethyl ether (311–365) (311–365) (311–365)	36.3±0.1	(298)	C	[62881-9] [80/3]
		36.5	(298)		[76/2]
		32.1	(365)		[76/2]
		35.2	(326)	A, EB	[87/5][76/2] [69/15][72/20]
C <sub>6</sub> H <sub>14</sub> O	<i>tert</i> -amyl methyl ether (309–396) (309–396) (309–396) (314–362) (283–308) (283–308) (306–359) (294–359)	35.3±0.4	(298)		[994-05-8] [U/2][02/32]
		36.6±0.1	(320)	EB	[02/15]
		34.5±0.2	(360)	EB	[02/15]
		32.1±0.5	(400)	EB	[02/15]
		33.4	(329)		[98/9]
		35.7±1.0	(295)	GS	[98/2]
		35.5±1.0	(298)	GS	[98/2]
		33.8	(321)	EB	[94/10]
		35.8	(298)	C	[91/11]
		34.3	(309)	EB	[84/26]
C <sub>6</sub> H <sub>14</sub> O	<i>tert</i> -butyl ethyl ether (307–346) (306–345) (284–346) (248–350) (340–407)	32.1	(322)		[637-92-3] [00/13]
		32.2	(321)	EB	[94/10]
		33.5	(299)	A	[87/5]
		35.3	(263)	A	[87/5]
		31.2	(355)	A	[87/5]
C <sub>6</sub> H <sub>14</sub> O	dipropyl ether (385–467) (465–530) (292–389) (312–371) (300–362) (340–379)	32.2	(400)	A	[111-43-3] [87/5]
		32.4	(480)	A	[87/5]
		35.7±0.1	(298)	C	[80/3]
		35.6	(307)	A	[87/5][76/2]
		31.4	(363)		[76/2]
		34.6	(327)	A, EB	[87/5][73/12]
		35.1	(315)	EB	[69/15]
C <sub>6</sub> H <sub>14</sub> O	diisopropyl ether (278–323) (307–349) (360–440) (436–500) (284–365) (284–365) (296–342) (321–350) (273–333)	33.0	(293)		[108-20-3] [99/14]
		31.1	(322)		[99/10]
		29.9	(375)	A	[87/5]
		29.5	(451)	A	[87/5]
		32.1±0.1	(298)	C	[80/3]
		32.6	(299)	A	[87/5][76/2]
		29.2	(341)		[76/2]
		32.1	(311)	A, EB	[87/5][69/15]
		30.1	(336)		[65/22][72/20]
C <sub>6</sub> H <sub>14</sub> O	1-hexanol (265–328)	33.2	(288)		[49/2][84/9] [111-27-3]
		62.0	(288)	GS	[01/3]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>14</sub> O	(265–328)	61.1	(298)	GS	[01/3]
	(373–423)	61.5	(298)	CGC	[95/21]
	(323–373)	61.6	(298)	CGC	[95/21]
	(253–338)	61.2	(296)		[92/14]
	(298–343)	57.7	(313)	A	[87/5]
	(380–417)	47.9	(395)	EB	[85/12]
		58.5±0.2	(328)	C	[85/3]
		57.6±0.2	(343)	C	[85/3]
		55.2±0.2	(358)	C	[85/3]
		53.8±0.2	(368)	C	[85/3]
	(243–303)	59.1	(298)		[83/14]
		60.8±0.2	(298)	C	[77/1]
	(308–430)	57.9	(323)		[73/26]
	(325–431)	58.5	(340)	DTA	[87/5][69/5]
					[72/20]
		61.6±0.2	(298)	C	[66/2]
	(334–381)	56.0	(349)		[61/6]
	(308–428)	U55.8	(323)	I	[38/10]
	(333–425)	57.9	(348)		[35/6][84/9]
	(dl) 2-hexanol				[626-93-7]
	(274–309)	58.3±0.3	(298)	GS	[01/7]
	(224–323)	61.8	(239)		[99/11]
	(360–415)	48.7	(375)	A	[87/5]
	56.8±0.2	(313)	C	[85/1]	
	55.0±0.2	(328)	C	[85/1]	
	53.0±0.2	(343)	C	[85/1]	
	50.7±0.2	(358)	C	[85/1]	
	49.2±0.2	(368)	C	[85/1]	
(337–413)	52.4	(352)		[84/10]	
(351–412)	47.8	(366)	A	[87/5][75/23]	
(301–415)	53.1	(316)		[73/26]	
(298–413)	49.7	(356)	I	[38/10]	
C <sub>6</sub> H <sub>14</sub> O	(dl) 3-hexanol				[623-37-0]
	(278–311)	58.6±0.4	(298)	GS	[01/7]
	(244–318)	U50.7	(259)		[99/11]
	(354–410)	46.1	(369)	A	[87/5]
	(280–320)	57.5	(295)	A	[87/5]
	(333–409)	51.5	(348)		[84/10]
	(280–316)	57.4	(295)		[75/1]
	(298–408)	46.4	(353)	I	[38/10]
C <sub>6</sub> H <sub>14</sub> O	(dl) 2-methyl-1-pentanol				[105-30-6]
	(275–313)	59.4±0.3	(298)	GS	[01/7]
	(367–423)	49.3	(382)	A	[87/5]
	(261–294)	64.9	(279)	A	[87/5][79/16]
		57.4±0.2	(328)	C	[85/1]
		55.7±0.2	(343)	C	[85/1]
		53.9±0.2	(358)	C	[85/1]
		52.7±0.2	(368)	C	[85/1]
	(298–423)	54.2	(313)		[73/26]
	(298–413)	50.2	(356)	I	[38/10]
C <sub>6</sub> H <sub>14</sub> O	(dl) 3-methyl-1-pentanol				[589-35-5]
	(280–316)	61.7±0.3	(298)	GS	[01/7]
	(328–427)	54.8	(343)	A	[87/5]
	(298–427)	59.7	(313)		[73/26]
	(298–423)	47.2	(360)	I	[40/9]
C <sub>6</sub> H <sub>14</sub> O	4-methyl-1-pentanol				[626-89-1]
	(357–427)	53.0	(372)	A	[87/5]
	(371–427)	51.1	(386)	A	[87/5]
	(298–427)	63.9	(313)		[73/26]
	(298–423)	46.5	(360)	I	[40/9]
C <sub>6</sub> H <sub>14</sub> O	2-methyl-2-pentanol				[590-36-3]
	(341–396)	44.2	(356)	A	[87/5]
	(330–397)	48.9	(345)	A	[87/5]
		54.7±0.2	(298)	C	[85/1]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		52.8±0.2	(313)	C	[85/1]
		50.7±0.2	(328)	C	[85/1]
		48.5±0.2	(343)	C	[85/1]
		46.1±0.2	(358)	C	[85/1]
		44.4±0.2	(368)	C	[85/1]
	(288–396)	58.3	(303)		[73/26]
	(268–394)	49.1	(283)		[47/5]
	(288–396)	51.3	(303)	I	[33/9]
C <sub>6</sub> H <sub>14</sub> O	( <i>dl</i> ) 3-methyl-2-pentanol				[565-60-5]
	(275–310)	58.2±0.3	(298)	GS	[01/7]
	(314–409)	54.4	(329)	A	[87/5]
	(255–295)	60.4	(280)	A	[87/5][79/16]
	(296–408)	54.8	(311)		[73/26]
C <sub>6</sub> H <sub>14</sub> O	( <i>dl</i> ) 4-methyl-2-pentanol				[108-11-2]
	(274–301)	57.3±0.3	(298)	GS	[01/7]
	(240–295)	59.6	(280)	A	[87/5]
	(293–406)	49.6	(308)		[73/26]
	(353–404)	47.3	(368)	A, EB	[87/5][70/7]
	(298–403)	45.6	(350)	I	[38/10]
C <sub>6</sub> H <sub>14</sub> O	( <i>dl</i> ) 2-methyl-3-pentanol				[565-67-3]
	(275–307)	56.0±0.5	(298)	GS	[01/7]
	(307–401)	52.2	(322)	A	[87/5]
	(342–400)	45.4	(357)	A	[87/5][75/23]
	(298–401)	52.0	(313)		[73/26]
	(298–399)	44.4	(349)	I	[40/8]
C <sub>6</sub> H <sub>14</sub> O	3-methyl-3-pentanol				[77-74-7]
	(275–301)	55.7±0.3	(298)	GS	[01/7]
	(322–397)	40.1	(337)	A	[87/5]
	(338–396)	46.4	(353)		[73/26]
		56.7±0.8	(298)		[91/8]
	(298–393)	42.1	(346)	I	[40/8]
C <sub>6</sub> H <sub>14</sub> O	2,2-dimethyl-1-butanol				[1185-33-7]
	(356–415)	47.2	(371)	A	[87/5]
	(298–415)	53.7	(313)		[73/26]
	(298–408)	52.1	(313)	I	[40/7]
C <sub>6</sub> H <sub>14</sub> O	( <i>dl</i> ) 2,3-dimethyl-1-butanol				[19550-30-2]
	(324–431)	51.4	(339)	A	[87/5]
	(373–422)	49.6	(388)		[73/26]
C <sub>6</sub> H <sub>14</sub> O	3,3-dimethyl-1-butanol				[624-95-3]
	(276–312)	58.0±0.2	(298)	GS	[01/7]
		58.6±0.1	(328)	C	[96/9]
		55.4±0.1	(343)	C	[96/9]
		52.4±0.1	(358)	C	[96/9]
	(319–424)	50.8	(334)	A	[87/5]
	(353–417)	49.4	(368)		[73/26]
C <sub>6</sub> H <sub>14</sub> O	2,3-dimethyl-2-butanol				[594-60-5]
	(303–340)	54.0±0.8	(298)		[91/8]
	(299–400)	48.8	(314)	A	[87/5]
	(298–393)	49.1	(313)		[73/26]
C <sub>6</sub> H <sub>14</sub> O	( <i>dl</i> ) 3,3-dimethyl-2-butanol				[464-07-3]
	(280–315)	53.8±0.3	(298)	GS	[01/7]
	(302–401)	48.3	(317)	A	[87/5]
	(338–393)	46.8	(353)		[73/26]
C <sub>6</sub> H <sub>14</sub> O	2-ethyl-1-butanol				[97-95-0]
	(275–313)	60.3±0.3	(298)	GS	[01/7]
	(321–426)	53.1	(336)	A	[87/5]
	(262–295)	65.4	(280)	A	[87/5][79/16]
	(298–426)	59.6	(313)		[73/26]
	(298–418)	U45.5	(313)	I	[40/7]
C <sub>6</sub> H <sub>14</sub> OS	2-methyl-2-propanesulfonic acid, ethyl ester				
	(337–343)	U14.0	(340)	A	[87/5]
C <sub>6</sub> H <sub>14</sub> O <sub>2</sub>	2-butoxyethanol				[111-76-2]
	(363–382)	51.2	(373)	MM	[99/15]
	(336–443)	49.5	(351)	A	[87/5][72/20]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>14</sub> O <sub>2</sub>	(336–443) 1,1-dimethoxybutane	52.6	(351)		[57/6][84/9] [4461-87-4]
	(304–329)	41.2	(317)	EB	[94/16]
C <sub>6</sub> H <sub>14</sub> O <sub>2</sub>	1,1-diethoxyethane				[105-57-7]
	(275–308)	39.6±0.3	(298)	GS	[98/21][02/32]
	(281–384)	41.6	(296)	A	[87/5][72/20]
	(273–343)	39.8	(288)		[49/2][84/9]
C <sub>6</sub> H <sub>14</sub> O <sub>2</sub>	(239–392)	36.2	(255)		[47/5]
	1,2-diethoxyethane				[629-14-1]
	(339–382)	39.3	(361)		[87/16]
	(239–393)	37.9	(254)	A	[87/5]
C <sub>6</sub> H <sub>14</sub> O <sub>2</sub>	1-methoxy-2-propoxyethane	43.2±0.1	(298)	C	[70/17]
		43.7±0.1	(298)	C	[77078-18-3] [70/17]
C <sub>6</sub> H <sub>14</sub> O <sub>2</sub>	2-isobutoxyethanol				[4439-24-1]
	(344–432)	48.1	(359)	A	[87/5][72/20] [57/6][84/9]
C <sub>6</sub> H <sub>14</sub> O <sub>2</sub>	1,6-hexanediol				[629-11-8]
C <sub>6</sub> H <sub>14</sub> O <sub>2</sub>	(355–559)	98.5±1.8	(298)	EB, IPM	[96/5]
	3-methyl-1,5-pentanediol				[4457-71-0]
C <sub>6</sub> H <sub>14</sub> O <sub>2</sub>	(402–485)	76.9	(417)	A	[87/5]
	( <i>dl</i> ) 2-methyl-2,4-pentanediol				[107-41-5]
C <sub>6</sub> H <sub>14</sub> O <sub>2</sub>	(373–473)	58.1	(388)	A	[87/5]
	2,3-dimethyl-2,3-butanediol				[76-09-5]
C <sub>6</sub> H <sub>14</sub> O <sub>2</sub>	(346–448)	59.1	(361)	A	[87/5]
	diethylene glycol, dimethyl ether				[111-96-6]
C <sub>6</sub> H <sub>14</sub> O <sub>3</sub>		48.0±0.6	(298)	CGC	[00/9]
	(286–433)	47.4	(301)	A	[87/5][47/5]
C <sub>6</sub> H <sub>14</sub> O <sub>3</sub>	3,5,7-trioxanonane				[5648-29-3]
		44.7±0.2	(298)	C	[69/18]
C <sub>6</sub> H <sub>14</sub> O <sub>3</sub>	<i>tert</i> -butyl 2-hydroxyethyl peroxide				[15476-85-4]
		66.4±1.9			[83/11]
C <sub>6</sub> H <sub>14</sub> O <sub>3</sub>	diethylene glycol, monoethyl ether				[111-90-0]
	(318–475)	52.1	(333)	A	[87/5][47/5]
C <sub>6</sub> H <sub>14</sub> O <sub>3</sub>	dipropylene glycol				[25265-71-8]
	(423–505)	61.2	(438)	A	[87/5]
C <sub>6</sub> H <sub>14</sub> O <sub>3</sub>	2-ethyl-2-hydroxymethyl-1,3-propanediol				[77-99-6]
	(433–570)	81.4	(448)	A	[87/5]
C <sub>6</sub> H <sub>14</sub> O <sub>3</sub>	1,2,6-trihydroxyhexane				[106-69-4]
	(393–433)	97.2	(408)	A	[87/5]
C <sub>6</sub> H <sub>14</sub> O <sub>4</sub>	1,1,2,2-tetramethoxyethane				[2517-44-4]
	(351–432)	42.9	(366)	A	[87/5]
C <sub>6</sub> H <sub>14</sub> O <sub>4</sub>	triethylene glycol				[112-27-6]
	(442–562)	72.2±0.3	(440)	EB	[02/17]
	(442–562)	68.5±0.3	(480)	EB	[02/17]
	(442–562)	64.6±0.3	(520)	EB	[02/17]
	(442–562)	60.8±0.5	(560)	EB	[02/17]
	(288–303)	67.7	(295)	A	[87/5]
	(387–552)	71.5	(402)	A	[87/5][47/5]
C <sub>6</sub> H <sub>14</sub> O <sub>6</sub>	dulcitol				
	(464–496)	133.8±1.4	(482)	TE	[90/16]
C <sub>6</sub> H <sub>14</sub> O <sub>6</sub>	D-mannitol				
	(458–501)	135.6±1.1	(479)	TE	[90/16]
C <sub>6</sub> H <sub>14</sub> O <sub>6</sub>	D-sorbitol				
	(461–497)	132.4±2.0	(477)	TE	[90/16]
C <sub>6</sub> H <sub>14</sub> S	methyl pentyl sulfide				[1741-83-9]
	(321–349)	44.2	(336)		[99/16]
		45.2	(298)		[81/12]
		44.6±0.8	(298)	GC	[64/17]
	(321–350)	42.6	(308)	EB	[61/17]
C <sub>6</sub> H <sub>14</sub> S	butyl ethyl sulfide				[638-46-0]
	(314–445)	43.7	(319)		[99/16]
		44.5	(298)		[81/12]
	44.9	(298)		[71/28]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>14</sub> S	(316–348)	44.6±0.8	(298)	GC	[64/17]
	(354–424)	43.5	(333)	EB	[62/17]
	sec-butyl ethyl sulfide	40.7	(369)	A, EB	[87/5][52/9] [5008-72-0]
C <sub>6</sub> H <sub>14</sub> S	(304–434)	41.2	(319)		[99/16]
	(345–409)	39.0	(360)	A, EB	[87/5][52/9]
C <sub>6</sub> H <sub>14</sub> S	tert-butyl ethyl sulfide				[14290-92-7]
	(293–420)	39.2	(308)		[99/16]
	(332–400)	39.3	(298)		[71/28]
C <sub>6</sub> H <sub>14</sub> S	diisopropyl sulfide	37.1	(347)	A, EB	[87/5][52/9] [625-80-9]
	(293–420)	39.4	(308)		[99/16]
C <sub>6</sub> H <sub>14</sub> S		39.6±0.1	(298)		[72/11][66/5]
	(324–433)	37.7	(339)	A, EB	[87/5][66/5]
		39.6±0.8	(298)	GC	[64/17]
	(303–328)	38.5	(318)	EB	[62/17]
	(330–400)	37.4	(345)	EB	[52/9]
C <sub>6</sub> H <sub>14</sub> S	dipropyl sulfide				[111-47-7]
	(313–411)	42.9	(328)		[99/16]
		44.2	(298)		[81/12]
		44.5	(298)		[71/28]
		39.5	(298)		[71/28]
C <sub>6</sub> H <sub>14</sub> S		44.7±0.8	(298)	GC	[64/17]
	(353–427)	40.6	(368)	A, EB	[87/5][52/9] [5008-73-1]
	isopropyl propyl sulfide				[99/16]
C <sub>6</sub> H <sub>14</sub> S	(303–432)	41.1	(318)		[81/12]
		41.8	(298)		[81/12]
	(343–416)	39.0	(358)	A, EB	[87/5][52/9] [1613-45-2]
C <sub>6</sub> H <sub>14</sub> S	ethyl isobutyl sulfide				[99/16]
	(305–401)	41.3	(320)		[87/5][52/9]
C <sub>6</sub> H <sub>14</sub> S	(345–414)	39.2	(360)	A, EB	[87/5][52/9]
	1-hexanethiol				[111-31-9]
C <sub>6</sub> H <sub>14</sub> S	(320–454)	43.9	(335)		[99/16]
		44.8±0.2	(298)		[66/10][66/5]
	(352–468)	42.4	(367)	A, EB	[87/5][66/5] [1679-06-7]
C <sub>6</sub> H <sub>14</sub> S	2-hexanethiol				[99/16]
	(310–440)	42.7	(325)		[99/16]
C <sub>6</sub> H <sub>14</sub> S	(328–423)	41.4	(343)	A	[87/5]
	2,3-dimethyl-2-butanethiol				[1639-01-6]
	(285–318)	39.3	(300)		[99/16]
C <sub>6</sub> H <sub>14</sub> S	(318–441)	37.8	(333)		[99/16]
		39.3±0.1	(298)		[72/11][66/5]
	(328–441)	37.4	(343)	A, EB	[87/5][66/5] [1633-97-2]
C <sub>6</sub> H <sub>14</sub> S	2-methyl-2-pentanethiol				[72/11][66/5]
	(327–439)	40.0±0.1	(298)		[72/11][66/5]
C <sub>6</sub> H <sub>14</sub> S <sub>2</sub>		38.0	(342)	A, EB	[87/5][66/5] [99/16]
	diisopropyl disulfide				[4253-89-8]
	(383–423)	49.3	(298)	CGC	[95/21]
C <sub>6</sub> H <sub>14</sub> S <sub>2</sub>		39.6	(298)		[81/12]
	(377–447)	43.8	(392)	A, EB	[87/5][52/9] [99/16]
	dipropyl disulfide				[629-19-6]
C <sub>6</sub> H <sub>14</sub> S <sub>2</sub>	(354–499)	47.8	(369)		[99/16]
		53.8±0.1	(298)	C	[85/2]
		53.8	(298)		[81/12]
	(389–447)	47.0	(404)	A, EB	[87/5][58/8] [66/5]
C <sub>6</sub> H <sub>14</sub> S <sub>2</sub>	(395–456)	46.6	(410)	EB	[52/9]
	ethyl (1,1-dimethylethyl) disulfide				[4151-69-3]
C <sub>6</sub> H <sub>14</sub> S <sub>2</sub>	(373–461)	43.4	(388)	A, EB	[87/5][52/9] [99/16]
	isopropyl propyl disulfide				[33672-51-4]
C <sub>6</sub> H <sub>14</sub> S <sub>2</sub>	(383–433)	45.4	(398)	A	[87/5][99/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>14</sub> S <sub>2</sub>	1,6-hexanedithiol (379–511)	55.7	(394)	A	[1191-43-1] [87/5][99/16]
C <sub>6</sub> H <sub>14</sub> S <sub>3</sub>	trithiodiethylene glycol, dimethyl ether (391–418)	103.7	(404)	A	[87/5] [37460-04-1]
C <sub>6</sub> H <sub>14</sub> S <sub>3</sub>	2,5,8-trithianonane (391–533)	116.4	(406)		[99/16] [111-26-2]
C <sub>6</sub> H <sub>15</sub> N	hexylamine (323–373)	45.0	(298)	CGC	[95/21]
	(303–406)	42.2	(318)	A	[87/5]
		45.1±0.1	(298)	C	[69/2]
C <sub>6</sub> H <sub>15</sub> N	( <i>dl</i> ) sec-butyl ethyl amine (283–372)	37.9	(298)		[21035-44-9] [87/5][72/20]
C <sub>6</sub> H <sub>15</sub> N	diisopropylamine (260–412)	35.4	(275)	A	[87/5]
	(273–367)	35.6	(288)	A	[87/5]
		34.6±0.1	(298)	C	[79/8]
		33.7±0.1	(313)	C	[79/8]
		32.6±0.1	(328)	C	[79/8]
		31.5±0.1	(343)	C	[79/8]
		30.2±0.1	(358)	C	[79/8]
	(300–356)	34.4	(315)	EB	[79/8]
	(291–305)	34.6	(298)		[71/13]
		34.5±0.1	(298)	C	[69/2]
	(273–333)	33.8±0.2	(298)	I	[69/16]
C <sub>6</sub> H <sub>15</sub> N	N-isopropyl propylamine				[21968-17-2]
		37.3±0.1	(298)	C	[79/8]
		36.2±0.1	(313)	C	[79/8]
		35.2±0.1	(328)	C	[79/8]
		34.1±0.1	(343)	C	[79/8]
		33.0±0.1	(358)	C	[79/8]
	(312–369)	36.2	(327)	EB	[79/8]
C <sub>6</sub> H <sub>15</sub> N	N-butylethylamine				[13360-63-9]
		40.2±0.1	(298)	C	[79/8]
		39.1±0.1	(313)	C	[79/8]
		38.0±0.1	(328)	C	[79/8]
		36.9±0.1	(343)	C	[79/8]
		35.8±0.1	(358)	C	[79/8]
	(313–375)	39.9	(328)	EB	[79/8]
	(283–382)	41.4	(298)	A	[87/5][72/20]
C <sub>6</sub> H <sub>15</sub> N	dipropylamine (321–382)	40.0	(336)		[142-84-7] [00/8]
	(302–422)	39.8	(317)		[87/5][72/20]
	(291–305)	41.5	(298)		[71/13]
		40.0±0.1	(298)	C	[69/2]
	(273–333)	40.2±0.3	(298)	I	[69/16]
C <sub>6</sub> H <sub>15</sub> N	triethylamine (231–319)	35.2±0.9	(275)		[121-44-8] [01/9]
	(302–338)	34.1	(317)	EB	[90/9]
	(298–324)	34.6	(311)		[87/5]
	(283–363)	35.5	(298)		[87/5]
		34.8±0.2	(298)	C	[79/9]
		33.9±0.1	(313)	C	[79/9]
		33.0±0.2	(328)	C	[79/9]
		32.2±0.1	(343)	C	[79/9]
		31.3±0.2	(358)	C	[79/9]
	(303–361)	34.8	(318)	EB	[79/9]
	(283–313)	35.1	(298)		[75/35]
		34.9±0.1	(298)	C	[69/2]
C <sub>6</sub> H <sub>15</sub> N	N,N-dimethyl <i>tert</i> -butyl amine (283–318)	34.8	(298)	A	[918-02-5] [87/5]
C <sub>6</sub> H <sub>15</sub> NO	N-(methoxymethyl)diethylamine (293–318)	38.0	(305)	A	[5888-29-9] [87/5]
C <sub>6</sub> H <sub>15</sub> NO	N,N-diethylethanolamine (332–475)	48.5±0.2	(340)	EB	[100-37-8] [02/21]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(332–475)	45.0±0.2	(380)	EB	[02/21]
	(332–475)	41.6±0.4	(420)	EB	[02/21]
	(332–475)	37.8±0.7	(460)	EB	[02/21]
	(328–433)	48.5	(343)	A	[87/5]
C <sub>6</sub> H <sub>15</sub> NO <sub>2</sub>	diisopropanolamine (390–521)	68.0	(405)	A	[110-97-4] [87/5][72/20]
C <sub>6</sub> H <sub>15</sub> NO <sub>2</sub>	2-[2-(dimethylamino)ethoxy]ethanol (412–452)	54.4	(427)	A	[1704-62-7] [87/5]
C <sub>6</sub> H <sub>15</sub> NO <sub>2</sub> S	N,N-diethyl ethanesulfonamide (392–526)	55.4	(407)	A	[33718-39-7] [87/5]
C <sub>6</sub> H <sub>15</sub> NO <sub>3</sub>	triethanolamine (523–579)	79.3	(538)	A	[102-71-6] [87/5][59/1] [84/9]
C <sub>6</sub> H <sub>15</sub> NS	N,N-dimethyl-S- <i>tert</i> -butylthiohydroxylamine (328–334)	28.3	(331)	A	[87/5][99/16]
C <sub>6</sub> H <sub>15</sub> N <sub>3</sub>	1,3,5-trimethylhexahydro-s-triazine (284–328)	50.8±0.8	(306)	GS	[02/28]
	(284–328)	51.2±0.8	(298)	GS	[02/28]
C <sub>6</sub> H <sub>15</sub> O <sub>2</sub> PS <sub>3</sub>	O,O-dimethyl-S-[2-(ethylthio)ethyl]dithiophosphate (283–394)	76.8	(298)	A	[640-15-3] [87/5][99/16]
C <sub>6</sub> H <sub>15</sub> O <sub>3</sub> P	phosphonic acid, dipropyl ester (318–467)	38.1	(333)	A	[1809-21-8] [87/5][72/20]
C <sub>6</sub> H <sub>15</sub> O <sub>3</sub> PS	O,O,O-triethylthiophosphate (305–335)	87.5	(320)	A	[126-68-1] [87/5][99/16]
C <sub>6</sub> H <sub>15</sub> O <sub>3</sub> PS	O,O,S-triethylthiophosphate (312–352)	76.3	(327)	A	[1186-09-0] [87/5][99/16]
C <sub>6</sub> H <sub>15</sub> O <sub>3</sub> PS <sub>2</sub>	phosphorothioic acid, O-[2-(ethylthio)ethyl]-O,O-dimethyl ester (283–379)	71.0	(298)	A	[867-27-6] [87/5][99/16]
C <sub>6</sub> H <sub>15</sub> O <sub>3</sub> PS <sub>2</sub>	phosphorothioic acid, S-[2-(ethylthio)ethyl]-O,O-dimethyl ester (283–407)	78.8	(298)	A	[919-86-8] [87/5][99/16]
C <sub>6</sub> H <sub>15</sub> O <sub>4</sub> P	triethylphosphate (312–484)	46.3	(327)	A	[78-40-0] [87/5][47/5]
C <sub>6</sub> H <sub>15</sub> P	triethylphosphine (291–402)	38.3	(306)	A	[554-70-1] [87/5][72/20]
C <sub>6</sub> H <sub>16</sub> FN <sub>2</sub> OP	N,N'-diisopropyl phosphorodiamidic fluoride (278–398)	58.1	(293)	A	[371-86-8] [87/5]
C <sub>6</sub> H <sub>16</sub> N <sub>2</sub>	1,6-hexanediamine (348–474)	49.3	(363)	A	[124-09-4] [87/5]
	(338–473)	51.3	(353)	A	[87/5]
C <sub>6</sub> H <sub>16</sub> N <sub>2</sub> O <sub>2</sub>	N,N- <i>bis</i> (2-hydroxyethyl)ethylenediamine (399–500)	106.4±6.4	(298)	EB, IPM	[4439-20-7] [97/6][97/7]
C <sub>6</sub> H <sub>18</sub> N <sub>3</sub> P	<i>tris</i> (dimethylamino)phosphine (298–333)	41.5±0.6 63.2	(298) (313)	STG	[1608-26-0] [95/2] [84/15]
C <sub>6</sub> H <sub>18</sub> N <sub>4</sub>	triethylenetetramine (431–550)	59.8	(446)	A	[112-24-3] [87/5][72/20]
C <sub>7</sub> ClF <sub>17</sub> N <sub>2</sub> S	chloro(trifluoromethyl) <i>bis</i> (heptafluoroisopropylimino) sulfur (467)	38.9	(467)	I	[77/15]
C <sub>7</sub> F <sub>6</sub> O <sub>2</sub>	carbonofluoric acid pentafluorophenyl ester (42.3)	42.3			[59483-82-8] [76/30]
C <sub>7</sub> F <sub>8</sub>	perfluorotoluene (291–378)	40.0	(306)		[434-64-0] [99/16]
	(285–376)	40.9	(300)	A	[87/5]
	(290–400)	40.4	(298)		[84/9][91/2]
C <sub>7</sub> F <sub>10</sub>	3,3-difluoro-1,2- <i>bis</i> (trifluoromethyl)-4-(difluoroethylene)cyclobutene (272–316)	31.5	(287)	A	[14451-74-2] [87/5][99/16]
C <sub>7</sub> F <sub>12</sub> O <sub>2</sub> S <sub>4</sub>	pentane <i>bis</i> (dithioperoxy) acid, hexafluoro- <i>bis</i> (trifluoromethyl) ester (33.6)	33.6	(370)	I	[58936-62-2] [76/18]
C <sub>7</sub> F <sub>12</sub> O <sub>6</sub>	hexafluoroperoxyglutaric acid, <i>bis</i> (trifluoromethyl) ester (200–390)	47.3	(215)	A	[32751-20-5] [87/5][99/16]
C <sub>7</sub> F <sub>14</sub>	perfluoromethylcyclohexane (305–414)	33.1	(320)		[355-02-2] [99/16]
	(413–488)	30.2	(428)		[99/16]
	(306–384)	34.0	(298)		[84/9][91/2]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		34.1 ± 0.3	(298)		[81/23]
	(305–385)	33.4	(320)	A	[87/5][70/14] [73/18]
	(306–384)	33.3	(321)		[59/12][84/9]
	(298–353)	33.8	(313)		[57/14][84/9]
	(272–349)	33.3	(310)		[56/14][70/14]
C <sub>7</sub> F <sub>15</sub> NS	2,2,3,3,4,4,5,5-octafluoro-1,1,2,3,4,5-hexahydro-1-[[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]imino]thiophene				[77984-26-0]
		33.9	(371)		[81/15]
C <sub>7</sub> F <sub>16</sub>	perfluoroheptane				[335-57-9]
	(363–474)	32.6	(378)		[99/16]
	(304–390)	36.3 ± 0.3	(298)	EB	[97/8]
	(290–355)	35.9	(298)		[84/9][91/2]
		33.1			[59/28]
	(293–355)	34.9	(324)		[56/14]
	(271–379)	37.7	(286)	A	[87/5][51/6] [70/14][73/18]
C <sub>7</sub> F <sub>16</sub> N <sub>2</sub> OS	1,1,1-trifluoro-N'-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]-N-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]methanesulfonimidamide				[62609-64-7]
		33.5	(451)		[77/19]
C <sub>7</sub> F <sub>17</sub> N	perfluoro-N,N-diethylpropylamine				[338-81-8]
	(283–366)	39.2	(325)		[99/16]
C <sub>7</sub> HF <sub>13</sub> O <sub>2</sub>	tridecafluoroheptanoic acid				[375-85-9]
	(359–485)	61.4 ± 0.3	(370)	EB	[02/14]
	(359–485)	55.5 ± 0.3	(410)	EB	[02/14]
	(359–485)	48.7 ± 0.7	(450)	EB	[02/14]
C <sub>7</sub> HF <sub>15</sub>	1,1,1,2,2,3,3,4,4,5,5,6,6,7,7-pentafluoroheptane				[375-83-7]
	(365–369)	30.7	(367)		[66/34]
	(292–370)	37.1	(307)	A	[87/5][53/6] [73/18][99/16]
C <sub>7</sub> H <sub>2</sub> F <sub>13</sub> NO	(E) 1,1,1,2,3,3,3-heptafluoro-N-[2,2,2-trifluoro-1-(2,2,2-trifluoro-ethoxy)ethylidene]-2-propanamine				[54181-88-3]
		35.7	(369)		[75/20]
C <sub>7</sub> H <sub>3</sub> ClF <sub>3</sub> NO <sub>2</sub>	1-(trifluoromethyl)-2-chloro-5-nitrobenzene				[777-37-7]
	(364–508)	58.1	(379)	A	[87/5][53/6] [73/18][99/16]
C <sub>7</sub> H <sub>3</sub> ClF <sub>3</sub> NO <sub>2</sub>	1-(trifluoromethyl)-4-chloro-3-nitrobenzene				[121-17-5]
	(358–495)	57.6	(373)	A	[87/5][73/18] [99/16]
C <sub>7</sub> H <sub>3</sub> Cl <sub>2</sub> F <sub>3</sub>	1-(trifluoromethyl)-3,4-dichlorobenzene				[328-84-7]
	(353–453)	44.1	(368)	A	[87/5]
	(284–446)	41.8	(299)		[47/5]
C <sub>7</sub> H <sub>3</sub> Cl <sub>2</sub> NO	3,4-dichlorophenylisocyanate				[102-36-3]
	(373–473)	47.4	(388)	A	[87/5]
C <sub>7</sub> H <sub>3</sub> Cl <sub>5</sub>	1-(trichloromethyl)-3,4-dichlorobenzene				[13014-24-9]
	(438–663)	59.3	(453)	A	[87/5][70/14] [73/18][99/16]
C <sub>7</sub> H <sub>3</sub> F <sub>5</sub>	2,3,4,5,6-pentafluorotoluene				[771-56-2]
	(403–523)	36.1	(418)		[99/16]
	(493–564)	34.9	(508)		[99/16]
	(310–410)	41.2	(298)		[84/9][91/2]
	(312–416)	39.9	(327)	A	[87/5][68/10] [73/18][99/16]
C <sub>7</sub> H <sub>4</sub> ClF <sub>3</sub>	1-(trifluoromethyl)-2-chlorobenzene				[88-16-4]
	(310–426)	44.6	(325)	A	[87/5][51/9] [70/14][73/18]
C <sub>7</sub> H <sub>4</sub> ClF <sub>3</sub>	1-(trifluoromethyl)-3-chlorobenzene				[98-15-7]
	(302–411)	43.0	(317)	A	[87/5][51/9] [70/14][73/18]
C <sub>7</sub> H <sub>4</sub> ClF <sub>3</sub>	1-(trifluoromethyl)-4-chlorobenzene				[98-56-6]
	(302–412)	42.2	(317)	A	[87/5][51/9] [70/14][73/18]
C <sub>7</sub> H <sub>4</sub> ClN	2-chlorobenzonitrile				[873-32-5]
	(378–486)	53.5	(393)	EB	[94/18]
C <sub>7</sub> H <sub>4</sub> ClN	4-chlorobenzonitrile				[623-03-0]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>4</sub> ClNO	(389–483) 3-chlorophenyl isocyanate	51.9	(404)	EB	[94/18] [2909-38-8]
	(344–432)	53.1	(359)	A	[87/5][64/10]
C <sub>7</sub> H <sub>4</sub> ClNO	(363–443) 4-chlorophenyl isocyanate	48.9	(378)	A	[104-12-1] [87/5]
	(323–433)	44.3	(338)		[67/17]
C <sub>7</sub> H <sub>4</sub> ClNO <sub>3</sub>	3-nitrobenzoyl chloride (428–551)	62.4	(443)	A	[121-90-4] [87/5][99/16]
C <sub>7</sub> H <sub>4</sub> Cl <sub>2</sub> O	2-chlorobenzoyl chloride (374–395)	53.4	(384)	A	[609-65-4] [87/5][99/16]
C <sub>7</sub> H <sub>4</sub> Cl <sub>2</sub> O	3-chlorobenzoyl chloride (367–391)	49.4	(382)	A	[618-46-2] [87/5][99/16]
C <sub>7</sub> H <sub>4</sub> Cl <sub>2</sub> O	4-chlorobenzoyl chloride (370–392)	55.7	(381)	A	[122-01-0] [87/5][99/16]
C <sub>7</sub> H <sub>4</sub> Cl <sub>4</sub>	1-(trichloromethyl)-2-chlorobenzene (423–588)	55.0	(438)	A	[2136-89-2] [87/5][70/14]
C <sub>7</sub> H <sub>4</sub> Cl <sub>4</sub>	2,3,5,6-tetrachlorotoluene (399–548)	52.6	(414)	A	[1006-31-1] [87/5][73/15]
C <sub>7</sub> H <sub>4</sub> F <sub>3</sub> NO <sub>2</sub>	1-(trifluoromethyl)-3-nitrobenzene (341–475)	53.8	(356)	A	[99/16] [98-46-4] [87/5][53/6] [99/16]
C <sub>7</sub> H <sub>4</sub> F <sub>4</sub>	1-(trifluoromethyl)-2-fluorobenzene (310–410)	38.1	(298)		[392-85-8] [84/9][91/2]
C <sub>7</sub> H <sub>4</sub> F <sub>4</sub>	1-(trifluoromethyl)-3-fluorobenzene (313–410)	36.8	(328)	A	[401-80-9] [87/5][70/14]
C <sub>7</sub> H <sub>4</sub> F <sub>4</sub>	1-(trifluoromethyl)-4-fluorobenzene (286–381)	35.8	(301)	A	[402-44-8] [87/5][70/14]
C <sub>7</sub> H <sub>4</sub> F <sub>12</sub> O	2,2,3,3,4,4,5,5,6,6,7,7-dodecafluoro-1-heptanol (355–446)	53.4	(370)	A	[335-99-9] [87/5][99/16]
C <sub>7</sub> H <sub>5</sub> BrO	benzoyl bromide (320–492)	52.3	(335)	A	[618-32-6] [87/5][47/5]
C <sub>7</sub> H <sub>5</sub> ClO	(305–470) benzoyl chloride	49.6	(320)	A	[98-88-4] [87/5][47/5] [99/16]
	2-chlorobenzaldehyde (382–563)	49.8	(397)	A	[89-98-5] [87/5][99/16]
C <sub>7</sub> H <sub>5</sub> Cl <sub>2</sub> N	phenylcarbonimidic dichloride (273–333)	54.0	(288)	A	[622-44-6] [87/5][73/18] [99/16]
C <sub>7</sub> H <sub>5</sub> Cl <sub>3</sub>	1-(chloromethyl)-2,4-dichlorobenzene (413–578)	54.6	(428)	A	[94-99-5] [87/5][70/14] [73/18]
C <sub>7</sub> H <sub>5</sub> Cl <sub>3</sub>	(trichloromethyl)benzene	57.6			[98-07-7] [95/30]
	(318–487)	52.0	(333)	A	[87/5][47/5]
C <sub>7</sub> H <sub>5</sub> Cl <sub>3</sub>	2,3,6-trichlorotoluene (384–509)	62.2	(399)	A	[2077-46-5] [87/5][73/15]
C <sub>7</sub> H <sub>5</sub> FN <sub>2</sub> O <sub>4</sub>	(fluorodinitromethyl)benzene (328–363)	52.8	(343)	A	[17003-70-2] [87/5]
C <sub>7</sub> H <sub>5</sub> F <sub>3</sub>	(trifluoromethyl)benzene (328–413)	35.6	(343)		[98-08-8] [99/16]
	(468–532)	31.6	(483)		[99/16]
	(323–384)	35.9	(338)	I	[92/3]
	(460–530)	32.4	(475)		[85/15]
	(330–410)	37.1	(298)		[84/9][91/2]
		35.4±0.1	(334)	C	[59/7]
		34.1±0.1	(353)	C	[59/7]
		32.6±0.1	(375)	C	[59/7]
	(328–413)	35.7	(343)	A, EB	[87/5][51/9] [70/14][59/7]
	(241–375)	39.1	(256)		[47/5]
(275–353)	38.5	(290)		[46/3]	
C <sub>7</sub> H <sub>5</sub> F <sub>10</sub> NS	2,2,2-trifluoro-N-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]-ethanimidothioic acid, ethyl ester				

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>5</sub> F <sub>11</sub> O	1-ethoxy-1,1,2,2,3,3,4,4,5,5,5-undecafluoropentane (288–373)	30.1	(394)		[75/20]
		39.0	(303)	I	[181214-75-5] [02/19]
C <sub>7</sub> H <sub>5</sub> F <sub>11</sub> O	1-ethoxy-1,1,2,2,3,3,4,4,4-octafluoro-3-(trifluoromethyl)butane (288–373)	38.3	(303)	I	[203783-57-7] [02/19]
C <sub>7</sub> H <sub>5</sub> N	benzotrile (301–464)	49.1	(316)	A	[100-47-0] [87/5][47/5]
C <sub>7</sub> H <sub>5</sub> N	phenyl isocyanide (285–438)	46.2	(300)	A	[931-54-4] [87/5][47/5]
C <sub>7</sub> H <sub>5</sub> NO	benzoxazole	51.2	(320)	EB	[273-53-0] [92/10]
		48.6	(360)	EB	[92/10]
		46.1	(400)	EB	[92/10]
		43.5	(440)	EB	[92/10]
		40.7	(480)	EB	[92/10]
C <sub>7</sub> H <sub>5</sub> NO	phenyl isocyanate (329–445)	46.5 ± 0.3	(298)	EB	[103-71-9] [96/4]
		45.0	(298)	A	[87/5][47/5]
C <sub>7</sub> H <sub>5</sub> NO <sub>3</sub>	2-nitrobenzaldehyde (390–547)	58.7	(405)	A	[552-89-6] [87/5]
		59.5	(373)		[47/5]
C <sub>7</sub> H <sub>5</sub> NO <sub>3</sub>	3-nitrobenzaldehyde (401–552)	62.0	(416)	A	[99-61-6] [87/5]
C <sub>7</sub> H <sub>5</sub> NS	benzothiazole	58.7	(320)	EB	[95-16-9] [92/10]
		56.0	(360)	EB	[92/10]
		53.5	(400)	EB	[92/10]
		50.9	(440)	EB	[92/10]
		48.4	(480)	EB	[92/10]
		45.7	(520)	EB	[92/10]
C <sub>7</sub> H <sub>5</sub> NS	phenyl isothiocyanate (320–492)	52.6	(335)	A	[103-72-0] [87/5][47/5]
C <sub>7</sub> H <sub>5</sub> N <sub>3</sub> O <sub>6</sub>	2,4,6-trinitrotoluene (353–523)	93.7	(368)	A	[118-96-7] [87/5]
		87.0 ± 1.9	(298)	ME	[78/2]
C <sub>7</sub> H <sub>5</sub> N <sub>3</sub> O <sub>7</sub>	2,4,6-trinitroanisole (342–363)	91.9	(352)	A	[606-35-9] [87/5]
C <sub>7</sub> H <sub>6</sub> Cl <sub>2</sub>	(dichloromethyl)benzene (308–487)	49.5	(323)	A	[98-87-3] [87/5][47/5]
C <sub>7</sub> H <sub>6</sub> Cl <sub>2</sub>	2,4-dichlorotoluene (346–475)	50.6	(361)	A	[95-73-8] [87/5][73/15]
					[99/16]
C <sub>7</sub> H <sub>6</sub> Cl <sub>2</sub>	3,4-dichlorotoluene (378–543)	49.4	(393)	A	[95-75-0] [87/5][0/14] [99/16]
C <sub>7</sub> H <sub>6</sub> Cl <sub>3</sub> NO <sub>2</sub>	2,2,4-trichloro-5-(dimethylamino)-4-cyclopentene-1,3-dione (453–483)	70.9	(468)	GC	[77765-42-5] [80/25]
C <sub>7</sub> H <sub>6</sub> F <sub>3</sub> N	1-(trifluoromethyl)-3-aminobenzene (334–464)	53.1	(349)	A	[98-16-8] [87/5][53/6] [99/16]
C <sub>7</sub> H <sub>6</sub> F <sub>3</sub> NS	N-(trifluoromethyl)thioaniline (333–413)	47.0	(348)	A	[87/5]
C <sub>7</sub> H <sub>6</sub> F <sub>6</sub> O <sub>4</sub>	dimethyl perfluoroglutarate	52.3	(298)	EB	[76/7]
C <sub>7</sub> H <sub>6</sub> N <sub>2</sub> O <sub>4</sub>	2,4-dinitrotoluene (344–572)	76.9	(359)	A	[121-14-2] [87/5]
		58.2	(488)		[87/5][68/14] [73/18]
		70.2			[77/6][58/1]
C <sub>7</sub> H <sub>6</sub> N <sub>2</sub> O <sub>4</sub>	2,6-dinitrotoluene (330–533)	77.8	(345)	A	[606-20-2] [87/5]
		56.9	(438)	A	[87/5][68/14]
		68.7			[77/6][58/1]
C <sub>7</sub> H <sub>6</sub> N <sub>2</sub> O <sub>4</sub>	3,5-dinitrotoluene				[618-85-9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>6</sub> O	(493–543)	62.6	(508)	A	[87/5][68/14]
	benzaldehyde				[100-52-7]
	(313–353)	49.1	(298)	CGC	[95/21]
	(348–452)	49.5	(363)	A	[87/5]
	(409–481)	43.8	(424)	A	[87/5]
	(311–376)	48.6	(326)	A	[87/5]
	(370–475)	45.5	(385)	A	[87/5]
	(465–541)	41.9	(480)	A	[87/5]
	(529–599)	40.6	(544)	A	[87/5]
	(311–404)	50.3	(298)	EB	[75/5]
	(311–404)	42.5	(452)	EB	[75/5]
C <sub>7</sub> H <sub>6</sub> O	(273–373)	47.0	(288)	A, BG	[87/5][73/4]
	(299–452)	54.4	(314)		[47/5]
C <sub>7</sub> H <sub>6</sub> O	2,4,6-cycloheptatrienone (tropone)				[539-80-0]
C <sub>7</sub> H <sub>6</sub> O <sub>2</sub>	(273–323)	54.2	(288)	A	[87/5]
	benzoic acid				[65-85-0]
C <sub>7</sub> H <sub>6</sub> O <sub>2</sub>	(353–393)	78.9	(298)	CGC	[95/21]
	(405–523)	66.3	(420)	A	[87/5]
		65.4	(428)	I	[43/7]
	(401–520)	67.7	(416)	MM, A	[27/5]
C <sub>7</sub> H <sub>6</sub> O <sub>2</sub>	4-hydroxybenzaldehyde				[123-08-0]
	(394–583)	72.3	(409)	A	[87/5][47/5]
C <sub>7</sub> H <sub>6</sub> O <sub>2</sub>	2-hydroxybenzaldehyde				[100-83-4]
	(383–470)	30.6	(398)	A	[87/5]
		47.7			[86/10]
C <sub>7</sub> H <sub>6</sub> O <sub>2</sub>	(306–470)	49.6	(321)		[47/5]
	phenyl formate				[1864-94-4]
C <sub>7</sub> H <sub>6</sub> O <sub>2</sub>	(287–305)	52.9±0.6	(298)	BG	[76/9][75/36]
	1,3-benzodioxole				[274-09-9]
C <sub>7</sub> H <sub>6</sub> O <sub>3</sub>		41.4			[58/25]
	2-hydroxybenzoic acid				[69-72-7]
C <sub>7</sub> H <sub>6</sub> O <sub>3</sub>	(445–504)	79.4	(460)	A	[87/5]
	benzylbromide				[100-39-0]
C <sub>7</sub> H <sub>7</sub> Br	(284–306)	53.3±0.7	(298)	GS	[02/29]
		53.7	(298)	CGC	[02/29]
	(340–409)	48.1	(355)	I, A	[76/11][87/5]
		50.5±0.5	(298)		[76/11]
	(305–472)	46.9	(320)	A	[87/5][47/5]
C <sub>7</sub> H <sub>7</sub> Br					[99/16]
	2-bromotoluene				[95-46-5]
	(322–455)	47.2	(337)		[99/16]
C <sub>7</sub> H <sub>7</sub> Br	(353–518)	45.3	(368)	A	[87/5][70/14]
					[73/18]
	(297–455)	52.6	(312)		[47/5]
	(273–348)	48.8	(288)		[40/5]
C <sub>7</sub> H <sub>7</sub> Br	3-bromotoluene				[591-17-3]
	(351–457)	47.7	(366)		[99/16]
	(287–457)	48.3	(302)	A	[87/5][47/5]
C <sub>7</sub> H <sub>7</sub> Br	(273–348)	49.4	(288)		[40/5]
	4-bromotoluene				[108-38-7]
	(320–458)	47.1	(335)		[99/16]
	(273–472)	55.3	(288)		[99/16]
C <sub>7</sub> H <sub>7</sub> Br	(358–523)	45.8	(373)	A	[87/5][70/14]
					[73/18]
C <sub>7</sub> H <sub>7</sub> BrO	2-bromoanisole				[578-57-4]
C <sub>7</sub> H <sub>7</sub> BrO		52.3			[86/10]
	3-bromoanisole				[2398-37-0]
C <sub>7</sub> H <sub>7</sub> BrO		50.2			[86/10]
	4-bromoanisole				[104-92-7]
	(318–496)	50.6			[86/10]
C <sub>7</sub> H <sub>7</sub> BrS		48.9	(333)		[47/5]
	2-bromothioanisole				[19614-16-5]
C <sub>7</sub> H <sub>7</sub> BrS	3-bromothioanisole	56.5			[86/10]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>7</sub> BrS	4-bromothioanisole	54.4			[86/10] [104-95-0]
C <sub>7</sub> H <sub>7</sub> Cl	benzyl chloride (276–309)	55.7			[86/10] [100-44-7]
		50.1±0.3	(298)	GS	[02/29]
		49.9	(298)	CGC	[02/29]
	(320–390)	48.6	(335)	A, I	[87/5][76/11]
		50.1±0.5	(298)		[76/11][99/16]
	(295–453)	48.6	(310)		[87/5][47/5]
C <sub>7</sub> H <sub>7</sub> Cl	2-chlorotoluene (370–432)	41.6	(385)		[99/16]
	(345–430)	45.3	(298)		[84/9][91/2]
	(345–430)	42.5	(361)		[84/9]
	(338–493)	42.8	(353)	A	[87/5][73/18]
					[70/14]
	(278–432)	44.8	(293)		[47/5]
	(273–348)	45.8	(288)		[40/5]
C <sub>7</sub> H <sub>7</sub> Cl	3-chlorotoluene (373–435)	41.9	(388)		[108-41-8] [99/16]
	(277–436)	43.7	(292)	A	[87/5][47/5]
	(273–348)	46.2	(288)		[40/5]
C <sub>7</sub> H <sub>7</sub> Cl	4-chlorotoluene (362–435)	41.8	(375)		[106-43-4] [99/16]
	(304–436)	41.7	(319)	A	[87/5]
	(340–430)	46.0	(298)		[84/9][91/2]
	(338–433)	43.5	(353)		[84/9]
	(279–435)	44.1	(293)		[47/5]
C <sub>7</sub> H <sub>7</sub> ClO	2-chloroanisole (388–460)	49.4			[766-51-8] [86/10]
		48.3	(403)	A	[87/5][73/18]
					[99/16]
C <sub>7</sub> H <sub>7</sub> ClO	3-chloroanisole	48.1			[2845-89-8] [86/10]
C <sub>7</sub> H <sub>7</sub> ClO	4-chloroanisole	47.7			[623-12-1] [86/10]
C <sub>7</sub> H <sub>7</sub> ClS	2-chlorothioanisole	53.6			[17733-22-1] [86/10]
C <sub>7</sub> H <sub>7</sub> ClS	3-chlorothioanisole	51.9			[4867-37-2] [86/10]
C <sub>7</sub> H <sub>7</sub> ClS	4-chlorothioanisole	53.1			[123-09-1] [86/10]
C <sub>7</sub> H <sub>7</sub> F	benzyl fluoride (278–318)	46.2±0.3	(298)	GS	[350-50-5] [02/29]
		46.5	(298)	CGC	[02/29]
	(278–318)	46.3±0.3	(298)	GS	[97/14]
	(297–410)	43.7	(312)	A	[87/5]
	(298–356)	44.3	(312)	I	[76/11]
		44.5±0.4	(298)		[76/11]
C <sub>7</sub> H <sub>7</sub> F	2-fluorotoluene (248–388)	42.0	(263)		[95-52-3] [99/16]
	(452–531)	31.5	(465)		[99/16]
	(453–530)	32.3	(468)		[84/16]
	(308–348)	38.0	(323)		[74/26][84/9]
	(295–388)	38.7	(310)	A	[87/5][51/9]
	(248–387)	40.5	(264)		[47/5]
C <sub>7</sub> H <sub>7</sub> F	3-fluorotoluene (250–390)	41.6	(265)		[352-70-5] [99/16]
	(293–390)	39.2	(308)	A	[87/5][51/9]
	(250–389)	40.7	(266)		[47/5]
C <sub>7</sub> H <sub>7</sub> F	4-fluorotoluene (340–430)	39.5	(298)		[352-32-9] [84/9][91/2]
	(340–429)	37.0	(355)	A	[87/5][51/9]
					[99/16]
C <sub>7</sub> H <sub>7</sub> F <sub>2</sub> N	N,N-difluorobenzylamine				[23162-99-4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>7</sub> F <sub>9</sub> O	(313–333)	77.8	(323)	A	[87/5]
	1,1,1,2,2,3,3,4,4-nonafluoro-4-propoxybutane (288–369)	37.9	(303)	I	[72372-80-6] [02/19]
C <sub>7</sub> H <sub>7</sub> I	benzyl iodide (301–337)	57.4±0.3	(298)	GS	[620-05-3] [02/29]
	(360–400)	57.7 46.8 50.6±1.4	(298) (375) (298)	CGC I, A	[02/29] [87/5][76/11] [76/11]
C <sub>7</sub> H <sub>7</sub> I	2-iodotoluene (310–484)	49.7	(325)	A	[615-37-2] [87/5][47/5]
C <sub>7</sub> H <sub>7</sub> IO	4-iodoanisole (401–520)	54.4	(416)	A	[696-62-8] [87/5][99/16]
	(401–479)	53.1±0.4	(440)	I	[56/26]
C <sub>7</sub> H <sub>7</sub> NO <sub>2</sub>	(nitromethyl)benzene (363–413)	53.8	(378)	A	[622-42-4] [87/5]
C <sub>7</sub> H <sub>7</sub> NO <sub>2</sub>	2-nitrotoluene (274–323)	59.0±0.3 59.1±0.3	(299) (298)	GS	[88-72-2] [00/15] [00/15]
	(388–448)	52.0	(403)	EB	[94/8]
C <sub>7</sub> H <sub>7</sub> NO <sub>2</sub>	(402–496)	51.0	(417)	A	[87/5]
	(387–493)	52.2	(402)		[38/9][94/8] [99-08-1]
C <sub>7</sub> H <sub>7</sub> NO <sub>2</sub>	3-nitrotoluene (397–452)	52.8	(413)	EB	[94/8]
	(353–505)	49.8	(368)	A	[87/5]
C <sub>7</sub> H <sub>7</sub> NO <sub>2</sub>	4-nitrotoluene (407–457)	52.8	(422)	EB	[99-99-0] [94/8]
	(423–512)	49.8	(438)	A	[87/5]
C <sub>7</sub> H <sub>7</sub> NO <sub>3</sub>	(387–493)	54.2	(402)		[38/9][94/8]
	2-nitroanisole (424–545)	58.6	(439)	A	[91-23-6] [87/5]
C <sub>7</sub> H <sub>7</sub> N <sub>3</sub>	(azidomethyl)benzene (333–363)	48.0	(348)	A	[622-79-7] [87/5]
C <sub>7</sub> H <sub>8</sub>	bicyclo[2.2.1]hepta-2,5-diene				[121-46-0]
	(300–364)	34.8±0.1 33.6 34.7±0.1	(298) (315) (298)	C A C	[93/1] [87/5] [85/2]
C <sub>7</sub> H <sub>8</sub>	(300–353)	33.8±0.9 32.9±0.8	(298) (298)		[78/1] [73/1]
	1,3,5-cycloheptatriene (273–338)	40.8	(288)	A	[544-25-2] [87/5][73/18]
C <sub>7</sub> H <sub>8</sub>	(273–416)	39.4	(288)	A, EB	[87/5][56/20]
	tetracyclo[3.2.0.0 <sup>2,7</sup> .0 <sup>4,6</sup> ]heptane (quadricyclane)	38.7±0.2	(298)		[56/20] [278-06-8]
C <sub>7</sub> H <sub>8</sub>	(302–372)	37.9±0.1 37.9±0.1 37.0±0.8	(298) (298) (298)	C C	[93/1] [85/2] [78/1]
	toluene (331–496)	37.3±0.8 35.7	(317) (346)	BG	[87/5][73/1] [108-88-3] [93/3]
C <sub>7</sub> H <sub>8</sub>	(210–279)	40.6	(264)	A	[87/5]
	(383–445)	34.4	(398)	A	[87/5]
	(440–531)	33.2	(455)	A	[87/5]
	(530–592)	33.3	(545)	A	[87/5]
	(273–295)	38.9	(284)	A	[87/5]
		33.5±0.1	(380)	C	[85/10]
		32.1±0.1	(403)	C	[85/10]
		29.4±0.1	(441)	C	[85/10]
		27.1±0.1	(470)	C	[85/10]
		24.0±0.1	(505)	C	[85/10]
		35.4	(333)		[84/29]
		33.4	(373)		[84/29]
	31.4	(413)		[84/29]	
	28.4	(453)		[84/29]	
	24.0	(493)		[84/29]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>8</sub> O	(343–383)	35.4	(360)		[75/33]
		38.0	(298)		[71/28]
	(303–343)	37.3	(318)		[68/23]
	(288–348)	36.9	(303)		[67/10]
	(210–293)	37.8	(278)		[56/5]
	(308–386)	37.0	(323)		[87/5][49/6]
		38.0	(298)	C	[47/7]
	(286–362)	37.8	(301)		[46/4]
	(308–384)	37.0	(323)	MM	[45/2]
	(273–323)	38.8	(288)		[43/1]
	anisole				[100-66-3]
	(353–393)	45.3	(298)	CGC	[95/21]
	(382–429)	41.8	(397)		[93/4]
		41.0			[86/10]
	(382–437)	41.9	(397)	A	[87/5][76/2]
	(382–437)	46.9	(298)		[76/2]
(282–437)	39.0	(426)		[76/2]	
	46.8±0.2	(298)	C	[75/3]	
	42.9±0.1	(367)	C	[67/39]	
	42.0±0.1	(382)	C	[67/39]	
	40.5±0.1	(402)	C	[67/39]	
	38.9±0.1	(427)	C	[67/39]	
C <sub>7</sub> H <sub>8</sub> O	(382–437)	41.9	(397)		[55/9][65/7]
	benzyl alcohol				[100-51-6]
	(277–381)	64.8±0.6	(298)	GS	[99/3]
	(323–373)	69.5	(298)	CGC	[95/21]
		60.5			[95/30]
	(303–333)	66.2	(318)	GS	[82/1]
C <sub>7</sub> H <sub>8</sub> O	(385–573)	54.6	(400)	A	[87/5][73/18]
	(293–313)	61.5	(303)	A, ME	[87/5][57/9]
					[73/18]
	2-hydroxytoluene				[95-48-7]
	(304–409)	58.5	(319)	A	[87/5]
	(399–470)	50.1	(414)	A	[87/5]
	(463–526)	46.2	(478)	A	[87/5]
	(517–630)	44.0	(532)	A	[87/5]
		50.2			[86/10]
	(383–473)	51.3	(398)	GS, EB	[87/5][60/4]
C <sub>7</sub> H <sub>8</sub> O	(415–462)	48.2	(438)		[73/18]
					[39/4]
	3-hydroxytoluene				[108-39-4]
	(393–433)	62.5	(298)	CGC	[95/21]
	(284–313)	61.7	(298)	A	[87/5]
	(285–416)	63.1	(300)	A	[87/5]
	(410–477)	52.7	(425)	A	[87/5]
	(471–531)	47.6	(486)	A	[87/5]
	(523–633)	43.8	(538)	A	[87/5]
	(383–473)	55.0	(398)	GS, EB	[87/5][60/4]
C <sub>7</sub> H <sub>8</sub> O	(388–429)	60.6	(409)	GS	[73/18]
	(359–473)	58.8	(374)		[80/17]
	(422–474)	50.7	(448)		[55/9][84/9]
					[39/4]
	4-hydroxytoluene				[106-44-5]
	(308–393)	62.0	(323)	A	[87/5]
C <sub>7</sub> H <sub>8</sub> O	(385–477)	55.4	(400)	A	[87/5]
	(463–533)	49.2	(478)	A	[87/5]
	(523–635)	46.0	(538)	A	[87/5]
		54.0			[86/10]
	(383–473)	55.6	(398)	A, GS, EB	[87/5][60/4]
					[73/18]
	(419–474)	51.3	(446)		[39/4]
					[106-53-6]
C <sub>7</sub> H <sub>8</sub> OS	4-methoxybenzenethiol	52.3			[86/10]
C <sub>7</sub> H <sub>8</sub> O <sub>2</sub>	2,4-dihydroxytoluene				[496-73-1]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>8</sub> O <sub>2</sub>	(391–459) 2,6-dihydroxytoluene	72.2	(406)	A, GC	[87/5][75/24] [608-25-3]
C <sub>7</sub> H <sub>8</sub> O <sub>2</sub>	(398–434) 3,4-dihydroxytoluene	66.9	(413)	A, GC	[87/5][75/24] [452-86-8]
C <sub>7</sub> H <sub>8</sub> O <sub>2</sub>	(387–415) 3,5-dihydroxytoluene	90.0	(401)	A	[87/5] [504-15-4]
C <sub>7</sub> H <sub>8</sub> O <sub>2</sub>	(402–468) 2-methoxyphenol	76.6	(417)	A, GC	[87/5][75/24] [90-05-1]
C <sub>7</sub> H <sub>8</sub> O <sub>2</sub>	(378–479) (355–478) 3-methoxyphenol	52.7 52.7	(393) (370)	A	[87/5][73/18] [55/9] [150-19-6]
C <sub>7</sub> H <sub>8</sub> O <sub>2</sub>	(413–518) 4-methoxyphenol	64.8	(428)	A	[87/5][73/18] [150-76-5]
C <sub>7</sub> H <sub>8</sub> O <sub>2</sub>	(418–518) 2,3-dimethyl-2 <i>H</i> -pyran-2-one	58.6 61.4	(433)	A	[86/10] [87/5][73/18] [63233-31-8]
C <sub>7</sub> H <sub>8</sub> O <sub>2</sub> S	(352–518) 6-methyl-4-methoxy-2 <i>H</i> -pyran-2-thione	64.9	(367)	A	[87/5][47/5] [52911-98-5]
C <sub>7</sub> H <sub>8</sub> O <sub>2</sub> S	(401–415) 2-methyl-6-(methylthio)-4 <i>H</i> -pyran-4-one	108.9	(408)	A	[87/5][99/16] [74/30] [52911-99-6]
C <sub>7</sub> H <sub>8</sub> O <sub>3</sub>	(387–432) 2-furancarboxylic acid, ethyl ester	62.7	(402)	A	[87/5][99/16] [74/30] [614-99-3]
C <sub>7</sub> H <sub>8</sub> O <sub>3</sub>	(354–389) (310–468) 3-methoxy-6-methyl-4 <i>H</i> -pyran-4-one	51.2 52.6	(369) (325)	A	[87/5] [47/5] [4225-42-7]
C <sub>7</sub> H <sub>8</sub> O <sub>3</sub>	(370–384) 4-methoxy-6-methyl-2 <i>H</i> -pyran-2-one	72.8	(377)	A	[87/5] [672-89-9]
C <sub>7</sub> H <sub>8</sub> O <sub>3</sub>	(385–434) benzenemethanethiol	57.4	(400)	A	[87/5] [100-53-8]
C <sub>7</sub> H <sub>8</sub> S	(394–436) 2-methylbenzenethiol	47.5 56.6±0.1	(409) (298)		[99/16] [72/11] [137-06-4]
C <sub>7</sub> H <sub>8</sub> S	(351–498) (370–470) 3-methylbenzenethiol	48.1 46.6 46.0	(366) (394)	A	[99/16] [87/5] [86/10] [108-40-7]
C <sub>7</sub> H <sub>8</sub> S	(353–498) (380–471) 4-methylbenzenethiol	48.7 47.1	(368) (395)	A	[99/16] [87/5] [106-45-6]
C <sub>7</sub> H <sub>8</sub> S	(351–499) (379–471) methyl phenyl sulfide	48.1 46.5 46.4	(366) (394)	A	[99/16] [87/5] [86/10] [100-68-5]
C <sub>7</sub> H <sub>8</sub> S	(389–475) 4,5,6,7-tetrahydro-1,4-benzodithiol-2-thione	47.7 54.3±0.1 47.5	(298) (404)	A, EB	[86/10] [72/11][66/5] [87/5][66/5] [99/16] [62/20] [698-42-0]
C <sub>7</sub> H <sub>8</sub> S <sub>3</sub>	(323–353) 2,3,3-trichloro-2-propenethioic acid, O-butyl ester	50.6±2.1 99.0	(298) (346)		[99/16] [62/20] [79886-21-8]
C <sub>7</sub> H <sub>9</sub> Cl <sub>3</sub> OS	(383–433) glycine, N-[N-(trifluoroacetyl)glycyl]methyl ester	73.3	GC		[80/24] [433-33-0]
C <sub>7</sub> H <sub>9</sub> F <sub>3</sub> N <sub>2</sub> O <sub>4</sub>	(420–443) pentafluoropropionic acid, butyl ester	93.8	(431)	A	[87/5][73/18] [680-28-4]
C <sub>7</sub> H <sub>9</sub> F <sub>5</sub> O <sub>2</sub>	(354–389) benzylamine	38.6	(369)	A, EB	[87/5][69/13] [99/16] [100-46-9]
C <sub>7</sub> H <sub>9</sub> N	(302–458) 2,3-dimethylpyridine	51.8	(317)	A	[87/5][77/3] [47/1] [583-61-9]
C <sub>7</sub> H <sub>9</sub> N	(283–313)	52.0±0.6	(298)	GS	[99/3]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>7</sub> H <sub>9</sub> N	(328–476)	45.2	(340)	EB	[95/22]	
	(328–476)	42.7	(380)	EB	[95/22]	
	(328–476)	40.2	(420)	EB	[95/22]	
	(328–476)	37.4	(460)	EB	[95/22]	
	(323–373)	47.6	(298)	CGC	[95/21]	
		46.9	(313)	C	[85/1]	
		45.0	(343)	C	[85/1]	
		43.5	(368)	C	[85/1]	
	(372–436)	43.0	(387)	A	[87/5][73/18] [108-47-4]	
	2,4-dimethylpyridine					
	(323–373)	47.5	(298)	CGC	[95/21]	
	(288–373)	45.5	(330)		[95/4]	
	(331–473)	44.8	(340)	EB	[95/22]	
	(331–473)	42.3	(380)	EB	[95/22]	
	(331–473)	39.8	(420)	EB	[95/22]	
(331–473)	37.0	(460)	EB	[95/22]		
(298–431)	47.1	(313)	EB	[90/6]		
(267–358)	47.5	(282)	MM	[86/2]		
C <sub>7</sub> H <sub>9</sub> N		46.5	(313)	C	[85/1]	
		44.6	(343)	C	[85/1]	
		43.9	(368)	C	[85/1]	
	(349–433)	43.5	(364)	A	[87/5][73/18] [589-93-5]	
	2,5-dimethylpyridine					
	(330–471)	44.4	(340)	EB	[95/22]	
	(330–471)	41.9	(380)	EB	[95/22]	
	(330–471)	39.4	(420)	EB	[95/22]	
	(330–471)	36.5	(460)	EB	[95/22]	
	(358–431)	42.8	(373)	A, MG	[87/5][53/4] [73/18] [108-48-5]	
	C <sub>7</sub> H <sub>9</sub> N	2,6-dimethylpyridine				
		(323–373)	46.4	(298)	CGC	[95/21]
		(288–373)	43.7	(330)		[95/4]
		(315–457)	43.9	(320)	EB	[95/22]
		(315–457)	41.4	(360)	EB	[95/22]
(315–457)		38.8	(400)	EB	[95/22]	
(315–457)		36.0	(440)	EB	[95/22]	
(295–417)		45.0	(310)	EB	[90/6]	
(267–358)		46.1	(282)	MM	[86/2]	
		44.4	(313)	C	[85/1]	
		42.5	(343)	C	[85/1]	
		40.8	(368)	C	[85/1]	
(352–418)		41.6	(367)	A, MG	[87/5][53/4] [583-58-4]	
C <sub>7</sub> H <sub>9</sub> N		3,4-dimethylpyridine				
		(341–495)	46.6	(360)	EB	[95/22]
	(341–495)	44.2	(400)	EB	[95/22]	
	(341–495)	41.7	(440)	EB	[95/22]	
	(341–495)	39.0	(480)	EB	[95/22]	
	(288–422)	47.6	(355)		[95/4]	
		48.8	(328)	C	[85/1]	
		47.6	(343)	C	[85/1]	
		45.9	(368)	C	[85/1]	
	(385–454)	44.8	(400)	A	[87/5][73/18] [591-22-0]	
	C <sub>7</sub> H <sub>9</sub> N	3,5-dimethylpyridine				
		(323–373)	48.7	(298)	CGC	[95/21]
		(288–392)	47.0	(340)		[95/4]
		(335–487)	46.7	(340)	EB	[95/22]
		(335–487)	44.3	(380)	EB	[95/22]
(335–487)		41.8	(420)	EB	[95/22]	
(335–487)		39.2	(460)	EB	[95/22]	
(273–358)		49.1	(288)	MM	[86/2]	
		49.6	(313)	C	[85/1]	
		46.5	(343)	C	[85/1]	
		44.8	(368)	C	[85/1]	
(373–446)		44.3	(388)	A	[87/5][73/18]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>9</sub> N	3-ethylpyridine (334–373)	44.6	(349)	A	[536-78-7] [87/5][73/18]
C <sub>7</sub> H <sub>9</sub> N	2-ethylpyridine (323–373)	43.7	(338)	A	[100-71-0] [87/5][73/18]
C <sub>7</sub> H <sub>9</sub> N	4-ethylpyridine (333–372)	45.3	(348)	A	[536-75-4] [87/5][73/18]
C <sub>7</sub> H <sub>9</sub> N	N-methylaniline (309–469)	53.6	(324)	A	[100-61-8] [87/5]
C <sub>7</sub> H <sub>9</sub> N	<i>o</i> -toluidine (290–517)	57.8	(300)	EB, IPM	[95-53-4] [94/17]
	(290–517)	54.5	(340)	EB, IPM	[94/17]
	(290–517)	51.5	(380)	EB, IPM	[94/17]
	(290–517)	48.6	(420)	EB, IPM	[94/17]
	(290–517)	45.7	(460)	EB, IPM	[94/17]
	(290–517)	42.7	(500)	EB, IPM	[94/17]
	(391–474)	50.0	(406)	A	[87/5][49/1] [84/9]
C <sub>7</sub> H <sub>9</sub> N	<i>m</i> -toluidine (394–477)	51.1	(409)	A	[108-44-1] [87/5][49/1] [84/9]
C <sub>7</sub> H <sub>9</sub> N	<i>p</i> -toluidine (393–474)	51.1	(408)	A	[106-49-0] [87/5]
	(315–473)	54.9	(330)		[47/5]
C <sub>7</sub> H <sub>9</sub> N	1-cyclohexene-1-carbonitrile	53.6±0.1	(298)	C	[1855-63-6] [70/21]
C <sub>7</sub> H <sub>9</sub> N	bicyclo[3.1.0]hexane-1-carbonitrile (366–444)	U43.2	(382)	BG	[31357-72-9] [71/2]
C <sub>7</sub> H <sub>9</sub> NO	2-methoxyaniline (334–492)	57.5	(349)	A	[90-04-0] [87/5][47/5]
C <sub>7</sub> H <sub>10</sub>	bicyclo[2.2.1]hept-2-ene (norbornene) (338–406)	35.1±0.2	(298)	EB	[498-66-8] [96/5]
	(301–350)	34.3	(316)	A	[87/5]
C <sub>7</sub> H <sub>10</sub>	bicyclo[4.1.0]hept-3-ene (333–384)	36.7	(348)	A	[16554-83-9] [87/5]
		38.4±0.6	(298)	EB	[74/20]
C <sub>7</sub> H <sub>10</sub>	tricyclo[2.2.1.0 <sup>2,6</sup> ]heptane (302–337)	38.3	(317)	A	[279-19-6] [87/5]
C <sub>7</sub> H <sub>10</sub>	tricyclo[4.1.0.0 <sup>2,4</sup> ]heptane	36.5±0.5	(298)	EB	[74/20]
C <sub>7</sub> H <sub>10</sub>	tricyclo[4.1.0.0 <sup>2,6</sup> ]heptane (322–373)	35.3	(337)	A	[187-26-8] [87/5]
C <sub>7</sub> H <sub>10</sub> N <sub>2</sub>	2,3,5-trimethylpyrazine	53.9±1.6	(298)	C	[14667-55-1] [96/2]
C <sub>7</sub> H <sub>10</sub> N <sub>2</sub>	diallylcyanamide (369–495)	52.3	(384)	A	[538-08-9] [87/5]
C <sub>7</sub> H <sub>10</sub> N <sub>2</sub>	1,5-dicyanopentane (306–331)	74.5	(318)	A	[646-20-8] [87/5]
C <sub>7</sub> H <sub>10</sub> N <sub>2</sub>	2,4-diaminotoluene (379–553)	67.7	(394)	A	[95-80-7] [87/5][47/5]
C <sub>7</sub> H <sub>10</sub> N <sub>2</sub>	4-tolyhydrazine (355–515)	65.4	(370)	A	[539-44-6] [87/5][47/5]
C <sub>7</sub> H <sub>10</sub> O	1-ethynyl-1-cyclopentanol (323–373)	62.1	(298)	CGC	[17356-19-3] [95/21]
C <sub>7</sub> H <sub>10</sub> O	7-norbornanone (322–348)	47.9	(335)	EB	[10218-02-7] [94/16]
C <sub>7</sub> H <sub>10</sub> O	2-norbornanone	50.0	(298)	GC	[497-38-1] 02/37]
	(343–383)	51.5	(298)	CGC	[95/21]
	(343–383)	49.6	(298)	CGC	[95/21]
C <sub>7</sub> H <sub>10</sub> O <sub>2</sub>	5-methyl-5-hexene-2,4-dione (323–363)	26.4	(338)	A	[20583-46-4] [87/5][73/18]
C <sub>7</sub> H <sub>10</sub> O <sub>3</sub>	3-acetyl-2,4-pentanedione (369–477)	54.9	(384)	A	[815-68-9] [87/5]
C <sub>7</sub> H <sub>10</sub> O <sub>3</sub>	glycidyl methacrylate				[106-91-2]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		61.2±0.4	(298)	A	[87/14]
		60.6±0.9	(298)	C	[86/8]
C <sub>7</sub> H <sub>10</sub> O <sub>4</sub>	trimethylsuccinic anhydride (326–504)	52.9	(341)	A	[87/5][47/5]
C <sub>7</sub> H <sub>10</sub> O <sub>4</sub>	dimethyl citraconate (324–484)	55.8	(339)	A	[87/5][47/5]
C <sub>7</sub> H <sub>10</sub> O <sub>4</sub>	dimethyl itaconate (342–481)	67.0	(357)	A	[617-52-7]
C <sub>7</sub> H <sub>10</sub> O <sub>4</sub>	dimethyl mesaconate (319–479)	55.2	(334)	A	[87/5][47/5]
C <sub>7</sub> H <sub>10</sub> O <sub>6</sub>	tris(methoxycarbonyl)methane (308–348)	74.4±0.6		GS	[95/8]
C <sub>7</sub> H <sub>10</sub> S	2-propylthiophene (243–303)	46.0	(273)		[1551-27-5]
C <sub>7</sub> H <sub>10</sub> S	2-isopropylthiophene (352–468)	41.5	(367)		[81/2][99/16]
C <sub>7</sub> H <sub>11</sub> BrO <sub>2</sub>	4-bromo-3-methylcrotonic acid, ethyl ester (346–381)	43.1	(361)	A	[4095-22-1]
C <sub>7</sub> H <sub>11</sub> ClO <sub>5</sub>	(2-chloroethyl)[(1-methoxycarbonyl)ethyl] carbonate (365–525)	66.8	(380)	A	[99/16]
C <sub>7</sub> H <sub>11</sub> Cl <sub>3</sub> O <sub>2</sub>	trichloroacetic acid, neopentyl ester (378–473)	57.7	(393)	A	[26918-14-9]
C <sub>7</sub> H <sub>11</sub> NO <sub>2</sub>	2-methyl-2-acetoxybutyronitrile (315–469)	58.1	(330)	A	[87/5][47/5]
C <sub>7</sub> H <sub>11</sub> NO <sub>2</sub>	5-oxo-2-pyrrolidinecarboxylic acid, ethyl ester (418–511)	73.7	(433)	A	[87/5]
C <sub>7</sub> H <sub>11</sub> N	cyclohexanecarbonitrile (333–427)	39.4	(351)	BG	[766-05-2]
		51.9±0.1	(298)	C	[71/2]
C <sub>7</sub> H <sub>12</sub>	bicyclo[2.2.1]heptane (norbornane)	40.0±0.1 sub	(298)		[70/21]
C <sub>7</sub> H <sub>12</sub>	<i>cis</i> bicyclo[4.1.0]heptane (298–385)	38.0±0.8	(313)	A	[279023-2]
C <sub>7</sub> H <sub>12</sub>	( <i>dl</i> ) bicyclo[4.1.0]heptane (333–385)	36.5	(348)	A	[87/1]
C <sub>7</sub> H <sub>12</sub>	1-methylbicyclo[3.1.0]hexane (312–362)	34.0	(327)	A	[286-08-8]
C <sub>7</sub> H <sub>12</sub>	cycloheptene (251–313)	38.5	(266)	A	[87/5][70/30]
		36.7	(300)		[286-08-8]
C <sub>7</sub> H <sub>12</sub>	1,2-dimethylcyclopentene (294–431)	36.4	(309)	A	[87/5]
C <sub>7</sub> H <sub>12</sub>	( <i>dl</i> ) 1,3-dimethylcyclopentene (283–410)	35.0	(298)	A	[4625-24-5]
C <sub>7</sub> H <sub>12</sub>	( <i>dl</i> ) 1,4-dimethylcyclopentene (273–413)	35.1	(288)	A	[87/5]
C <sub>7</sub> H <sub>12</sub>	( <i>dl</i> ) 1,5-dimethylcyclopentene (273–423)	37.1	(288)	A	[628-92-2]
C <sub>7</sub> H <sub>12</sub>	1-ethylidenecyclopentane	38.6±0.2	(298)	GCC	[87/5][41/6]
C <sub>7</sub> H <sub>12</sub>	1-ethylcyclopentene	38.5±0.3	(298)	GCC	[41/6]
		36.5	(308)	A	[765-47-9]
C <sub>7</sub> H <sub>12</sub>	3-ethylcyclopentene (288–435)	36.5	(303)	A	[87/5][73/18]
C <sub>7</sub> H <sub>12</sub>	4-ethylcyclopentene (288–435)	36.5	(303)	A	[694-35-9]
C <sub>7</sub> H <sub>12</sub>	1-methyl-1-cyclohexene (275–313)	37.7±0.2	(294)	GS	[87/5][73/18]
		37.5±0.2	(298)	GS	[3742-38-9]
		35.7	(348)	A	[87/5][73/18]
		36.7	(324)	MM	[591-49-1]
C <sub>7</sub> H <sub>12</sub>	( <i>dl</i> ) 3-methyl-1-cyclohexene				[00/7]
					[00/7]
					[87/5][70/24]
					[84/9]
					[60/20]
					[591-48-0]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(335–376)	34.8	(350)	A	[87/5][70/24] [84/9]
C <sub>7</sub> H <sub>12</sub>	( <i>dl</i> ) 4-methyl-1-cyclohexene (275–296)	37.0±0.6	(286)	GS	[591-47-9] [00/7]
	(275–296)	36.3±0.6	(298)	GS	[00/7]
	(292–429)	36.3	(307)	A	[87/5]
C <sub>7</sub> H <sub>12</sub>	methylenecyclohexane (331–387)	36.1±0.3 34.4	(298) (346)	GCC A, EB	[1192-37-6] [79/17]
C <sub>7</sub> H <sub>12</sub>	1-heptyne (336–373)	37.9	(351)	A	[87/5][73/12] [628-71-7] [87/5][70/24] [84/9]
C <sub>7</sub> H <sub>12</sub>	2-heptyne (346–385)	38.6	(361)	A	[1119-65-9] [87/5][70/24] [84/9]
C <sub>7</sub> H <sub>12</sub>	3-heptyne (343–380)	39.1	(358)	A	[2586-89-2] [87/5][70/24] [84/9]
C <sub>7</sub> H <sub>12</sub> Br <sub>2</sub>	1,2-dibromocycloheptane (292–353)	50.3	(307)	A	[29974-68-3] [87/5][41/6] [73/18]
C <sub>7</sub> H <sub>12</sub> ClNO	6-chlorohexylisocyanate (363–453)	52.5	(378)	A	[13654-91-6] [87/5][68/7] [73/18]
C <sub>7</sub> H <sub>12</sub> Cl <sub>2</sub> O <sub>2</sub>	dichloroacetic acid, neopentyl ester (368–463)	57.4	(383)	A	[87/5][99/16]
C <sub>7</sub> H <sub>12</sub> Cl <sub>2</sub> S	(2-chloroethyl)(2-chlorocyclopentyl) sulfide (273–333)	65.9	(303)	A, GS	[87/5][48/9] [99/16] [3922-36-9]
C <sub>7</sub> H <sub>12</sub> Cl <sub>4</sub>	1,1,1,7-tetrachloroheptane (342–455)	71.7	(357)		[99/16]
	(370–454)	69.9	(385)	A	[87/5]
C <sub>7</sub> H <sub>12</sub> N <sub>2</sub>	2-piperidinoacetonitrile (303–338)	56.0±0.5		GS	[97/10]
C <sub>7</sub> H <sub>12</sub> O	<i>exo</i> -norborneol	52.5	(298)	GC	[497-37-0] [02/37]
C <sub>7</sub> H <sub>12</sub> O	cyclohexenyl methyl ether (274–313)	44.0±0.2	(294)	GS	[98/2]
	(274–313)	43.7±0.2	(298)	GS	[98/2]
C <sub>7</sub> H <sub>12</sub> O	cycloheptanone (343–383)	50.6	(298)	CGC	[502-42-1] [95/21]
	(343–383)	51.9	(298)	CGC	[95/21]
	(343–383)	50.7	(298)	CGC	[95/21]
	(313–453)	48.5	(328)	A	[87/5]
	(373–465)	44.8	(388)	A, EB	[87/5][76/10]
C <sub>7</sub> H <sub>12</sub> O <sub>2</sub>	cyclobutanecarboxylic acid, ethyl ester (274–308)	44.9±0.4		GS	[98/22]
C <sub>7</sub> H <sub>12</sub> O <sub>2</sub>	1,4-dioxaspiro[4.4]nonane (278–313)	47.6±0.5	(298)	GS	[176-32-9] [98/21][02/32]
C <sub>7</sub> H <sub>12</sub> O <sub>2</sub>	butyl acrylate (318–419)	47.3±0.3	(298)	EB	[141-32-2] [96/5]
	(272–421)	44.8	(287)	A	[87/5][47/5]
C <sub>7</sub> H <sub>12</sub> O <sub>2</sub>	isobutyl acrylate (330–410)	43.8	(345)	A	[106-63-8] [87/5]
C <sub>7</sub> H <sub>12</sub> O <sub>2</sub>	heptanolactone (368–390)	48.2±0.3	(379)	MM	[539-87-7] [91/7]
	(369–390)	53.3±1.3	(298)	MM	[91/7]
C <sub>7</sub> H <sub>12</sub> O <sub>2</sub>	propyl methacrylate (304–413)	41.6	(319)	A	[2210-28-8] [87/5]
C <sub>7</sub> H <sub>12</sub> O <sub>3</sub>	glycidyl butyrate	58.7±0.4	(298)		[2461-40-7] [87/14]
		58.0±0.4	(298)	C	[86/8]
C <sub>7</sub> H <sub>12</sub> O <sub>3</sub>	2-acetoxy-2-methyl-3-butanone (337–368)	54.8	(352)	A	[10235-71-9] [87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>12</sub> O <sub>3</sub>	ethyl levulinate (320–480)	58.3	(335)	A	[539-88-8] [87/5][47/5]
		51.6	(420)		[31/1]
C <sub>7</sub> H <sub>12</sub> O <sub>4</sub>	2-acetoxypionic acid, ethyl ester (313–454)	57.9	(328)	A	[2985-28-6] [87/5]
C <sub>7</sub> H <sub>12</sub> O <sub>4</sub>	3-acetoxypionic acid, ethyl ester (350–367)	72.1	(358)	A	[40326-37-2] [87/5][73/18]
C <sub>7</sub> H <sub>12</sub> O <sub>4</sub>	1,2-propylene glycol diacetate (318–367)	54.9	(323)		[623-84-7] [01/19]
C <sub>7</sub> H <sub>12</sub> O <sub>4</sub>	diethyl malonate (288–318)	64.7±0.2	(293)	GS	[105-53-3] [92/13]
		63.3	(305)	A	[87/5]
		59.9	(399)	A	[87/5]
		51.2	(328)	A	[87/5][47/5]
C <sub>7</sub> H <sub>12</sub> O <sub>4</sub>	dimethyl dimethylmalonate (278–307)	55.6±0.8	(293)	GS	[92/13]
C <sub>7</sub> H <sub>12</sub> O <sub>4</sub>	glutaric acid, dimethyl ester (366–483)	54.7	(381)	A	[1119-40-0] [87/5]
C <sub>7</sub> H <sub>12</sub> O <sub>4</sub>	methyl adipate (453–503)	82.9	(468)	A	[627-91-8] [87/5]
C <sub>7</sub> H <sub>12</sub> O <sub>4</sub>	heptanedioic acid (pimelic acid) (436–615)	88.6	(451)	A	[111-16-0] [87/5][47/5]
C <sub>7</sub> H <sub>12</sub> O <sub>4</sub>	2,4,8,10-tetraoxaspiro[5.5]undecane	56.0			[126-54-5] [59/23]
C <sub>7</sub> H <sub>12</sub> O <sub>5</sub>	ethyl[(1-methoxycarbonyl)ethyl]carbonate (343–473)	60.0	(358)	A	[87/5]
C <sub>7</sub> H <sub>12</sub> O <sub>5</sub>	2-(lactyloxy)propionic acid, methyl ester (317–384)	72.0	(332)	A	[87/5]
C <sub>7</sub> H <sub>13</sub> ClO	heptanoyl chloride (307–418)	63.7	(322)	A	[2528-61-2] [87/5][47/5]
C <sub>7</sub> H <sub>13</sub> ClO <sub>2</sub>	chloroacetic acid, neopentyl ester (378–448)	55.6	(393)	A	[87/5][99/16]
C <sub>7</sub> H <sub>13</sub> F <sub>3</sub> O <sub>3</sub>	<i>tris</i> (2-fluoroethyl)orthoformate (273–333)	59.7	(288)	A	[2339-51-7] [87/5][99/16]
C <sub>7</sub> H <sub>13</sub> N	2,2-dimethylpentanenitrile (274–303)	46.9±0.4		GS	[94/5]
C <sub>7</sub> H <sub>13</sub> N	heptanonitrile (313–473)	46.0	(328)	A	[629-08-3] [87/5]
		46.4	(309)		[47/5]
C <sub>7</sub> H <sub>13</sub> NO	N-methylcaprolactam (340–400)	49.4	(370)		[2556-73-2] [84/18]
C <sub>7</sub> H <sub>13</sub> NO	2-butoxypropionitrile (373–423)	46.7	(388)	A	[87/5][73/18]
C <sub>7</sub> H <sub>13</sub> NO	2-methoxy-3,3-dimethylbutanenitrile (295–324)	58.8±1.1	(298)	GS	[162047-91-8] [95/11]
C <sub>7</sub> H <sub>13</sub> NO	2-methoxy-2-methylpentanenitrile (278–308)	48.5±0.6	(298)	GS	[162047-90-7] [95/11]
C <sub>7</sub> H <sub>13</sub> NO <sub>2</sub>	lactic acid, N-(methallyl) amide (360–428)	81.8	(375)	A	[87/5]
C <sub>7</sub> H <sub>13</sub> NO <sub>2</sub>	N-lactylmorpholine (371–423)	62.7	(386)	A	[87/5]
C <sub>7</sub> H <sub>13</sub> NO <sub>3</sub>	( <i>dl</i> ) N-acetylalanine ethyl ester (372–460)	65.2	(387)	A	[5143-72-6] [87/5][73/18]
C <sub>7</sub> H <sub>13</sub> O <sub>6</sub> P	Mevinphos (293–383)	68.1	(308)	A	[7786-34-7] [87/5]
C <sub>7</sub> H <sub>14</sub>	cycloheptane (282–333)	38.6	(297)	A	[291-64-5] [87/5]
		31.7	(491)	A	[87/5]
		36.4	(348)	A, EB	[87/5][76/10]
		36.1	(356)	A, EB	[87/5][56/20]
		38.5±0.2	(298)		[56/20]
C <sub>7</sub> H <sub>14</sub>	methylcyclohexane (295–333)	36.2	(310)		[108-87-2] [91/3]
		35.1±0.4	(298)	GC	[87/17]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(373–511)	32.3	(388)	A	[87/5]
	(501–573)	31.2	(516)	A	[87/5]
		32.2	(353)		[84/29]
		29.9	(393)		[84/29]
		26.9	(433)		[84/29]
		23.4	(473)		[84/29]
		35.4±0.1	(298)	C	[79/13]
		34.6±0.1	(313)	C	[79/13]
		33.5±0.1	(333)	C	[79/13]
		32.5±0.1	(353)	C	[79/13]
		35.4	(298)	GCC	[78/16]
		35.3	(298)		[75/12]
	(308–368)	34.6	(323)	A	[87/5][70/25]
					[84/9]
		31.8	(374)		[46/11]
	(299–375)	34.9	(314)	MM	[45/2]
	(273–348)	36.1	(288)		[40/5]
C <sub>7</sub> H <sub>14</sub>	1,1-dimethylcyclopentane				[1638-26-2]
	(284–363)	34.0	(299)	A	[87/5]
		33.8	(298)		[71/28]
	(289–362)	33.8	(304)		[49/6]
C <sub>7</sub> H <sub>14</sub>	<i>cis</i> 1,2-dimethylcyclopentane				[1192-18-3]
	(293–375)	35.5	(308)	A	[87/5]
		35.8	(298)		[71/28]
	(298–373)	35.2	(313)		[49/6]
C <sub>7</sub> H <sub>14</sub>	( <i>dl</i> ) <i>trans</i> 1,2-dimethylcyclopentane				[822-50-4]
	(295–367)	34.2	(310)	A	[87/5]
		34.6	(298)		[71/28]
	(299–366)	34.0	(314)		[49/6]
C <sub>7</sub> H <sub>14</sub>	<i>cis</i> 1,3-dimethylcyclopentane				[2532-58-3]
	(295–366)	34.2	(310)	A	[87/5]
		34.3	(298)		[71/28]
		32.8±0.1	(323)	C	[59/8]
		31.7±0.1	(342)	C	[59/8]
		30.4±0.1	(364)	C	[59/8]
	(299–366)	34.0	(314)		[49/6]
C <sub>7</sub> H <sub>14</sub>	( <i>dl</i> ) <i>trans</i> 1,3-dimethylcyclopentane				[1759-58-6]
	(295–367)	34.0	(310)	A	[87/5]
		34.5	(298)		[71/28]
	(291–365)	34.2	(306)		[49/6]
C <sub>7</sub> H <sub>14</sub>	ethylcyclopentane				[1640-89-7]
	(308–387)	35.5	(323)	A	[87/5]
	(386–507)	32.9	(401)	A	[87/5]
	(499–569)	31.9	(514)	A	[87/5]
		35.6±0.1	(313)	C	[81/14]
		34.8±0.1	(328)	C	[81/14]
		33.9±0.1	(343)	C	[81/14]
		33.0±0.1	(358)	C	[81/14]
		32.5±0.1	(368)	C	[81/14]
		36.5	(298)		[71/28]
	(302–377)	35.7	(317)		[49/6]
C <sub>7</sub> H <sub>14</sub>	1-heptene				[592-76-7]
	(311–368)	34.6	(326)	A	[87/5]
	(327–367)	33.9	(342)		[70/24][84/9]
		35.7	(298)		[71/28]
	(295–318)	35.3	(310)	MM	[50/6]
	(255–312)	35.9	(300)		[41/6]
	(273–362)	34.5	(288)		[36/3]
C <sub>7</sub> H <sub>14</sub>	<i>cis</i> 2-heptene				[6443-92-1]
	(276–304)	39.0±0.3	(290)	GS	[00/7]
	(276–304)	38.6	(298)	GS	[00/7]
	(315–372)	35.3	(330)	A	[87/5]
	(332–371)	34.6	(347)		[70/24][84/9]
		36.0	(298)		[71/28]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>14</sub>	<i>trans</i> 2-heptene (314–373)	35.3	(329)	A	[14686-13-6] [87/5]
		36.0	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	<i>cis</i> 3-heptene (331–370)	34.6	(346)	A	[70/24] [7642-10-6]
		35.0	(327)		[87/5]
C <sub>7</sub> H <sub>14</sub>	<i>trans</i> 3-heptene (312–369)	35.6	(298)	A	[71/28]
		34.6	(327)		[87/5]
C <sub>7</sub> H <sub>14</sub>	2-methyl-1-hexene (318–390)	33.9	(333)	A	[6094-02-6] [87/5][73/18]
		35.1	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	<i>(dl)</i> 3-methyl-1-hexene (311–381)	33.4	(326)	A	[3404-61-3] [87/5][73/18]
		34.3	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	<i>(dl)</i> 4-methyl-1-hexene (313–384)	33.6	(328)	A	[3769-23-1] [87/5][73/18]
		34.7	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	5-methyl-1-hexene (313–393)	33.5	(328)	A	[3524-73-0] [87/5][73/18]
		34.3	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	2-methyl-2-hexene (322–394)	34.0	(337)	A	[2738-19-4] [87/5][73/18]
		35.6	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	<i>cis</i> 3-methyl-2-hexene (322–396)	34.2	(337)	A	[10574-36-4] [87/5][73/18]
		35.6	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	<i>trans</i> 3-methyl-2-hexene (321–394)	34.1	(336)	A	[20710-38-7] [87/5][73/18]
		35.6	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	<i>cis</i> 4-methyl-2-hexene (313–384)	33.5	(328)	A	[3683-19-0] [87/5][73/18]
		34.7	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	<i>trans</i> 4-methyl-2-hexene (314–385)	33.6	(329)	A	[3683-22-5] [87/5][73/18]
		34.7	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	<i>cis</i> 5-methyl-2-hexene (354–372)	32.6	(363)	A	[13151-17-2] [87/5][73/18]
		34.7	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	<i>trans</i> 5-methyl-2-hexene (315–386)	33.6	(330)	A	[7385-82-2] [87/5][73/18]
		34.7	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	<i>cis</i> 2-methyl-3-hexene (262–383)	36.1	(277)	A	[15840-60-5] [87/5][73/18]
		34.3	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	<i>trans</i> 2-methyl-3-hexene (313–383)	33.5	(328)	A	[692-24-0] [87/5][73/18]
		34.3	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	<i>cis</i> 3-methyl-3-hexene (307–375)	35.4	(322)	A	[4914-89-0] [87/5]
		36.4	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	<i>trans</i> 3-methyl-3-hexene (302–368)	35.7	(317)	MM	[60/20] [3899-36-3]
		34.8	(325)		A
C <sub>7</sub> H <sub>14</sub>	<i>(dl)</i> 2,3-dimethylpent-1-ene (311–382)	35.8	(298)	MM	[71/28] [60/20]
		35.3	(315)		[87/5][73/18]
C <sub>7</sub> H <sub>14</sub>	2,3-dimethylpent-2-ene (300–367)	34.3	(298)	A	[71/28]
		33.4	(326)		[87/5][73/18]
C <sub>7</sub> H <sub>14</sub>	2,4-dimethylpent-1-ene (311–361)	32.3	(326)	A	[2213-32-3] [87/5]
		33.1	(298)		[71/28]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>14</sub>	(289–355)	33.2	(304)	MM	[60/20]
	3,3-dimethylpent-1-ene				[3404-73-7]
	(306–374)	33.0	(321)	A	[87/5][73/18]
C <sub>7</sub> H <sub>14</sub>	(306–374)	33.5	(298)		[71/28]
	( <i>dl</i> ) 3,4-dimethylpent-1-ene				[7385-78-6]
	(309–378)	33.2	(324)	A	[87/5][73/18]
C <sub>7</sub> H <sub>14</sub>	(309–378)	33.9	(298)		[71/28]
	4,4-dimethylpent-1-ene				[762-62-9]
	(299–347)	31.0	(314)	A	[87/5]
C <sub>7</sub> H <sub>14</sub>	(299–347)	31.2	(298)		[71/28]
	(290–346)	31.0	(315)	MM	[60/20]
	2,3-dimethylpent-2-ene				[10574-37-5]
C <sub>7</sub> H <sub>14</sub>	(322–396)	34.2	(337)	A	[87/5][73/18]
	(322–396)	35.6	(298)		[71/28]
	2,4-dimethylpent-2-ene				[625-65-0]
C <sub>7</sub> H <sub>14</sub>	(276–297)	35.2 ± 1.5	(286)	GS	[00/7]
	(276–297)	34.5 ± 1.5	(298)	GS	[00/7]
	(286–363)	34.5	(301)	A	[87/5]
	(286–363)	34.3	(298)		[71/28]
	(292–357)	34.2	(307)	MM	[60/20]
	<i>cis</i> 3,4-dimethylpent-2-ene				[4914-91-4]
C <sub>7</sub> H <sub>14</sub>	(316–387)	33.7	(331)	A	[87/5][73/18]
	(316–387)	34.7	(298)		[71/28]
	<i>trans</i> 3,4-dimethylpent-2-ene				[4914-92-5]
C <sub>7</sub> H <sub>14</sub>	(317–390)	33.9	(332)	A	[87/5][73/18]
	(317–390)	35.1	(298)		[71/28]
	<i>cis</i> 4,4-dimethylpent-2-ene				[762-63-0]
C <sub>7</sub> H <sub>14</sub>	(303–355)	32.2	(318)	A	[87/5]
	(303–355)	32.6	(298)		[71/28]
	(291–354)	32.6	(306)	MM	[60/20]
C <sub>7</sub> H <sub>14</sub>	<i>trans</i> 4,4-dimethylpent-2-ene				[690-08-4]
	(295–352)	32.8	(310)	A	[87/5]
	(295–352)	32.8	(298)		[71/28]
C <sub>7</sub> H <sub>14</sub>	(289–350)	33.0	(304)	MM	[60/20]
	2-ethyl-3-methyl-1-butene				[7357-93-9]
	(303–381)	33.8	(318)	A	[87/5]
C <sub>7</sub> H <sub>14</sub>	(303–381)	34.3	(298)		[71/28]
	(290–360)	34.4	(305)	MM	[60/20]
	2-ethyl-1-pentene				[3404-71-5]
C <sub>7</sub> H <sub>14</sub>	(267–392)	36.6	(282)	A	[87/5][73/18]
	(267–392)	35.1	(298)		[71/28]
	3-ethyl-1-pentene				[4038-04-4]
C <sub>7</sub> H <sub>14</sub>	(311–382)	33.4	(326)	A	[87/5][73/18]
	(311–382)	34.3	(298)		[71/28]
	3-ethyl-2-pentene				[816-79-5]
C <sub>7</sub> H <sub>14</sub>	(321–395)	34.1	(336)	A	[87/5][73/18]
	(321–395)	35.6	(298)		[71/28]
	2,3,3-trimethyl-1-butene				[594-56-9]
C <sub>7</sub> H <sub>14</sub>	(288–353)	32.4	(303)	A	[87/5]
	(288–353)	34.3	(298)		[71/28]
	(288–351)	32.1	(303)	MM	[60/20]
C <sub>7</sub> H <sub>14</sub> Br <sub>2</sub>	1,1-dibromoheptane				[59104-79-9]
	(395–548)	54.4	(410)	A, EST	[87/5][56/16]
	(395–548)				[70/14]
C <sub>7</sub> H <sub>14</sub> Br <sub>2</sub>	( <i>dl</i> ) 1,2-dibromoheptane				[42474-21-5]
	(295–553)	52.9	(310)	A	[87/5][73/18]
	(295–553)				[99/16]
C <sub>7</sub> H <sub>14</sub> Cl <sub>2</sub>	1,1-dichloroheptane				[41/6]
	(295–355)	54.4	(300)		[821-25-0]
	(375–460)	53.5	(298)		[87/12][91/2]
C <sub>7</sub> H <sub>14</sub> Cl <sub>2</sub>	(364–510)	48.4	(379)	A, EST	[87/5][56/16]
	(364–510)				[70/14]
	1,2-dichloroheptane				[10575-87-8]
C <sub>7</sub> H <sub>14</sub> Cl <sub>2</sub>	(353–466)	49.0	(368)		[99/16]
	(353–466)				



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>14</sub> Cl <sub>2</sub>	(350–470)	53.2	(298)		[82/12][91/2]
	1,7-dichloroheptane				[821-76-1]
	(406–491)	52.3	(421)		[99/16]
C <sub>7</sub> H <sub>14</sub> F <sub>2</sub>	(410–490)	61.2	(298)		[88/11][91/2]
	1,1-difluoroheptane				[407-96-5]
	(311–424)	41.1	(326)	A, EST	[87/5][56/16] [70/14]
C <sub>7</sub> H <sub>14</sub> N <sub>2</sub>	3-(diethylamino)propionitrile (338–470)	53.7	(353)	A	[5351-04-2] [87/5]
C <sub>7</sub> H <sub>14</sub> N <sub>2</sub>	2-(diethylamino)propionitrile (278–315)	50.8 ± 0.3		GS	[97/10]
C <sub>7</sub> H <sub>14</sub> O	1,2-epoxyheptane (305–414)	45.5	(320)	A	[5063-65-0] [87/5][70/28]
C <sub>7</sub> H <sub>14</sub> O	cycloheptanol				[502-41-0]
	(284–323)	64.7	(299)	A	[87/5]
	(284–321)	67.4	(299)		[75/1]
C <sub>7</sub> H <sub>14</sub> O	1-methylcyclohexanol (340–430)	49.1	(355)	A	[590-67-0] [87/5]
C <sub>7</sub> H <sub>14</sub> O	2-methylcyclohexanol (323–373)	63.3	(298)	CGC	[583-59-5] [95/21]
C <sub>7</sub> H <sub>14</sub> O	<i>cis</i> 2-methylcyclohexanol	61.8			[7443-70-1] [75/39]
C <sub>7</sub> H <sub>14</sub> O	3-methylcyclohexanol (323–373)	65.5	(298)	CGC	[591-23-1] [95/21]
C <sub>7</sub> H <sub>14</sub> O	( <i>dl</i> ) <i>cis</i> 3-methylcyclohexanol (340–450)	54.3	(355)	A	[24965-90-0] [87/5]
C <sub>7</sub> H <sub>14</sub> O	( <i>dl</i> ) <i>trans</i> 3-methylcyclohexanol (350–450)	50.0	(365)	A	[23068-71-5] [87/5]
C <sub>7</sub> H <sub>14</sub> O	4-methylcyclohexanol (323–373)	65.9	(298)	CGC	[589-91-3] [95/21]
C <sub>7</sub> H <sub>14</sub> O	<i>cis</i> 4-methylcyclohexanol (340–450)	49.9	(355)	A	[7731-28-4] [87/5]
C <sub>7</sub> H <sub>14</sub> O	<i>trans</i> 4-methylcyclohexanol (340–350)	52.1	(355)	A	[7731-29-5] [87/5]
C <sub>7</sub> H <sub>14</sub> O	1-ethyl-1-cyclopentanol (347–426)	58.4	(362)	A	[1462-96-0] [87/5][73/18]
C <sub>7</sub> H <sub>14</sub> O	2-heptanone				[110-43-0]
	(343–383)	46.1	(298)	CGC	[95/21]
	(343–383)	48.5	(298)	CGC	[95/21]
	(303–424)	47.5	(318)	A	[87/5]
	(449–480)	39.1	(464)	A	[87/5]
		47.4 ± 0.3	(298)	GCC	[79/7]
		47.2 ± 0.1	(298)	C	[79/1]
	(327–457)	44.7	(342)		[87/5][75/8]
		48.0	(298)		[75/8]
	(309–424)	46.9	(324)	EB	[66/12]
	(292–423)	50.9	(307)		[47/5]
	(273–348)	48.0	(288)		[40/5]
	C <sub>7</sub> H <sub>14</sub> O	4-heptanone			
(343–383)		47.8	(298)	CGC	[95/21]
		46.2 ± 0.4	(298)	GCC	[79/7]
(304–490)		45.5	(319)	A	[87/5][75/8]
		46.7	(298)		[75/8]
(296–417)		57.5	(311)	A	[87/5][47/5]
C <sub>7</sub> H <sub>14</sub> O	(283–323)	40.7	(303)		[37/9]
	2-methyl-3-hexanone				[7379-12-6]
	(296–406)	41.3	(311)	A	[87/5]
C <sub>7</sub> H <sub>14</sub> O	2,2-dimethyl-3-pentanone				[564-04-5]
		42.3 ± 0.1	(298)	C	[70/18]
		42.3 ± 0.1	(298)	C	[66/2]
C <sub>7</sub> H <sub>14</sub> O	2,4-dimethyl-3-pentanone				[565-80-0]
	(321–399)	39.4	(336)	A	[87/5][73/18]
		41.6 ± 0.1	(298)	C	[70/18]
	41.5 ± 0.1	(298)	C	[66/2]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>7</sub> H <sub>14</sub> O	heptanal (313–353)	48.7	(298)	CGC	[111-71-7] [95/21]	
		47.3±0.1	(298)		[81/18]	
	(285–428)	62.0	(300)		[47/5]	
C <sub>7</sub> H <sub>14</sub> O	3-methylhexanal (314–417)	42.8	(329)	EB	[19269-28-4] [87/10]	
C <sub>7</sub> H <sub>14</sub> O	3,4-dimethylpentanal (319–417)	42.4	(334)	EB	[19353-21-0] [87/10]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	1,1-dimethoxycyclopentane (278–318) (307–343)	44.5±0.3	(298)	GS	[931-94-2] [98/21][02/32]	
		46.1	(325)	EB	[94/16]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	methyl hexanoate	45.2	(350)		[106-70-7] [02/27]	
		46.4±0.1	(325)		[02/27]	
		47.7±0.1	(298)		[02/27]	
		(313–363)	47.9	(298)	CGC	[95/21]
		(313–353)	48.2	(298)	CGC	[95/21]
			47.8±0.5	(298)	GC	[87/17]
			48.7±0.3	(298)	GCC	[80/5]
			48.0±0.1	(298)	C	[77/1]
		(315–383)	45.3	(330)	A	[87/5][63/16]
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	butyl propionate (305–417) (305–365)	49.1	(320)	A	[590-01-2] [87/5]	
		47.4	(320)		[59/13][84/9]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	ethyl pivalate (308–429) (308–429) (308–429)	39.8±0.1	(320)	EB	[3938-95-2] [02/16]	
		36.9±0.2	(360)	EB	[02/16]	
		33.8±0.6	(400)	EB	[02/16]	
		41.3±0.1	(298)	C	[66/2]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	ethyl isovalerate (301–418) (267–407)	42.8	(316)	A	[108-64-5] [87/5]	
		44.5	(282)		[47/5]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	isobutyl propionate (271–410)	44.9	(286)	A	[540-42-1] [87/5][47/5]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	isopentyl acetate (230–435) (278–305) (278–305) (308–424) (313–368)	46.4	(300)		[123-92-2] [99/27]	
		46.8±0.2	(292)	GS	[99/4]	
		46.4±0.2	(298)	GS	[99/4]	
		44.3	(323)	A	[87/5]	
		45.1	(328)		[59/15][84/9]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	isopropyl isobutyrate (257–394)	43.3	(272)	A	[617-50-5] [87/5][47/5]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	4-methoxy-4-methyl-2-pentanone (343–423)	45.0	(358)	A	[107-70-0] [87/5]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	methyl <i>tert</i> -butylacetate (274–313)	44.4±0.2	(298)	GS	[10250-48-3] [96/11]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	neopentyl acetate (301–400)	49.1	(316)	A	[926-41-0] [87/5]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	<i>tert</i> -pentyl acetate (274–308)	42.8±0.3	(298)	GS	[625-16-1] [96/11]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	pentyl acetate (321–462) (329–423)	48.6±0.4	(298)	EB	[628-63-7] [96/3]	
		43.2	(344)	A	[87/5]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	propyl butyrate (390–430) (355–416) (271–416)	39.6	(405)		[105-66-8] [95/17]	
		42.0	(370)		[93/8]	
		44.3	(286)	A	[87/5][47/5]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	propyl isobutyrate (267–407)	50.5	(282)	A	[644-49-5] [87/5][47/5]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	ethyl 2-methylbutanoate (288–308)	64.7	(298)	GS	[92/13]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	butyl glycidyl ether				[2426-08-6] [87/14]	
		53.3±0.4			[7665-72-7]	
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	<i>tert</i> -butyl glycidyl ether				[7665-72-7]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	2,2,4-trimethyl-1,3-dioxane	50.2±0.4			[87/14]
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	2-methyl-2-propyl-1,3-dioxolane (278–313)	41.9±1.2	(298)		[67/37]
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	2-methyl-2-isopropyl-1,3-dioxolane (274–303)	46.3±0.3	(298)	GS	[4352-98-1] [98/21][02/32]
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	[(1-methylpropoxy)methyl]oxirane	43.9±0.2	(298)	GS	[4405-16-7] [02/32]
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	heptanoic acid (283–328)	44.6±0.2		GS	[98/21]
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	heptanoic acid (283–328)	45.2±1.8			[3814-55-9] [87/14]
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	heptanoic acid (353–393)	72.5±0.8	(306)	GS	[111-14-8] [00/6]
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	heptanoic acid (353–393)	72.9±0.8	(298)	GS	[00/6]
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	heptanoic acid (353–393)	75.7	(298)	CGC	[95/21]
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	heptanoic acid (353–393)	76.0	(266)		[82/4]
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	heptanoic acid (271–291)	72.0±1.5	(298)	TE	[79/4]
C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	heptanoic acid (351–495)	68.3	(366)	A	[87/5][47/5]
C <sub>7</sub> H <sub>14</sub> O <sub>3</sub>	<i>tert</i> -butylperoxymethyloxirane	53.9±0.4			[33415-52-0] [87/14]
C <sub>7</sub> H <sub>14</sub> O <sub>3</sub>	2-propoxyethylacetate	55.6±0.1	(298)	C	[20706-25-6] [70/17]
C <sub>7</sub> H <sub>14</sub> O <sub>3</sub>	( <i>dl</i> ) butyl lactate (339–456)	58.7	(354)	A	[138-22-7] [87/5]
C <sub>7</sub> H <sub>14</sub> O <sub>3</sub>	3-ethoxypropionic acid, ethyl ester (312–446)	45.5	(327)	A	[763-69-9] [87/5]
C <sub>7</sub> H <sub>14</sub> O <sub>3</sub>	1-heptene ozonide (353–373)	44.4	(363)	A	[768-63-8] [87/5][77/9]
C <sub>7</sub> H <sub>14</sub> O <sub>3</sub>	4-(2-hydroxyethyl)-4-methyl-1,3-dioxane (329–455)	51.7	(344)	A	[87/5]
C <sub>7</sub> H <sub>14</sub> O <sub>3</sub>	3-hydroxypropionic acid, butyl ester (361–382)	60.3	(371)	A	[87/5][73/18]
C <sub>7</sub> H <sub>14</sub> O <sub>3</sub>	3-methoxypropionic acid, propyl ester (323–433)	47.0	(338)	A	[5349-56-4] [87/5]
C <sub>7</sub> H <sub>14</sub> O <sub>3</sub>	3-propoxypropionic acid, methyl ester (323–453)	46.6	(338)	A	[14144-39-9] [87/5]
C <sub>7</sub> H <sub>14</sub> O <sub>3</sub>	( <i>dl</i> ) butyric acid, 2,3-dihydroxypropyl ester (392–449)	80.4	(407)	A	[557-25-5] [87/5]
C <sub>7</sub> H <sub>14</sub> O <sub>3</sub>	2-butoxypropionic acid (373–473)	52.8	(388)	A	[14620-87-2] [87/5][73/18]
C <sub>7</sub> H <sub>14</sub> S	allyl <i>tert</i> -butyl sulfide (319–339)	41.9	(332)		[37850-75-2] [99/16]
C <sub>7</sub> H <sub>14</sub> S	allyl <i>tert</i> -butyl sulfide (319–339)	43.1	(329)	A, EB	[87/5][62/16]
C <sub>7</sub> H <sub>14</sub> S	allyl <i>tert</i> -butyl sulfide (319–339)	44.8	(298)	EB	[62/16]
C <sub>7</sub> H <sub>15</sub> Br	1-bromoheptane (341–481)	47.0	(356)		[629-04-9] [99/16]
C <sub>7</sub> H <sub>15</sub> Br	1-bromoheptane (323–363)	50.2	(298)	CGC	[95/21]
C <sub>7</sub> H <sub>15</sub> Br	1-bromoheptane (323–363)	50.8±0.1	(298)	C	[68/1]
C <sub>7</sub> H <sub>15</sub> Br	1-bromoheptane (323–363)	50.4±0.2	(298)	C	[66/2]
C <sub>7</sub> H <sub>15</sub> Br	1-bromoheptane (333–483)	47.5	(348)	A, EST	[87/5][61/13]
C <sub>7</sub> H <sub>15</sub> Br	( <i>dl</i> ) 2-bromoheptane (333–440)	45.0	(348)	A	[1974-04-5] [87/5][99/16]
C <sub>7</sub> H <sub>15</sub> Cl	1-chloroheptane (326–462)	45.1	(341)		[629-06-1] [99/16]
C <sub>7</sub> H <sub>15</sub> Cl	1-chloroheptane (313–353)	47.9	(298)	CGC	[95/21]
C <sub>7</sub> H <sub>15</sub> Cl	1-chloroheptane (300–430)	47.0	(298)		[84/9][91/2]
C <sub>7</sub> H <sub>15</sub> Cl	1-chloroheptane (307–434)	46.9	(322)	A, DTA	[87/5][69/5]
C <sub>7</sub> H <sub>15</sub> Cl	1-chloroheptane (307–434)	47.7±0.1	(298)	C	[68/1]
C <sub>7</sub> H <sub>15</sub> Cl	( <i>dl</i> ) 2-chloroheptane (313–424)	44.8	(328)	A	[1001-89-4] [87/5][99/16]
C <sub>7</sub> H <sub>15</sub> Cl <sub>2</sub> N	N-methyl- <i>bis</i> (2-chloropropyl)amine (273–333)	54.6	(288)	A, GS	[52802-03-6] [87/5][48/13]
C <sub>7</sub> H <sub>15</sub> Cl <sub>2</sub> N	N-propyl- <i>bis</i> (2-chloroethyl)amine (273–369)	56.8	(288)	A, GS	[73/18] [621-68-1] [87/5][48/13]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>15</sub> F	1-fluoroheptane				[73/18]
	(294–416)	40.3	(309)		[661-11-0]
	(287–417)	40.8	(302)	A, EST	[99/18]
C <sub>7</sub> H <sub>15</sub> I	1-iodoheptane				[87/5][61/13]
	(373–513)	47.8	(388)	A, EST	[4282-40-0]
C <sub>7</sub> H <sub>15</sub> N	N-ethylpiperidine				[87/5][61/13]
	(274–313)	41.1±0.6	(294)	GS	[70/14]
C <sub>7</sub> H <sub>15</sub> N	(274–313)	40.8±0.6	(298)	GS	[766-09-6]
	octahydroazocine				[98/12]
C <sub>7</sub> H <sub>15</sub> NO	N,N-dimethyl- <i>tert</i> -butylcarboxamide				[98/12]
	(273–313)	46.5	(288)	A	[1121-92-2]
C <sub>7</sub> H <sub>15</sub> NO	1-(diethylamino)-2-propanone				[87/5]
	(278–318)	47.7±0.3	(298)	ME	[95/3][93/19]
C <sub>7</sub> H <sub>15</sub> NO <sub>2</sub>	methyl 2-(N,N-dimethylamino)-2-methylpropanoate				[1620-14-0]
	(278–308)	49.2±1.0	(293)	GS	[94/3]
C <sub>7</sub> H <sub>15</sub> NO <sub>2</sub>	lactic acid, N-butylamide				[92/13]
	(365–433)	77.4	(380)	A	[30220-58-7]
C <sub>7</sub> H <sub>15</sub> NO <sub>2</sub>	lactic acid, N- <i>sec</i> -butylamide				[87/5]
	(368–418)	74.6	(383)	A	[87/5]
C <sub>7</sub> H <sub>15</sub> NO <sub>2</sub>	lactic acid, N- <i>isobutyl</i> amide				[87/5]
	(388–418)	73.5	(403)	A	[87/5]
C <sub>7</sub> H <sub>15</sub> NO <sub>2</sub>	( <i>l</i> ) leucine methyl ester				[2666-93-5]
	(320–353)	39.4	(366)	A	[87/5]
C <sub>7</sub> H <sub>16</sub>	heptane				[142-85-5]
	(330–371)	34.7	(345)		[02/8]
		36.6	(298)		[94/12]
	(298–363)	36.1	(313)		[84/27]
	(298–338)	36.1	(313)		[84/15]
		36.6±0.1	(298)	C	[79/13]
		35.6±0.1	(313)	C	[79/13]
		34.4±0.1	(333)	C	[79/13]
		33.1±0.1	(353)	C	[79/13]
		36.55	(298)		[71/28]
	(288–348)	36.4	(303)		[67/10]
	(297–375)	36.1	(312)	A	[87/5][49/6]
		34.5±0.1	(331)	C	[47/10]
		33.2±0.1	(350)	C	[47/10]
	(313–398)	35.4	(328)		[46/4]
(299–372)	36.0	(314)	MM	[45/2]	
	32.0	(371)	C	[40/6]	
(310–397)	35.5	(325)	EB	[40/14]	
C <sub>7</sub> H <sub>16</sub>	2-methylhexane				[591-76-4]
	(296–365)	34.6	(311)	A	[87/5]
		34.9±0.1	(298)	C	[79/13]
		33.9±0.1	(313)	C	[79/13]
		32.7±0.1	(333)	C	[79/13]
		31.3±0.1	(353)	C	[79/13]
		34.8	(298)		[71/28]
	(273–318)	34.8	(298)		[61/16]
	(291–364)	34.8	(306)		[49/6]
	C <sub>7</sub> H <sub>16</sub>	( <i>dl</i> ) 3-methylhexane			
(289–366)		35.1	(304)	A	[87/5]
		35.1±0.1	(298)	C	[79/13]
		34.2±0.1	(313)	C	[79/13]
		32.9±0.1	(333)	C	[79/13]
		31.7±0.1	(353)	C	[79/13]
		35.1	(298)		[71/28]
(293–366)	34.9	(308)		[49/6]	
C <sub>7</sub> H <sub>16</sub>	2,2-dimethylpentane				[590-35-2]
		32.4±0.1	(298)	C	[98/16]
	31.8±0.1	(308)	C	[98/16]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>16</sub>	(277–354) (353–483) (285–353)  (288–353) <i>(dl)</i> 2,3-dimethylpentane (309–371) (208–286)	31.4±0.1	(315)	C	[98/16]
		31.0±0.1	(323)	C	[98/16]
		30.5±0.1	(330)	C	[98/16]
		30.1±0.1	(338)	C	[98/16]
		29.4±0.1	(348)	C	[98/16]
		28.8±0.1	(358)	C	[98/16]
		28.1±0.1	(368)	C	[98/16]
		33.2	(292)	A	[87/5]
		30.1	(368)	A	[87/5]
		32.8	(300)		[49/6]
		32.4±0.1	(298)	C	[47/7]
		32.2±0.1	(298)	C	[47/7]
		32.6	(303)	MM	[45/2]
		33.0	(324)		[99/10]
		35.9	(271)	A	[87/5]
C <sub>7</sub> H <sub>16</sub>	2,4-dimethylpentane	34.3±0.1	(298)	C	[79/13]
		33.4±0.1	(313)	C	[79/13]
		32.2±0.1	(333)	C	[79/13]
		31.1±0.1	(353)	C	[79/13]
		34.5	(301)		[87/5][73/18]
		34.4	(306)		[49/6]
		34.2±0.1	(298)	C	[47/7]
		32.7±0.1	(298)	C	[108-08-7] [98/16]
		32.3±0.1	(308)	C	[98/16]
		31.9±0.1	(315)	C	[98/16]
C <sub>7</sub> H <sub>16</sub>	3,3-dimethylpentane	31.5±0.1	(323)	C	[98/16]
		31.0±0.1	(330)	C	[98/16]
		30.6±0.1	(338)	C	[98/16]
		30.0±0.1	(348)	C	[98/16]
		33.3	(299)	A	[87/5][73/18]
		33.2	(302)		[49/6]
		32.9±0.1	(298)	C	[47/7]
		34.8	(266)		[562-49-2] [87/5]
		33.6	(295)		[87/5]
		33.0±0.1	(298)	C	[81/9]
C <sub>7</sub> H <sub>16</sub>	3-ethylpentane	33.0	(298)		[71/28]
		33.2	(302)		[49/6]
		33.0±0.1	(298)	C	[47/7]
		33.3	(300)	MM	[87/5][45/2]
		35.1±0.1	(298)	C	[617-78-7] [98/16]
		34.5±0.1	(308)	C	[98/16]
		34.1±0.1	(315)	C	[98/16]
		33.7±0.1	(232)	C	[98/16]
		33.3±0.1	(330)	C	[98/16]
		32.7±0.1	(338)	C	[98/16]
C <sub>7</sub> H <sub>16</sub>	2,2,3-trimethylbutane	32.2±0.1	(348)	C	[98/16]
		35.2	(306)		[87/5]
		35.2	(298)		[71/28]
		35.2±0.1	(298)	C	[47/7]
		35.0	(309)		[45/2]
		34.4	(323)	EB	[41/9][84/9]
		32.4	(299)	A	[464-06-2] [87/5]
		29.9	(368)	A	[87/5]
		32.0	(298)		[71/28]
		32.3	(301)		[49/6]
C <sub>7</sub> H <sub>16</sub> N <sub>2</sub> S	1,3-dipropylthiourea	31.2±0.1	(314)	C	[47/10]
		31.9	(311)	EB	[41/9]
		107±3.0	(370)	ME, TE	[26536-60-7] [94/21]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>16</sub> O	<i>tert</i> -amyl ethyl ether	39.2±0.4	(298)		[919-94-8] [U/2][02/32]
		38.2±0.2	(298)	C	[02/22]
		(318–374) 35.7	(333)	EB	[02/22]
		(320–374) 35.6	(335)	EB	[94/10]
C <sub>7</sub> H <sub>16</sub> O	propyl <i>tert</i> -butyl ether	38.3	(298)		[29072-93-3] [U/2][02/32]
		(315–370) 37.2±0.6	(298)	EB	[02/10]
		36.6±0.2	(298)	C	[02/10]
C <sub>7</sub> H <sub>16</sub> O	isopropyl <i>tert</i> -butyl ether	36.2	(298)		[17348-59-3] [U/2][02/32]
		(305–360) 34.4±0.6	(298)	EB	[02/10]
		34.5±0.2	(298)	C	[02/10]
		(307–360) 34.0	(322)	EB	[94/10]
C <sub>7</sub> H <sub>16</sub> O	1-heptanol	66.5	(298)	CGC	[111-70-6] [95/21]
		(323–373) 66.4	(298)	CGC	[95/21]
		(373–423) 65.2	(310)		[92/14]
		(258–363) 62.5	(350)	A	[87/5]
		(335–450) 66.8±0.2	(298)	C	[77/1] [73/26]
		(333–449) 65.2	(348)		[73/26]
		(336–450) 62.6	(351)	DTA	[87/5][69/5]
		(333–425) 62.9	(348)		[35/6][84/9]
C <sub>7</sub> H <sub>16</sub> O	<i>dl</i> 2-heptanol	66.1	(259)		[543-49-7] [99/11]
		(244–338) 54.4	(366)		[84/10]
		(351–433) 51.6	(372)	A	[87/5][75/23]
		(323–433) 59.8	(338)		[73/26]
C <sub>7</sub> H <sub>16</sub> O	<i>dl</i> 3-heptanol	67.0	(259)		[589-82-2] [99/11]
		(244–333) 60.3	(340)	A	[87/5]
		(325–430) 64.7	(280)	A	[87/5][79/16]
		(263–295) 53.1	(364)		[84/10]
		(349–430) 59.2	(343)		[73/26]
C <sub>7</sub> H <sub>16</sub> O	4-heptanol	58.2	(335)	A	[589-55-9] [87/5]
		(320–428) 53.1	(364)		[84/10]
		(349–428) 63.1	(297)	A	[87/5][75/1]
		(282–320) 56.9	(335)		[73/26]
C <sub>7</sub> H <sub>16</sub> O	2-methyl-1-hexanol	53.5	(390)		[624-22-6] [73/26]
		(343–438)			
C <sub>7</sub> H <sub>16</sub> O	3-methyl-1-hexanol	57.4	(399)		[13231-81-7] [73/26]
C <sub>7</sub> H <sub>16</sub> O	4-methyl-1-hexanol	62.6	(363)		[818-49-5] [73/26]
		(348–448)			
C <sub>7</sub> H <sub>16</sub> O	2-methyl-2-hexanol	54.5	(326)	A	[625-23-0] [87/5][73/26]
		(311–415)			
C <sub>7</sub> H <sub>16</sub> O	5-methyl-2-hexanol	49.4	(388)		[627-59-8] [73/26]
C <sub>7</sub> H <sub>16</sub> O	2-methyl-3-hexanol	55.7	(338)		[617-29-8] [73/26]
		(323–420)			
C <sub>7</sub> H <sub>16</sub> O	3-methyl-3-hexanol	53.6	(338)		[597-96-6] [73/26]
		(323–416)			
C <sub>7</sub> H <sub>16</sub> O	3,4-dimethyl-1-pentanol	50.3	(388)		[6570-87-2] [73/26]
C <sub>7</sub> H <sub>16</sub> O	2,4-dimethyl-2-pentanol	49.7	(343)		[625-06-9] [73/26]
		(328–408)			
C <sub>7</sub> H <sub>16</sub> O	2,2-dimethyl-3-pentanol	51.4	(333)		[3970-62-5] [73/26]
		(318–411)			
C <sub>7</sub> H <sub>16</sub> O	2,3-dimethyl-3-pentanol	53.2	(333)		[595-41-5] [73/26]
		(318–413)			
C <sub>7</sub> H <sub>16</sub> O	2,4-dimethyl-3-pentanol	51.8	(328)	C	[600-36-2] [96/6]
		48.8	(343)	C	[96/6]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>16</sub> O	(307–412)	45.7	(358)	C	[96/6]
	3-ethyl-3-pentanol	53.6	(322)	A	[87/5][73/26] [597-49-9]
	(317–408)	51.3	(332)	A	[87/5][73/18]
C <sub>7</sub> H <sub>16</sub> O	(308–416)	55.2	(323)		[73/26]
	2-methyl-2-ethyl-1-butanol				[18371-13-6]
C <sub>7</sub> H <sub>16</sub> O	(358–428)	55.7	(373)		[73/26]
	2,3,3-trimethyl-2-butanol				[594-83-2]
C <sub>7</sub> H <sub>16</sub> O <sub>2</sub>	(298–363)	48.7	(313)	MM	[85/5]
	1-butoxy-2-methoxyethane				[13343-98-1]
C <sub>7</sub> H <sub>16</sub> O <sub>2</sub>		47.8±0.1	(298)	C	[70/17]
	1-propoxy-2-ethoxyethane				[18854-31-4]
C <sub>7</sub> H <sub>16</sub> O <sub>2</sub>		46.8±0.1	(298)	C	[70/17]
	1,3-diethoxypropane				[3459-83-4]
C <sub>7</sub> H <sub>16</sub> O <sub>2</sub>		45.9±0.2	(298)	C	[72/42]
	2,2-diethoxypropane				[126-84-1]
C <sub>7</sub> H <sub>16</sub> O <sub>2</sub>	(273–308)	43.2±0.4	(298)	GS	[02/32]
	(273–308)	43.9		GS	[98/21]
	(286–304)	U28.2	(295)	A, I	[87/5][62/14]
	1- <i>tert</i> -butoxy-2-propanol				[57018-52-7]
C <sub>7</sub> H <sub>16</sub> O <sub>2</sub>	(346–420)	45.4	(361)	EB	[01/6]
	4-methyl-4-methoxy-2-pentanol				[141-73-1]
C <sub>7</sub> H <sub>16</sub> O <sub>3</sub>	(343–423)	46.6	(358)	A	[87/5][73/18]
	diethylene glycol monopropyl ether				[6881-94-3]
C <sub>7</sub> H <sub>16</sub> O <sub>3</sub>	(369–404)	65.3	(384)	A	[87/5]
	2-(2-propoxyethoxy)ethanol				[6881-94-3]
C <sub>7</sub> H <sub>16</sub> O <sub>3</sub>	(378–495)	65.7±0.8	(298)	EB	[96/3]
	triethoxymethane				[122-51-0]
C <sub>7</sub> H <sub>16</sub> O <sub>3</sub>	(293–323)	49.0	(308)	A	[87/5]
		46.0±0.8	(298)		[71/26]
	(278–419)	47.2	(293)		[87/5][47/5]
	3,5,7,9-tetraoxaundecane				[4431-82-7]
C <sub>7</sub> H <sub>16</sub> O <sub>3</sub>		53.6±0.7	(298)	C	[69/18]
	<i>tert</i> -pentylperoxyethanol				[51452-08-5]
C <sub>7</sub> H <sub>16</sub> O <sub>4</sub>		70.1±2.5			[83/11]
	3- <i>tert</i> -butyldioxy-1,2-propanediol				[38578-50-6]
C <sub>7</sub> H <sub>16</sub> S		88.0±2.6			[83/11]
	1-heptanethiol				[1639-09-4]
	(273–345)	49.5	(288)		[99/16]
C <sub>7</sub> H <sub>16</sub> S		50.6±0.2	(298)		[66/10][66/5]
	(373–472)	45.0	(388)	A, EB	[87/5][65/8]
					[66/5]
	2-heptanethiol				[628-00-2]
C <sub>7</sub> H <sub>16</sub> S	(343–437)	44.1	(358)		[99/16]
	(343–471)	47.2	(360)		[99/16]
	(341–443)	44.2	(356)	A	[87/5][73/18]
					[62224-02-6]
C <sub>7</sub> H <sub>16</sub> S <sub>2</sub>	1,7-heptanedithiol				[87/5][73/18]
	(392–526)	59.0	(407)	A	[99/16]
C <sub>7</sub> H <sub>17</sub> N	<i>tert</i> -butylisopropylamine				[97/21]
	(275–299)	35.7±1.0	(287)		[39099-23-5]
C <sub>7</sub> H <sub>17</sub> N	N-butyl isopropylamine				[79/8]
		42.1±0.1	(298)	C	[79/8]
		40.9±0.1	(313)	C	[79/8]
		39.9±0.1	(328)	C	[79/8]
		38.7±0.1	(343)	C	[79/8]
		37.6±0.1	(358)	C	[79/8]
		40.0	(340)	C	[79/8]
C <sub>7</sub> H <sub>17</sub> N	(325–395)				[111-68-2]
	heptylamine				[95/21]
	(323–373)	49.9	(298)	CGC	[87/5]
C <sub>7</sub> H <sub>17</sub> NO	(326–430)	46.5	(341)	A	[69/2]
		50.0±0.1	(298)	C	[7352-03-6]
C <sub>7</sub> H <sub>17</sub> NO	N-(ethoxymethyl)diethylamine				[87/5]
	(285–400)	39.6	(300)	A	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>7</sub> H <sub>17</sub> O <sub>2</sub> PS <sub>3</sub>	O,O-diethyl-S-[(ethylthio)methyl]dithiophosphate (283–387)	70.8	(298)	A	[298-02-2] [87/5][73/18] [99/16]
C <sub>7</sub> H <sub>18</sub> N <sub>2</sub>	N,N-diethyl-1,3-propanediamine (329–443)	46.4	(344)	A	[104-78-9] [87/5]
C <sub>7</sub> H <sub>17</sub> N <sub>2</sub>	1,7-heptanediamine (273–313)	46.5	(288)	A	[646-19-5] [87/5]
C <sub>7</sub> H <sub>18</sub> N <sub>2</sub> O	1,3-bis(dimethylamino)-2-propanol (355–450)	50.3	(370)	A	[5966-51-8] [87/5]
C <sub>7</sub> H <sub>18</sub> N <sub>3</sub>	N,N-diethyl-2-(1-methylhydrazino)ethanamine (283–313)	61.8	(298)	A	[67727-91-7] [87/5]
C <sub>7</sub> H <sub>20</sub> N <sub>4</sub>	1,4,8,11-tetrazaundecane (332–348)	98.3 ± 1.3	(340)	TE	[4741-99-5] [83/16]
	(332–348)	100.0 ± 2.5	(298)	TE	[83/16]
C <sub>8</sub> F <sub>8</sub> O <sub>2</sub>	trifluoroacetic acid, pentafluorophenyl ester	42.1			[14533-84-7] [76/31]
C <sub>8</sub> F <sub>8</sub> O <sub>4</sub>	carbonoperoxoic acid, O-(pentafluorophenyl) O,O-(trifluoromethyl) ester	51.8			[59483-83-9] [76/30]
C <sub>8</sub> F <sub>16</sub>	perfluoroethylcyclohexane (308–512)	37.2	(323)		[335-21-7] [99/16]
	(310–400)	38.6	(298)		[84/9][91/2]
		38.7 ± 0.4	(298)		[81/23]
	(311–411)	37.1	(326)	A	[87/5][70/14] [59/12][99/16]
C <sub>8</sub> F <sub>16</sub>	perfluoro-1,3-dimethylcyclohexane (308–375)	37.4	(323)		[335-27-3] [99/16]
C <sub>8</sub> F <sub>16</sub>	<i>cis/trans</i> perfluoro-1,3-dimethylcyclohexane	38.6 ± 0.1	(298)	C	[96/26]
C <sub>8</sub> F <sub>16</sub> N <sub>2</sub>	2,2,2-trifluoro-N'-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]-N-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]ethanimidamide	32.8			[57682-63-0] [75/42]
C <sub>8</sub> F <sub>16</sub> O	perfluoro-2-butyltetrahydrofuran (383–433)	34.7	(408)	EST	[60/27]
C <sub>8</sub> F <sub>18</sub>	perfluorooctane (437–503)	32.0	(452)		[307-34-6] [99/16]
	(309–378)	41.2 ± 0.8	(298)	EB	[81/23]
		41.1 ± 0.1	(298)	C	[81/23]
	(310–379)	39.5	(325)	A	[87/5][62/4] [70/14]
C <sub>8</sub> F <sub>18</sub> N <sub>2</sub> OS	<i>bis</i> (1,1,1,3,3,3-hexafluoro-2-propanamino)oxobis(trifluoromethyl) sulfur (273–333)	39.6	(288)	A	[66632-47-1] [87/5][78/14] [99/16]
C <sub>8</sub> F <sub>18</sub> N <sub>2</sub> S	<i>S,S-bis</i> (trifluoromethyl)-N-[2,2,2-trifluoro-1-(trifluoromethyl)-1-[(2,2,2-trifluoro-1-(trifluoromethyl)ethylidene)amino]ethyl sulfilimine (329–373)	41.1	(344)	A	[37826-45-2] [87/5][72/21]
C <sub>8</sub> F <sub>18</sub> O	<i>bis</i> (nonafluorobutyl) ether (315–374)	40.3 ± 0.8	(298)	EB	[308-48-5] [89/13]
		40.7 ± 0.1	(298)	C	[89/13]
	(343–375)	36.6	(358)	A	[87/5]
	(288–313)	42.2	(300)	A	[87/5]
	(374–413)	56.3	(389)	A	[87/5][99/16]
C <sub>8</sub> F <sub>18</sub> O <sub>2</sub>	dodecafluoro-1,6-bis(trifluoromethoxy)hexane (293–353)	33.6	(323)		[99/16]
C <sub>8</sub> F <sub>18</sub> O <sub>3</sub> S	<i>bis</i> (1,1,1,3,3,3-hexafluoro-2-(trifluoromethyl)-2-propanol) sulfite 38.7				[53517-90-1] [75/43]
C <sub>8</sub> F <sub>20</sub> N <sub>2</sub> S	difluoro[1,1,1,3,3,3-hexafluoro-N-[2,2,2-trifluoro-1-(trifluoromethyl)-ethylidene]-2,2-propanediamino(2-)-N]-bis(trifluoromethyl) sulfur 39.3		(390)	I	[78/14]
C <sub>8</sub> HCl <sub>4</sub> F <sub>11</sub> O <sub>2</sub>	3,5,7,8-tetrachloro-2,2,3,4,4,5,6,6,7,8,8-undecafluorooctanoic acid (373–553)	70.6 6	(388)	A	[2923-68-4] [87/5][57/17] [99/16]
C <sub>8</sub> HF <sub>16</sub> NO	1,1,1,2,3,3,3-heptafluoro-N-[2,2,2-trifluoro-1-[2,2,2-trifluoro-1-(trifluoromethyl)ethoxy]ethylidene]-2-propanamine 36.0		(364)		[54181-87-2] [75/20]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>2</sub> F <sub>16</sub>	1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluorooctane (298–323)	41.1	(310)	A	[307-99-3] [87/5][99/16]
C <sub>8</sub> H <sub>3</sub> ClF <sub>6</sub>	4-chloro-1,3-bis(trifluoromethyl)benzene (275–353)	48.0	(290)		[327-76-4] [87/5][46/3] [70/14][99/16]
C <sub>8</sub> H <sub>3</sub> ClF <sub>6</sub>	5-chloro-1,3-bis(trifluoromethyl)benzene (275–353)	46.2	(290)	A	[328-72-3] [87/5][46/3] [70/14][99/16]
C <sub>8</sub> H <sub>3</sub> Cl <sub>4</sub> F <sub>3</sub>	1,1,1-trifluoro-2,2-dichloro-2-(3,4-dichlorophenyl)ethane (417–461)	56.9	(432)	A	[328-82-5] [87/5][99/16]
C <sub>8</sub> H <sub>3</sub> F <sub>5</sub> O <sub>2</sub>	acidic acid, pentafluorophenyl ester (283–322)	48.1	(298)	A	[19220-93-0] [87/5][99/16]
C <sub>8</sub> H <sub>3</sub> F <sub>15</sub> O	2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-octanol (350–437)	53.3	(365)	A	[307-30-2] [87/5][99/16]
C <sub>8</sub> H <sub>4</sub> ClF <sub>3</sub> O	trifluoromethyl 3-chlorophenyl ketone (366–405)	52.7	(386)	A	[321-31-3] [87/5][99/16]
C <sub>8</sub> H <sub>4</sub> Cl <sub>2</sub> O <sub>2</sub>	isophthaloyl chloride (443–550)	61.5	(458)	A	[99-63-8] [87/5][99/16]
C <sub>8</sub> H <sub>4</sub> Cl <sub>2</sub> O <sub>2</sub>	phthaloyl chloride (391–549)	58.0	(406)	A	[88-95-9] [87/5][47/5] [99/16]
C <sub>8</sub> H <sub>4</sub> Cl <sub>2</sub> O <sub>2</sub>	terephthaloyl chloride (454–473)	56.2	(463)	A	[100-20-9] [87/5][99/16]
C <sub>8</sub> H <sub>4</sub> Cl <sub>3</sub> F <sub>3</sub>	1,1,1-trifluoro-2,2-dichloro-(3-chlorophenyl)ethane (387–475)	49.6	(431)		[309-12-6] [99/16]
C <sub>8</sub> H <sub>4</sub> F <sub>6</sub>	1,3-bis(trifluoromethyl)benzene (275–353)	50.4	(402)	A	[87/5] [402-31-3] [87/5][51/9] [70/14][99/16]
C <sub>8</sub> H <sub>4</sub> F <sub>6</sub>	1,4-bis(trifluoromethyl)benzene (287–390)	41.8	(302)	A	[433-19-2] [87/5][70/14] [99/16]
C <sub>8</sub> H <sub>4</sub> O <sub>3</sub>	phthalic anhydride (407–558)	52.1	(422)	A	[85-44-9] [87/5]
	(411–450)	63.9 ± 2.5	(422)		[79/22]
		65.3 ± 0.8			[46/16][79/22]
C <sub>8</sub> H <sub>5</sub> Cl <sub>2</sub> F <sub>3</sub>	1,1,1-trifluoro-2,2-dichloro-2-phenylethane (365–446)	47.2	(380)	A	[309-10-4] [87/5][99/16]
C <sub>8</sub> H <sub>5</sub> Cl <sub>2</sub> N	$\alpha,\alpha$ -dichlorophenylacetone nitrile (329–497)	57.2	(344)	A	[40626-45-7] [87/5][47/5]
C <sub>8</sub> H <sub>5</sub> Cl <sub>5</sub>	pentachloroethylbenzene (369–572)	58.8	(384)	A	[606-07-5] [87/5][47/5] [99/16]
C <sub>8</sub> H <sub>5</sub> F <sub>5</sub> O	2,2,2-trifluoroacetophenone (342–425)	43.1	(357)	A	[434-45-7] [87/5][99/16]
C <sub>8</sub> H <sub>5</sub> F <sub>14</sub> OP	ethyl bis(heptafluoropropyl)phosphinite (303–393)	41.9	(348)		[59/21]
C <sub>8</sub> H <sub>5</sub> NO	benzoylnitrile (318–481)	52.0	(333)	A	[613-90-1] [87/5][47/5]
C <sub>8</sub> H <sub>6</sub>	phenylacetylene (313–416)	42.6 ± 0.1	(320)	EB	[536-74-3] [02/17]
	(313–416)	40.4 ± 0.1	(360)	EB	[02/17]
	(313–416)	38.0 ± 0.2	(400)	EB	[02/17]
	(265–291)	43.9	(278)	MM	[81/19]
	(270–292)	45.2	(281)	HSA	[81/19]
C <sub>8</sub> H <sub>6</sub> BrN	( <i>dl</i> ) $\alpha$ -bromophenylacetone nitrile (293–515)	64.7	(308)	A	[5798-79-8] [87/5]
C <sub>8</sub> H <sub>6</sub> Cl <sub>2</sub>	2,3-dichlorostyrene (334–508)	55.4	(349)		[2123-28-6] [99/16]
	(334–508)	54.3	(349)	A	[87/5][47/5]
C <sub>8</sub> H <sub>6</sub> Cl <sub>2</sub>	2,4-dichlorostyrene (327–498)	55.0	(342)	A	[2123-27-5] [87/5][70/14]
C <sub>8</sub> H <sub>6</sub> Cl <sub>2</sub>	2,5-dichlorostyrene (328–500)	54.3	(343)	A	[1123-84-8] [87/5][47/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>6</sub> Cl <sub>2</sub>	2,6-dichlorostyrene	53.8 ± 1.5	(298)	GS	[70/14] [28469-92-3]
	(321–490)	50.4	(336)	A	[01/1] [87/5][47/5] [70/14]
C <sub>8</sub> H <sub>6</sub> Cl <sub>2</sub>	3,4-dichlorostyrene	53.3	(345)	A	[2039-83-0] [87/5][47/5]
	(330–503)				[70/14]
C <sub>8</sub> H <sub>6</sub> Cl <sub>2</sub>	3,5-dichlorostyrene	55.1	(341)	A	[2155-42-2] [87/5][70/14]
	(326–498)				[63024-77-1]
C <sub>8</sub> H <sub>6</sub> Cl <sub>2</sub> O	3-(chloromethyl)benzoyl chloride	54.7	(439)	A	[87/5][99/16]
C <sub>8</sub> H <sub>6</sub> Cl <sub>2</sub> O	4-(chloromethyl)benzoyl chloride	68.3	(453)	A	[876-08-4] [87/5][99/16]
	(440–466)				[877-08-7]
C <sub>8</sub> H <sub>6</sub> Cl <sub>4</sub>	2,3,4,6-tetrachloro-1-ethylbenzene	53.6	(365)	A	[87/5][47/5]
	(350–543)				[877-08-7]
C <sub>8</sub> H <sub>6</sub> Cl <sub>4</sub>	3,4,5,6-tetrachloro-1,2-dimethylbenzene	63.6	(382)	A	[87/5][70/14]
	(367–547)				[53602-64-5]
C <sub>8</sub> H <sub>6</sub> F <sub>12</sub> O <sub>3</sub> S	<i>bis</i> (1,1,1,3,3,3-hexafluoro-2-methyl-2-propanol) sulfite	46.5			[75/43]
C <sub>8</sub> H <sub>6</sub> O	2,3-benzofuran	46.2	(338)	A	[271-89-6] [87/5]
	(323–403)				[5101-44-0]
C <sub>8</sub> H <sub>6</sub> O	2-ethynylphenol	33.5	(315)	A	[87/5]
	(300–373)				[1074-12-0]
C <sub>8</sub> H <sub>6</sub> O <sub>2</sub>	phenyl glyoxal	59.7	(363)	A	[87/5][47/5]
	(348–467)				[87-41-2]
C <sub>8</sub> H <sub>6</sub> O <sub>2</sub>	phthalide	59.3	(383)	A	[87/5][47/5]
	(368–563)				[120-57-0]
C <sub>8</sub> H <sub>6</sub> O <sub>3</sub>	piperonal	65.7	(331)		[53/5]
	(310–353)				[87/5][47/5]
C <sub>8</sub> H <sub>6</sub> S	benzo[ <i>b</i> ]thiophene	60.6	(375)	A	[87/5][47/5]
	(349–424)	52.1	(364)		[95-15-8]
	(424–498)	47.9	(439)		[99/16]
	(498–631)	45.0	(513)		[99/16]
	(310–542)	54.3	(320)		[91/13]
	(310–542)	52.0	(360)		[91/13]
	(310–542)	49.7	(400)		[91/13]
	(310–542)	46.2	(460)		[91/13]
	(310–542)	43.8	(500)		[91/13]
	(310–542)	41.2	(540)		[91/13]
		47.2	(425)		[81/1]
		42.8	(505)		[81/1]
		36.1	(605)		[81/1]
		53.8	(326)		[81/2][99/16]
C <sub>8</sub> H <sub>7</sub> Br	2-bromostyrene	48.7	(393)	A	[2039-88-5] [87/5][70/14]
	(378–543)				[2039-82-9]
C <sub>8</sub> H <sub>7</sub> Br	4-bromostyrene	48.5	(406)		[99/16]
	(393–420)	49.9	(398)	A	[87/5][70/14]
C <sub>8</sub> H <sub>7</sub> Cl	2-chlorostyrene	46.0	(378)	A	[2039-87-4] [87/5][70/14]
	(363–523)				[2039-85-2]
C <sub>8</sub> H <sub>7</sub> Cl	3-chlorostyrene	46.1	(313)	A	[87/5][47/5] [70/14]
	(298–463)				[1073-67-2]
C <sub>8</sub> H <sub>7</sub> Cl	4-chlorostyrene	48.1	(378)	A	[87/5][47/5] [70/14]
	(363–523)				[99-91-2]
C <sub>8</sub> H <sub>7</sub> ClO	4'-chloroacetophenone	54.0	(419)	A	[87/5][99/16]
	(404–623)	50.7	(410)		[49/1][84/9]
C <sub>8</sub> H <sub>7</sub> ClO	phenylacetyl chloride	56.5	(336)	A	[103-80-0] [87/5][47/5]
	(321–483)				[99/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>7</sub> ClO <sub>2</sub>	benzyl chloroformate (293–303)	38.5 ± 0.1	(298)		[501-53-1] [90/12]
C <sub>8</sub> H <sub>7</sub> Cl <sub>3</sub> O <sub>3</sub>	3,4,5-trichloro-2,6-dimethoxyphenol (293–323)	77.4	(308)	CGC	[2539-26-6] [99/13]
C <sub>8</sub> H <sub>7</sub> FO	2-fluoroacetophenone (273–333)	62.0	(288)	A, GS	[450-95-3] [87/5][48/14] [99/16]
C <sub>8</sub> H <sub>7</sub> F <sub>3</sub>	1,1,1-trifluoro-2-phenylethane (273–313)	46.1 ± 0.3	(298)	GS	[21249-93-4] [97/14]
C <sub>8</sub> H <sub>7</sub> N	benzylcyanide (283–328)	60.1 ± 0.7	(306)	GS	[140-29-4] [00/2]
		60.5 ± 0.7	(298)	GS	[00/2]
		54.8	(348)	A	[87/5][47/5]
C <sub>8</sub> H <sub>7</sub> N	2-tolunitrile (309–479)	50.8	(324)	A	[620-22-4] [87/5][47/5]
C <sub>8</sub> H <sub>7</sub> N	4-tolunitrile (315–491)	48.0	(330)	A	[104-85-8] [87/5][47/5]
C <sub>8</sub> H <sub>7</sub> N	2-tolylisocyanide (298–457)	48.5	(313)	A	[10468-64-1] [87/5][47/5]
C <sub>8</sub> H <sub>7</sub> NO	benzyl isocyanate (333–393)	42.3	(348)	A	[3173-56-6] [87/5]
C <sub>8</sub> H <sub>7</sub> NO <sub>3</sub>	2'-nitroacetophenone (293–333)	103.6	(308)	A	[577-59-3] [87/5]
C <sub>8</sub> H <sub>7</sub> NO <sub>4</sub>	2-nitrobenzoic acid, methyl ester (423–453)	56.1	(438)	A	[606-27-9] [87/5]
C <sub>8</sub> H <sub>7</sub> NO <sub>4</sub>	(2-nitrophenyl) acetate (373–526)	71.1	(388)	A	[610-69-5] [87/5][47/5]
C <sub>8</sub> H <sub>7</sub> NS	benzyl isothiocyanate (352–516)	62.2	(367)	A	[622-78-6] [87/5][47/5]
C <sub>8</sub> H <sub>7</sub> NS	2-methylbenzothiazole (343–499)	61.3	(358)	A	[120-75-2] [87/5][47/5]
					[99/16]
C <sub>8</sub> H <sub>7</sub> N <sub>3</sub> O <sub>7</sub>	2,4,6-trinitrophenetole (342–351)	120.5	(346)	A	[4732-14-3] [87/5]
C <sub>8</sub> H <sub>8</sub>	cyclooctatetraene (273–348)	43.9	(288)	A	[629-20-9] [87/5]
		43.1	(298)		49/23]
C <sub>8</sub> H <sub>8</sub>	bicyclo[2.2.2]octa-2,5,7-triene	42.9 ± 0.1	(298)	C	[500-24-3] [85/2]
C <sub>8</sub> H <sub>8</sub>	1,5,7-octatriene-3-yene (313–429)	35.1	(328)	A	[16607-77-5] [87/5]
C <sub>8</sub> H <sub>8</sub>	styrene (245–334)	42.5	(260)	A	[100-42-5] [87/5]
		41.5	(349)	A	[87/5]
		42.5	(319)		[59/27]
		43.1	(318)		[55/22]
		43.9	(298)		[46/10]
		43.5 ± 0.4	(298)		[46/10]
		40.2	(348)		[42/3]
		43.2	(298)		[39/6]
C <sub>8</sub> H <sub>8</sub> Br <sub>2</sub>	(1,2-dibromoethyl)benzene (359–527)	64.9	(374)	A	[93-52-7] [87/5][47/5] [70/14]
C <sub>8</sub> H <sub>8</sub> Cl <sub>2</sub>	2,5-dichloro-1,4-dimethylbenzene (393–573)	52.7	(408)	A	[1124-05-6] [87/5][70/14] [99/16]
C <sub>8</sub> H <sub>8</sub> Cl <sub>2</sub>	2,3-dichloro-1-ethylbenzene (319–495)	48.9	(334)	A	[54484-61-6] [87/5][47/5] [70/14]
C <sub>8</sub> H <sub>8</sub> Cl <sub>2</sub>	2,5-dichloro-1-ethylbenzene (311–490)	46.0	(326)	A	[54484-63-8] [87/5][47/5] [70/14]
C <sub>8</sub> H <sub>8</sub> Cl <sub>2</sub>	3,4-dichloro-1-ethylbenzene (320–500)	49.3	(335)	A	[6623-59-2] [87/5][47/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>8</sub> Cl <sub>2</sub>	1,4- <i>bis</i> (chloromethyl)benzene (412–504)	50.8	(427)		[70/14] [93-52-7]
C <sub>8</sub> H <sub>8</sub> Cl <sub>2</sub> O <sub>2</sub>	2-(2,4-dichlorophenoxy)ethanol (484–560)	65.1	(499)	A	[99/16] [120-67-2] [59/1][84/9] [99/16][87/5]
C <sub>8</sub> H <sub>8</sub> Cl <sub>2</sub> O <sub>3</sub>	3,5-dichloro-2,6-dimethoxyphenol (293–323)	70.4	(308)	CGC	[99/13]
C <sub>8</sub> H <sub>8</sub> Cl <sub>3</sub> O <sub>3</sub> PS	O,O-dimethyl-O-(2,4,5-trichlorophenyl)thiophosphate (298–373)	56.8	(313)	A	[299-84-3] [87/5]
C <sub>8</sub> H <sub>8</sub> N <sub>2</sub> O <sub>2</sub>	1,4- <i>bis</i> (2-hydroxyethyl)piperazine (413–507)	67.8±5.3			[122-96-3] [98/7]
C <sub>8</sub> H <sub>8</sub> N <sub>2</sub> O <sub>3</sub>	2'-nitroacetanilide (473–593)	44.0	(488)	A	[552-32-9] [87/5]
C <sub>8</sub> H <sub>8</sub> O	acetophenone (360–520)	55.4±0.4	(298)	EB	[98-86-2] [96/3]
	(343–383)	53.4	(298)	CGC	[95/21]
	(343–383)	52.7	(298)	CGC	[95/21]
	(343–383)	57.9	(298)	CGC	[95/21]
	(375–603)	49.7	(390)	A	[87/5]
	(383–437)	41.9	(398)	GS, EB	[65/7]
	(310–476)	51.2	(325)		[47/5]
C <sub>8</sub> H <sub>8</sub> O	2,5-dihydrobenzo-3,4-furan (285–510)	53.7±0.4	(298)	EB	[496-14-0] [96/4]
C <sub>8</sub> H <sub>8</sub> O	phenylacetaldehyde (283–333)	54.5	(298)	A	[122-78-1] [87/5]
C <sub>8</sub> H <sub>8</sub> O <sub>2</sub>	1,4-benzodioxan (400–486)	50.4	(415)	A	[493-09-4] [87/5]
		50.4			[58/25]
C <sub>8</sub> H <sub>8</sub> O <sub>2</sub>	benzyl formate (298–357)	51.6	(313)	A	[104-57-4] [87/5]
C <sub>8</sub> H <sub>8</sub> O <sub>2</sub>	2'-hydroxyacetophenone (369–491)	58.3	(384)	A	[118-93-4] [87/5]
		50.2			[86/10]
C <sub>8</sub> H <sub>8</sub> O <sub>2</sub>	2-methoxybenzaldehyde	55.2			[135-02-4] [86/10]
C <sub>8</sub> H <sub>8</sub> O <sub>2</sub>	4-methoxybenzaldehyde (348–521)	58.4	(363)	A, EB	[123-11-5] [85/9]
	(283–323)	60.4	(298)	A	[87/5][55/8]
	(346–521)	57.1	(361)	A	[87/5][47/5]
C <sub>8</sub> H <sub>8</sub> O <sub>2</sub>	methyl benzoate (358–517)	51.1±0.2	(360)	EB	[93-58-3] [02/15]
	(358–517)	48.5±0.2	(400)	EB	[02/15]
	(358–517)	45.8±0.2	(440)	EB	[02/15]
	(358–517)	43.0±0.4	(480)	EB	[02/15]
		57.2±0.1	(303)	C	[98/6]
	(313–353)	53.4	(298)	CGC	[95/21]
	(313–363)	53.8	(298)	CGC	[95/21]
	(433–473)	54.7	(298)	CGC	[95/21]
	(334–428)	50.7	(379)	BG	[88/2]
	(334–428)	48.3	(410)	BG	[88/2]
	(283–323)	53.9	(298)	A	[87/5]
	(373–533)	49.7	(388)	A	[87/5]
		55.6±0.1	(298)	C	[72/1]
	(341–433)	52.8	(363)	BG	[71/2]
C <sub>8</sub> H <sub>8</sub> O <sub>2</sub>	<i>m</i> -toluic acid (473–533)	62.8	(503)	A	[99-04-7] [87/5][70/34]
C <sub>8</sub> H <sub>8</sub> O <sub>2</sub>	phenyl acetate (313–363)	53.3	(298)	CGC	[122-79-2] [95/21]
	(433–473)	53.6	(298)	CGC	[95/21]
	(313–353)	53.1	(298)	CGC	[95/21]
	(311–469)	51.7	(326)	A	[87/5][47/5]
C <sub>8</sub> H <sub>8</sub> O <sub>2</sub>	phenylacetic acid (370–539)	65.0	(385)	A	[103-82-2] [87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>8</sub> O <sub>3</sub>	<i>cis</i> 4-cyclohexene-1,2-dicarboxylic acid anhydride (325–525)	53.1 ± 0.1			[935-79-5] [84/14]
C <sub>8</sub> H <sub>8</sub> O <sub>3</sub>	4-hydroxybenzoic acid, methyl ester (446–517)	81.5	(461)	A	[99-76-3] [87/5]
C <sub>8</sub> H <sub>8</sub> O <sub>3</sub>	methyl salicylate (327–497)	59.9	(342)	A	[119-36-8] [87/5]
	(329–496)	58.7	(344)	A	[87/5]
	(288–333)	56.9	(303)		[87/5]
C <sub>8</sub> H <sub>8</sub> O <sub>3</sub>	4-hydroxy-3-methoxybenzaldehyde (vanillin) (380–558)	66.9	(395)	A	[121-33-5] [87/5][47/5]
C <sub>8</sub> H <sub>8</sub> O <sub>4</sub>	2-acetyl-5-hydroxy-3-oxo-4-hexenoic acid- $\delta$ -lactone (dehydroacetic acid) (364–542)	62.1	(379)	A	[520-45-6] [87/5][47/5]
C <sub>8</sub> H <sub>9</sub> Br	1-bromo-2,5-dimethylbenzene (310–480)	50.9	(325)		[533-94-6] [99/16][47/5]
	(310–480)	53.6	(325)	A	[87/5][70/14]
C <sub>8</sub> H <sub>9</sub> Br	(1-bromoethyl)benzene (298–333)	56.4 ± 0.3	(298)	GS	[585-71-7] [02/29]
		52.4	(298)	CGC	[02/29]
C <sub>8</sub> H <sub>9</sub> Br	(2-bromoethyl)benzene (348–401)	51.5	(363)	A	[103-63-9] [87/5][99/16]
C <sub>8</sub> H <sub>9</sub> Br	1-bromo-2-ethylbenzene (368–523)	48.1	(383)	A	[1973-22-4] [87/5][70/14]
					[99/16]
C <sub>8</sub> H <sub>9</sub> Br	1-bromo-4-ethylbenzene (347–479)	46.2	(362)		[1585-07-5] [99/16]
	(378–533)	49.4	(393)	A	[87/5][70/14]
	(303–479)	52.0	(318)		[47/5]
C <sub>8</sub> H <sub>9</sub> Cl	( <i>dl</i> ) (1-chloroethyl)benzene (281–319)	52.8 ± 0.2	(298)	GS	[627-65-1] [02/29]
		52.4	(298)	CGC	[02/29]
	(336–372)	51.4	(351)		[99/16]
	(342–378)	47.0	(357)	A	[87/5]
C <sub>8</sub> H <sub>9</sub> Cl	(2-chloroethyl)benzene (356–480)	53.1	(368)		[622-24-2] [99/16]
	(356–380)	51.7	(368)	A	[87/5]
C <sub>8</sub> H <sub>9</sub> Cl	1-chloro-2-ethylbenzene (353–503)	46.1	(368)		[89-96-3]
	(290–450)	47.2	(305)	A	[87/5][70/14]
					[47/5]
C <sub>8</sub> H <sub>9</sub> Cl	1-chloro-3-ethylbenzene (348–457)	46.4	(363)		[620-16-6] [99/16]
	(358–508)	46.8	(373)	A	[87/5][70/14]
	(291–454)	46.4	(307)		[47/5]
C <sub>8</sub> H <sub>9</sub> Cl	1-chloro-4-ethylbenzene (350–458)	45.8	(365)		[622-98-0] [99/16]
	(358–508)	46.8	(373)	A	[87/5][70/14]
	(381–457)	45.5	(396)		[47/5]
C <sub>8</sub> H <sub>9</sub> Cl	1-(chloromethyl)-4-methylbenzene (376–457)	44.9	(391)	A	[104-82-5] [87/5][99/16]
C <sub>8</sub> H <sub>9</sub> ClNO <sub>3</sub> PS	O,O-(dimethyl)-O-(3-chloro-4-nitrophenyl)thiophosphate (283–409)	92.0	(346)	A	[500-28-7] [87/5][99/16]
C <sub>8</sub> H <sub>9</sub> ClO	1-chloro-2-ethoxybenzene (318–481)	52.4	(333)	A	[614-72-2] [87/5][47/5]
C <sub>8</sub> H <sub>9</sub> ClO	4-chlorophenethyl alcohol (426–673)	59.3	(411)	A	[1875-88-3] [87/5][99/16]
C <sub>8</sub> H <sub>9</sub> ClO	4-chloro-1-ethoxybenzene (395–485)	49.5	(410)	A	[622-61-7] [87/5][99/16]
C <sub>8</sub> H <sub>9</sub> ClO <sub>2</sub>	ethylene glycol, 4-chlorophenyl ether (410–554)	68.5	(425)	A	[7477-64-7] [87/5][99/16]
C <sub>8</sub> H <sub>9</sub> ClO <sub>3</sub>	3-chloro-2,6-dimethoxyphenol (293–323)	68.6	(308)	CGC	[99/13]
C <sub>8</sub> H <sub>9</sub> Cl <sub>3</sub> O <sub>4</sub>	2-acetyl-4,4,4-trichloro-3-oxobutyric acid, ethyl ester (374–409)	53.1	(389)	A	[87/5][99/16]
C <sub>8</sub> H <sub>9</sub> I	(1-iodoethyl)benzene (303–340)	59.9 ± 0.4	(298)	GS	[10604-60-1] [02/29]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>9</sub> N	2-methyl-5-vinylpyridine (342–457)	55.2	(357)	A	[140-76-1] [87/5]
	(342–457)	54.5	(357)		[61/19][84/9]
C <sub>8</sub> H <sub>9</sub> N	N-methylbenzaldehyde-imine (283–318)	51.1±0.2	(301)	GS	[97/9]
		51.2±0.2	(298)	GS	[97/9]
C <sub>8</sub> H <sub>9</sub> NO	acetanilide (473–577)	64.8	(488)	A	[103-84-4] [87/5]
		66.3	(402)		[47/5]
C <sub>8</sub> H <sub>9</sub> NO <sub>2</sub>	anthranilic acid, methyl ester (299–333)	62.3	(314)	A, ME	[134-20-3] [87/5][54/7]
C <sub>8</sub> H <sub>9</sub> NO <sub>2</sub>	2-nitro-1,3-dimethylbenzene (284–323)	57.2±0.8	(303)	GS	[81-20-9] [00/15]
		57.5±0.8	(298)		[00/15]
		49.7	(388)	A	[87/5]
C <sub>8</sub> H <sub>9</sub> NO <sub>2</sub>	4-nitro-1,3-dimethylbenzene (368–518)	56.7	(383)	A	[89-87-2] [87/5]
		57.3	(353)		[47/5]
C <sub>8</sub> H <sub>9</sub> NO <sub>2</sub>	1,2-dimethyl-3-nitrobenzene (383–518)	59.4	(398)		[83-41-0] [84/9]
C <sub>8</sub> H <sub>9</sub> NO <sub>2</sub>	1,2-dimethyl-4-nitrobenzene (399–536)	63.6	(414)		[99-51-4] [84/9]
C <sub>8</sub> H <sub>9</sub> NO <sub>2</sub>	2-nitro-1-ethylbenzene (284–323)	62.7±0.4	(303)	GS	[612-22-6] [00/15]
		63.0±0.4	(298)		[00/15]
		56.3	(368)	A	[87/5]
C <sub>8</sub> H <sub>9</sub> NO <sub>2</sub>	4-nitro-1-ethylbenzene (353–433)	59.4	(368)	A	[100-12-9] [87/5]
C <sub>8</sub> H <sub>9</sub> N <sub>3</sub>	2,2-dicyanohexanenitrile (288–323)	61.0±0.2		GS	[94/5]
C <sub>8</sub> H <sub>10</sub>	1,2-dimethylbenzene (373–423)	42.9	(298)	CGC	[95-47-6] [95/21]
		41.1	(348)	A	[87/5]
		38.0	(431)	A	[87/5]
		36.7	(486)	A	[87/5]
		36.7	(582)	A	[87/5]
		39.8	(401)		[82/3]
		43.4	(298)		[71/28]
		43.4±0.1	(298)		[47/7]
		40.8	(352)	C	[45/2][49/6]
		45.0	(288)	MM	[43/1][84/9]
C <sub>8</sub> H <sub>10</sub>	1,3-dimethylbenzene (360–410)	39.2	(375)		[108-38-3] [02/9]
		40.7	(342)		[89/7]
		44.7	(282)	A	[87/5]
		37.5	(427)	A	[87/5]
		36.4	(476)	A	[87/5]
		36.2	(565)	A	[87/5]
		38.7	(395)		[83/2]
		42.7	(298)		[71/28]
		42.7±0.1	(298)	C	[47/7]
		40.4	(346)	MM	[87/5][45/2] [49/6]
C <sub>8</sub> H <sub>10</sub>	1,4-dimethylbenzene (373–423)	43.2	(288)		[43/1][84/9]
		42.3	(298)	CGC	[106-42-3] [95/21]
		43.0±0.1	(298)		[90/3]
		42.3±0.01	(298)		[88/16]
		40.3	(353)		[88/7]
		37.3	(426)	A	[87/5]
		36.1	(475)	A	[87/5]
		36.2	(566)	A	[87/5]
		36.0±0.1	(411)	C	[85/10]
		34.5±0.1	(436)	C	[85/10]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>8</sub> H <sub>10</sub>	(380–410)	30.5±0.1	(484)	C	[85/10]	
		24.7±0.1	(540)	C	[85/10]	
		37.3	(395)		[82/3]	
		42.3±0.1	(298)	C	[81/10]	
		42.6	(298)		[74/13]	
	(286–453)	42.4	(301)	IPM, EB	[87/5][74/11]	
		42.4	(298)		[71/28]	
	(303–343)	41.6	(318)		[68/23]	
		42.4±0.1	(298)	C	[47/7]	
	(332–413)	40.1	(347)	MM	[45/2][49/6]	
		ethylbenzene				[100-41-4]
	(298–420)	41.8	(313)	A	[87/5]	
		37.0	(424)	A	[87/5]	
		35.8	(472)	A	[87/5]	
		40.6	(335)		[86/13]	
35.5		(564)	A	[87/5]		
40.5±0.1		(328)	C	[82/10]		
39.5±0.1		(343)	C	[82/10]		
38.6±0.1		(358)	C	[82/10]		
42.4±0.1		(298)	C	[81/10]		
42.3		(298)		[71/28]		
C <sub>8</sub> H <sub>10</sub> F <sub>3</sub> NO <sub>3</sub>	42.2±0.1	(298)	C	[47/7]		
	40.0	(345)	MM	[45/2][49/6]		
	N-trifluoroacetyl- <i>l</i> -proline, methyl ester				[715-58-2]	
	(303–523)	57.9	(318)	A	[87/5][99/16]	
	C <sub>8</sub> H <sub>10</sub> F <sub>3</sub> NO <sub>5</sub>	N-trifluoroacetyl- <i>l</i> -aspartic acid, dimethyl ester				[81084-01-7]
		(303–423)	58.2	(318)	A	[87/5][99/16]
	C <sub>8</sub> H <sub>10</sub> NO <sub>5</sub> PS	O,O-dimethyl-O-(4-nitrophenyl) thiophosphate				[298-00-0]
		(293–427)	88.9	(308)	A	[87/5]
	C <sub>8</sub> H <sub>10</sub> N <sub>2</sub> O <sub>2</sub>	87.0		GS	[79/19]	
		3-nitro- <i>N,N</i> -dimethylaniline				[619-31-8]
(427–558)		52.3	(442)	A, GS, EB	[87/5][60/4]	
C <sub>8</sub> H <sub>10</sub> O	(357–492)	48.2	(372)		[55/9]	
	2,3-dimethylphenol				[526-75-0]	
C <sub>8</sub> H <sub>10</sub> O	(433–492)	52.1	(448)	A, GS, EB	[87/5][60/4]	
	2,4-dimethylphenol				[105-67-9]	
C <sub>8</sub> H <sub>10</sub> O	(393–433)	64.6	(298)	CGC	[95/21]	
	(282–318)	65.9	(297)	A	[87/5]	
	(429–486)	51.8	(444)	A, GS, EB	[87/5][60/4]	
C <sub>8</sub> H <sub>10</sub> O	2,5-dimethylphenol				[95-87-4]	
	(427–485)	51.7	(442)	A, GS, EB	[87/5][60/4]	
C <sub>8</sub> H <sub>10</sub> O	2,6-dimethylphenol				[576-26-1]	
		75.6	(298)		[71/7]	
		75.1	(298)		[68/9]	
	(417–476)	48.5	(432)	A, GS, EB	[87/5][60/4]	
C <sub>8</sub> H <sub>10</sub> O	3,4-dimethylphenol				[96-65-8]	
		85.1	(298)		[71/7]	
		85.0	(298)		[68/9]	
C <sub>8</sub> H <sub>10</sub> O	(444–502)	54.9	(459)	A, GS, EB	[87/5][60/4]	
	3,5-dimethylphenol				[108-68-9]	
C <sub>8</sub> H <sub>10</sub> O		82.0	(298)		[71/7]	
	(427–497)	55.3	(442)	A, GS, EB	[87/5][60/4]	
C <sub>8</sub> H <sub>10</sub> O	benzyl methyl ether				[538-86-3]	
	(274–314)	51.4±0.3	(298)	GS	[02/29]	
C <sub>8</sub> H <sub>10</sub> O	ethoxybenzene				[103-73-1]	
	(390–454)	44.5	(405)	A	[87/5][76/2]	
	(390–454)	50.7	(298)		[76/2]	
	(390–454)	40.7	(443)		[76/2]	
C <sub>8</sub> H <sub>10</sub> O		51.0±0.1	(298)	C	[75/3]	
	(400–454)	44.0	(415)		[65/7][84/9]	
	2-ethylphenol				[90-00-6]	
C <sub>8</sub> H <sub>10</sub> O	(393–433)	64.5	(298)	CGC	[95/21]	
	(423–491)	50.5	(438)	A, GS, EB	[87/5][63/10]	
	(277–318)	63.5	(292)	A, GS, EB	[87/5][63/10]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(359–480)	51.6	(374)		[55/9]
	(321–492)	51.4	(348)		[53/9]
	(321–492)	49.5	(373)		[53/9]
	(321–492)	48.6	(398)		[53/9]
	(321–492)	47.0	(423)		[53/9]
	(321–492)	43.1	(473)		[53/9]
C <sub>8</sub> H <sub>10</sub> O	3-ethylphenol				[620-17-7]
	(445–503)	53.1	(460)	A, GS, EB	[87/5][63/10]
	(277–323)	68.1	(292)	A, GS, EB	[87/5][63/10]
	(334–501)	58.3	(348)		[53/9]
	(334–501)	56.5	(373)		[53/9]
	(334–501)	55.2	(398)		[53/9]
	(334–501)	53.7	(423)		[53/9]
	(334–501)	48.8	(473)		[53/9]
C <sub>8</sub> H <sub>10</sub> O	4-ethylphenol				[123-07-9]
	(444–503)	53.2	(459)	A, GS, EB	[87/5][63/10]
	(337–503)	56.5	(348)		[53/9]
	(337–503)	54.7	(373)		[53/9]
	(337–503)	53.8	(398)		[53/9]
	(337–503)	51.3	(423)		[53/9]
	(337–503)	47.6	(473)		[53/9]
C <sub>8</sub> H <sub>10</sub> O	4-methylbenzyl alcohol				[589-18-4]
	(338–376)	64.2	(353)	A	[87/5]
C <sub>8</sub> H <sub>10</sub> O	( <i>dl</i> ) 1-phenylethanol				[13323-81-4]
	(353–480)	53.5	(368)	A	[87/5]
C <sub>8</sub> H <sub>10</sub> O	2-phenylethanol				[60-12-8]
	(394–613)	55.1	(409)	A	[87/5]
	(283–318)	68.4	(298)	A, ME	[87/5][54/10]
C <sub>8</sub> H <sub>10</sub> O	2-methylanisole				[578-58-5]
		45.2			[86/10]
C <sub>8</sub> H <sub>10</sub> O	4-methylanisole				[104-93-8]
		46.0			[86/10]
C <sub>8</sub> H <sub>10</sub> OS	4-methoxythioanisole				[1879-16-9]
		53.6			[86/10]
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub>	ethyl <i>trans</i> $\beta$ -(2-furyl)acrylate				[56/11]
	(428–500)	56.8	(464)		[56/11]
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub>	4-methoxybenzyl alcohol				[105-13-5]
	(394–424)	95.6	(409)	A	[87/5]
	(354–453)	71.7	(369)	EB	[85/9]
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub>	1,3-dihydroxy-2,5-dimethylbenzene				[488-87-9]
	(393–459)	74.7	(408)	A, GC	[87/5][75/24]
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub>	1,3-dihydroxy-4,5-dimethylbenzene				[527-55-9]
	(424–453)	67.5	(438)	A, GC	[87/5][75/24]
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub>	1,3-dihydroxy-4,6-dimethylbenzene				[615-89-4]
	(388–466)	74.7	(403)	A, GC	[75/24]
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub>	1,4-dihydroxy-2,5-dimethylbenzene				[615-90-7]
	(331–361)	101.1	(346)	A	[87/5]
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub>	1,3-dihydroxy-5-ethylbenzene				[4299-72-3]
	(408–479)	81.3	(423)	A, GC	[87/5][75/24]
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub>	1,2-dimethoxybenzene				[91-16-7]
		66.9			[58/25]
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub>	1,3-dimethoxybenzene				[151-10-0]
	(358–423)	60.8	(373)	A, GC	[87/5][75/24]
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub>	1,4-dimethoxybenzene				[150-78-7]
	(298–357)	62.1	(313)	A	[87/5]
		51.5			[86/10]
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub>	2-phenoxyethanol				[122-99-6]
	(351–519)	66.0	(366)	A	[87/5][47/5]
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub>	3-methoxy-4-hydroxytoluene				[2896-67-5]
	(356–495)	53.2	(371)	A	[87/5]
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub> S	benzyl methyl sulfone				[3112-90-1]
	(455–529)	64.9	(470)	A	[87/5][99/16]
C <sub>8</sub> H <sub>10</sub> O <sub>3</sub>	<i>cis</i> cyclohexane-1,2-dicarboxylic acid anhydride				[13149-00-3]
	(325–525)	48.8±0.1			[84/14]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>10</sub> O <sub>6</sub>	dioxobutanedioic acid, diethyl ester (343–507)	59.3	(358)	A	[59743-08-7] [87/5][47/5]
C <sub>8</sub> H <sub>10</sub> S	benzyl methyl sulfide (336–368)	51.8	(351)		[766-92-7] [99/16]
	(336–368)	50.8	(351)	A	[87/5]
	(323–358)	55.2±2.1	(298)		[62/20]
C <sub>8</sub> H <sub>10</sub> S	ethyl phenyl sulfide (338–367)	50.9	(353)		[622-38-8] [99/16]
	(338–477)	51.7	(353)	A	[87/5]
	(323–358)	53.6±2.1			[62/20]
C <sub>8</sub> H <sub>10</sub> S	2-(methylthio)toluene	50.2			[86/10]
C <sub>8</sub> H <sub>10</sub> S	4-(methylthio)toluene	50.2			[623-13-2] [86/10]
C <sub>8</sub> H <sub>11</sub> Cl <sub>3</sub> OS	2,3,3-trichloro-2-propenethioic acid, O-pentyl ester (413–455)	74.1		GC	[76619-94-8] [80/24]
C <sub>8</sub> H <sub>11</sub> F <sub>3</sub> O <sub>2</sub>	trifluoroacetic acid, cyclohexyl ester (345–420)	43.0	(360)	A, EB	[1549-45-7] [87/5][69/13] [99/16]
C <sub>8</sub> H <sub>11</sub> N	N,N-dimethylaniline (284–323)	53.7±0.5	(304)		[121-69-7] [97/21]
	(363–418)	49.2	(378)	A	[87/5]
	(302–467)	52.8±0.1	(298)	C	[82/18]
		47.6	(317)	A	[87/5][47/5]
C <sub>8</sub> H <sub>11</sub> N	2,4-dimethylaniline (295–339)	61.3±0.6	(317)		[95-68-1] [97/21]
	(383–485)	55.5	(398)	A	[87/5]
	(326–485)	56.9	(341)		[47/5]
C <sub>8</sub> H <sub>11</sub> N	2,5-dimethylaniline (295–339)	61.7±0.7	(317)		[95-78-3] [97/21]
C <sub>8</sub> H <sub>11</sub> N	2,6-dimethylaniline (286–326)	59.2±0.3	(306)		[87-62-7] [00/14]
		59.6±0.3	(298)		[00/14]
	(373–490)	48.5	(388)	A	[87/5]
	(317–491)	50.7	(332)		[47/5]
C <sub>8</sub> H <sub>11</sub> N	N-ethylaniline (279–318)	58.3±0.6	(298)		[103-69-5] [97/21]
	(311–477)	52.2	(326)	A	[87/5]
C <sub>8</sub> H <sub>11</sub> N	2-ethylaniline (283–323)	60.3±0.9	(304.3)	GS	[578-54-1] [00/14]
		60.6±0.9	(298)		[00/14]
C <sub>8</sub> H <sub>11</sub> N	4-ethylaniline (393–491)	53.1	(408)	A	[589-16-2] [87/5]
	(325–490)	54.6	(340)		[47/5]
C <sub>8</sub> H <sub>11</sub> N	5-ethyl-2-methylpyridine (348–451)	45.4	(363)	A	[104-90-5] [87/5]
	(253–276)	51.6	(264)	GS	[80/6]
C <sub>8</sub> H <sub>11</sub> N	$\alpha$ -methylbenzylamine (283–318)	54.7±0.3	(301)	GS	[98-84-0] [99/3]
	(283–318)	54.9±0.3	(298)	GS	[99/3]
C <sub>8</sub> H <sub>11</sub> N	( <i>dl</i> ) $\alpha$ -methylbenzylamine (292–318)	36.7	(305)	A	[618-36-0] [87/5]
		54.5±0.1	(298)	C	[87/8]
C <sub>8</sub> H <sub>11</sub> N	(+) $\alpha$ -methylbenzylamine	54.1±0.1	(298)	C	[87/8]
C <sub>8</sub> H <sub>11</sub> N	(-) $\alpha$ -methylbenzylamine	54.6±0.1	(298)	C	[87/8]
C <sub>8</sub> H <sub>11</sub> N	4-methylbenzylamine (353–466)	54.4	(368)	A	[104-84-7] [87/5]
C <sub>8</sub> H <sub>11</sub> N	2,3,5-trimethylpyridine (293–426)	44.0	(359)		[695-98-7] [95/4]
C <sub>8</sub> H <sub>11</sub> N	2,3,6-trimethylpyridine	48.5	(328)	C	[1462-84-6] [85/1]
		47.5	(343)	C	[85/1]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference		
C <sub>8</sub> H <sub>11</sub> N	2,4,6-trimethylpyridine (323–373) (303–424) (298–444)	45.7	(368)	C	[85/1] [108-75-8]		
		50.2	(298)	CGC	[95/21]		
		46.5	(363)		[95/4]		
		51.2	(313)	EB	[90/6]		
		50.3±0.2	(298)		[85/1]		
		48.3	(328)	C	[85/1]		
		47.2	(343)	C	[85/1]		
C <sub>8</sub> H <sub>11</sub> N	2-propylpyridine (338–445)	46.6	(353)	A	[622-39-9] [87/5]		
		C <sub>8</sub> H <sub>11</sub> N	3-propylpyridine (350–450)	49.9	(365)	A	[4673-31-8] [87/5]
				C <sub>8</sub> H <sub>11</sub> N	4-propylpyridine (354–465)	47.8	(369)
C <sub>8</sub> H <sub>11</sub> NO	2-anilinoethanol (377–553)	69.9	(392)			A	[122-98-5] [87/5][47/5]
		C <sub>8</sub> H <sub>11</sub> NO	2-ethoxyaniline (373–458)	57.3	(388)	A	[94-70-2] [87/5]
C <sub>8</sub> H <sub>11</sub> NO	4-ethoxyaniline (421–523)			61.2	(436)	A	[156-43-4] [87/5]
		C <sub>8</sub> H <sub>12</sub>	tricyclo[3.3.0.0 <sup>2,6</sup> ]octane (273–343)	40.0	(273)		[250-21-5] [88/9]
39.1	(298)				[88/9]		
38.3	(323)				[88/9]		
C <sub>8</sub> H <sub>12</sub>	cyclooctadiene (mixed isomers) (290–474)	34.6	(305)	A	[87/5]		
		C <sub>8</sub> H <sub>12</sub>	<i>cis cis</i> 1,5-cyclooctadiene	43.4±0.1	(298)	C	[1552-12-1] [96/18]
C <sub>8</sub> H <sub>12</sub>	1,5-cyclooctadiene (348–386)			40.9	(363)	A	[10092-71-4] [87/5]
		C <sub>8</sub> H <sub>12</sub>	<i>(dl trans)</i> 1,2-divinylcyclobutane (319–371) (350–385)	38.9±0.5	(298)	EB	[6553-48-6] [96/18]
39.1	(365)			A	[87/5]		
42.3	(298)				[73/8]		
39.0±0.5	(367)				[73/8]		
C <sub>8</sub> H <sub>12</sub>	<i>(dl)</i> 4-vinyl-1-cyclohexene (292–405)	40.1	(307)	A	[100-40-3] [87/5]		
C <sub>8</sub> H <sub>12</sub> Cl <sub>2</sub> O <sub>5</sub>	diethylene glycol <i>bis</i> (chloroacetate) (421–586)	87.3	(436)		[87/5][47/5] [99/16]		
C <sub>8</sub> H <sub>12</sub> N <sub>2</sub>	suberic acid dinitrile (303–339)	77.3	(318)	A	[629-40-3] [87/5]		
C <sub>8</sub> H <sub>12</sub> O	1-methylnorcamphor	47.6			[59348-18-4] [84/17]		
		C <sub>8</sub> H <sub>12</sub> O	2- <i>tert</i> -butylfuran (270–308) (270–308)	38.7±0.4	(289)	GS	[7040-43-9] [98/2]
38.1±0.4	(298)			GS	[98/2]		
C <sub>8</sub> H <sub>12</sub> O <sub>4</sub>	diethyl fumerate (326–492)	53.2	(341)	A	[623-91-6] [87/5][47/5]		
C <sub>8</sub> H <sub>12</sub> O <sub>4</sub>	diethyl maleate (330–498)	55.2	(345)	A	[141-05-9] [87/5][47/5]		
C <sub>8</sub> H <sub>12</sub> O <sub>4</sub> S	thiodiacetic acid, diethyl ether (385–448)	77.7	(400)		[925-47-3] [99/16]		
C <sub>8</sub> H <sub>14</sub>	<i>cis</i> bicyclo[3.3.0]octane (298–318)	54.9	(308)	A	[1755-05-1] [87/5]		
		41.5±0.4	(318)		[70/30]		
		43.1±0.8	(298)		[70/30]		
C <sub>8</sub> H <sub>14</sub>	<i>trans</i> bicyclo[3.3.0]octane (298–320)	49.6	(309)	A	[5597-89-7] [87/5]		
		41.3±0.4	(320)		[70/30]		
		42.7±0.8	(298)		[70/30]		
C <sub>8</sub> H <sub>14</sub>	<i>cis</i> bicyclo[4.2.0]octane (298–347)	51.1	(313)	A	[28282-35-1] [87/5]		

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>14</sub>	<i>cis</i> bicyclo[5.1.0]octane (297–322)	39.5±0.4	(347)		[70/30]
		42.7±1.2	(298)		[70/30]
C <sub>8</sub> H <sub>14</sub>	cyclooctene (273–411)	43.6±0.8	(309)	A	[16526-90-2] [87/5][70/30]
C <sub>8</sub> H <sub>14</sub>	vinylcyclohexane	42.0	(288)	A	[931-88-4] [87/5]
		41.6	(300)		[41/6]
C <sub>8</sub> H <sub>14</sub>	allylcyclopentane	39.7±0.2	(298)	GCC	[695-12-5] [79/17]
C <sub>8</sub> H <sub>14</sub>	2,5-dimethyl-1,5-hexadiene (330–388)	40.4±0.2	(298)	GCC	[3524-75-2] [79/17]
C <sub>8</sub> H <sub>14</sub>	3,3-dimethyl-1,5-hexadiene (293–371)	38.8	(345)	A	[627-58-7] [87/5]
C <sub>8</sub> H <sub>14</sub>	1-ethylcyclohexene (353–412)	35.2	(308)	A	[24253-25-6] [87/5]
C <sub>8</sub> H <sub>14</sub>	1-methylbicyclo[4.1.0]heptane (340–394)	39.1	(368)	A	[1453-24-3] [87/5]
		40.1	(347)	MM	[60/20]
C <sub>8</sub> H <sub>14</sub>	1-octyne	37.2	(355)	A	[2439-79-4] [87/5]
C <sub>8</sub> H <sub>14</sub>	2-octyne	42.3±0.1	(298)	C	[629-05-0] [83/7]
		38.5	(372)	A	[87/5][70/24] [84/9]
C <sub>8</sub> H <sub>14</sub>	3-octyne	44.5±0.1	(298)	C	[2809-67-8] [83/7]
		39.9	(383)	A	[87/5][70/24] [84/9]
C <sub>8</sub> H <sub>14</sub>	4-octyne	43.9	(298)		[15232-76-5] [U/1][85/6]
		39.7	(378)	A	[87/5][70/24] [84/9]
C <sub>8</sub> H <sub>14</sub>	4-octyne	42.7±0.1	(298)	C	[1942-45-6] [83/7]
		39.6	(377)	A	[87/5][70/24] [84/9]
C <sub>8</sub> H <sub>14</sub> Br <sub>2</sub>	1,2-dibromocyclooctane (292–354)	50.3	(307)	A	[29974-69-4] [87/5][41/6]
C <sub>8</sub> H <sub>14</sub> Cl <sub>2</sub> S	(2-chlorocyclohexyl)(2-chloroethyl) sulfide (293–333)	62.5	(308)	A, GS	[16660-53-0] [87/5][48/9] [99/16]
C <sub>8</sub> H <sub>14</sub> N <sub>2</sub>	2-piperidinopropionitrile (283–318)	57.6±0.3		GS	[97/10]
C <sub>8</sub> H <sub>14</sub> O	cyclooctanone (343–383)	54.4	(298)	CGC	[502-49-8] [95/21]
		53.6	(298)	CGC	[95/21]
		54.2	(298)	CGC	[95/21]
		47.3	(338)	A	[87/5]
		46.8	(409)	A, EB	[87/5][76/10]
C <sub>8</sub> H <sub>14</sub> O	2-ethyl-2-hexenal (326–448)	48.4	(341)	A	[66266-68-2] [87/5][61/12]
C <sub>8</sub> H <sub>14</sub> O	2-ethyl-4-methyl-2-pentenal (311–436)	46.7	(326)	A	[28419-86-5] [87/5][61/12]
C <sub>8</sub> H <sub>14</sub> O	6-methyl-5-hepten-2-one (364–393)	45.9	(379)		[110-93-0] [89/8]
		44.7±0.2	(390)		[88/4]
C <sub>8</sub> H <sub>14</sub> O	( <i>dl</i> ) 2-propylcyclopentanone (332–457)	46.0	(347)	A	[1193-70-0] [87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>2</sub>	octanolactone (345–380)	48.9±0.2	(362)	MM	[5698-29-3] [91/7]
		52.8±1.3	(298)	MM	[91/7]
C <sub>8</sub> H <sub>14</sub> O <sub>2</sub>	acrylic acid, neopentyl ester (301–325)	45.7	(313)	A	[87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>2</sub>	1,4-butanediol divinyl ether				[3891-33-6]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>14</sub> O <sub>2</sub>	(335–440) butyl methacrylate	49.0	(350)	A	[87/5] [97-88-1]
	(343–373)	47.4	(358)	A	[87/5]
	(344–437)	45.1	(359)	A	[87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>2</sub>	cyclopentanecarboxylic acid ethyl ester (275–308)	51.2±0.6		GS	[96/22]
C <sub>8</sub> H <sub>14</sub> O <sub>2</sub>	1,4-dioxaspiro[4.5]decane (278–308)	50.6±0.6	(298)	GS	[177-10-6] [98/21][02/32]
C <sub>8</sub> H <sub>14</sub> O <sub>2</sub>	cyclohexyl acetate (278–318)	51.7±0.2	(298)	GS	[622-45-7] [96/11]
	(368–446)	46.7	(383)	A, EB	[87/5][69/13]
C <sub>8</sub> H <sub>14</sub> O <sub>2</sub>	methacrylic acid, <i>tert</i> -butyl ester (313–410)	42.9	(328)	A	[585-07-9] [87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>2</sub>	pentyl acrylate (325–440)	44.9	(340)	A	[2998-23-4] [87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>3</sub>	butyric anhydride (349–470)	49.1	(364)	A	[106-31-0] [87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>3</sub>	diethylene glycol divinyl ether (336–470)	50.0	(351)	A	[764-99-8] [87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>3</sub>	2-ethylacetoacetic acid, ethyl ester (313–471)	53.3	(328)	A	[607-97-6] [87/5][47/5]
C <sub>8</sub> H <sub>14</sub> O <sub>3</sub>	isopropyl levulinate (321–481)	56.6	(336)	A	[21884-26-4] [87/5][47/5]
		52.0	(422)		[31/1]
C <sub>8</sub> H <sub>14</sub> O <sub>3</sub>	propyl levulinate (332–495)	56.3	(347)	A	[645-67-0] [87/5]
		54.0	(436)		[31/1]
C <sub>8</sub> H <sub>14</sub> O <sub>4</sub>	2-acetoxypropionic acid, propyl ester (318–469)	59.5	(333)	A	[87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>4</sub>	3-acetoxypropionic acid, propyl ester (361–373)	74.7	(367)	A	[87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>4</sub>	diethyl succinate (327–490)	56.5	(342)	A	[123-25-1] [87/5][47/5]
	diisopropyl oxalate (418–501)	57.8	(433)	A	[615-81-6] [87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>4</sub>	(316–467)	57.6	(331)	A	[87/5][47/5]
	dimethyl adipate (382–500)	58.8	(397)	A	[627-93-0] [87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>4</sub>	dipropyl oxalate (326–487)	57.8	(341)	A	[615-98-5] [87/5][47/5]
C <sub>8</sub> H <sub>14</sub> O <sub>4</sub>	2-methylmalonic acid, diethyl ester (312–475)	52.5	(327)	A	[609-08-5] [87/5][47/5]
C <sub>8</sub> H <sub>14</sub> O <sub>4</sub>	octanedioic acid (suberic acid) (445–619)	91.4	(460)	A	[505-48-6] [87/5][47/5]
C <sub>8</sub> H <sub>14</sub> O <sub>4</sub> S	thiodiacetic acid, diethyl ester (384–448)	77.3	(399)	A	[925-47-3] [87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>5</sub>	isopropyl[1-(methoxycarbonyl)ethyl] carbonate (330–493)	55.5	(345)	A	[87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>5</sub>	2-(lactyloxy)propionic acid, ethyl ester (321–389)	72.8	(336)	A	[87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>5</sub>	malic acid, diethyl ester (353–527)	59.6	(368)	A	[7554-12-3] [87/5][47/5]
	propyl[1-(methoxycarbonyl)ethyl] carbonate (373–495)	58.0	(388)	A	[87/5]
C <sub>8</sub> H <sub>14</sub> O <sub>6</sub>	( <i>d</i> ) diethyl tartrate (375–553)	65.9	(390)		[13811-71-7] [47/5]
	( <i>dl</i> ) diethyl tartrate (375–553)	67.3	(390)	A	[87-91-2] [87/5][47/5]
C <sub>8</sub> H <sub>14</sub> O <sub>6</sub> S	sulfonyldiacetic acid, diethyl ester (421–494)	88.2	(426)		[29771-87-7] [99/16]
	(421–494)	87.6	(436)	A	[87/5]
C <sub>8</sub> H <sub>15</sub> Br	(2-bromoethyl)cyclohexane (311–486)	54.2	(326)	A	[1647-26-3] [87/5][47/5]
					[70/14]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>15</sub> ClO	octanoyl chloride (343–373)	74.5	(358)	A	[111-64-8] [87/5][99/16]
C <sub>8</sub> H <sub>15</sub> ClO	5-methylheptanoyl chloride (338–373)	66.3	(353)	A	[87/5][99/16]
C <sub>8</sub> H <sub>15</sub> Cl <sub>3</sub> O <sub>4</sub>	trichlorohydrine pentaerythritol (404–449)	80.4	(419)		[65/10]
C <sub>8</sub> H <sub>15</sub> N	3-azabicyclo[3.2.2]nonane (303–443)	52.2	(318)	A	[283-24-9] [87/5]
C <sub>8</sub> H <sub>15</sub> N	octanenitrile (373–480)	50.0	(388)	A	[124-12-9] [87/5]
		56.8 ± 0.3	(298)	C	[77/5]
	(374–420)	49.8	(389)	EB	[71/4]
	(420–479)	48.0	(435)	EB	[71/4]
	(316–477)	56.7	(331)		[47/5]
C <sub>8</sub> H <sub>15</sub> NO	heptyl isocyanate (326–461)	47.5	(341)	A	[4747-81-3] [87/5]
C <sub>8</sub> H <sub>15</sub> NO	methacrylic acid, <i>N-tert</i> -butylamide (340–467)	49.6	(355)	A	[6554-73-0] [87/5]
C <sub>8</sub> H <sub>15</sub> NO <sub>2</sub>	methacrylic acid, 2-(dimethylamino)ethyl ester (372–460)	48.8	(387)	A	[2867-47-2] [87/5]
C <sub>8</sub> H <sub>15</sub> NO <sub>2</sub>	1-lactopiperidine (346–408)	62.1	(361)	A	[87/5]
C <sub>8</sub> H <sub>15</sub> NO <sub>2</sub>	<i>N</i> -acetyl- <i>N</i> -butylacetamide	64.4 ± 0.4	(298)	C	[1563-86-6] [65/12]
C <sub>8</sub> H <sub>15</sub> NO <sub>3</sub>	<i>N,N</i> -diethyloxamic acid, ethyl ester (349–525)	60.5	(364)	A	[5411-58-5] [87/5][47/5]
C <sub>8</sub> H <sub>16</sub>	1-ethyl-1-methylcyclopentane	38.8	(298)	C	[16747-50-5] [81/10]
C <sub>8</sub> H <sub>16</sub>	cyclooctane	43.1 ± 0.2		GC	[292-64-8] [89/16]
	(289–369)	43.3	(304)	A	[87/5]
	(373–434)	39.3	(388)	EB	[76/10]
		43.3 ± 0.2	(298)		[56/20]
	(369–467)	39.4	(384)	A, EB	[87/5][56/20]
C <sub>8</sub> H <sub>16</sub>	1,1-dimethylcyclohexane (271–303)	39.6 ± 0.1	(287)	GS	[590-66-9] [95/27]
		38.8 ± 0.1	(298)		[95/27]
		37.9	(298)		[75/12]
		37.8	(298)		[71/28]
	(313–395)	36.6	(328)	A	[87/5][49/6]
C <sub>8</sub> H <sub>16</sub>	<i>cis</i> 1,2-dimethylcyclohexane	39.4	(298)		[2207-01-4] [75/12]
		39.7	(298)		[71/28]
		35.5 ± 0.1	(370)	C	[51/2]
		34.5 ± 0.1	(387)	C	[51/2]
		39.7 ± 0.1	(298)	C	[47/7]
	(322–405)	38.0	(337)	A, MM	[87/5][45/2]
C <sub>8</sub> H <sub>16</sub>	( <i>dl</i> ) <i>trans</i> 1,2-dimethylcyclohexane	38.3	(298)		[6876-23-9] [75/12]
		38.4	(298)		[71/28]
		34.4 ± 0.1	(373)	C	[51/2]
		33.5 ± 0.1	(387)	C	[51/2]
		38.4 ± 0.1	(298)	C	[47/7]
	(316–399)	37.0	(331)	A, MM	[87/5][45/2]
C <sub>8</sub> H <sub>16</sub>	<i>cis</i> 1,3-dimethylcyclohexane (318–396)	36.8	(333)	A	[87/5] [75/12]
		38.1	(298)		[71/28]
		38.2	(298)		[71/28]
		34.9 ± 0.1	(363)	C	[51/2]
		33.3 ± 0.1	(385)	C	[51/2]
		38.2 ± 0.1	(298)	C	[47/7]
	(316–398)	37.7	(331)	MM	[45/2]
C <sub>8</sub> H <sub>16</sub>	( <i>dl</i> ) <i>trans</i> 1,3-dimethylcyclohexane (314–400)	37.9	(329)	A	[2207-03-6] [87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>16</sub>	<i>cis</i> 1,4-dimethylcyclohexane	39.1	(298)		[75/12]
		39.2	(298)		[71/28]
		39.2±0.1	(298)	C	[47/7]
		37.4	(329)	MM	[45/2]
					[624-29-3]
C <sub>8</sub> H <sub>16</sub>	<i>dl</i> <i>trans</i> 1,4-dimethylcyclohexane	39.0	(298)		[75/12]
		39.0	(298)		[71/28]
		39.0±0.1	(298)	C	[47/7]
		37.6	(332)	A, MM	[87/5][45/2]
					[2207-04-7]
C <sub>8</sub> H <sub>16</sub>	ethylcyclohexane	37.6	(298)		[75/12]
		37.9	(298)		[71/28]
		35.6±0.1	(341)	C	[51/2]
		34.6±0.1	(357)	C	[51/2]
		33.5±0.1	(377)	C	[51/2]
		39.9±0.1	(298)	C	[47/7]
		36.7	(328)	A, MM	[87/5][45/2]
					[1678-91-7]
		39.2±0.4	(298)	GC	[87/17]
		39.8±0.1	(313)	C	[81/14]
		38.9±0.1	(328)	C	[81/14]
37.9±0.1	(343)	C	[81/14]		
37.0±0.1	(358)	C	[81/14]		
36.3±0.1	(368)	C	[81/14]		
40.0±0.4	(298)	GCC	[78/16]		
40.4	(298)		[75/12]		
40.5	(298)		[41/28]		
40.5±0.1	(298)	C	[47/7]		
C <sub>8</sub> H <sub>16</sub>	propylcyclopentane	38.6	(338)	A, MM	[87/5][45/2]
					[2040-96-2]
		41.1	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	isopropylcyclopentane	41.1±0.1	(298)	C	[47/7]
		39.2	(338)	A, MM	[87/5][45/2]
C <sub>8</sub> H <sub>16</sub>	1,1,2-trimethylcyclopentane	37.9	(298)		[71/28]
		39.4±0.1	(298)	C	[47/7]
C <sub>8</sub> H <sub>16</sub>	1,1,3-trimethylcyclopentane	37.9	(335)	A, MM	[87/5][45/2]
					[4259-00-1]
C <sub>8</sub> H <sub>16</sub>	1-ethyl-1-methylcyclopentane	36.3	(324)	A, MM	[87/5][49/6]
					[4516-69-2]
C <sub>8</sub> H <sub>16</sub>	<i>dl</i> <i>cis</i> 1-ethyl-2-methylcyclopentane	35.4	(316)	A, MM	[87/5][49/6]
					[16747-50-5]
		36.7	(346)	A	[87/5]
C <sub>8</sub> H <sub>16</sub>	<i>dl</i> <i>cis</i> 1-ethyl-2-methylcyclopentane	40.2	(273)	IPM	[87/5][74/11]
		38.9	(298)		[71/28]
		37.3	(331)		[49/6]
					[930-89-2]
C <sub>8</sub> H <sub>16</sub>	<i>dl</i> <i>cis</i> 1-ethyl-2-methylcyclopentane	42.5	(253)	A	[87/5]
		39.3	(318)	A	[87/5]
		41.6	(273)	IPM	[74/11]
C <sub>8</sub> H <sub>16</sub>	<i>trans</i> 1-ethyl-2-methylcyclopentane	40.2	(298)		[71/28]
		38.3	(337)		[49/6]
C <sub>8</sub> H <sub>16</sub>	<i>cis</i> 1-ethyl-3-methylcyclopentane	39.3	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	<i>trans</i> 1-ethyl-3-methylcyclopentane	39.3	(298)		[41/7]
C <sub>8</sub> H <sub>16</sub>	1,1,2-trimethylcyclopentane	38.9	(298)		[41/7]
C <sub>8</sub> H <sub>16</sub>	1,1,3-trimethylcyclopentane	37.2	(298)		[4259-00-1]
C <sub>8</sub> H <sub>16</sub>	<i>cis, cis</i> 1,2,3-trimethylcyclopentane	36.0	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	<i>cis, cis</i> 1,2,3-trimethylcyclopentane	36.0	(298)		[4516-69-2]
C <sub>8</sub> H <sub>16</sub>	<i>cis, cis</i> 1,2,3-trimethylcyclopentane	38.9	(298)		[71/28]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>16</sub>	<i>cis, cis</i> 1,2,4-trimethylcyclopentane	38.1	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	<i>cis</i> 1,2- <i>trans</i> -3-trimethylcyclopentane	38.1	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	<i>cis</i> 1,2- <i>trans</i> -4-trimethylcyclopentane (311–392)	36.8	(326)	A, MM	[4850-28-6] [87/5][49/6]
C <sub>8</sub> H <sub>16</sub>	<i>trans</i> 1,2- <i>cis</i> -4-trimethylcyclopentane	36.8	(298)		[13398-35-1] [71/28]
C <sub>8</sub> H <sub>16</sub>	(305–385) 1-octene (373–423)	36.0 40.6 39.5±0.1 38.6±0.1 37.6±0.1 36.6±0.1 35.8±0.1	(320) (298) (313) (328) (343) (358) (368)	A, MM CGC C C C C	[87/5][49/6] [111-66-0] [95/21] [82/10] [82/10] [82/10] [82/10]
C <sub>8</sub> H <sub>16</sub>	(263–291) (260–291)	40.2 41.2	(277) (275)	MM HSA	[81/19] [81/19]
C <sub>8</sub> H <sub>16</sub>	(317–395) <i>cis</i> 2-octene	40.3±0.2 38.0 38.8	(298) (298) (332)	C A, MM	[77/1] [71/28] [87/5][50/6] [7642-04-8]
C <sub>8</sub> H <sub>16</sub>	(356–400) <i>trans</i> 2-octene (356–399)	40.2 37.8 37.9 40.2	(298) (371) (371) (298)	A A	[71/28] [87/5] [13389-42-9] [87/5] [71/28]
C <sub>8</sub> H <sub>16</sub>	<i>cis</i> 3-octene	39.7	(298)		[14850-22-7] [71/28]
C <sub>8</sub> H <sub>16</sub>	<i>trans</i> 3-octene (354–396)	37.6 40.2	(369) (298)	A	[14919-01-8] [87/5] [71/28]
C <sub>8</sub> H <sub>16</sub>	<i>cis</i> 4-octene (353–395)	37.2 39.7	(368) (298)	A	[7642-15-1] [87/5] [71/28]
C <sub>8</sub> H <sub>16</sub>	<i>trans</i> 4-octene (276–308) (276–308) (353–396)	43.2±0.3 42.9±0.3 37.4 39.7	(292) (298) (368) (298)	GS GS A	[14850-23-8] [00/7] [00/7] [87/5] [71/28]
C <sub>8</sub> H <sub>16</sub>	2-methyl-1-heptene	39.3	(298)		[15870-10-7] [71/28]
C <sub>8</sub> H <sub>16</sub>	3-methyl-1-heptene	38.5	(298)		[4810-09-7] [71/28]
C <sub>8</sub> H <sub>16</sub>	4-methyl-1-heptene	38.9	(298)		[13151-05-8] [71/28]
C <sub>8</sub> H <sub>16</sub>	5-methyl-1-heptene	38.9	(298)		[13151-04-7] [71/28]
C <sub>8</sub> H <sub>16</sub>	6-methyl-1-heptene	38.9	(298)		[5026-76-6] [71/28]
C <sub>8</sub> H <sub>16</sub>	2-methyl-2-heptene (257–396)	39.7 41.2	(298) (272)	A	[627-97-4] [71/28] [87/5][47/5]
C <sub>8</sub> H <sub>16</sub>	3-methyl- <i>cis</i> -2-heptene	39.7	(298)		[22768-19-0] [71/28]
C <sub>8</sub> H <sub>16</sub>	3-methyl- <i>trans</i> -2-heptene	39.7	(298)		[22768-20-3] [71/28]
C <sub>8</sub> H <sub>16</sub>	4-methyl- <i>cis</i> -2-heptene	38.9	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	4-methyl- <i>trans</i> -2-heptene	38.9	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	5-methyl- <i>cis</i> -2-heptene	39.3	(298)		[24608-84-2] [71/28]
C <sub>8</sub> H <sub>16</sub>	5-methyl- <i>trans</i> -2-heptene				[24608-85-3]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>16</sub>	6-methyl- <i>cis</i> -2-heptene	39.3	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	6-methyl- <i>trans</i> -2-heptene	39.3	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	2-methyl- <i>cis</i> -3-heptene	39.3	(298)		[51065-65-7] [71/28]
C <sub>8</sub> H <sub>16</sub>	2-methyl- <i>trans</i> -3-heptene	38.9	(298)		[20488-34-0] [71/28]
C <sub>8</sub> H <sub>16</sub>	3-methyl- <i>cis</i> -3-heptene	38.9	(298)		[692-96-6] [71/28]
C <sub>8</sub> H <sub>16</sub>	3-methyl- <i>trans</i> -3-heptene	39.7	(298)		[22768-17-8] [71/28]
C <sub>8</sub> H <sub>16</sub>	4-methyl- <i>cis</i> -3-heptene	39.7	(298)		[22768-18-9] [71/28]
C <sub>8</sub> H <sub>16</sub>	4-methyl- <i>trans</i> -3-heptene	39.7	(298)		[14255-24-4] [71/28]
C <sub>8</sub> H <sub>16</sub>	5-methyl- <i>cis</i> -3-heptene	39.7	(298)		[13714-85-7] [71/28]
C <sub>8</sub> H <sub>16</sub>	5-methyl- <i>trans</i> -3-heptene	38.9	(298)		[50422-80-5] [71/28]
C <sub>8</sub> H <sub>16</sub>	6-methyl- <i>cis</i> -3-heptene	38.9	(298)		[53510-18-2] [71/28]
C <sub>8</sub> H <sub>16</sub>	6-methyl- <i>trans</i> -3-heptene	38.9	(298)		[66225-19-2] [71/28]
C <sub>8</sub> H <sub>16</sub>	2-ethyl-1-hexene	38.9	(298)		[66225-20-5] [71/28]
C <sub>8</sub> H <sub>16</sub>	3-ethyl-1-hexene	39.7	(298)		[1632-16-2] [71/28]
C <sub>8</sub> H <sub>16</sub>	4-ethyl-1-hexene	38.5	(298)		[3404-58-8] [71/28]
C <sub>8</sub> H <sub>16</sub>	2,3-dimethyl-1-hexene	38.9	(298)		[16746-85-3] [71/28]
C <sub>8</sub> H <sub>16</sub>	2,4-dimethyl-1-hexene	38.5	(298)		[16746-86-4] [71/28]
C <sub>8</sub> H <sub>16</sub>	2,5-dimethyl-1-hexene	38.5	(298)		[16746-87-5] [71/28]
C <sub>8</sub> H <sub>16</sub>	3,3-dimethyl-1-hexene	38.9	(298)		[6795-92-4] [71/28]
C <sub>8</sub> H <sub>16</sub>	3,4-dimethyl-1-hexene	36.0	(298)		[3404-77-1] [71/28]
C <sub>8</sub> H <sub>16</sub>	3,5-dimethyl-1-hexene	38.9	(298)		[16745-94-1] [71/28]
C <sub>8</sub> H <sub>16</sub>	4,4-dimethyl-1-hexene	38.1	(298)		[7423-69-0] [71/28]
C <sub>8</sub> H <sub>16</sub>	4,5-dimethyl-1-hexene	31.0	(298)		[1647-08-1] [71/28]
C <sub>8</sub> H <sub>16</sub>	5,5-dimethyl-1-hexene	38.5	(298)		[16106-59-5] [71/28]
C <sub>8</sub> H <sub>16</sub>	3-ethyl- <i>cis</i> -2-hexene	37.7	(298)		[7116-86-1] [71/28]
C <sub>8</sub> H <sub>16</sub>	3-ethyl- <i>trans</i> -2-hexene	39.7	(298)		[36880-72-5] [71/28]
C <sub>8</sub> H <sub>16</sub>	4-ethyl- <i>cis</i> -2-hexene	39.7	(298)		[19781-63-6] [71/28]
C <sub>8</sub> H <sub>16</sub>	4-ethyl- <i>trans</i> -2-hexene	38.9	(298)		[54616-49-8] [71/28]
C <sub>8</sub> H <sub>16</sub>	2,3-dimethyl-2-hexene	38.9	(298)		[19781-63-6] [71/28]
C <sub>8</sub> H <sub>16</sub>	2,4-dimethyl-2-hexene	39.7	(298)		[7145-20-2] [71/28]
C <sub>8</sub> H <sub>16</sub>	2,5-dimethyl-2-hexene	38.5	(298)		[14255-23-3] [71/28]
C <sub>8</sub> H <sub>16</sub>	3,4-dimethyl- <i>cis</i> -2-hexene	38.9	(298)		[3404-78-2] [71/28]
C <sub>8</sub> H <sub>16</sub>					[19550-81-3]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>16</sub>	3,4-dimethyl- <i>trans</i> -2-hexene	39.3	(298)		[71/28] [19550-82-4]
C <sub>8</sub> H <sub>16</sub>	3,5-dimethyl- <i>cis</i> -2-hexene	39.3	(298)		[71/28] [66225-31-8]
C <sub>8</sub> H <sub>16</sub>	3,5-dimethyl- <i>trans</i> -2-hexene	38.9	(298)		[71/28] [66225-12-5]
C <sub>8</sub> H <sub>16</sub>	4,4-dimethyl- <i>cis</i> -2-hexene	38.9	(298)		[71/28] [66225-13-6]
C <sub>8</sub> H <sub>16</sub>	4,4-dimethyl- <i>trans</i> -2-hexene	38.1	(298)		[71/28] [19550-83-5]
C <sub>8</sub> H <sub>16</sub>	4,5-dimethyl- <i>cis</i> -2-hexene	38.1	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	4,5-dimethyl- <i>trans</i> -2-hexene	38.5	(298)		[71/28] [66225-14-7]
C <sub>8</sub> H <sub>16</sub>	5,5-dimethyl- <i>cis</i> -2-hexene	38.5	(298)		[71/28] [39761-61-0]
C <sub>8</sub> H <sub>16</sub>	5,5-dimethyl- <i>trans</i> -2-hexene	38.1	(298)		[71/28] [39782-43-9]
C <sub>8</sub> H <sub>16</sub>	3-ethyl-3-hexene	38.1	(298)		[71/28] [16789-51-8]
C <sub>8</sub> H <sub>16</sub>	<i>cis</i> 2,2-dimethyl-3-hexene (319–380)	39.3	(298)		[71/28] [690-92-6]
		35.3	(334)	A	[87/5]
		37.2	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	(305–379) <i>trans</i> 2,2-dimethyl-3-hexene (306–379)	36.1	(320)	MM	[60/20] [690-93-7]
		36.1	(321)	A	[87/5]
		37.2	(298)		[71/28]
	(303–374)	36.3	(318)	MM	[60/20]
C <sub>8</sub> H <sub>16</sub>	<i>cis</i> 2,3-dimethyl-3-hexene				[59643-75-3]
C <sub>8</sub> H <sub>16</sub>	<i>trans</i> 2,3-dimethyl-3-hexene	38.9	(298)		[71/28] [66225-30-7]
C <sub>8</sub> H <sub>16</sub>	<i>cis</i> 2,4-dimethyl-3-hexene	38.9	(298)		[71/28] [37549-89-6]
C <sub>8</sub> H <sub>16</sub>	<i>trans</i> 2,4-dimethyl-3-hexene	38.5	(298)		[71/28] [61847-78-7]
C <sub>8</sub> H <sub>16</sub>	<i>cis</i> 2,5-dimethyl-3-hexene	38.5	(298)		[71/28] [10557-44-5]
C <sub>8</sub> H <sub>16</sub>	<i>trans</i> 2,5-dimethyl-3-hexene	37.2	(298)		[71/28] [692-70-6]
C <sub>8</sub> H <sub>16</sub>	<i>cis</i> 3,4-dimethyl-3-hexene	37.5	(298)		[71/28] [19550-87-9]
C <sub>8</sub> H <sub>16</sub>	<i>trans</i> 3,4-dimethyl-3-hexene	39.7	(298)		[71/28] [19550-88-0]
C <sub>8</sub> H <sub>16</sub>	2- <i>n</i> -propyl-1-pentene	39.7	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	2-isopropyl-1-pentene	39.3	(298)		[71/28] [61847-79-8]
C <sub>8</sub> H <sub>16</sub>	2-ethyl-3-methyl-1-pentene (307–389)	38.8	(298)		[71/28] [3404-67-9]
		36.4	(322)	A	[87/5]
		38.9	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	(308–383) 2-ethyl-4-methyl-1-pentene	36.4	(323)	MM	[60/20] [3404-80-6]
		38.5	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	3-ethyl-2-methyl-1-pentene				[19780-66-6]
C <sub>8</sub> H <sub>16</sub>	3-ethyl-3-methyl-1-pentene	37.7	(298)		[71/28] [6196-60-7]
C <sub>8</sub> H <sub>16</sub>	3-ethyl-4-methyl-1-pentene	38.9	(298)		[71/28] [61847-80-1]
C <sub>8</sub> H <sub>16</sub>	2,3,3-trimethyl-1-pentene	38.5	(298)		[71/28] [560-23-6]
C <sub>8</sub> H <sub>16</sub>	2,3,4-trimethyl-1-pentene	38.5	(298)		[71/28] [565-76-4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>16</sub>	2,4,4-trimethyl-1-pentene (343–381)	38.5	(298)		[71/28] [107-39-1]
		33.5	(358)	A	[87/5]
		35.7	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	3,3,4-trimethyl-1-pentene (301–375)	35.1	(316)	MM	[60/20] [564-03-4]
		38.1	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	2-methyl-3-ethyl-2-pentene				[19780-67-7]
C <sub>8</sub> H <sub>16</sub>	4-methyl-3-ethyl- <i>cis</i> -2-pentene	39.3	(298)		[71/28] [42067-48-1]
		39.3	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	4-methyl-3-ethyl- <i>trans</i> -2-pentene				[42067-49-2]
C <sub>8</sub> H <sub>16</sub>	2,3,4-trimethyl-2-pentene	38.9	(298)		[71/28] [565-77-5]
		39.3	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	2,4,4-trimethyl-2-pentene (319–380)	35.7	(334)	A	[87/5] [107-40-4]
		39.3	(298)		[71/28]
		37.2	(320)	MM	[60/20]
C <sub>8</sub> H <sub>16</sub>	3,4,4-trimethyl- <i>cis</i> -2-pentene				[39761-64-3]
C <sub>8</sub> H <sub>16</sub>	3,4,4-trimethyl- <i>trans</i> -2-pentene	38.9	(298)		[71/28] [39761-64-3]
		38.9	(298)		[71/28]
C <sub>8</sub> H <sub>16</sub>	3-methyl-2-isopropyl-1-butene				[71/28]
C <sub>8</sub> H <sub>16</sub>	3,3-dimethyl-2-ethyl-1-butene				[71/28]
C <sub>8</sub> H <sub>16</sub> Br <sub>2</sub>	1,1-dibromooctane (412–571)	38.5	(298)		[71/28] [62168-26-7]
		57.1	(427)	A, EST	[87/5][56/16] [70/14][99/16]
C <sub>8</sub> H <sub>16</sub> Cl <sub>2</sub>	1,1-dichlorooctane (380–480) (382–533)	57.7	(298)	A	[20395-24-8] [87/12][91/2]
		51.4	(397)	A, EST	[87/5][56/16] [70/14][99/16]
C <sub>8</sub> H <sub>16</sub> Cl <sub>2</sub>	1,2-dichlorooctane (370–490) (370–490)	52.0	(385)		[21948-46-9] [82/12][99/16]
		57.6	(298)		[82/12][92/1]
C <sub>8</sub> H <sub>16</sub> Cl <sub>2</sub>	1,8-dichlorooctane (410–510) (410–510)	55.9	(426)		[2162-99-4] [99/16]
		65.6	(298)		[88/11][91/2]
C <sub>8</sub> H <sub>16</sub> Cl <sub>2</sub>	erythro-4,5-dichlorooctane (351–480)	47.3	(415)		[2162-99-4] [99/16]
C <sub>8</sub> H <sub>16</sub> F <sub>2</sub>	1,1-difluorooctane (329–459)	44.2	(344)	A, EST	[61350-03-6] [87/5][56/16] [70/14][99/16]
C <sub>8</sub> H <sub>16</sub> NO <sub>2</sub>	ethyl 2-(N,N-dimethylamino)-2-methylpropanoate (278–313)	51.6 ± 0.5	(298)	GS	[96/20]
C <sub>8</sub> H <sub>16</sub> N <sub>2</sub>	methyl ethyl ketazine (439–524)	40.0			[5921-54-0] [93/21]
C <sub>8</sub> H <sub>16</sub> N <sub>2</sub>	1,1,4,4-tetramethyltetramethylenediazine	50.1 ± 0.4	(298)	C	[76/3]
C <sub>8</sub> H <sub>16</sub> N <sub>2</sub>	2-diethylamino-2-methylpropionitrile	56.3 ± 1.1		GS	[97/10]
C <sub>8</sub> H <sub>16</sub> O	octanal (313–353) (293–438)	53.8	(298)	CGC	[124-13-0] [95/21]
		43.4	(308)	A	[87/5]
		51.3 ± 0.2	(298)		[81/18]
C <sub>8</sub> H <sub>16</sub> O	2,4-dimethyl-3-hexanone (350–418)	42.5	(365)	A	[18641-70-8] [87/5]
C <sub>8</sub> H <sub>16</sub> O	1-ethylcyclohexanol (324–440)	46.9	(339)	A	[1940-18-7] [87/5]
C <sub>8</sub> H <sub>16</sub> O	2-methyl-3-heptanone (350–428)	43.5	(365)	A	[13019-20-0] [87/5]
C <sub>8</sub> H <sub>16</sub> O	6-methyl-3-hepten-2-ol				[51500-48-2]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>16</sub> O	(314–449)	59.7	(329)	A	[87/5][47/5]
	( <i>dl</i> ) 6-methyl-5-hepten-2-ol				[4630-06-2]
C <sub>8</sub> H <sub>16</sub> O	(314–448)	57.0	(329)	A	[87/5][47/5]
	2-octanone				[111-13-7]
C <sub>8</sub> H <sub>16</sub> O	(343–383)	52.6	(298)	CGC	[95/21]
	(317–446)	49.8	(332)	A	[87/5]
		52.0±0.3	(298)	GCC	[79/7]
	(324–520)	49.1	(339)	A	[87/5][75/8]
	(324–520)	51.8	(298)		[75/8]
	(296–446)	50.6	(311)		[47/5]
C <sub>8</sub> H <sub>16</sub> O	3-octanone				[106-68-3]
	(293–348)	43.8	(308)	A	[87/5]
C <sub>8</sub> H <sub>16</sub> O	4-octanone				[589-63-9]
	(288–433)	36.4	(303)	A	[87/5]
C <sub>8</sub> H <sub>16</sub> O	1-propylcyclopentanol				[1604-02-0]
	(344–447)	64.2	(359)	A	[87/5]
C <sub>8</sub> H <sub>16</sub> O	2,2,4-trimethyl-3-pentanone				[5857-36-2]
	(287–408)	55.7	(302)	A	[87/5][47/5]
		43.3±0.2	(298)	C	[70/18]
		43.3±0.1	(298)	C	[66/2]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	3-butoxy-2-butanone				
	(323–398)	36.7	(338)	A	[87/5]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	<i>trans</i> 2,2,4,6-tetramethyl-1,3-dioxane				
		41.9±1.2	(298)		[67/37]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	<i>cis</i> 2,2,4,6-tetramethyl-1,3-dioxane				
		42.3±1.2	(298)		[67/37]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	1,1-dimethoxycyclohexane				[933-40-4]
	(278–308)	48.6±0.2	(298)	GS	[02/32]
	(278–308)	49.0±0.2		GS	[98/21]
	(315–347)	52.4	(331)	EB	[94/16]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	octanoic acid (caprylic acid)				[124-07-2]
	(297–343)	79.8±0.6	(320)	GS	[00/6]
	(297–434)	81.0±0.6	(298)	GS	[00/6]
	(353–393)	81.2	(298)	CGC	[95/21]
	(417–514)	66.6	(432)	A, EB	[87/9]
	(296–331)	85.3	(311)	A	[87/5]
	(360–512)	74.4	(375)	A	[87/5]
		80.0	(290)		[82/4]
	(291–303)	82.9±1.0	(298)	TE	[79/4]
		70.0	(407)	I	[43/7]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	ethyl hexanoate				[123-66-0]
	(345–374)	47.4±0.3	(359)	EB	[91/7]
	(345–379)	51.5±1.3	(298)	EB	[91/7]
	(396–449)	51.8	(311)	A	[87/5]
	(300–376)	48.6	(315)	A	[87/5]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	( <i>dl</i> ) 2-ethylhexanoic acid				[149-57-5]
	(397–514)	76.3±0.9	(298)	EB	[97/8]
	(403–500)	61.8	(418)	A	[87/5]
		75.6±0.5	(298)	C	[76/1]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	hexyl acetate				[142-92-7]
		52.1	(298)	GC	[97/13]
	(303–444)	50.9	(318)		[95/16]
	(304–381)	48.9	(319)	A	[87/5]
	(378–459)	46.2	(387)	DTA	[80/8]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	isobutyl butyrate				[539-90-2]
	(277–430)	41.7	(292)	A	[87/5][47/5]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	isobutyl isobutyrate				[97-85-8]
	(278–313)	44.5±0.1	(298)	GS	[96/11]
	(277–421)	46.9	(292)	A	[87/5][47/5]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	isopentyl propionate				[624-54-4]
	(281–434)	44.1	(296)	A	[87/5]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	methyl heptanoate				[106-73-0]
		49.1	(350)		[02/27]
		50.2±0.1	(326)		[02/27]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		51.8±0.1	(298)		[02/27]
	(313–363)	53.4	(298)	CGC	[95/21]
	(433–473)	53.7	(298)	CGC	[95/21]
	(313–353)	53.5	(298)	CGC	[95/21]
		49.7±0.5	(298)	GC	[87/17]
		53.1±0.4	(298)	GCC	[80/5]
		53.1±0.1	(298)	C	[80/5]
		51.6±0.5	(298)	C	[77/1]
	(332–402)	49.0	(347)	A, EST	[87/5][63/16]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	4-methylvaleric acid, ethyl ester (284–434)	45.4	(299)	A	[25415-67-2] [87/5][47/5]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	propyl isovalerate (281–429)	44.3	(296)	A	[557-00-6] [87/5][47/5]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	ethyl hexanoate (279–309)	50.8±0.4	(294)	GS	[123-66-0] [99/4]
	(279–309)	50.6±0.4	(298)	GS	[99/4]
C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	[(3-methylbutoxy)methyl]oxirane				[15965-97-6]
		55.8±1.9			[87/14]
C <sub>8</sub> H <sub>16</sub> O <sub>3</sub>	2-butoxyethyl acetate				[112-07-2]
		59.5±0.1	(298)	C	[70/17]
C <sub>8</sub> H <sub>16</sub> O <sub>3</sub>	2-butoxypropionic acid, methyl ester (348–417)	51.9	(363)	A	[4126-55-0] [87/5]
C <sub>8</sub> H <sub>16</sub> O <sub>3</sub>	3-butoxypropionic acid, methyl ester (311–469)	51.1	(326)	A	[14144-34-4] [87/5]
C <sub>8</sub> H <sub>16</sub> O <sub>3</sub>	3-ethoxypropionic acid, propyl ester (343–461)	48.6	(358)	A	[87/5][54/15]
C <sub>8</sub> H <sub>16</sub> O <sub>3</sub>	ethylene glycol monobutyl ether acetate (293–465)	51.9	(308)	A	[112-07-2] [87/5]
C <sub>8</sub> H <sub>16</sub> O <sub>3</sub>	2-hydroxyisobutyric acid, butyl ester (384–458)	47.7	(399)	A	[816-50-2] [87/5]
C <sub>8</sub> H <sub>16</sub> O <sub>3</sub>	3-methoxypropionic acid, butyl ester (311–469)	50.9	(326)	A	[4195-88-4] [87/5]
C <sub>8</sub> H <sub>16</sub> O <sub>3</sub>	pentyl lactate (288–469)	73.9	(303)	A	[6382-06-5] [87/5]
C <sub>8</sub> H <sub>16</sub> O <sub>3</sub>	diethylene glycol monoethyl ether acetate (293–491)	51.7	(308)	A	[112-15-2] [87/5]
C <sub>8</sub> H <sub>16</sub> O <sub>4</sub>	1,4,7,10-tetraoxacyclododecane (12-crown-4)				[294-93-9]
		65.7±3.7	(298)	CGC	[00/9]
		65.6±0.4	(298)	C	[82/9]
C <sub>8</sub> H <sub>17</sub> Br	1-bromooctane (323–363)	55.1	(298)	CGC	[111-83-1] [95/21]
		55.8±0.1	(298)	C	[76/6][77/1]
	(373–475)	49.3	(388)	A, EST	[87/5][61/13] [70/14]
C <sub>8</sub> H <sub>17</sub> Br	( <i>dl</i> ) 2-bromooctane (343–463)	48.4	(358)	A	[555-35-7] [87/5][99/16]
C <sub>8</sub> H <sub>17</sub> Cl	1-chlorooctane (330–460)	51.4	(298)		[111-85-3] [84/9][91/2]
	(327–457)	50.3	(342)	A, DTA	[87/5][69/5]
		52.4±0.1	(298)	C	[68/1]
C <sub>8</sub> H <sub>17</sub> Cl	( <i>dl</i> ) 2-chlorooctane (330–446)	47.8	(345)	A	[628-61-5] [87/5][99/16]
C <sub>8</sub> H <sub>17</sub> Cl	(3-chloromethyl)heptane (371–443)	44.2	(386)	A	[123-04-6] [87/5][99/16]
C <sub>8</sub> H <sub>17</sub> ClO <sub>4</sub>	triethylene glycol mono(2-chloroethyl) ether (383–555)	68.6	(398)	A	[5197-66-0] [87/5][47/5]
C <sub>8</sub> H <sub>17</sub> Cl <sub>2</sub> N	N-butyl <i>bis</i> (2-chloroethyl)amine (273–380)	60.7	(288)	A,GS	[42520-97-8] [87/5][48/13] [99/16]
C <sub>8</sub> H <sub>17</sub> Cl <sub>2</sub> N	N- <i>sec</i> -butyl <i>bis</i> (2-chloromethyl)amine (273–373)	59.5	(288)	GS	[87/5][48/13] [99/16]
C <sub>8</sub> H <sub>17</sub> Cl <sub>2</sub> N	N- <i>tert</i> -butyl <i>bis</i> (2-chloromethyl)amine (273–345)	58.4	(288)	A, GS	[10125-86-7] [87/5][48/13]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>17</sub> Cl <sub>2</sub> N	N-isobutyl bis(2-chloromethyl)amine (273–345)	60.3	(288)	A, GS	[99/16]
					[87289-70-1]
C <sub>8</sub> H <sub>17</sub> F	1-fluorooctane (307–446)	49.7	(298)	A, EST	[87/5][48/13]
		44.1	(322)		[99/16]
C <sub>8</sub> H <sub>17</sub> I	1-iodooctane (391–554)	50.7	(406)	A, EST	[463-11-6]
					[U/1][85/6]
C <sub>8</sub> H <sub>17</sub> NO	N-propylpiperidine (275–314)	45.2±0.4	(294)	GS	[87/5][61/13]
		44.9±0.4	(298)	GS	[70/14]
C <sub>8</sub> H <sub>17</sub> NO	butyric acid, N,N-diethylamide (298–373)	38.7	(313)	A	[629-27-6]
					[87/5][61/13]
C <sub>8</sub> H <sub>17</sub> NO	caprylaldehyde oxime (313–400)	71.3	(328)	A	[70/14]
					[5470-07-0]
C <sub>8</sub> H <sub>17</sub> NO	2-octanone oxime (293–487)	67.5	(308)	A	[98/12]
					[98/12]
C <sub>8</sub> H <sub>17</sub> NO	3-octanone oxime (293–400)	67.2	(308)	A	[1114-76-7]
					[87/5]
C <sub>8</sub> H <sub>17</sub> NO	4-octanone oxime (293–400)	68.8	(308)	A	[87/5]
					[929-55-5]
C <sub>8</sub> H <sub>17</sub> NO <sub>2</sub>	2,4,4-trimethyl-2-nitropentane (288–324)	54.2±0.8	(298)	GS	[87/5]
					[7207-49-0]
C <sub>8</sub> H <sub>17</sub> NO <sub>2</sub>	lactic acid, N-isopentylamide (386–433)	77.9	(401)	A	[7207-50-3]
					[87/5]
C <sub>8</sub> H <sub>17</sub> NO <sub>2</sub>	lactic acid, N-pentylamide (373–448)	81.8	(388)	A	[87/5]
					[87/5]
C <sub>8</sub> H <sub>17</sub> NO <sub>2</sub>	(l) leucine ethyl ester (333–449)	43.5	(348)	A	[2743-60-4]
					[87/5]
C <sub>8</sub> H <sub>17</sub> NO <sub>2</sub>	ethyl 2-(N,N-dimethylamino)-2-methylpropionate (303–338)	55.6±0.4	(283)	DSC	[93/15]
					[87/5]
C <sub>8</sub> H <sub>18</sub>	2,2-dimethylhexane (243–380)	37.3	(298)	C	[590-73-8]
		39.7	(258)		[71/28]
C <sub>8</sub> H <sub>18</sub>	2,3-dimethylhexane (302–381)	37.3±0.1	(298)	A, MM	[47/5]
		36.6	(317)		[47/7]
C <sub>8</sub> H <sub>18</sub>	2,3-dimethylhexane (250–388)	38.8	(298)	C	[87/5][45/2]
		41.4	(265)		[71/28]
C <sub>8</sub> H <sub>18</sub>	2,4-dimethylhexane (310–390)	38.8±0.1	(298)	A, MM	[47/5]
		37.6	(325)		[47/7]
C <sub>8</sub> H <sub>18</sub>	2,4-dimethylhexane (246–382)	37.8	(298)	C	[589-43-5]
		41.0	(261)		[71/28]
C <sub>8</sub> H <sub>18</sub>	2,5-dimethylhexane (305–385)	37.8±0.1	(298)	A, MM	[47/5]
		36.9	(320)		[47/7]
C <sub>8</sub> H <sub>18</sub>	2,5-dimethylhexane (246–382)	37.9	(298)	C	[87/5][45/2]
		41.1	(261)		[71/28]
C <sub>8</sub> H <sub>18</sub>	3,3-dimethylhexane (247–385)	37.9±0.1	(298)	A, MM	[592-13-2]
		36.9	(322)		[47/7]
C <sub>8</sub> H <sub>18</sub>	3,3-dimethylhexane (308–386)	41.2	(262)	C	[563-16-6]
		37.5±0.1	(298)		[47/5]
C <sub>8</sub> H <sub>18</sub>	3,4-dimethylhexane (251–390)	36.6	(323)	A, MM	[47/7]
		[87/5][45/2]			
C <sub>8</sub> H <sub>18</sub>	3,4-dimethylhexane (313–392)	41.3	(266)	C	[583-48-2]
		39.0±0.1	(298)		[47/5]
		37.7	(328)	A, MM	[47/7]
					[87/5][45/2]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>8</sub> H <sub>18</sub>	3-ethylhexane	39.7	(298)		[619-99-8] [71/28]	
	(251–391)	42.4	(268)		[47/5]	
		39.6±0.1	(298)	C	[47/7]	
	(314–393)	38.2	(329)	A, MM	[87/5][45/2] [609-26-7]	
C <sub>8</sub> H <sub>18</sub>	3-ethyl-2-methylpentane	38.5	(298)		[71/28]	
		38.5±0.1	(298)	C	[47/7]	
	(311–390)	37.4	(326)	A, MM	[87/5][45/2] [1067-08-9]	
C <sub>8</sub> H <sub>18</sub>	3-ethyl-3-methylpentane	38.0	(298)		[71/28]	
	(249–391)	40.2	(264)		[47/5]	
		38.0±0.1	(298)	C	[47/7]	
	(312–393)	36.9	(327)	A, MM	[87/5][45/2] [592-27-8]	
C <sub>8</sub> H <sub>18</sub>	2-methylheptane	39.8	(300)	A	[87/5]	
	(285–392)	39.7±0.1	(298)	C	[79/13]	
		38.7±0.1	(313)	C	[79/13]	
		37.3±0.1	(333)	C	[79/13]	
		36.0±0.1	(353)	C	[79/13]	
	(233–283)	41.6	(268)	IPM	[87/5][74/11]	
		39.7	(298)		[71/28]	
		39.8±0.1	(298)	C	[47/7]	
	(315–391)	38.1	(330)	MM	[45/2]	
	C <sub>8</sub> H <sub>18</sub>	3-methylheptane	39.8±0.2	(298)	C	[87/19] [589-81-1]
(286–393)		40.1	(301)	A	[87/5]	
(238–286)		41.6	(271)	IPM	[87/5][74/11]	
		39.8	(298)		[71/28]	
		39.8±0.1	(298)	C	[47/7]	
(316–393)		38.3	(331)	MM	[45/2]	
C <sub>8</sub> H <sub>18</sub>		4-methylheptane	39.7±0.1	(298)	C	[589-53-7] [79/13]
		38.7±0.1	(313)	C	[79/13]	
		37.4±0.1	(333)	C	[79/13]	
		36.1±0.1	(353)	C	[79/13]	
		39.7	(298)		[71/28]	
	(253–391)	42.3	(268)		[47/5]	
		39.7±0.1	(298)	C	[47/7]	
	(312–392)	38.2	(327)	A, MM	[87/5][45/2] [111-65-9]	
	C <sub>8</sub> H <sub>18</sub>	octane	41.6	(298)		[94/12]
		(297–400)	41.0	(312)	A	[87/5]
		(216–278)	44.4	(263)	A	[87/5]
(396–432)		36.3	(411)	A	[87/5]	
(428–510)		35.5	(443)	A	[87/5]	
(506–569)		34.9	(521)	A	[87/5]	
(295–402)		41.2	(310)		[86/13]	
(298–333)		41.9	(313)		[84/15]	
		41.5±0.1	(298)	C	[81/9]	
		41.5±0.1	(298)	C	[79/13]	
		40.5±0.1	(313)	C	[79/13]	
		39.1±0.1	(333)	C	[79/13]	
		37.8±0.1	(353)	C	[79/13]	
(217–297)		43.0	(282)		[73/11]	
		41.5	(298)		[71/28]	
		38.0±0.1	(311)	C	[60/21]	
		36.7±0.1	(328)	C	[60/21]	
	35.4±0.1	(344)	C	[60/21]		
	41.5±0.1	(298)	C	[47/7]		
(326–400)	39.2	(341)	MM	[45/2]		
C <sub>8</sub> H <sub>18</sub>	2,2,3,3-tetramethylbutane				[594-82-1]	
	(377–390)	333.0	(383)	A	[87/5]	
C <sub>8</sub> H <sub>18</sub>	(dl) 2,2,3-trimethylpentane				[560-21-4]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>18</sub>	2,2,4-trimethylpentane (306–384)	37.7±0.1	(298)	C	[98/16]
		37.1±0.1	(308)	C	[98/16]
		36.6±0.1	(315)	C	[98/16]
		36.0±0.1	(323)	C	[98/16]
		35.5±0.1	(330)	C	[98/16]
		35.1±0.1	(338)	C	[98/16]
		34.8±0.1	(348)	C	[98/16]
		34.1±0.1	(358)	C	[98/16]
		33.5±0.1	(368)	C	[98/16]
		36.9	(298)		[71/28]
		36.9±0.1	(298)	C	[47/7]
		36.1	(321)	A, MM	[87/5][45/2] [540-84-1]
		34.9	(298)	CGC	[95/21]
		36.1	(304)		[91/3]
		31.6	(438)	A	[87/5]
		32.2	(387)	A	[87/5]
		31.5	(428)	A	[87/5]
		31.4	(505)	A	[87/5]
		35.2±0.1	(298)	C	[82/10]
		34.4±0.1	(313)	C	[82/10]
33.4±0.1	(328)	C	[82/10]		
32.6±0.1	(343)	C	[82/10]		
31.7±0.1	(358)	C	[82/10]		
31.0±0.1	(368)	C	[82/10]		
35.1±0.1	(298)	C	[79/13]		
34.3±0.1	(313)	C	[79/13]		
33.2±0.1	(333)	C	[79/13]		
32.0±0.1	(353)	C	[79/13]		
35.1	(298)		[71/28]		
40.7	(209)	A	[87/5][56/5]		
35.1±0.1	(298)	C	[47/7]		
34.8	(312)	A, MM	[87/5][45/2]		
31.0	(371)	C	[40/6]		
33.9	(333)	EB	[40/14]		
C <sub>8</sub> H <sub>18</sub>	2,3,3-trimethylpentane	37.6±0.1	(298)	C	[98/16]
		36.9±0.1	(308)	C	[98/16]
		36.5±0.1	(315)	C	[98/16]
		36.0±0.1	(323)	C	[98/16]
		35.5±0.1	(330)	C	[98/16]
		35.1±0.1	(338)	C	[98/16]
		34.4±0.1	(348)	C	[98/16]
		33.9±0.1	(358)	C	[98/16]
		33.3±0.1	(368)	C	[98/16]
		37.2	(298)		[71/28]
		36.9±0.1	(298)	C	[47/7]
		37.2±0.1	(298)	C	[47/7]
		36.4	(323)	A, MM	[87/5][45/2] [565-75-3]
		37.7	(303)	A	[87/5]
		39.1	(274)	A	[87/5]
37.7±0.1	(298)	C	[81/9]		
41.3	(238)	IPM, EB	[74/11]		
39.8	(263)	IPM	[74/11]		
37.7	(298)		[71/28]		
37.7±0.1	(298)	C	[47/7]		
36.7	(325)	MM	[45/2]		
C <sub>8</sub> H <sub>18</sub> N <sub>2</sub>	dibutyldiazene	49.3±0.2	(298)	C	[2159-75-3] [78/3]
					[927-83-3]
C <sub>8</sub> H <sub>18</sub> N <sub>2</sub>	di- <i>tert</i> -butyldiazene	39.1±0.3	(298)	C	[76/3]
		39.6	(299)	UV	[74/32]
		32.7		I	[74/32]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>18</sub> N <sub>2</sub>	butylhydrazone butyraldehyde (298–323)	55.6	(310)		[80/20]
C <sub>8</sub> H <sub>18</sub> N <sub>2</sub>	isobutylhydrazone isobutyraldehyde (288–313)	57.2	(300)		[80/20]
C <sub>8</sub> H <sub>18</sub> N <sub>2</sub> O	dibutyldiazene N-oxide	45.9±0.1	(298)	C	[16649-52-8] [81/7]
C <sub>8</sub> H <sub>18</sub> O	heptyl methyl ether	46.9	(298)		[629-32-3] [U/1][85/6]
C <sub>8</sub> H <sub>18</sub> O	butyl <i>tert</i> -butyl ether	43.2	(298)		[1000-63-1] [U/2][02/32]
		41.6±0.2	(298)	C	[02/11]
		42.3±0.3	(298)	C	[91/12]
	(293–397)	41.7	(308)	A	[87/5]
	(356–397)	38.3	(371)	EB	[87/5][69/13]
C <sub>8</sub> H <sub>18</sub> O	<i>tert</i> -butyl isobutyl ether				[33021-02-2] [U/2][02/32]
		41.2±0.3	(298)		
		39.2±0.3	(298)	C	[02/11]
	(273–308)	40.9±0.3	(298)	GS	[96/11]
		40.1±0.1	(298)	C	[91/12]
C <sub>8</sub> H <sub>18</sub> O	butyl isobutyl ether (328–406)	40.3	(343)	A	[17071-47-5] [87/5]
C <sub>8</sub> H <sub>18</sub> O	sec-butyl <i>tert</i> -butyl ether	41.3	(298)		[U2][02/32]
C <sub>8</sub> H <sub>18</sub> O	1-methyl-1- <i>tert</i> -butoxypropane				[32970-45-9]
		40.3±0.2	(298)	C	[91/12]
C <sub>8</sub> H <sub>18</sub> O	dibutyl ether (339–415)	40.9	(354)	A	[142-96-1] [87/5]
	(336–415)	41.7	(351)	A	[87/5]
		44.7±0.1	(298)	C	[82/6]
		45.0±0.1	(298)	C	[80/3]
	(362–414)	44.4	(298)		[76/2]
	(362–414)	36.4	(413)		[76/2]
	(362–413)	40.6	(377)	EB	[69/15]
	(386–440)	39.4	(413)		[65/20]
C <sub>8</sub> H <sub>18</sub> O	di- <i>tert</i> -butyl ether (290–386)	37.7±0.3	(298)	EB	[6163-66-2] [96/5]
	(289–382)	37.3	(304)	A	[87/5][76/2]
	(289–382)	37.2	(298)		[76/2]
	(289–382)	31.6	(380)		[76/2]
		37.6±0.1	(298)	C	[75/3]
	(277–382)	38.7	(292)	A	[87/5][61/20]
C <sub>8</sub> H <sub>18</sub> O	diisobutyl ether (320–396)	38.9	(335)	A	[628-55-7] [87/5]
C <sub>8</sub> H <sub>18</sub> O	propyl <i>tert</i> -amyl ether	43.8±0.7	(298)		[U/2][02/32]
C <sub>8</sub> H <sub>18</sub> O	isopropyl <i>tert</i> -amyl ether	41.6	(298)		[U/2][02/32]
C <sub>8</sub> H <sub>18</sub> O	2-ethyl-1-hexanol (373–398)	52.7	(388)		[104-76-7] [73/14]
	(347–457)	60.2	(362)	A	[87/5][61/12]
C <sub>8</sub> H <sub>18</sub> O	3-ethyl-3-hexanol (331–433)	49.2	(345)		[597-76-2] [73/26]
C <sub>8</sub> H <sub>18</sub> O	2-ethyl-4-methyl-1-pentanol (343–450)	58.9	(358)	A	[10137-88-9] [87/5][61/12]
					[73/26]
C <sub>8</sub> H <sub>18</sub> O	2-methyl-1-heptanol (350–449)	53.3	(365)	A	[106-67-2] [87/5][73/26]
C <sub>8</sub> H <sub>18</sub> O	3-methyl-1-heptanol (360–459)	53.4	(375)	A	[1070-32-2] [87/5][73/26]
C <sub>8</sub> H <sub>18</sub> O	4-methyl-1-heptanol (357–456)	55.9	(372)	A	[817-91-4] [87/5]
	(354–456)	56.7	(369)		[73/26]
C <sub>8</sub> H <sub>18</sub> O	( <i>dl</i> ) 5-methyl-1-heptanol (364–460)	57.6	(379)	A	[7212-53-5] [87/5][73/26]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>18</sub> O	6-methyl-1-heptanol (368–610)	61.0	(383)	A	[1653-40-3] [87/5][73/26]
C <sub>8</sub> H <sub>18</sub> O	2-methyl-2-heptanol (343–430)	53.1	(358)	A	[625-25-2] [87/5]
	(339–429)	55.0	(354)		[73/26]
C <sub>8</sub> H <sub>18</sub> O	3-methyl-2-heptanol (341–440)	48.0	(356)	A	[31367-46-1] [87/5][73/26]
C <sub>8</sub> H <sub>18</sub> O	4-methyl-2-heptanol (351–445)	54.2	(366)	A	[56298-90-9] [87/5][73/26]
C <sub>8</sub> H <sub>18</sub> O	5-methyl-2-heptanol (348–445)	51.9	(363)	A	[54630-50-1] [87/5]
	(348–445)	47.2	(363)		[73/26]
C <sub>8</sub> H <sub>18</sub> O	( <i>dl</i> ) 6-methyl-2-heptanol (354–445)	55.2	(369)	A	[4730-22-7] [87/5][73/26]
C <sub>8</sub> H <sub>18</sub> O	( <i>dl</i> ) 2-methyl-3-heptanol (349–441)	54.8	(364)	A	[18720-62-2] [87/5][73/26]
C <sub>8</sub> H <sub>18</sub> O	3-methyl-3-heptanol (344–433)	54.1	(359)	A	[5582-82-1] [87/5]
	(338–433)	54.7	(353)		[73/26]
C <sub>8</sub> H <sub>18</sub> O	4-methyl-3-heptanol (330–429)	43.9	(345)	A	[14979-39-6] [87/5][73/26]
C <sub>8</sub> H <sub>18</sub> O	5-methyl-3-heptanol (330–427)	46.5	(345)	A	[18720-65-5] [87/5][73/26]
C <sub>8</sub> H <sub>18</sub> O	( <i>dl</i> ) 6-methyl-3-heptanol (333–432)	47.6	(348)	A	[18720-66-6] [87/5]
C <sub>8</sub> H <sub>18</sub> O	2-methyl-4-heptanol (348–440)	54.8	(363)	A	[21570-35-4] [87/5]
	(345–437)	56.3	(360)		[73/26]
C <sub>8</sub> H <sub>18</sub> O	( <i>dl</i> ) 3-methyl-4-heptanol (340–438)	48.0	(355)	A	[1838-73-9] [87/5][73/26]
C <sub>8</sub> H <sub>18</sub> O	4-methyl-4-heptanol (344–434)	54.4	(359)	A	[598-01-6] [87/5]
	(331–434)	54.8	(345)		[73/26]
C <sub>8</sub> H <sub>18</sub> O	2,5-dimethyl-3-hexanol (337–431)	55.0	(352)		[19550-07-3] [73/26]
C <sub>8</sub> H <sub>18</sub> O	1-octanol (282–321)	69.6	(303)	GS	[111-87-5] [01/3]
	(282–321)	70.1	(298)	GS	[01/3]
	(373–423)	71.6	(298)	CGC	[95/21]
	(273–363)	68.7	(318)		[92/14]
	(328–400)	67.3	(343)	A	[87/5]
	(430–474)	52.5	(445)	A	[87/5]
	(397–479)	56.6	(412)	A	[87/5]
	(475–555)	47.8	(490)	A	[87/5]
		71.0±0.4	(298)	C	[77/1]
	(343–468)	67.5	(358)		[73/26]
	(386–480)	58.3	(401)	EB	[87/5][70/2]
	(352–468)	65.0	(367)	DTA	[69/5]
	(293–353)	70.4	(308)		[66/7]
	(267–282)	64.0	(274)	A, ME	[87/5][65/15]
	(365–427)	61.6	(380)		[58/2]
C <sub>8</sub> H <sub>18</sub> O	( <i>dl</i> ) 2-octanol (253–353)	70.7	(268)		[123-96-6] [99/11]
	(333–453)	60.7	(348)	A	[87/5]
	(367–453)	56.1	(382)		[84/10]
	(345–453)	60.0	(360)		[73/26]
C <sub>8</sub> H <sub>18</sub> O	( <i>dl</i> ) 3-octanol (253–348)	71.6	(268)		[20296-29-1] [99/11]
	(313–450)	64.1	(328)	A	[87/5]
	(366–450)	54.5	(381)		[84/10]
	(349–449)	58.8	(364)		[73/26]
C <sub>8</sub> H <sub>18</sub> O	( <i>dl</i> ) 4-octanol (343–450)	57.3	(358)	A	[589-62-8] [87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>18</sub> O	(364–449)	54.8	(379)		[84/10]
	(341–449)	62.1	(356)		[73/26]
	( <i>dl</i> ) 2,4,4-trimethyl-1-pentanol				[123-44-4]
		60.6±0.1	(328)	C	[96/9]
		58.6±0.1	(343)	C	[96/9]
C <sub>8</sub> H <sub>18</sub> O		56.5±0.1	(358)	C	[96/9]
	(352–446)	54.2	(367)	A	[87/5]
	(333–441)	54.7	(348)		[73/26]
C <sub>8</sub> H <sub>18</sub> O	2,2,3-trimethyl-3-pentanol				[7294-05-5]
C <sub>8</sub> H <sub>18</sub> O	(318–426)	47.3	(333)		[73/26]
	2,2,4-trimethyl-3-pentanol				[5162-48-1]
C <sub>8</sub> H <sub>18</sub> O <sub>2</sub>	(328–428)	57.1	(343)		[73/26]
	di- <i>tert</i> -butyl peroxide				[110-05-4]
	(308–358)	37.0	(333)		[95/23]
	(308–358)	38.9	(298)		[95/23]
C <sub>8</sub> H <sub>18</sub> O <sub>2</sub>	(246–311)	32.0	(261)	A	[87/5][78/6]
	(273–384)	31.0	(288)	A	[87/5][51/10]
	1,2-dipropoxyethane				[18854-56-3]
	(234–453)	U28.2	(249)	A	[87/5]
C <sub>8</sub> H <sub>18</sub> O <sub>2</sub>		50.6±0.1	(298)	C	[70/17]
	1-butoxy-2-ethoxyethane				[4413-13-2]
C <sub>8</sub> H <sub>18</sub> O <sub>2</sub>		50.9±0.1	(298)	C	[70/17]
	ethylene glycol mono(2-ethylbutyl) ether				[4468-93-3]
C <sub>8</sub> H <sub>18</sub> O <sub>2</sub>	(357–470)	53.4	(372)	A	[87/5]
	ethylene glycol monoethyl ether				[112-25-4]
C <sub>8</sub> H <sub>18</sub> O <sub>2</sub>	(363–483)	54.6	(378)	A	[87/5]
	3-hydroxymethyl-4-heptanol				[87/5]
C <sub>8</sub> H <sub>18</sub> O <sub>2</sub>	(375–518)	61.6	(390)	A	[87/5]
	2,2,4-trimethyl-1,3-pentanediol				[144-19-4]
	(396–489)	66.6±2.1	(400)	EB	[02/14]
	(396–489)	60.3±1.7	(440)	EB	[02/14]
	(396–489)	55.0±1.6	(480)	EB	[02/14]
C <sub>8</sub> H <sub>18</sub> O <sub>3</sub>	(413–502)	58.5	(428)	A	[87/5]
	diethylene glycol diethyl ether				[112-36-7]
		56.4±1.4	(298)	CGC	[00/9]
C <sub>8</sub> H <sub>18</sub> O <sub>3</sub>	(330–461)	48.3	(345)	A	[87/5]
	diethylene glycol monobutyl ether				[112-36-7]
C <sub>8</sub> H <sub>18</sub> O <sub>4</sub>	(415–505)	55.7	(430)	A	[87/5]
	1,2-bis(2-methoxyethoxy)ethane (triglyme)				[112-49-2]
C <sub>8</sub> H <sub>18</sub> O <sub>4</sub> S <sub>2</sub>		63.7±3.3	(298)	CGC	[00/9]
	2,2-butanediol bis(ethylsulfonate)				[76-20-0]
C <sub>8</sub> H <sub>18</sub> O <sub>5</sub>	(443–493)	75.7	(458)	A	[87/5][99/16]
	tetraethylene glycol				[112-60-7]
C <sub>8</sub> H <sub>18</sub> S	(426–581)	92.2	(441)	A	[87/5][47/5]
	dibutyl sulfide				[544-40-1]
	(283–390)	40.3	(298)		[99/16]
		53.0	(298)		[81/12]
		54.2±0.8	(298)	GC	[64/17]
C <sub>8</sub> H <sub>18</sub> S	(390–470)	46.5	(405)	A, EB	[87/5][52/9]
	di- <i>tert</i> -butyl sulfide				[626-26-6]
	(264–329)	44.9	(279)		[99/16]
	(329–470)	41.4	(344)		[99/16]
	(390–470)	46.4	(405)		[99/16]
	(278–308)	44.8	(293)		[98/25]
	(324–420)	42.4	(339)	A	[87/5]
		43.8	(298)		[81/12]
		43.8±0.1	(298)		[72/11]
		49.3±0.8	(298)	GC	[64/17]
C <sub>8</sub> H <sub>18</sub> S	(325–350)	42.3	(333)	EB	[62/17]
	diisobutyl sulfide				[592-65-4]
	(325–346)	46.4	(335)	A	[87/5][99/16]
		48.7	(298)		[81/12]
		48.5±0.8	(298)	GC	[64/17]
	(326–346)	43.1	(336)	EB	[62/17]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>18</sub> S	1-octanethiol (372–473)	49.6	(387)	A	[111-88-6] [87/5][99/16] [32/2]
C <sub>8</sub> H <sub>18</sub> S	2-octanethiol (347–489)	49.0	(362)		[3001-66-9] [99/16]
C <sub>8</sub> H <sub>18</sub> S	( <i>dl</i> ) 2-octanethiol (361–460)	48.0	(376)	A	[10435-81-1] [87/5][99/16] [32/2]
C <sub>8</sub> H <sub>18</sub> S <sub>2</sub>	dibutyl disulfide (383–423)	64.1 62.3±0.2 62.3	(298) (298) (298)	CGC C	[629-45-8] [95/21] [85/2] [81/12]
C <sub>8</sub> H <sub>18</sub> S <sub>2</sub>	diisobutyl disulfide	57.2	(298)		[81/12]
C <sub>8</sub> H <sub>18</sub> S <sub>2</sub>	2,7-dimethyl-4,5-dithiooctane	57.2±0.1	(298)	C	[1518-72-5] [85/2]
C <sub>8</sub> H <sub>18</sub> S <sub>2</sub>	2,2,5,5-tetramethyl-3,4-dithiahexane (383–423)	53.8 52.5±0.2 52.5	(298) (298) (298)	CGC C	[110-06-5] [95/21] [85/2] [81/12]
C <sub>8</sub> H <sub>18</sub> S <sub>2</sub>	1,8-octanedithiol (405–543)	60.9	(420)	A	[1191-62-4] [87/5][43/6] [99/16]
C <sub>8</sub> H <sub>19</sub> N	N-butyl isobutylamine (313–423)	41.2	(328)	A	[20810-06-4] [87/5]
C <sub>8</sub> H <sub>19</sub> N	N,N-dibutylamine (343–479)	46.0 46.0±0.1 44.8±0.1	(358) (343) (358)	A C C	[111-92-2] [87/5] [79/8] [79/8]
	(291–305)	48.1	(298)		[71/13]
	(273–333)	49.4±0.1 45.7±0.3	(298) (298)	C I	[69/2] [69/16]
C <sub>8</sub> H <sub>19</sub> N	N,N-diisobutylamine (291–305)	39.3	(298)		[110-93-3] [71/13]
	(273–333)	43.1±0.3	(298)	I	[69/16]
	(268–413)	43.8	(283)	A	[87/5][47/5]
C <sub>8</sub> H <sub>19</sub> N	N,N-di-sec-butylamine (273–333)	41.3±0.3	(298)	I	[69/16]
C <sub>8</sub> H <sub>19</sub> N	2-ethylhexylamine (341–447)	44.8	(356)	A	[104-75-6] [87/5]
C <sub>8</sub> H <sub>19</sub> N	octylamine (343–494)	54.8±0.5	(298)	EB	[111-86-4] [96/4]
	(323–373)	54.6	(298)	CGC	[95/21]
	(308–453)	50.8	(323)	A	[87/5]
C <sub>8</sub> H <sub>19</sub> O <sub>2</sub> PS <sub>3</sub>	O,O-diethyl-S-[2-(ethylthio)ethyl] dithiophosphate (283–401)	76.7	(298)	A	[298-04-4] [87/5][99/16]
C <sub>8</sub> H <sub>19</sub> O <sub>3</sub> P	dibutyl phosphite (298–438)	37.8	(313)	A	[1809-19-4] [87/5]
C <sub>8</sub> H <sub>19</sub> O <sub>3</sub> P	diisopropyl ethylphosphonate	60.7±4.2			[56/23][82/15]
C <sub>8</sub> H <sub>19</sub> O <sub>3</sub> PS <sub>2</sub>	O,O-diethyl-O-[2-(ethylthio)ethyl] thiophosphate (283–411)	78.7	(298)	A	[298-03-3] [87/5][99/16]
C <sub>8</sub> H <sub>19</sub> O <sub>3</sub> PS <sub>2</sub>	O,O-diethyl-S-[2-(ethylthio)ethyl] thiophosphate (283–401)	76.4	(298)	A	[126-75-0] [87/5][99/16]
C <sub>8</sub> H <sub>20</sub> ClN	dibutylammonium chloride (553–563)	116.7	(558)	A	[6287-40-7] [87/5][99/16]
C <sub>8</sub> H <sub>20</sub> N <sub>2</sub>	tetraethylhydrazine (308–368)	33.4	(323)	A	[4267-00-9] [87/5]
C <sub>8</sub> H <sub>20</sub> N <sub>2</sub>	N,N,N',N'-tetramethyl-1,3-butanediamine (273–363)	49.2	(288)		[97-84-7] [02/42]
	(335–439)	42.7	(350)	A	[87/5]
C <sub>8</sub> H <sub>20</sub> N <sub>2</sub> O <sub>2</sub> S	N,N,N',N'-tetraethylsulfamide (407–528)	59.1	(422)	A	[2832-49-7] [87/5]
C <sub>8</sub> H <sub>20</sub> N <sub>2</sub> O <sub>3</sub>	<i>tris</i> (2-hydroxyethyl)ethylenediamine				

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>20</sub> O <sub>5</sub> P <sub>2</sub> S <sub>2</sub>	(373–472)	90.0		GS	[98/7]
	dithiopyrophosphoric acid, tetraethyl ester (293–409)	80.6	(308)	A	[3689-24-5] [87/5][99/16]
C <sub>8</sub> H <sub>20</sub> O <sub>7</sub> P <sub>2</sub>	pyrophosphoric acid, tetraethyl ester (283–411)	82.2	(298)	A	[107-49-3] [87/5]
C <sub>8</sub> H <sub>23</sub> N <sub>5</sub>	tetraethylene pentamine (464–615)	71.3	(478)	A	[112-57-2] [87/5]
C <sub>8</sub> H <sub>24</sub> N <sub>4</sub> O <sub>3</sub> P <sub>2</sub>	pyrophosphoric acid <i>tetrakis</i> (dimethylamide) (273–415)	65.5	(288)	A	[152-16-9] [87/5]
C <sub>9</sub> F <sub>16</sub>	<i>trans</i> perfluorohydrindane	45.2±0.1	(298)	C	[96/26]
C <sub>9</sub> F <sub>17</sub> NO <sub>3</sub> S	perfluoro-1-octanesulfonylisocyanate (324–470)	67.7	(339)	A	[34834-20-3] [87/5][99/16]
C <sub>9</sub> F <sub>18</sub>	perfluoro(propylcyclohexane) (321–396)	40.4	(336)		[374-59-4] [99/16]
		43.1±0.1	(298)	C	[96/26]
	43.1±0.5	(298)	EB	[81/23]	
	43.1±0.1	(298)	C	[81/23]	
C <sub>9</sub> F <sub>18</sub>	perfluoro(isopropylcyclohexane)	46.7±0.1	(298)	C	[96/26]
C <sub>9</sub> F <sub>18</sub> N <sub>2</sub>	1,1,1,3,3,3-hexafluoro-N,N'- <i>bis</i> [2,2,2-trifluoro-1-(trifluoromethyl)-ethyidene]-2,2-propanediamine (314–381)	35.5	(329)	A	[34451-14-4] [87/5][72/21]
C <sub>9</sub> F <sub>18</sub> O <sub>3</sub>	carbonic acid, <i>bis</i> [1,1,1,3,3,3-hexafluoro-2-(trifluoromethyl)-2-propyl] ester (316–358)	39.7	(331)	A	[40719-69-5] [87/5][75/22]
C <sub>9</sub> F <sub>19</sub> NO	2,2,2-trifluoro-N-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]-ethanimidic acid, 1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl ester	37.6	(385)		[75/20]
C <sub>9</sub> F <sub>20</sub>	perfluorononane (387–524)	32.8	(402)	A	[375-96-2] [87/5][67/12]
C <sub>9</sub> F <sub>21</sub> N	perfluoro-N-methyl-N,N-dibutylamine (339–407)	48.8±0.8	(298)	EB	[514-03-4] [95/20]
		48.2±0.1	(298)	C	[95/20]
C <sub>9</sub> F <sub>21</sub> N	<i>tris</i> (heptafluoropropyl)amine (329–403)	46.6±0.3	(298)	C	[338-83-3] [95/20]
		46.9±0.7	(298)	EB	[95/20]
		40.6	(348)	A	[87/5]
C <sub>9</sub> H <sub>4</sub> O <sub>5</sub>	trimellitic acid anhydride (558–596)	65.6	(573)	A	[552-30-7] [87/5]
C <sub>9</sub> H <sub>5</sub> ClN <sub>2</sub> O <sub>2</sub>	5-chloro-2,4-diisocyanato-1-methylbenzene (373–433)	66.7	(388)	A	[15166-26-4] [87/5]
		60.2±0.2	(403)		[72/26]
C <sub>9</sub> H <sub>6</sub> Cl <sub>6</sub> O <sub>3</sub> S	Endosulfan I (343–453)	80.4	(398)	GC	[959-98-8] [90/2]
C <sub>9</sub> H <sub>6</sub> Cl <sub>6</sub> O <sub>3</sub> S	Endosulfan II (343–453)	82.4	(398)	GC	[33213-65-9] [90/2]
C <sub>9</sub> H <sub>6</sub> Cl <sub>6</sub> O <sub>4</sub> S	Endosulfan sulfate (343–453)	85.6	(398)	GC	[1031-07-8] [90/2]
C <sub>9</sub> H <sub>6</sub> N <sub>2</sub> O <sub>2</sub>	2,4-toluene diisocyanate (373–530)	59.7	(388)	A	[584-84-9] [87/5]
		59.5	(408)	A	[87/5]
		61.3	(388)	I	[75/13]
		57.7±0.2	(403)		[72/26]
C <sub>9</sub> H <sub>6</sub> N <sub>2</sub> O <sub>2</sub>	2,6-toluene diisocyanate (373–463)	60.4	(388)	A	[91-08-7] [87/5]
C <sub>9</sub> H <sub>6</sub> O <sub>2</sub>	coumarin (379–463)	63.2	(394)	A	[91-64-5] [87/5][47/5]
C <sub>9</sub> H <sub>7</sub> Cl <sub>3</sub> O <sub>3</sub>	2,4,5-trichlorophenoxyacetic acid, methyl ester (444–573)	76.9	(459)	A	[1928-37-6] [87/5][99/16]
C <sub>9</sub> H <sub>7</sub> F <sub>3</sub> O <sub>2</sub>	trifluoroacetic acid, 3-tolyl ester (363–439)	47.4	(378)	A, EB	[1736-09-0] [87/5][69/13]
C <sub>9</sub> H <sub>7</sub> F <sub>3</sub> O <sub>2</sub>	trifluoroacetic acid, 4-tolyl ester (365–442)	47.8	(380)	A, EB	[99/16] [1813-29-2] [87/5][69/13]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>9</sub> H <sub>7</sub> N	isoquinoline (439–517)	51.0	(454)	A, EB	[99/16] [119-65-3] [87/5][61/10]
C <sub>9</sub> H <sub>7</sub> N	quinoline (573–668)	46.9	(588)	DSC	[91-22-5] [96/10]
	(504–616)	46.5	(519)		[92/1]
	(463–794)	46.1	(478)	A	[87/5]
	(286–309)	58.1	(298)	GS	[80/6]
	(433–511)	49.2	(448)	EB	[87/5][61/10]
C <sub>9</sub> H <sub>8</sub>	indene (369–457)	45.3	(384)	A	[95-13-6] [87/5]
	(289–455)	43.6	(304)	A	[87/5][47/5]
	(329–454)	43.9	(392)		[42/3]
C <sub>9</sub> H <sub>8</sub> Cl <sub>2</sub> O <sub>3</sub>	2,4-dichlorophenoxyacetic acid, methyl ester (403–548)	68.0	(418)	A	[1928-38-7] [87/5][99/16]
C <sub>9</sub> H <sub>8</sub> Cl <sub>3</sub> NO <sub>3</sub>	2,2,4-trichloro-5-(4-morpholinyl)-4-cyclopentene-1,3-dione (453–483)	79.6	(468)	GC	[75907-45-8] [80/25]
C <sub>9</sub> H <sub>8</sub> N <sub>2</sub>	1-phenylpyrazole	70.2±3.4	(298)	C	[1126-00-7] [00/1]
C <sub>9</sub> H <sub>8</sub> N <sub>2</sub>	1-phenylimidazole	84.6±3.7	(298)	C	[7164-98-9] [00/1]
C <sub>9</sub> H <sub>8</sub> O	1-indanone (318–348)	60.3±0.4		GS	[83-33-0] [98/3]
C <sub>9</sub> H <sub>8</sub> O	3-phenyl-2-propenal (cinnamaldehyde)	62.4	(298)	GC	[14371-10-9] [02/37]
	(408–482)	51.7	(444)	TGA	[02/40]
	(349–519)	58.2	(364)	A	[87/5][47/5]
	(353–373)	72.7	(363)	A	[87/5]
C <sub>9</sub> H <sub>8</sub> O <sub>2</sub>	<i>trans</i> cinnamic acid (430–573)	73.9	(445)	A	[140-10-3] [87/5]
C <sub>9</sub> H <sub>8</sub> O <sub>2</sub>	7,7-dimethoxynorborane (321–357)	49.0	(339)	EB	[39869-70-0] [94/16]
C <sub>9</sub> H <sub>9</sub> F <sub>6</sub> NO <sub>3</sub>	( <i>l</i> ) N,O-bis(trifluoroacetal)-threonine methyl ester (323–413)	72.5	(338)	A	[1548-45-4] [87/5][99/16]
C <sub>9</sub> H <sub>9</sub> N	3-methylindole (skatole) (368–540)	64.5	(383)	A	[83-34-1] [87/5][47/5]
C <sub>9</sub> H <sub>9</sub> N	$\alpha$ -methylbenzylcyanide (284–318)	60.8±0.7	(301)	GS	[1823-91-2] [00/2]
	(284–318)	60.9±0.7	(298)	GS	[00/2]
C <sub>9</sub> H <sub>9</sub> NO <sub>4</sub>	3-nitrobenzoic acid, ethyl ester (381–571)	65.1	(396)	A	[618-98-4] [87/5][47/5]
C <sub>9</sub> H <sub>10</sub>	indane (374–466)	44.0	(389)	A	[496-11-7] [87/5]
		49.0	(298)	C	[81/10]
	(355–482)	45.0	(370)		[76/26]
C <sub>9</sub> H <sub>10</sub>	2-methylstyrene (305–385)	47.9	(320)	A	[611-15-4] [87/5][53/13]
C <sub>9</sub> H <sub>10</sub>	3-methylstyrene (314–385)	47.5	(329)	A	[100-80-1] [87/5][53/13]
C <sub>9</sub> H <sub>10</sub>	4-methylstyrene (304–390)	47.6	(319)	A	[622-97-9] [87/5][53/13]
C <sub>9</sub> H <sub>10</sub>	$\alpha$ -methylstyrene (274–314)	49.2±0.3	(294)	GS	[98-83-9] [99/21]
		48.9±0.3	(298)		[99/21]
	(331–467)	48.6±0.4	(298)	EB	[97/6]
	(343–493)	44.3	(358)	A	[87/5]
	(353–413)	44.8	(368)	A	[87/5]
C <sub>9</sub> H <sub>10</sub>	<i>cis</i> $\beta$ -methylstyrene (348–498)	44.8	(363)	A	[766-90-5] [87/5]
C <sub>9</sub> H <sub>10</sub>	<i>trans</i> $\beta$ -methylstyrene (291–452)	46.4	(306)	A	[873-66-5] [87/5][47/5]
C <sub>9</sub> H <sub>10</sub>	allylbenzene (274–313)	46.5±0.2	(294)	GS	[300-57-2] [99/21]
		46.3±0.2	(298)		[99/21]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>9</sub> H <sub>10</sub> Cl <sub>2</sub> O <sub>4</sub>	2,6-dichlorosyringaldehyde (293–323)	82.2	(308)	CGC	[99/13]
C <sub>9</sub> H <sub>10</sub> F <sub>2</sub>	1,1-difluoro-3-phenylpropane (278–318)	53.3±0.4	(298)	GS	[97/14]
C <sub>9</sub> H <sub>10</sub> O	allyl phenyl ether (349–456)	49.4	(364)	A	[1746-13-0] [87/5]
C <sub>9</sub> H <sub>10</sub> O	cinnamyl alcohol (295–325)	68.1±0.1	(310)	TG,DTA	[104-54-1] [02/3]
	(310–328)	79.8	(319)	A	[87/5]
	(373–523)	56.2	(388)	A	[87/5]
C <sub>9</sub> H <sub>10</sub> O	2,4-dimethylbenzaldehyde (358–489)	57.4	(373)	A	[15764-16-6] [87/5]
C <sub>9</sub> H <sub>10</sub> O	5-hydroxyindane (393–524)	55.4	(408)	A	[1470-94-6] [87/5]
C <sub>9</sub> H <sub>10</sub> O	4'-methylacetophenone (288–333)	59.6	(303)	A	[122-00-9] [87/5]
C <sub>9</sub> H <sub>10</sub> O	2-phenylpropionaldehyde (364–517)	52.3±0.2	(360)	EB	[93-53-8] [02/21]
	(364–517)	49.4±0.2	(400)	EB	[02/21]
	(364–517)	46.6±0.3	(440)	EB	[02/21]
	(364–517)	43.4±0.5	(480)	EB	[02/21]
C <sub>9</sub> H <sub>10</sub> O	3-phenylpropionaldehyde (330–363)	67.5	(345)	A	[104-53-0] [87/5]
C <sub>9</sub> H <sub>10</sub> O	benzyl methyl ketone (343–383)	56.1	(298)	CGC	[103-79-7] [95/21]
	(343–383)	55.0	(298)	CGC	[95/21]
	(273–328)	53.5±0.3	(298)		[54/8]
C <sub>9</sub> H <sub>10</sub> O	ethyl phenyl ketone (propiophenone) (388–623)	52.1	(403)	A	[93-55-0] [87/5]
	(391–454)	44.4	(406)	EB, GS	[65/7]
C <sub>9</sub> H <sub>10</sub> O	2-vinylanisole (314–467)	56.7	(329)	A	[612-15-7] [87/5][47/5]
C <sub>9</sub> H <sub>10</sub> O	3-vinylanisole (316–471)	55.9	(331)	A	[626-20-0] [87/5][47/5]
C <sub>9</sub> H <sub>10</sub> O	4-vinylanisole (318–478)	54.9	(333)	A	[637-69-4] [87/5][47/5]
C <sub>9</sub> H <sub>10</sub> O <sub>2</sub>	methyl <i>o</i> -toluate	57.3±0.2	(293)	C	[89-71-4] [98/6]
C <sub>9</sub> H <sub>10</sub> O <sub>2</sub>	methyl <i>m</i> -toluate	60.3±0.2	(296)	C	[99-36-5] [98/6]
		53.5	(388)		[74/1]
C <sub>9</sub> H <sub>10</sub> O <sub>2</sub>	acetic acid, 3-tolyl ester (385–480)	55.7	(400)	A, EB	[122-46-3] [87/5][69/13]
C <sub>9</sub> H <sub>10</sub> O <sub>2</sub>	acetic acid, 4-tolyl ester (385–480)	55.9	(400)	A, EB	[140-39-6] [87/5][69/13]
C <sub>9</sub> H <sub>10</sub> O <sub>2</sub>	2-acetylanisole	56.5			[579-74-8] [86/10]
C <sub>9</sub> H <sub>10</sub> O <sub>2</sub>	4-acetylanisole (311–334)	66.5	(322)	A, ME	[100-06-1] [87/5][54/9]
C <sub>9</sub> H <sub>10</sub> O <sub>2</sub>	3,4-dihydro-2 <i>H</i> -1,5-benzodioxepin	55.6			[7216-18-4] [58/25]
C <sub>9</sub> H <sub>10</sub> O <sub>2</sub>	benzyl acetate (283–490)	55.5	(298)	A	[140-11-4] [87/5]
	(283–328)	60.4	(305)	ME	[54/10]
C <sub>9</sub> H <sub>10</sub> O <sub>2</sub>	ethylbenzoate (369–531)	52.5±0.2	(380)	EB	[93-89-0] [02/15]
	(369–531)	49.6±0.2	(420)	EB	[02/15]
	(369–531)	46.7±0.3	(460)	EB	[02/15]
	(369–531)	43.6±0.5	(500)	EB	[02/15]
	(344–440)	57.0	(356)	BG	[88/2]
	(344–440)	50.5	(419)	BG	[88/2]
	(288–333)	55.9	(303)	A	[87/5]
	(358–487)	50.4	(373)	A	[87/5]
	(317–486)	51.9	(332)		[47/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>9</sub> H <sub>10</sub> O <sub>2</sub>	3-phenylpropionic acid (375–553)	67.0	(390)	A	[501-52-0] [87/5]
C <sub>9</sub> H <sub>10</sub> O <sub>2</sub>	3-methylbenzoic acid, methyl ester (359–500)	54.8	(374)	A	[99-36-5] [87/5]
C <sub>9</sub> H <sub>10</sub> O <sub>2</sub>	(phenoxyethyl)oxirane (400–532)	69.9±0.7	(298)	EB	[122-60-1] [97/18]
	(400–532)	60.3±0.5	(400)	EB	[97/18]
	(400–532)	56.7±0.4	(440)	EB	[97/18]
	(400–532)	53.1±0.4	(480)	EB	[97/18]
	(400–532)	51.3±0.5	(500)	EB	[97/18]
	(400–532)	49.4±0.6	(520)	EB	[97/18]
	(343–373)	65.6±0.1			[76/21]
C <sub>9</sub> H <sub>10</sub> O <sub>2</sub>	2-phenyl-1,3-dioxolane (285–333)	62.6±0.7	(298)	GS	[936-51-6] [02/32]
	(298–333)	62.1±0.3	(316)	GS	[95/25]
C <sub>9</sub> H <sub>10</sub> O <sub>3</sub>	ethyl salicylate (288–333)	59.2	(303)	A	[118-61-6] [87/5]
	(334–505)	55.2	(349)	A	[87/5]
C <sub>9</sub> H <sub>10</sub> O <sub>3</sub>	2-furanacrylic acid, ethyl ester (428–500)	56.8	(443)	A	[623-20-1] [87/5]
C <sub>9</sub> H <sub>10</sub> O <sub>3</sub>	methyl 4-methoxybenzoate (382–472)	61.1	(397)	EB	[121-98-2] [85/9]
C <sub>9</sub> H <sub>10</sub> O <sub>3</sub>	ethyl 4-hydroxybenzoate	72.6		TGA	[120-47-8] [01/20]
C <sub>9</sub> H <sub>10</sub> O <sub>3</sub>	<i>cis,cis</i> 3-methyl-4-cyclohexene-1,2-dicarboxylic acid anhydride (325–525)	49.5±1.0			[35438-32-5] [84/14]
C <sub>9</sub> H <sub>11</sub> Br	1-bromo-2-isopropylbenzene (404–484)	48.4	(419)		[7073-94-1] [99/16]
	(378–528)	49.8	(393)	A	[87/5][70/14] [586-61-8]
C <sub>9</sub> H <sub>11</sub> Br	1-bromo-4-isopropylbenzene (362–493)	51.1	(377)		[99/16]
	(388–528)	50.4	(403)	A	[87/5][70/14] [3575-19-7]
C <sub>9</sub> H <sub>11</sub> Br	cumyl bromide	58.0	(298)	CGC	[02/29]
C <sub>9</sub> H <sub>11</sub> Cl	1-chloro-2-isopropylbenzene (341–465)	48.1	(356)		[2077-13-6] [99/16]
	(363–508)	47.7	(378)	A	[87/5][70/14] [2621-46-7]
C <sub>9</sub> H <sub>11</sub> Cl	1-chloro-4-isopropylbenzene (307–472)	51.4	(322)		[99/16]
	(368–513)	48.5	(383)	A	[87/5][70/14] [934-53-2]
C <sub>9</sub> H <sub>11</sub> Cl	cumyl chloride	54.7	(298)	CGC	[02/29]
C <sub>9</sub> H <sub>11</sub> ClO <sub>2</sub>	propylene glycol mono(4-chlorophenyl) ether (417–542)	64.9	(432)	A	[67146-43-4] [87/5][99/16]
C <sub>9</sub> H <sub>11</sub> ClO <sub>4</sub>	2-chlorosyringaldehyde (293–323)	77.7	(308)	CGC	[99/13]
C <sub>9</sub> H <sub>11</sub> ClS	benzyl (2-chloroethyl) sulfide (293–333)	52.3	(308)	A, GS	[4322-51-8] [87/5][48/9] [99/16]
C <sub>9</sub> H <sub>11</sub> F <sub>3</sub> O <sub>2</sub>	pentafluoropropionic acid, cyclohexyl ester (335–428)	46.4	(350)	A, EB	[24262-73-5] [87/5][69/13]
C <sub>9</sub> H <sub>11</sub> I	cumyl iodide	63.3	(298)	CGC	[54290-22-1] [02/29]
C <sub>9</sub> H <sub>11</sub> NO	N-methylacetanilide (383–519)	60.1	(398)	A	[579-10-2] [87/5]
	(377–526)	56.7	(392)		[47/5]
C <sub>9</sub> H <sub>11</sub> NO <sub>2</sub>	1-nitro-2-isopropylbenzene (278–323)	65.5±0.7	(301)	GS	[6526-72-3] [00/15]
		65.6±0.7	(298)		[00/15]
C <sub>9</sub> H <sub>11</sub> NO <sub>2</sub>	ethyl 2-aminobenzoate (ethyl anthranilate) (433–593)	59.6	(448)	A	[87-25-2] [87/5]
C <sub>9</sub> H <sub>11</sub> NO <sub>2</sub>	ethyl carbanilate (380–510)	84.2	(395)	A	[101-99-5] [87/5][47/5]
C <sub>9</sub> H <sub>12</sub>	<i>cis</i> bicyclo[4.3.0]nona-3,7-diene				[38451-18-2]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>9</sub> H <sub>12</sub>	(356–429)	41.8	(371)	A	[87/5]
	(Z) 5-ethylidene-2-norbornene				[28304-66-7]
	(315–462)	44.3±0.3	(298)	EB	[97/18]
	(315–462)	43.0±0.3	(320)	EB	[97/18]
	(315–462)	40.5±0.3	(360)	EB	[97/18]
C <sub>9</sub> H <sub>12</sub>	(315–462)	38.0±0.3	(400)	EB	[97/18]
	(315–462)	35.2±0.5	(440)	EB	[97/18]
	5-ethylidene-2-norbornene				[3048-64-4]
	(314–420)	42.3±0.3	(298)	EB	[96/5]
	<i>trans</i> 5-ethylidene-2-norbornene				[28304-67-8]
C <sub>9</sub> H <sub>12</sub>	(346–416)	41.2	(361)	A	[87/5]
	2-ethyltoluene				[611-14-3]
C <sub>9</sub> H <sub>12</sub>		46.9	(298)		[94/11]
		47.7	(298)		[71/28]
	(353–443)	43.6	(368)	A	[87/5][49/6]
	3-ethyltoluene				[620-14-4]
		46.6	(298)		[94/11]
C <sub>9</sub> H <sub>12</sub>		46.9	(298)		[71/28]
	(348–438)	43.4	(363)	A	[87/5][49/6]
	4-ethyltoluene				[622-96-8]
		46.5	(298)		[94/11]
		46.6	(298)		[71/28]
C <sub>9</sub> H <sub>12</sub>	(349–442)	43.2	(364)	A	[87/5][49/6]
	isopropylbenzene				[98-82-8]
		45.1	(298)		[94/11]
	(349–426)	41.2	(364)		[89/6]
	(339–433)	42.1	(354)	A	[87/5]
C <sub>9</sub> H <sub>12</sub>		45.1±0.1	(298)	C	[82/5]
		44.0	(298)		[75/12]
		45.1	(298)		[71/28]
		45.1	(298)	C	[47/7]
	(343–426)	41.9	(358)	MM	[49/6][45/2]
	propylbenzene				[103-65-1]
		46.2	(298)		[94/11]
	(340–391)	43.8	(355)		[86/13]
		45.0	(298)		[75/12]
		46.2	(298)		[71/28]
C <sub>9</sub> H <sub>12</sub>		46.2	(298)	C	[47/7]
	(348–433)	42.7	(363)	A, MM	[87/5][49/6]
					[45/2]
	3a,4,7,7a-tetrahydro-1 <i>H</i> -indene				[3048-65-5]
	(338–440)	42.3	(353)	A	[87/5]
C <sub>9</sub> H <sub>12</sub>	1,2,3-trimethylbenzene				[526-73-8]
		49.0	(298)		[94/11]
		48.8	(298)		[74/14]
	(363–456)	44.8	(378)	A	[87/5][49/6]
		49.1	(298)		[71/28]
C <sub>9</sub> H <sub>12</sub>	1,2,4-trimethylbenzene				[47/7]
		49.1	(298)	C	[95-63-6]
		48.0	(298)		[94/11]
		47.2	(298)		[74/14]
		47.9	(298)		[71/28]
C <sub>9</sub> H <sub>12</sub>	(357–450)	44.1	(372)	A	[87/5][49/6]
		47.9	(298)	C	[47/7]
	1,3,5-trimethylbenzene				[108-67-8]
		47.6	(298)		[94/11]
	(296–342)	46.2±1.3	(319)	MM	[91/7]
C <sub>9</sub> H <sub>12</sub>	(296–342)	47.5±2.1	(298)	MM	[91/7]
	(348–424)	43.5	(363)		[89/7]
	(249–356)	49.7	(264)	A	[87/5]
		47.5±0.1	(298)	C	[87/19]
	(354–445)	43.9	(369)	A	[87/5][49/6]
	(273–299)	47.7	(286)	MM	[81/19]
		47.5	(298)		[71/28]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>9</sub> H <sub>12</sub>	5-vinyl-2-norbornene	47.5	(298)	C	[47/7]
	(301–410)	42.0	(316)	A	[3048-64-4] [87/5]
	(354–409)	48.9	(369)	A	[87/5]
C <sub>9</sub> H <sub>12</sub> NO <sub>3</sub> PS	O,O-dimethyl-O-(3-methyl-4-nitrophenyl)thiophosphate	78.0	(308)	A	[122-14-5] [87/5]
C <sub>9</sub> H <sub>12</sub> N <sub>2</sub>	n-pentylmalodinitrile	66.9 ± 0.4		GS	[90/4]
C <sub>9</sub> H <sub>12</sub> N <sub>2</sub>	phenylhydrazone acetone	74.6	(424)	A	[103-02-6] [87/5]
C <sub>9</sub> H <sub>12</sub> O	(1-methoxyethyl)benzene	49.2 ± 0.4	(296)	GS	[01/16]
	(298–313)	49.1 ± 0.4	(298)	GS	[01/16]
C <sub>9</sub> H <sub>12</sub> O	benzyl ethyl ether	53.5 ± 0.4	(298)	GS	[539-30-0] [02/29]
	(278–314)	48.0	(314)	A	[87/5][47/5]
C <sub>9</sub> H <sub>12</sub> O	2-ethylanisole	49.8	(317)	A	[14804-32-1] [87/5][47/5]
C <sub>9</sub> H <sub>12</sub> O	3-ethylanisole	49.3	(321)	A	[10568-38-4] [87/5][47/5]
C <sub>9</sub> H <sub>12</sub> O	4-ethylanisole	51.9	(321)	A	[1515-95-3] [87/5][47/5]
C <sub>9</sub> H <sub>12</sub> O	5-ethyl-3-methylphenol	55.0	(483)	A, GS, EB	[87/5][64/14]
	(468–521)	58.5			[55/9]
C <sub>9</sub> H <sub>12</sub> O	2-isopropylphenol	63.5	(390)	EB	[88-69-7] [90/5]
	(375–493)	55.1	(385)	A	[87/5]
	(370–489)	56.1	(390)		[86/7]
	(375–493)	57.3	(350)		[47/5]
C <sub>9</sub> H <sub>12</sub> O	3-isopropylphenol	64.3	(392)	A	[618-45-1] [87/5]
C <sub>9</sub> H <sub>12</sub> O	4-isopropylphenol	63.7	(406)	EB	[99-89-8] [90/5]
	(391–507)	63.1	(395)	A	[87/5]
C <sub>9</sub> H <sub>12</sub> O	isopropyl phenyl ether	49.5	(360)	A	[2741-16-4] [87/5][65/25]
C <sub>9</sub> H <sub>12</sub> O	(345–448)				[84/9]
	3-phenyl-1-propanol	62.8	(299)	A	[122-97-4] [87/5]
C <sub>9</sub> H <sub>12</sub> O	(284–328)	62.6	(362)		[47/5]
	(347–508)	52.9	(406)	A	[617-94-7] [87/5]
C <sub>9</sub> H <sub>12</sub> O	2-phenyl-2-propanol	52.9	(406)	A	[617-94-7] [87/5]
C <sub>9</sub> H <sub>12</sub> O	phenyl propyl ether	46.5	(389)	A	[622-85-5] [87/5]
C <sub>9</sub> H <sub>12</sub> O	2-propylphenol	56.9	(392)	A	[644-35-9] [87/5]
	(377–495)	59.9	(398)		[53/9]
	(381–504)	57.2	(423)		[53/9]
	(381–504)	53.0	(473)		[53/9]
C <sub>9</sub> H <sub>12</sub> O	3-propylphenol	60.2	(423)	A	[621-27-2] [87/5]
	(408–538)	59.9	(398)		[53/9]
	(386–512)	57.2	(423)		[53/9]
	(386–512)	53.0	(473)		[53/9]
C <sub>9</sub> H <sub>12</sub> O	4-propylphenol	56.7	(398)	A	[645-56-7] [87/5]
	(383–508)	61.3	(348)		[53/9]
	(347–517)	59.5	(373)		[53/9]
	(347–517)	58.4	(398)		[53/9]
	(347–517)	56.2	(423)		[53/9]
	(347–517)	51.5	(473)		[53/9]
C <sub>9</sub> H <sub>12</sub> O	2,3,5-trimethylphenol	53.9	(474)	A, GS, EB	[697-82-5] [87/5][64/14]
(459–521)					

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(379–506)	55.1	(394)		[55/9]
C <sub>9</sub> H <sub>12</sub> O	2,4,5-trimethylphenol				[496-78-6]
	(379–505)	56.5	(394)	A	[87/5][55/9]
C <sub>9</sub> H <sub>12</sub> O	2,4,6-trimethylphenol				[527-60-6]
	(367–494)	53.2	(382)	A	[87/5][55/9]
C <sub>9</sub> H <sub>12</sub> O	3,4,5-trimethylphenol				[527-54-8]
	(396–521)	61.1	(411)	A	[87/5]
C <sub>9</sub> H <sub>12</sub> O	2,5,6-trimethylphenol				[2416-94-6]
	(359–503)	51.1±0.2	(431)		[88/4]
C <sub>9</sub> H <sub>12</sub> O	$\alpha,\alpha$ -dimethylbenzyl alcohol				[617-94-7]
	(311–338)	63.4±0.5	(325)	GS	[99/3]
	(311–338)	65.0±0.5	(298)	GS	[99/3]
C <sub>9</sub> H <sub>12</sub> O <sub>2</sub>	trimethylhydroquinone				[700-13-0]
	(450–501)	45.5±0.3	(475)		[88/4]
C <sub>9</sub> H <sub>12</sub> O <sub>2</sub>	cumene hydroperoxide				[80-15-9]
	(283–333)	69.9	(298)	A	[87/5]
	(347–390)	74.0	(362)	A	[87/5]
C <sub>9</sub> H <sub>12</sub> O <sub>2</sub>	1,3-dihydroxy-5-methyl-2-ethylbenzene				
	(388–453)	77.1	(403)	A, GC	[87/5][75/24]
C <sub>9</sub> H <sub>12</sub> O <sub>2</sub>	3,5-dimethoxytoluene				[4179-19-5]
	(374–520)	59.5	(389)	A	[87/5]
C <sub>9</sub> H <sub>12</sub> O <sub>2</sub>	ethylene glycol monobenzyl ether				[622-08-2]
	(453–530)	58.6	(468)	A	[87/5]
C <sub>9</sub> H <sub>12</sub> O <sub>2</sub>	propylene glycol 1-phenyl ether				[770-35-4]
	(389–509)	59.5	(404)	A	[87/5]
C <sub>9</sub> H <sub>12</sub> O <sub>2</sub>	isopropyl catechol (isomer not specified)				
	(393–453)	65.3	(423)		[65/21]
C <sub>9</sub> H <sub>12</sub> O <sub>2</sub>	benzaldehyde dimethyl acetal				[1125-88-8]
	(278–318)	60.9±0.5	(298)	GS	[02/32]
	(283–318)	56.5±0.7	(300)	GS	[95/25]
C <sub>9</sub> H <sub>12</sub> O <sub>3</sub>	1,3,5-trimethoxybenzene				[621-23-8]
		68.2±2.0	(298)	CGC	[00/9]
C <sub>9</sub> H <sub>12</sub> S	benzyl ethyl sulfide				[6263-62-3]
	(346–370)	56.0	(358)		[99/16]
	(345–500)	54.8	(360)	A	[87/5]
		56.9±2.1	(298)		[62/20]
C <sub>9</sub> H <sub>12</sub> S	2-ethylthioanisole				[20760-06-9]
	(481–511)	44.3	(496)		[99/16]
C <sub>9</sub> H <sub>12</sub> S	ethyl <i>m</i> -tolyl sulfide				[34786-24-8]
	(472–502)	43.5	(487)		[99/16]
C <sub>9</sub> H <sub>12</sub> S	ethyl <i>p</i> -tolyl sulfide				[622.63-9]
	(473–503)	43.6	(488)		[99/16]
C <sub>9</sub> H <sub>12</sub> S	(isopropylthio)benzene				[3019-20-3]
	(461–491)	U23.6	(476)		[99/16]
C <sub>9</sub> H <sub>12</sub> S	(propylthio)benzene				[874-79-3]
	(473–503)	44.3	(488)		[99/16]
C <sub>9</sub> H <sub>13</sub> Cl <sub>3</sub> OS	2,3,3-trichloro-2-propenethioic acid, O-hexyl ester				[76619-95-9]
	(433–483)	69.5		GC	[80/24]
C <sub>9</sub> H <sub>13</sub> N	$\alpha,\alpha$ -dimethylbenzylamine				
	(283–323)	56.4±0.7	(303)	GS	[99/3]
	(283–323)	56.7±0.7	(298)	GS	[99/3]
C <sub>9</sub> H <sub>13</sub> N	N,N-dimethylbenzylamine				[103-83-3]
	(288–328)	48.9±0.4	(308)	GS	[99/3]
	(288–328)	49.5±0.4	(298)	GS	[99/3]
		50.1±0.9	(298)	C	[96/21]
C <sub>9</sub> H <sub>13</sub> N	N,N-dimethyl-2-toluidine				[609-72-3]
	(301–458)	52.4	(316)	A	[87/5][47/5]
C <sub>9</sub> H <sub>13</sub> N	N,N-dimethyl-3-toluidine				[121-72-2]
		58.2±6.9	(298)	CGC	[96/1]
C <sub>9</sub> H <sub>13</sub> N	N,N-dimethyl-4-toluidine				[99-97-8]
	(323–483)	60.7	(338)	A	[87/5][47/5]
C <sub>9</sub> H <sub>13</sub> N	N-ethyl-3-toluidine				[102-27-2]
		60.0±3.0	(298)	CGC	[96/1]
C <sub>9</sub> H <sub>13</sub> N	2-isopropylaniline				[643-28-7]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(286–326)	61.3±0.9	(306)		[00/14]
		61.8±0.9	(298)		[00/14]
C <sub>9</sub> H <sub>13</sub> N	4-isopropylaniline (333–500)	57.5	(348)	A	[99-88-7] [87/5][47/5]
C <sub>9</sub> H <sub>13</sub> N	1-phenyl-2-propylamine (333–353)	53.4	(343)	A	[300-62-9] [87/5]
C <sub>9</sub> H <sub>13</sub> N	2,4,6-trimethylaniline (341–510)	64.1	(356)	A	[88-05-1] [87/5][47/5]
C <sub>9</sub> H <sub>14</sub>	1-ethyltricyclo[2,2,1,0 <sup>2,6</sup> ]heptane	42.0±0.1	(298)	C	[96/18]
C <sub>9</sub> H <sub>14</sub>	2-methylenebicyclo[2.2.2]octane	45.2			[2972-20-5] [74/33]
C <sub>9</sub> H <sub>14</sub>	2-methylbicyclo[2.2.2]oct-2-ene (363–402)	40.2 43.5±0.4	(378) (298)	A EB	[4893-13-4] [87/5] [74/20][74/33]
C <sub>9</sub> H <sub>14</sub>	2-vinylbicyclo[2.2.1]heptane (350–385)	38.6	(365)	A	[2146-39-6] [87/5]
C <sub>9</sub> H <sub>14</sub> F <sub>3</sub> NO <sub>3</sub>	N-trifluoroacetyl- <i>l</i> -leucine, methyl ester (273–463)	55.9	(288)	A	[1115-39-5] [87/5][99/16]
C <sub>9</sub> H <sub>14</sub> N <sub>2</sub>	azelaic acid dinitrile (308–341)	80.4	(323)	A	[1675-69-0] [87/5]
C <sub>9</sub> H <sub>14</sub> O	<i>cis</i> 2-hexahydroindanone	57.5	(298)		[5689-04-3] [71/8]
C <sub>9</sub> H <sub>14</sub> O	<i>trans</i> 2-hexahydroindanone	56.1	(298)		[16484-17-6] [71/8]
C <sub>9</sub> H <sub>14</sub> O	2,5,6-trimethyl-2-cyclohexen-1-one (371–478)	45.5±0.3	(425)		[20030-30-2] [88/4]
C <sub>9</sub> H <sub>14</sub> O	3,3,5-trimethyl-2-cyclohex-1-one (isophorone) (311–489)	48.6	(326)	A	[78-59-1] [87/5][47/5]
C <sub>9</sub> H <sub>14</sub> O	2,6-dimethyl-2,5-heptadien-4-one (phorone) (315–471)	54.1	(330)	A	[504-20-1] [87/5][47/5]
C <sub>9</sub> H <sub>14</sub> O <sub>2</sub>	bicyclo[2.2.1]heptan-7-one ethylene ketal (283–318)	53.8±0.2		GS	[98/21][02/32]
C <sub>9</sub> H <sub>14</sub> O <sub>2</sub>	methyl 2-octynoate (283–312)	64.5	(297)	A, ME	[111-12-6] [87/5][55/8]
C <sub>9</sub> H <sub>14</sub> O <sub>4</sub>	diethyl citraconate (332–504)	54.9	(347)	A	[691-83-8] [87/5][47/5]
C <sub>9</sub> H <sub>14</sub> O <sub>4</sub>	diethyl itaconate (324–501)	51.0	(339)	A	[2409-52-1] [87/5][47/5]
C <sub>9</sub> H <sub>14</sub> O <sub>4</sub>	diethyl mesaconate (335–502)	55.9	(350)	A	[2418-31-7] [87/5][47/5]
C <sub>9</sub> H <sub>14</sub> O <sub>4</sub>	1,1-cyclopropanedicarboxylic acid diethyl ester (288–318)	63.9±0.5		GS	[1559-02-0] [98/22]
C <sub>9</sub> H <sub>14</sub> O <sub>5</sub>	diethyl acetylmalonate (363–510)	54.0	(378)	A	[570-08-1] [87/5]
C <sub>9</sub> H <sub>14</sub> O <sub>5</sub>	ethyl[(1-allyloxycarbonyl)ethyl] carbonate (342–496)	61.3	(357)	A	[87/5]
C <sub>9</sub> H <sub>14</sub> O <sub>5</sub>	2-lactyloxypropionic acid, allyl ester (331–401)	75.1	(346)	A	[87/5]
C <sub>9</sub> H <sub>14</sub> O <sub>6</sub>	glycerol triacetate (284–319)	82.0 83.4±1.0	(299) (298)	A GCC	[102-76-1] [87/5] [80/5]
C <sub>9</sub> H <sub>14</sub> O <sub>7</sub>	trimethyl citrate (379–560)	67.4	(394)	A	[1587-20-8] [87/5][47/5]
C <sub>9</sub> H <sub>15</sub> Cl <sub>3</sub> O <sub>2</sub>	3-chloro-2,2- <i>bis</i> (chloromethyl)propyl butyrate (426–482)	73.6	(441)	A	[87/5][99/16]
C <sub>9</sub> H <sub>15</sub> NOS	carbamothioic acid, (1-methylethyl)-2-propynyl-S-ethyl ester (298–313)	72.8	(305)	A	[59300-33-3] [87/5][99/16]
C <sub>9</sub> H <sub>15</sub> NOS	carbamothioic acid, propyl-2-propynyl-S-ethyl ester (298–313)	64.6	(305)	A	[59300-33-3] [87/5]
C <sub>9</sub> H <sub>16</sub>	1-nonyne (320–464)	45.6±0.2	(320)	EB	[3452-09-3] [02/16]
	(320–464)	42.7±0.2	(360)	EB	[02/16]
	(320–464)	39.7±0.3	(400)	EB	[02/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>9</sub> H <sub>16</sub>	(320–464) <i>trans</i> bicyclo[6.1.0]nonane	36.4±0.5	(440)	EB	[02/16] [39124-79-3]
		42.7±0.6		EB	[78/15]
C <sub>9</sub> H <sub>16</sub>	<i>cis</i> bicyclo[6.1.0]nonane	49.8±0.8		EB	[13757-43-2] [78/15]
C <sub>9</sub> H <sub>16</sub>	(297–360) 1,4-dimethylbicyclo[2.2.1]heptane	50.4±0.8	(312)	A	[87/5][70/30] [20454-81-3]
	(328–393)	36.8	(343)	A	[87/5][70/6] [84/9]
C <sub>9</sub> H <sub>16</sub>	<i>trans</i> 2,3-dimethylbicyclo[2.2.1]heptane (345–411)	39.3	(360)	A	[20558-16-1] [87/5][70/6] [84/9]
C <sub>9</sub> H <sub>16</sub>	2-ethylbicyclo[2.2.1]heptane (349–396)	44.4	(364)	A	[2146-41-0] [87/5]
C <sub>9</sub> H <sub>16</sub>	<i>cis</i> hexahydroindan (263–293) (290–366) (363–463) (350–442)	47.1	(278)	A	[87/5]
		45.9	(305)	A	[87/5]
		41.9	(378)	A	[87/5]
		42.6	(365)	GS	[55/7]
C <sub>9</sub> H <sub>16</sub>	<i>trans</i> hexahydroindan (281–362) (356–457) (262–283) (358–479) (345–435)	45.1	(296)	A	[3296-50-2] [87/5]
		41.1	(371)	A	[87/5]
		45.9	(272)	A	[87/5]
		41.0	(373)	A	[87/5]
		41.6	(360)	GS	[55/7]
C <sub>9</sub> H <sub>16</sub>	allylcyclohexane				[2114-42-3]
C <sub>9</sub> H <sub>16</sub>	ethylidenecyclohexane	44.0±0.2	(298)	GCC	[79/17]
		42.0±0.2	(298)	GCC	[1003-64-1] [79/17]
C <sub>9</sub> H <sub>16</sub>	spiro[4.4]nonane (278–313)	44.5±0.6	(298)	GS	[175-93-9] [02/32]
C <sub>9</sub> H <sub>16</sub> Cl <sub>4</sub>	1,1,1,9-tetrachlorononane (303–434) (298–338)	78.0	(318)		[1561-48-4] [99/16]
		89.0	(313)	A	[87/5]
C <sub>9</sub> H <sub>16</sub> N <sub>2</sub>	2-methyl-2-piperidinopropionitrile	57.6±0.4		GS	[2273-41-8] [97/10]
C <sub>9</sub> H <sub>16</sub> O	cyclononanone (333–413)	51.4	(348)	A	[3350-30-9] [87/5]
C <sub>9</sub> H <sub>16</sub> O	1-(1-methyl-3-cyclohexen-3-yl)ethanol (358–410)	54.6	(373)	A	[2890-62-2] [87/5]
C <sub>9</sub> H <sub>16</sub> O	methyl (1-methylcyclohexyl) ketone (374–414)	46.1	(389)	A	[2890-62-2] [87/5]
C <sub>9</sub> H <sub>16</sub> O	<i>trans</i> 2-nonenal (363–398)	56.1	(378)	A	[18829-56-6] [87/5]
C <sub>9</sub> H <sub>16</sub> O	( <i>dl</i> ) 3,5,5-trimethylcyclohexanone (423–463)	39.3	(438)	A	[873-94-9] [87/5]
C <sub>9</sub> H <sub>16</sub> O	2,5,5-trimethyl-4-hexene-1-al (293–353)	57.0	(308)	A	[1000-30-2] [87/5]
C <sub>9</sub> H <sub>16</sub> OS	tetrahydro-2,2,6,6-tetramethyl-4 <i>H</i> -thiopyran-4-one (300–360)	34.7	(315)	A	[22842-41-7] [87/5][72/27] [99/16]
C <sub>9</sub> H <sub>16</sub> O <sub>2</sub>	bicyclo[2.2.1]heptan-7-one dimethyl ketal (283–318)	50.2±0.2		GS	[39869-70-0] [98/21][02/32]
C <sub>9</sub> H <sub>16</sub> O <sub>2</sub>	acetic acid, 2-methylcyclohexyl ester, mixed isomers (337–457)	49.0	(353)	A	[5726-19-2] [87/5]
C <sub>9</sub> H <sub>16</sub> O <sub>2</sub>	2-butyl-4,7-dihydro-1,3-dioxepine (318–453)	50.9	(333)	A	[61732-95-4] [87/5]
C <sub>9</sub> H <sub>16</sub> O <sub>2</sub>	hexyl acrylate (342–461)	48.2	(357)	A	[2499-95-8] [87/5]
C <sub>9</sub> H <sub>16</sub> O <sub>2</sub>	methacrylic acid, neopentyl ester (313–338)	40.5	(325)	A	[87/5]
C <sub>9</sub> H <sub>16</sub> O <sub>2</sub>	oxo-2-cyclodecanone (nonanolactone) (352–381) (352–381)	54.5±0.2	(366)	MM	[6008-27-1] [91/7]
		59.0±1.3	(298)	MM	[91/7]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>9</sub> H <sub>16</sub> O <sub>2</sub>	(333–383)	60.9	(348)	A	[87/5]
	2,6-dimethyl-3,5-heptanedione				[18362-64-6]
C <sub>9</sub> H <sub>16</sub> O <sub>2</sub>		56.1	(298)		[78/18]
	pentyl methacrylate				[2849-98-1]
C <sub>9</sub> H <sub>16</sub> O <sub>3</sub>	(339–456)	47.6	(354)	A	[87/5]
	butyl levulinate				[2052-15-5]
C <sub>9</sub> H <sub>16</sub> O <sub>3</sub>	(338–511)	55.5	(373)	A	[87/5]
		56.0	(452)		[31/1]
C <sub>9</sub> H <sub>16</sub> O <sub>3</sub>		51.0	(408)	A	[2052-15-5]
	sec-butyl levulinate				[87/5]
C <sub>9</sub> H <sub>16</sub> O <sub>3</sub>	(393–499)				[3757-32-2]
	isobutyl levulinate				[87/5][47/5]
C <sub>9</sub> H <sub>16</sub> O <sub>4</sub>	(338–503)	61.5	(353)	A	[87/5][47/5]
		54.7	(444)		[31/1]
C <sub>9</sub> H <sub>16</sub> O <sub>4</sub>	2-acetoxypionic acid, butyl ester				
C <sub>9</sub> H <sub>16</sub> O <sub>4</sub>	(325–485)	63.2	(340)	A	[87/5]
	3-acetoxypionic acid, butyl ester				[40326-38-3]
C <sub>9</sub> H <sub>16</sub> O <sub>4</sub>	(373–391)	75.4	(382)	A	[87/5]
	diethyl glutarate				[818-38-2]
C <sub>9</sub> H <sub>16</sub> O <sub>4</sub>	(338–510)	55.7	(353)	A	[87/5][47/5]
	ethylmalonic acid, diethyl ester				[133-13-1]
C <sub>9</sub> H <sub>16</sub> O <sub>4</sub>	(323–485)	55.3	(338)	A	[87/5][47/5]
	nonanedioic acid (azelaic acid)				[123-99-9]
C <sub>9</sub> H <sub>16</sub> O <sub>5</sub>	(451–630)	89.3	(466)	A	[87/5][47/5]
	butyl[1-(methoxycarbonyl)ethyl] carbonate				
C <sub>9</sub> H <sub>16</sub> O <sub>5</sub>	(349–510)	61.7	(364)	A	[87/5]
	isobutyl[1-(methoxycarbonyl)ethyl] carbonate				
C <sub>9</sub> H <sub>16</sub> O <sub>5</sub>	(340–501)	59.1	(355)	A	[87/5]
	2-lactoylpropionic acid, propyl ester				
C <sub>9</sub> H <sub>16</sub> O <sub>5</sub>	(327–397)	73.5	(342)	A	[87/5]
	methyl[1-(butoxycarbonyl)ethyl] carbonate				
C <sub>9</sub> H <sub>16</sub> O <sub>5</sub>	(311–503)	60.2	(326)	A	[87/5]
					[767-92-0]
C <sub>9</sub> H <sub>17</sub> N	<i>trans</i> (R,S)-decahydroquinoline				
	(325–525)	50.4	(340)	EB, IPM	[94/17]
	(325–525)	47.6	(380)	EB, IPM	[94/17]
	(325–525)	45.0	(420)	EB, IPM	[94/17]
	(325–525)	42.3	(460)	EB, IPM	[94/17]
C <sub>9</sub> H <sub>17</sub> N	(325–525)	39.5	(500)	EB,IPM	[94/17]
	octyl cyanide				[2243-27-8]
C <sub>9</sub> H <sub>17</sub> NO <sub>3</sub>	(328–503)	56.8	(343)	A	[87/5]
	( <i>dl</i> ) N-acetylvaline ethyl ester				[56430-36-5]
C <sub>9</sub> H <sub>17</sub> NO <sub>3</sub> S	(382–466)	67.7	(397)	A	[87/5]
	( <i>dl</i> ) N-acetylmethionine ethyl ester				[33280-93-2]
C <sub>9</sub> H <sub>18</sub>	(432–519)	81.6	(447)	A	[87/5][99/16]
	butylcyclopentane				[2040-95-1]
	(413–432)	39.4	(422)	A	[87/5]
		43.8±0.1	(328)	C	[81/14]
		42.7±0.1	(343)	C	[81/14]
		41.6±0.1	(358)	C	[81/14]
		40.9±0.1	(368)	C	[81/14]
C <sub>9</sub> H <sub>18</sub>		46.0	(298)		[71/28]
	<i>cis</i> 1-ethyl-3-methylcyclohexane				[19489-10-2]
C <sub>9</sub> H <sub>18</sub>	(373–465)	39.0	(388)	A	[87/5]
	isopropylcyclohexane				[696-29-7]
C <sub>9</sub> H <sub>18</sub>	(295–431)	44.1	(310)	A	[87/5]
	(344–429)	41.1	(359)		[49/6]
C <sub>9</sub> H <sub>18</sub>	propylcyclohexane				[1678-92-8]
		42.8±0.5	(298)	GC	[87/17]
		44.7±0.4	(298)	GCC	[78/16]
		45.2	(298)		[71/28]
		45.2	(298)	C	[47/7]
C <sub>9</sub> H <sub>18</sub>	(346–431)	41.7	(361)	A, MM	[87/5][47/5]
					[49/6]
C <sub>9</sub> H <sub>18</sub>	1,1,3-trimethylcyclohexane				[3073-66-3]
	(348–411)	37.7	(363)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>9</sub> H <sub>18</sub>	(327–410)	38.6	(342)		[62/24][84/9]
	(328–411)	38.4	(343)		[49/6]
C <sub>9</sub> H <sub>18</sub>	1,1,4-trimethylcyclohexane	45.6			[7094-27-1] [95/31]
C <sub>9</sub> H <sub>18</sub>	<i>cis</i> 1,3,5-trimethylcyclohexane (318–410)	38.3	(333)	A	[1795-27-3] [87/5]
C <sub>9</sub> H <sub>18</sub>	2,6-dimethyl-1-heptene (273–306)	46.3±0.5	(290)	GS	[3074-78-0] [00/7]
C <sub>9</sub> H <sub>18</sub>	(273–306)	45.9±0.5	(298)	GS	[00/7]
	1-nonene (278–318)	44.7±0.2	(298)	GS	[124-11-8] [00/7]
C <sub>9</sub> H <sub>18</sub>	(339–423)	45.5	(298)		[71/28]
	42.0	(354)	A, MM	[87/5][50/6]	
C <sub>9</sub> H <sub>18</sub>	<i>cis</i> 2-nonene (379–424)	40.7	(394)	A	[6434-77-1] [87/5]
C <sub>9</sub> H <sub>18</sub>	<i>trans</i> 2-nonene (379–422)	40.8	(394)	A	[6434-78-2] [87/5]
C <sub>9</sub> H <sub>18</sub>	<i>cis</i> 3-nonene (376–422)	40.3	(391)	A	[20237-46-1] [87/5]
C <sub>9</sub> H <sub>18</sub>	<i>trans</i> 3-nonene (377–421)	40.6	(392)	A	[20063-92-7] [87/5]
C <sub>9</sub> H <sub>18</sub>	<i>cis</i> 4-nonene (376–421)	40.1	(391)	A	[10405-84-2] [87/5]
C <sub>9</sub> H <sub>18</sub>	<i>trans</i> 4-nonene (376–420)	40.4	(391)	A	[10405-85-3] [87/5]
C <sub>9</sub> H <sub>18</sub> Br <sub>2</sub>	1,1-dibromononane (427–591)	59.5	(442)	A, EST	[62168-27-8] [87/5][56/16] [70/14][99/16]
C <sub>9</sub> H <sub>18</sub> Cl <sub>2</sub>	1,1-dichlorononane (420–490)	62.3	(298)		[821-88-5] [87/12][91/2]
	(398–556)	54.0	(413)	A, EST	[87/5][56/16] [70/14][99/16]
C <sub>9</sub> H <sub>18</sub> Cl <sub>2</sub>	1,2-dichlorononane (430–510)	52.1	(443)		[56375-96-3] [99/16]
	(430–510)	62.1	(298)		[86/5][91/2]
C <sub>9</sub> H <sub>18</sub> F <sub>2</sub>	1,1-difluorononane (347–482)	47.2	(362)	A, EST	[62127-42-8] [87/5][56/16] [70/14][99/16]
C <sub>9</sub> H <sub>18</sub> F <sub>2</sub>	2,2-difluorononane (279–313)	46.7±0.2	(298)	GS	[97/14]
C <sub>9</sub> H <sub>18</sub> N <sub>2</sub>	2-(diethylamino)pentanenitrile (283–318)	57.4±0.4		GS	[19340-91-9] [97/10]
	(283–326)	58.8	(298)	A	[87/5]
C <sub>9</sub> H <sub>18</sub> O	1-butylcyclopentanol (359–466)	63.5	(374)	A	[1462-97-1] [87/5]
C <sub>9</sub> H <sub>18</sub> O	2,2,4,4-tetramethyl-3-pentanone	45.5±0.4	(298)	C	[815-24-7] [77/7]
		45.4±0.1	(298)	C	[70/18]
C <sub>9</sub> H <sub>18</sub> O		45.4±0.1	(298)	C	[66/2]
	2,6-dimethyl-4-heptanone	49.8±0.1	(308)	C	[108-83-8] [92/8]
		49.3±0.1	(313)	C	[92/8]
		48.4±0.1	(323)	C	[92/8]
		47.9±0.1	(328)	C	[92/8]
		47.1±0.1	(338)	C	[92/8]
		46.6±0.1	(343)	C	[92/8]
		46.1±0.1	(348)	C	[92/8]
		45.2±0.1	(358)	C	[92/8]
		51.0	(298)		[75/8]
C <sub>9</sub> H <sub>18</sub> O	(322–471)	50.9±0.1	(298)	C	[70/18]
	(336–451)	46.8	(351)	A, MM	[87/5][47/8]
C <sub>9</sub> H <sub>18</sub> O	1-(1-methylcyclohexyl)ethanol (358–408)	55.5	(373)	A	[87/5]
C <sub>9</sub> H <sub>18</sub> O	nonanal				[124-19-6]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>9</sub> H <sub>18</sub> O	(323–343)	55.2	(298)	CGC	[96/7][00/10]
	(313–353)	58.9	(298)	CGC	[95/21]
	(306–458)	51.1	(321)	A	[87/5]
		56.3±0.2	(298)		[81/18]
	2-nonanone				[925-78-0]
	(285–454)	55.6	(300)		[99/27]
C <sub>9</sub> H <sub>18</sub> O	(335–468)	52.6	(350)	A	[87/5]
		56.6±0.6	(298)	GCC	[79/7]
		56.4±0.1	(298)	C	[77/2]
	(342–545)	56.4	(298)		[75/8]
	(335–437)	52.7	(348)		[66/12]
	5-nonanone				[502-56-7]
C <sub>9</sub> H <sub>18</sub> O	(443–486)	44.7	(458)	A	[87/5]
		54.9±0.4	(298)	GCC	[79/7]
	(357–468)	49.7	(372)	A	[87/5][75/8]
		55.0	(298)		[75/8]
		53.3±0.1	(298)	C	[70/19]
		40.2	(298)	A	[87/5][37/9]
C <sub>9</sub> H <sub>18</sub> O	3,3,5-trimethylcyclohexanol				[116-02-9]
C <sub>9</sub> H <sub>18</sub> O	(343–473)	61.8	(358)	A	[87/5]
C <sub>9</sub> H <sub>18</sub> O	2,2,5-trimethyl-4-hexene-1-ol				[53965-16-5]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(323–373)	61.5	(338)	A	[87/5]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	2-butoxy-3-pentanone				[22432-66-2]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(333–398)	39.8	(348)	A	[87/5]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	2-butyl-1,3-dioxepane				[22432-66-2]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(325–358)	57.4	(340)	A	[87/5]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	2-ethylheptanoic acid				[3274-29-1]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(386–475)	63.4	(401)	A, EB	[87/5][60/22]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	2-methyl-2-pentyl-1,3-dioxolane				[4352-95-8]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(278–318)	54.0±0.3	(298)	GS	[98/21][02/32]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	2,2-diisopropyl-1,3-dioxolane				[4421-10-7]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(278–318)	49.9±0.3	(293)	GS	[98/21][02/32]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	2-hexyl-1,3-dioxolane				[1708-34-5]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(325–353)	55.0	(339)	A	[87/5]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	methyl 2,4,4-trimethylpentanoate				[64198-22-7]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(278–318)	48.4±0.2	(298)	GS	[96/11]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	butyl pivalate				[5129-37-3]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(274–313)	50.4±0.3	(298)	GS	[96/11]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	isobutyl isovalerate				[589-59-3]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(289–442)	47.3	(304)	A	[87/5][47/5]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	isopentyl butyrate				[106-27-4]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(294–452)	47.4	(309)	A	[87/5][47/5]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	isopentyl isobutyrate				[2050-01-3]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(287–442)	47.4	(302)	A	[87/5][47/5]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	isopropyl caproate				[2311-46-8]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(307–383)	51.6	(322)	A	[87/5]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	methyl octanoate (methyl caprylate)				[111-11-5]
		53.3	(350)		[02/27]
		52.6±0.1	(363)		[02/27]
		56.9±0.1	(298)		[02/27]
		54.7±0.6	(298)	GC	[87/17]
		57.3±0.4	(298)	GCC	[80/5]
		57.9±0.4	(298)	C	[77/7]
		56.4±0.5	(298)	C	[77/1]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(347–470)	52.4	(362)	A, EST	[87/5][63/16]
	(373–419)	50.8	(388)		[61/6][84/9]
	(307–350)	55.2	(322)	MG, OM	[52/13]
	nonanoic acid				[112-05-0]
	(381–528)	76.9	(396)	A	[87/5]
	(292–313)	85.3±2.0	(304)	ME, TE	[82/4]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(293–303)	82.4±0.4	(298)		[68/20]
	(387–483)	64.2		EB	[60/22]
	propyl caproate				[626-77-7]
	(315–394)	52.8	(330)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(315–394) heptyl acetate	52.1	(330)		[61/6][84/9] [112-06-1]
		56.9	(298)	GC	[97/13]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(387–478) <i>tert</i> -amyl butyrate	49.2	(402)	DTA	[80/8] [2050-00-2]
	(278–308) butyl 2-methylbutanoate	50.8±0.6	(298)	GS	[96/11]
C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>	(278–313) butyl 2-methylbutanoate	50.6±0.5	(298)	GS	[15706-73-7] [96/11]
C <sub>9</sub> H <sub>18</sub> O <sub>3</sub>	2-butoxypropionic acid, ethyl ester (348–438)	80.3	(363)	A	[87/5]
C <sub>9</sub> H <sub>18</sub> O <sub>3</sub>	3-ethoxypropionic acid, butyl ester (346–479)	51.8	(361)	A	[14144-35-5] [87/5]
C <sub>9</sub> H <sub>18</sub> O <sub>3</sub>	3-hydroxypropionic acid, hexyl ester (408–432)	69.6	(420)	A	[87/5]
C <sub>9</sub> H <sub>18</sub> O <sub>3</sub>	lactic acid, hexyl ester (307–494)	67.4	(322)	A	[20279-51-0] [87/5]
C <sub>9</sub> H <sub>18</sub> O <sub>3</sub>	3-methoxypropionic acid, pentyl ester (322–485)	53.3	(337)	A	[10500-16-0] [87/5]
C <sub>9</sub> H <sub>18</sub> O <sub>3</sub>	3-propoxypropionic acid, propyl ester (317–484)	50.9	(332)	A	[14144-41-3] [87/5]
C <sub>9</sub> H <sub>19</sub> Br	1-bromononane (376–525)	53.1	(391)		[693-58-3] [99/16]
	(391–549)	52.2	(406)	A, EST	[87/5][61/13] [70/14]
					[2473-01-0] [99/16]
C <sub>9</sub> H <sub>19</sub> Cl	1-chlorononane (363–509)	51.5	(378)		[84/9][91/2]
	(340–480)	55.9	(298)		[87/5][69/5]
	(342–478)	53.4	(357)	A, DTA	[463-18-3] [94/17]
C <sub>9</sub> H <sub>19</sub> F	1-fluorononane (278–313)	50.8±0.9	(298)	GS	[87/5][61/13]
	(333–473)	46.8	(348)	A, EST	[70/14][99/16] [4282-42-2]
					[99/16]
C <sub>9</sub> H <sub>19</sub> I	1-iodononane (391–551)	54.6	(406)		[87/5][70/14]
	(408–577)	53.5	(423)	A	[47/5]
	(343–493)	64.3	(358)		[97/21]
C <sub>9</sub> H <sub>19</sub> N	2,2,6,6-tetramethylpiperidine (288–313)	44.5±0.5	(300)		[4945-48-6] [98/12]
C <sub>9</sub> H <sub>19</sub> N	N-butylpiperidine (275–313)	49.2±0.2	(294)	GS	[98/12]
	(275–313)	48.9±0.2	(298)	GS	[98/12]
C <sub>9</sub> H <sub>19</sub> N	N,N-diethyl-4-pentenylamine (338–430)	41.5	(353)	A	[13173-21-2] [87/5]
C <sub>9</sub> H <sub>19</sub> NO	1-(cyclohexylamino)-2-propanol (423–512)	56.6	(438)	A	[103-00-4] [87/5][84/9] [59/1]
C <sub>9</sub> H <sub>19</sub> NO	nonanamide (353–370)	114.8	(361)	A	[1120-07-6] [87/5]
C <sub>9</sub> H <sub>19</sub> NO <sub>2</sub>	heptylcarbamic acid, methyl ester (368–408)	109.8	(383)	A	[35601-84-4] [87/5]
C <sub>9</sub> H <sub>19</sub> NO <sub>2</sub>	propyl 2-(N,N-dimethylamino)-2-methylpropanoate (282–318)	54.0±0.5	(298)	GS	[96/20]
C <sub>9</sub> H <sub>19</sub> NO <sub>2</sub>	ethyl 2-(N,N-diethylamino)-2-propanoate (283–313)	54.9±0.6	(298)	GS	[96/20]
C <sub>9</sub> H <sub>20</sub>	nonane				[111-84-2]
		46.7	(299)	C	[96/22]
		46.0	(314)	C	[96/22]
		46.6±0.2	(298)	C	[96/18]
		46.6	(298)		[94/12]
	(322–413)	43.9	(337)		[86/13]
		44.3	(328)	C	[84/8]
		43.2	(343)	C	[84/8]
		42.1	(358)	C	[84/8]
	46.4	(298)		[71/28]	



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(219–308)	48.3	(234)	A	[87/5][73/11]
		46.4	(298)	C	[47/7]
	(344–426)	42.7	(359)	A, MM	[87/5][45/2] [49/6] [3221-61-2]
C <sub>9</sub> H <sub>20</sub>	2-methyloctane (305–417)	43.2	(320)	A	[87/5]
		44.9	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	3-methyloctane				[2216-33-3]
		44.9	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	4-methyloctane				[2216-34-4]
		44.5	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	3-ethylheptane				[15869-80-4]
		44.5	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	4-ethylheptane				[2216-32-2]
		44.1	(298)		[61/30]
C <sub>9</sub> H <sub>20</sub>	2,2-dimethylheptane				[1071-26-7]
		42.3	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	2,3-dimethylheptane				[3074-71-3]
		43.6	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	2,4-dimethylheptane				[2213-23-2]
		42.9	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	2,5-dimethylheptane				[2216-30-0]
		43.3	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	2,6-dimethylheptane				[1072-05-5]
		43.3	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	3,3-dimethylheptane				[4032-86-4]
		42.6	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	3,4-dimethylheptane				[922-28-1]
		43.6	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	3,5-dimethylheptane				[926-82-9]
		43.3	(298)		[71/28]
C <sub>9</sub> H <sub>20</sub>	4,4-dimethylheptane				[1068-19-5]
		42.2	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	3,3-diethylpentane				[1067-20-5]
		42.6 ± 0.3	(298)	GCC	[79/17]
		43.6	(298)		[71/28][61/30]
	(335–426)	39.8	(350)	A	[87/5][49/6] [16789-46-1]
C <sub>9</sub> H <sub>20</sub>	2-methyl-3-ethylhexane				[61/30]
		43.2	(298)		[3074-75-7]
C <sub>9</sub> H <sub>20</sub>	2-methyl-4-ethylhexane				[61/30]
		42.9	(298)		[3074-76-8]
C <sub>9</sub> H <sub>20</sub>	3-methyl-3-ethylhexane				[61/30]
		42.9	(298)		[61/30]
C <sub>9</sub> H <sub>20</sub>	3-methyl-4-ethylhexane				[61/30]
		43.6	(298)		[16747-25-4]
C <sub>9</sub> H <sub>20</sub>	2,2,3-trimethylhexane (238–303)	42.2	(288)	IPM	[74/11]
		41.7	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	2,2,4-trimethylhexane (288–410)	39.5	(303)	A	[87/5]
	(238–393)	41.0	(278)	A	[87/5]
	(238–303)	40.5	(288)	IPM	[74/11]
		40.7	(298)		[71/28]
C <sub>9</sub> H <sub>20</sub>	2,2,5-trimethylhexane (288–399)	40.1	(303)	A	[3522-94-9] [87/5]
	(238–303)	41.1	(288)	A, IPM	[87/5][74/11]
		40.2	(298)		[71/28]
	(319–398)	38.5	(334)		[49/6]
		40.2	(298)	C	[47/7]
C <sub>9</sub> H <sub>20</sub>	2,3,3-trimethylhexane (238–303)	44.2	(253)	A	[16747-28-7] [87/5]
	(288–422)	39.4	(303)	A	[87/5]
		42.1	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	2,3,4-trimethylhexane				[921-47-1]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>9</sub> H <sub>20</sub>	2,3,5-trimethylhexane	42.7	(298)		[71/28][61/30] [1069-53-0]	
		41.4	(298)		[71/28]	
		41.4	(298)	C	[47/7]	
C <sub>9</sub> H <sub>20</sub>	2,4,4-trimethylhexane	41.1	(298)		[16747-30-0] [71/28][61/30]	
		(323–406)	38.5	(338)	A	[87/5][49/6]
C <sub>9</sub> H <sub>20</sub>	3,3,4-trimethylhexane				[16747-31-2] [71/28][61/30]	
C <sub>9</sub> H <sub>20</sub>	2,2-dimethyl-3-ethylpentane	42.2	(298)		[16747-32-3] [71/28][61/30]	
C <sub>9</sub> H <sub>20</sub>	2,3-dimethyl-3-ethylpentane	41.7	(298)		[16747-33-4] [71/28][61/30]	
C <sub>9</sub> H <sub>20</sub>	2,4-dimethyl-3-ethylpentane	42.7	(298)		[1068-87-7] [71/28][61/30]	
C <sub>9</sub> H <sub>20</sub>	2,2,3,3-tetramethylpentane	42.3	(298)		[7154-79-2] [71/28][61/30]	
		(328–415)	41.2	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	2,2,3,4-tetramethylpentane	39.2	(343)	A	[87/5][49/6] [1186-53-4]	
		(325–413)	40.8	(298)		[71/28][61/30]
C <sub>9</sub> H <sub>20</sub>	2,2,4,4-tetramethylpentane	38.4	(340)	A	[87/5][49/6] [1070-87-7]	
			38.5 ± 0.1	(298)	C	[82/6]
C <sub>9</sub> H <sub>20</sub>	2,3,3,4-tetramethylpentane	38.5 ± 0.3	(298)	GCC	[79/17]	
		(313–397)	38.2	(298)		[71/28][61/30]
		(331–375)	37.2	(328)	A	[87/5][49/6]
		(375–422)	36.5	(346)	EB	[41/9][84/9]
			34.8	(390)		[41/9]
			41.8	(298)		[16747-38-9] [71/28][61/30]
C <sub>9</sub> H <sub>20</sub> ClF <sub>3</sub> N <sub>2</sub> S	chlorobis(N-ethylethanaminato)(trifluoromethyl) sulfur	39.3	(346)	A	[87/5][49/6] [63265-72-5]	
			39.8	(479)	I	[77/15]
C <sub>9</sub> H <sub>20</sub> ClF <sub>3</sub> N <sub>2</sub> OS	chlorobis(N-ethylethanaminato)oxo(trifluoromethyl) sulfur	44.4	(486)	I	[63265-74-7] [77/15]	
C <sub>9</sub> H <sub>20</sub> N <sub>2</sub> S	1,3-dibutylthiourea				[109-46-6] [94/21]	
C <sub>9</sub> H <sub>20</sub> O	1-nonanol	105 ± 2.0	(386)	ME, TE	[143-08-8]	
		(373–423)	72.2	(298)	CGC	[00/10]
		(273–323)	76.7	(298)	CGC	[95/21]
		(368–500)	77.4	(298)		[92/14]
		(381–495)	65.0	(383)	A	[87/5]
			62.9	(396)	A	[87/5]
			76.9 ± 0.8	(298)	C	[77/1]
			59.7	(440)	EB	[76/13]
			64.5	(383)		[73/26]
			65.5	(380)	DTA	[69/5]
C <sub>9</sub> H <sub>20</sub> O	2-nonanol				[628-99-9]	
		(253–353)	79.6	(268)		[99/11]
		(364–471)	55.5	(379)		[73/26]
C <sub>9</sub> H <sub>20</sub> O	3-nonanol				[624-51-1]	
		(263–363)	75.5	(278)		[99/11]
		(366–468)	57.1	(381)		[73/26]
C <sub>9</sub> H <sub>20</sub> O	2-methyl-2-octanol				[628-44-4] [73/26]	
C <sub>9</sub> H <sub>20</sub> O	2-methyl-3-octanol	64.6	(353)		[26533-34-6] [73/26]	
C <sub>9</sub> H <sub>20</sub> O	3-methyl-3-octanol	49.5	(403)		[73/26]	
		(353–388)	53.2	(368)		[5340-36-3] [73/26]
C <sub>9</sub> H <sub>20</sub> O	2,2-dimethyl-4-heptanol				[73/26]	
C <sub>9</sub> H <sub>20</sub> O	2,6-dimethyl-4-heptanol	(320–445)	50.2	(335)		[73/26]
		(363–453)	54.5	(378)		[108-82-7] [73/26]
		(374–452)	52.8	(389)	A, MM	[87/5][47/8]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>9</sub> H <sub>20</sub> O	2,2,3-trimethyl-3-hexanol (343–441)	55.1	(358)		[5340-41-0] [73/26]
C <sub>9</sub> H <sub>20</sub> O	2,4-dimethyl-3-ethyl-3-pentanol (369–451)	50.0	(384)		[3970-59-0] [73/26]
C <sub>9</sub> H <sub>20</sub> O	2,2,3,4-tetramethyl-3-pentanol (329–448)	60.8	(344)		[29772-39-2] [73/26]
C <sub>9</sub> H <sub>20</sub> O	butyl 1,1-dimethylpropyl ether (278–308)	46.1 ± 0.3	(298)	GS	[3249-47-6] [96/11]
C <sub>9</sub> H <sub>20</sub> O	2-methoxy-2,4,4-trimethylpentane (381–418)	38.5	(396)		[01/14]
C <sub>9</sub> H <sub>20</sub> O	methyl <i>tert</i> -octyl ether	45.3	(298)		[U/2][02/32]
C <sub>9</sub> H <sub>20</sub> O	pentyl <i>tert</i> -butyl ether	48.3	(298)		[10100-95-5] [U/2][02/32]
	(319–365)	43.7	(334)	EB	[90/15]
	(319–365)	46.9 ± 1.0	(298)	EB	[90/15]
C <sub>9</sub> H <sub>20</sub> O	isobutyl <i>tert</i> -amyl ether	46.3	(298)		[U/2][02/32]
C <sub>9</sub> H <sub>20</sub> O	sec-butyl <i>tert</i> -amyl ether	46.8	(298)		[U/2][02/32]
C <sub>9</sub> H <sub>20</sub> O	butyl <i>tert</i> -amyl ether	48.3	(298)		[U/2][02/32]
C <sub>9</sub> H <sub>20</sub> O <sub>2</sub>	2,6,6-trimethyl-5-oxa-2-heptanol (329–454)	53.3	(344)		[68/16][84/9]
C <sub>9</sub> H <sub>20</sub> O <sub>2</sub>	dibutoxymethane (366–452)	47.9	(381)	EB	[00/17]
C <sub>9</sub> H <sub>20</sub> O <sub>2</sub>	1-butoxy-2-propoxyethane	54.7 ± 0.1	(298)	C	[18854-58-5] [70/17]
C <sub>9</sub> H <sub>20</sub> O <sub>2</sub>	2-butyl-2-ethyl-1,3-propanediol (424–523)	74.3 ± 0.3	(420)	EB	[115-84-4] [02/14]
	(424–523)	67.2 ± 0.3	(460)	EB	[02/14]
	(424–523)	61.4 ± 0.6	(500)	EB	[02/14]
C <sub>9</sub> H <sub>20</sub> O <sub>2</sub>	4- <i>tert</i> -butoxy-2-methyl-2-butanol (367–483)	61.5	(382)	A	[22419-28-9] [87/5]
C <sub>9</sub> H <sub>20</sub> O <sub>2</sub>	2,2,4-trimethyl-1,6-hexanediol (419–541)	68.0	(434)	A	[3089-24-5] [87/5]
C <sub>9</sub> H <sub>20</sub> O <sub>3</sub>	dipropylene glycol isopropyl ether (319–479)	55.0	(334)	A	[87/5][47/5]
C <sub>9</sub> H <sub>20</sub> O <sub>4</sub>	tripropylene glycol (369–541)	63.3	(384)	A	[87/5]
C <sub>9</sub> H <sub>20</sub> S	1-nonanethiol (390–494)	52.6	(405)	A	[1455-21-6] [87/5][99/16] [32/2]
C <sub>9</sub> H <sub>20</sub> S	2-nonanethiol (379–482)	50.3	(394)		[13281-11-3] [99/16][32/2]
C <sub>9</sub> H <sub>20</sub> S <sub>2</sub>	1,9-nonedithiol (418–557)	63.6	(433)	A	[3489-28-9] [87/5][99/16] [43/6]
C <sub>9</sub> H <sub>21</sub> N	N-methyl octylamine (365–508)	49.2	(380)	A	[2439-54-5] [87/5]
C <sub>9</sub> H <sub>21</sub> N	nonylamine (377–478)	50.7	(392)	A	[112-20-9] [87/5]
C <sub>9</sub> H <sub>21</sub> N	tripropylamine (341–475)	45.6	(356)	A	[102-69-2] [87/5]
		46.2 ± 0.1	(298)	C	[69/2]
C <sub>9</sub> H <sub>21</sub> NO <sub>3</sub>	triisopropanolamine (428–573)	73.7	(443)	A	[122-20-3] [87/5]
C <sub>9</sub> H <sub>21</sub> O <sub>4</sub> P	tripropylphosphate (394–525)	56.7	(409)	A	[513-08-6] [87/5]
C <sub>9</sub> H <sub>21</sub> P	tripropylphosphine (324–368)	39.4 ± 0.2	(346)		[2234-97-1] [01/9]
C <sub>9</sub> H <sub>22</sub> ClN <sub>2</sub> PS	P-(chloromethyl)-N,N'-bis(1-methylpropyl)phosphorothioic diamide (333–368)	66.8	(348)	A	[58023-20-4] [87/5][99/16]
C <sub>10</sub> Cl <sub>8</sub>	octachloronaphthalene				[2234-13-1]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> Cl <sub>12</sub>	(323–423) Mirex	96.1	(373)	GC	[99/9] [2385-85-5]
	(343–453) perfluorobicyclo[4.4.0]dec-1,6-diene	90.3	(398)	GC	[90/2]
C <sub>10</sub> F <sub>16</sub>		45.3 ± 0.1	(298)	C	[96/26]
C <sub>10</sub> F <sub>18</sub>	perfluoro( <i>cis</i> -decahydronaphthalene) (313–415)	43.9	(328)		[60433-11-6] [99/16]
		46.2 ± 0.1	(298)	C	[96/26]
		46.7 ± 0.6	(298)	EB	[81/23]
		46.2 ± 0.1	(298)	C	[81/23]
C <sub>10</sub> F <sub>18</sub>	perfluoro( <i>trans</i> -decahydronaphthalene) (315–417)	43.3	(330)		[60433-12-7] [99/16]
		45.4 ± 0.1	(298)	C	[96/26]
		45.9 ± 0.6	(298)	EB	[81/23]
		45.4 ± 0.1	(298)	C	[81/23]
C <sub>10</sub> F <sub>20</sub>	perfluoro-1-decene (315–399)	42.3	(330)		[35328-43-9] [99/16]
		45.2 ± 0.6	(298)	EB	[81/23]
C <sub>10</sub> F <sub>20</sub>	perfluoro(1-methyl-4-isopropyl)cyclohexane (339–418)	42.7	(354)		[116667-53-9] [99/16]
		46.7 ± 0.5	(298)	EB	[81/23]
C <sub>10</sub> F <sub>20</sub>	perfluoro(isobutylcyclohexane) (327–415)	43.4	(342)		[132868-02-1] [99/16]
		46.3 ± 0.6	(298)	EB	[81/23]
		46.7 ± 0.1	(298)	C	[81/23]
C <sub>10</sub> F <sub>20</sub> N <sub>2</sub> S	2,2,3,3,4,4,5,5-octafluoro-1,1,2,3,4,5-hexahydro-1-[[2,2,2-trifluoro-1-(trifluoromethyl)-1-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-amino]ethyl]imino]thiophene	29.3	(389)		[77984-27-1] [81/15]
C <sub>10</sub> F <sub>22</sub>	perfluorodecane (404–543)	34.0	(420)	A	[307-45-9] [87/5][67/18] [99/16]
					[464-36-8]
C <sub>10</sub> F <sub>22</sub> O	<i>bis</i> (undecafluoropentyl)ether (337–411)	49.9 ± 1.5	(298)	EB	[89/13]
		49.5 ± 0.1	(298)	C	[89/13]
	(288–313)	51.5	(300)	A	[87/5][99/16]
		47.3 ± 0.8	(298)	EB	[76/7]
C <sub>10</sub> HCl <sub>5</sub> F <sub>14</sub> O <sub>2</sub>	2,2,3,3,4,4,5,5,6,6,7,8,8,9,10,10-tetradecafluoro-3,5,7,9,10-penta-chlorodecanoic acid (373–578)	80.6	(388)	A	[335-74-0] [87/5][57/17] [99/16]
C <sub>10</sub> HCl <sub>7</sub>	1,2,3,4,5,6,7-heptachloronaphthalene (323–423)	90.6	(373)	GC	[58863-14-2] [99/9]
C <sub>10</sub> H <sub>2</sub> Cl <sub>6</sub>	1,2,4,5,6,8-hexachloronaphthalene (323–423)	85.3	(373)	GC	[90948-28-0] [99/9]
C <sub>10</sub> H <sub>2</sub> Cl <sub>6</sub>	1,2,3,5,7,8-hexachloronaphthalene (323–423)	85.0	(373)	GC	[103426-94-4] [99/9]
C <sub>10</sub> H <sub>2</sub> Cl <sub>6</sub>	1,2,3,5,6,7-hexachloronaphthalene (323–423)	84.5	(373)	GC	[103426-97-7] [99/9]
C <sub>10</sub> H <sub>2</sub> Cl <sub>6</sub>	1,2,3,4,6,7-hexachloronaphthalene (323–423)	84.5	(373)	GC	[103426-96-6] [99/9]
C <sub>10</sub> H <sub>2</sub> O <sub>6</sub>	pyromellitic acid dianhydride (641–665)	79.6	(576)	A	[89-32-7] [87/5]
C <sub>10</sub> H <sub>3</sub> Cl <sub>5</sub>	1,2,3,5,8-pentachloronaphthalene (323–423)	80.5	(373)	GC	[150224-24-1] [99/9]
	1,2,3,5,7-pentachloronaphthalene (323–423)	78.2	(373)	GC	[53555-65-0] [99/9]
C <sub>10</sub> H <sub>3</sub> Cl <sub>5</sub>	1,2,3,4,6-pentachloronaphthalene (323–423)	78.9	(373)	GC	[67922-26-3] [99/9]
C <sub>10</sub> H <sub>4</sub> Cl <sub>4</sub>	1,2,4,7-tetrachloronaphthalene (323–423)	72.1	(373)	GC	[67922-21-8] [99/9]
	1,2,3,5-tetrachloronaphthalene (323–423)	73.4	(373)	GC	[53555-63-8] [99/9]
C <sub>10</sub> H <sub>4</sub> Cl <sub>4</sub>	1,2,3,4-tetrachloronaphthalene (323–423)	73.2	(373)	GC	[20020-02-4] [99/9]
C <sub>10</sub> H <sub>5</sub> Cl <sub>3</sub>	1,2,3-trichloronaphthalene				[50402-52-3]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>5</sub> Cl <sub>7</sub>	(323–423)	68.0	(373)	GC	[99/9]
	Heptachlor				[76-44-8]
C <sub>10</sub> H <sub>5</sub> Cl <sub>9</sub>	(343–453)	76.5	(398)	GC	[90/2]
	<i>cis</i> Nonachlor				[5103-73-1]
C <sub>10</sub> H <sub>5</sub> Cl <sub>9</sub>	(343–453)	83.8	(398)	GC	[90/2]
	<i>trans</i> Nonachlor				[39765-80-5]
C <sub>10</sub> H <sub>6</sub> Cl <sub>2</sub>	(343–453)	85.5	(398)	GC	[90/2]
	1,2-dichloronaphthalene				[2050-69-3]
C <sub>10</sub> H <sub>6</sub> Cl <sub>2</sub>	(323–423)	60.7	(373)	GC	[99/9]
	1,4-dichloronaphthalene				[1825-31-6]
C <sub>10</sub> H <sub>6</sub> Cl <sub>8</sub>	(323–423)	58.7	(373)	GC	[99/9]
	<i>cis</i> Chlordane				[5103-71-9]
C <sub>10</sub> H <sub>6</sub> Cl <sub>8</sub>	(323–409)	83.0	(338)		[99/16]
	(343–453)	82.0	(398)	GC	[90/2]
C <sub>10</sub> H <sub>6</sub> Cl <sub>8</sub>	<i>trans</i> Chlordane				[5103-74-2]
	(373–409)	81.7	(388)		[99/16]
C <sub>10</sub> H <sub>6</sub> N <sub>2</sub> O <sub>4</sub>	(343–453)	80.7	(398)	GC	[90/2]
	1,5-dinitronaphthalene				[605-71-0]
C <sub>10</sub> H <sub>6</sub> N <sub>2</sub> O <sub>4</sub>	(506–642)	74.7	(521)	A	[87/5]
	1,8-dinitronaphthalene				[602-38-0]
C <sub>10</sub> H <sub>7</sub> Br	(553–715)	78.5	(568)	A	[87/5]
	1-bromonaphthalene				[90-11-9]
C <sub>10</sub> H <sub>7</sub> Br	(357–555)	58.5	(372)		[87/5]
	(295–359)	56±6	(329)	ME	[80/7]
C <sub>10</sub> H <sub>7</sub> Br	(469–559)	45.8	(484)	A, EB	[87/5][76/13]
	2-bromonaphthalene				[99/16]
C <sub>10</sub> H <sub>7</sub> Cl	(330–378)	42.5	(354)		[580-13-2]
	(322–359)	40.4	(340)	ME, TE	[99/16]
C <sub>10</sub> H <sub>7</sub> Cl	1-chloronaphthalene				[81/22]
		64.0±0.3	(298)	GS	[90-13-1]
C <sub>10</sub> H <sub>7</sub> Cl	(323–423)	58.6	(373)	GC	[01/1]
	(353–553)	59.6	(368)	A	[99/9]
C <sub>10</sub> H <sub>7</sub> Cl	(400–435)	57.8	(415)	A	[87/5][47/5]
	2-chloronaphthalene				[87/5]
C <sub>10</sub> H <sub>7</sub> Cl	(400–435)	57.9	(417)		[91-58-7]
	(323–423)	58.5	(373)	GC	[99/16]
C <sub>10</sub> H <sub>7</sub> Cl <sub>7</sub>	1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindan				[99/9]
	(333–353)	83.8	(343)		[2589-15-3]
C <sub>10</sub> H <sub>7</sub> F <sub>5</sub> O <sub>2</sub>	pentafluoropropionic acid, 3-tolyl ester				[99/16]
	(371–446)	48.3	(386)	A, EB	[24277-51-0]
C <sub>10</sub> H <sub>7</sub> F <sub>5</sub> O <sub>2</sub>	pentafluoropropionic acid, 4-tolyl ester				[87/5][69/13]
	(371–448)	48.3	(386)	A, EB	[99/16]
C <sub>10</sub> H <sub>7</sub> I	1-iodonaphthalene				[24271-52-1]
	(321–428)	78.9	(336)		[87/5][69/13]
C <sub>10</sub> H <sub>7</sub> NO <sub>2</sub>	1-nitronaphthalene				[99/16]
	(332–580)	66.4	(347)	A	[86-57-7]
C <sub>10</sub> H <sub>8</sub>	azulene				[87/5]
		52.8	(298)	CGC	[275-51-4]
C <sub>10</sub> H <sub>8</sub>	(369–515)	53.0	(384)	A	[98/11]
	(442–534)	51.2	(457)	EB	[87/5]
C <sub>10</sub> H <sub>8</sub>	(373–423)	55.5	(373)		[77/10]
	naphthalene				[62/25]
C <sub>10</sub> H <sub>8</sub>	(323–473)	56.1	(398)	GC	[91-20-3]
		53.4	(298)	CGC	[02/18]
C <sub>10</sub> H <sub>8</sub>	(460–647)	45.4	(475)	DSC	[98/11]
	(403–453)	56.6	(298)	CGC	[96/10]
C <sub>10</sub> H <sub>8</sub>		48.7±0.3	(400)	EB	[95/21]
		46.4	(440)	EB	[93/11]
C <sub>10</sub> H <sub>8</sub>		44.0	(480)	EB	[93/11]
		41.5	(520)	EB	[93/11]
C <sub>10</sub> H <sub>8</sub>	(513–613)	44.4	(528)		[93/3]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(418–613)	47.9	(423)	EB	[90/7]
	(352–500)	50.6	(367)	A	[87/5]
	(491–565)	44.8	(506)	A	[87/5]
	(563–663)	43.2	(578)	A	[87/5]
	(661–750)	43.3	(676)	A	[87/5]
	(441–727)	44.7	(466)		[81/21][86/15]
	(353–388)	50.3±0.2	(370)		[81/6]
	(354–453)	50.7	(369)		[68/11]
	(399–491)	49.0	(414)		[55/7]
		46.4	(441)	C	[51/7]
		48.3	(379)	I	[43/7]
	(373–473)	47.2	(423)	I	[23/1]
	(360–494)	47.7	(427)	I	[22/1]
C <sub>10</sub> H <sub>8</sub> N <sub>2</sub> O <sub>2</sub>	1,3- <i>bis</i> (isocyanatomethyl)benzene (403–473)	46.7	(418)	A	[3634-83-1] [87/5]
C <sub>10</sub> H <sub>8</sub> N <sub>2</sub> O <sub>2</sub>	1,4- <i>bis</i> (isocyanatomethyl)benzene (403–473)	56.9	(418)	A	[1014-98-8] [87/5]
C <sub>10</sub> H <sub>8</sub> N <sub>2</sub> O <sub>2</sub>	benzene, ethyldiisocyanato (mixed isomers) (363–473)	60.7	(378)	A	[64711-83-7] [87/5][77/22]
C <sub>10</sub> H <sub>8</sub> O	1-naphthol (399–556)	58.5	(414)	A	[90-15-3] [87/5]
	(423–563)	60.8	(473)		[27/4]
C <sub>10</sub> H <sub>8</sub> O	2-naphthol (393–433)	76.2	(298)	CGC	[135-19-3] [95/21]
	(401–561)	59.7	(416)	A	[87/5]
	(417–561)	59.7	(432)		[55/9]
	(423–563)	61.8	(473)		[27/4]
C <sub>10</sub> H <sub>9</sub> Cl <sub>3</sub> O <sub>3</sub>	(2,4,5-trichlorophenoxy)acetic acid, ethyl ester (444–573)	76.4	(459)	A	[1928-39-8] [87/5][99/16]
C <sub>10</sub> H <sub>9</sub> N	2-methylquinoline (quinaldine) (281–313)	66.1±1.9 61.2	(298) (297)	C GS	[91-63-4] [95/1] [80/6]
	(443–521)	54.7	(548)	A, EB	[87/5][61/11] [61/10]
C <sub>10</sub> H <sub>9</sub> N	3-methylquinoline (443–528)	55.8	(458)	A	[612-58-8] [87/5][61/11]
C <sub>10</sub> H <sub>9</sub> N	4-methylquinoline (lepidine) (463–539)	67.6±1.8 58.2	(298) (478)	C A, EB	[491-35-0] [95/1] [87/5][61/11] [61/10]
C <sub>10</sub> H <sub>9</sub> N	6-methylquinoline (453–540)	67.7±1.8 56.1	(298) (468)	C A	[91-62-3] [95/1] [87/5]
C <sub>10</sub> H <sub>9</sub> N	7-methylquinoline (493–532)	56.7	(508)	A, EB	[612-60-2] [87/5][61/10]
C <sub>10</sub> H <sub>9</sub> N	8-methylquinoline (493–523)	65.7±1.9 52.2	(298) (508)	C A, EB	[611-32-5] [95/1] [87/5][61/10]
C <sub>10</sub> H <sub>9</sub> N	1-naphthylamine (377–574)	63.6	(392)	A	[134-32-7] [87/5][47/5]
C <sub>10</sub> H <sub>9</sub> N	2-naphthylamine (388–579)	63.5	(403)	A	[91-59-8] [87/5][47/5]
C <sub>10</sub> H <sub>9</sub> NO	6-methoxyquinoline (493–523)	78.1±2.3 52.2	(298) (508)	C A, EB	[5263-87-6] [02/35] [87/5][61/10]
C <sub>10</sub> H <sub>10</sub>	1,3-divinylbenzene (305–453)	48.3	(320)	A	[108-57-6] [87/5][47/5]
C <sub>10</sub> H <sub>10</sub>	dicyclopentadiene (307–440)	42.4	(322)		[47/5]
C <sub>10</sub> H <sub>10</sub>	1,2-dihydronaphthalene (274–319)	51.9±0.4 51.9±0.4	(296) (298)	GS	[447-53-0] [99/21] [99/21]
C <sub>10</sub> H <sub>10</sub>	1,4-dihydronaphthalene (300–333)	53.2±0.4 54.2±0.4	(296) (298)	GS	[612-17-9] [99/21] [99/21]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>10</sub>	diisopropenyldiacetylene	50.2			[5187-81-5] [77/25]
C <sub>10</sub> H <sub>10</sub> Cl <sub>2</sub> O <sub>3</sub>	(2,4-dichlorophenoxy)acetic acid, ethyl ester (444–573)	72.6	(459)	A	[533-23-3] [87/5][99/16]
C <sub>10</sub> H <sub>10</sub> N <sub>2</sub>	1-benzylpyrazole	73.8±2.0	(298)	C	[10199-67-4] [99/5]
C <sub>10</sub> H <sub>10</sub> O	2-methyl-3-phenyl-2-propenal (401–556)	59.3±0.2	(400)	EB	[101-39-3] [02/16]
	(401–556)	56.3±0.2	(440)	EB	[02/16]
	(401–556)	53.4±0.2	(480)	EB	[02/16]
	(401–556)	50.5±0.4	(520)	EB	[02/16]
	(401–556)	47.7±0.6	(560)	EB	[02/16]
	(343–393)	71.5	(358)	A	[87/5]
C <sub>10</sub> H <sub>10</sub> O	4-phenyl-3-buten-2-one (354–534)	58.5	(369)	A	[122-57-6] [87/5][47/5]
C <sub>10</sub> H <sub>10</sub> O	1-tetralone (284–324)	65.0±0.3	(298)	GS	[529-34-0] [98/4]
	(388–535)	61.5	(403)	A	[87/5]
C <sub>10</sub> H <sub>10</sub> O <sub>2</sub>	cinnamic acid, methyl ester (409–557)	59.9±0.2	(420)	EB	[103-26-4] [02/16]
	(409–557)	56.9±0.2	(460)	EB	[02/16]
	(409–557)	53.8±0.3	(500)	EB	[02/16]
	(409–557)	50.5±0.5	(540)	EB	[02/16]
	(288–333)	62.4	(303)	A	[87/5]
	(350–536)	58.3	(365)	A	[87/5][47/5]
C <sub>10</sub> H <sub>10</sub> O <sub>2</sub>	1,3-diacetylbenzene (323–418)	43.2	(338)	A	[6781-42-6] [87/5]
C <sub>10</sub> H <sub>10</sub> O <sub>2</sub>	1,4-diacetylbenzene (388–431)	82.2	(403)	A	[1009-61-6] [87/5]
C <sub>10</sub> H <sub>10</sub> O <sub>2</sub>	isosafrole (393–531)	59.4	(408)	A	[120-58-1] [87/5]
C <sub>10</sub> H <sub>10</sub> O <sub>2</sub>	$\alpha$ -methylcinnamic acid (398–561)	78.5	(413)	A	[1199-77-5] [87/5][47/5]
C <sub>10</sub> H <sub>10</sub> O <sub>2</sub>	safrole (336–506)	54.6	(351)	A	[94-59-7] [87/5][47/5]
C <sub>10</sub> H <sub>10</sub> O <sub>2</sub>	4-carboxypentacyclo[4.3.0.0. <sup>2,5</sup> 0 <sup>4,7</sup> ]nonane	82.0		C	[84/12]
C <sub>10</sub> H <sub>10</sub> O <sub>4</sub>	1,2-diacetoxybenzene (371–551)	62.9	(386)	A	[635-67-6] [87/5]
C <sub>10</sub> H <sub>10</sub> O <sub>4</sub>	dimethyl isophthalate (350–607)	77.2±0.8	(298)	EB, IPM	[1459-93-4] [96/7]
	(393–550)	60.5	(408)	A, GS	[87/5][63/13]
C <sub>10</sub> H <sub>10</sub> O <sub>4</sub>	dimethyl phthalate (466–518)	61.5	(481)	EB	[131-11-3] [99/25]
		69.4±0.1	(365)	C	[98/6]
		72.5±0.6	(344)	C	[98/6]
		74.5±0.3	(326)	C	[98/6]
	(304–371)	78.7	(319)	A	[87/5]
	(371–547)	63.7	(386)	A	[87/5]
	(377–440)	68.6	(409)		[69/1]
C <sub>10</sub> H <sub>10</sub> O <sub>4</sub>	dimethyl terephthalate (413–523)	62.0	(428)	A	[120-61-6] [87/5]
C <sub>10</sub> H <sub>11</sub> N	$\alpha$ , $\alpha$ -dimethylbenzylcyanide (284–323)	60.3±0.6	(303)	GS	[00/2]
	(284–323)	60.6±0.6	(298)	GS	[00/2]
C <sub>10</sub> H <sub>11</sub> N	$\alpha$ -ethylbenzylcyanide (283–313)	64.3±0.6	(298)	GS	[00/2]
C <sub>10</sub> H <sub>13</sub> NO <sub>2</sub>	2-nitro-1- <i>tert</i> -butylbenzene (278–323)	64.8±0.6	(301)	GS	[00/15]
		65.0±0.6	(298)		[00/15]
C <sub>10</sub> H <sub>12</sub>	<i>endo</i> dicyclopentadiene (350–446)	43.6	(365)	A	[77-73-6] [87/5]
C <sub>10</sub> H <sub>12</sub>	2,4-dimethylstyrene (307–453)	50.0	(322)	A	[2234-20-0] [87/5][47/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>12</sub>	2,5-dimethylstyrene (302–453)	48.1	(317)	A	[2039-89-6] [87/5][47/5]
C <sub>10</sub> H <sub>12</sub>	1-ethyl-2-vinylbenzene (363–413)	46.3	(378)	A	[7564-63-8] [87/5]
C <sub>10</sub> H <sub>12</sub>	1-ethyl-3-vinylbenzene (343–453)	49.6	(358)	A	[7525-62-4] [87/5]
C <sub>10</sub> H <sub>12</sub>	1-ethyl-4-vinylbenzene (341–448)	48.4	(356)	A	[3454-07-7] [87/5]
C <sub>10</sub> H <sub>12</sub>	1,2,3,4-tetrahydronaphthalene (tetralin) (465–580)	44.1	(480)		[119-64-2] [92/2]
	(311–481)	51.1	(326)	A	[87/5]
		41.3±0.1	(498)	C	[85/10]
		37.6±0.1	(552)	C	[85/10]
		35.7±0.1	(567)	C	[85/10]
		33.9±0.1	(585)	C	[85/10]
		32.0±0.1	(604)	C	[85/10]
	(331–437)	52.1	(346)		[84/24]
	(367–479)	48.6	(382)		[47/5]
C <sub>10</sub> H <sub>12</sub> Cl <sub>4</sub> NO <sub>2</sub>	P-chloromethyl-N-(1-methylethyl)amidothiophosphonic acid, O-(2,4,6-trichlorophenyl) ester (323–363)	78.3	(338)		[21844-03-1] [87/5]
C <sub>10</sub> H <sub>12</sub> N <sub>2</sub>	2-diethylamino-2-piperidinoacetonitrile (298–338)	62.8±0.4		GS	[97/10]
C <sub>10</sub> H <sub>12</sub> O	anethole	61.9	(298)	GC	[104-46-1] [02/37]
C <sub>10</sub> H <sub>12</sub> O	<i>cis</i> anethole (333–363)	68.7	(348)	A	[25679-28-1] [87/5]
C <sub>10</sub> H <sub>12</sub> O	<i>trans</i> anethole (333–363)	78.3	(348)	A	[4180-23-8] [87/5]
C <sub>10</sub> H <sub>12</sub> O	estragole (325–488)	56.3	(340)	A	[140-67-0] [87/5]
C <sub>10</sub> H <sub>12</sub> O	2'-ethylacetophenone (363–397)	52.8	(378)	A	[2142-64-5] [87/5]
	(293–423)	U23.7	(368)		[68/31]
C <sub>10</sub> H <sub>12</sub> O	4'-ethylacetophenone (294–368)	42.2	(309)	A	[937-30-4] [87/5]
	(293–423)	39.8	(368)		[68/31]
C <sub>10</sub> H <sub>12</sub> O	4-isopropylbenzaldehyde (cuminal) (331–505)	55.3	(346)	A	[122-03-2] [87/5][47/5]
C <sub>10</sub> H <sub>12</sub> O	2-methyl-3-phenylpropanal (333–373)	59.1	(348)	A	[5445-77-2] [87/5]
C <sub>10</sub> H <sub>12</sub> O	4'-methoxypropionophenone (332–512)	52.6	(347)	A	[5337-93-9] [87/5][47/5]
C <sub>10</sub> H <sub>12</sub> O	4-vinylphenetole (337–498)	59.2	(352)	A	[5459-40-5] [87/5][47/5]
C <sub>10</sub> H <sub>12</sub> O	4-methoxy- $\alpha$ -methylstyrene (308–343)	60.6±0.3	(326)	GS	[99/21]
		62.1±0.3	(298)		[99/21]
C <sub>10</sub> H <sub>12</sub> O <sub>2</sub>	acetic acid, phenethyl ester (283–318)	67.4	(298)	A	[103-45-7] [87/5]
	(422–506)	52.2	(437)	A	[87/5]
C <sub>10</sub> H <sub>12</sub> O <sub>2</sub>	methyl 2-phenylpropionate (284–318)	61.8±0.7	(301)	GS	[99/2]
	(284–318)	62.0±0.7	(298)	GS	[99/2]
C <sub>10</sub> H <sub>12</sub> O <sub>2</sub>	4-allyl-2-methoxyphenol (eugenol) (395–527)	66.3	(298)	GC	[97-53-0] [02/37]
	(285–333)	57.7	(410)	A	[87/5]
	(351–526)	66.1	(300)	ME	[87/5][59/7] [47/5]
		60.3	(366)		[122-63-4]
C <sub>10</sub> H <sub>12</sub> O <sub>2</sub>	benzyl propionate (298–378)	59.0	(313)	A	[87/5]
C <sub>10</sub> H <sub>12</sub> O <sub>2</sub>	5-allyl-2-methoxyphenol (345–527)	61.4	(371)	A	[501-19-9] [87/5]
C <sub>10</sub> H <sub>12</sub> O <sub>2</sub>	2-methoxy-4-(1-propenyl)phenol (isoeugenol) (359–540)	60.7	(374)		[57/6]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>12</sub> O <sub>2</sub>	<i>cis</i> isoeugenol (373–403)	69.7	(388)	A	[5912-86-7] [87/5]
C <sub>10</sub> H <sub>12</sub> O <sub>2</sub>	<i>trans</i> isoeugenol (363–420)	69.1	(378)	A	[5932-68-3] [87/5]
C <sub>10</sub> H <sub>12</sub> O <sub>2</sub>	phenylacetic acid, ethyl ester (288–328)	63.9±0.4	(308)	GS	[101-97-3] [99/2]
	(288–328)	64.5±0.4	(298)	GS	[99/2]
	(393–500)	54.0	(408)	A	[87/5]
C <sub>10</sub> H <sub>12</sub> O <sub>2</sub>	propylbenzoate (359–458)	60.2	(379)	BG	[2315-68-6] [88/2]
	(359–458)	52.7	(440)	BG	[88/2]
	(327–504)	53.8	(342)	A	[87/5][47/5]
C <sub>10</sub> H <sub>12</sub> O <sub>2</sub>	[(phenylmethoxy)methyl]oxirane	71.0±0.4			[2930-05-4] [87/14]
C <sub>10</sub> H <sub>12</sub> O <sub>3</sub>	acetic acid, (2-phenoxyethyl) ester (355–533)	56.8	(370)	A	[6192-44-5] [87/5][47/5]
C <sub>10</sub> H <sub>12</sub> O <sub>3</sub>	propyl 4-hydroxybenzoate	76.5		TGA	[94-13-3] [01/20]
C <sub>10</sub> H <sub>12</sub> O <sub>4</sub>	maleic acid, diallyl ester (392–426)	77.7	(407)	A	[999-21-3] [87/5]
C <sub>10</sub> H <sub>13</sub> Br	2-bromo-4-isopropyltoluene (400–510)	50.2	(415)	A	[2437-76-5] [87/5][70/14] [99/16]
C <sub>10</sub> H <sub>13</sub> Br	3-bromo-4-isopropyltoluene (400–510)	48.3	(415)	A	[4478-10-8] [87/5][70/14] [99/16]
C <sub>10</sub> H <sub>13</sub> Cl	2-chloro-4-isopropyltoluene (400–490)	49.3	(415)	A	[4395-79-3] [87/5][70/14] [99/16]
C <sub>10</sub> H <sub>13</sub> Cl	3-chloro-4-isopropyltoluene (400–490)	47.1	(415)	A	[15146-00-6] [87/5][70/14]
C <sub>10</sub> H <sub>13</sub> ClO	2-chloroethyl $\alpha$ -methylbenzyl ether (335–508)	54.8	(350)	A	[4446-91-7] [87/5][47/5] [99/16]
C <sub>10</sub> H <sub>13</sub> ClO <sub>3</sub>	diethylene glycol 4-chlorophenyl ether (450–523)	75.9	(465)	A	[58498-77-4] [87/5][99/16]
C <sub>10</sub> H <sub>13</sub> Cl <sub>3</sub> O <sub>2</sub> P	4- <i>tert</i> -butyl phenyl dichlorophosphate (369–572)	59.6	(384)		[47/5]
C <sub>10</sub> H <sub>13</sub> Cl <sub>3</sub> NOPS	P-chloromethyl-N-(1-methylethyl)amidothiophosphonic acid, O-(2,4-dichlorophenyl) ester (323–368)	93.1	(345)	A	[18361-88-1] [87/5][99/16]
C <sub>10</sub> H <sub>13</sub> NO	N,N-dimethyl- <i>m</i> -toluamide (374–405)	29.9	(390)		[69/1]
C <sub>10</sub> H <sub>13</sub> NO <sub>2</sub>	4'-ethoxyacetanilide (463–533)	82.6	(478)	A	[62-44-2] [87/5]
C <sub>10</sub> H <sub>13</sub> NO <sub>2</sub>	2-nitro-4-isopropyltoluene (370–415)	67.7	(385)	A	[943-15-7] [87/5]
C <sub>10</sub> H <sub>13</sub> NO <sub>2</sub>	3-nitro-4-isopropyltoluene (330–430)	54.0	(345)	A	[35480-94-5] [87/5]
C <sub>10</sub> H <sub>14</sub>	butylbenzene (343–501)	47.4±0.2	(350)	EB	[104-51-8] [02/14]
	(343–501)	43.5±0.2	(410)	EB	[02/14]
	(343–501)	40.6±0.4	(450)	EB	[02/14]
	(343–501)	37.5±0.7	(490)	EB	[02/14]
	(243–403)	50.8	(298)		[94/11]
		53.5	(258)		[93/10]
		48.0±0.1	(343)	C	[82/10]
		46.8±0.1	(358)	C	[82/10]
		46.0±0.1	(368)	C	[82/10]
		50.1	(298)		[71/28]
	(374–454)	45.2	(389)		[65/26][84/9]
	(369–463)	45.7	(384)	A	[87/5][49/6]
C <sub>10</sub> H <sub>14</sub>	( <i>dl</i> ) sec-butylbenzene (335–491)	45.7±0.2	(340)	EB	[135-98-8] [02/14]
	(335–491)	43.2±0.2	(380)	EB	[02/14]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(335–491)	40.6±0.3	(420)	EB	[02/14]
	(335–491)	37.8±0.5	(460)	EB	[02/14]
		48.1	(298)		[94/11]
	(243–373)	50.6	(258)		[93/10]
	(384–448)	42.8	(399)	A	[87/5]
		49.5	(298)		[71/28]
	(368–448)	44.0	(375)		[49/6]
C <sub>10</sub> H <sub>14</sub>	<i>tert</i> -butylbenzene				[98-06-6]
	(332–486)	45.3±0.2	(340)	EB	[02/14]
	(332–486)	42.6±0.2	(380)	EB	[02/14]
	(332–486)	39.9±0.3	(420)	EB	[02/14]
	(332–486)	37.0±0.5	(460)	EB	[02/14]
	(278–308)	47.8±0.4	(293)	GS	[98/19]
		47.5±0.4	(298)		[98/19]
		47.6	(298)		[94/11]
	(368–444)	43.1	(383)	A	[87/5]
		47.7	(298)		[74/14]
		49.1	(298)		[71/28]
	(357–443)	43.7	(372)		[49/6]
C <sub>10</sub> H <sub>14</sub>	1,2-diethylbenzene				[135-01-3]
		52.8	(298)		[71/28]
	(369–464)	46.0	(384)	A	[87/5][49/6]
C <sub>10</sub> H <sub>14</sub>	1,3-diethylbenzene				[141-93-5]
		52.5	(298)		[71/28]
	(368–457)	45.8	(383)	A	[87/5][49/6]
C <sub>10</sub> H <sub>14</sub>	1,4-diethylbenzene				[105-05-5]
		52.5	(298)		[71/28]
	(369–464)	45.8	(384)	A	[87/5][49/6]
C <sub>10</sub> H <sub>14</sub>	1,2-dimethyl-3-ethylbenzene				[933-98-2]
	(344–497)	49.7	(359)	A	[87/5]
		54.9	(298)		[71/28]
C <sub>10</sub> H <sub>14</sub>	1,2-dimethyl-4-ethylbenzene				[934-80-5]
	(340–493)	48.9	(355)	A	[87/5]
		53.9	(298)		[71/28]
C <sub>10</sub> H <sub>14</sub>	1,3-dimethyl-2-ethylbenzene				[2870-04-0]
	(341–493)	48.8	(356)	A	[87/5]
		53.9	(298)		[71/28]
	(299–461)	48.6	(314)		[47/5]
C <sub>10</sub> H <sub>14</sub>	1,3-dimethyl-4-ethylbenzene				[874-41-9]
	(339–492)	48.5	(354)	A	[87/5]
		53.3	(298)		[71/28]
C <sub>10</sub> H <sub>14</sub>	1,3-dimethyl-5-ethylbenzene				[934-74-7]
	(336–487)	48.0	(351)	A	[87/5]
		52.4	(298)		[71/28]
	(295–456)	47.5	(310)		[47/5]
C <sub>10</sub> H <sub>14</sub>	1,4-dimethyl-2-ethylbenzene				[1758-88-9]
	(338–490)	48.0	(353)	A	[87/5]
		52.6	(298)		[71/28]
	(299–440)	48.7	(313)		[47/5]
C <sub>10</sub> H <sub>14</sub>	isobutylbenzene				[538-93-2]
		48.0	(298)		[94/11]
	(373–447)	43.2	(388)	A	[87/5]
		49.5	(298)		[71/28]
	(360–447)	43.8	(375)		[49/6]
C <sub>10</sub> H <sub>14</sub>	2-isopropyltoluene				[527-84-4]
	(354–453)	44.4	(369)	A	[87/5][59/1]
		50.6	(298)		[84/9]
					[71/28]
C <sub>10</sub> H <sub>14</sub>	3-isopropyltoluene				[535-77-3]
	(351–450)	44.7	(366)	A	[87/5][59/1]
		50.0	(298)		[84/9]
					[71/28]
C <sub>10</sub> H <sub>14</sub>	4-isopropyltoluene				[99-87-6]
		48.9	(298)		[94/11]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(380–452)	44.0	(395)	A	[87/5][59/1] [84/9] [71/28]
C <sub>10</sub> H <sub>14</sub>	2-propyltoluene (337–488)	50.3 48.0 52.7	(298) (352) (298)	A	[1074-17-5] [87/5] [71/28]
C <sub>10</sub> H <sub>14</sub>	3-propyltoluene (334–485)	47.8 52.1	(349) (298)	A	[1074-43-7] [87/5] [71/28]
C <sub>10</sub> H <sub>14</sub>	4-propyltoluene (335–487)	47.6 51.9	(350) (298)	A	[1074-55-1] [87/5] [71/28]
C <sub>10</sub> H <sub>14</sub>	1,2,3,4-tetramethylbenzene	54.0 52.6±0.2	(298) (298)	C	[488-23-3] [94/11] [94/1]
	(352–509)	50.7 57.2 55.7	(367) (298) (331)	A	[87/5] [71/28] [47/5]
C <sub>10</sub> H <sub>14</sub>	1,2,3,5-tetramethylbenzene	53.2 52.0±0.2	(298) (298)	C	[527-53-7] [94/11] [94/1]
	(348–502)	50.0 55.8 58.9	(363) (298) (329)	A	[87/5] [71/28] [47/5]
C <sub>10</sub> H <sub>14</sub>	1,2,4,5-tetramethylbenzene (363–381)	47.7±0.3	(375)	DM	[95-93-2] [01/8]
	(353–500)	49.4	(368)	A	[87/5]
C <sub>10</sub> H <sub>14</sub>	spirocyclopropane-1,6-tricyclo[3.2.1.0 <sup>2,4</sup> ]octane	47.8±0.1	(298)	C	[98/17][96/18]
C <sub>10</sub> H <sub>14</sub> NO <sub>5</sub> PS	Parathion (293–433)	93.4	(308)	A	[58-38-2] [87/5][99/16]
C <sub>10</sub> H <sub>14</sub> NO <sub>5</sub> PS	phosphorothioic acid, O,O'-diethyl-S-(4-nitrophenyl) (313–366)	75.9	(328)	A	[3270-86-8] [87/5][99/16]
C <sub>10</sub> H <sub>14</sub> NO <sub>5</sub> PS	phosphorothioic acid, O,S-diethyl-O'-(4-nitrophenyl) (332–364)	75.1	(347)	A	[597-88-6] [87/5][99/16]
C <sub>10</sub> H <sub>14</sub> NO <sub>6</sub> P	O,O-diethyl-O-(4-nitrophenyl) phosphate (273–422)	87.9	(288)	A	[311-45-5] [87/5]
C <sub>10</sub> H <sub>14</sub> N <sub>2</sub>	(dl) nicotine (406–520)	53.3	(421)	A	[22083-74-5] [87/5]
C <sub>10</sub> H <sub>14</sub> O	2-butylphenol (403–533)	55.1	(418)	A	[3180-09-4] [87/5][75/17]
	(382–520)	52.9	(398)		[53/9]
	(382–520)	51.0	(423)		[53/9]
	(382–520)	47.0	(473)		[53/9]
C <sub>10</sub> H <sub>14</sub> O	2-sec-butylphenol (451–513)	52.1	(466)	A, GS, EB	[89-72-5] [87/5][64/14]
C <sub>10</sub> H <sub>14</sub> O	2-tert-butylphenol (289–329)	62.6±0.2 63.2±0.2	(309) (298)	GS	[88-18-6] [99/18]
	(409–467)	74.1	(424)	EB	[90/5]
	(409–465)	52.9	(424)		[86/7]
	(353–498)	54.9	(368)	A	[87/5]
	(330–507)	55.6	(348)		[53/9]
	(330–507)	53.9	(373)		[53/9]
	(330–507)	51.0	(423)		[53/9]
	(330–507)	47.0	(473)		[53/9]
C <sub>10</sub> H <sub>14</sub> O	3-butylphenol (396–533)	62.5	(411)	A	[4074-43-5] [87/5]
	(396–533)	56.6	(398)		[53/9]
	(396–533)	54.4	(423)		[53/9]
	(396–533)	49.9	(473)		[53/9]
C <sub>10</sub> H <sub>14</sub> O	3-tert-butylphenol (320–348)	69.1±0.8 71.3±0.8	(334) (298)	GS	[585-34-2] [99/18] [99/18]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference		
C <sub>10</sub> H <sub>14</sub> O	(391–524)	62.4	(406)	A	[87/5]		
	(391–524)	56.6	(398)		[53/9]		
	(391–524)	54.4	(423)		[53/9]		
	C <sub>10</sub> H <sub>14</sub> O	(391–524)	49.9	(473)	A	[53/9]	
		4-butylphenol				[1638-22-8]	
		(395–653)	61.7	(410)		[87/5]	
		(357–529)	57.6	(373)		[53/9]	
		(357–529)	56.6	(398)		[53/9]	
		(357–529)	54.4	(423)		[53/9]	
C <sub>10</sub> H <sub>14</sub> O	(357–529)	49.9	(473)	A	[53/9]		
	4-sec-butylphenol				[99-71-8]		
C <sub>10</sub> H <sub>14</sub> O	(344–516)	59.0	(359)	A	[87/5][47/5]		
	4-tert-butylphenol				[98-54-4]		
C <sub>10</sub> H <sub>14</sub> O		67.9 ± 1.0	(298)	C	[99/7]		
	(471–525)	54.3	(486)		A, GS, EB	[87/5][47/5]	
	C <sub>10</sub> H <sub>14</sub> O				A	[64/14]	
		(346–523)	59.6	(348)		[53/9]	
		(346–523)	57.6	(373)		[53/9]	
		(346–523)	56.6	(398)		[53/9]	
		(346–523)	54.4	(423)		[53/9]	
		(346–523)	49.9	(473)		[53/9]	
	C <sub>10</sub> H <sub>14</sub> O	butyl phenyl ether			A	[1126-79-0]	
		(391–483)	48.9	(406)		[87/5][49/1]	
C <sub>10</sub> H <sub>14</sub> O				EB	[84/9]		
	3-isopropyl-2-methylphenol				[4371-48-6]		
C <sub>10</sub> H <sub>14</sub> O	(365–516)	60.2	(380)	EB	[69/23]		
	4-isopropyl-2-methylphenol				[1740-97-2]		
C <sub>10</sub> H <sub>14</sub> O	(382–503)	59.8	(397)	EB	[69/23]		
	5-isopropyl-2-methylphenol (carvacrol)				[499-75-2]		
		68.2	(298)		GC	[02/37]	
C <sub>10</sub> H <sub>14</sub> O	(387–512)	59.4	(402)	EB	[69/23]		
	(343–510)	56.5	(358)		A	[87/5][47/5]	
	6-isopropyl-2-methylphenol			EB	[3228-04-4]		
	(371–499)	54.5	(386)		[69/23]		
C <sub>10</sub> H <sub>14</sub> O	3,5-diethylphenol			A	[1197-34-8]		
	(387–521)	54.3	(402)		[87/5][55/9]		
C <sub>10</sub> H <sub>14</sub> O	4-isobutylphenol			A	[4167-74-2]		
	(345–510)	58.1	(360)		[87/5][47/5]		
C <sub>10</sub> H <sub>14</sub> O	2,3,5,6-tetramethylphenol			A	[527-35-5]		
	(381–522)	51.2	(396)		[87/5][55/9]		
C <sub>10</sub> H <sub>14</sub> O	2-isopropyl-5-methylphenol (thymol)			A	[89-83-8]		
		68.7	(298)		GC	[02/37]	
	(393–433)	70.5	(298)		CGC	[95/21]	
	(381–514)	58.4	(396)		A	[87/5]	
	(339–514)	63.2	(373)		[53/9]		
	(339–514)	58.4	(398)		[53/9]		
	(339–514)	55.2	(423)		[53/9]		
	(339–514)	52.8	(448)		[53/9]		
	(339–514)	51.5	(473)		[53/9]		
	(337–505)	54.9	(352)		[47/5]		
	C <sub>10</sub> H <sub>14</sub> O	(dl) carvone				A	[22327-39-5]
		(330–501)	55.0		(345)		[87/5][47/5]
	C <sub>10</sub> H <sub>14</sub> O	4-ethylphenetole				A	[1585-06-4]
(321–481)		54.3	(336)	[87/5][47/5]			
C <sub>10</sub> H <sub>14</sub> O	2-(2-ethylphenyl)ethanol			A	[87/5]		
	(420–653)	59.5	(435)		[22545-13-7]		
C <sub>10</sub> H <sub>14</sub> O	2-(4-ethylphenyl)ethanol			A	[87/5]		
	(420–653)	59.1	(435)		[536-60-7]		
C <sub>10</sub> H <sub>14</sub> O	4-isopropylbenzyl alcohol			A	[87/5]		
	(347–520)	59.7	(362)		[87/5][47/5]		
C <sub>10</sub> H <sub>14</sub> O	2-methyl-3-phenyl-1-propanol			A	[7384-80-7]		
	(343–393)	71.9	(358)		[87/5]		
C <sub>10</sub> H <sub>14</sub> O	(1-ethoxyethyl)benzene			GS	[01/16]		
	(286–318)	52.4 ± 0.2	(302)				

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>14</sub> O	(286–318) 2-adamantanone	52.6±0.2	(298)	GS	[01/16] [700-58-3]
C <sub>10</sub> H <sub>14</sub> O <sub>2</sub>	1,2-dihydroxy-3- <i>tert</i> -butylbenzene (334–384)	60.7	(298)	GC	[02/37] [4026-05-5]
C <sub>10</sub> H <sub>14</sub> O <sub>2</sub>	(334–384)	70.1±0.8	(359)	GS	[00/5]
C <sub>10</sub> H <sub>14</sub> O <sub>2</sub>	1,2-dihydroxy-4- <i>tert</i> -butylbenzene (439–516)	73.5±0.8	(298)	GS	[00/5] [98-29-3]
C <sub>10</sub> H <sub>14</sub> O <sub>2</sub>	1,3-dihydroxy-2-butylbenzene (413–469)	96.5±2.8	(298)	EB	[97/6] [13331-20-9]
C <sub>10</sub> H <sub>14</sub> O <sub>2</sub>	2-methoxy-4-propylphenol (373–413)	75.3	(428)	A, GC	[87/5][75/24] [2785-87-7]
C <sub>10</sub> H <sub>14</sub> O <sub>2</sub>	<i>tert</i> -butylcatechol (isomer not specified) (421–466)	78.0	(388)	A	[87/5] [65/21]
C <sub>10</sub> H <sub>14</sub> O <sub>2</sub>	1,1-dimethoxy-2-phenylcyclopropane (278–313)	58.2	(443)		[18523-34-7] [02/32]
C <sub>10</sub> H <sub>14</sub> O <sub>2</sub>	acetophenone dimethyl ketal (268–303)	63.7±0.6	(298)	GS	[02/32] [4316-35-2]
C <sub>10</sub> H <sub>14</sub> O <sub>2</sub>	(268–303)	54.0±0.8	(298)	GS	[02/32]
C <sub>10</sub> H <sub>14</sub> O <sub>3</sub>	trimethyl orthobenzoate (294–333)	55.0±1.3	(286)	GS	[95/25] [707-07-3]
C <sub>10</sub> H <sub>14</sub> O <sub>3</sub>	(294–333)	59.9±0.4	(298)	GS	[02/32]
C <sub>10</sub> H <sub>14</sub> O <sub>5</sub>	allyl[(1-allyloxycarbonyl)ethyl] carbonate (353–503)	58.6±0.4		GS	[95/7]
C <sub>10</sub> H <sub>15</sub> Cl <sub>3</sub> OS	2,3,3-trichloro-2-propenethioic acid, O-heptyl ester (433–483)	61.9	(368)	A	[87/5] [76633-71-1]
C <sub>10</sub> H <sub>15</sub> N	2- <i>tert</i> -butylaniline (279–318)	72.7		GC	[80/24]
C <sub>10</sub> H <sub>15</sub> N	2,6-diethylaniline (284–328)	62.7±0.4	(298)	GS	[00/14]
C <sub>10</sub> H <sub>15</sub> N		69.5±0.6	(306)		[00/14]
C <sub>10</sub> H <sub>15</sub> N		65.9±0.6	(298)		[00/14]
C <sub>10</sub> H <sub>15</sub> N	5-isopropyl-2-methylaniline (360–386)	72.0	(373)	A	[2051-53-8] [87/5]
C <sub>10</sub> H <sub>15</sub> N	N- $\alpha$ -dimethylphenethylamine (270–304)	52.8	(285)	A	[537-46-2] [87/5]
C <sub>10</sub> H <sub>15</sub> N	N-butylaniline (413–643)	55.6	(428)	A	[1126-78-9] [87/5]
C <sub>10</sub> H <sub>15</sub> N	N,N-diethylaniline (343–493)	54.5	(358)	A	[91-66-7] [87/5]
C <sub>10</sub> H <sub>15</sub> NO	2-(dimethylamino)-1-phenylethanone (293–333)	69.7±0.5	(298)	GS	[94/3] [103-62-8]
C <sub>10</sub> H <sub>15</sub> NO	4-(butylamino)phenol (464–511)	71.2	(478)	A	[87/5] [120-07-0]
C <sub>10</sub> H <sub>15</sub> NO <sub>2</sub>	N,N- <i>bis</i> -(2-hydroxyethyl)aniline (418–611)	77.6	(433)	A	[87/5][47/5] [55-38-9]
C <sub>10</sub> H <sub>15</sub> O <sub>3</sub> PS <sub>2</sub>	O,O-dimethyl-O-[3-methyl-4-(methylthio)phenyl]thiophosphate (293–373)	75.6	(308)	A	[87/5][99/16] [281-23-2]
C <sub>10</sub> H <sub>16</sub>	adamantane (403–453)	48.2	(298)	GC	[02/37]
C <sub>10</sub> H <sub>16</sub>	( <i>dl</i> ) camphene (320–434)	51.7	(298)	CGC	[95/21] [79-92-5]
C <sub>10</sub> H <sub>16</sub>	( <i>d</i> ) 3,7,7-trimethylbicyclo[4.1.0]hept-2-ene (2-carene) (293–450)	44.0	(335)	A	[87/5][47/5] [4497-92-1]
C <sub>10</sub> H <sub>16</sub>	( <i>d</i> ) 3,7,7-trimethylbicyclo[4.1.0]hept-3-ene (3-carene) (359–443)	45.5	(308)	A	[87/5][54/12] [498-15-7]
C <sub>10</sub> H <sub>16</sub>	(+) limonene (373–423)	42.8	(374)	A	[87/5]
C <sub>10</sub> H <sub>16</sub>	(S)-(-) limonene (320–451)	49.6	(298)	CGC	[95/21] [96/15]
C <sub>10</sub> H <sub>16</sub>	( <i>d</i> ) limonene	47.4	(335)		[5989-27-5]
		49.9	(298)	GC	[02/37]
	(339–495)	46.1±0.2	(350)	EB	[02/15]
	(339–495)	43.5±0.2	(390)	EB	[02/15]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(339–495)	40.9±0.3	(430)	EB	[02/15]
	(339–495)	37.9±0.6	(470)	EB	[02/15]
	(250–434)	49.2	(300)		[99/27]
		48.9±0.1	(298)	C	[87/8]
	(287–448)	44.5	(302)	A	[87/5]
	(288–323)	47.7	(303)	A	[87/5]
C <sub>10</sub> H <sub>16</sub>	( <i>l</i> ) limonene				[5989-54-8]
		49.0±0.1	(298)	C	[87/8]
	(303–363)	45.5	(318)	A	[87/5][54/12]
C <sub>10</sub> H <sub>16</sub>	( <i>dl</i> ) limonene				[138-86-3]
	(287–448)	45.9	(302)	A	[87/5]
C <sub>10</sub> H <sub>16</sub>	limonene				
	(353–405)	39.4	(379)	TGA	[02/40]
C <sub>10</sub> H <sub>16</sub>	$\beta$ -myrcene				
	(303–363)	47.0	(318)		[54/12]
C <sub>10</sub> H <sub>16</sub>	7-methyl-3-methylene-1,6-octadiene (myrcene)				[123-35-3]
		50.6	(298)	GC	[02/37]
	(287–445)	45.7	(302)	A	[87/5][47/5]
C <sub>10</sub> H <sub>16</sub>	5-isopropyl-2-methyl-1,3-cyclohexadiene				[99-83-2]
	(293–448)	47.7	(308)	A	[87/5]
C <sub>10</sub> H <sub>16</sub>	3-isopropyl-6-methylenecyclohexene				[555-10-2]
	(303–363)	47.7	(318)	A	[87/5][54/12]
C <sub>10</sub> H <sub>16</sub>	$\alpha$ -pinene				
	(320–429)	42.5	(335)		[96/15]
	(365–430)	40.2	(380)		[93/4]
		44.6±0.1	(298)	C	[87/19]
C <sub>10</sub> H <sub>16</sub>	( <i>d</i> ) $\alpha$ -pinene				[80-56-8]
	(292–433)	45.0	(307)	A	[87/5]
	(293–363)	43.4	(308)		[54/12]
C <sub>10</sub> H <sub>16</sub>	$\beta$ -pinene				
	(290–439)	46.0	(305)		[96/15]
	(364–439)	41.6	(379)		[93/4]
		45.8±0.1	(298)	C	[87/19]
C <sub>10</sub> H <sub>16</sub>	( <i>l</i> ) $\beta$ -pinene				[127-91-3]
	(291–441)	46.1	(306)	A	[87/5]
	(293–363)	44.9	(308)		[54/12]
C <sub>10</sub> H <sub>16</sub>	terpinolene				[586-62-9]
	(313–363)	50.8	(328)		[54/12]
	(305–458)	50.5	(320)	A	[87/5][47/5]
C <sub>10</sub> H <sub>16</sub>	tetrahydrodicyclopentadiene				[6004-38-2]
	(358–465)	43.5	(373)	A	[87/5]
C <sub>10</sub> H <sub>16</sub> ClO <sub>6</sub>	lactic acid, O-ethoxycarbonyl, 2-(2-chloroethoxy)ethyl ester (solid)				
	(406–523)	83.8	(421)	A	[87/5]
C <sub>10</sub> H <sub>16</sub> Cl <sub>3</sub> NOS	carbamothioic acid, <i>bis</i> (isopropyl), <i>S</i> -(2,3,3-trichloroallyl) ester				
	(293–318)	84.3	(305)	A	[87/5]
C <sub>10</sub> H <sub>16</sub> N <sub>2</sub>	sebaconitrile				[1871-96-1]
	(303–343)		(318)	A	[87/5]
C <sub>10</sub> H <sub>16</sub> N <sub>2</sub>	<i>N'</i> -(2,4-dimethylphenyl)- <i>N</i> -methylformamidine				
		89.2	(303)		[98/23]
C <sub>10</sub> H <sub>16</sub> O	3,7-dimethyl-6-octen-1-yn-3-ol (dehydrolinalool)				[29171-20-8]
	(406–471)	52.1	(421)	EB	[01/13]
	(359–381)	Unreliable			[99/33]
	(369–445)	50.4±0.1	(407)		[88/4]
C <sub>10</sub> H <sub>16</sub> O	camphor				
	(343–383)	54.4	(298)	CGC	[95/21]
	(343–383)	54.5	(298)	CGC	[95/21]
	(343–383)	55.2	(298)	CGC	[95/21]
C <sub>10</sub> H <sub>16</sub> O	(+) camphor				[464-49-3]
		55.3	(298)	GC	[02/37]
C <sub>10</sub> H <sub>16</sub> O	$\alpha$ -pinene oxide				[1686-14-2]
		53.6	(298)	GC	[02/37]
C <sub>10</sub> H <sub>16</sub> O	( <i>d</i> ) 3-bornanone				[13854-85-8]
	(452–488)	44.6	(467)	A	[87/5]
C <sub>10</sub> H <sub>16</sub> O	( <i>d</i> ) 1,3,3-trimethylbicyclo[2.2.1]heptan-2 one (fenchone)				[4695-62-9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(365–384)	47.0	(374)		[02/13]
		51.7±0.1	(298)	C	[87/8]
		51.4±0.1	(298)	C	[87/8]
		51.1±0.1	(298)	C	[85/2]
C <sub>10</sub> H <sub>16</sub> O	(301–464) ( <i>l</i> ) 1,3,3-trimethylbicyclo[2.2.1]heptan-2-one (fenchone)	48.9	(316)	A	[87/5][47/5]
		51.1±0.1	(298)	C	[87/8]
		51.3±0.1	(298)	C	[87/8]
		51.4±0.1	(298)	C	[85/2]
C <sub>10</sub> H <sub>16</sub> O	pulegone				[89-82-7]
		62.0	(298)	GC	[02/37]
	(331–494)	U99.8	(346)	A	[87/5][47/5]
C <sub>10</sub> H <sub>16</sub> O	( <i>d</i> ) 1-isopropyl-4-methylbicyclo[3.1.0]hexan-3-one (thujone)				[471-15-8]
	(311–474)	51.8	(326)	A	[87/5][47/5]
C <sub>10</sub> H <sub>16</sub> O	( <i>dl</i> ) 3-isopropyl-6-methyl-2-cyclohexene-1-one				[499-74-1]
	(364–507)	56.9	(379)	A	[87/5]
C <sub>10</sub> H <sub>16</sub> O	5-isopropyl-2-methyl-2-cyclohexen-1-one				[43205-82-9]
	(361–503)	56.8	(376)	A	[87/5]
C <sub>10</sub> H <sub>16</sub> O	3,4-epoxycarane ( $\alpha$ -isomer)				
		49.4			[77/27]
C <sub>10</sub> H <sub>16</sub> O	3,4-epoxycarane ( $\beta$ -isomer)				
		50.2			[77/27]
C <sub>10</sub> H <sub>16</sub> O	( <i>dl</i> ) dihydrocarvone				[4584-09-2]
	(319–496)	51.2	(334)	A	[87/5][47/5]
C <sub>10</sub> H <sub>16</sub> O	geranial (citral)				[141-27-5]
	(283–333)	61.0	(298)	A	[87/5]
	(373–501)	54.9	(388)	A	[87/5]
C <sub>10</sub> H <sub>16</sub> O	1-adamantanol				[768-95-6]
		60.8	(298)	GC	[02/37]
C <sub>10</sub> H <sub>16</sub> O	<i>trans</i> octahydro-3a-methyl-2 <i>H</i> -inden-2-one				[20379-99-1]
		58.3±0.2	(298)	C	[70/38]
C <sub>10</sub> H <sub>16</sub> O <sub>2</sub>	3-acetyl-2,2-dimethylcyclobutaneacetaldehyde (pinonaldehyde)				
	(283–308)	75.5±5.6		ME	[97/24]
C <sub>10</sub> H <sub>16</sub> O <sub>2</sub>	2,2-dimethyl-3-(2-oxopropyl)cyclopropaneacetaldehyde (caronaldehyde)				
	(283–308)	77.4±6.9		ME	[97/24]
C <sub>10</sub> H <sub>16</sub> O <sub>2</sub>	diosphenol				[490-03-9]
	(339–505)	56.2	(354)	A	[87/5][47/5]
C <sub>10</sub> H <sub>16</sub> O <sub>2</sub>	fencholic acid				
	(374–537)	77.5	(389)		[47/5]
C <sub>10</sub> H <sub>16</sub> O <sub>2</sub>	(2,3,3-trimethyl-3-cyclopentadienyl)acetic acid				
	(370–529)	71.3	(385)	A	[87/5][47/5]
C <sub>10</sub> H <sub>16</sub> O <sub>4</sub>	1,1-cyclobutanedicarboxylic acid, diethyl ester				
	(288–318)	65.8±0.4		GS	[98/22]
C <sub>10</sub> H <sub>16</sub> O <sub>6</sub>	lactic acid, O-ethoxycarbonyl, tetrafurfuryl ester				
	(390–523)	71.2	(405)	A	[87/5]
C <sub>10</sub> H <sub>16</sub> O <sub>6</sub>	<i>tris</i> -(carboethoxy)methane				
	(297–338)	79.1±0.7	(298)	GS	[92/13]
C <sub>10</sub> H <sub>16</sub> S	(1 <i>R</i> ) (–)-thiocamphor				[53402-10-1]
		55.5	(298)	GC	[02/37]
C <sub>10</sub> H <sub>17</sub> N	1-cyclohexylimino-2-butene				
		58.3			[93/20]
C <sub>10</sub> H <sub>17</sub> NOS	carbamothioic acid, N,N-dipropyl, S-(2-propynyl) ester (solid)				[59300-36-6]
	(298–313)	92.4	(305)	A	[87/5]
C <sub>10</sub> H <sub>17</sub> NO <sub>3</sub>	2-(2-cyanoethoxy)propionic acid, butyl ester				
	(328–382)	61.7	(343)	A	[87/5]
C <sub>10</sub> H <sub>17</sub> NO <sub>5</sub>	( <i>l</i> ) N-acetylaspartic acid, diethyl ester				[1069-39-2]
	(418–508)	76.0	(433)	A	[87/5]
C <sub>10</sub> H <sub>18</sub>	spiro[4.5]decane				[176-63-6]
		54.8	(298)	C	[75/14]
	(348–389)	44.0	(363)		[65/11]
C <sub>10</sub> H <sub>18</sub>	<i>cis</i> bicyclo[5.3.0]decane				[16189-46-1]
	(298–377)	49.8	(313)	A	[87/5]
		46.9±0.8	(377)		[70/30]
		53.6±1.2	(298)		[70/30]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>18</sub>	bicyclopentyl (350–393)	43.2	(365)	A	[1636-39-1] [87/5]
C <sub>10</sub> H <sub>18</sub>	<i>cis</i> carane (362–445)	42.8	(377)	A	[18968-24-6] [87/5]
C <sub>10</sub> H <sub>18</sub>	<i>cis</i> decahydronaphthalene (371–473)	45.5	(386)	A, GS	[493-01-6] [87/5][55/7]
C <sub>10</sub> H <sub>18</sub>	<i>trans</i> decahydronaphthalene (363–461)	44.2	(378)	A, GS	[493-02-7] [87/5][55/7]
C <sub>10</sub> H <sub>18</sub>	5-decyne (477–487)	45.5	(366)	A	[1942-46-7] [87/5]
C <sub>10</sub> H <sub>18</sub>	<i>cis</i> 2,6,6-trimethylbicyclo[3.1.1]heptane ( <i>cis</i> -pinane) (378–441)	41.8	(393)		[4755-33-3] [02/41]
C <sub>10</sub> H <sub>18</sub> Cl <sub>4</sub>	1,2,9,10-tetrachlorodecane	75.4			[98/20]
C <sub>10</sub> H <sub>18</sub> O	1,8-epoxy-p-menthane (264–303)	35.6	(279)	A	[470-82-6] [87/5]
C <sub>10</sub> H <sub>18</sub> O	( <i>dl</i> ) borneol (477–487)	50.9	(482)	A	[6627-72-1] [87/5]
C <sub>10</sub> H <sub>18</sub> O	1,4-cineole (353–403)	41.1	(378)	TGA	[470-82-6] [02/40]
		53.2	(298)	GC	[02/37]
	(288–449)	46.1	(303)	A	[87/5]
C <sub>10</sub> H <sub>18</sub> O	( <i>d</i> ) dihydrocarveol (336–498)	58.2	(351)	A	[619-01-2] [87/5]
C <sub>10</sub> H <sub>18</sub> O	( <i>dl</i> ) fenchyl alcohol (318–474)	89.1	(333)	A	[2217-01-8] [87/5]
C <sub>10</sub> H <sub>18</sub> O	geraniol (288–333)	62.9	(303)	A	[106-24-1] [87/5]
	(342–503)	59.1	(357)	A	[87/5]
C <sub>10</sub> H <sub>18</sub> O	( <i>d</i> ) isopulegol (335–485)	49.8	(350)	A	[7786-67-6] [87/5]
C <sub>10</sub> H <sub>18</sub> O	( <i>d</i> ) linalool (273–321)	65.4	(297)		[126-90-9] [99/27]
	(313–471)	52.4	(328)	A	[87/5]
C <sub>10</sub> H <sub>18</sub> O	linalool (368–428)	51.4	(399)	TGA	[78-70-6] [02/40]
	(409–465)	50.3	(424)	EB	[02/2]
C <sub>10</sub> H <sub>18</sub> O	<i>cis</i> 3,7-dimethyl-2,6-octadien-1-ol ( <i>nerol</i> ) (334–499)	55.4	(349)	A	[106-25-2] [87/5]
C <sub>10</sub> H <sub>18</sub> O	( <i>dl</i> ) $\alpha$ -terpineol (325–491)	54.0	(340)	A	[98-55-5] [87/5]
C <sub>10</sub> H <sub>18</sub> O	(+) $\alpha$ -terpineol	60.7	(298)	GC	[7785-53-7] [02/37]
C <sub>10</sub> H <sub>18</sub> O	1-(1-methylcyclohex-3-enyl)-1-propanol (397–422)	53.6	(409)	A	[87/5]
C <sub>10</sub> H <sub>18</sub> O	cyclodecanone (353–423)	55.2	(368)	A	[1502-06-3] [87/5]
C <sub>10</sub> H <sub>18</sub> O	ethyl (1-methylcyclohexyl) ketone (388–431)	45.2	(403)	A	[87/5]
C <sub>10</sub> H <sub>18</sub> O	2-isopropyl-5-methylcyclohexanone ( <i>menthone</i> ) (372–397)	50.1	(385)		[10458-14-7] [02/13]
	(350–483)	51.2	(365)	A	[87/5]
C <sub>10</sub> H <sub>18</sub> O	( <i>d</i> ) citronellal (288–333)	54.9	(303)	A	[2385-77-5] [87/5]
	(317–480)	53.2	(332)	A	[87/5][47/5]
C <sub>10</sub> H <sub>18</sub> O	( <i>Z</i> ) 3-decenal (323–343)	59.2	(298)	CGC	[69891-94-7] [96/7][00/10]
C <sub>10</sub> H <sub>18</sub> O	( <i>E</i> ) 3-decenal (323–343)	59.8	(298)	CGC	[68676-85-7] [96/7][00/10]
C <sub>10</sub> H <sub>18</sub> O	( <i>Z</i> ) 4-decenal (323–343)	59.3	(298)	CGC	[21662-09-9] [96/7][00/10]
C <sub>10</sub> H <sub>18</sub> O	( <i>E</i> ) 4-decenal (323–343)	60.0	(298)	CGC	[65405-70-1] [96/7][00/10]
C <sub>10</sub> H <sub>18</sub> O	( <i>Z</i> ) 5-decenal				[21662-08-8]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>18</sub> O	(323–343) (E) 5-decenal	58.5	(298)	CGC	[96/7][00/10] [21662-11-3]
C <sub>10</sub> H <sub>18</sub> O	(323–343) (Z) 6-decenal	59.2	(298)	CGC	[96/7][00/10] [147159-48-6]
C <sub>10</sub> H <sub>18</sub> O	(323–343) (E) 6-decenal	59.3	(298)	CGC	[96/7][00/10] [147159-48-6]
C <sub>10</sub> H <sub>18</sub> O	(323–343) (Z) 7-decenal	59.5	(298)	CGC	[96/7][00/10] [21661-97-2]
C <sub>10</sub> H <sub>18</sub> O	(323–343) (E) 7-decenal	59.9	(298)	CGC	[96/7][00/10] [21662-10-2]
C <sub>10</sub> H <sub>18</sub> O	(323–343) (Z) 8-decenal	59.8	(298)	CGC	[96/7][00/10] [174155-46-5]
C <sub>10</sub> H <sub>18</sub> O	(323–343) (E) 8-decenal	60.5	(298)	CGC	[96/7][00/10] [174155-47-6]
C <sub>10</sub> H <sub>18</sub> O <sub>2</sub>	3,7-dimethyl-6-octenoic acid (372–530)	60.2	(298)	CGC	[96/7][00/10] [502-47-6]
C <sub>10</sub> H <sub>18</sub> O <sub>2</sub>	8,8-dimethyl-6,10-dioxaspiro[4.5]decane (283–313)	68.7	(387)	A	[87/5][47/5]
C <sub>10</sub> H <sub>18</sub> O <sub>2</sub>	2,2,6-trimethyl-3,5-heptanedione	53.7±0.5		GS	[98/21][02/32] [7333-23-5]
C <sub>10</sub> H <sub>18</sub> O <sub>2</sub>	decanolactone (365–387)	57.7	(298)		[78/18] [706-14-9]
	(365–387)	57.7±0.8	(376)	MM	[91/7]
		63.0±1.5	(298)	MM	[91/7]
C <sub>10</sub> H <sub>18</sub> O <sub>2</sub>	cyclohexyl butyrate (283–313)	60.0±0.6	(298)	GS	[1551-44-6] [96/11]
C <sub>10</sub> H <sub>18</sub> O <sub>2</sub>	heptyl acrylate (359–481)	51.1	(374)	A	[2499-58-3] [87/5]
C <sub>10</sub> H <sub>18</sub> O <sub>2</sub>	hexyl methacrylate (354–475)	50.5	(369)	A	[142-09-6] [87/5]
C <sub>10</sub> H <sub>18</sub> O <sub>2</sub>	1-methyl-3-isopropylcyclopentane carboxylic acid (374–538)	91.6	(389)	A	[512-77-6] [87/5]
C <sub>10</sub> H <sub>18</sub> O <sub>3</sub>	3-hydroxy-2,3-dimethyl-4-hexenoic acid, ethyl ester (362–387)	57.4	(374)	A	[87/5]
C <sub>10</sub> H <sub>18</sub> O <sub>3</sub>	isopentyl levulinate (403–521)	59.4	(418)	A	[87/5]
		56.3	(461)		[31/1]
C <sub>10</sub> H <sub>18</sub> O <sub>3</sub>	1-ethylpropyl levulinate (397–513)	58.6	(412)	A	[87/5]
C <sub>10</sub> H <sub>18</sub> O <sub>3</sub>	1-methylbutyl levulinate (397–513)	57.2	(412)	A	[87/5]
C <sub>10</sub> H <sub>18</sub> O <sub>3</sub>	2-methylbutyl levulinate (391–473)	56.5	(406)	A	[87/5]
C <sub>10</sub> H <sub>18</sub> O <sub>3</sub>	pentyl levulinate (354–527)	66.3	(369)	A	[20279-49-6] [87/5][47/5]
		56.2	(466)		[31/1]
C <sub>10</sub> H <sub>18</sub> O <sub>3</sub>	trimethylacetic acid anhydride (355–513)	50.7±0.2	(360)	EB	[1538-75-6] [02/16]
	(355–513)	47.4±0.2	(400)	EB	[02/16]
	(355–513)	44.0±0.4	(440)	EB	[02/16]
	(355–513)	40.3±0.7	(480)	EB	[02/16]
C <sub>10</sub> H <sub>18</sub> O <sub>4</sub>	pentyl 2-acetoxypropionate (312–501)	68.5	(327)	A	[87/5]
C <sub>10</sub> H <sub>18</sub> O <sub>4</sub>	diethyl adipate (347–513)	57.5	(362)	A	[141-28-6] [87/5][47/5]
C <sub>10</sub> H <sub>18</sub> O <sub>4</sub>	diisobutyl oxalate (336–503)	55.5	(351)	A	[2050-61-5] [87/5][47/5]
C <sub>10</sub> H <sub>18</sub> O <sub>4</sub>	dipropyl succinate (350–524)	59.4	(365)	A	[925-15-5] [87/5][47/5]
C <sub>10</sub> H <sub>18</sub> O <sub>4</sub>	diethyl ethylmethylmalonate (317–481)	53.2	(332)	A	[2049-70-9] [87/5]
C <sub>10</sub> H <sub>18</sub> O <sub>4</sub>	sebacic acid (456–625)	85.9	(471)		[111-20-6] [47/5]
C <sub>10</sub> H <sub>18</sub> O <sub>5</sub>	ethyl[1-(butoxycarbonyl)ethyl] carbonate				

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>18</sub> O <sub>5</sub>	(324–473) 2-lactoyloxypropionic acid, butyl ester	70.2	(339)	A	[87/5]
	(336–407) 2-lactoyloxypropionic acid, sec-butyl ester	74.8	(351)	A	[87/5]
C <sub>10</sub> H <sub>18</sub> O <sub>5</sub>	(329–399) pentyl[1-(ethoxycarbonyl)methyl] carbonate	74.3	(344)	A	[87/5]
	(383–503) pentyl[1-(methoxycarbonyl)ethyl] carbonate	68.2	(398)	A	[87/5]
C <sub>10</sub> H <sub>18</sub> O <sub>5</sub>	(360–524) ( <i>d</i> ) diisopropyl tartrate	63.7	(375)	A	[87/5]
	(376–548) ( <i>d</i> ) dipropyl tartrate	65.7	(391)	A	[62961-64-2] [87/5][47/5]
C <sub>10</sub> H <sub>18</sub> O <sub>6</sub>	(388–576) Phosphamidon	71.8	(403)	A	[2217-14-3] [87/5][47/5]
	(293–388) N,N- <i>bis</i> (2-chloroethyl)cyclohexylamine	90.1	(308)	A	[13171-21-6] [87/5][99/16]
C <sub>10</sub> H <sub>19</sub> Cl <sub>2</sub> N	(273–333) N-cyclopentylpiperidine	62.4	(288)	A, GS	[4261-59-0] [87/5][48/13] [99/16]
	(283–318) decanenitrile (caprinitrile)	54.9±0.3	(301)	GS	[7335-04-8] [98/12]
C <sub>10</sub> H <sub>19</sub> N	(283–318) (381–519)	55.1±0.3	(298)	GS	[98/12]
	(381–519)	58.0	(396)	A	[87/5]
	(381–431)	66.8±0.4	(298)	C	[77/5]
	(431–518)	57.8	(396)	EB	[71/4]
C <sub>10</sub> H <sub>19</sub> NO <sub>3</sub>	(391–476) ( <i>l</i> ) N-acetylsoleucine, ethyl ester	54.4	(446)	EB	[71/4]
	(396–476) ( <i>l</i> ) N-acetylleucine, ethyl ester	69.1	(406)	A	[87/5]
C <sub>10</sub> H <sub>19</sub> O <sub>6</sub> PS <sub>2</sub>	(283–419) ( <i>dl</i> ) Malathion	74.8	(411)	A	[87/5]
	(283–406) O,O-dimethyl-S-[1,2- <i>bis</i> (ethoxycarbonyl)ethyl]thiophosphate	71.1	(298)	A	[121-75-5] [87/5]
C <sub>10</sub> H <sub>20</sub>	(283–406) 1,1,4-trimethylcycloheptane	93.4	(298)	A	[87/5]
		45.5±0.2	(298)	C	[2158-55-6] [96/18]
		45.6±0.2	(298)		[95/19]
[Note: Text in [96/18] states 1,1,4-trimethylcycloheptane; however, the molecular structure of 1,1,4-trimethylcyclohexane is given in the paper.]					
C <sub>10</sub> H <sub>20</sub>	(404–489) cyclodecane	45.1	(419)	A, EB	[293-96-9] [87/5][76/10]
	(343–386) butylcyclohexane	48.2	(358)	EB	[87/5][76/10]
C <sub>10</sub> H <sub>20</sub>	(274–313)	47.4±0.2	(294)	GS	[1678-93-9] [95/27]
		47.0±0.2	(298)		[95/27]
		48.9±0.5	(298)	GC	[87/17]
		49.4±0.4	(298)	GCC	[78/16]
		49.4	(298)		[75/12]
		50.0	(298)		[71/28]
	(367–457) sec-butylcyclohexane	44.9	(382)	A	[87/5][49/6] [7058-01-7]
C <sub>10</sub> H <sub>20</sub>	(369–455) <i>tert</i> -butylcyclohexane	44.1	(384)	A	[87/5][49/6] [3178-22-1]
		45.0±0.1	(328)	C	[81/14]
C <sub>10</sub> H <sub>20</sub>		44.0±0.1	(343)	C	[81/14]
		43.0±0.1	(358)	C	[81/14]
		42.4±0.1	(368)	C	[81/14]
	(355–446) isobutylcyclohexane	42.9	(370)	A	[87/5][49/6] [1678-98-4]
	(355–446)	47.5	(298)		[75/12]
C <sub>10</sub> H <sub>20</sub>	(382–443) 1-isopropyl-4-methylcyclohexane	43.5	(370)	A	[87/5][49/6] [99-82-1]
		43.6	(297)	A	[87/5]
C <sub>10</sub> H <sub>20</sub>	n-pentylcyclopentane				[3741-00-2]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>20</sub>	1-decene (383–445)	51.0	(298)		[71/28] [872-05-9]
		43.8	(398)	A	[87/5]
		50.4±0.2	(298)	C	[77/1]
		50.5	(298)		[71/28]
		45.1	(375)		[50/6]
C <sub>10</sub> H <sub>20</sub>	<i>cis</i> 2-decene (401–447)	43.6	(416)	A	[20348-51-0] [87/5]
C <sub>10</sub> H <sub>20</sub>	<i>trans</i> 2-decene (401–447)	43.7	(416)	A	[20063-97-2] [87/5]
C <sub>10</sub> H <sub>20</sub>	<i>cis</i> 3-decene (398–444)	43.1	(413)	A	[19398-86-8] [87/5]
C <sub>10</sub> H <sub>20</sub>	<i>trans</i> 3-decene (398–445)	43.4	(413)	A	[19150-21-1] [87/5]
C <sub>10</sub> H <sub>20</sub>	<i>cis</i> 4-decene (397–444)	43.0	(412)	A	[19398-88-0] [87/5]
C <sub>10</sub> H <sub>20</sub>	<i>trans</i> 4-decene (398–444)	43.2	(413)	A	[19398-89-1] [87/5]
C <sub>10</sub> H <sub>20</sub>	<i>cis</i> 5-decene (397–443)	42.9	(412)	A	[7433-78-5] [87/5]
C <sub>10</sub> H <sub>20</sub>	<i>trans</i> 5-decene (398–444)	42.3	(413)	A	[7433-56-9] [87/5]
C <sub>10</sub> H <sub>20</sub>	4-propyl-3-heptene (333–371)	43.7	(348)	A, MG	[4485-13-6] [87/5][55/11]
C <sub>10</sub> H <sub>20</sub>	<i>trans</i> 2,2,4,4-tetramethyl-3-hexene	42.0±0.2	(298)	GCC	[79/17]
C <sub>10</sub> H <sub>20</sub> Br <sub>2</sub>	1,1-dibromodecane (442–610)	62.2	(457)	A, EST	[59104-80-2] [87/5][56/16]
					[70/14][99/16]
C <sub>10</sub> H <sub>20</sub> Br <sub>2</sub>	1,2-dibromodecane (368–524)	67.0	(383)	A	[28467-71-2] [87/5][47/5]
C <sub>10</sub> H <sub>20</sub> Cl <sub>2</sub>	1,1-dichlorodecane (415–577)	56.9	(430)	A, EST	[70/14] [3162-62-7] [87/5][56/16]
					[70/14]
C <sub>10</sub> H <sub>20</sub> Cl <sub>2</sub>	1,10-dichlorodecane (441–520)	61.1	(456)		[2162-98-3] [99/16]
		67.3			[98/20]
		73.1	(298)		[91/2]
C <sub>10</sub> H <sub>20</sub> F <sub>2</sub>	1,1-difluorodecane (364–504)	50.2	(379)	A, EST	[62127-43-9] [87/5][56/16] [70/14][99/16]
C <sub>10</sub> H <sub>20</sub> NO <sub>2</sub>	ethyl 2-(N,N-diethylamino)butanoate (283–313)	57.3±0.2	(298)	GS	[96/20]
C <sub>10</sub> H <sub>20</sub> N <sub>2</sub> O <sub>2</sub>	tetraethyloxamide	63	(464)	TGA, DSC	[14288-05-2] [02/36]
C <sub>10</sub> H <sub>20</sub> O	<i>bis</i> (3-methyl-2-butenyl) ether (383–413)	47.8	(398)		[89/8]
C <sub>10</sub> H <sub>20</sub> O	(2-ethylhexyl) vinyl ether (330–451)	44.7	(345)	A	[103-44-6] [87/5]
C <sub>10</sub> H <sub>20</sub> O	1-butylcyclohexanol (362–481)	55.7	(377)	A	[5445-30-7] [87/5]
C <sub>10</sub> H <sub>20</sub> O	3,7-dimethyl-6-octene-1-ol (293–333)	72.6	(308)	A	[106-22-9] [87/5]
		65.9	(388)	A	[87/5]
C <sub>10</sub> H <sub>20</sub> O	( <i>l</i> ) menthol (372–488)	59.1	(387)	A	[2216-51-5] [87/5]
		58.2	(344)		[47/5]
C <sub>10</sub> H <sub>20</sub> O	1-(1-methylcyclohexyl)-1-propanol (396–420)	55.4	(408)	A	[87/5]
C <sub>10</sub> H <sub>20</sub> O	2-(1-methylcyclohexyl)-2-propanol (393–418)	53.0	(405)	A	[27331-02-8] [87/5]
C <sub>10</sub> H <sub>20</sub> O	( <i>Z</i> ) 3-decen-1-ol (323–363)	78.7	(298)	CGC	[10340-22-4] [00/10][94/13]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>20</sub> O	(E) 3-decen-1-ol (323–363)	78.8	(298)	CGC	[10339-60-3] [00/10][94/13]
C <sub>10</sub> H <sub>20</sub> O	(Z) 4-decen-1-ol (323–363)	79.6	(298)	CGC	[57074-37-0] [00/10][94/13]
C <sub>10</sub> H <sub>20</sub> O	(E) 4-decen-1-ol (323–363)	80.3	(298)	CGC	[10339-62-5] [00/10][94/13]
C <sub>10</sub> H <sub>20</sub> O	(Z) 5-decen-1-ol (323–363)	80.3	(298)	CGC	[51652-47-2] [00/10][94/13]
C <sub>10</sub> H <sub>20</sub> O	(E) 5-decen-1-ol (323–363)	80.6	(298)	CGC	[56578-18-8] [00/10][94/13]
C <sub>10</sub> H <sub>20</sub> O	(Z) 6-decen-1-ol (323–363)	80.3	(298)	CGC	[68760-59-8] [00/10][94/13]
C <sub>10</sub> H <sub>20</sub> O	(E) 6-decen-1-ol (323–363)	80.6	(298)	CGC	[38421-92-0] [00/10][94/13]
C <sub>10</sub> H <sub>20</sub> O	(Z) 7-decen-1-ol (323–363)	80.8	(298)	CGC	[16504-66-8] [00/10][94/13]
C <sub>10</sub> H <sub>20</sub> O	(E) 7-decen-1-ol (323–363)	81.1	(298)	CGC	[52957-12-7] [00/10][94/13]
C <sub>10</sub> H <sub>20</sub> O	(Z) 8-decen-1-ol (323–363)	81.6	(298)	CGC	[83799-67-1] [00/10][94/13]
C <sub>10</sub> H <sub>20</sub> O	(E) 8-decen-1-ol (323–363)	81.5	(298)	CGC	[83799-68-2] [00/10][94/13]
C <sub>10</sub> H <sub>20</sub> O	2-decanone (317–484)	51.7	(332)	A	[693-54-9] [87/5][47/5]
	(357–560)	55.1	(372)		[87/5]
		60.9 ± 0.5	(298)	GCC	[79/7]
	(358–568)	44.6	(487)		[75/8]
C <sub>10</sub> H <sub>20</sub> O	2,2,5,5-tetramethyl-3-hexanone	48.8 ± 0.2	(298)	C	[868-91-7] [70/18]
C <sub>10</sub> H <sub>20</sub> O	decanal (308–353)	60.5	(298)	CGC	[112-31-2] [96/7][00/10]
	(288–333)	57.3	(303)	A	[87/5]
	(293–358)	57.3	(308)	A	[87/5]
		60.4 ± 0.3	(298)		[81/18]
	(324–482)	56.3	(339)		[87/5][47/5]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub>	2-heptyl-1,3-dioxolane (318–453)	62.0	(333)	A	[4359-57-3] [87/5]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub>	2-(1-ethylpentyl)-1,3-dioxolane (333–453)	55.3	(348)	A	[4359-47-1] [87/5]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub>	4-hexyl-1,3-dioxane (318–453)	56.9	(333)	A	[2244-85-1] [87/5]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub>	3-pentyl-4-hydroxytetrahydropyran (383–453)	72.6	(398)	A	[61827-60-9] [87/5]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub>	2-butoxy-3-hexanone (333–418)	39.5	(348)	A	[87/5]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub>	hydroxycitronellal (283–333)	75.3	(298)	A, ME	[107-75-5] [87/5][55/8]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub>	octyl acetate				[112-14-1]
		61.7	(298)	GC	[97/22]
	(334–417)	54.9	(349)	A	[87/5]
	(345–472)	47.8	(360)	A	[87/5]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub>	ethyl octanoate (382–412)	52.5 ± 0.2	(397)	EB	[106-32-1] [91/7]
	(382–412)	59.5 ± 1.3	(298)	EB	[91/7]
	(330–480)	53.2	(345)	A	[87/5]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub>	2-ethylhexylacetate (333–472)	50.1	(348)	A	[103-09-3] [87/5]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub>	isopentyl isovalerate (341–479)	46.4	(356)	A	[659-70-1] [87/5]
	(300–467)	47.2	(315)		[47/5]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub>	neopentyl pivalate (280–310)	49.1 ± 0.5	(295)	GS	[5340-26-1] [99/4]
	(280–310)	48.9 ± 0.5	(298)	GS	[99/4]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub>	methyl nonanoate				[1731-84-6]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		57.4	(350)		[02/27]
		56.7±0.3	(364)		[02/27]
		61.6±0.4	(298)		[02/27]
		57.7±0.7	(298)	GC	[87/17]
		62.0±0.5	(298)	GCC	[80/5]
		62.0±0.4	(298)	C	[77/1]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub>	(364–439) decanoic acid (capric acid)	55.6	(379)	A, EST	[87/5][63/16] [334-48-5]
	(398–543)	76.4	(413)	A	[87/5]
	(305–323)	88.6	(314)	ME, TE	[82/4]
		71.4	(418)	I	[43/7]
C <sub>10</sub> H <sub>20</sub> O <sub>3</sub>	propyl 3-butoxypropionate (373–473)	44.2	(388)	A	[14144-47-9] [87/5]
C <sub>10</sub> H <sub>20</sub> O <sub>3</sub>	pentyl 3-ethoxypropionate (374–498)	54.1	(389)	A	[14144-36-6] [87/5]
C <sub>10</sub> H <sub>20</sub> O <sub>3</sub>	methyl 3-hexyloxypropionate (373–473)	55.1	(388)	A	[7419-97-8] [87/5]
C <sub>10</sub> H <sub>20</sub> O <sub>4</sub>	diethylene glycol monobutyl ether acetate (393–520)	57.7	(408)	A	[124-17-4] [87/5]
C <sub>10</sub> H <sub>20</sub> O <sub>5</sub>	1,4,7,10,13-pentaoxacyclopentadecane (15-crown-5)	75.7±1.7	(298)	CGC	[33100-27-5] [00/9]
		79.6±0.3	(298)	C	[82/9]
C <sub>10</sub> H <sub>21</sub> Br	1-bromodecane (391–545)	56.1	(406)		[112-29-8] [99/16]
	(383–570)	56.6	(398)	A, EST	[87/5][61/13]
C <sub>10</sub> H <sub>21</sub> Cl	1-chlorodecane	64.0±0.2	(298)	GS	[1002-69-3] [01/1]
	(379–530)	54.4	(394)		[99/16]
	(359–499)	56.2	(374)	A, DTA	[87/5][69/5]
C <sub>10</sub> H <sub>21</sub> F	1-fluorodecane (342–503)	50.4	(357)	A	[334-56-5] [87/5][61/13]
C <sub>10</sub> H <sub>21</sub> I	1-iododecane (407–571)	57.4	(422)		[2050-77-3] [99/16]
	(397–598)	58.1	(412)	A, EST	[87/5][61/13]
C <sub>10</sub> H <sub>21</sub> N	N,α-dimethylcyclohexanethylamine (270–300)	50.2	(285)	A	[101-40-6] [87/5]
C <sub>10</sub> H <sub>21</sub> NO	N,N-diethylhexanamide (373–443)	47.7	(388)	A	[6282-97-9] [87/5]
C <sub>10</sub> H <sub>22</sub>	decane (337–376)	46.6	(352)		[124-18-5] [02/13]
		51.1±3.9	(298)	CGC	[00/9]
		51.5	(299)	C	[96/22]
		50.5	(314)	C	[96/22]
		50.1	(324)	C	[96/22]
		49.2	(334)	C	[96/22]
	(403–453)	50.9	(298)	CGC	[95/21]
	(423–473)	51.5	(298)	CGC	[95/21]
		51.4	(298)		[94/12]
	(409–584)	42.5	(424)		[92/2]
	(268–490)	48.1	(340)	EB, IPM	[89/1]
	(268–490)	51.4	(298)	EB, IPM	[89/1]
	(252–383)	53.8	(267)	A	[87/5]
	(447–526)	41.7	(462)	A	[87/5]
	(524–617)	38.6	(539)	A	[87/5]
	(298–347)	50.3	(313)	GS	[86/6]
	(308–351)	49.8±1.7			[84/12]
		51.4±0.1	(298)	C	[82/18]
	(243–310)	55.9	(258)		[73/11]
		51.4	(298)		[71/28]
	(373–443)	45.3	(388)		[87/5][70/6]
		51.4	(298)	C	[47/7]
	(368–440)	45.5	(383)	MM	[45/2]
C <sub>10</sub> H <sub>22</sub>	2-methylnonane (324–441)	46.4±0.2	(339)	A	[871-83-0] [87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>22</sub>	3-methylnonane	47.3±0.2	(328)	C	[84/8]
		46.2±0.2	(343)	C	[84/8]
		45.0±0.2	(358)	C	[84/8]
		51.0	(298)		[71/28]
C <sub>10</sub> H <sub>22</sub>	3-methylnonane				[5911-04-6]
		47.3±0.2	(328)	C	[84/8]
		46.2±0.2	(343)	C	[84/8]
		45.1±0.2	(358)	C	[84/8]
C <sub>10</sub> H <sub>22</sub>	4-methylnonane	50.2	(298)		[71/28]
		49.5	(298)		[17301-94-9]
C <sub>10</sub> H <sub>22</sub>	5-methylnonane				[61/30]
					[15869-85-9]
		47.0±0.2	(328)	C	[84/8]
		45.9±0.2	(343)	C	[84/8]
C <sub>10</sub> H <sub>22</sub>	5-methylnonane	44.6±0.2	(358)	C	[84/8]
		49.8	(298)		[71/28]
					[5881-17-4]
C <sub>10</sub> H <sub>22</sub>	3-ethyloctane	49.0	(298)		[71/28]
C <sub>10</sub> H <sub>22</sub>	4-ethyloctane				[15869-86-0]
C <sub>10</sub> H <sub>22</sub>	4-propylheptane	48.1	(298)		[71/28]
					[3178-29-8]
C <sub>10</sub> H <sub>22</sub>	(331–430) 4-isopropylheptane	48.5	(298)		[71/28]
		44.1	(346)	A, MG	[87/5][55/11]
		47.3	(298)		[71/28]
C <sub>10</sub> H <sub>22</sub>	2,2-dimethyloctane				[15869-87-1]
		49.0	(298)		[71/28]
C <sub>10</sub> H <sub>22</sub>	2,3-dimethyloctane				[7146-60-3]
C <sub>10</sub> H <sub>22</sub>	2,4-dimethyloctane	48.1	(298)		[71/28]
					[4032-94-4]
		44.9±0.2	(328)	C	[84/4]
		43.6±0.2	(343)	C	[84/4]
C <sub>10</sub> H <sub>22</sub>	2,4-dimethyloctane	42.4±0.2	(358)	C	[84/4]
		48.5	(298)		[71/28]
					[15869-89-3]
C <sub>10</sub> H <sub>22</sub>	2,5-dimethyloctane	49.0	(298)		[71/28]
C <sub>10</sub> H <sub>22</sub>	2,6-dimethyloctane				[2051-30-1]
		49.3	(298)		[71/28]
C <sub>10</sub> H <sub>22</sub>	2,7-dimethyloctane				[1072-16-8]
		47.7	(298)		[71/28]
		45.2	(294)	A	[87/5][47/5]
C <sub>10</sub> H <sub>22</sub>	(279–433) 3,3-dimethyloctane				[4110-44-5]
C <sub>10</sub> H <sub>22</sub>	3,3-dimethyloctane	48.5	(298)		[71/28]
					[15869-92-8]
C <sub>10</sub> H <sub>22</sub>	3,4-dimethyloctane	48.1	(298)		[71/28]
					[15869-93-9]
C <sub>10</sub> H <sub>22</sub>	3,5-dimethyloctane	48.5	(298)		[71/28]
					[15869-94-0]
C <sub>10</sub> H <sub>22</sub>	3,6-dimethyloctane	47.3	(298)		[71/28]
					[15869-95-1]
C <sub>10</sub> H <sub>22</sub>	4,4-dimethyloctane	48.1	(298)		[71/28]
					[15869-96-2]
C <sub>10</sub> H <sub>22</sub>	4,5-dimethyloctane	48.5	(298)		[71/28]
					[14676-29-0]
C <sub>10</sub> H <sub>22</sub>	2-methyl-3-ethylheptane	48.1	(298)		[71/28]
C <sub>10</sub> H <sub>22</sub>	2-methyl-4-ethylheptane				[52896-88-5]
		47.3	(298)		[71/28]
C <sub>10</sub> H <sub>22</sub>	2-methyl-5-ethylheptane				[13475-78-0]
		48.1	(298)		[71/28]
C <sub>10</sub> H <sub>22</sub>	3-methyl-3-ethylheptane	47.7	(298)		[17302-01-1]
					[71/28]
C <sub>10</sub> H <sub>22</sub>	3-methyl-4-ethylheptane				[52896-89-6]
		47.7	(298)		[71/28]
C <sub>10</sub> H <sub>22</sub>	3-methyl-5-ethylheptane				[71/28]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>22</sub>	4-methyl-3-ethylheptane	47.7	(298)		[71/28]
C <sub>10</sub> H <sub>22</sub>	4-methyl-4-ethylheptane	48.1	(298)		[61/30]
C <sub>10</sub> H <sub>22</sub>	2,2,3-trimethylheptane	47.2	(298)		[61/30]
C <sub>10</sub> H <sub>22</sub>	2,2,4-trimethylheptane	46.9	(298)		[52896-92-1] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,2,5-trimethylheptane	45.6	(298)		[14720-74-2] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,2,6-trimethylheptane	46.0	(298)		[20291-95-6] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,3,3-trimethylheptane	46.4	(298)		[1190-83-6] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,3,4-trimethylheptane	46.9	(298)		[52896-93-2] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,3,5-trimethylheptane	47.3	(298)		[52896-95-4] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,3,6-trimethylheptane	47.3	(298)		[20278-85-7] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,4,4-trimethylheptane	47.3	(298)		[4032-93-3] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,4,5-trimethylheptane	45.2	(298)		[4032-92-2] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,4,6-trimethylheptane	46.9	(298)		[20278-84-6] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,5,5-trimethylheptane	46.4	(298)		[2613-61-8] [71/28]
C <sub>10</sub> H <sub>22</sub>	3,3,4-trimethylheptane	46.0	(298)		[1189-99-7] [71/28]
C <sub>10</sub> H <sub>22</sub>	3,3,5-trimethylheptane	46.9	(298)		[20278-88-0] [71/28]
C <sub>10</sub> H <sub>22</sub>	3,4,4-trimethylheptane	46.0	(298)		[7154-80-5] [71/28]
C <sub>10</sub> H <sub>22</sub>	3,4,5-trimethylheptane	46.4	(298)		[20278-88-0] [71/28]
C <sub>10</sub> H <sub>22</sub>	2-methyl-3-isopropylhexane	47.3	(298)		[20278-89-1] [71/28]
C <sub>10</sub> H <sub>22</sub>	3,3-diethylhexane	46.4	(298)		[71/28]
C <sub>10</sub> H <sub>22</sub>	3,4-diethylhexane	47.3	(298)		[17302-02-2] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,2-dimethyl-3-ethylhexane	47.7	(298)		[19398-77-7] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,2-dimethyl-4-ethylhexane	46.0	(298)		[20291-91-2] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,3-dimethyl-3-ethylhexane	45.2	(298)		[52896-99-8] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,3-dimethyl-4-ethylhexane	46.9	(298)		[52897-00-4] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,4-dimethyl-3-ethylhexane	46.9	(298)		[52897-01-5] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,4-dimethyl-4-ethylhexane	46.9	(298)		[7220-26-0] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,5-dimethyl-3-ethylhexane	46.4	(298)		[52897-03-7] [71/28]
C <sub>10</sub> H <sub>22</sub>	3,3-dimethyl-4-ethylhexane	46.4	(298)		[52897-04-8] [71/28]
C <sub>10</sub> H <sub>22</sub>	3,4-dimethyl-3-ethylhexane	46.4	(298)		[52897-05-9] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,2,3,3-tetramethylhexane	46.4	(298)		[52897-06-0] [71/28]
C <sub>10</sub> H <sub>22</sub>	2,2,3,4-tetramethylhexane	45.2	(298)		[13475-81-5] [71/28]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>22</sub>	2,2,3,5-tetramethylhexane	45.6	(298)		[71/28] [52897-09-3]
C <sub>10</sub> H <sub>22</sub>	2,2,4,4-tetramethylhexane	45.2	(298)		[71/28] [51750-65-3]
C <sub>10</sub> H <sub>22</sub>	2,2,4,5-tetramethylhexane	43.5	(298)		[71/28] [16747-42-5]
C <sub>10</sub> H <sub>22</sub>	2,2,5,5-tetramethylhexane	44.4	(298)		[71/28] [1071-81-4]
C <sub>10</sub> H <sub>22</sub>	2,3,3,4-tetramethylhexane	43.5	(298)		[71/28] [52897-10-6]
C <sub>10</sub> H <sub>22</sub>	2,3,3,5-tetramethylhexane	46.4	(298)		[71/28] [52897-11-7]
C <sub>10</sub> H <sub>22</sub>	2,3,4,4-tetramethylhexane	45.2	(298)		[71/28] [52897-12-8]
C <sub>10</sub> H <sub>22</sub>	2,3,4,5-tetramethylhexane	46.0	(298)		[71/28] [52897-15-1]
C <sub>10</sub> H <sub>22</sub>	3,3,4,4-tetramethylhexane	46.0	(298)		[71/28] [5171-84-6]
C <sub>10</sub> H <sub>22</sub>	2,4-dimethyl-3-isopentylpentane	42.3	(298)		[71/28] [13475-79-1]
C <sub>10</sub> H <sub>22</sub>	2-methyl-3,3-diethylpentane	45.6	(298)		[71/28] [52897-16-2]
C <sub>10</sub> H <sub>22</sub>	2,2,3-trimethyl-3-ethylpentane	47.3	(298)		[71/28] [52897-17-3]
C <sub>10</sub> H <sub>22</sub>	2,2,4-trimethyl-3-ethylpentane	46.0	(298)		[71/28] [52897-18-4]
C <sub>10</sub> H <sub>22</sub>	2,3,4-trimethyl-3-ethylpentane	44.8	(298)		[71/28] [52897-19-5]
C <sub>10</sub> H <sub>22</sub>	2,2,3,3,4-pentamethylpentane	46.4	(298)		[71/28] [16747-44-7]
C <sub>10</sub> H <sub>22</sub>	2,2,3,4,4-pentamethylpentane	45.2	(298)		[71/28] [16747-45-8]
C <sub>10</sub> H <sub>22</sub> O	hexyl <i>tert</i> -butyl ether	43.5	(298)		[71/28] [69775-79-7]
C <sub>10</sub> H <sub>22</sub> O	pentyl <i>tert</i> -amyl ether	53.2	(298)		[U/2][02/32] [U/2][02/32]
C <sub>10</sub> H <sub>22</sub> O	ethyl <i>tert</i> -octyl ether	53.5	(298)		[U/2][02/32]
C <sub>10</sub> H <sub>22</sub> O	dipentyl ether	45.3 ± 0.3	(298)		[U/2][02/32] [693-65-2]
	(373–460)	46.2	(388)	A	[87/5]
	(423–480)	45.6	(451)		[68/13]
C <sub>10</sub> H <sub>22</sub> O	butyl hexyl ether				[54459-71-1] [85/2]
C <sub>10</sub> H <sub>22</sub> O	diisopentyl ether	53.2 ± 0.1	(298)	C	[544-01-4] [95/21]
	(353–393)	51.4	(298)	CGC	[95/21]
	(417–470)	41.4	(443)		[68/13]
	(291–447)	47.6	(306)	A	[87/5][47/5]
C <sub>10</sub> H <sub>22</sub> O	1-decanol				[112-30-1] [01/3]
	(281–327)	79.5	(309)	GS	[01/3]
	(281–327)	80.9	(298)	GS	[01/3]
	(278–378)	81.1	(293)		[99/11]
	(373–423)	81.7	(298)	CGC	[95/21]
	(353–393)	79.3	(298)	CGC	[94/13][00/10]
	(283–388)	75.4	(336)		[92/14]
	(349–410)	71.6	(364)	A	[87/5]
	(405–528)	62.6	(420)	A	[87/5]
	(474–529)	53.9	(489)	A	[87/5]
		78.2 ± 0.8	(323)	C	[79/6]
		81.5 ± 0.8	(298)	C	[79/6]
		81.5 ± 0.8	(298)	C	[77/1]
	(298–325)	77.6	(313)		[73/26]
	(400–529)	63.5	(415)	A, EB	[87/5][70/2]
	(378–504)	69.5	(393)	DTA	[69/5]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>22</sub> O	(298–325)	77.6	(311)	ME	[65/15]
	(364–461)	69.6	(379)		[58/2]
C <sub>10</sub> H <sub>22</sub> O <sub>2</sub>	( <i>dl</i> ) 3,7-dimethyl-1-octanol (341–467)	79.1	(356)	A	[106-21-8] [87/5]
	ethylene glycol dibutyl ether (356–476)	55.9	(371)	A	[112-48-1] [87/5]
C <sub>10</sub> H <sub>22</sub> O <sub>2</sub>		58.8±0.1	(298)	C	[70/17]
	ethylene glycol diisobutyl ether (336–456)	46.1	(351)	A	[5669-09-0] [87/5]
C <sub>10</sub> H <sub>22</sub> O <sub>2</sub>	ethylene glycol mono(2-ethylhexyl) ether (381–502)	56.5	(396)	A	[1559-35-9] [87/5]
C <sub>10</sub> H <sub>22</sub> O <sub>2</sub>	acetaldehyde dibutyl ether (303–464)	47.3	(318)	A	[871-22-7] [87/5]
C <sub>10</sub> H <sub>22</sub> O <sub>2</sub>	3,4-diethyl-3,4-hexanediol (405–507)	54.7	(420)	A, EB	[6931-71-1] [87/5][79/10]
C <sub>10</sub> H <sub>22</sub> O <sub>2</sub>	3-ethyl-3-hydroxymethyl-2-heptanol (338–500)	63.4	(353)		[87/5]
C <sub>10</sub> H <sub>22</sub> O <sub>3</sub>	diethylene glycol monoethyl ether (406–531)	62.7	(421)	A	[112-59-4] [87/5]
C <sub>10</sub> H <sub>22</sub> O <sub>3</sub>	dipropylene glycol monobutyl ether (337–500)	63.2	(352)	A	[24083-03-2] [87/5][47/5]
C <sub>10</sub> H <sub>22</sub> O <sub>4</sub>	tripropylene glycol monomethyl ether (308–515)	58.7	(323)	A	[20324-33-8] [87/5]
C <sub>10</sub> H <sub>22</sub> O <sub>5</sub>	tetraethylene glycol dimethyl ether (tetraglyme)	76.9±2.6	(298)	CGC	[143-24-8] [00/9]
	(419–553)	58.0	(434)	A	[87/5]
C <sub>10</sub> H <sub>22</sub> S	1-ethylthiooctane (384–545)	63.9±0.6	(298)	EB	[3698-94-0] [96/3]
	1-decanethiol (390–544)	56.4	(405)		[143-10-2] [99/16]
C <sub>10</sub> H <sub>22</sub> S	(283–293)	58.6	(288)	A	[87/5]
	(413–534)	54.6	(428)	A	[87/5]
		65.5±0.5	(298)	C	[77/1]
C <sub>10</sub> H <sub>22</sub> S	2-decanethiol (380–534)	54.6	(395)		[13402-60-3] [99/16]
C <sub>10</sub> H <sub>22</sub> S	diisopentyl sulfide (339–366)	57.9	(352)	A	[544-02-5] [87/5][99/16]
	(340–365)	56.9	(352)	C	[62/17]
C <sub>10</sub> H <sub>22</sub> S	dipentyl sulfide (346–365)	U66.3	(356)		[872-10-6] [99/16]
	(346–366)	58.7	(356)	A	[87/5]
	(346–366)	57.5	(358)	EB	[62/17]
C <sub>10</sub> H <sub>22</sub> S <sub>2</sub>	dipentyl disulfide (410–571)	59.8	(425)		[112-51-6] [99/16]
		71.1±0.2	(298)	C	[85/2]
C <sub>10</sub> H <sub>22</sub> S <sub>2</sub>	1,10-decanedithiol (434–571)	72.3	(449)	A	[1191-67-9] [87/5][99/16] [43/6]
	decylamine (410–506)	52.4	(425)	A, EST	[2016-57-1] [87/5][56/17]
C <sub>10</sub> H <sub>23</sub> N	N,N-dimethyloctylamine (284–323)	54.0±0.5	(303)		[7378-99-6] [97/21]
	(371–517)	50.2	(386)	A	[87/5]
C <sub>10</sub> H <sub>23</sub> N	dipentylamine (379–527)	51.2	(394)	A	[2050-92-2] [87/5]
C <sub>10</sub> H <sub>23</sub> N <sub>2</sub>	N-methyl-N-(dimethylamino)hydrazone acetone (288–315)	62.3	(301)		[80/20]
C <sub>10</sub> H <sub>23</sub> N <sub>3</sub>	[2-(dimethylamino)ethyl]methylhydrazone-2-propanone (288–315)	62.3	(301)	A	[67752-90-3] [87/5]
	O,O-diethyl-S-[2-(diethylamino)ethyl]thiophosphate (358–407)	94.5	(373)	A	[78-53-5] [87/5][99/16]
C <sub>10</sub> H <sub>24</sub> N <sub>4</sub>	tetrakis(dimethylamino)ethylene (358–485)	53.9±0.5	(298)	EB	[996-70-3] [97/7]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>11</sub> F <sub>21</sub> N <sub>3</sub>	2,2,2-trifluoro-N-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-N'-[2,2,2-trifluoro-1-(trifluoromethyl)-1-[[2,2,2-trifluoro-1-(trifluoro-methyl)ethylidene]amino]ethyl] ethanimidamide	39.8			[57731-09-6] [75/42]
C <sub>11</sub> F <sub>22</sub>	perfluoro(1-methyl-4- <i>tert</i> -butylcyclohexane) (mix <i>cis</i> + <i>trans</i> ) (345–442)	45.8	(360)		[75169-50-5] [99/16]
C <sub>11</sub> F <sub>22</sub>	perfluoro(1-methyl-4- <i>tert</i> -butylcyclohexane) (isomer not specified)	54.1±0.5	(298)	EB	[81/23]
C <sub>11</sub> F <sub>24</sub> O <sub>2</sub>	octadecafluoro-1,9- <i>bis</i> (trifluoromethoxy)nonane (293–353)	43.0	(323)		[99/16]
C <sub>11</sub> H <sub>4</sub> Cl <sub>5</sub> NO <sub>2</sub>	2,2,4-trichloro-5-[(3,4-dichlorophenyl)amino]-4-cyclopentene-1,3-dione (453–483)	87.5	(468)	GC	[77765-41-4] [80/25]
C <sub>11</sub> H <sub>5</sub> BrCl <sub>3</sub> NO <sub>2</sub>	2,2,4-trichloro-5-[(2-bromophenyl)amino]-4-cyclopentene-1,3-dione (453–483)	67.5	(468)	GC	[73373-59-8] [80/25]
C <sub>11</sub> H <sub>5</sub> BrCl <sub>3</sub> NO <sub>2</sub>	2,2,4-trichloro-5-[(3-bromophenyl)amino]-4-cyclopentene-1,3-dione (453–483)	78.1	(468)	GC	[73373-60-1] [80/25]
C <sub>11</sub> H <sub>5</sub> BrCl <sub>3</sub> NO <sub>2</sub>	2,2,4-trichloro-5-[(4-bromophenyl)amino]-4-cyclopentene-1,3-dione (453–483)	82.9	(468)	GC	[73373-61-2] [80/25]
C <sub>11</sub> H <sub>5</sub> Cl <sub>4</sub> NO <sub>2</sub>	2,2,4-trichloro-5-[(4-chlorophenyl)amino]-4-cyclopentene-1,3-dione (453–483)	86.2	(468)	GC	[73373-63-4] [80/25]
C <sub>11</sub> H <sub>7</sub> N <sub>3</sub>	2,2-dicyano-1-phenylpropionitrile (318–388)	66.9		B	[6023-46-7] [94/5]
C <sub>11</sub> H <sub>8</sub> N <sub>4</sub>	1,1,2,2-tetracyano-4-methyl-4-cyclohexene	82.0±2.1		MG	[71/37]
C <sub>11</sub> H <sub>8</sub> O <sub>2</sub>	1-naphthoic acid (457–573)	97.2	(472)	A	[86-55-5] [87/5]
C <sub>11</sub> H <sub>8</sub> O <sub>2</sub>	2-naphthoic acid (463–582)	98.9	(478)	A	[93-09-4] [87/5]
C <sub>11</sub> H <sub>9</sub> Cl	1-(chloromethyl)naphthalene (423–565)	59.8	(494)		[86-52-2] [99/16]
C <sub>11</sub> H <sub>9</sub> N	2-phenylpyridine (407–447)	U90.2	(422)	A	[87/5]
C <sub>11</sub> H <sub>9</sub> N	3-phenylpyridine	68.7±4.6	(298)	CGC	[1009-89-5] [00/3]
C <sub>11</sub> H <sub>9</sub> N	3-phenylpyridine	64.5±4.5	(298)	CGC	[1008-88-4] [00/3]
C <sub>11</sub> H <sub>10</sub>	1-methylnaphthalene (323–473)	62.4	(298)	GC	[92-12-0] [02/18]
	(485–595)	50.0	(500)		[92/2]
	(259–388)	63.3	(274)		[88/12]
	(424–536)	49.6	(455)		[81/1]
	(424–536)	45.9	(525)		[81/1]
	(278–313)	57.5	(293)	A, GS	[87/5][79/11]
		57.3±0.4	(298)	C	[74/28]
	(415–526)	52.3	(430)	A, GS	[87/5][55/7]
C <sub>11</sub> H <sub>10</sub>	2-methylnaphthalene (424–535)	48.4	(465)		[91-57-6] [81/1]
	(424–535)	46.4	(505)		[81/1]
	(423–515)	51.2	(438)	A, GS	[87/5][55/7]
C <sub>11</sub> H <sub>11</sub> Cl <sub>3</sub> O <sub>3</sub>	2,4,5-trichlorophenoxyacetic acid, propyl ester (444–573)	83.2	(459)	A	[1928-40-1] [87/5][99/16]
C <sub>11</sub> H <sub>11</sub> N	2,4-dimethylquinoline (458–543)	56.3	(473)	A	[1198-37-4] [87/5]
C <sub>11</sub> H <sub>11</sub> N	2,6-dimethylquinoline (461–541)	55.7	(476)	A	[877-43-0] [87/5]
C <sub>11</sub> H <sub>12</sub> Cl <sub>2</sub> O <sub>3</sub>	2,4-dichlorophenoxyacetic acid, isopropyl ester (460–573)	69.5	(475)	A	[94-11-1] [87/5][99/16]
C <sub>11</sub> H <sub>12</sub> Cl <sub>2</sub> O <sub>3</sub>	2,4-dichlorophenoxyacetic acid, propyl ester (444–573)	77.3	(459)	A	[1928-61-1] [87/5][99/16]
C <sub>11</sub> H <sub>12</sub> Cl <sub>2</sub> O <sub>4</sub>	2,4-dichlorophenoxyacetic acid, 3-hydroxypropyl ester (463–483)	72.1	(473)	A	[28191-20-0] [87/5][99/16]
C <sub>11</sub> H <sub>12</sub> O	2-ethylidene-3-phenylpropanal (333–374)	73.6	(348)	A	[87/5]
C <sub>11</sub> H <sub>12</sub> O <sub>2</sub>	benzyl methacrylate (347–431)	70.5	(362)	A	[2495-37-6] [87/5]
C <sub>11</sub> H <sub>12</sub> O <sub>2</sub>	ethyl cinnamate				[103-36-6]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>11</sub> H <sub>12</sub> O <sub>2</sub>	(453–544)	57.8	(468)	A	[87/5]
	1-phenyl-1,3-pentanedione (371–550)	64.6	(386)	A	[5331-64-6] [87/5]
C <sub>11</sub> H <sub>12</sub> O <sub>2</sub>	1-phenyl-4,7-dioxaspiro[2.4]heptane (307–333)	71.3±0.7	(298)	GS	[39522-76-4] [02/32]
	(288–302)	69.6±0.7		GS	[98/21]
C <sub>11</sub> H <sub>12</sub> O <sub>2</sub>	4-carboxymethylpentacyclo[4.3.0.0.2 <sup>5</sup> 0 <sup>4,7</sup> ]nonane (303–343)	80.0±1.7	(333)		[40317-63-3] [84/12]
C <sub>11</sub> H <sub>12</sub> O <sub>3</sub>	benzoylactic acid, ethyl ester (380–538)	72.1	(395)	A	[94-02-0] [87/5]
C <sub>11</sub> H <sub>12</sub> O <sub>3</sub>	myristicin (368–553)	61.2	(383)	A	[607-91-0] [87/5]
C <sub>11</sub> H <sub>12</sub> O <sub>3</sub>	2-piperonylpropanal (373–423)	74.5	(388)	A	[87/5]
C <sub>11</sub> H <sub>13</sub> Cl <sub>3</sub>	4- <i>tert</i> -butyl-2,3,6-trichlorotoluene (423–570)	62.7	(438)	A	[61468-36-8] [87/5][73/15] [99/16]
	C <sub>11</sub> H <sub>14</sub>	1,1-dimethylindane (313–348)	50.1	(328)	A
C <sub>11</sub> H <sub>14</sub>	(313–467)	50.5	(328)	A	[87/5]
	(387–467)	45.9	(402)	A	[87/5]
	4,6-dimethylindane (313–467)	56.9	(328)	A	[1685-82-1] [87/5]
C <sub>11</sub> H <sub>14</sub>	(313–363)	56.4	(328)	A	[87/5]
	(415–467)	50.3	(430)	A	[87/5]
	4,7-dimethylindane (313–470)	54.7	(328)	A	[6682-71-9] [87/5]
C <sub>11</sub> H <sub>14</sub>	(313–363)	56.9	(328)	A	[87/5]
	(417–470)	50.6	(432)	A	[87/5]
	4-isopropylstyrene (408–478)	48.5	(423)	A	[2055-40-5] [87/5]
C <sub>11</sub> H <sub>14</sub>	5-methyl-1,2,3,4-tetrahydronaphthalene (416–508)	53.4	(431)	A	[2809-64-5] [87/5]
C <sub>11</sub> H <sub>14</sub>	6-methyl-1,2,3,4-tetrahydronaphthalene (411–502)	53.7	(426)	A	[1680-51-9] [87/5]
C <sub>11</sub> H <sub>14</sub>	2,4,5-trimethylstyrene (352–490)	56.4	(367)	A	[3937-24-4] [87/5][49/18]
C <sub>11</sub> H <sub>14</sub>	2,4,6-trimethylstyrene (362–483)	50.9	(377)	A	[769-25-5] [87/5][49/18]
C <sub>11</sub> H <sub>14</sub> Cl <sub>2</sub>	4- <i>tert</i> -butyl-2,5-dichlorotoluene (395–538)	57.0	(410)	A	[61468-35-7] [87/5][73/15] [99/16]
C <sub>11</sub> H <sub>14</sub> N <sub>2</sub> O <sub>4</sub>	3-nitro-(4-nitrophenyl)pentane (321–358)	88.0±0.8	(298)	GS	[97/5]
C <sub>11</sub> H <sub>14</sub> O	<i>tert</i> -butyl phenyl ketone (330–493)	55.5	(345)	A	[938-16-9] [87/5][47/5]
C <sub>11</sub> H <sub>14</sub> O	2-ethyl-3-phenylpropanal (343–388)	64.6	(358)	A	[87/5]
C <sub>11</sub> H <sub>14</sub> O	isobutyl phenyl ketone (331–501)	55.7	(346)	A	[582-62-7] [87/5][47/5]
C <sub>11</sub> H <sub>14</sub> O	2,3,5-trimethylacetophenone (352–557)	57.9	(367)	A	[87/5][47/5]
C <sub>11</sub> H <sub>14</sub> O <sub>2</sub>	1,1-dimethoxy-2-phenylcyclopropane (278–313)	63.9±0.6		GS	[98/21]
C <sub>11</sub> H <sub>14</sub> O <sub>2</sub>	3-acetoxy-1-phenylpropane (293–333)	74.3	(306)	A	[87/5]
C <sub>11</sub> H <sub>14</sub> O <sub>2</sub>	butyl benzoate (374–474)	63.2	(394)	BG	[120-50-3] [88/2]
	(374–474)	55.7	(452)	BG	[88/2]
	(343–405)	59.1	(358)	A	[87/5]
C <sub>11</sub> H <sub>14</sub> O <sub>2</sub>	1,2-dimethoxy-4-(1-propenyl)benzene (358–521)	61.9	(373)	A	[93-16-3] [87/5][47/5]
C <sub>11</sub> H <sub>14</sub> O <sub>2</sub>	isobutyl benzoate (370–467)	60.4	(393)	BG	[136-60-7] [88/2]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>11</sub> H <sub>14</sub> O <sub>2</sub>	(370–467)	54.4	(449)	BG	[88/2]
	(291–300)	58.1	(295)	A	[87/5]
	(338–510)	57.1	(353)	A	[87/5][47/5]
C <sub>11</sub> H <sub>14</sub> O <sub>2</sub>	ethyl 2-phenylpropionate				[2510-99-8]
	(293–329)	63.2±0.3	(311)	GS	[99/2]
C <sub>11</sub> H <sub>14</sub> O <sub>2</sub>	(293–329)	64.0±0.3	(298)	GS	[99/2]
	1-(4-methoxyphenyl)-2-butanone				[53917-01-4]
C <sub>11</sub> H <sub>14</sub> O <sub>3</sub>	(373–443)	62.6	(388)	A	[87/5]
	butyl 4-hydroxybenzoate				[01/20]
C <sub>11</sub> H <sub>14</sub> O <sub>3</sub>	(72.2)			TGA	
	2-piperonylpropanol				[87/5]
C <sub>11</sub> H <sub>15</sub> Cl	(373–443)	84.8	(388)	A	[42597-10-4]
	4- <i>tert</i> -butyl-2-chlorotoluene				[87/5][73/15]
C <sub>11</sub> H <sub>15</sub> N	(372–503)	54.0	(387)	A	[99/16]
	2-phenylethylazetidene				[42525-65-2]
C <sub>11</sub> H <sub>15</sub> N	(302–333)	62.2	(317)	A	[87/5][76/22]
	N-phenylpiperidine				[4096-20-2]
C <sub>11</sub> H <sub>15</sub> NO	(284–323)	64.0±0.4	(303)	GS	[98/12]
	(284–323)	64.3±0.4	(298)	GS	[98/12]
	N,N-diethylbenzamide				[1696-17-9]
C <sub>11</sub> H <sub>15</sub> NO	(373–403)	56.5	(388)	A	[87/5]
	(374–405)	53.2	(389)		[69/1]
C <sub>11</sub> H <sub>15</sub> NO	(4R,5R)-3,4-dimethyl-5-phenyl-1,3-oxazolidine				
	(293–303)	50.0±1.3	(298)		[98/3]
C <sub>11</sub> H <sub>15</sub> NO	(4S,5R)-3,4-dimethyl-5-phenyl-1,3-oxazolidine				
	(293–303)	52.4±0.9	(298)		[98/3]
C <sub>11</sub> H <sub>16</sub>	tetracyclo[6,2,1,0 <sup>2,7</sup> ,0 <sup>3,5</sup> ]undecane				[1777-44-2]
		55.3±0.3	(298)	C	[96/18]
C <sub>11</sub> H <sub>16</sub>	pentylbenzene				[538-68-1]
		55.3	(298)		[94/11]
		55.1	(298)		[71/28]
C <sub>11</sub> H <sub>16</sub>	( <i>dl</i> ) 2-phenylpentane				[2719-52-0]
	(302–466)	50.3	(317)	A	[87/5]
C <sub>11</sub> H <sub>16</sub>	1- <i>tert</i> -butyl-3-methylbenzene				[1075-38-3]
	(279–314)	51.4±0.6	(296)	GS	[98/19]
C <sub>11</sub> H <sub>16</sub>		51.3±0.6	(298)		[98/19]
	1- <i>tert</i> -butyl-4-methylbenzene				[98-51-1]
	(279–314)	52.3±0.5	(296)	GS	[98/19]
C <sub>11</sub> H <sub>16</sub>		52.2±0.6	(298)		[98/19]
	4- <i>tert</i> -butyltoluene				[98-15-1]
C <sub>11</sub> H <sub>16</sub>	(342–465)	49.1	(357)	A	[87/5][73/15]
	3,5-diethyltoluene				[2050-24-0]
C <sub>11</sub> H <sub>16</sub>	(307–474)	49.6	(322)	A	[87/5][47/5]
	1-ethyl-3-isopropylbenzene				[4920-99-4]
C <sub>11</sub> H <sub>16</sub>	(301–466)	48.8	(316)	A	[87/5][47/5]
	1-ethyl-4-isopropylbenzene				[4218-48-8]
C <sub>11</sub> H <sub>16</sub>	(304–469)	49.4	(319)	A	[87/5][47/5]
	2-ethyl-1,3,5-trimethylbenzene				[3982-67-0]
C <sub>11</sub> H <sub>16</sub>	(312–481)	52.6	(327)	A	[87/5]
	3-ethyl-1,2,4-trimethylbenzene				[18262-85-6]
C <sub>11</sub> H <sub>16</sub>	(347–488)	61.3	(362)	A	[87/5]
	5-ethyl-1,2,4-trimethylbenzene				[17851-27-3]
C <sub>11</sub> H <sub>16</sub>	(317–481)	56.4	(332)	A	[87/5][47/5]
	pentamethylbenzene				[700-12-9]
C <sub>11</sub> H <sub>16</sub> O	(338–503)	57.8	(353)	A	[87/5]
	2- <i>sec</i> -butyl-4-methylphenol				[51528-17-7]
	(413–548)	58.4	(428)	A	[87/5]
	(383–523)	59.0	(373)		[53/9]
	(383–523)	58.0	(398)		[53/9]
C <sub>11</sub> H <sub>16</sub> O	(383–523)	55.8	(423)		[53/9]
	(383–523)	51.4	(473)		[53/9]
	2- <i>tert</i> -butyl-4-methylphenol				[2409-55-4]
	(327–358)	63.0±0.3	(343)	GS	[99/18]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		65.7±0.3	(298)		[99/18]
	(385–517)	58.9	(400)	A	[87/5]
	(343–507)	57.7	(348)		[53/9]
	(343–507)	55.7	(373)		[53/9]
	(343–507)	52.6	(423)		[53/9]
	(343–507)	48.5	(473)		[53/9]
C <sub>11</sub> H <sub>16</sub> O	2- <i>tert</i> -butyl-5-methylphenol (296–343)	65.9±0.3	(320)	GS	[88-60-8] [99/18]
		67.2±0.3	(298)		[99/18]
	(378–490)	59.8	(393)	A	[87/5]
	(383–518)	53.0	(398)	A	[87/5]
C <sub>11</sub> H <sub>16</sub> O	2- <i>tert</i> -butyl-6-methylphenol (308–343)	62.2±0.5	(326)	GS	[2219-82-1] [99/19]
		63.8±0.5	(298)		[99/19]
	(375–505)	55.2	(390)	A	[87/5]
C <sub>11</sub> H <sub>16</sub> O	4- <i>tert</i> -butyl-2-methylphenol (291–333)	71.3±0.6	(312)	GS	[98-27-1] [99/18]
		72.1±0.6	(298)		[99/18]
	(347–520)	61.5	(362)	A	[87/5]
	(275–297)	75.7	(286)	A	[87/5][60/1]
	(347–532)	55.7	(348)		[53/9]
	(347–532)	53.9	(373)		[53/9]
	(347–532)	53.2	(398)		[53/9]
	(347–532)	50.9	(423)		[53/9]
	(347–532)	46.7	(473)		[53/9]
C <sub>11</sub> H <sub>16</sub> O	2-ethyl-3-phenyl-1-propanol (348–393)	70.9	(363)	A	[3968-87-4] [87/5]
C <sub>11</sub> H <sub>16</sub> O	2-(2-pentyl)phenol (397–501)	74.4	(413)	EB	[87-26-3] [90/5]
	(397–501)	59.6	(412)		[93/10]
C <sub>11</sub> H <sub>16</sub> O	4-pentylphenol (423–563)	60.9	(438)	A	[14938-35-3] [87/5]
C <sub>11</sub> H <sub>16</sub> O	4- <i>tert</i> -pentylphenol (297–333)	64.2±0.2	(329)	GS	[80-46-6] [99/18]
		65.3±0.2	(298)		[99/18]
	(385–548)	58.2	(400)	A	[87/5]
C <sub>11</sub> H <sub>16</sub> O	5-phenyl-1-pentanol (373–430)	58.2	(388)	A	[10521-91-2] [87/5]
C <sub>11</sub> H <sub>16</sub> O	(1-propoxyethyl)benzene (288–321)	56.4±0.2	(305)	GS	[01/16]
	(288–321)	56.7±0.2	(298)	GS	[01/16]
C <sub>11</sub> H <sub>16</sub> O	(1-isopropoxyethyl)benzene (278–313)	55.4±0.3	(298)	GS	[65757-61-1] [02/29][02/38]
C <sub>11</sub> H <sub>16</sub> O	cumyl ethyl ether (278–313)	54.8±0.5	(296)	GS	[1712-74-9] [01/18]
	(278–313)	54.7±0.5	(298)	GS	[01/18]
C <sub>11</sub> H <sub>16</sub> O <sub>2</sub>	2- <i>tert</i> -butyl-4-methoxyphenol (403–463)	54.4	(418)	A	[121-00-6] [87/5]
C <sub>11</sub> H <sub>16</sub> O <sub>2</sub>	1,3-dihydroxy-4-pentylbenzene (423–488)	84.9	(438)	A, GC	[533-24-4] [87/5][75/24]
C <sub>11</sub> H <sub>16</sub> O <sub>2</sub>	phenyldiethoxymethane (283–329)	62.8±0.6	(298)	GS	[774-48-1] [02/32]
C <sub>11</sub> H <sub>16</sub> O <sub>2</sub>	1,1-dimethoxy-1-phenylpropane (288–328)	58.9±0.3	(298)	GS	[25310-92-3] [02/32]
	(288–328)	57.9±0.3		GS	[98/21]
C <sub>11</sub> H <sub>16</sub> O <sub>2</sub>	<i>tert</i> -pentylcatechol (isomer not specified) (398–473)	58.2	(436)		[65/21]
C <sub>11</sub> H <sub>16</sub> O <sub>5</sub>	ethylcamphoric acid anhydride (391–571)	70.8	(406)	A	[87/5][47/5]
C <sub>11</sub> H <sub>16</sub> O <sub>5</sub>	(1-methylallyl)[1-(allyloxycarbonyl)ethyl]carbonate (368–508)	60.2	(383)	A	[87/5]
C <sub>11</sub> H <sub>17</sub> Cl <sub>3</sub> OS	2,3,3-trichloro-2-propenethioic acid, O-octyl ester (443–483)	74.2		GC	[76619-96-0] [80/24]
C <sub>11</sub> H <sub>17</sub> NO	2-(dimethylamino)-1-phenyl-1-propanone				

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>11</sub> H <sub>18</sub> O	(293–333)	64.8±1.2	(298)	GS	[94/3]
	6-methyl-3-isopropenyl-5-hepten-2-one (390–420)	49.7	(405)		[89/8]
C <sub>11</sub> H <sub>18</sub> O <sub>2</sub>	borneol formate (320–487)	52.7	(335)	A	[7492-41-3] [87/5][47/5]
	3,7-dimethyl- <i>cis</i> -2,6-octadienyl formate (330–498)	58.1	(345)		[2142-94-1] [87/5]
C <sub>11</sub> H <sub>18</sub> O <sub>2</sub>	3,7-dimethyl- <i>trans</i> -2,6-octadienyl formate (334–503)	57.1	(349)	A	[105-86-2] [87/5][47/5]
	isoborneol formate (383–441)	53.5	(398)		A
C <sub>11</sub> H <sub>18</sub> O <sub>4</sub>	1,1-cyclopentanedicarboxylic acid, diethyl ester (293–323)	66.8±0.4		GS	[98/22]
C <sub>11</sub> H <sub>18</sub> O <sub>5</sub>	4-oxononanedioic acid, dimethyl ester (394–559)	72.7	(409)	A	[87/5]
	1,1,1- <i>tris</i> (ethoxycarbonyl)methane (298–338)	74.1±0.4			GS
C <sub>11</sub> H <sub>18</sub> O <sub>6</sub>	1,1,1- <i>tris</i> (methoxycarbonyl)pentane (298–338)	81.0±0.4		GS	[95/8]
	ethyl <i>bis</i> (isopropyl)cianoacetate (284–319)	65.0±0.9	(298)		GS
C <sub>11</sub> H <sub>19</sub> O <sub>5</sub>	N-acetyl-( <i>l</i> )-glutamic acid, diethyl ester (403–503)	67.2	(418)	A	[1446-19-1] [87/5]
C <sub>11</sub> H <sub>20</sub>	spiro[5.5]undecane	56.1	(298)	C	[180-43-8] [75/14]
	cyclopentylcyclohexane (383–488)	47.9	(398)		A
C <sub>11</sub> H <sub>20</sub> Cl <sub>4</sub>	1,1,1,1-tetrachloroundecane (303–353)	92.5	(318)	A	[3922-34-7] [87/5][99/16]
	1,2,10,11-tetrachloroundecane	78.7			
C <sub>11</sub> H <sub>20</sub> O	cycloundecanone (363–433)	60.3	(378)	A	[87/5]
	(448–501)	51.8	(463)		A, EB
C <sub>11</sub> H <sub>20</sub> O <sub>2</sub>	2,2,6,6-tetramethyl-3,5-heptanedione	59.5	(298)	A	[78/18] [103-11-7]
	( <i>dl</i> ) 2-ethylhexyl acrylate (323–489)	55.3	(338)		A
C <sub>11</sub> H <sub>20</sub> O <sub>2</sub>	formic acid, 3- <i>para</i> -menthol ester (320–492)	52.0	(335)	A	[87/5][47/5]
	2-hexyl-4,7-dihydro-1,3-dioxepin (333–453)	66.0	(348)		A
C <sub>11</sub> H <sub>20</sub> O <sub>2</sub>	octyl acrylate (331–500)	56.2	(346)	A	[2499-59-4] [87/5][47/5]
	oxa-2-cyclododecanone (undecanolactone) (365–387)	57.7±0.8	(376)		MM
C <sub>11</sub> H <sub>20</sub> O <sub>2</sub>	(365–387)	66.2±1.3	(298)	MM	[91/7]
	(353–413)	70.5	(368)	A	[87/5]
	10-undecenoic acid (387–548)	70.6	(402)	A	[112-38-9] [87/5][47/5]
C <sub>11</sub> H <sub>20</sub> O <sub>2</sub>	3,3-dimethyl-1,5-dioxaspiro[5.5]undecane (283–323)	59.0±0.6		GS	[7-7-29-9] [98/21][02/32]
	hexyl levulinate (363–540)	66.6	(378)		A
C <sub>11</sub> H <sub>20</sub> O <sub>3</sub>		59.1	(479)	A	[31/1]
	( <i>dl</i> ) hexyl 2-acetoxypropionate (322–517)	70.3	(337)		A
C <sub>11</sub> H <sub>20</sub> O <sub>4</sub>	azelaic acid, dimethyl ester (413–540)	63.6	(428)	A	[1732-10-1] [87/5]
	diethyl diethylmalonate (386–491)	68.5	(401)		A
C <sub>11</sub> H <sub>20</sub> O <sub>5</sub>	hexyl[1-(methoxycarbonyl)ethyl]carbonate (371–538)	65.9	(386)	A	[87/5]
C <sub>11</sub> H <sub>20</sub> O <sub>5</sub>	propyl[1-(butoxycarbonyl)ethyl]carbonate				

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>11</sub> H <sub>21</sub> N	(330–463)	66.4	(345)	A	[87/5]
	2-butyl-2-methylhexanenitrile				[80606-32-2]
C <sub>11</sub> H <sub>21</sub> N	(298–388)	59.8±0.4		GS	[94/5]
	undecanonitrile				[2244-07-1]
C <sub>11</sub> H <sub>21</sub> N	(355–534)	63.7	(370)	A	[87/5]
		71.1±0.1	(298)	C	[77/5]
	N-cyclohexylpiperidine				[3319-01-5]
C <sub>11</sub> H <sub>21</sub> NO	(288–328)	59.9±0.6	(308)	GS	[98/12]
	(288–328)	60.5±0.6	(298)	GS	[98/12]
	N-hexanoylpiperidone				[15770-38-4]
C <sub>11</sub> H <sub>22</sub>	(383–433)	66.3	(398)	A	[87/5]
	pentylcyclohexane				[4292-92-6]
		52.9±0.5	(298)		[87/17]
		54.1±0.3	(298)	GCC	[78/16]
		53.9	(298)		[75/12]
C <sub>11</sub> H <sub>22</sub>		55.0	(298)		[71/28]
	hexylcyclopentane				[4457-00-5]
		55.9	(298)		[71/28]
C <sub>11</sub> H <sub>22</sub>	1-undecene				[821-95-4]
	(283–312)	54.3±0.3	(298)	GS	[00/7]
		55.4	(298)		[71/28]
C <sub>11</sub> H <sub>22</sub>	(378–473)	48.2	(393)	A	[87/5][50/6]
	<i>cis</i> 2-undecene				[821-96-5]
C <sub>11</sub> H <sub>22</sub>	(333–393)	53.2	(348)	A	[87/5]
	<i>trans</i> 2-undecene				[693-61-8]
C <sub>11</sub> H <sub>22</sub>	(333–393)	53.0	(348)	A	[87/5]
	<i>cis</i> 3-undecene				[821-97-6]
C <sub>11</sub> H <sub>22</sub>	(333–393)	52.3	(348)	A	[87/5]
	<i>trans</i> 3-undecene				[1002-68-2]
C <sub>11</sub> H <sub>22</sub>	(333–393)	52.0	(348)	A	[87/5]
	<i>cis</i> 4-undecene				[821-98-7]
C <sub>11</sub> H <sub>22</sub>	(333–393)	51.6	(348)	A	[87/5]
	<i>trans</i> 4-undecene				[693-62-9]
C <sub>11</sub> H <sub>22</sub>	(333–393)	52.1	(348)	A	[87/5]
	<i>cis</i> 5-undecene				[764-96-5]
C <sub>11</sub> H <sub>22</sub>	(333–393)	51.4	(348)	A	[87/5]
	<i>trans</i> 5-undecene				[764-97-6]
C <sub>11</sub> H <sub>22</sub>	(333–393)	51.8	(348)	A	[87/5]
	3-methyl-3-propyl-1-heptene				
	(263–293)	52.8±1.0	(278)	HSA	[95/27]
C <sub>11</sub> H <sub>22</sub> Cl <sub>2</sub>		50.9	(298)		[95/27]
		51.5	(298)	CGC	[95/27]
	1,1-dichloroundecane				[822-01-5]
	(430–500)	59.5	(445)		[99/16][87/12]
C <sub>11</sub> H <sub>22</sub> N <sub>2</sub>	(430–500)	71.7	(298)		[87/12][91/2]
	<i>bis</i> (piperidino)methane				[880-09-1]
	(283–322)	61.9±0.9	(303)	GS	[02/28]
C <sub>11</sub> H <sub>22</sub> O	(283–322)	62.2±0.9	(298)	GS	[02/28]
	1-hexylcyclopentanol				[36633-49-5]
C <sub>11</sub> H <sub>22</sub> O	(387–509)	59.2	(402)	A	[87/5]
	cyclohexyl tert-amyl ether				
C <sub>11</sub> H <sub>22</sub> O		54.3±0.2	(298)		[02/32]
	2-undecanone				[112-12-9]
	(461–538)	51.5	(476)	A	[87/5]
		69.7±0.5	(298)	GCC	[79/7]
		67.0±0.4	(298)	C	[79/1]
	(393–523)	56.2	(408)	A	[87/5][75/8]
		46.4	(506)		[75/8]
	(335–433)	61.6	(350)	A, EB	[87/5][66/12]
	(341–497)	61.9	(356)		[47/5]
	6-undecanone				[927-49-1]
C <sub>11</sub> H <sub>22</sub> O	(343–383)	59.0	(298)	CGC	[95/21]
	(343–383)	61.8	(298)	CGC	[95/21]
	(388–543)	55.3	(403)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(461–513)	50.4	(476)	A	[87/5]
		63.5 ± 0.5	(298)	GCC	[79/7]
	(383–514)	45.8	(500)		[75/6]
C <sub>11</sub> H <sub>22</sub> O	2,2,6,6-tetramethyl-4-heptanone	52.9 ± 0.2	(298)	C	[71/31]
C <sub>11</sub> H <sub>22</sub> O	undecanal				[112-44-7]
	(323–343)	69.3	(298)	CGC	[96/7][00/10]
	(288–400)	60.2	(303)	A	[87/5]
C <sub>11</sub> H <sub>22</sub> O <sub>2</sub>	heptyl butyrate				[5870-93-9]
	(384–498)	58.7	(399)	A	[87/5]
C <sub>11</sub> H <sub>22</sub> O <sub>2</sub>	4,5-dimethyl-2-hexyl-1,3-dioxolane				[6454-22-4]
	(333–453)	65.6	(348)	A	[87/5]
C <sub>11</sub> H <sub>22</sub> O <sub>2</sub>	4-heptyl-1,3-dioxane				[2244-84-0]
	(353–453)	64.4	(368)	A	[87/5]
C <sub>11</sub> H <sub>22</sub> O <sub>2</sub>	3-hexyl-4-hydroxytetrahydro-2 <i>H</i> -pyran				[41277-7502]
	(383–453)	73.6	(398)	A	[87/5]
C <sub>11</sub> H <sub>22</sub> O <sub>2</sub>	isopropyl caprylate				[5458-59-3]
	(338–420)	57.5	(353)	A	[87/5]
	(338–419)	58.3	(353)		[48/8][84/9]
C <sub>11</sub> H <sub>22</sub> O <sub>2</sub>	methyl decanoate (methyl caprate)				[110-42-9]
		62.0	(350)		[02/27]
		62.9 ± 0.1	(337)		[02/27]
		66.1 ± 0.2	(298)		[02/27]
	(373–433)	66.9	(298)	GC	[97/28]
	(453–543)	49.9	(498)	GC	[93/9]
		66.3 ± 0.5	(298)	GCC	[80/5]
		66.8 ± 0.6	(298)	C	[77/1]
	(379–500)	57.1	(394)	A, EST	[87/5][63/16]
	(324–370)	63.0	(339)	MG, OM	[52/13]
C <sub>11</sub> H <sub>22</sub> O <sub>2</sub>	2-octyl-1,3-dioxolane				[5432-30-4]
	(333–453)	60.3	(348)	A	[87/5]
C <sub>11</sub> H <sub>22</sub> O <sub>2</sub>	propyl caprylate				[624-13-5]
	(343–500)	58.8	(358)	A	[87/5]
	(343–426)	58.2	(358)		[48/8][84/9]
C <sub>11</sub> H <sub>22</sub> O <sub>2</sub>	nonyl acetate				[143-13-5]
		66.8	(298)		[97/22]
	(313–358)	67.0	(298)	GC	[97/13][00/10]
C <sub>11</sub> H <sub>22</sub> O <sub>2</sub>	undecanoic acid				[112-37-8]
	(393–557)	81.3	(408)	A	[87/5]
	(310–332)	90.7 ± 2.0	(323)	ME, TE	[82/4]
	(303–308)	97.9 ± 6.3	(305)		[68/20]
C <sub>11</sub> H <sub>22</sub> O <sub>3</sub>	butyl 2-butoxypropionate				[38611-89-1]
	(373–398)	40.8	(385)	A	[87/5]
C <sub>11</sub> H <sub>22</sub> O <sub>3</sub>	butyl 3-butoxypropionate				[14144-48-0]
	(343–493)	57.6	(358)	A	[87/5]
C <sub>11</sub> H <sub>22</sub> O <sub>3</sub>	hexyl 3-ethoxypropionate				[14144-37-7]
	(373–514)	56.7	(388)	A	[87/5]
C <sub>11</sub> H <sub>22</sub> O <sub>3</sub>	octyl lactate				[51191-33-4]
	(328–528)	71.5	(343)	A	[87/5]
C <sub>11</sub> H <sub>23</sub> Br	1-bromoundecane				[693-67-4]
	(407–564)	58.8	(422)		[99/16]
	(398–591)	59.5	(413)	A, EST	[87/5][61/13]
					[70/14]
C <sub>11</sub> H <sub>23</sub> Cl	1-chloroundecane				[2473-03-2]
	(370–520)	65.9	(298)		[84/9][91/2]
	(374–519)	59.4	(389)	A, DTA	[87/5][69/5]
C <sub>11</sub> H <sub>23</sub> F	1-fluoroundecane				[506-05-8]
	(373–523)	52.3	(388)	A, EST	[87/5][61/13]
					[70/14]
C <sub>11</sub> H <sub>23</sub> I	1-iodoundecane				[4282-44-4]
	(422–589)	60.1	(437)		[99/16]
	(412–618)	60.9	(427)	A, EST	[87/5][61/13]
					[70/14]
C <sub>11</sub> H <sub>23</sub> NO	N,N-dimethyl nonamide				[6225-08-7]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>11</sub> H <sub>23</sub> NO <sub>2</sub>	(411–509) N,N-dibutyl lactamide	69.3	(426)	A	[87/5] [6288-16-0]
	(393–418)	88.3	(405)	A	[87/5]
C <sub>11</sub> H <sub>23</sub> NO <sub>2</sub>	N-octyl lactamide (428–468)	96.3	(443)	A	[87/5]
C <sub>11</sub> H <sub>24</sub>	undecane				[1120-21-4]
		56.2	(299)	C	[96/22]
		55.4	(314)	C	[96/22]
		54.5	(324)	C	[96/22]
		54.0	(334)	C	[96/22]
		53.1	(344)	C	[96/22]
		56.6	(298)		[94/12]
	(278–470)	60.0	(293)	A	[87/5]
		56.3	(298)		[71/28]
		49.1	(393)		[55/7]
C <sub>11</sub> H <sub>24</sub>	2-methyldecane (273–353)	55.5	(288)	A	[6975-98-0] [87/5]
	(379–463)	47.4	(394)	A	[87/5]
		51.9	(328)	C	[84/8]
		50.6	(343)	C	[84/8]
		49.5	(358)	C	[84/8]
C <sub>11</sub> H <sub>24</sub>	(273–293) 3-methyldecane	55.4	(283)	IPM	[74/11] [13151-34-3]
	(340–464)	46.5	(355)	A	[87/5]
C <sub>11</sub> H <sub>24</sub>	4-methyldecane (339–460)				[2847-72-5]
		46.6	(354)	A	[87/5]
		50.4	(343)	C	[84/8]
		49.2	(358)	C	[84/8]
C <sub>11</sub> H <sub>24</sub>		48.5	(368)	C	[84/8]
	5-methyldecane (334–452)	46.0	(349)	A	[13151-35-4] [87/5]
C <sub>11</sub> H <sub>24</sub>	2,3-dimethylnonane (336–460)	45.1	(351)	A	[2884-06-2] [87/5]
	2,4-dimethylnonane (334–452)	46.8	(349)	A	[17302-24-8] [87/5]
C <sub>11</sub> H <sub>24</sub>	2,4,6-trimethyloctane (325–442)	44.9	(340)	A	[62016-37-9] [87/5]
C <sub>11</sub> H <sub>24</sub>	2,4,7-trimethyloctane				[62016-38-0]
		47.6	(328)	C	[84/8]
		46.4	(343)	C	[84/8]
		45.3	(358)	C	[84/8]
C <sub>11</sub> H <sub>24</sub> O	decyl methyl ether (341–429)	56.9	(356)	A	[7289-52-3] [87/5]
	(341–471)	57.0	(356)		[87/5][76/2]
	(341–471)	62.6	(298)		[76/2]
	(341–471)	45.5	(489)		[76/2]
		62.3 ± 0.3	(298)	C	[75/3]
C <sub>11</sub> H <sub>24</sub> O	ethyl nonyl ether				[16979-32-1]
C <sub>11</sub> H <sub>24</sub> O		60.3 ± 0.1	(298)	C	[85/2]
	propyl octyl ether				[29379-41-7]
C <sub>11</sub> H <sub>24</sub> O		58.8 ± 0.1	(298)	C	[85/2]
	butyl heptyl ether				[71112-90-8]
C <sub>11</sub> H <sub>24</sub> O		58.2 ± 0.1	(298)	C	[85/2]
	heptyl <i>tert</i> -butyl ether				[U/2][02/32]
C <sub>11</sub> H <sub>24</sub> O		56.6	(298)		[U/2][02/32]
	hexyl <i>tert</i> -amyl ether				[U/2][02/32]
C <sub>11</sub> H <sub>24</sub> O		58.6	(298)		[U/2][02/32]
	propyl <i>tert</i> -octyl ether				[U/2][02/32]
C <sub>11</sub> H <sub>24</sub> O	1-undecanol				[112-42-5]
	(313–354)	79.5	(336)	GS	[01/3]
	(313–354)	84.7	(298)	GS	[01/3]
	(373–423)	86.8	(298)	CGC	[95/21]
	(353–393)	85.6	(298)	CGC	[94/13][00/10]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(293–342)	83.6	(318)		[92/14]
	(283–393)	83.5	(298)		[99/11]
	(393–523)	68.7	(408)	A	[87/5]
	(393–534)	68.5	(408)	A	[87/5]
	(393–516)	72.3	(408)		[73/26]
C <sub>11</sub> H <sub>24</sub> O	2-undecanol				[1653-30-1]
	(344–505)	61.4	(359)		[47/5]
C <sub>11</sub> H <sub>24</sub> O	2,5-dimethyl-3-isopropyl-3-hexanol				[57233-26-8]
	(321–458)	57.2	(336)		[73/26]
C <sub>11</sub> H <sub>24</sub> O	2,2,4-trimethyl-3-isopropyl-3-pentanol				[5457-41-0]
	(321–458)	67.1	(336)		[73/26]
C <sub>11</sub> H <sub>24</sub> O <sub>4</sub>	tripropylene glycol, monoethyl ether				[75899-69-3]
	(317–521)	60.0	(332)	A	[87/5]
C <sub>11</sub> H <sub>24</sub> S	1-undecanethiol				[5332-52-5]
	(405–563)	59.3	(420)		[99/16]
C <sub>11</sub> H <sub>24</sub> S <sub>2</sub>	1,11-undecanedithiol				[63476-06-2]
	(444–582)	75.1	(459)	A	[87/5][43/6]
					[99/16]
C <sub>11</sub> H <sub>25</sub> N	undecylamine				[7307-55-3]
	(428–527)	55.1	(443)	A, EST	[87/5][56/17]
C <sub>11</sub> H <sub>26</sub> NO <sub>2</sub> PS	methylthiophosphonic acid, O-ethyl-S-[2-(N,N-diisopropylamino)-ethyl] ester				[50782-69-9]
	(280–315)	101.0	(295)	A	[87/5][99/16]
C <sub>12</sub> Cl <sub>10</sub>	decachlorobiphenyl				[2051-24-3]
	(343–393)	103.4	(368)	GC	[94/6]
	(343–453)	103.4	(398)	GC	[90/2]
C <sub>12</sub> F <sub>10</sub>	decafluorobiphenyl				[434-90-2]
	(453–608)	49.9	(468)	DSC	[96/10]
C <sub>12</sub> F <sub>18</sub>	hexakis(trifluoromethyl)bicyclo[2.2.0]hexa-2,5-diene				[23174-55-2]
	(293–343)	41.4	(308)	A	[87/5][70/33]
					[99/16]
C <sub>12</sub> F <sub>18</sub>	hexakis(trifluoromethyl)tetracyclo[2.2.0.0 <sup>2,6</sup> .0 <sup>3,5</sup> ]hexane				[22736-20-5]
	(313–353)	33.1	(328)	A	[87/5][70/33]
					[99/16]
C <sub>12</sub> F <sub>18</sub>	hexakis(trifluoromethyl)tricyclo[3.1.0.0 <sup>2,6</sup> ]hex-3-ene				[22186-64-7]
	(293–353)	38.6	(308)	A	[87/5][70/33]
					[99/16]
C <sub>12</sub> F <sub>27</sub> N	perfluorotributylamine				[311-89-7]
		60.3 ± 0.1	(298)	C	[95/20]
	(298–450)	57.4	(313)	A	[87/5]
	(371–544)	51.1	(386)	A	[87/5]
		60.4 ± 1.2	(298)		[77/13][77/20]
C <sub>12</sub> H <sub>2</sub> Cl <sub>8</sub>	2,2',3,3',5,5',6,6'-octachlorobiphenyl				[2136-99-4]
	(343–393)	92.9	(368)	GC	[94/6]
	(343–453)	92.9	(398)	GC	[90/2]
C <sub>12</sub> H <sub>3</sub> Br <sub>7</sub> O	2',3,3',4,4',5,6-heptabromodiphenyl ether				[327185-13-7]
	(363–473)	115.8	(418)	GC	[01/2]
	(403–475)	121.2		CGC	[01/11]
C <sub>12</sub> H <sub>3</sub> Cl <sub>7</sub>	2,2',3,4',5,5',6-heptachlorobiphenyl				[52663-68-0]
	(343–393)	94.0	(368)	GC	[94/6]
C <sub>12</sub> H <sub>3</sub> Cl <sub>7</sub>	2,2',3,4,4',5,5'-heptachlorobiphenyl				[35065-29-3]
	(343–393)	96.5	(268)	GC	[94/6]
C <sub>12</sub> H <sub>3</sub> Cl <sub>7</sub>	2,2',3,3',4,4',6-heptachlorobiphenyl				[52663-71-5]
	(343–393)	109.1	(298)	CGC	[01/1]
		95.9	(368)	GC	[94/6]
C <sub>12</sub> H <sub>3</sub> Cl <sub>7</sub>	2,2',3,3',4,4',5-heptachlorobiphenyl				[35065-30-6]
	(343–393)	98.4	(368)	GC	[94/6]
C <sub>12</sub> H <sub>4</sub> Br <sub>6</sub> O	2,2',3,4,4',5'-hexabromodiphenyl ether				[01/11]
	(403–475)	114.1		CGC	[01/11]
C <sub>12</sub> H <sub>4</sub> Br <sub>6</sub> O	2,2',4,4',5,5'-hexabromodiphenyl ether				[68631-49-2]
	(363–473)	107.6	(418)	GC	[01/2]
C <sub>12</sub> H <sub>4</sub> Cl <sub>6</sub>	2,3,3',4,4',5-hexachlorobiphenyl				[38380-08-4]
		112.6 ± 0.4	(298)	CGC	[01/1]
	(343–393)	94.8	(368)	GC	[94/6]
C <sub>12</sub> H <sub>4</sub> Cl <sub>6</sub>	2,2',4,4',5,5'-hexachlorobiphenyl				[35065-27-1]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		103.5±0.1	(298)	CGC	[01/1]
	(343–393)	91.4	(368)	GC	[94/6]
C <sub>12</sub> H <sub>4</sub> Cl <sub>6</sub>	2,2',3,4',5',6-hexachlorobiphenyl (343–393)	89.8	(368)	GC	[38380-04-0] [94/6]
C <sub>12</sub> H <sub>4</sub> Cl <sub>6</sub>	2,2',3,4,4',5'-hexachlorobiphenyl (343–393)	91.9	(368)	GC	[35065-28-2] [94/6]
C <sub>12</sub> H <sub>4</sub> Cl <sub>6</sub>	2,2',3,3',4,4'-hexachlorobiphenyl (343–393)	93.5	(368)	GC	[38380-07-3] [94/6]
C <sub>12</sub> H <sub>5</sub> Br <sub>5</sub> O	2,2',3,4,4'-pentabromodiphenyl ether (403–475)	111.0		CGC	[01/11]
C <sub>12</sub> H <sub>5</sub> Br <sub>5</sub> O	2,2',3,3',4-pentabromodiphenyl ether (363–473)	99.1	(418)	GC	[327185-11-5] [01/2]
C <sub>12</sub> H <sub>5</sub> Br <sub>5</sub> O	2,2',4,4',5-pentabromodiphenyl ether (363–473)	100.3	(418)	GC	[60348-60-9] [01/2]
	(405–475)	104.8		CGC	[01/11]
C <sub>12</sub> H <sub>5</sub> Br <sub>5</sub> O	2,2',4,4',6-pentabromodiphenyl ether (363–473)	101.8	(418)	GC	[189084-66-0] [01/2]
C <sub>12</sub> H <sub>5</sub> Cl <sub>5</sub>	2,3',4,4',5-pentachlorobiphenyl (343–393)	89.3	(368)	GC	[31508-00-6] [94/6]
C <sub>12</sub> H <sub>5</sub> Cl <sub>5</sub>	2,3,3',4,4'-pentachlorobiphenyl (343–393)	91.1	(368)	GC	[32598-14-4] [94/6]
C <sub>12</sub> H <sub>5</sub> Cl <sub>5</sub>	2,2',4,5,5'-pentachlorobiphenyl (343–393)	86.4	(368)	GC	[37680-73-2] [94/6]
	(343–453)	83.7	(398)	GC	[90/2]
C <sub>12</sub> H <sub>5</sub> Cl <sub>5</sub>	2,2',3,5',6-pentachlorobiphenyl				[38379-99-6]
		92.3±0.6	(298)	CGC	[01/1]
C <sub>12</sub> H <sub>5</sub> Cl <sub>5</sub>	2,2',3,6,6'-pentachlorobiphenyl				[73575-54-9]
		89.6±0.2	(298)	CGC	[01/1]
C <sub>12</sub> H <sub>5</sub> Cl <sub>5</sub>	2,2',4,5',6-pentachlorobiphenyl				[60145-21-3]
		91.6±0.5	(298)	CGC	[01/1]
C <sub>12</sub> H <sub>5</sub> Cl <sub>5</sub>	2,2',3,4,5'-pentachlorobiphenyl (343–393)	87.3	(368)	GC	[38380-02-8] [94/6]
C <sub>12</sub> H <sub>5</sub> Cl <sub>5</sub>	2,2',4,4',5-pentachlorobiphenyl (343–393)	86.8	(368)	GC	[38380-01-7] [94/6]
C <sub>12</sub> H <sub>6</sub> Br <sub>4</sub> O	2,2',4,4'-tetrabromodiphenyl ether (363–473)	92.0	(418)	GC	[5436-43-1] [01/2]
	(403–475)	103.1		CGC	[01/1]
C <sub>12</sub> H <sub>6</sub> Br <sub>4</sub> O	2,3',4,4'-tetrabromodiphenyl ether (363–473)	93.5	(418)	GC	[189084-61-5] [01/2]
C <sub>12</sub> H <sub>6</sub> Br <sub>4</sub> O	2,3',4,6-tetrabromodiphenyl ether (363–473)	91.1	(418)	GC	[327185-09-1] [01/2]
C <sub>12</sub> H <sub>6</sub> Br <sub>4</sub> O	2,4,4',6-tetrabromodiphenyl ether (363–473)	90.1	(418)	GC	[189084-63-7] [01/2]
C <sub>12</sub> H <sub>6</sub> Br <sub>4</sub> O	3,3',4,4'-tetrabromodiphenyl ether (363–473)	95.3	(418)	GC	[93703-48-1] [01/2]
C <sub>12</sub> H <sub>6</sub> Cl <sub>4</sub>	2,2',3,3'-tetrachlorobiphenyl (343–398)	81.8	(368)	GC	[38444-93-8] [94/6]
C <sub>12</sub> H <sub>6</sub> Cl <sub>4</sub>	2,2',5,5'-tetrachlorobiphenyl (343–398)	80.8	(368)	GC	[35693-99-3] [94/6]
	(343–453)	79.0	(398)	GC	[90/2]
C <sub>12</sub> H <sub>6</sub> Cl <sub>4</sub>	2,3',4,4'-tetrachlorobiphenyl (343–398)	83.3	(368)	GC	[32598-10-0] [94/6]
C <sub>12</sub> H <sub>6</sub> Cl <sub>4</sub>	2,3',4',5-tetrachlorobiphenyl (343–398)	84.8	(368)	GC	[32598-11-1] [94/6]
C <sub>12</sub> H <sub>6</sub> Cl <sub>4</sub>	2,2',4,5'-tetrachlorobiphenyl				[41464-40-8]
		87.4±0.8	(298)	CGC	[01/1]
C <sub>12</sub> H <sub>6</sub> Cl <sub>4</sub>	2,2',5,6'-tetrachlorobiphenyl				[41464-41-9]
		84.9±0.6	(298)	CGC	[01/1]
	(343–398)	78.8	(368)	GC	[94/6]
C <sub>12</sub> H <sub>6</sub> Cl <sub>4</sub>	3,3',4,4'-tetrachlorobiphenyl (343–393)	87.2	(368)	GC	[32598-13-3] [94/6]
C <sub>12</sub> H <sub>7</sub> Br <sub>3</sub> O	2,4,4'-tribromodiphenyl ether (403–475)	94.1		CGC	[01/11]
C <sub>12</sub> H <sub>7</sub> Br <sub>3</sub> O	3,4,4'-tribromodiphenyl ether				[147217-81-0]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>12</sub> H <sub>7</sub> Br <sub>3</sub> O	(363–473) 2,4,6-tribromodiphenyl ether	86.7	(418)	GC	[01/2] [155999-95-4]
C <sub>12</sub> H <sub>7</sub> Br <sub>3</sub> O	(363–473) 2,4',6-tribromodiphenyl ether	85.1	(418)	GC	[01/2] [189084-60-4]
C <sub>12</sub> H <sub>7</sub> Br <sub>3</sub> O	(363–473) 2',3,4-tribromodiphenyl ether	83.3	(418)	GC	[01/2] [147217-78-5]
C <sub>12</sub> H <sub>7</sub> Br <sub>3</sub> O	(363–473) 3,3',4-tribromodiphenyl ether	81.0	(418)	GC	[01/2] [147217-80-9]
C <sub>12</sub> H <sub>7</sub> Cl <sub>2</sub> NO <sub>3</sub>	(363–473) 2,4-dichlorophenyl 4-nitrophenyl ether	86.4	(418)	GC	[01/2] [1836-75-5]
C <sub>12</sub> H <sub>7</sub> Cl <sub>3</sub>	(328–403) 2,4,5-trichlorobiphenyl	90.4	(343)		[87/5] [15862-07-4]
C <sub>12</sub> H <sub>7</sub> Cl <sub>3</sub>	(343–393) 2,4,6-trichlorobiphenyl	76.6	(368)	GC	[94/6] [35693-92-6]
C <sub>12</sub> H <sub>7</sub> Cl <sub>3</sub>	(343–393) 2,4',5-trichlorobiphenyl	74.4	(368)	GC	[94/6] [16606-02-3]
C <sub>12</sub> H <sub>7</sub> Cl <sub>3</sub>	(343–398) 2,2',5-trichlorobiphenyl	77.7	(368)	GC	[94/6] [36780-65-2]
C <sub>12</sub> H <sub>8</sub> Br <sub>2</sub> O	2,4-dibromodiphenyl ether	80.2±0.9	(298)	CGC	[01/1] [171977-44-9]
C <sub>12</sub> H <sub>8</sub> Br <sub>2</sub> O	(363–473) 3,4-dibromodiphenyl ether	75.4	(418)	GC	[01/2] [189084-59-1]
C <sub>12</sub> H <sub>8</sub> Br <sub>2</sub> O	(363–473) 3,4'-dibromodiphenyl ether	77.4	(418)	GC	[01/2] [83694-71-7]
C <sub>12</sub> H <sub>8</sub> Br <sub>2</sub> O	(363–473) 4,4'-dibromodiphenyl ether	77.4	(418)	GC	[01/2] [2050-47-7]
C <sub>12</sub> H <sub>8</sub> Br <sub>2</sub> O	(363–473) 2,4'-dibromodiphenyl ether	78.0	(418)	GC	[01/2] [147217-71-8]
C <sub>12</sub> H <sub>8</sub> Br <sub>2</sub> O	(363–473) 2,6-dibromodiphenyl ether	76.4	(418)	GC	[01/2] [51930-04-2]
C <sub>12</sub> H <sub>8</sub> Cl <sub>2</sub>	(363–473) 2,4-dichlorobiphenyl	73.1	(418)	GC	[01/1] [33284-50-3]
C <sub>12</sub> H <sub>8</sub> Cl <sub>2</sub>	(343–393) 2,5-dichlorobiphenyl	75.3±1.5 73.5	(298) (368)	CGC GC	[01/1] [94/6] [34883-39-1]
C <sub>12</sub> H <sub>8</sub> Cl <sub>2</sub>	(343–393) 3,3'-dichlorobiphenyl	76.8±0.4 73.9	(298) (368)	CGC GC	[01/1] [94/6] [2050-67-1]
C <sub>12</sub> H <sub>8</sub> Cl <sub>2</sub>	(343–393) 4,4'-dichlorobiphenyl	81.0±0.2 75.4	(298) (368)	CGC GC	[01/1] [94/6] [2050-68-2]
C <sub>12</sub> H <sub>8</sub> Cl <sub>2</sub> O <sub>2</sub> S	(343–393) 4,4'-dichlorodiphenylsulfone	81.4±0.3 76.0	(298) (368)	CGC GC	[01/1] [94/6] [80-07-9]
C <sub>12</sub> H <sub>8</sub> Cl <sub>3</sub> NO <sub>2</sub>	(463–573) 2,2,4-trichloro-5-[(2-methylphenyl)amino]-4-cyclopentene-1,3-dione	59.7	(478)		[99/16] [77765-39-0]
C <sub>12</sub> H <sub>8</sub> Cl <sub>3</sub> NO <sub>3</sub>	(453–483) 2,2,4-trichloro-5-[(2-methoxyphenyl)amino]-4-cyclopentene-1,3-dione	85.0	(468)	GC	[80/25] [77765-40-3]
C <sub>12</sub> H <sub>8</sub> Cl <sub>3</sub> NO <sub>3</sub>	(453–483) 2,2,4-trichloro-5-[(3-methoxyphenyl)amino]-4-cyclopentene-1,3-dione	84.6	(468)	GC	[80/25] [73373-64-5]
C <sub>12</sub> H <sub>8</sub> Cl <sub>6</sub>	(453–483) Aldrin	63.1	(468)	GC	[80/25] [309-00-2]
C <sub>12</sub> H <sub>8</sub> Cl <sub>6</sub>	(343–453) Dieldrin	75.1	(398)	GC	[90/2] [60-57-1]
C <sub>12</sub> H <sub>8</sub> O	(343–453) dibenzofuran	82.5	(398)	GC	[90/2] [132-64-9]
C <sub>12</sub> H <sub>8</sub> OS	(323–473) phenoxathiin	66.2	(398)	GC	[02/18] [87/5]
	(403–559)	55.1	(418)	A	[87/5] [58/23]
	(403–418)	66.2	(410)		[58/23] [262-20-4]
	(365–640)	68.7	(400)	EB, IPM	[93/13]
	(365–640)	66.0	(440)	EB, IPM	[93/13]
	(365–640)	63.4	(480)	EB, IPM	[93/13]
	(365–640)	60.8	(520)	EB, IPM	[93/13]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>12</sub> H <sub>8</sub> S	(365–640)	58.0	(560)	EB, IPM	[93/13]
	(365–640)	55.1	(600)	EB, IPM	[93/13]
	dibenzothiophene				[132-64-0]
	(373–424)	65.6	(388)		[99/16]
	(424–608)	63.4	(439)		[99/16]
		69.5	(380)		[95/24]
		66.8	(420)		[95/24]
		64.3	(460)		[95/24]
		61.8	(500)		[95/24]
		59.3	(540)		[95/24]
		56.8	(580)		[95/24]
		54.0	(620)		[95/24]
		68.0	(400)		[91/10]
		64.9	(450)		[91/10]
		61.8	(500)		[91/10]
		58.7	(550)		[91/10]
		55.4	(600)		[91/10]
	51.8	(650)		[91/10]	
	(385–574)	60.1	(400)	A	[87/5]
		56.9	(590)	C	[84/3]
		55.3	(610)	C	[84/3]
		53.6	(630)	C	[84/3]
		69.4	(385)		[81/2]
C <sub>12</sub> H <sub>8</sub> S <sub>2</sub>	(373–403)				[92-85-3]
	thianthrene				[92-85-3]
	(429–460)	71.2	(444)		[99/16]
	(460–539)	68.4	(475)		[99/16]
	(395–639)	72.7	(440)	EB, IPM	[93/13]
	(395–639)	69.9	(480)	EB, IPM	[93/13]
	(395–639)	67.2	(520)	EB, IPM	[93/13]
	(395–639)	64.5	(560)	EB, IPM	[93/13]
	(395–639)	61.7	(600)	EB, IPM	[93/13]
	(430–593)	69.1	(465)		[83/4]
	(430–593)	68.7	(515)		[83/4]
C <sub>12</sub> H <sub>9</sub> Br	(428–448)	71.1	(438)		[81/2]
	4-bromobiphenyl				[92-66-0]
C <sub>12</sub> H <sub>9</sub> BrO	(371–583)	62.2	(386)	A	[87/5][47/5]
	2-bromodiphenyl ether				[7025-06-1]
C <sub>12</sub> H <sub>9</sub> BrO	(363–473)	63.7	(418)	GC	[01/2]
	3-bromodiphenyl ether				[6876-00-2]
C <sub>12</sub> H <sub>9</sub> BrO	(363–473)	65.4	(418)	GC	[01/2]
	4-bromodiphenyl ether				[101-55-3]
C <sub>12</sub> H <sub>9</sub> BrO	(463–673)	64.6	(478)	A	[87/5]
	2-bromo-4-phenylphenol				[92-03-5]
C <sub>12</sub> H <sub>9</sub> Cl	(373–584)	57.8	(388)	A	[87/5][47/5]
	2-chlorobiphenyl				[2051-60-7]
		72.1 ± 2.0	(298)	CGC	[01/1]
	(343–393)	64.4	(368)	GC	[94/6]
	(409–540)	57.8	(424)	A	[87/5]
	(306–350)	74.5	(328)	ME	[83/9]
	(410–540)	55.8	(424)	QM	[75/28]
C <sub>12</sub> H <sub>9</sub> Cl	(362–541)	61.1	(377)	A	[87/5][47/5]
	3-chlorobiphenyl				[2051-61-8]
		74.3 ± 1.1	(298)	CGC	[01/1]
	(343–393)	66.6	(368)	GC	[94/6]
	(310–359)	66.2	(335)	ME	[83/9]
	(341–402)	69.2	(372)	TE	[83/9]
C <sub>12</sub> H <sub>9</sub> Cl	(452–536)	66.0	(494)	QM	[75/28]
	4-chlorobiphenyl				[2051-62-9]
		71.6 ± 0.7	(298)	CGC	[01/1]
	(343–393)	66.8	(368)	GC	[94/6]
	(451–536)	65.9	(466)		[87/5]
C <sub>12</sub> H <sub>9</sub> ClO	(348–409)	67.8	(378)	TE	[83/9]
	(369–566)	59.0	(384)	A	[87/5][47/5]
	2-chloro-3-phenylphenol				[87/5][47/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>12</sub> H <sub>9</sub> ClO	(391–591)	65.0	(406)		[87/5][47/5]
	2-chloro-6-phenylphenol				[85-97-2]
C <sub>12</sub> H <sub>9</sub> N	(393–590)	67.6	(408)	A	[87/5][47/5]
	carbazole				[86-74-8]
C <sub>12</sub> H <sub>10</sub>		NA			[83/17]
	(525–631)	65.7	(540)	A	[87/5][23/2]
					[84/9]
	(517–624)	66.0	(532)		[23/1][84/9]
	acenaphthene				[83-32-9]
C <sub>12</sub> H <sub>10</sub>	(323–473)	63.9	(398)	GC	[02/18]
		66.2	(298)	CGC	[98/11]
	(368–552)	54.0	(403)	A	[87/5]
	(368–413)	60.3	(383)	A	[87/5][75/11]
					[84/9]
		61.3	(395)	I	[43/7]
	(413–561)	54.3	(466)	I	[23/1]
	(420–561)	55.4	(435)		[23/1][84/9]
	biphenyl				[92-52-4]
	(323–473)	62.5	(298)	GC	[02/18]
C <sub>12</sub> H <sub>10</sub> N <sub>2</sub>		64.5 ± 2.2	(298)	GS	[01/1]
		66.2	(298)	CGC	[98/11]
	(495–688)	51.2	(510)	DSC	[96/10]
	(403–453)	66.0	(298)	CGC	[95/21]
	(348–453)	59.6	(363)	GS	[89/9]
	(350–578)	64.9	(298)	EB	[89/4]
	(350–578)	57.4	(400)	EB	[89/4]
	(350–578)	60.3	(360)	EB	[89/4]
	(350–578)	50.4	(500)	EB	[89/4]
	(333–393)	60.4	(363)		[89/14]
	(390–563)	57.3	(405)	A	[87/5]
	(396–437)	54.9	(417)	GS	[80/17]
	(528–766)	48.0	(647)		[57/12]
	(342–544)	59.4	(357)		[30/4][84/9]
	C <sub>12</sub> H <sub>10</sub> N <sub>2</sub>	<i>trans</i> azobenzene			
(436–626)		72.8 ± 0.7	(298)	EB	[96/5]
C <sub>12</sub> H <sub>10</sub> O	(376–566)	62.3	(391)	A	[87/5][47/5]
	1-acetylnaphthalene				[941-98-0]
C <sub>12</sub> H <sub>10</sub> O	(388–569)	65.4	(403)	A	[87/5]
	2-acetylnaphthalene				[93-08-3]
C <sub>12</sub> H <sub>10</sub> O	(393–574)	74.1	(408)	A	[87/5]
	diphenyl ether				[101-84-8]
	(353–393)	67.1	(298)	CGC	[95/21]
	(477–544)	65.0	(298)		[76/2]
	(477–544)	48.2	(531)		[76/2]
C <sub>12</sub> H <sub>10</sub> O <sub>2</sub>	(477–544)	53.0	(492)	GS, EB	[87/5][76/2]
		15.8 ± 0.1	(298)	C	[72/28]
					[65/7]
	(313–333)	64.2	(323)	A	[87/5][48/11]
C <sub>12</sub> H <sub>10</sub> O	2-hydroxybiphenyl				[90-43-7]
	(434–547)	94.2	(449)	A	[87/5]
C <sub>12</sub> H <sub>10</sub> O	4-hydroxybiphenyl				[92-69-3]
	(450–581)	72.3	(465)	A	[87/5]
C <sub>12</sub> H <sub>10</sub> O <sub>2</sub>	2,2'-dihydroxybiphenyl				[1806-29-7]
	(444–598)	61.7	(459)	A	[87/5]
C <sub>12</sub> H <sub>10</sub> O <sub>2</sub>	3-phenoxyphenol				[713-68-8]
	(416–494)	69.5	(431)	A	[87/5]
C <sub>12</sub> H <sub>10</sub> O <sub>4</sub> S <sub>2</sub>	diphenyl disulfone				[10409-06-0]
		149.0 ± 2.9	(298)	EST	[64/33]
		161.9 ± 3.3(sub)		EST	[64/33]
C <sub>12</sub> H <sub>10</sub> S	[Note: Enthalpy of sublimation value incorrectly given in our earlier paper] <sup>7</sup>				
	diphenyl sulfide				[139-66-2]
	(369–566)	60.5	(384)		[99/16]
	(345–611)	67.3	(360)	EB, IPM	[95/24]
	(345–611)	64.3	(400)	EB, IPM	[95/24]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>12</sub> H <sub>10</sub> S <sub>2</sub>	(345–611)	61.3	(440)	EB, IPM	[95/24]
	(345–611)	58.3	(480)	EB, IPM	[95/24]
	(345–611)	55.3	(520)	EB, IPM	[95/24]
	(345–611)	52.0	(560)	EB, IPM	[95/24]
	(369–566)	58.2	(384)	A	[87/5][49/5]
C <sub>12</sub> H <sub>10</sub> S <sub>2</sub>	diphenyl disulfide				[882-33-7]
	(405–583)	72.4	(420)		[99/16]
C <sub>12</sub> H <sub>11</sub> N		78.7 ± 2.9	(298)		[62/16]
	(404–583)	74.4	(419)		[87/5][47/5]
	2-aminobiphenyl				[90-41-5]
	(340–623)	68.6	(400)	EB, IPM	[91/14]
	(340–623)	65.1	(440)	EB, IPM	[91/14]
C <sub>12</sub> H <sub>11</sub> N	(340–623)	61.8	(480)	EB, IPM	[91/14]
	(340–623)	58.5	(520)	EB, IPM	[91/14]
	(340–623)	55.2	(560)	EB, IPM	[91/14]
	(340–623)	51.7	(600)	EB, IPM	[91/14]
	diphenylamine				[122-39-4]
C <sub>12</sub> H <sub>12</sub>	(381–575)	64.1	(396)	A	[87/5][47/5]
	(573–673)	54.2	(588)	A	[87/5]
C <sub>12</sub> H <sub>12</sub>	1,5-dimethylnaphthalene				[571-61-7]
C <sub>12</sub> H <sub>12</sub>	(323–473)	64.1	(398)	GC	[02/18]
	1,6-dimethylnaphthalene				[575-43-9]
C <sub>12</sub> H <sub>12</sub>	(323–473)	63.6	(398)	GC	[02/18]
	1,8-dimethylnaphthalene				[569-41-5]
C <sub>12</sub> H <sub>12</sub>	(338–413)	62.8	(353)	A	[87/5][75/11]
					[84/9]
		64.8	(336)		[77/22]
C <sub>12</sub> H <sub>12</sub>	2,3-dimethylnaphthalene				[581-40-8]
	(378–408)	60.9 ± 0.7	(380)		[88/16]
C <sub>12</sub> H <sub>12</sub>	2,6-dimethylnaphthalene	60.0	(393)	A	[87/5]
	(384–418)	57.3	(399)	A	[581-42-0]
C <sub>12</sub> H <sub>12</sub>					[87/5][75/11]
					[84/9]
		57.3	(400)		[582-16-1]
		54.8	(440)		[93/11]
		52.2	(480)		[93/11]
		49.5	(520)		[93/11]
		46.6	(560)		[93/11]
(369–400)	58.5	(384)	A	[87/5][75/11]	
C <sub>12</sub> H <sub>12</sub>	1-ethylnaphthalene				[1127-76-0]
	(393–565)	57.3	(408)	A, GS	[87/5][79/11]
C <sub>12</sub> H <sub>12</sub>	2-ethylnaphthalene				[939-27-5]
	(323–473)	64.7	(398)	GC	[02/18]
	(269–398)	69.3	(284)		[88/12]
	(286–319)	61.9	(301)	A	[87/5]
	(393–565)	56.7	(408)	A	[87/5]
C <sub>12</sub> H <sub>12</sub> N <sub>2</sub>	1,1-diphenylhydrazine				[530-50-7]
	(399–596)	68.8	(414)	A	[87/5][47/5]
C <sub>12</sub> H <sub>12</sub> O <sub>6</sub>	1,2,3-benzenetricarboxylic acid, trimethyl ester				[2672-57-3]
	(453–513)	72.5	(468)	A, GS	[87/5][63/13]
C <sub>12</sub> H <sub>12</sub> O <sub>6</sub>	1,2,4-benzenetricarboxylic acid, trimethyl ester				[28904-30-5]
	(443–493)	78.5 ± 0.4	(399)	C	[98/6]
C <sub>12</sub> H <sub>12</sub> O <sub>6</sub>	1,3,5-benzenetricarboxylic acid, trimethyl ester	61.1	(458)	A, GS	[87/5][63/13]
	(443–513)	75.4	(458)	A	[2672-58-4]
C <sub>12</sub> H <sub>13</sub> Cl <sub>3</sub> O <sub>3</sub>	2,4,5-trichlorophenoxyacetic acid, butyl ester				[87/5]
	(460–573)	87.3	(475)	A	[93-79-8]
C <sub>12</sub> H <sub>14</sub> Cl <sub>2</sub>	cyclohexyl-3,4-dichlorobenzene				[87/5]
	(383–488)	64.7	(398)		[81/20]
C <sub>12</sub> H <sub>14</sub> Cl <sub>2</sub> O <sub>3</sub>	2,4-dichlorophenoxyacetic acid, butyl ester				[94-80-4]
	(444–573)	76.3	(459)	A	[87/5][99/16]
C <sub>12</sub> H <sub>14</sub> Cl <sub>2</sub> O <sub>3</sub>	2,4-dichlorophenoxyacetic acid, sec-butyl ester				[94-79-1]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>12</sub> H <sub>14</sub> Cl <sub>2</sub> O <sub>4</sub>	(444–573)	74.2	(459)	A	[87/5][99/16]
	2,4-dichlorophenoxyacetic acid, 2-ethoxyethyl ester				[74944-83-5]
C <sub>12</sub> H <sub>14</sub> Cl <sub>2</sub> O <sub>4</sub>	(443–503)	63.5	(458)	A	[87/5]
	2,4-dichlorophenoxyacetic acid, 4-hydroxybutyl ester				[36227-43-7]
C <sub>12</sub> H <sub>14</sub> N <sub>2</sub> O <sub>5</sub>	(443–503)	72.1	(458)	A	[87/5]
	2-cyclohexyl-4,6-dinitrophenol				[131-89-5]
C <sub>12</sub> H <sub>14</sub> O <sub>2</sub>	(405–565)	88.6	(420)	A	[87/5][47/5]
	ethyl <i>cis</i> -2-phenylcyclopropanecarboxylate				
C <sub>12</sub> H <sub>14</sub> O <sub>3</sub>		70.7±0.6	(298)	C	[98/17]
	1-acetoxy-2-methoxy-4-allylbenzene (eugenol acetate)				[93-28-7]
C <sub>12</sub> H <sub>14</sub> O <sub>4</sub>	(374–555)	63.1	(389)	A	[87/5][47/5]
	1,3-benzodioxole (apiol)				[523-80-8]
C <sub>12</sub> H <sub>14</sub> O <sub>4</sub>	(389–558)	70.6	(404)	A	[87/5]
	diethyl phthalate				[84-66-2]
C <sub>12</sub> H <sub>14</sub> O <sub>4</sub>		74.6	(426)	BG	[88/17]
	(345–453)	77.9	(360)	A	[87/5]
C <sub>12</sub> H <sub>14</sub> O <sub>4</sub>	(421–570)	59.1	(436)	A	[87/5]
	(307–333)	86.8	(310)	GS	[82/1]
C <sub>12</sub> H <sub>15</sub> N		81.1±0.8	(298)	GCC	[80/5]
	(381–567)	65.9	(396)		[47/5]
C <sub>12</sub> H <sub>15</sub> N	N,N-diallyl aniline				[6247-00-3]
	(421–513)	54.8	(436)	A	[87/5]
C <sub>12</sub> H <sub>16</sub>	cyclohexylbenzene				[827-52-1]
	(283–462)	60.4	(298)		[93/10]
C <sub>12</sub> H <sub>16</sub>	(421–513)	51.3	(436)	A	[87/5]
		59.9±0.3	(298)	C	[78/7]
C <sub>12</sub> H <sub>16</sub>	dicyclohexadiene				
	(377–505)	77.9	(329)	A	[87/5]
C <sub>12</sub> H <sub>16</sub>	2,5-diethylstyrene				[2715-29-9]
	(322–496)	52.2	(337)	A	[87/5][47/5]
C <sub>12</sub> H <sub>16</sub>	1-isopropenyl-4-isopropylbenzene				[2388-14-9]
	(403–479)	50.9	(418)	A	[87/5]
C <sub>12</sub> H <sub>16</sub> O <sub>2</sub>	pentyl benzoate				[2049-96-9]
	(395–492)	85.9	(410)	A	[87/5]
C <sub>12</sub> H <sub>16</sub> O <sub>2</sub>	isopentyl benzoate				[94-46-2]
	(345–535)	51.6	(360)	A	[87/5][47/5]
C <sub>12</sub> H <sub>16</sub> O <sub>2</sub>	ethyl 2-phenylbutyrate				[94-46-2]
	(404–489)	56.0	(419)	A	[87/5]
C <sub>12</sub> H <sub>16</sub> O <sub>3</sub>	pentyl salicylate				[2050-08-0]
	(402–540)	66.5	(417)	A	[87/5]
C <sub>12</sub> H <sub>16</sub> O <sub>3</sub>	isopentyl salicylate				[87-20-7]
	(287–329)	73.0	(302)	A, ME	[87/5][55/8]
C <sub>12</sub> H <sub>16</sub> O <sub>4</sub>	benzo-12-crown-4				[14174-08-4]
		82.7±2.3	(298)	CGC	[00/9]
C <sub>12</sub> H <sub>17</sub> NO	N-butylacetanilide				[91-49-6]
	(443–653)	60.2	(458)	A	[87/5]
C <sub>12</sub> H <sub>17</sub> NO	N,N-diethyl-2-phenylacetamide				[2431-96-1]
	(404–460)	82.8	(419)	A	[87/5][69/1]
C <sub>12</sub> H <sub>17</sub> NO <sub>2</sub>	1-nitro-2,6-diisopropylbenzene				
	(308–343)	66.9±0.6	(326)	GS	[00/15]
C <sub>12</sub> H <sub>18</sub>		68.4±0.6	(298)		[00/15]
	1- <i>cis</i> -5- <i>trans</i> -9- <i>trans</i> -cyclododecatriene				[4904-61-4]
C <sub>12</sub> H <sub>18</sub>	(344–387)	49.9	(359)	A	[87/5]
	(400–423)	60.0	(411)	A	[87/5]
C <sub>12</sub> H <sub>18</sub>	(426–503)	47.8	(441)	A	[87/5]
	1- <i>trans</i> -5- <i>trans</i> -9- <i>cis</i> -cyclododecatriene				[706-31-0]
C <sub>12</sub> H <sub>18</sub>	(286–373)	68.0	(301)	A	[87/5]
	hexylbenzene				[1077-16-3]
C <sub>12</sub> H <sub>18</sub>		60.2	(298)		[94/11]
	(274–463)	61.6	(289)		[93/10]
C <sub>12</sub> H <sub>18</sub>		60.0	(298)		[71/28]
	1,2-diisopropylbenzene				[577-55-9]
C <sub>12</sub> H <sub>18</sub>	(388–476)	48.9	(403)	A	[87/5]
	1,3-diisopropylbenzene				[99-62-7]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>12</sub> H <sub>18</sub>	(283–318)	56.0±0.8	(301)	GS	[98/10]
	(283–318)	56.2±0.8	(298)	GS	[98/10]
	(387–477)	48.9	(402)	A	[87/5]
	1,4-diisopropylbenzene				[100-18-5]
	(366–530)	50.7±0.2	(400)	EB	[02/20]
	(366–530)	46.3±0.3	(440)	EB	[02/20]
	(366–530)	43.0±0.5	(480)	EB	[02/20]
	(366–530)	39.3±0.9	(520)	EB	[02/20]
	(283–318)	56.3±0.3	(301)	GS	[98/10]
	(283–318)	56.5±0.3	(298)	GS	[98/10]
C <sub>12</sub> H <sub>18</sub>	(393–485)	47.6	(408)	A	[87/5]
	(393–485)	48.9	(408)		[59/1][84/9]
	1,3-dimethyl-5- <i>tert</i> -butylbenzene				[98-19-1]
	(284–318)	56.5±0.6	(301)	GS	[98/19]
C <sub>12</sub> H <sub>18</sub>		56.6±0.6	(298)		[98/19]
	(253–443)	59.8	(268)		[93/10]
C <sub>12</sub> H <sub>18</sub>	hexamethylbenzene				[87-85-4]
C <sub>12</sub> H <sub>18</sub>	(443–537)	56.8	(458)	A	[87/5]
	1,2,4-triethylbenzene				[877-44-1]
C <sub>12</sub> H <sub>18</sub>	(319–491)	51.2	(334)	A	[87/5][47/5]
	1,3,5-triethylbenzene				[102-25-0]
C <sub>12</sub> H <sub>18</sub>	(371–534)	59.2±0.3	(298)	EB	[97/6]
	1,2,4-trimethyl-5-isopropylbenzene				[10222-95-4]
C <sub>12</sub> H <sub>18</sub>		64.9	(298)		[75/39]
	2-isopropenyl-1-methyl-1-vinyl-3-cyclohexane				[6902-73-4]
C <sub>12</sub> H <sub>18</sub> Cl <sub>2</sub> NOPS	(348–404)	47.8	(363)	A	[87/5]
	P-(chloromethyl)-N-(1-methylpropyl)amidothiophosphonic acid, O-(2-chloro-4-methylphenyl) ester				[42585-08-0]
C <sub>12</sub> H <sub>18</sub> O	(309–363)	62.6	(324)	A	[87/5]
	(1-butoxyethyl)benzene				
C <sub>12</sub> H <sub>18</sub> O	(278–318)	59.8±0.3	(298)	GS	[01/16]
	R,S (1- <i>sec</i> -butoxyethyl)benzene				[6857-85-1]
C <sub>12</sub> H <sub>18</sub> O	(296–332)	58.7±0.5	(298)	GS	[02/29][02/38]
	S,S (1- <i>sec</i> -butoxyethyl)benzene				[8760-63-8]
C <sub>12</sub> H <sub>18</sub> O	(297–332)	59.1±0.5	(298)	GS	[02/29][02/39]
	propyl cumyl ether				[24142-77-6]
C <sub>12</sub> H <sub>18</sub> O	(278–325)	59.1±0.2	(302)	GS	[01/18]
	(278–325)	59.3±0.2	(298)	GS	[01/18]
C <sub>12</sub> H <sub>18</sub> O	benzyl pentyl ether				[6382-14-5]
	(363–512)	50.8	(378)	A	[87/5][69/17]
C <sub>12</sub> H <sub>18</sub> O	2,4-diisopropylphenol				[2934-05-6]
	(395–528)	58.4	(410)	A	[87/5]
C <sub>12</sub> H <sub>18</sub> O	2,4-diisopropylphenol				
	(293–328)	67.9±0.3	(310)	GS	[99/19]
C <sub>12</sub> H <sub>18</sub> O		68.7±0.3	(298)		[99/19]
	2,3-dimethyl-4- <i>tert</i> -butylphenol				[68189-19-5]
C <sub>12</sub> H <sub>18</sub> O	(418–523)	60.2	(433)	A	[87/5]
	2,3-dimethyl-6- <i>tert</i> -butylphenol				[46170-85-8]
C <sub>12</sub> H <sub>18</sub> O	(412–525)	60.0	(427)		[87/5]
	2,4-dimethyl-6- <i>tert</i> -butylphenol				[1879-09-0]
C <sub>12</sub> H <sub>18</sub> O	(304–333)	67.2±0.8	(318)	GS	[99/19]
		68.4±0.8	(298)		[99/19]
	(388–522)	58.4	(403)	A	[87/5]
	(344–535)	54.4	(348)		[53/9]
	(344–535)	52.7	(373)		[53/9]
	(344–535)	51.7	(398)		[53/9]
	(344–535)	49.7	(423)		[53/9]
	(344–535)	45.4	(473)		[53/9]
	2,5-dimethyl-4- <i>tert</i> -butylphenol				[17696-37-6]
	(408–538)	61.7	(423)	A	[87/5]
C <sub>12</sub> H <sub>18</sub> O	(361–548)	62.0	(373)		[53/9]
	(361–548)	59.4	(398)		[53/9]
	(361–548)	57.1	(423)		[53/9]
	(361–548)	52.8	(473)		[53/9]
C <sub>12</sub> H <sub>18</sub> O	2,6-dimethyl-4- <i>tert</i> -butylphenol				[879-97-0]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(392–522)	59.7	(407)	A	[87/5]
	(347–530)	58.4	(348)		[53/9]
	(347–530)	57.0	(373)		[53/9]
	(347–530)	55.4	(398)		[53/9]
	(347–530)	54.2	(423)		[53/9]
	(347–530)	49.3	(473)		[53/9]
C <sub>12</sub> H <sub>18</sub> O	3,4-dimethyl-6- <i>tert</i> -butylphenol (413–532)	62.7	(428)	A	[1445-23-4] [87/5]
C <sub>12</sub> H <sub>18</sub> O	2-ethyl-4- <i>tert</i> -butylphenol (428–623)	61.6	(443)	A	[63452-61-9] [87/5]
	(397–543)	55.4	(398)		[53/9]
	(397–543)	54.2	(423)		[53/9]
	(397–543)	49.3	(473)		[53/9]
C <sub>12</sub> H <sub>18</sub> O	2-ethyl-6- <i>tert</i> -butylphenol (393–443)	58.2	(408)	A	[63551-41-7] [87/5]
C <sub>12</sub> H <sub>18</sub> O	3-ethyl-6- <i>tert</i> -butylphenol (415–530)	59.5	(430)	A	[4237-25-6] [87/5]
C <sub>12</sub> H <sub>18</sub> O	4-ethyl-2- <i>tert</i> -butylphenol (394–523)	59.2	(409)	A	[96-70-8] [87/5]
	(349–533)	57.0	(373)		[53/9]
	(349–533)	55.4	(398)		[53/9]
	(349–533)	54.2	(423)		[53/9]
	(349–533)	49.3	(473)		[53/9]
C <sub>12</sub> H <sub>18</sub> O	2-methyl-4- <i>tert</i> -pentylphenol (443–653)	65.6	(458)	A	[71745-63-6] [87/5]
	(409–561)	55.3	(423)		[53/9]
	(409–561)	50.7	(473)		[53/9]
C <sub>12</sub> H <sub>18</sub> O	3-methyl-4- <i>tert</i> -pentylphenol (443–683)	65.1	(458)	A	[87/5]
	(409–561)	55.3	(423)		[53/9]
	(409–561)	50.7	(473)		[53/9]
C <sub>12</sub> H <sub>18</sub> O	4-methyl-2- <i>tert</i> -pentylphenol (423–653)	61.4	(438)	A	[34072-71-4] [87/5]
	(394–538)	58.1	(398)		[53/9]
	(394–538)	55.3	(423)		[53/9]
	(394–538)	50.7	(473)		[53/9]
C <sub>12</sub> H <sub>18</sub> O <sub>2</sub>	1,3-dihydroxy-2-hexylbenzene (433–494)	76.8	(448)	A, GC	[5673-09-6] [87/5][75/24]
C <sub>12</sub> H <sub>18</sub> O <sub>2</sub>	1,3-dihydroxy-4-hexylbenzene (434–494)	88.1	(449)	A, GC	[136-77-6] [87/5][75/24]
C <sub>12</sub> H <sub>18</sub> O <sub>4</sub>	3,4-dihydro-2,2-dimethyl-4-oxo-2 <i>H</i> -pyran-6-carboxylic acid, butyl ester (357–435)	64.7	(372)	A	[532-34-3] [87/5]
C <sub>12</sub> H <sub>18</sub> O <sub>6</sub>	triethyl aconitrate (423–540)	79.6	(438)	A	[87/5]
C <sub>12</sub> H <sub>19</sub> N	2,6-diisopropylaniline (284–323)	69.2±0.3 69.5±0.3	(303) (298)		[24544-04-5] [00/14] [00/14]
C <sub>12</sub> H <sub>19</sub> N	N-methyl-3-methyl-3-phenyl-2-butaneamine (283–330)	67.0±0.8	(307)	GS	[98/1]
	(283–330)	67.5±0.8	(298)	GS	[98/1]
C <sub>12</sub> H <sub>19</sub> NO	2-(dimethylamino)-2-methyl-1-phenylpropanone (298–338)	66.7±0.4	(298)	GS	[94/3]
C <sub>12</sub> H <sub>19</sub> NO	2-(diethylamino)-1-phenylethanone (293–338)	71.6±0.9	(298)	GS	[94/3]
C <sub>12</sub> H <sub>19</sub> F <sub>3</sub> N <sub>2</sub> O <sub>4</sub>	N[N-(trifluoroacetyl)valyl]alanine ethyl ester (425–453)	86.4	(439)	A	[87/5][99/16]
C <sub>12</sub> H <sub>20</sub>	1-ethyladamantane (383–492)	55.3±1.1 49.1	(298) (398)	A	[770-69-4] [00/22] [87/5]
C <sub>12</sub> H <sub>20</sub>	1,3-dimethyladamantane (352–526)	49.2±0.2 49.7±0.2 49.4±0.3 67.8±1.3	(308) (298) (298) (298)	C C EB EB	[707-79-4] [01/4] [01/4] [96/3] [77/4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>12</sub> H <sub>20</sub> O	2,5-di- <i>tert</i> -butylfuran (274–323)	56.1 ± 1.1	(298)	GS	[4789-40-6] [98/2]
C <sub>12</sub> H <sub>20</sub> O <sub>2</sub>	bornyl acetate (319–496)	50.8	(334)	A	[76-49-3] [87/5][47/5]
C <sub>12</sub> H <sub>20</sub> O <sub>2</sub>	geranyl acetate (346–516)	58.1	(361)	A	[105-87-3] [87/5][47/5]
C <sub>12</sub> H <sub>20</sub> O <sub>2</sub>	isobornyl acetate (404–450)	56.1	(419)	A	[125-12-2] [87/5]
C <sub>12</sub> H <sub>20</sub> O <sub>2</sub>	bicyclo[2.2.1]heptane-7-one 2,2-dimethylpropylene acetal (293–323)	60.5 ± 0.9	(298)	GS	[02/32] [115-95-7]
C <sub>12</sub> H <sub>20</sub> O <sub>2</sub>	3,7-dimethyl-1,6-octadien-3-ol acetate (linalyl acetate) (281–490)	57.8	(296)	A	[87/5] [47/5]
C <sub>12</sub> H <sub>20</sub> O <sub>2</sub>	(328–493)	56.8	(343)		[47/5]
C <sub>12</sub> H <sub>20</sub> O <sub>2</sub>	terpineol acetate (310–424)	68.1	(325)	A	[80-26-2] [87/5]
C <sub>12</sub> H <sub>20</sub> O <sub>4</sub>	dibutyl maleate (255–550)	41.1	(270)	A	[105-76-0] [87/5]
C <sub>12</sub> H <sub>20</sub> O <sub>5</sub>	2-ethoxycarbonylpropionic acid, cyclohexyl ester (388–523)	67.6	(403)	A	[87/5]
C <sub>12</sub> H <sub>20</sub> O <sub>7</sub>	triethyl citrate (380–567)	68.2	(395)	A	[77-93-0] [87/5]
C <sub>12</sub> H <sub>21</sub> O <sub>4</sub> P	trimethylallyl phosphate (367–597)	53.9	(381)		[47/5]
C <sub>12</sub> H <sub>21</sub> N <sub>2</sub> O <sub>3</sub> PS	Diazinon (293–398)	87.4	(308)	A	[333-41-5] [87/5][99/16]
C <sub>12</sub> H <sub>22</sub>	<i>cis</i> bicyclohexyl (331–511)	53.8	(346)	A	[92-51-3] [87/5]
C <sub>12</sub> H <sub>22</sub>	bicyclohexyl	50.1	(435)		[92-51-3] [81/1]
		42.5	(525)		[81/1]
		58.0 ± 0.2	(298)	C	[78/12]
C <sub>12</sub> H <sub>22</sub>	6-dodecyne (373–388)	60.9	(380)	A	[6975-99-1] [87/5]
C <sub>12</sub> H <sub>22</sub>	perhydroacenaphthylene (422–514)	49.6	(437)	EB	[00/16]
C <sub>12</sub> H <sub>22</sub> Cl <sub>4</sub>	1,2,11,12-tetrachlorododecane	81.9			[98/20]
C <sub>12</sub> H <sub>22</sub> O	<i>trans</i> 2-cyclohexylcyclohexanol (324–364)	83.2 ± 1.2	(344)	ME	[97/23] [830-13-7]
C <sub>12</sub> H <sub>22</sub> O	cyclododecanone (373–443)	61.0	(388)	A	[87/5]
	(408–450)	57.9	(423)	A, EB	[87/5][76/10]
	(458–556)	54.7	(473)	A, EB	[87/5][76/10]
C <sub>12</sub> H <sub>22</sub> O	(Z) 2-dodecenal (323–363)	72.5	(298)	CGC	[81149-96-4] [96/7][00/10]
C <sub>12</sub> H <sub>22</sub> O	(E) 2-dodecenal (323–363)	72.6	(298)	CGC	[20407-84-5] [96/7][00/10]
C <sub>12</sub> H <sub>22</sub> O	(Z) 3-dodecenal (323–363)	69.6	(298)	CGC	[68141-15-1] [96/7][00/10]
C <sub>12</sub> H <sub>22</sub> O	(E) 3-dodecenal (323–363)	70.2	(298)	CGC	[76595-72-7] [96/7][00/10]
C <sub>12</sub> H <sub>22</sub> O	(Z) 4-dodecenal (323–363)	69.4	(298)	CGC	[21944-98-9] [96/7][00/10]
C <sub>12</sub> H <sub>22</sub> O	(E) 4-dodecenal (323–363)	69.9	(298)	CGC	[174155-48-7] [96/7][00/10]
C <sub>12</sub> H <sub>22</sub> O	(Z) 5-dodecenal (323–363)	69.1	(298)	CGC	[68820-33-7] [96/7][00/10]
C <sub>12</sub> H <sub>22</sub> O	(E) 5-dodecenal (323–363)	69.6	(298)	CGC	[68820-34-8] [96/7][00/10]
C <sub>12</sub> H <sub>22</sub> O	(Z) 6-dodecenal (323–363)	69.2	(298)	CGC	[12674-61-7] [96/7][00/10]
C <sub>12</sub> H <sub>22</sub> O	(E) 6-dodecenal (323–363)	67.7	(298)	CGC	[174155-49-8] [96/7][00/10]
C <sub>12</sub> H <sub>22</sub> O	(Z) 7-dodecenal				[63851-40-1]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>12</sub> H <sub>22</sub> O	(323–363) (E) 7-dodecenal	69.4	(298)	CGC	[96/7][00/10] [82944-76-1]
C <sub>12</sub> H <sub>22</sub> O	(323–363) (Z) 8-dodecenal	69.6	(298)	CGC	[96/7][00/10] [139909-65-2]
C <sub>12</sub> H <sub>22</sub> O	(323–363) (E) 8-dodecenal	70.0	(298)	CGC	[96/7][00/10] [144298-64-6]
C <sub>12</sub> H <sub>22</sub> O	(323–363) (Z) 9-dodecenal	69.8	(298)	CGC	[96/7][00/10] [56219-03-5]
C <sub>12</sub> H <sub>22</sub> O	(323–363) (E) 9-dodecenal	70.1	(298)	CGC	[96/7][00/10] [155235-07-7]
C <sub>12</sub> H <sub>22</sub> O	(323–363) (Z) 10-dodecenal	70.4	(298)	CGC	[96/7][00/10] [81892-61-7]
C <sub>12</sub> H <sub>22</sub> O	(323–363) (E) 10-dodecenal	71.0	(298)	CGC	[96/7][00/10] [81892-62-8]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	(323–363) dodecanolactone	70.9	(298)	CGC	[96/7][00/10] [947-05-7]
	(377–403)	64.2 ± 1.1	(390)	MM	[91/7]
	(377–403)	70.5 ± 1.7	(298)	MM	[91/7]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	acetic acid, 4- <i>tert</i> -butylcyclohexyl ester (285–318)	63.8	(300)	A, ME	[87/5][58/9] [57/9]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	( <i>d</i> ) menthyl acetate (330–500)	55.3	(345)	A	[16409-45-3] [87/5][47/5]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	citronellyl acetate (347–490)	68.7	(362)	A	[150-84-5] [87/5][47/5]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	2-(1-ethylpentyl)-4,7-dihydro-1,3-dioxepin (333–453)	66.3	(348)	A	[61732-97-6] [87/5]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	octyl methacrylate (384–513)	55.6	(399)	A	[2157-01-9] [87/5]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	methyl 10-undecenoate (397–524)	59.2	(412)	A	[111-81-9] [87/5]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	(Z) 3-decenyl acetate (313–358)	69.5	(298)	GC	[81634-99-3] [97/13][00/10]
	(299–313)	72	(306)	GC	[83/10]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	(E) 3-decenyl acetate (313–358)	70.1	(298)	GC	[81634-98-2] [97/13][00/10]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	(Z) 4-decenyl acetate (313–358)	69.0	(298)	GC	[67452-27-1] [97/13][00/10]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	(E) 4-decenyl acetate (313–358)	70.1	(298)	GC	[69222-16-8] [97/13][00/10]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	(Z) 5-decenyl acetate (313–358)	69.7	(298)	GC	[67446-07-5] [97/13][00/10]
	(299–313)	72	(306)	GC	[83/10]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	(E) 5-decenyl acetate (313–358)	70.6	(298)	GC	[38421-90-8] [97/13][00/10]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	(Z) 6-decenyl acetate (313–358)	70.1	(298)	GC	[68760-70-3] [97/13][00/10]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	(E) 6-decenyl acetate (313–358)	70.6	(298)	GC	[97/13][00/10]
	(299–313)	72	(306)	GC	[83/10]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	(Z) 7-decenyl acetate (313–358)	70.7	(298)	GC	[13857-03-9] [97/13][00/10]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	(E) 7-decenyl acetate (313–358)	71.1	(298)	GC	[13857-04-0] [97/13][00/10]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	(Z) 8-decenyl acetate (313–358)	71.5	(298)	GC	[83808-51-9] [97/13][00/10]
C <sub>12</sub> H <sub>22</sub> O <sub>2</sub>	(E) 8-decenyl acetate (313–358)	71.5	(298)	GC	[83808-51-9] [97/13][00/10]
C <sub>12</sub> H <sub>22</sub> O <sub>3</sub>	heptyl levulinate (393–558)	62.6	(408)	A	[87/5]
		60.0	(496)		[31/1]
C <sub>12</sub> H <sub>22</sub> O <sub>3</sub>	3-pentyl-4-acetoxytetrahydro-2 <i>H</i> -pyran (383–453)	65.8	(398)	A	[18871-14-2] [87/5]
C <sub>12</sub> H <sub>22</sub> O <sub>4</sub>	dipropyl adipate				[106-19-4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>12</sub> H <sub>22</sub> O <sub>4</sub>	(413–540)	63.6	(428)	A	[87/5]
	isopentylmalonic acid, diethyl ester				[5398-08-3]
C <sub>12</sub> H <sub>22</sub> O <sub>4</sub>	(377–420)	64.1	(392)	A	[87/5]
	(1-methylbutyl)malonic acid, diethyl ester				[22328-91-2]
C <sub>12</sub> H <sub>22</sub> O <sub>4</sub>	(395–516)	67.4	(410)	A	[87/5]
	diisopentyl oxalate				[2051-00-5]
C <sub>12</sub> H <sub>22</sub> O <sub>4</sub> S	(358–538)	58.6	(373)	A	[87/5][47/5]
	thiodiglycolic acid, diethyl ester				[4121-12-4]
C <sub>12</sub> H <sub>22</sub> O <sub>5</sub>	(298–383)	75.7	(313)	A	[87/5][99/16]
	butyl[1-(butoxycarbonyl)ethyl] carbonate				
C <sub>12</sub> H <sub>22</sub> O <sub>5</sub>	(338–513)	68.1	(353)	A	[87/5]
	pentyl[1-(ethoxycarbonyl)isopropyl] carbonate				
C <sub>12</sub> H <sub>22</sub> O <sub>6</sub>	(368–513)	63.8	(383)	A	[87/5]
	lactic acid, O-ethoxycarbonyl, 2-butoxyethyl ester				
C <sub>12</sub> H <sub>22</sub> O <sub>6</sub>	(383–521)	74.6	(398)	A	[87/5]
	dibutyl tartrate				[87-92-3]
C <sub>12</sub> H <sub>22</sub> O <sub>6</sub>	(428–511)	79.8	(443)	A	[87/5]
	( <i>d</i> ) diisobutyl tartrate				[4054-82-4]
C <sub>12</sub> H <sub>22</sub> O <sub>6</sub>	(390–597)	64.6	(405)	A	[87/5]
C <sub>12</sub> H <sub>22</sub> S					[7133-46-2]
	dicyclohexyl sulfide				[97/7]
C <sub>12</sub> H <sub>23</sub> N	(421–523)	69.0±0.7	(298)	EB	[101-83-7]
	dicyclohexylamine				
C <sub>12</sub> H <sub>23</sub> N	(408–529)	54.0	(423)	A	[87/5]
	lauronitrile				[2437-25-4]
C <sub>12</sub> H <sub>24</sub>		76.1±0.1	(298)	C	[77/5]
	(393–462)	65.2	(408)	EB	[71/4]
	(440–556)	60.7	(455)	A, EB	[87/5][71/4]
					[73/12]
					[294-62-2]
C <sub>12</sub> H <sub>24</sub>	cyclododecane				
		63.0	(298)	CGC	[98/11]
	(403–453)	62.8	(298)	CGC	[95/21]
	(386–441)	52.6	(401)	A, EB	[87/5][76/10]
C <sub>12</sub> H <sub>24</sub>	(440–529)	49.8	(455)	A, EB	[87/5][76/10]
	1-dodecene				[112-41-4]
		60.8±0.3	(298)	C	[76/5][77/1]
		60.3	(298)		[71/28]
C <sub>12</sub> H <sub>24</sub>	(396–493)	51.1	(411)	A	[87/5][50/6]
	hexylcyclohexane				[4292-75-5]
		55.9±0.5	(298)	GC	[87/17]
C <sub>12</sub> H <sub>24</sub>		59.0±0.5	(298)	GCC	[78/16]
		59.9	(298)		[71/28]
	heptylcyclopentane				[5617-42-5]
C <sub>12</sub> H <sub>24</sub>		60.8	(298)		[71/28]
	<i>trans</i> 2,2,4,6,6-pentamethyl-3-heptene				
C <sub>12</sub> H <sub>24</sub>	(291–318)	65.6±0.5	(305)	GS	[00/7]
	(291–318)	65.9±0.3	(298)	GS	[00/7]
C <sub>12</sub> H <sub>24</sub>	<i>cis</i> 2,2,4,6,6-pentamethyl-3-heptene				
	(288–318)	63.0±0.5	(303)	GS	[00/7]
C <sub>12</sub> H <sub>24</sub> Cl <sub>2</sub>	(288–318)	63.2±0.5	(298)	GS	[00/7]
	1,12-dichlorododecane				
C <sub>12</sub> H <sub>24</sub> O		73.1			[98/20]
	cyclododecanol				[1724-39-6]
C <sub>12</sub> H <sub>24</sub> O	(405–468)	68.8	(420)	A	[87/5]
	(467–557)	57.1	(482)	A	[87/5]
C <sub>12</sub> H <sub>24</sub> O	dodecanal				[112-54-9]
	(308–353)	70.2	(298)	CGC	[96/7][00/10]
C <sub>12</sub> H <sub>24</sub> O	(350–530)	56.5	(365)	A	[87/5][47/5]
	2-dodecanone				[6175-49-1]
C <sub>12</sub> H <sub>24</sub> O	(350–520)	61.1	(365)	A	[87/5][47/5]
		71.8±0.6	(298)	C	[77/2]
	(386–609)	60.8	(401)	A	[87/5][75/8]
	(386–609)	48.1	(524)		[75/8]
C <sub>12</sub> H <sub>24</sub> O	ethyl <i>p</i> -menthyl ether				[19321-39-2]
	(366–414)	50.9	(381)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>12</sub> H <sub>24</sub> O	1-heptylcyclopentanol (395–524)	58.6	(410)	A	[20999-39-7] [87/5]
C <sub>12</sub> H <sub>24</sub> O	1-hexylcyclohexanol (380–491)	53.5	(395)	A	[3964-63-4] [87/5]
C <sub>12</sub> H <sub>24</sub> O	(Z) 2-dodecen-1-ol (333–373)	90.7	(298)	CGC	[69064-36-4] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(E) 2-dodecen-1-ol (333–373)	91.0	(298)	CGC	[69064-37-5] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(Z) 3-dodecen-1-ol (333–373)	89.3	(298)	CGC	[32451-95-9] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(E) 3-dodecen-1-ol (333–373)	89.2	(298)	CGC	[68900-87-8] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(Z) 4-dodecen-1-ol (333–373)	89.9	(298)	CGC	[40642-37-3] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(E) 4-dodecen-1-ol (333–373)	90.6	(298)	CGC	[81745-38-2] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(Z) 5-dodecen-1-ol (333–373)	90.2	(298)	CGC	[40642-38-4] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(E) 5-dodecen-1-ol (333–373)	90.7	(298)	CGC	[62936-12-3] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(Z) 6-dodecen-1-ol (333–373)	90.2	(298)	CGC	[40642-39-5] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(E) 6-dodecen-1-ol (333–373)	90.7	(298)	CGC	[52957-14-9] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(Z) 7-dodecen-1-ol (333–373)	90.5	(298)	CGC	[20056-92-2] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(E) 7-dodecen-1-ol (333–373)	90.8	(298)	CGC	[16695-40-2] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(Z) 8-dodecen-1-ol (333–373)	91.0	(298)	CGC	[40642-40-8] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(E) 8-dodecen-1-ol (333–373)	91.0	(298)	CGC	[42513-42-8] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(Z) 9-dodecen-1-ol (333–373)	91.1	(298)	CGC	[35148-18-6] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(E) 9-dodecen-1-ol (333–373)	91.7	(298)	CGC	[35237-62-8] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(Z) 10-dodecen-1-ol (333–373)	92.4	(298)	CGC	[35289-30-6] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O	(E) 10-dodecen-1-ol (333–373)	91.9	(298)	CGC	[35237-63-9] [00/10][94/13]
C <sub>12</sub> H <sub>24</sub> O <sub>2</sub>	ethyl decanoate (404–440)	58.4±0.1	(422)	MM	[110-38-3] [91/7]
	(404–440)	67.4±1.3	(298)	MM	[91/7]
	(359–515)	59.6	(374)	A	[87/5]
C <sub>12</sub> H <sub>24</sub> O <sub>2</sub>	decyl acetate (313–358)	71.6	(298)	GC	[112-17-4] [97/13][00/10]
	(363–515)	61.9	(378)	A	[87/5]
	(299–313)	72	(306)	GC	[83/10]
	(445–530)	56.3	(460)	DTA	[80/8]
C <sub>12</sub> H <sub>24</sub> O <sub>2</sub>	4,5-dimethyl-2-heptyl-1,3-dioxolane (333–453)	69.8	(346)	A	[61732-91-0] [87/5]
C <sub>12</sub> H <sub>24</sub> O <sub>2</sub>	dodecanoic acid (393–573)	88.8	(408)	A	[143-07-7] [87/5]
	(321–341)	95.8	(332)	ME, TE	[82/5]
		81.3	(437)	I	[43/7]
C <sub>12</sub> H <sub>24</sub> O <sub>2</sub>	2-(1-ethylpentyl)-1,3-dioxepane (333–373)	68.1	(348)	A	[61732-93-2] [87/5]
C <sub>12</sub> H <sub>24</sub> O <sub>2</sub>	2-heptyl-1,3-dioxepane (328–373)	70.3	(343)	A	[61732-92-1] [87/5]
C <sub>12</sub> H <sub>24</sub> O <sub>2</sub>	3-heptyl-4-hydroxytetrahydro-2H-pyran (383–453)	77.6	(398)	A	[62159-06-2] [87/5]
C <sub>12</sub> H <sub>24</sub> O <sub>2</sub>	4-octyl-1,3-dioxane (353–453)	65.5	(368)	A	[23433-02-5] [87/5]
C <sub>12</sub> H <sub>24</sub> O <sub>2</sub>	methyl undecanoate				[1731-86-8]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		66.1	(350)		[02/27]
		67.0±0.1	(340)		[02/27]
		70.8±0.4	(298)		[02/27]
	(433–473)	70.6	(298)	CGC	[95/21]
		71.4±0.3	(298)	C	[77/1]
	(393–473)	60.9	(408)	A, EST	[87/5][63/16]
C <sub>12</sub> H <sub>24</sub> O <sub>3</sub>	pentyl 2-butoxypropionate (373–398)	47.3	(385)	A	[87/5]
C <sub>12</sub> H <sub>24</sub> O <sub>3</sub>	methyl 3-octyloxypropionate (373–513)	59.8	(388)	A	[7419-98-9] [87/5]
C <sub>12</sub> H <sub>24</sub> O <sub>6</sub>	18-crown-6	86.1±6.7	(298)	CGC	[17455-13-9] [00/9]
C <sub>12</sub> H <sub>25</sub> Br	1-bromododecane (411–610)	74.8±0.4 62.2	(298) (426)	C A, EST	[143-15-7] [76/6][77/1] [87/5][61/13]
C <sub>12</sub> H <sub>25</sub> Cl	1-chlorododecane (390–520)	73.9±1.4 70.5	(298) (298)	GS	[112-52-7] [01/1] [84/9][91/2]
		71.9±0.3	(298)	C	[77/1]
		70.3±0.5	(298)	C	[75/6]
	(389–519)	62.4	(404)	A, DTA	[87/5][69/5]
C <sub>12</sub> H <sub>25</sub> Cl	( <i>dl</i> ) 2-chlorododecane (283–328)	65.3	(298)	A	[2350-12-1] [87/5][70/14]
					[62/30]
C <sub>12</sub> H <sub>25</sub> Cl	( <i>dl</i> ) 3-chlorododecane (283–328)	65.9	(298)	A	[2350-12-1] [87/5][70/14]
					[62/30]
C <sub>12</sub> H <sub>25</sub> Cl	( <i>dl</i> ) 4-chlorododecane (283–328)	64.1	(298)	A	[2350-13-2] [87/5][70/14]
					[62/30]
C <sub>12</sub> H <sub>25</sub> Cl	( <i>dl</i> ) 5-chlorododecane (283–328)	65.9	(298)	A	[2350-14-3] [87/5][70/14]
					[62/30]
C <sub>12</sub> H <sub>25</sub> Cl	6-chlorododecane (283–328)	65.5	(298)	A	[26535-66-0] [87/5][70/14]
					[62/30]
C <sub>12</sub> H <sub>25</sub> F	1-fluorododecane (288–328) (374–533)	64.0±0.2 56.2	(298) (389)	GS A, EST	[334-68-9] [97/14] [87/5][61/13]
					[70/14]
C <sub>12</sub> H <sub>25</sub> I	1-iodododecane (426–636)	63.5	(441)	A, EST	[4292-19-7] [87/5][61/13]
					[70/14]
C <sub>12</sub> H <sub>25</sub> NO	N,N-diethylcaprylamide (373–510)	71.2	(388)	A	[996-97-4] [87/5]
C <sub>12</sub> H <sub>26</sub>	dodecane	62.1±0.2	(298)	GS	[112-40-3] [01/1]
		60.3±0.8	(298)	CGC	[00/9]
		61.4	(299)	C	[96/22]
		58.1	(334)	C	[96/22]
		57.4	(344)	C	[96/22]
	(373–423)	60.7	(298)	CGC	[95/21]
	(363–413)	61.2	(298)	CGC	[95/21]
	(423–473)	61.2	(298)	CGC	[95/21]
		61.5	(298)		[94/12]
	(263–371)	65.7	(278)		[88/12]
	(278–400)	61.8	(293)	A	[87/5]
	(298–389)	61.1	(313)	GS	[86/6]
		61.8±0.5	(298)	C	[76/4]
		60.4±0.3	(298)	C	[72/29]
		61.3	(298)		[71/28]
	(400–492)	51.6	(415)	A, MM	[87/5][45/2]
C <sub>12</sub> H <sub>26</sub>	2-methylundecane				[7045-71-8]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>12</sub> H <sub>26</sub>	(356–484) <i>(dl)</i> 3-methylundecane	49.5	(371)	A	[87/5] [1002-43-3]
	(357–485) 4-methylundecane	48.8	(372)	A	[87/5] [2980-69-0]
C <sub>12</sub> H <sub>26</sub>	(359–481) 5-methylundecane	51.6	(374)	A	[87/5] [1632-70-8]
	(357–480) 2,3-dimethyldecane	50.3	(372)	A	[87/5] [17312-44-6]
C <sub>12</sub> H <sub>26</sub>	(369–480) 2,4-dimethyldecane	50.0	(384)	A	[87/5] [2801-84-5]
	(348–472) 2,4,6-trimethylnonane	47.5	(363)	A	[87/5] [62184-10-5]
C <sub>12</sub> H <sub>26</sub>	(339–459) 3,3,6,6-tetramethyloctane	46.4	(354)	A	[87/5] [62199-46-6]
	(347–463) 2,2,4,6,6-pentamethylheptane	52.9	(362)	A	[87/5] [13475-82-6]
C <sub>12</sub> H <sub>26</sub> O	ethyl decyl ether	49.0±0.2	(298)	C	[76/4] [55962-01-1]
C <sub>12</sub> H <sub>26</sub> O	dihexyl ether	65.9±0.1	(298)	C	[85/2] [112-58-3]
		63.6±0.8	(298)	CGC	[00/9]
	(353–393)	63.5	(298)	CGC	[95/21]
	(372–510)	52.9	(387)	A	[87/5]
C <sub>12</sub> H <sub>26</sub> O	octyl <i>tert</i> -butyl ether	64.1±0.1	(298)	C	[85/2]
		61.4	(298)		[U/2][02/32]
C <sub>12</sub> H <sub>26</sub> O	isobutyl <i>tert</i> -octyl ether	51.6	(298)		[U/2][02/32]
C <sub>12</sub> H <sub>26</sub> O	butyl <i>tert</i> -octyl ether	52.9±0.4	(298)		[U/2][02/32]
C <sub>12</sub> H <sub>26</sub> O	1-dodecanol				[112-53-8]
	(303–348)	85.8	(327)	GS	[01/3]
	(303–348)	90.0	(298)	GS	[01/3]
	(373–423)	91.7	(298)	CGC	[95/21]
	(353–393)	91.7	(298)	CGC	[94/13][00/10]
	(303–413)	80.5	(358)		[92/14]
	(383–438)	73.8	(398)	A	[87/5]
	(505–550)	57.1	(520)	A	[87/5]
		84.7±0.5	(343)	C	[79/6]
		91.8±0.6	(298)	C	[79/6]
		92.0±0.6	(298)	C	[77/1]
	(297–363)	92.5	(312)		[73/26]
	(411–487)	67.6	(426)		[73/26]
	(425–550)	66.7	(440)	A, EB	[87/5][70/2]
	(400–538)	71.5	(415)	DTA	[69/5]
(297–313)	95.4	(305)	ME	[65/15]	
C <sub>12</sub> H <sub>26</sub> O	(303–363)	83.3	(333)	A, ME	[87/5][62/12]
	(411–487)	67.6	(426)		[58/2]
C <sub>12</sub> H <sub>26</sub> O	2-dodecanol				[10203-28-8]
	(293–393)	87.0	(308)		[99/11]
	(293–343)	85.0	(318)	A, ME	[87/5][62/12]
C <sub>12</sub> H <sub>26</sub> O	<i>(dl)</i> 3-dodecanol				[10203-30-2]
C <sub>12</sub> H <sub>26</sub> O	(293–343)	78.3	(318)	A, ME	[87/5][62/12]
	4-dodecanol				[10203-32-4]
C <sub>12</sub> H <sub>26</sub> O	(293–343)	80.6	(318)	A, ME	[87/5][62/12]
	5-dodecanol				[10203-33-5]
C <sub>12</sub> H <sub>26</sub> O	(293–343)	79.4	(318)	A, ME	[87/5][62/12]
	6-dodecanol				[6836-38-0]
C <sub>12</sub> H <sub>26</sub> O <sub>2</sub>	(293–343)	81.5	(318)	A, ME	[87/5][62/12]
	<i>(dl)</i> 3,4-diethyl-3,4-dimethoxyhexane				
C <sub>12</sub> H <sub>26</sub> O <sub>3</sub>	(302–332)	59.8±1.3	(317)	GS	[90/17]
	diethylene glycol dibutyl ether				[112-73-2]
C <sub>12</sub> H <sub>26</sub> O <sub>3</sub>		73.8±1.7	(298)	GCG	[00/9]
	(293–528)	56.6	(308)	A	[87/5]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>12</sub> H <sub>26</sub> O <sub>4</sub>	2,2-bis( <i>tert</i> -butylperoxy)butane (299–323)	77.1	(311)	A	[41407-59-4] [87/5]
C <sub>12</sub> H <sub>26</sub> O <sub>4</sub>	tripropylene glycol monoisopropyl ether (355–530)	56.9	(370)	A	[87/5][47/5] [112-55-0]
C <sub>12</sub> H <sub>26</sub> S	1-dodecanethiol (420–581)	62.0	(435)		[99/16] [33528-63-1]
C <sub>12</sub> H <sub>26</sub> S <sub>2</sub>	1,12-dodecanedithiol (454–593)	77.8	(469)	A	[87/5][43/6] [99/16] [10496-15-8]
C <sub>12</sub> H <sub>26</sub> S <sub>2</sub>	dihexyl disulfide (435–601)	64.9	(450)		[99/16] [124-22-1]
C <sub>12</sub> H <sub>27</sub> N	dodecylamine (443–545)	61.0	(458)	A, EST	[87/5][56/17]
C <sub>12</sub> H <sub>27</sub> N	(356–521)	63.4	(371)		[47/5] [143-16-8]
C <sub>12</sub> H <sub>27</sub> N	dihexylamine (408–569)	55.1	(423)	A	[87/5]
C <sub>12</sub> H <sub>27</sub> N	N,N-dimethyldodecylamine (405–564)	55.2	(420)	A	[1120-24-7] [87/5]
C <sub>12</sub> H <sub>27</sub> N	tributylamine (298–337)	64.4	(313)	A	[102-82-9] [87/5]
C <sub>12</sub> H <sub>27</sub> N	(333–487)	48.1	(348)	A	[87/5]
C <sub>12</sub> H <sub>27</sub> N	triisobutylamine (305–452)	54.3	(320)	A	[1116-40-1] [87/5][47/5]
C <sub>12</sub> H <sub>27</sub> O <sub>4</sub> P	tributyl phosphate (500–562)	61.4	(515)	A	[126-73-8] [87/5]
C <sub>12</sub> H <sub>27</sub> O <sub>4</sub> P	triisobutyl phosphate (411–537)	62.8	(426)	A	[126-71-6] [87/5]
C <sub>12</sub> H <sub>27</sub> P	tributyl phosphine (353–428)	51.7 ± 0.5	(390)		[998-40-3] [01/9]
C <sub>12</sub> H <sub>28</sub> N <sub>2</sub>	1,12-dodecanediamine (313–353)	110.1	(328)	A	[4843-89-4] [87/5]
C <sub>12</sub> H <sub>28</sub> N <sub>2</sub>	tetrapropyl hydrazine (362–423)	65.2	(377)	A	[60678-69-5] [87/5]
C <sub>12</sub> H <sub>30</sub> N <sub>3</sub> P	<i>tris</i> (diethylamino)phosphine	60.7 ± 0.4			[59/24]
C <sub>13</sub> H <sub>8</sub> O	9-fluorenone	NA			[486-25-9] [83/17]
C <sub>13</sub> H <sub>9</sub> ClO <sub>2</sub>	5-chloro-2-hydroxybenzophenone (367–493)	73.3	(382)	A, UV	[85-19-8] [87/5][60/2]
C <sub>13</sub> H <sub>9</sub> N	acridine (423–621)	62.9	(465)		[260-94-6] [83/4]
C <sub>13</sub> H <sub>9</sub> N	(423–621)	62.1	(515)		[83/4]
C <sub>13</sub> H <sub>9</sub> N	(423–621)	61.5	(595)		[83/4]
C <sub>13</sub> H <sub>10</sub>	(402–619)	66.2	(417)	A	[87/5][47/5] [86-73-7]
C <sub>13</sub> H <sub>10</sub>	fluorene (323–473)	66.9	(398)	GC	[02/18]
C <sub>13</sub> H <sub>10</sub>	(403–453)	72.3	(298)	CGC	[98/11]
C <sub>13</sub> H <sub>10</sub>	(323–363)	72.2	(298)	CGC	[95/21]
C <sub>13</sub> H <sub>10</sub>	(383–427)	65.7	(298)	B	[94/4]
C <sub>13</sub> H <sub>10</sub>	(402–568)	63.3	(398)		[88/12]
C <sub>13</sub> H <sub>10</sub>	(423–573)	54.2	(417)	A	[87/5]
C <sub>13</sub> H <sub>10</sub> N <sub>2</sub>	N,N'-diphenylcarbodiimide (500–599)	56.6	(498)	I	[23/1] [622-16-2]
C <sub>13</sub> H <sub>10</sub> O	benzophenone (433–673)	65.6	(515)	A	[87/5]
C <sub>13</sub> H <sub>10</sub> O	(473–579)	65.1	(448)	A	[119-61-9] [87/5]
C <sub>13</sub> H <sub>10</sub> O	(530–575)	62.2	(488)		[49/1][84/9]
C <sub>13</sub> H <sub>10</sub> O	xanthene	59.0	(545)		[1904/1][84/9] [92-83-1]
C <sub>13</sub> H <sub>10</sub> O		64.5	(435)		[84/25]
C <sub>13</sub> H <sub>10</sub> O		61.1	(475)		[84/25]
C <sub>13</sub> H <sub>10</sub> O		59.2	(515)		[84/25]
C <sub>13</sub> H <sub>10</sub> O		56.7	(555)		[84/25]
C <sub>13</sub> H <sub>10</sub> O		54.4	(585)		[85/25]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>13</sub> H <sub>10</sub> O	(413–433) 9-hydroxyfluorene	88.7	(423)	A	[87/5][58/23] [1689-64-1]
C <sub>13</sub> H <sub>10</sub> O <sub>2</sub>	phenylbenzoate (379–587)	NA			[83/17] [93-99-2]
C <sub>13</sub> H <sub>10</sub> O <sub>3</sub>	2,4-dihydroxybenzophenone (418–485)	62.4	(394)	A	[87/5][47/5] [131-56-6]
C <sub>13</sub> H <sub>10</sub> O <sub>3</sub>	phenyl salicyate (423–587)	87.1	(433)	A, UV	[87/5][60/2] [118-55-8]
C <sub>13</sub> H <sub>11</sub> Cl	chlorodiphenylmethane (381–450)	69.9	(438)	A, UV	[87/5][60/2] [90-99-3]
C <sub>13</sub> H <sub>11</sub> F	fluorodiphenylmethane (288–333)	70.4	(396)	A	[87/5] [579-55-5]
C <sub>13</sub> H <sub>11</sub> N	benzophenone imine (308–338)	69.8±0.4	(298)	GS	[97/14]
C <sub>13</sub> H <sub>11</sub> N	benzophenone imine (308–338)	74.2±1.0	(323)	GS	[1013-88-3] [97/9]
C <sub>13</sub> H <sub>11</sub> N	benzophenone imine (308–338)	75.7±1.0	(298)	GS	[97/9]
C <sub>13</sub> H <sub>11</sub> N	benzophenone imine (373–422)	62.3	(388)	A	[87/5]
C <sub>13</sub> H <sub>11</sub> N	9-methylcarbazole (373–673)	73.4	(400)	EB, IPM	[1484-12-4] [92/15]
C <sub>13</sub> H <sub>11</sub> N	9-methylcarbazole (373–673)	70.5	(440)	EB, IPM	[92/15]
C <sub>13</sub> H <sub>11</sub> N	9-methylcarbazole (373–673)	67.7	(480)	EB, IPM	[92/15]
C <sub>13</sub> H <sub>11</sub> N	9-methylcarbazole (373–673)	65.0	(520)	EB, IPM	[92/15]
C <sub>13</sub> H <sub>11</sub> N	9-methylcarbazole (373–673)	62.1	(560)	EB, IPM	[92/15]
C <sub>13</sub> H <sub>11</sub> N	9-methylcarbazole (373–673)	59.1	(600)	EB, IPM	[92/15]
C <sub>13</sub> H <sub>11</sub> N	9-methylcarbazole (373–673)	55.9	(640)	EB, IPM	[92/15]
C <sub>13</sub> H <sub>11</sub> N <sub>3</sub> O	2-(2'-hydroxy-5'-methylphenyl)benzotriazole (348–384)	74.9	(366)	GS	[80/6]
C <sub>13</sub> H <sub>11</sub> N <sub>3</sub> O	2-(2'-hydroxy-5'-methylphenyl)benzotriazole (413–433)	79.1	(423)	ME	[2440-22-4] [84/1]
C <sub>13</sub> H <sub>12</sub>	3-methylbiphenyl (404–435)	70.6	(419)	A, UV	[87/5][60/2] [643-93-6]
C <sub>13</sub> H <sub>12</sub>	3-methylbiphenyl (283–463)	69.6	(298)		[93/10]
C <sub>13</sub> H <sub>12</sub>	diphenylmethane				[101-81-5]
C <sub>13</sub> H <sub>12</sub>	diphenylmethane	65.7	(298)	GC	[02/37]
C <sub>13</sub> H <sub>12</sub>	diphenylmethane (303–343)	66.4±0.5	(323)	GS	[99/8]
C <sub>13</sub> H <sub>12</sub>	diphenylmethane (303–343)	67.9±0.5	(298)	GS	[99/8]
C <sub>13</sub> H <sub>12</sub>	diphenylmethane (303–402)	63.7	(363)		[89/14]
C <sub>13</sub> H <sub>12</sub>	diphenylmethane (295–383)	72.2	(310)	A	[87/5]
C <sub>13</sub> H <sub>12</sub>	diphenylmethane (423–583)	56.7	(438)	A	[87/5]
C <sub>13</sub> H <sub>12</sub>	diphenylmethane	55.8	(445)		[81/1]
C <sub>13</sub> H <sub>12</sub>	diphenylmethane	49.0	(535)		[81/1]
C <sub>13</sub> H <sub>12</sub>	diphenylmethane	66.6±0.1	(298)	C	[72/28]
C <sub>13</sub> H <sub>12</sub> O	benzyl phenyl ether (490–555)	54.2	(505)		[15/1][84/9]
C <sub>13</sub> H <sub>12</sub> O	benzyl phenyl ether (368–560)	58.8	(383)	A	[946-80-5] [87/5][47/5]
C <sub>13</sub> H <sub>12</sub> O	diphenylmethanol (438–574)	65.4	(453)	A	[91-01-0] [87/5]
C <sub>13</sub> H <sub>12</sub> O	ethyl 1-naphthyl ketone (397–579)	74.1	(412)	A	[2876-63-3] [87/5][47/5]
C <sub>13</sub> H <sub>13</sub> N	N-methyldiphenylamine (376–555)	65.2	(391)	A	[552-82-9] [87/5][47/5]
C <sub>13</sub> H <sub>13</sub> N	N-benzylaniline (316–343)	79.6±1.1	(330)		[103-32-2] [97/21]
C <sub>13</sub> H <sub>13</sub> N	N-benzylaniline	79.5			[80/21]
[Note: The value reported in [80/21] for the enthalpy of vaporization is larger than the value given for the enthalpy of sublimation.]					
C <sub>13</sub> H <sub>14</sub>	1,6,7-trimethylnaphthalene (323–473)	68.6	(398)	GC	[2245-38-7] [02/18]
C <sub>13</sub> H <sub>14</sub>	1-isopropylnaphthalene (402–541)	50.4	(417)	A	[6158-45-8] [87/5]
C <sub>13</sub> H <sub>14</sub>	2-isopropylnaphthalene (402–541)	60.3	(417)	A	[2027-17-0] [87/5]
C <sub>13</sub> H <sub>14</sub> N <sub>2</sub>	2,4'-diaminodiphenylmethane (353–403)	111.5	(368)	A	[1208-52-2] [87/5]
C <sub>13</sub> H <sub>14</sub> N <sub>2</sub>	4,4'-diaminodiphenylmethane				[101-77-9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>13</sub> H <sub>15</sub> Cl <sub>3</sub> O <sub>3</sub>	(343–393)	109.3	(358)	A	[87/5]
	(486–545)	98.0	(501)	A	[87/5]
	(471–545)	100.6	(502)	A	[66/28]
C <sub>13</sub> H <sub>15</sub> Cl <sub>3</sub> O <sub>3</sub>	2,4,6-trichlorophenoxyacetic acid, pentyl ester				[120-39-8]
	(460–573)	78.8	(475)	A	[87/5]
C <sub>13</sub> H <sub>15</sub> N	1,2,3,4-tetrahydro-9-methylcarbazole				[17058-12-7]
	(370–655)	72.5	(400)	EB, IPM	[92/15]
	(370–655)	69.6	(440)	EB, IPM	[92/15]
	(370–655)	66.7	(480)	EB, IPM	[92/15]
	(370–655)	63.8	(520)	EB, IPM	[92/15]
	(370–655)	60.7	(560)	EB, IPM	[92/15]
	(370–655)	57.4	(600)	EB, IPM	[92/15]
	(370–655)	53.8	(640)	EB, IPM	[92/15]
C <sub>13</sub> H <sub>15</sub> NO	1-(1-isocyanato-1-methylethyl)-4-(1-methylethylbenzene)				
	(298–463)	68.5	(308)	DTA, T, HSA	[86/3]
C <sub>13</sub> H <sub>16</sub> Cl <sub>2</sub> O <sub>3</sub>	2,4-dichlorophenoxyacetic acid, isopentyl ester				[67821-07-2]
C <sub>13</sub> H <sub>16</sub> Cl <sub>2</sub> O <sub>3</sub>	(460–573)	75.8	(475)	A	[87/5]
	2,4-dichlorophenoxyacetic acid, pentyl ester				[1917-96-6]
C <sub>13</sub> H <sub>16</sub> Cl <sub>2</sub> O <sub>3</sub>	(444–573)	73.6	(459)	A	[87/5]
	2-phenyl-2-piperidinoacetonitrile				
C <sub>13</sub> H <sub>16</sub> N <sub>2</sub>	(338–378)	73.2±0.4		GS	[97/10]
	1-(phenacyl)piperidine				[3626-62-8]
C <sub>13</sub> H <sub>17</sub> NO	(381–446)	51.4	(396)	A	[87/5][69/1]
	(382–450)	47.2	(416)		[69/1]
C <sub>13</sub> H <sub>17</sub> NO	1-( <i>m</i> -toluoyl)piperidine				[13290-48-7]
	(373–403)	53.8	(388)	A	[87/5][69/1]
C <sub>13</sub> H <sub>17</sub> NO <sub>3</sub>	( <i>dl</i> ) N-acetylphenylalanine, ether ester				[4134-09-2]
C <sub>13</sub> H <sub>18</sub>	(438–528)	82.4	(453)	A	[87/5]
	1,1,4,6-tetramethylindane				[941-60-6]
	(313–383)	59.4	(328)	A	[87/5]
	(313–469)	60.2	(328)	A	[87/5]
C <sub>13</sub> H <sub>18</sub>	(242–469)	51.9	(439)	A	[87/5]
	1,1,4,7-tetramethylindane				[1078-04-2]
	(313–388)	59.6	(328)	A	[87/5]
	(313–469)	60.4	(328)	A	[87/5]
C <sub>13</sub> H <sub>18</sub> O	(431–469)	52.0	(446)	A	[87/5]
	4,4-dimethyl-1-phenyl-3-pentanone				[5195-24-4]
	(405–520)	63.5	(420)	A	[87/5]
C <sub>13</sub> H <sub>18</sub> O	p-isopropyl- $\alpha$ -methylhydrocinnamaldehyde				[103-95-7]
	(283–499)	72.6	(298)	A	[87/5]
C <sub>13</sub> H <sub>18</sub> O	1-phenyl-1-heptanone				[1671-75-6]
	(373–550)	64.6	(388)	A	[87/5][47/5]
C <sub>13</sub> H <sub>19</sub> NO	3-phenylpropionic acid, N,N-diethylamide				
	(353–439)	46.5	(368)	A	[87/5]
C <sub>13</sub> H <sub>19</sub> NO	(4R,5R)-2,2,3,4-tetramethyl-5-phenyl-1,3-oxazolidine				[141271-51-4]
	(293–301)	61.6±1.8	(298)		[98/3]
C <sub>13</sub> H <sub>20</sub>	heptylbenzene				[1078-71-3]
	(423–527)	54.0	(438)	A	[87/5]
		64.9	(298)		[71/28]
C <sub>13</sub> H <sub>20</sub> O	butyl cumyl ether				
C <sub>13</sub> H <sub>20</sub> O	(278–318)	63.8±0.5	(298)	GS	[01/18]
	$\alpha$ -ionone				[127-41-3]
	(352–523)	62.0	(367)	A	[87/5][47/5]
C <sub>13</sub> H <sub>20</sub> O	(286–333)	67.5	(301)	A, ME	[87/5][57/9]
	$\beta$ -ionone				[14901-07-6]
C <sub>13</sub> H <sub>20</sub> O	(291–334)	69.0	(306)	A, ME	[87/5][57/9]
	6,10-dimethyl-4,5,9-undecatrien-2-one				[16647-05-5]
C <sub>13</sub> H <sub>20</sub> O	(349–421)	63.6±1.4	(385)		[88/4]
	6,10-dimethyl-3,5,9-undecatrien-2-one				[141-10-6]
C <sub>13</sub> H <sub>20</sub> O	(382–457)	67.6±1.1	(420)		[88/4]
	4-(2,6,6-trimethyl-1-cyclohexen-1-yl)-3-buten-2-one				[79-77-6]
C <sub>13</sub> H <sub>20</sub> O	(373–442)	49.6±1.1	(408)		[88/4]
	1,3-dihydroxy-5-heptylbenzene				[500-67-4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>13</sub> H <sub>20</sub> O <sub>2</sub>	(443–504)	91.6	(458)	A, GC	[87/5][75/24] [41395-27-1]
	1,3-dihydroxy-5-methyl-2-hexylbenzene (433–493)	82.8	(448)	A, GC	[87/5][75/24] [76619-97-1]
C <sub>13</sub> H <sub>21</sub> Cl <sub>3</sub> OS	2,3,3-trichloro-2-propenethioic acid, O-decyl ester (483–503)	79.9		GC	[80/24]
C <sub>13</sub> H <sub>21</sub> N	N,N-dimethyl-3-methyl-3-phenyl-2-butaneamine (283–330)	59.8±0.7	(307)	GS	[98/1]
	(283–330)	60.3±0.7	(298)	GS	[98/1]
C <sub>13</sub> H <sub>21</sub> N	N-methyl-2,3-dimethyl-3-phenyl-2-butaneamine (285–332)	71.9±1.1	(309)	GS	[98/1]
	(285–332)	72.5±1.1	(298)	GS	[98/1]
C <sub>13</sub> H <sub>21</sub> NO	2-(diethylamino)-1-phenyl-1-propanone (293–333)	71.6±1.0	(298)	GS	[94/3]
C <sub>13</sub> H <sub>22</sub>	2-allyl- <i>cis</i> -decahydronaphthalene (296–320)	89.9	(308)	A	[87/5]
C <sub>13</sub> H <sub>22</sub>	2-allyl- <i>trans</i> -decahydronaphthalene (296–320)	91.7	(308)	A	[87/5]
C <sub>13</sub> H <sub>22</sub>	dodecahydrofluorene (332–525)	55.8	(347)	A	[5744-03-6] [87/5]
C <sub>13</sub> H <sub>22</sub>	1,3,5-trimethyladamantane	51.7±0.2	(298)		[707-35-7] [00/21][00/22]
C <sub>13</sub> H <sub>22</sub> Cl <sub>2</sub> O <sub>4</sub>	2,2- <i>bis</i> (chloromethyl)-1,3-propanediol dibutyrate (454–572)	43.1	(469)	A	[87/5]
C <sub>13</sub> H <sub>22</sub> O <sub>2</sub>	bornyl propionate (337–508)	55.9	(352)	A	[78548-53-5] [87/5][47/5]
C <sub>13</sub> H <sub>24</sub> Cl <sub>4</sub>	1,1,1,1,3-tetrachlorotridecane (320–370)	97.4	(335)	A	[3922-33-6] [87/5]
C <sub>13</sub> H <sub>24</sub> O	5-methyl-2-ethyl-2-butyl-4-hexenal (323–393)	69.1	(338)	A	[42023-59-6] [87/5]
C <sub>13</sub> H <sub>24</sub> O <sub>2</sub>	decyl acrylate (404–536)	59.6	(419)	A	[2156-96-9] [87/5]
C <sub>13</sub> H <sub>24</sub> O <sub>2</sub>	oxa-2-cyclotetradecanone (tridecanolactone) (375–405)	66.6±1.1	(390)	MM	[1725-04-8] [91/7]
	(375–405)	72.9±1.7	(298)	MM	[91/7]
	(393–443)	67.5	(408)	A	[87/5]
C <sub>13</sub> H <sub>24</sub> O <sub>2</sub>	ethyl 10-undecenoate (404–532)	77.4	(419)	A	[692-86-4] [87/5]
C <sub>13</sub> H <sub>24</sub> O <sub>3</sub>	1,4-dioxa-5-cyclopentadecanone (403–443)	69.6	(418)	A, GC	[1898-91-1] [87/5][71/33]
	1,6-dioxa-7-cyclopentadecanone (403–443)	75.7	(418)	A, GC	[36575-54-9] [87/5][71/33]
C <sub>13</sub> H <sub>24</sub> O <sub>3</sub>	1,8-dioxa-9-cyclopentadecanone (403–443)	66.5	(418)	A, GC	[36575-53-8] [87/5][71/33]
C <sub>13</sub> H <sub>24</sub> O <sub>3</sub>	3-hexyl-4-acetoxytetrahydro-2 <i>H</i> -pyran (383–453)	72.1	(398)	A	[18871-17-5] [87/5]
C <sub>13</sub> H <sub>24</sub> O <sub>3</sub>	octyl levulinate (413–565)	66.3	(428)	A	[41780-57-8] [87/5]
		65.1	(507)		[33/6]
C <sub>13</sub> H <sub>24</sub> O <sub>4</sub>	octyl 3-acetoxypionate (420–440)	88.4	(430)	A	[87/5]
C <sub>13</sub> H <sub>24</sub> O <sub>4</sub>	ethylisopentylmalonic acid, ethyl methyl ester (392–501)	73.1	(407)	A	[72030-39-8] [87/5]
C <sub>13</sub> H <sub>24</sub> O <sub>5</sub>	octyl[1-(methoxycarbonyl)ethyl] carbonate (391–566)	70.0	(406)	A	[87/5]
C <sub>13</sub> H <sub>24</sub> O <sub>5</sub>	pentyl[1-(butoxycarbonyl)ethyl] carbonate (348–513)	70.1	(363)	A	[87/5]
C <sub>13</sub> H <sub>25</sub> N	tridecanonitrile (380–566)	69.5	(395)	A	[629-60-7] [87/5]
C <sub>13</sub> H <sub>25</sub> NO	1-octanoyl piperidine (373–443)	50.0	(388)	A	[20299-83-6] [87/5]
C <sub>13</sub> H <sub>26</sub>	5-butyl-4-nonene (310–361)	55.8	(325)	A, MG	[7367-38-6] [87/5][55/11]
C <sub>13</sub> H <sub>26</sub>	1-tridecene	65.3	(298)		[2437-56-1] [71/28]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>13</sub> H <sub>26</sub>	(413–509) n-octylcyclopentane	53.9	(428)	A	[87/5][55/7] [1795-20-6]
		65.8	(298)		[71/28]
C <sub>13</sub> H <sub>26</sub>	n-heptylcyclohexane	64.9	(298)		[5617-41-4] [71/28]
C <sub>13</sub> H <sub>26</sub> O	5-methyl-2-ethyl-2-butyl-4-hexene-1-ol (333–393)	76.9	(348)	A	[53144-53-9] [87/5]
C <sub>13</sub> H <sub>26</sub> O	1-octylcyclopentanol (468–541)	60.9	(483)	A	[30089-09-9] [87/5]
C <sub>13</sub> H <sub>26</sub> O	2-tridecanone (335–534)	69.6	(350)	A	[593-08-8] [87/5]
		61.0	(439)	A	[87/5]
		49.6	(541)		[75/8]
		69.8	(348)	EB	[66/12]
		62.1	(375)		[47/5]
C <sub>13</sub> H <sub>26</sub> O	7-tridecanone (395–600)	62.7	(410)	A	[462-18-0] [87/5]
		49.3	(536)		[75/8]
C <sub>13</sub> H <sub>26</sub> O	(Z) 7-tridecen-1-ol (343–383)	95.1	(298)	CGC	[64470-31-1] [00/10][94/13]
C <sub>13</sub> H <sub>26</sub> O	(E) 7-tridecen-1-ol (343–383)	95.6	(298)	CGC	[64437-28-1] [00/10][94/13]
C <sub>13</sub> H <sub>26</sub> O	(Z) 9-tridecen-1-ol (343–383)	95.8	(298)	CGC	[52957-10-5] [00/10][94/13]
C <sub>13</sub> H <sub>26</sub> O	(E) 9-tridecen-1-ol (343–383)	96.4	(298)	CGC	[52957-15-0] [00/10][94/13]
C <sub>13</sub> H <sub>26</sub> O	(Z) 11-tridecen-1-ol (343–383)	97.1	(298)	CGC	[34010-24-7] [00/10][94/13]
C <sub>13</sub> H <sub>26</sub> O	(E) 1,1-tridecen-1-ol (343–383)	97.2	(298)	CGC	[56195-34-7] [00/10][94/13]
C <sub>13</sub> H <sub>26</sub> O	6,10-dimethyl-2-undecanone (379–473)	59.3±0.4	(426)		[1604-34-8] [88/4]
C <sub>13</sub> H <sub>26</sub> O <sub>2</sub>	4,5-dimethyl-2-octyl-1,3-dioxolane (333–453)	72.8	(348)	A	[5452-11-9] [87/5]
C <sub>13</sub> H <sub>26</sub> O <sub>2</sub>	2-octyl-1,3-dioxepane (323–373)	61.2	(338)	A	[61732-94-3] [87/5]
C <sub>13</sub> H <sub>26</sub> O <sub>2</sub>	undecyl acetate (333–378)	77.2	(298)	GC	[1731-81-3] [97/13][00/10]
C <sub>13</sub> H <sub>26</sub> O <sub>2</sub>	isopropyl decanoate (363–451)	60.8	(378)	A	[2311-59-3] [87/5]
C <sub>13</sub> H <sub>26</sub> O <sub>2</sub>	propyl decanoate (369–459)	62.4	(384)	A	[30673-60-0] [87/5]
C <sub>13</sub> H <sub>26</sub> O <sub>2</sub>	methyl laurate	71.4	(350)		[111-82-0] [02/27]
		70.7±0.2	(356)		[02/27]
		76.6±0.4	(298)		[02/27]
		74.9	(310)		[01/10]
		76.8	(298)	GC	[97/28]
		53.3	(498)	GC	[93/9]
		83.6	(302)	A	[87/5]
		76.5±0.7	(298)	C,GC	[80/5]
		77.2±0.6	(298)	C	[77/1]
		63.6	(422)	A	[87/5][63/16]
C <sub>13</sub> H <sub>26</sub> O <sub>2</sub>	(336–409)	71.4	(351)	MG,OM	[52/13]
	(373–439)	62.3	(388)		[44/7]
	tridecanoic acid (409–585)	90.1	(424)	A	[638-53-9] [87/5]
C <sub>13</sub> H <sub>26</sub> O <sub>3</sub>	(328–350) decyl lactate	100.4±2.0	(340)	ME, TE	[82/4]
	(349–556)	76.6	(364)	A	[42175-34-8] [87/5]
C <sub>13</sub> H <sub>26</sub> O <sub>3</sub>	octyl 3-ethoxypropionate (398–543)	56.9	(413)	A	[87/5]
C <sub>13</sub> H <sub>26</sub> O <sub>3</sub>	pentyl 3-pentyloxypropionate (378–498)	62.3	(393)	A	[14144-56-0] [87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>13</sub> H <sub>27</sub> Br	1-bromotridecane (425–628)	64.6	(440)	A, EST	[765-09-3] [87/5][61/13] [70/14]
C <sub>13</sub> H <sub>27</sub> Cl	1-chlorotridecane (414–611)	63.0	(429)	A, EST	[822-13-9] [87/5][61/13] [70/14]
C <sub>13</sub> H <sub>27</sub> F	1-fluorotridecane (387–558)	58.9	(402)	A, EST	[1536-21-6] [87/5][61/13] [70/14]
C <sub>13</sub> H <sub>27</sub> I	1-iodotridecane (440–655)	66.1	(455)	A, EST	[35599-77-0] [87/5][61/13] [70/14]
C <sub>13</sub> H <sub>27</sub> NO <sub>2</sub>	N-decyl lactamide (413–483)	97.9	(428)	A	[87/5]
C <sub>13</sub> H <sub>27</sub> NO <sub>2</sub>	O-decyl lactamide (413–483)	95.0	(428)	A	[87/5]
C <sub>13</sub> H <sub>28</sub>	tridecane	65.3	(309)	C	[629-50-5] [96/22]
		64.9	(314)	C	[96/22]
		64.2	(324)	C	[96/22]
		63.3	(334)	C	[96/22]
		62.4	(344)	C	[96/22]
		62.3	(349)	C	[96/22]
		66.7	(298)		[94/12]
		65.6	(308)	C	[79/2]
		64.6	(318)	C	[79/2]
		61.7	(348)	C	[79/2]
		66.5 ± 0.2	(298)	C	[79/2]
		66.4 ± 0.3	(298)	C	[72/29]
		66.2	(298)		[71/28]
	(417–511)	54.5	(432)	A	[87/5][55/7]
C <sub>13</sub> H <sub>28</sub>	2-methyldodecane (373–503)	52.5	(388)	A	[1560-97-0] [87/5]
C <sub>13</sub> H <sub>28</sub>	3-methyldodecane (372–504)	51.4	(387)	A	[17312-57-1] [87/5]
C <sub>13</sub> H <sub>28</sub>	4-methyldodecane (372–501)	52.0	(387)	A	[6117-97-1] [87/5]
C <sub>13</sub> H <sub>28</sub>	5-methyldodecane (368–500)	50.6	(383)	A	[17453-93-9] [87/5]
C <sub>13</sub> H <sub>28</sub>	2,3-dimethylundecane (383–500)	53.2	(398)	A	[17312-77-5] [87/5]
C <sub>13</sub> H <sub>28</sub>	2,4-dimethylundecane (365–490)	52.1	(380)	A	[17312-80-0] [87/5]
C <sub>13</sub> H <sub>28</sub>	2,4,6-trimethyldecane (352–478)	48.7	(367)	A	[87/5]
C <sub>13</sub> H <sub>28</sub>	5-ethyl-5-methyldecane (273–307)	61.4 ± 1.1	(290)	HSA	[95/27]
		60.5 ± 1.1	(298)		[95/27]
		61.4 ± 1.8	(298)	CGC	[95/27]
C <sub>13</sub> H <sub>28</sub>	5-butylnonane (298–365)	52.6	(313)	A, MG	[17312-63-9] [87/5][55/11]
C <sub>13</sub> H <sub>28</sub> O	pentyl <i>tert</i> -octyl ether	55.9 ± 0.3	(298)		[U/2][02/32]
C <sub>13</sub> H <sub>28</sub> O	1-tridecanol (307–348)	91.1	(327)	GS	[112-70-9] [01/3]
	(307–348)	95.8	(298)	GS	[01/3]
	(313–373)	87.4	(343)		[92/14]
	(431–568)	69.2	(446)	A	[87/5]
C <sub>13</sub> H <sub>28</sub> O	2,2-dimethyl-3- <i>tert</i> -butyl-3-heptanol (379–513)	58.3	(394)		[42930-67-6] [73/26]
C <sub>13</sub> H <sub>28</sub> O	3,3,5,5-tetramethyl-4-ethyl-4-heptanol (393–526)	55.9	(408)		[73/26]
C <sub>13</sub> H <sub>28</sub> O	3,3,6-trimethyl-4-isopropyl-4-heptanol (381–512)	59.1	(396)		[73/26]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>13</sub> H <sub>28</sub> O	3,3,6-trimethyl-4-propyl-4-heptanol (383–513)	60.1	(398)		[73/26]
C <sub>13</sub> H <sub>28</sub> O	2,2,5-trimethyl-3- <i>tert</i> -butyl-3-hexanol (377–513)	57.6	(392)		[32579-70-7] [73/26]
C <sub>13</sub> H <sub>28</sub> O <sub>4</sub>	tripropylene glycol, monobutyl ether (374–543)	67.1	(389)	A	[57499-93-1] [87/5][47/5]
C <sub>13</sub> H <sub>28</sub> S	1-tridecanethiol (433–598)	64.7	(448)		[19484-26-5] [99/16]
C <sub>13</sub> H <sub>29</sub> N	tridecylamine (458–562)	60.1	(473)	A, EST	[2869-34-3] [87/5][56/17]
C <sub>14</sub> H <sub>8</sub> Cl <sub>4</sub>	<i>p,p'</i> -DDE (343–453)	87.2	(398)	GC	[72-55-9] [90/2]
C <sub>14</sub> H <sub>8</sub> O <sub>2</sub>	9,10-anthraquinone (559–660)	64.3	(574)	A	[84-65-1] [87/5]
C <sub>14</sub> H <sub>8</sub> O <sub>4</sub>	1,4-dihydroxy-9,10-anthraquinone (469–633)	74.0	(484)	A	[81-64-1] [87/5][47/5]
C <sub>14</sub> H <sub>9</sub> Cl <sub>5</sub>	1,1,1-trichloro-2,2- <i>bis</i> (4-chlorophenyl)ethane ( <i>p,p'</i> DDT) (343–453)	106.1 ± 1.3 93.2	(398) (398)	GS GC	[50-29-3] [01/1] [90/2]
C <sub>14</sub> H <sub>9</sub> Cl <sub>5</sub>	1,1,1-trichloro-2-(4-chlorophenyl)-2-(2-chlorophenyl)ethane ( <i>p,o'</i> DDT) (343–453)	88.6	(398)	GC	[789-02-6] [90/2]
C <sub>14</sub> H <sub>9</sub> Cl <sub>5</sub>	DDT (313–363)	83.7	(338)		[49/3]
C <sub>14</sub> H <sub>10</sub>	anthracene (323–473)	72.4	(398)	GC	[120-12-7] [02/18]
		79.1	(298)	CGC	[01/1]
		79.8	(298)	CGC	[98/11]
	(453–503)	79.6	(298)	CGC	[95/21]
	(343–453)	69.7	(398)	GC	[90/2]
	(504–615)	58.6	(519)	A	[87/5]
	(500–616)	59.2	(558)	I	[23/1]
	(500–616)	60.3	(515)	I	[23/1][84/9]
	(496–614)	59.6	(555)	I	[22/1]
	(496–614)	60.7	(511)	I	[22/1][84/9]
C <sub>14</sub> H <sub>10</sub>	phenanthrene (323–473)	72.2	(398)	GC	[85-01-8] [02/18]
		78.7	(298)	CGC	[98/11]
	(403–453)	78.5	(298)	CGC	[95/21]
	(343–453)	71.2	(398)	GC	[90/2]
	(391–613)	58.2	(406)	A	[87/5]
	(373–423)	69.6	(388)	A	[87/5][75/11]
		71.2	(372)		[77/22]
	(476–620)	57.2	(548)	I	[23/1]
	(476–620)	61.2	(491)	I	[23/1][84/9]
	(505–614)	59.3	(560)	I	[22/1]
	(505–614)	61.2	(520)	I	[22/1][84/9]
C <sub>14</sub> H <sub>10</sub>	diphenylacetylene (439–517)	63.8 ± 0.2	(440)	EB	[501-65-5] [02/17]
	(439–517)	60.9 ± 0.2	(480)	EB	[02/17]
	(439–517)	58.1 ± 0.3	(520)	EB	[02/17]
C <sub>14</sub> H <sub>10</sub> Cl <sub>4</sub>	1,1-dichloro-2,2- <i>bis</i> (4-chlorophenyl)ethane <i>p,p'</i> -DDD (343–453)	88.5	(398)	GC	[72-54-8] [90/2]
C <sub>14</sub> H <sub>10</sub> Cl <sub>4</sub>	(2,2',4,6'-tetrachloro-5-methyldiphenyl)methane 98.6		(298)	GC	[121107-48-0] [96/24]
C <sub>14</sub> H <sub>10</sub> Cl <sub>4</sub>	(2,2',4,5'-tetrachloro-5-methyldiphenyl)methane 101.0		(298)	GC	[121107-46-8] [96/24]
C <sub>14</sub> H <sub>10</sub> Cl <sub>4</sub>	(2,2',5,5'-tetrachloro-4-methyldiphenyl)methane 101.2		(298)	GC	[121107-54-8] [96/24]
C <sub>14</sub> H <sub>10</sub> Cl <sub>4</sub>	(2,2',4,4'-tetrachloro-5-methyldiphenyl)methane 101.3		(298)	GC	[121107-44-6] [96/24]
C <sub>14</sub> H <sub>10</sub> Cl <sub>4</sub>	(2,2',4,6'-tetrachloro-3-methyldiphenyl)methane 100.1		(298)	GC	[121107-47-9] [96/24]
C <sub>14</sub> H <sub>10</sub> Cl <sub>4</sub>	(2',3,4,6'-tetrachloro-6-methyldiphenyl)methane 101.1		(298)	GC	[121107-83-5] [96/24]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>14</sub> H <sub>10</sub> Cl <sub>4</sub>	(2,2',4,4'-tetrachloro-3-methyldiphenyl)methane	101.8	(298)	GC	[121107-43-5] [96/24]
C <sub>14</sub> H <sub>10</sub> Cl <sub>4</sub>	(2,3',4,4'-tetrachloro-5-methyldiphenyl)methane	103.8	(298)	GC	[121107-65-1] [96/24]
C <sub>14</sub> H <sub>10</sub> Cl <sub>4</sub>	(2',3,4,4'-tetrachloro-6-methyldiphenyl)methane	103.0	(298)	GC	[121107-77-5] [96/24]
C <sub>14</sub> H <sub>10</sub> O <sub>2</sub>	benzil (401–620)	69.2	(416)	A	[134-81-6] [87/5][47/5]
C <sub>14</sub> H <sub>10</sub> O <sub>3</sub>	benzoic acid anhydride (416–633)	69.1	(431)	A	[93-97-0] [87/5][47/5]
C <sub>14</sub> H <sub>11</sub> F <sub>3</sub>	1,1,1-trifluoro-2,2-diphenylethane (286–328)	69.1 ± 0.9	(298)	GS	[384-94-1] [97/14]
C <sub>14</sub> H <sub>12</sub>	1-methylfluorene (323–473)	71.1	(398)	GC	[1730-37-6] [02/18]
C <sub>14</sub> H <sub>12</sub>	9-methylfluorene (318–358)	66.5	(298)	B	[2523-37-7] [94/4]
C <sub>14</sub> H <sub>12</sub>	9,10-dihydrophenanthene (417–453)	64.0	(432)	A	[776-35-2] [87/5]
	(353–418)	72.3 ± 0.6	(340)		[79/5]
	(353–418)	76.6 ± 0.1	(298)		[79/5]
C <sub>14</sub> H <sub>12</sub>	1,1-diphenylethylene (360–550)	59.3	(375)	A	[530-48-3] [87/5][47/5]
C <sub>14</sub> H <sub>12</sub>	<i>cis</i> 1,2-diphenylethylene ( <i>cis</i> stilbene) (373–428)	66.5	(388)	A	[645-49-8] [87/5]
C <sub>14</sub> H <sub>12</sub>	<i>trans</i> 1,2-diphenylethylene ( <i>trans</i> stilbene) (453–503)	79.7	(298)	CGC	[103-30-0] [98/11]
	(403–453)	79.8	(298)	CGC	[95/21]
	(419–580)	79.6	(298)	CGC	[95/21]
		65.5	(434)	A	[87/5]
C <sub>14</sub> H <sub>12</sub> O	benzyl phenyl ketone (396–594)	68.1	(411)	A	[451-40-1] [87/5][47/5]
C <sub>14</sub> H <sub>12</sub> O	2-methylbenzophenone (435–580)	65.1	(450)	A	[131-58-8] [87/5]
C <sub>14</sub> H <sub>12</sub> O	3-methylbenzophenone (445–585)	68.4	(460)	A	[643-65-2] [87/5]
C <sub>14</sub> H <sub>12</sub> O	4-methylbenzophenone (450–492)	72.0	(465)	A	[134-84-9] [87/5]
C <sub>14</sub> H <sub>12</sub> O <sub>2</sub>	( <i>dl</i> ) benzooin (408–616)	69.0	(423)	A	[579-44-2] [87/5][47/5]
C <sub>14</sub> H <sub>12</sub> O <sub>2</sub>	benzyl benzoate (497–602)	59.7	(512)	A, EB	[120-51-4] [87/5][76/13]
	(297–353)	77.7	(312)	A, ME	[87/5][57/9]
C <sub>14</sub> H <sub>12</sub> O <sub>3</sub>	benzyl salicylate (295–334)	78.7	(310)	A, ME	[118-58-1] [87/5][55/8]
C <sub>14</sub> H <sub>12</sub> O <sub>3</sub>	2-hydroxy-4-methoxybenzophenone (337–413)	74.7	(352)	A, UV	[131-57-7] [87/5][60/2]
C <sub>14</sub> H <sub>12</sub> O <sub>4</sub>	2,2'-dihydroxy-4-methoxybenzophenone (342–481)	75.6	(357)	A, UV	[131-53-3] [87/5][60/2]
C <sub>14</sub> H <sub>13</sub> N	N-benzylbenzaldehyde-imine (309–340)	83.4 ± 1.2	(324)	GS	[97/9]
	(309–340)	85.0 ± 1.2	(298)	GS	[97/9]
C <sub>14</sub> H <sub>14</sub>	(4-methylphenyl)phenylmethane (293–333)	68.6 ± 0.3	(313)	GS	[99/8]
	(293–333)	69.5 ± 0.3	(298)	GS	[99/8]
C <sub>14</sub> H <sub>14</sub>	3,3'-dimethylbiphenyl (288–308)	71.9	(298)	A	[612-75-9] [87/5]
C <sub>14</sub> H <sub>14</sub>	1,1-diphenylethane (293–328)	68.2 ± 0.6	(313)	GS	[612-00-0] [99/8]
	(293–328)	68.9 ± 0.6	(298)	GS	[99/8]
	(348–405)	62.4	(363)	A	[87/5]
C <sub>14</sub> H <sub>14</sub>	1,2-diphenylethane (323–473)	67.4	(398)	GC	[103-29-7] [02/18]
		66.2 ± 0.2	(340)		[88/16]
	(333–413)	64.1	(373)		[89/14]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>14</sub> H <sub>14</sub> N <sub>2</sub> O <sub>3</sub>	(359–557)	57.0	(374)	A	[87/5][47/5]
	4,4'-dimethoxyazoxybenzene				[1562-94-3]
C <sub>14</sub> H <sub>14</sub> O	(395–418)	73.7	(406)	A	[87/5]
	dibenzyl ether				[103-50-4]
C <sub>14</sub> H <sub>14</sub> O	(275–417)	45.6	(290)	A	[87/5]
	(413–461)	59.4	(428)	A	[87/5]
C <sub>14</sub> H <sub>14</sub> O	isopropyl 2-naphthyl ketone				[59502-28-2]
	(406–586)	75.9	(421)	A	[87/5][47/5]
C <sub>14</sub> H <sub>14</sub> O	2-(1-phenylethyl)phenol				[52857-29-1]
	(443–521)	82.8	(458)	A	[87/5]
C <sub>14</sub> H <sub>14</sub> O	(442–523)	72.8	(482)		[39/4]
	4-(1-phenylethyl)phenol				[1988-89-2]
C <sub>14</sub> H <sub>14</sub> O <sub>2</sub>	(447–517)	90.8	(462)	A	[87/5]
	(447–523)	75.4	(485)		[39/4]
C <sub>14</sub> H <sub>14</sub> O <sub>2</sub>	2-(2-biphenyloxy)ethanol				[7501-02-2]
	(410–608)	71.9	(425)	A	[87/5]
C <sub>14</sub> H <sub>15</sub> N	dibenzylamine				[103-49-1]
	(391–573)	70.5	(406)	A	[87/5][47/5]
C <sub>14</sub> H <sub>15</sub> N	N,N-diphenyl-N-ethylamine				[606-99-5]
	(371–559)	63.2	(386)	A	[87/5][47/5]
C <sub>14</sub> H <sub>16</sub> N <sub>2</sub> O <sub>2</sub>	1,3-bis(1-isocyanato-1-methylethyl)benzene				
	(298–426)	65.2	(361)	HSA, T, DTA	[86/3]
C <sub>14</sub> H <sub>16</sub> N <sub>2</sub> O <sub>2</sub>	1,4-bis(1-isocyanato-1-methylethyl)benzene				
	(373–428)	74.0	(400)	HSA, T, DTA	[86/3]
C <sub>14</sub> H <sub>17</sub> Cl <sub>3</sub> O <sub>3</sub>	hexyl 2,4,5-trichlorophenoxyacetate				[2630-13-9]
	(460–573)	85.3	(475)	A	[87/5]
C <sub>14</sub> H <sub>18</sub>	1,2,3,4,5,6,7,8-octahydroanthracene				[1079-71-6]
	(437–498)	45.6	(452)	A	[87/5]
C <sub>14</sub> H <sub>18</sub>	(348–433)	NA		IPM	[82/16]
	1,2,3,4,5,6,7,8-octahydrophenanthrene				[5325-97-3]
C <sub>14</sub> H <sub>18</sub>	(402–570)	55.8	(417)	A	[87/5]
	hexyl 2,4-dichlorophenoxyacetate				[1917-95-9]
C <sub>14</sub> H <sub>18</sub> Cl <sub>2</sub> O <sub>3</sub>	(444–573)	81.3	(459)	A	[87/5]
	isohexyl 2,4-dichlorophenoxyacetate				
C <sub>14</sub> H <sub>18</sub> Cl <sub>2</sub> O <sub>3</sub>	(460–573)	69.1	(475)	A	[87/5][99/16]
	$\alpha$ -pentylcinnamaldehyde				[122-40-7]
C <sub>14</sub> H <sub>18</sub> O	(282–333)	75.3	(297)	A, ME	[87/5][55/8]
	dipropyl phthalate				[131-16-8]
C <sub>14</sub> H <sub>18</sub> O <sub>4</sub>	(403–578)	73.2	(418)	A	[87/5]
	diisopropyl phthalate				
C <sub>14</sub> H <sub>19</sub> NO	(403–578)	74.8	(430)	BG	[88/17]
	hexahydro-1-(phenylacetyl)-1 <i>H</i> -azepine				[18494-61-6]
C <sub>14</sub> H <sub>20</sub>	(370–418)	53.9	(385)	A	[87/5][69/1]
	(371–420)	49.4	(396)		[69/1]
C <sub>14</sub> H <sub>20</sub>	1-cyclohexyl-1-phenylethane				[4413-16-5]
	(359–400)	70.8	(374)	A, MG	[87/5][55/11]
C <sub>14</sub> H <sub>20</sub>	1-cyclohexyl-2-phenylethane				[1603-61-8]
	(372–406)	60.7	(387)	A, MG	[87/5][55/11]
C <sub>14</sub> H <sub>20</sub>	1-cyclopentyl-3-phenylpropane				[2883-12-7]
	(373–540)	61.3	(388)	A, MG	[87/5][55/11]
C <sub>14</sub> H <sub>20</sub> Cl <sub>2</sub>	1,2-dichloro-3,4,5,6-tetraethylbenzene				
	(378–575)	66.2	(393)		[87/5][47/5]
C <sub>14</sub> H <sub>20</sub> Cl <sub>2</sub>					[70/14]
	1,4-dichloro-2,3,5,6-tetraethylbenzene				
C <sub>14</sub> H <sub>20</sub> O	(364–570)	60.8	(379)		[87/5][47/5]
					[70/14]
C <sub>14</sub> H <sub>20</sub> O	(1-cyclohexyloxyethyl)benzene				[61812-55-3]
	(286–338)	69.8 ± 0.5	(298)	GS	[02/29][02/38]
C <sub>14</sub> H <sub>20</sub> O <sub>3</sub>	2-(4- <i>tert</i> -butylphenoxy)ethyl acetate				
	(391–578)	78.8	(406)	A	[87/5][47/5]
C <sub>14</sub> H <sub>20</sub> O <sub>5</sub>	benzo-15-crown-5				[14098-44-3]
		98.9 ± 1.3	(298)	CGC	[00/9]
C <sub>14</sub> H <sub>21</sub> F <sub>3</sub> N <sub>2</sub> O <sub>4</sub>	proline, 1-[N-(trifluoroacetyl)-(l)-leucyl]methyl ester				
	(366–453)	105.8	(381)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>14</sub> H <sub>22</sub>	1,4-di- <i>tert</i> -butylbenzene (387–559)	63.0±0.6	(298)	EB	[1012-72-2] [97/8]
C <sub>14</sub> H <sub>22</sub>	1,3-di- <i>tert</i> -butylbenzene (288–333)	58.9±0.5 59.6±0.5	(310) (298)	GS	[1014-60-4] [98/19] [98/19]
C <sub>14</sub> H <sub>22</sub>	(346–374) octylbenzene (293–462)	58.0 67.4	(360) (308)	A	[87/5] [2189-60-8] [93/10]
C <sub>14</sub> H <sub>22</sub>	(368–400) (316–399)	63.1 66.2	(383) (336)	A GS	[87/5] [86/6]
C <sub>14</sub> H <sub>22</sub>	2-phenyloctane (361–392)	61.6 70.0	(376) (298)	A	[777-22-0] [87/5] [71/28]
C <sub>14</sub> H <sub>22</sub>	1,2,3,4-tetraethylbenzene (423–525)	62.6	(438)	A	[642-32-0] [87/5]
C <sub>14</sub> H <sub>22</sub>	1,2,3,5-tetraethylbenzene (413–521)	64.8	(428)	A	[38842-05-6] [87/5]
C <sub>14</sub> H <sub>22</sub>	1,2,4,5-tetraethylbenzene (338–521)	54.5	(353)	A	[635-81-4] [87/5]
C <sub>14</sub> H <sub>22</sub> O	2,4-di- <i>tert</i> -butylphenol (333–368)	69.2±0.5 72.4±0.5	(350) (298)	GS	[96-76-4] [99/18] [99/18]
C <sub>14</sub> H <sub>22</sub> O	(403–537) 2,6-di- <i>tert</i> -butylphenol (313–368)	60.1 63.5±0.2 66.0±0.2	(418) (341) (298)	A GS	[87/5] [128-39-2] [99/19] [99/19]
C <sub>14</sub> H <sub>22</sub> O	(386–530) 4-(1,1-diethylbutyl)phenol (404–549)	60.4 69.5	(401) (419)	A	[87/5] [63264-81-3] [87/5]
C <sub>14</sub> H <sub>22</sub> O	2,4-diisobutylphenol (448–598)	65.0	(463)	A	[87/5]
C <sub>14</sub> H <sub>22</sub> O	4-[(1,2-dimethyl-1-ethyl)butyl]phenol (415–578)	64.7	(430)	A	[59048-99-6] [87/5]
C <sub>14</sub> H <sub>22</sub> O	4-[(1,3-dimethyl-1-ethyl)butyl]phenol (409–571)	60.9	(424)	A	[87/5]
C <sub>14</sub> H <sub>22</sub> O	4-[(2,2-dimethyl-1-ethyl)butyl]phenol (413–553)	67.0	(428)	A	[87/5]
C <sub>14</sub> H <sub>22</sub> O	$\beta$ -irone (288–333)	72.1	(303)	A	[79-70-9] [87/5]
C <sub>14</sub> H <sub>22</sub> O	$\alpha$ -isomethylionone (288–333)	69.5	(303)	A	[127-51-5] [87/5]
C <sub>14</sub> H <sub>22</sub> O	4-[(1-methyl-1-ethyl)pentyl]phenol (413–578)	62.8	(428)	A	[1988-35-8] [87/5]
C <sub>14</sub> H <sub>22</sub> O	$\alpha$ -methylionone (288–333)	70.1	(303)	A	[127-42-4] [87/5]
C <sub>14</sub> H <sub>22</sub> O	$\beta$ -methylionone (288–333)	70.3	(303)	A	[127-43-5] [87/5]
C <sub>14</sub> H <sub>22</sub> O	4-(1,1,3,3-tetramethylbutyl)phenol (309–350)	68.8±0.3 70.7±0.3	(329) (298)	GS	[140-66-9] [99/18] [99/18]
C <sub>14</sub> H <sub>22</sub> O	(381–563)	72.4	(396)	A	[87/5][59/1] [84/9]
C <sub>14</sub> H <sub>22</sub> O <sub>11</sub>	diethylenel glycol, O,O-dicarboxylic acid, di[1-(methoxycarbonyl)-ethyl] ester (403–493)	98.2	(418)	A	[87/5]
C <sub>14</sub> H <sub>23</sub> N	N,N-dimethyl-2,3-dimethyl-3-phenyl-2-butanamine (280–335)	65.8±1.3	(308)	GS	[98/1]
C <sub>14</sub> H <sub>24</sub>	(280–335) perhydrophenanthrene (455–551)	66.4±1.3 55.7	(298) (470)	GS EB	[98/1] [5743-97-5] [00/16]
C <sub>14</sub> H <sub>24</sub> N <sub>2</sub>	N,N'-di- <i>sec</i> -butyl-1,4-phenylenediamine (370–507)	70.3	(385)	A	[101-96-2] [87/5]
C <sub>14</sub> H <sub>24</sub> O	2,2,5,9-tetramethyl-4,8-decanedienal (353–416)	66.4	(368)	A	[53131-20-7] [87/5]
C <sub>14</sub> H <sub>24</sub> O	borneol butyrate				

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>14</sub> H <sub>24</sub> O	(347–520) <i>(dl)</i> borneol isobutyrate	59.6	(362)	A	[87/5][47/5] [24717-86-0]
C <sub>14</sub> H <sub>24</sub> O	(343–516) geraniol butyrate	58.8	(358)	A	[87/5][47/5]
C <sub>14</sub> H <sub>24</sub> O	(369–531) geraniol isobutyrate	68.6	(384)	A	[87/5][47/5]
C <sub>14</sub> H <sub>24</sub> O <sub>6</sub>	(363–524) 1,1,1- <i>tris</i> (ethoxycarbonyl)pentane	67.8	(378)	A	[87/5][47/5]
C <sub>14</sub> H <sub>26</sub>	(298–343) 1-cyclohexyl-3-cyclopentylpropane	81.4±0.4		GS	[95/8] [2883-07-0]
C <sub>14</sub> H <sub>26</sub>	(371–403) 1,1-dicyclohexylethane	64.5	(386)	A	[87/5] [2319-61-1]
C <sub>14</sub> H <sub>26</sub>	(370–402) 1,2-dicyclohexylethane	62.1	(385)	A	[87/5] [3321-50-4]
C <sub>14</sub> H <sub>26</sub> O	(371–402) <i>cis</i> 2,2,5,9-tetramethyl-4,8-decadiene-1-ol	65.4	(386)	A	[87/5] [53965-17-6]
C <sub>14</sub> H <sub>26</sub> O	(363–393) <i>trans</i> 2,2,5,9-tetramethyl-4,8-decadiene-1-ol	94.0	(378)	A	[87/5] [53965-18-7]
C <sub>14</sub> H <sub>26</sub> O	(363–393) ( <i>Z</i> ) 2-tetradecenal	86.3	(378)	A	[87/5] [142628-55-5]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>E</i> ) 2-tetradecenal	82.5	(298)	CGC	[96/7][00/10] [51534-36-2]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>Z</i> ) 3-tetradecenal	82.6	(298)	CGC	[96/7][00/10] [174155-51-2]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>E</i> ) 3-tetradecenal	79.4	(298)	CGC	[96/7][00/10] [174155-50-1]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>Z</i> ) 4-tetradecenal	80.1	(298)	CGC	[96/7][00/10] [115018-49-0]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>E</i> ) 4-tetradecenal	79.2	(298)	CGC	[96/7][00/10] [115018-39-8]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>Z</i> ) 5-tetradecenal	79.9	(298)	CGC	[96/7][00/10] [63851-42-3]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>E</i> ) 5-tetradecenal	78.4	(298)	CGC	[96/7][00/10] [174155-52-3]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>Z</i> ) 6-tetradecenal	79.1	(298)	CGC	[96/7][00/10] [174155-53-4]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>E</i> ) 6-tetradecenal	78.5	(298)	CGC	[96/7][00/10] [174155-54-5]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>Z</i> ) 7-tetradecenal	79.3	(298)	CGC	[96/7][00/10] [65128-96-3]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>E</i> ) 7-tetradecenal	78.7	(298)	CGC	[96/7][00/10] [37011-96-4]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>Z</i> ) 8-tetradecenal	79.2	(298)	CGC	[96/7][00/10] [169054-69-7]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>E</i> ) 8-tetradecenal	78.8	(298)	CGC	[96/7][00/10] [174155-55-6]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>Z</i> ) 9-tetradecenal	79.3	(298)	CGC	[96/7][00/10] [53939-27-8]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>E</i> ) 9-tetradecenal	79.1	(298)	CGC	[96/7][00/10] [71377-13-4]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>Z</i> ) 10-tetradecenal	79.5	(298)	CGC	[96/7][00/10] [144525-16-6]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>E</i> ) 10-tetradecenal	79.6	(298)	CGC	[96/7][00/10] [148238-39-5]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>Z</i> ) 11-tetradecenal	79.8	(298)	CGC	[96/7][00/10] [35237-64-0]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>E</i> ) 11-tetradecenal	80.3	(298)	CGC	[96/7][00/10] [35746-21-5]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>Z</i> ) 12-tetradecenal	80.5	(298)	CGC	[96/7][00/10] [174155-56-7]
C <sub>14</sub> H <sub>26</sub> O	(353–393) ( <i>E</i> ) 12-tetradecenal	80.8	(298)	CGC	[96/7][00/10] [124499-92-9]
C <sub>14</sub> H <sub>26</sub> O	(353–393) 2-(1,2-dimethylpropyl)-5,6-dimethylheptenal	80.8	(298)	CGC	[96/7][00/10]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>14</sub> H <sub>26</sub> O	(385–535) 2-pentyl-2-nonenal	60.0	(400)	EB	[87/3] [3021-89-4]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(385–553) decyl methacrylate	65.0	(409)	EB	[87/3] [3179-47-3]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(350–541) (Z) 2-dodecenyl acetate	62.7	(365)	A	[87/5] [84801-15-0]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (E) 2-dodecenyl acetate	79.7	(298)	GC	[97/13][00/10] [84801-16-1]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (Z) 3-dodecenyl acetate	81.0	(298)	GC	[97/13][00/10] [38363-24-5]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (E) 3-dodecenyl acetate	79.3	(298)	GC	[97/13][00/10] [56218-63-4]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (Z) 4-dodecenyl acetate	79.8	(298)	GC	[97/13][00/10] [38363-25-6]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (E) 4-dodecenyl acetate	78.6	(298)	GC	[97/13][00/10] [38363-26-7]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (Z) 5-dodecenyl acetate	79.8	(298)	GC	[97/13][00/10] [16676-96-3]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (E) 5-dodecenyl acetate	79.2	(298)	GC	[97/13][00/10] [16676-97-4]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (Z) 6-dodecenyl acetate	80.0	(298)	GC	[97/13][00/10] [16974-12-2]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (E) 6-dodecenyl acetate	79.3	(298)	GC	[97/13][00/10] [29868-16-4]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (Z) 7-dodecenyl acetate	80.0	(298)	GC	[97/13][00/10] [14959-86-5]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(303–317) (E) 7-dodecenyl acetate	79.8	(298)	GC	[97/13][00/10] [83/10]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (Z) 8-dodecenyl acetate	77.5	(310)	GC	[16695-41-3] [97/13][00/10]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (E) 8-dodecenyl acetate	80.2	(298)	GC	[97/13][00/10] [28079-04-1]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (Z) 9-dodecenyl acetate	80.2	(298)	GC	[97/13][00/10] [38363-29-0]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (E) 9-dodecenyl acetate	80.5	(298)	GC	[97/13][00/10] [16974-11-1]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (Z) 10-dodecenyl acetate	80.7	(298)	GC	[97/13][00/10] [35148-19-7]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (E) 10-dodecenyl acetate	81.0	(298)	GC	[97/13][00/10] [35148-20-0]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (Z) 11-dodecenyl acetate	81.4	(298)	GC	[97/13][00/10] [35153-09-4]
C <sub>14</sub> H <sub>26</sub> O <sub>2</sub>	(333–378) (E) 11-dodecenyl acetate	81.5	(298)	GC	[97/13][00/10] [5963-13-3]
C <sub>14</sub> H <sub>26</sub> O <sub>3</sub>	1,7-dioxo-8-cyclohexadecanone (403–453)	73.3	(418)	A	[87/5] [23144-23-2]
C <sub>14</sub> H <sub>26</sub> O <sub>3</sub>	3-heptyl-4-acetoxytetrahydro-2H-pyran (383–453)	74.4	(398)	A	[87/5]
C <sub>14</sub> H <sub>26</sub> O <sub>3</sub>	nonyl levulinate (423–571)	69.4	(438)	A	[87/5]
C <sub>14</sub> H <sub>26</sub> O <sub>4</sub>	dibutyl adipate (435–563)	68.4	(516)	A	[33/6] [105-99-7]
C <sub>14</sub> H <sub>26</sub> O <sub>4</sub>	diethyl isopentylmalonate (388–526)	68.7	(450)	A	[87/5]
C <sub>14</sub> H <sub>26</sub> O <sub>4</sub>	2-methylheptane-5,5-dicarboxylic acid, diethyl ester (394–427)	75.3	(403)	A	[87/5]
C <sub>14</sub> H <sub>26</sub> O <sub>4</sub>	diethyl decanedioate (398–579)	70.1	(409)	A	[87/5] [110-40-7]
C <sub>14</sub> H <sub>26</sub> O <sub>5</sub>	ethyl[1-(1-octyloxycarbonyl)ethyl]carbonate (413–513)	74.1	(413)	A	[87/5][47/5]
C <sub>14</sub> H <sub>26</sub> O <sub>5</sub>	hexyl[1-(1-butoxycarbonyl)ethyl]carbonate (357–501)	74.0	(428)	A	[87/5]
C <sub>14</sub> H <sub>27</sub> N	myristonitrile (391–580)	72.1	(372)	A	[87/5] [629-63-0]
		71.4	(406)	A	[87/5]
		85.3±0.5	(298)	C	[77/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>14</sub> H <sub>28</sub>	cyclotetradecane	62.3 ± 0.2	(343)		[295-17-0] [92/4]
		65.3 ± 0.2	(298)		[92/4]
C <sub>14</sub> H <sub>28</sub>	3- <i>tert</i> -butyl-1-methyl-4-isopropylcyclohexane (329–505)	53.8	(344)	A	[87/5]
C <sub>14</sub> H <sub>28</sub>	(1-methylheptyl)cyclohexane (364–397)	60.4	(379)	A	[87/5]
C <sub>14</sub> H <sub>28</sub>	octylcyclohexane (367–399)	62.7	(382)	A	[1795-15-9] [87/5]
		69.8	(298)		[71/28]
C <sub>14</sub> H <sub>28</sub>	nonylcyclopentane	70.7	(298)		[2882-98-6] [71/28]
C <sub>14</sub> H <sub>28</sub>	1-tetradecene (430–527)	70.2	(298)	A	[1120-36-1] [71/28]
		56.5	(445)		[87/5][55/7]
C <sub>14</sub> H <sub>28</sub>	2,2,3,5,5,6,6-heptamethyl-3-heptene (303–355)	51.2	(318)	A, MG	[87/5][55/11]
C <sub>14</sub> H <sub>28</sub> N <sub>2</sub> O <sub>2</sub>	tetrapropylloxamide	67	(489)	TGA, DSC	[02/36]
C <sub>14</sub> H <sub>28</sub> O	1-octylcyclohexanol (373–403)	105.6	(388)	A	[5770-04-7] [87/5]
C <sub>14</sub> H <sub>28</sub> O	(Z) 2-tetradecen-1-ol (353–393)	101.1	(298)	CGC	[75039-85-9] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(E) 2-tetradecen-1-ol (353–393)	101.5	(298)	CGC	[75039-86-0] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(Z) 3-tetradecen-1-ol (353–393)	99.8	(298)	CGC	[68892-27-3] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(E) 3-tetradecen-1-ol (353–393)	99.7	(298)	CGC	[68900-86-7] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(Z) 4-tetradecen-1-ol (353–393)	100.0	(298)	CGC	[40642-41-9] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(E) 4-tetradecen-1-ol (353–393)	100.7	(298)	CGC	[59101-24-5] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(Z) 5-tetradecen-1-ol (353–393)	100.3	(298)	CGC	[40642-42-0] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(E) 5-tetradecen-1-ol (353–393)	100.8	(298)	CGC	[62936-14-5] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(Z) 6-tetradecen-1-ol (353–393)	100.0	(298)	CGC	[68760-63-4] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(E) 6-tetradecen-1-ol (353–393)	100.5	(298)	CGC	[68760-62-3] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(Z) 7-tetradecen-1-ol (353–393)	99.9	(298)	CGC	[40642-43-1] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(E) 7-tetradecen-1-ol (353–393)	100.5	(298)	CGC	[37011-95-3] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(Z) 8-tetradecen-1-ol (353–393)	100.3	(298)	CGC	[64470-32-2] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(E) 8-tetradecen-1-ol (353–393)	101.4	(298)	CGC	[64437-34-9] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(Z) 9-tetradecen-1-ol (353–393)	100.6	(298)	CGC	[35153-15-2] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(E) 9-tetradecen-1-ol (353–393)	101.0	(298)	CGC	[52957-16-1] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(Z) 10-tetradecen-1-ol (353–393)	101.1	(298)	CGC	[57393-02-9] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(E) 10-tetradecen-1-ol (353–393)	101.5	(298)	CGC	[64437-35-0] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(Z) 11-tetradecen-1-ol (353–393)	101.7	(298)	CGC	[34010-15-6] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(E) 11-tetradecen-1-ol (353–393)	101.8	(298)	CGC	[35153-18-5] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(Z) 12-tetradecen-1-ol (353–393)	102.5	(298)	CGC	[70711-48-7] [00/10][94/13]
C <sub>14</sub> H <sub>28</sub> O	(E) 12-tetradecen-1-ol				[70711-49-8]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>14</sub> H <sub>28</sub> O	(353–393) 2-tetradecanone	102.5	(298)	CGC	[00/10][94/13] [2345-27-9]
	(411–560)	65.6	(426)	A	[87/5]
	(549–643)	55.6	(564)	A	[87/5]
	(412–643)	51.6	(556)		[75/8]
C <sub>14</sub> H <sub>28</sub> O	(372–551) 7-tetradecanone	64.4	(387)	A	[87/5][47/5] [6137-34-4]
	(438–462)	66.9	(450)	A, ME	[87/5][38/8]
C <sub>14</sub> H <sub>28</sub> O	tetradecanal				[124-25-4]
	(343–383)	80.2	(298)	CGC	[96/7][00/10]
C <sub>14</sub> H <sub>28</sub> O <sub>2</sub>	(372–571) dodecyl acetate	63.4	(387)	A	[87/5][47/5] [112-66-3]
	(333–378)	81.8	(298)	GC	[97/13][00/10]
C <sub>14</sub> H <sub>28</sub> O <sub>2</sub>	(398–540) ethyl dodecanoate	70.5	(413)	A	[87/5] [106-33-2]
	(423–483)	80.0	(298)	GC	[97/28]
C <sub>14</sub> H <sub>28</sub> O <sub>2</sub>	(386–435) methyl tridecanoate	67.2	(401)	A	[87/5] [1731-88-0]
		74.0	(350)		[02/27]
		72.3±0.1	(368)		[02/27]
		80.0±0.5	(298)		[02/27]
		81.3±0.7	(298)	GC, C	[80/5]
C <sub>14</sub> H <sub>28</sub> O <sub>2</sub>	(377–504) tetradecanoic acid	82.7±0.8	(298)	C	[77/1]
		72.6	(392)	A, EST	[87/5][63/16] [544-63-8]
	(383–459)	100.4	(398)	A	[87/5]
	(423–599)	91.6	(438)	A	[87/5]
	(339–358)	104.1±2.0	(349)	ME, TE	[82/4]
C <sub>14</sub> H <sub>28</sub> O <sub>3</sub>	88.9	(455)	I	[43/7]	
	decyl 3-methoxypropionate (403–513)	68.9	(418)	A	[87/5]
C <sub>14</sub> H <sub>29</sub> Br	1-bromotetradecane (437–645)	67.1	(452)	A, EST	[112-71-0] [87/5][61/13] [70/14]
	C <sub>14</sub> H <sub>29</sub> Cl	1-chlorotetradecane (313–373)	80.2	(313)	GC
(313–373)		78.0	(333)	GC	[80/14]
(313–373)		74.4	(353)	GC	[80/14]
(313–373)		72.9	(373)	GC	[80/14]
(414–570)		68.7	(429)	A, DTA	[87/5][69/5] [593-33-9]
C <sub>14</sub> H <sub>29</sub> F	1-fluorotetradecane (288–335)	73.5±0.4	(298)	GS	[97/14]
	(400–593)	61.4	(415)	A, EST	[87/5][61/13] [70/14]
C <sub>14</sub> H <sub>29</sub> I	1-iodotetradecane (452–672)	68.6	(467)	A, EST	[19218-94-1] [87/5][61/13] [70/14]
	C <sub>14</sub> H <sub>30</sub>	tetradecane			
		72.1	(298)	GS	[01/1]
		72.0±2.4	(298)	CGC	[00/9]
		69.0	(324)	C	[96/22]
		68.6	(329)	C	[96/22]
		67.9	(334)	C	[96/22]
		66.8	(344)	C	[96/22]
		65.7	(359)	C	[96/22]
(423–473)		71.2	(298)	CGC	[95/21]
(363–413)		71.4	(298)	CGC	[95/21]
		71.7	(298)		[94/12]
(313–433)		67.8	(328)	A	[87/5]
(343–395)		64.1	(361)	GS	[86/6]
	70.1	(313)	C	[79/2]	
	68.9	(328)	C	[79/2]	
	71.8±0.6	(298)	C	[79/2]	
	71.1±0.4	(298)	C	[72/29]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		71.7	(298)		[71/28]
	(432–529)	57.1	(447)	A	[87/5][55/7]
	(429–468)	57.8	(449)	ME	[38/8]
C <sub>14</sub> H <sub>30</sub>	2-methyltridecane (388–530)	56.3	(403)	A	[1560-96-9] [87/5]
C <sub>14</sub> H <sub>30</sub>	3-methyltridecane (389–521)	55.1	(404)	A	[6418-41-3] [87/5]
C <sub>14</sub> H <sub>30</sub>	4-methyltridecane (386–520)	54.2	(401)	A	[26730-12-1] [87/5]
C <sub>14</sub> H <sub>30</sub>	5-methyltridecane (385–518)	53.8	(400)	A	[25117-31-1] [87/5]
C <sub>14</sub> H <sub>30</sub>	7-methyltridecane (357–389)	59.0	(372)	A	[26730-14-3] [87/5]
C <sub>14</sub> H <sub>30</sub>	2,3-dimethyldodecane (385–519)	53.4	(400)	A	[6117-98-2] [87/5]
C <sub>14</sub> H <sub>30</sub>	2,4-dimethyldodecane (379–509)	54.0	(394)	A	[6117-99-3] [87/5]
C <sub>14</sub> H <sub>30</sub>	2,4,6-trimethylundecane (368–491)	53.2	(383)	A	[87/5]
C <sub>14</sub> H <sub>30</sub>	2,2,3,4,6,6-heptamethylheptane (313–366)	54.5	(366)	A, MG	[7225-67-4] [87/5][55/11]
C <sub>14</sub> H <sub>30</sub>	hexaethylethane (3,3,4,4-tetraethylhexane) (298–307)	63.9 ± 1.2	(298)	GS	[5171-86-8] [97/29]
	(283–302)	65.7 ± 1.2	(292)	GS	[73/30][95/27]
		65.0 ± 1.2	(298)		[73/30]
C <sub>14</sub> H <sub>30</sub>	2,2,3,3,4,4,5,5-octamethylhexane (288–325)	56.9 ± 0.7	(298)	GS	[65149-84-0] [97/29]
C <sub>14</sub> H <sub>30</sub> O	diheptyl ether (360–547)	63.1	(375)	A	[629-64-1] [87/5]
C <sub>14</sub> H <sub>30</sub> O	4-methylpentyl <i>tert</i> -octyl ether	57.5	(298)		[U/2][02/32]
C <sub>14</sub> H <sub>30</sub> O	3-methylpentyl <i>tert</i> -octyl ether	58.0	(298)		[U/2][02/32]
C <sub>14</sub> H <sub>30</sub> O	3,3-dimethylbutyl <i>tert</i> -octyl ether	56.4	(298)		[U/2][02/32]
C <sub>14</sub> H <sub>30</sub> O	hexyl <i>tert</i> -octyl ether	59.2	(298)		[U/2][02/32]
C <sub>14</sub> H <sub>30</sub> O	1-tetradecanol (312–346)	93.6	(328)	GS	[112-72-1] [01/3]
	(312–346)	98.7	(298)	GS	[01/3]
	(333–438)	81.8	(386)		[92/14]
	(317–358)	109.0	(332)	A	[87/5]
		102.2 ± 2.3	(298)	C	[77/1]
	(313–358)	106.4	(328)		[73/26]
	(424–569)	76.6	(439)	A	[87/5][69/5]
	(313–326)	104.2	(320)	ME	[65/15]
C <sub>14</sub> H <sub>30</sub> O	2-tetradecanol (313–428)	95.7	(328)		[4706-81-4] [99/11]
C <sub>14</sub> H <sub>30</sub> O <sub>2</sub>	2-(dodecyloxy)ethanol (414–467)	71.5	(429)	A	[4536-30-5] [87/5]
C <sub>14</sub> H <sub>30</sub> S	1-tetradecanethiol (446–614)	67.3	(461)		[2079-95-0] [99/16]
C <sub>14</sub> H <sub>30</sub> S <sub>2</sub>	diheptyl disulfide (458–630)	69.8	(473)		[10496-16-9] [99/16]
C <sub>14</sub> H <sub>31</sub> N	diheptylamine (435–605)	60.0	(450)	A	[2470-68-0] [87/5]
C <sub>14</sub> H <sub>31</sub> N	N,N-dimethyldodecylamine (380–604)	64.4	(395)	A	[112-18-5] [87/5]
C <sub>14</sub> H <sub>31</sub> N	tetradecylamine (471–577)	62.4	(486)	A, EST	[2016-42-4] [87/5][56/17]
C <sub>14</sub> H <sub>31</sub> O <sub>2</sub> P	diheptylphosphinic acid (482–664)	64.1	(573)		[71/32]
C <sub>15</sub> H <sub>8</sub> Cl <sub>3</sub> NO <sub>2</sub>	2,2,4-trichloro-5-(2-naphthalenylamino)-4-cyclopentene-1,3-dione (453–483)	91.4	(468)	GC	[77765-38-9] [80/25]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>15</sub> H <sub>9</sub> N <sub>3</sub>	pyrido[2,3-f][1,7]phenanthroline (648–707)	65.1	(663)	A	[87/5]
C <sub>15</sub> H <sub>9</sub> N <sub>3</sub>	pyrido[3,2-f][1,7]phenanthroline (648–706)	67.4	(663)	A	[87/5]
C <sub>15</sub> H <sub>10</sub> N <sub>2</sub> O <sub>2</sub>	2,2'-diisocyanatodiphenylmethane (343–413)	90.1	(358)	A	[2536-05-2] [87/5]
C <sub>15</sub> H <sub>10</sub> N <sub>2</sub> O <sub>2</sub>	2,4'-diisocyanatodiphenylmethane (343–413)	89.3	(358)	A	[5873-54-1] [87/5]
C <sub>15</sub> H <sub>10</sub> N <sub>2</sub> O <sub>2</sub>	4,4'-diisocyanatodiphenylmethane (343–413)	90.5	(358)	A	[101-68-8] [87/5]
	(442–530)	93.8	(457)	A	[87/5]
	(442–530)	90.6	(483)	A	[66/28]
C <sub>15</sub> H <sub>11</sub> NO <sub>2</sub>	1-methylamino-9,10-anthraquinone (433–493)	103.5	(448)	A	[82-38-2] [87/5]
C <sub>15</sub> H <sub>12</sub>	2-methylanthracene (323–473)	76.1	(398)	GC	[613-12-7] [02/18]
C <sub>15</sub> H <sub>12</sub>	9-methylanthracene (354–402)	98.9	(369)	A	[779-02-0] [87/5]
	(423–587)	58.5	(465)		[83/4]
	(423–515)	58.1	(515)		[83/4]
	(423–515)	56.5	(555)		[83/4]
C <sub>15</sub> H <sub>12</sub>	1-methylphenanthrene (323–473)	76.3	(398)	GC	[832-69-9] [02/18]
C <sub>15</sub> H <sub>12</sub> O	dibenzosuberone (314–338)	90.0 ± 1.5		GS	[1210-35-1] [98/4]
C <sub>15</sub> H <sub>12</sub> O <sub>2</sub>	1,3-diphenyl-1,3-propanedione (368–383)	60.1	(375)	A	[120-46-7] [87/5]
C <sub>15</sub> H <sub>14</sub> Cl <sub>3</sub> O <sub>2</sub> PS	(chloromethyl)thiophosphonic acid, O,O-bis(2-chloro-4-methylphenyl) ester (343–365)	93.2	(354)	A	[57875-65-7] [87/5][99/16]
C <sub>15</sub> H <sub>14</sub> O	1,3-diphenylacetone (398–604)	65.7	(413)	A	[102-04-5] [87/5][47/5]
C <sub>15</sub> H <sub>14</sub> O <sub>2</sub>	2,2-diphenyl-1,3-dioxolane (331–370)	84.6 ± 0.6	(298)	GS	[4359-34-6] [02/32]
	(331–370)	81.2 ± 0.6		GS	[98/21]
C <sub>15</sub> H <sub>14</sub> O <sub>2</sub>	1-biphenyloxy-2,3-epoxypropane (408–613)	80.0	(423)	A	[7144-65-2] [87/5]
C <sub>15</sub> H <sub>14</sub> O <sub>3</sub>	2-hydroxy-4-ethoxybenzophenone (373–433)	90.7	(403)	ME	[15889-70-0] [84/1]
C <sub>15</sub> H <sub>14</sub> O <sub>5</sub>	2,2'-dihydroxy-4,4'-dimethoxybenzophenone (406–497)	77.4	(423)	A, UV	[131-54-4] [87/5][60/2]
C <sub>15</sub> H <sub>15</sub> Cl	chloro-di-4-tolylmethane (406–453)	75.2	(421)	A	[13389-70-3] [87/5]
C <sub>15</sub> H <sub>16</sub>	ditolylmethane (573–673)	51.8	(588)		[1335-47-3] [64/11]
C <sub>15</sub> H <sub>16</sub>	1,1-diphenylpropane (298–343)	71.4 ± 0.4	(321)	GS	1530-03-6 [99/8]
	(298–343)	72.8 ± 0.4	(298)	GS	[99/8]
C <sub>15</sub> H <sub>16</sub>	1,3-diphenylpropane (342–577)	61.5	(357)	A	[1081-75-0] [87/5]
C <sub>15</sub> H <sub>16</sub> N <sub>4</sub> O <sub>2</sub>	3-methyl-3'-nitro-4-N,N-dimethylaminoazobenzene (370–388)	98.6	(379)	A	[87/5]
C <sub>15</sub> H <sub>16</sub> O	di-(4-tolyl)methanol (413–478)	81.7	(428)	A	[885-77-8] [87/5]
C <sub>15</sub> H <sub>16</sub> O	1-isovaleronaphthone (409–593)	76.2	(424)	A	[87/5][47/5]
C <sub>15</sub> H <sub>16</sub> O <sub>2</sub>	Bisphenol A (466–634)	102.2	(481)	A	[80-05-7] [87/5][47/5]
C <sub>15</sub> H <sub>17</sub> NO <sub>2</sub>	N-(2-hydroxy-3-phenoxypropyl)phenylamine (343–373)	113.9	(358)	A	[87/5]
C <sub>15</sub> H <sub>18</sub>	1-pentyl-naphthalene (415–535)	62.7	(430)	A	[86-89-5] [87/5]
C <sub>15</sub> H <sub>18</sub> O	2,4,6-triallylphenol (423–571)	61.0	(438)	A	[20490-22-6] [87/5]
C <sub>15</sub> H <sub>19</sub> Cl <sub>3</sub> O <sub>3</sub>	2,4,5-trichlorophenoxyacetic acid, heptyl ester				



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>15</sub> H <sub>20</sub> Cl <sub>2</sub> O <sub>3</sub>	(460–573)	92.3	(475)	A	[87/5]
	2,4-dichlorophenoxyacetic acid, heptyl ester				[1917-96-0]
C <sub>15</sub> H <sub>20</sub> Cl <sub>2</sub> O <sub>3</sub>	(460–573)	88.3	(475)	A	[87/5]
	2,4-dichlorophenoxyacetic acid, 1-propylbutyl ester				
C <sub>15</sub> H <sub>20</sub> Cl <sub>2</sub> O <sub>4</sub>	(460–573)	77.3	(475)	A	[87/5]
	2,4-dichlorophenoxyacetic acid, (1-methyl-2-butoxy)ethyl ester				[3966-11-8]
C <sub>15</sub> H <sub>20</sub> O <sub>2</sub>	(443–573)	82.5	(458)	A	[87/5]
	helenine, alantolactone				[1407-13-3]
C <sub>15</sub> H <sub>22</sub> N <sub>2</sub> O <sub>2</sub>	(430–548)	112.7	(445)	A	[87/5]
	dicyclohexylmethane-4,4'-diisocyanate				[5124-30-1]
C <sub>15</sub> H <sub>24</sub>	(326–404)	80.4	(341)	A	[87/5]
	nonylbenzene				[1081-77-2]
C <sub>15</sub> H <sub>24</sub>	(316–415)	69.7	(331)	GS	[86/6]
		74.8	(298)		[71/28]
	1,3,5-triisopropylbenzene				[717-74-8]
	(283–323)	64.3±0.3	(303)	GS	[98/10]
C <sub>15</sub> H <sub>24</sub>	(283–323)	64.6±0.6	(298)	GS	[98/10]
	(282–388)	67.4	(297)		[93/10]
	1,3-di- <i>tert</i> -butyl-5-methylbenzene				
C <sub>15</sub> H <sub>24</sub> O	(309–338)	61.8±0.9	(310)	GS	[98/19]
		63.3±0.9	(298)		[98/19]
C <sub>15</sub> H <sub>24</sub> O	2,4-di- <i>tert</i> -butyl-5-methylphenol				[497-39-2]
	(376–555)	67.0	(391)	A	[87/5][47/5]
C <sub>15</sub> H <sub>24</sub> O	2,4-di- <i>tert</i> -butyl-6-methylphenol				[616-55-7]
	(359–543)	59.8	(374)	A	[87/5]
C <sub>15</sub> H <sub>24</sub> O	2,6-di- <i>tert</i> -butyl-4-methylphenol				[128-37-0]
	(303–343)	87.8	(318)	A	[87/5]
	(358–536)	61.5	(373)	A	[87/5][47/5]
C <sub>15</sub> H <sub>24</sub> O	2-methyl-4-(1,1,3,3-tetramethylbutyl)phenol				[2219-84-3]
	(447–683)	67.1	(462)	A	[87/5]
C <sub>15</sub> H <sub>24</sub> O	3-methyl-4-(1,1,3,3-tetramethylbutyl)phenol				[2219-84-3]
	(436–549)	65.5	(451)	A	[87/5]
C <sub>15</sub> H <sub>24</sub> O	4-methyl-2-(1,1,3,3-tetramethylbutyl)phenol				[4979-46-8]
	(415–545)	65.0	(430)	A	[87/5]
C <sub>15</sub> H <sub>24</sub> O	4-(3',6'-dimethyl-3'-heptyl)phenol				
		89.4	(298)	ME	[01/21]
C <sub>15</sub> H <sub>24</sub> O	4-nonylphenol				[104-40-5]
	(487–595)	65.0	(502)	A, EB	[87/5][76/13]
C <sub>15</sub> H <sub>24</sub> O	$\alpha$ -santalol				[115-71-9]
	(293–450)	58.3	(308)	A	[87/5]
C <sub>15</sub> H <sub>24</sub> O <sub>2</sub>	2,5-di- <i>tert</i> -butyl-4-methoxyphenol				[1991-52-2]
	(423–453)	64.4	(438)	A	[87/5]
C <sub>15</sub> H <sub>24</sub> O <sub>2</sub>	1,3-dimethoxy-5-heptylbenzene				[6121-64-8]
	(419–488)	75.5	(434)	A, GC	[87/5][75/24]
C <sub>15</sub> H <sub>24</sub> O <sub>2</sub>	1,3-dimethoxy-5-methyl-2-hexylbenzene				[41442-51-7]
	(410–475)	72.3	(425)	A, GC	[87/5][75/24]
C <sub>15</sub> H <sub>24</sub> O <sub>6</sub>	aconitic acid, tripropyl ester				[64617-28-3]
	(359–500)	72.3	(374)	A	[87/5]
C <sub>15</sub> H <sub>26</sub> O	guaial				[489-86-1]
	(373–561)	62.2	(388)	A	[87/5]
C <sub>15</sub> H <sub>26</sub> O <sub>6</sub>	camphorenic acid, triethyl ester				
	(423–574)	69.0	(438)	A	[87/5][47/5]
C <sub>15</sub> H <sub>26</sub> O <sub>6</sub>	tripropyl 1,2,3-propanetricarboxylate				[5333-54-0]
	(360–460)	76.5	(375)	A	[87/5]
C <sub>15</sub> H <sub>26</sub> O <sub>6</sub>	glycerol tributyrate				[60-01-1]
	(318–364)	81.4	(333)	A	[87/5]
C <sub>15</sub> H <sub>28</sub> Cl <sub>4</sub>	1,1,1,15-tetrachloropentadecane				[3922-32-5]
	(340–392)	103.5	(355)	A	[87/5]
C <sub>15</sub> H <sub>28</sub> O	3,7,11-trimethyl-1-dodecyn-3-ol				[1604-35-9]
	(401–524)	43.2±1.1	(463)		[88/4][86/16]
C <sub>15</sub> H <sub>28</sub> O <sub>2</sub>	dodecyl acrylate				[2156-97-0]
	(432–573)	64.6	(447)	A	[87/5]
C <sub>15</sub> H <sub>28</sub> O <sub>2</sub>	pentadecanolid				[106-02-5]
	(363–443)	78.2	(378)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>15</sub> H <sub>28</sub> O <sub>2</sub>	(310–320)	74.2	(315)	A, ME	[87/5][54/9]
	(Z) 7-tridecenyl acetate (343–388)	84.3	(298)	GC	[34270-22-9] [97/13][00/10]
C <sub>15</sub> H <sub>28</sub> O <sub>2</sub>	(E) 7-tridecenyl acetate (343–388)	84.8	(298)	GC	[56577-30-1] [97/13][00/10]
	(Z) 9-tridecenyl acetate (343–388)	85.1	(298)	GC	[35835-78-0] [97/13][00/10]
C <sub>15</sub> H <sub>28</sub> O <sub>2</sub>	(E) 9-tridecenyl acetate (343–388)	85.5	(298)	GC	[52957-19-4] [97/13][00/10]
	(Z) 11-tridecenyl acetate (343–388)	86.4	(298)	GC	[33951-95-0] [97/13][00/10]
C <sub>15</sub> H <sub>28</sub> O <sub>2</sub>	(E) 11-tridecenyl acetate (343–388)	86.4	(298)	GC	[56195-36-9] [97/13][00/10]
	decyl levulinate (423–580)	76.1	(438)	A	[37826-51-0] [87/5]
C <sub>15</sub> H <sub>28</sub> O <sub>3</sub>	1,6-dioxo-7-cycloheptadecanone (403–463)	72.0	(524)	A	[33/6] [6707-60-4]
		75.9	(418)		[87/5]
C <sub>15</sub> H <sub>28</sub> O <sub>5</sub>	decyl[1-(methoxycarbonyl)ethyl]carbonate (411–592)	73.8	(426)	A	[87/5]
		75.5	(418)		[2570-26-5] [87/5]
C <sub>15</sub> H <sub>29</sub> N	pentadecanenitrile (403–596)	75.5	(418)	A	[87/5]
		81.0	(393)		[87/5]
C <sub>15</sub> H <sub>29</sub> NO <sub>3</sub>	2-[2-ethyl(hexanoyloxy)]propionic acid, butylamide (378–433)	81.0	(393)	A	[87/5]
		71.1	(373)		[1795-21-7] [87/5]
C <sub>15</sub> H <sub>30</sub>	decylcyclopentane (358–411)	75.7	(298)	A	[71/28]
		59.7	(468)		[87/5][54/7] [2883-02-5]
C <sub>15</sub> H <sub>30</sub>	nonylcyclohexane	74.7	(298)	A, MM	[71/28]
		65.2	(390)		[13360-61-7] [87/5]
C <sub>15</sub> H <sub>30</sub>	1-pentadecene (375–407) (423–658)	53.2	(570)	A	[75/8]
		75.1	(298)		[71/28]
C <sub>15</sub> H <sub>30</sub> O	(Z) 9-pentadecen-1-ol (363–403)	59.3	(458)	A	[87/5][55/7] [56218-94-1]
		105.3	(298)		CGC
C <sub>15</sub> H <sub>30</sub> O	(E) 9-pentadecen-1-ol (363–403)	105.9	(298)	CGC	[64437-40-7] [00/10][94/13]
		105.9	(298)		CGC
C <sub>15</sub> H <sub>30</sub> O	(Z) 10-pentadecen-1-ol (363–403)	105.9	(298)	CGC	[64437-44-1] [00/10][94/13]
		106.2	(298)		CGC
C <sub>15</sub> H <sub>30</sub> O	(E) 10-pentadecen-1-ol (363–403)	106.3	(298)	CGC	[69222-14-6] [00/10][94/13]
		106.5	(298)		CGC
C <sub>15</sub> H <sub>30</sub> O	(Z) 11-pentadecen-1-ol (363–403)	106.7	(298)	CGC	[69222-15-7] [00/10][94/13]
		107.0	(298)		CGC
C <sub>15</sub> H <sub>30</sub> O	(E) 11-pentadecen-1-ol (363–403)	107.7	(298)	CGC	[158906-52-6] [00/10][94/13]
		107.7	(298)		CGC
C <sub>15</sub> H <sub>30</sub> O	2-pentadecanone (422–575) (559–658)	67.8	(437)	A	[87/5]
		57.9	(574)		A
C <sub>15</sub> H <sub>30</sub> O	8-pentadecanone (443–568) (443–589)	65.3	(458)	A	[818-23-5] [87/5]
		65.4	(458)		A
C <sub>15</sub> H <sub>30</sub> O	(444–590) (438–462)	53.0	(567)	A, ME	[75/8]
		61.9	(450)		[87/5][38/8] [124-10-7]
C <sub>15</sub> H <sub>30</sub> O <sub>2</sub>	methyl tetradecanoate (methyl myristate)				

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		79.8	(350)		[02/27]
		76.0±0.2	(382)		[02/27]
		85.9±0.8	(298)		[02/27]
	(393–473)	86.6	(298)	GC	[97/28]
	(453–543)	65.3	(498)	GC	[93/9]
		86.2±1.0	(298)	GC, C	[80/5]
		87.0±0.9	(298)	C	[77/1]
	(389–519)	75.6	(404)	A	[87/5][63/16]
	(364–417)	77.4	(379)	MG, OM	[52/13]
C <sub>15</sub> H <sub>30</sub> O <sub>2</sub>	isopropyl dodecanoate				[10233-13-3]
	(305–452)	81.5	(320)		[01/10]
	(390–469)	66.1	(405)	A	[87/5][48/8]
					[84/9]
C <sub>15</sub> H <sub>30</sub> O <sub>2</sub>	propyl dodecanoate				[3681-78-5]
	(423–483)	84.7	(298)	GC	[97/28]
	(396–479)	66.9	(411)	A	[87/5][48/8]
					[84/9]
C <sub>15</sub> H <sub>30</sub> O <sub>2</sub>	tridecyl acetate				[1072-33-9]
	(313–358)	87.2	(298)	GC	[97/13][00/10]
C <sub>15</sub> H <sub>30</sub> O <sub>2</sub>	pentadecanoic acid				[1002-84-2]
	(431–613)	94.0	(446)	A	[87/5]
	(347–367)	108.5±2.0	(357)	ME, TE	[82/4]
C <sub>15</sub> H <sub>30</sub> O <sub>3</sub>	dodecyl lactate				[6283-92-7]
	(367–583)	80.5	(382)	A	[87/5]
C <sub>15</sub> H <sub>30</sub> O <sub>3</sub>	decyl 2-ethoxypropionate				[70160-09-7]
	(423–523)	69.8	(438)	A	[87/5]
C <sub>15</sub> H <sub>31</sub> Br	1-bromopentadecane				[629-72-1]
	(450–661)	69.5	(465)	A, EST	[87/5][61/13]
					[70/14]
C <sub>15</sub> H <sub>31</sub> Cl	1-chloropentadecane				[4862-03-7]
	(439–645)	55.4	(454)	A, EST	[87/5][61/13]
					[70/14]
C <sub>15</sub> H <sub>31</sub> F	1-fluoropentadecane				[1555-17-5]
	(413–593)	63.8	(428)	A, EST	[87/5][61/13]
					[70/14]
C <sub>15</sub> H <sub>31</sub> I	1-iodopentadecane				[35599-78-1]
	(464–673)	70.6	(479)	A, EST	[87/5][61/13]
					[70/14]
C <sub>15</sub> H <sub>31</sub> NO <sub>2</sub>	N,N-dihexyl lactamide				[87/5]
	(418–453)	79.4	(433)	A	[87/5]
C <sub>15</sub> H <sub>31</sub> NO <sub>2</sub>	N-dodecyl lactamide				[87/5]
	(408–476)	103.9	(423)	A	[87/5]
C <sub>15</sub> H <sub>32</sub>	pentadecane				[629-62-9]
		72.9	(334)	C	[96/22]
		71.8	(344)	C	[96/22]
	(453–503)	75.7	(298)	CGC	[95/21]
	(423–473)	76.2	(298)	CGC	[95/21]
	(363–413)	76.4	(298)	CGC	[95/21]
		76.8	(298)		[94/12]
	(366–409)	67.5	(381)	A	[87/5]
	(333–409)	66.4	(350)	GS	[86/6]
		75.4±1.2	(298)	C	[79/2]
		70.8	(353)	C	[79/2]
		68.8	(373)	C	[79/2]
		72.2±1.2	(333)	C	[79/2]
		76.2±0.4	(298)	C	[72/29]
		76.2	(298)		[71/28]
	(447–546)	59.6	(462)	A	[87/5][55/7]
	(430–464)	61.9	(447)	ME	[38/8]
C <sub>15</sub> H <sub>32</sub>	2-methyltetradecane				[1560-95-8]
	(402–537)	58.8	(417)	A	[87/5]
C <sub>15</sub> H <sub>32</sub>	3-methyltetradecane				[18435-22-8]
	(403–538)	58.4	(418)	A	[87/5]
C <sub>15</sub> H <sub>32</sub>	4-methyltetradecane				[25117-24-2]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>15</sub> H <sub>32</sub>	(398–536) 5-methyltetradecane	55.9	(413)	A	[87/5] [25117-32-2]
	(398–535) 2,3-dimethyltridecane	56.1	(413)	A	[87/5] [18435-20-6]
C <sub>15</sub> H <sub>32</sub>	(399–537) 2,4-dimethyltridecane	56.3	(414)	A	[87/5] [61868-05-1]
	(393–523) 2,4,6-trimethyldodecane	57.9	(408)	A	[87/5]
C <sub>15</sub> H <sub>32</sub> O	(382–508) 1-pentadecanol	55.8	(397)	A	[87/5] [629-76-5]
	(319–358)	95.5	(339)	GS	[01/3]
	(319–358)	102.5	(298)	GS	[01/3]
	(353–393)	107.2	(298)	CGC	[94/13][00/10]
	(343–393)	92.4	(368)		[92/14]
	(438–600)	75.0	(453)	A	[87/5]
	(453–584)	72.4	(468)	A	[87/5]
C <sub>15</sub> H <sub>32</sub> O <sub>5</sub>	tetrapropylene glycol monoisopropyl ether (389–566)	71.5	(404)	A	[87/5][47/5]
C <sub>15</sub> H <sub>32</sub> S	1-pentadecanethiol (459–629)	69.8	(474)		[25276-70-4] [99/16]
	1-aminopentadecane (400–594)	71.2	(415)	A, EST	[2570-26-5] [87/5][56/17]
C <sub>16</sub> H <sub>10</sub>	fluoranthene (323–473)	79.3	(398)	GC	[206-44-0] [02/18]
	(343–453)	77.4	(398)	GC	[90/2]
	(503–658)	62.2	(518)	A	[87/5][55/10]
	pyrene (343–453)	78.6	(398)	GC	[129-00-0] [90/2]
C <sub>16</sub> H <sub>10</sub>	(413–467)	76.0	(428)		[88/12]
	(398–458)	76.4	(440)		[80/12]
	(513–668)	73.0	(528)	A	[87/5][55/10]
	N-phenyl-1-naphthylamine (338–368)	89.6	(353)	A	[90-32-2] [87/5]
C <sub>16</sub> H <sub>13</sub> N	N-phenyl-2-naphthylamine (383–520)	88.7	(398)	A	[135-88-6] [87/5]
	4,5,9,10-tetrahydropyrene				[781-17-9]
C <sub>16</sub> H <sub>14</sub>		70.9	(440)	EB, IPM	[93/12]
		68.1	(480)	EB, IPM	[93/12]
		65.3	(520)	EB, IPM	[93/12]
		62.5	(560)	EB, IPM	[93/12]
		59.5	(600)	EB, IPM	[93/12]
		56.4	(640)	EB, IPM	[93/12]
C <sub>16</sub> H <sub>14</sub>	1,2,3,10b-tetrahydrofluoranthene (400–469)	68.0	(415)	A	[20279-21-4] [87/5]
	benzyl cinnamate (446–623)	89.4	(461)	A	[103-41-3] [87/5][47/5]
C <sub>16</sub> H <sub>16</sub>	1,2,3,6,7,8-hexahydropyrene				[1732-13-4]
		72.0	(440)	EB, IPM	[93/12]
		69.4	(480)	EB, IPM	[93/12]
		66.8	(520)	EB, IPM	[93/12]
		64.2	(560)	EB, IPM	[93/12]
		61.5	(600)	EB, IPM	[93/12]
C <sub>16</sub> H <sub>16</sub>	1,1-di(4-methylphenyl)ethene (309–332)	100.3±1.4 101.0±1.4	(320) (298)	GS	[99/21] [99/21]
	1-(2-tolyl)-2-(4-tolyl)ethane (298–473)	85.6	(313)	A	[87/5][63/14] [719-79-9]
C <sub>16</sub> H <sub>18</sub>	1,1-diphenylbutane (298–342)	75.9±0.6	(320)	GS	[99/8]
	(298–342)	77.2±0.6	(298)	GS	[99/8]
	2-methyl-1,1-diphenylpropane (298–338)	72.0±0.5	(318)	GS	[1634-11-3] [99/8]
C <sub>16</sub> H <sub>18</sub>	(298–338)	73.2±0.5	(298)	GS	[99/8]
	1,1-bis(4-methylphenyl)ethane				[530-45-0]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>16</sub> H <sub>18</sub> Cl <sub>4</sub> O <sub>4</sub>	(298–338)	75.3±0.6	(318)	GS	[99/8]
	(298–338)	76.5±0.6	(298)	GS	[99/8]
	dibutyl tetrachlorophthalate (368–421)	99.7	(383)	A, T	[3015-66-5] [87/5][49/9] [99/16]
C <sub>16</sub> H <sub>18</sub> O	<i>bis</i> ( $\alpha$ -methylbenzyl) ether (369–554)	62.1	(384)	A	[93-96-9] [87/5][47/5]
C <sub>16</sub> H <sub>21</sub> Cl <sub>3</sub> O <sub>3</sub>	2,4,5-trichlorophenoxyacetic acid, (2-ethylhexyl) ester (460–575)	85.4	(475)	A	[1928-47-8] [87/5]
C <sub>16</sub> H <sub>21</sub> Cl <sub>3</sub> O <sub>3</sub>	2,4,5-trichlorophenoxyacetic acid, octyl ester (460–575)	92.2	(475)	A	[2630-15-1] [87/5]
C <sub>16</sub> H <sub>22</sub> Cl <sub>2</sub> O <sub>3</sub>	2,4-dichlorophenoxyacetic acid, (2-ethylhexyl) ester (460–575)	83.0	(475)	A	[1928-43-4] [87/5]
C <sub>16</sub> H <sub>22</sub> Cl <sub>2</sub> O <sub>3</sub>	2,4-dichlorophenoxyacetic acid, (1-methylheptyl) ester (460–575)	83.0	(475)	A	[1917-97-1] [87/5]
C <sub>16</sub> H <sub>22</sub> Cl <sub>2</sub> O <sub>3</sub>	2,4-dichlorophenoxyacetic acid, octyl ester (460–573)	87.9	(475)	A	[1928-44-5] [87/5]
C <sub>16</sub> H <sub>22</sub> O <sub>4</sub>	dibutyl phthalate				[84-74-2]
		80.4	(462)		[88/17]
	(314–469)	94.0	(329)	A	[87/5]
	(468–605)	76.1	(483)	A	[87/5]
C <sub>16</sub> H <sub>22</sub> O <sub>4</sub>	di- <i>sec</i> -butyl phthalate (313–373)	93.8	(328)	A, ME	[4489-61-6] [87/5][48/10]
	dibutyl terephthalate (393–483)	86.2	(408)	A	[1962-75-0] [87/5]
	chloropentaethylbenzene (363–558)	60.3	(378)	A	[87/5][47/5]
C <sub>16</sub> H <sub>26</sub>	decylbenzene				[104-72-3]
	(313–433)	78.0	(328)		[93/10]
	(371–427)	75.1	(386)	A	[87/5]
		79.8	(298)		[71/28]
C <sub>16</sub> H <sub>26</sub>	(475–571)	61.6	(490)	A, MM	[87/5][54/7]
	pentaethylbenzene (359–550)	56.5	(374)	A	[605-01-6] [87/5][47/5]
	2,6-di- <i>tert</i> -butyl-4-ethylphenol (362–557)	62.8	(348)		[4130-42-1] [53/9]
C <sub>16</sub> H <sub>26</sub> O	(362–557)	60.4	(373)		[53/9]
	(362–557)	58.6	(398)		[53/9]
	(362–557)	57.3	(423)		[53/9]
	(362–557)	52.6	(473)		[53/9]
	4,6-di- <i>tert</i> -butyl-2-ethylphenol (413–556)	61.9	(428)	A	[6287-47-4] [87/5]
C <sub>16</sub> H <sub>26</sub> O	(413–562)	57.3	(423)		[53/9]
	(413–562)	52.6	(473)		[53/9]
	2,4-di- <i>tert</i> -butyl-5,6-dimethylphenol (431–565)	69.1	(446)	A	[70766-54-0] [87/5]
C <sub>16</sub> H <sub>26</sub> O	2,4-di- <i>tert</i> -butyl-5-ethylphenol (384–563)	69.3	(399)	A	[19245-41-1] [87/5]
C <sub>16</sub> H <sub>26</sub> O	2,4,5-triisopropylbenzyl alcohol (312–346)	113.1	(327)	A	[87/5]
C <sub>16</sub> H <sub>26</sub> O <sub>11</sub>	diethylene glycol dicarboxylic acid, di[1-(ethoxycarbonyl)-ethyl] ester (418–503)	99.3	(433)	A	[87/5]
C <sub>16</sub> H <sub>28</sub>	tricyclopentylmethane				[3752-92-9]
	(273–351)	77.8	(288)	A	[87/5][64/12]
	(371–429)	71.4	(386)	A	[87/5]
C <sub>16</sub> H <sub>30</sub> O	3-methylcyclopentadecanone (391–601)	63.5	(406)	A	[541-91-3] [87/5]
C <sub>16</sub> H <sub>30</sub> O	( <i>Z</i> ) 3-hexadecenal (373–413)	89.9	(298)	CGC	[174155-58-9] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	( <i>E</i> ) 3-hexadecenal (373–413)	89.6	(298)	CGC	[174155-57-8] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	( <i>Z</i> ) 4-hexadecenal (373–413)	88.7	(298)	CGC	[88373-69-7] [96/7][00/10]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>16</sub> H <sub>30</sub> O	(E) 4-hexadecenal (373–413)	88.9	(298)	CGC	[174155-59-0] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(Z) 5-hexadecenal (373–413)	87.8	(298)	CGC	[88373-68-6] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(E) 5-hexadecenal (373–413)	88.6	(298)	CGC	[99142-11-7] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(Z) 6-hexadecenal (373–413)	87.9	(298)	CGC	[88373-67-5] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(E) 6-hexadecenal (373–413)	88.5	(298)	CGC	[103346-18-5] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(Z) 7-hexadecenal (373–413)	87.8	(298)	CGC	[56797-40-1] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(E) 7-hexadecenal (373–413)	88.6	(298)	CGC	[72698-27-2] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(Z) 8-hexadecenal (373–413)	87.7	(298)	CGC	[66644-98-2] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(E) 8-hexadecenal (373–413)	88.4	(298)	CGC	[72698-28-3] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(Z) 9-hexadecenal (373–413)	88.0	(298)	CGC	[56219-04-6] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(E) 9-hexadecenal (373–413)	88.6	(298)	CGC	[72698-29-4] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(Z) 10-hexadecenal (373–413)	88.2	(298)	CGC	[68279-24-3] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(E) 10-hexadecenal (373–413)	88.8	(298)	CGC	[72698-30-7] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(Z) 11-hexadecenal (373–413)	88.5	(298)	CGC	[53939-28-9] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(E) 11-hexadecenal (373–413)	89.2	(298)	CGC	[57491-33-5] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(Z) 12-hexadecenal (373–413)	89.3	(298)	CGC	[72698-31-8] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(E) 12-hexadecenal (373–413)	89.3	(298)	CGC	[72698-32-9] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(Z) 13-hexadecenal (373–413)	89.7	(298)	CGC	[71545-96-5] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O	(E) 13-hexadecenal (373–413)	90.0	(298)	CGC	[72698-33-0] [96/7][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	dodecyl methacrylate (438–580)	64.9	(453)	A	[142-90-5] [87/5]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	oxa-2-cycloheptadecanone (403–463)	71.6	(418)	A	[109-29-5] [87/5]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(Z) 2-tetradecenyl acetate (353–398)	89.1	(298)	GC	[51309-20-7] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(E) 2-tetradecenyl acetate (353–398)	90.3	(298)	GC	[51309-21-8] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(Z) 3-tetradecenyl acetate (353–398)	88.5	(298)	GC	[54897-65-3] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(E) 3-tetradecenyl acetate (353–398)	89.2	(298)	GC	[56221-90-0] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(Z) 4-tetradecenyl acetate (353–398)	87.8	(298)	GC	[54897-66-4] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(E) 4-tetradecenyl acetate (353–398)	89.0	(298)	GC	[56209-67-7] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(Z) 5-tetradecenyl acetate (353–398)	88.3	(298)	GC	[35153-13-0] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(E) 5-tetradecenyl acetate (353–398)	89.1	(298)	GC	[34010-13-4] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(Z) 6-tetradecenyl acetate (353–398)	88.1	(298)	GC	[39650-11-8] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(E) 6-tetradecenyl acetate (353–398)	88.9	(298)	GC	[39650-10-7] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(Z) 7-tetradecenyl acetate (353–398)	88.4	(298)	GC	[16974-10-0] [97/13][00/10]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(E) 7-tetradecenyl acetate (353–398)	89.0	(298)	GC	[28540-79-6] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(Z) 8-tetradecenyl acetate (353–398)	88.7	(298)	GC	[35835-80-4] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(E) 8-tetradecenyl acetate (353–398)	89.2	(298)	GC	[56218-64-5] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(Z) 9-tetradecenyl acetate (353–398)	89.1	(298)	GC	[16725-53-4] [97/13][00/10]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(E) 9-tetradecenyl acetate (353–398)	90	(310)	GC	[83/10] [23192-82-7]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(Z) 10-tetradecenyl acetate (353–398)	89.6	(298)	GC	[97/13][00/10] [35153-16-3]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(E) 10-tetradecenyl acetate (353–398)	89.6	(298)	GC	[97/13][00/10] [35153-17-4]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(Z) 11-tetradecenyl acetate (353–398)	89.9	(298)	GC	[97/13][00/10] [20711-10-8]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(E) 11-tetradecenyl acetate (353–398)	90.0	(298)	GC	[97/13][00/10] [33189-72-9]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(Z) 12-tetradecenyl acetate (353–398)	90.4	(298)	GC	[97/13][00/10] [35153-20-9]
C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>	(E) 12-tetradecenyl acetate (353–398)	90.9	(298)	GC	[97/13][00/10] [35153-21-0]
C <sub>16</sub> H <sub>30</sub> O <sub>3</sub>	1,7-dioxa-8-cyclooctadecanone (403–463)	90.8	(298)	GC	[97/13][00/10] [6720-22-5]
C <sub>16</sub> H <sub>30</sub> O <sub>3</sub>	1,9-dioxa-2-cyclooctadecanone (403–463)	73.3	(418)	A	[87/5] [36575-58-3]
C <sub>16</sub> H <sub>30</sub> O <sub>4</sub>	dipentyl adipate (449–575)	74.5	(418)	A	[87/5] [14027-78-2]
C <sub>16</sub> H <sub>30</sub> O <sub>5</sub>	octyl[1-(butoxycarbonyl)ethyl]carbonate (374–503)	74.7	(464)	A	[87/5]
C <sub>16</sub> H <sub>31</sub> N	palmitonitrile (503–608)	76.2	(389)	A	[87/5] [629-79-8]
C <sub>16</sub> H <sub>32</sub>	tetraisobutylene (381–440)	70.1	(518)	A	[87/5]
C <sub>16</sub> H <sub>32</sub>	decylcyclohexane (371–425)	54.5	(397)		[43/2] [1795-16-0]
C <sub>16</sub> H <sub>32</sub>	undecylcyclopentane	76.7 79.7 61.6	(386) (298) (484)	A, MM	[87/5] [71/28] [87/5][54/7] [6785-23-5]
C <sub>16</sub> H <sub>32</sub>	1-hexadecene	80.6	(298)		[71/28] [629-73-2]
C <sub>16</sub> H <sub>32</sub> O	(Z) 3-hexadecen-1-ol (373–413)	80.3 ± 0.4 80.3 ± 0.4 80.1 61.5	(298) (298) (298) (476)	C C A	[77/1] [76/5] [71/28] [87/5][54/7] [141694-91-9]
C <sub>16</sub> H <sub>32</sub> O	(E) 3-hexadecen-1-ol (373–413)	110.7	(298)	CGC	[00/10][94/13] [128999-42-8]
C <sub>16</sub> H <sub>32</sub> O	(Z) 4-hexadecen-1-ol (373–413)	110.8	(298)	CGC	[00/10][94/13] [145235-63-8]
C <sub>16</sub> H <sub>32</sub> O	(E) 4-hexadecen-1-ol (373–413)	110.6	(298)	CGC	[00/10][94/13] [59101-23-4]
C <sub>16</sub> H <sub>32</sub> O	(Z) 5-hexadecen-1-ol (373–413)	111.5	(298)	CGC	[00/10][94/13] [106463-48-3]
C <sub>16</sub> H <sub>32</sub> O	(E) 5-hexadecen-1-ol (373–413)	110.9	(298)	CGC	[00/10][94/13] [85388-16-5]
C <sub>16</sub> H <sub>32</sub> O	(Z) 6-hexadecen-1-ol (373–413)	111.4	(298)	CGC	[00/10][94/13] [40642-45-3]
C <sub>16</sub> H <sub>32</sub> O	(E) 6-hexadecen-1-ol (373–413)	110.5	(298)	CGC	[00/10][94/13] [34500-33-9]
C <sub>16</sub> H <sub>32</sub> O	(Z) 7-hexadecen-1-ol (373–413)	111.0	(298)	CGC	[00/10][94/13] [24880-48-6]
C <sub>16</sub> H <sub>32</sub> O	(E) 7-hexadecen-1-ol (373–413)	110.2	(298)	CGC	[00/10][94/13]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>16</sub> H <sub>32</sub> O	(E) 7-hexadecen-1-ol (373–413)	111.4	(298)	CGC	[51824-10-3] [00/10][94/13]
C <sub>16</sub> H <sub>32</sub> O	(Z) 8-hexadecen-1-ol (373–413)	110.4	(298)	CGC	[64437-46-3] [00/10][94/13]
C <sub>16</sub> H <sub>32</sub> O	(E) 8-hexadecen-1-ol (373–413)	111.1	(298)	CGC	[64470-33-3] [00/10][94/13]
C <sub>16</sub> H <sub>32</sub> O	(Z) 9-hexadecen-1-ol (373–413)	110.6	(298)	CGC	[10378-01-5] [00/10][94/13]
C <sub>16</sub> H <sub>32</sub> O	(E) 9-hexadecen-1-ol (373–413)	111.3	(298)	CGC	[64437-47-4] [00/10][94/13]
C <sub>16</sub> H <sub>32</sub> O	(Z) 10-hexadecen-1-ol (373–413)	111.0	(298)	CGC	[64437-48-5] [00/10][94/13]
C <sub>16</sub> H <sub>32</sub> O	(E) 10-hexadecen-1-ol (373–413)	111.5	(298)	CGC	[54502-94-2] [00/10][94/13]
C <sub>16</sub> H <sub>32</sub> O	(Z) 11-hexadecen-1-ol (373–413)	111.3	(298)	CGC	[56683-54-6] [00/10][94/13]
C <sub>16</sub> H <sub>32</sub> O	(E) 11-hexadecen-1-ol (373–413)	111.8	(298)	CGC	[61301-56-2] [00/10][94/13]
C <sub>16</sub> H <sub>32</sub> O	(Z) 12-hexadecen-1-ol (373–413)	111.8	(298)	CGC	[72698-34-1] [00/10][94/13]
C <sub>16</sub> H <sub>32</sub> O	(E) 12-hexadecen-1-ol (373–413)	112.1	(298)	CGC	[72698-35-2] [00/10][94/13]
C <sub>16</sub> H <sub>32</sub> O	(Z) 13-hexadecen-1-ol (373–413)	112.3	(298)	CGC	[69282-65-1] [00/10][94/13]
C <sub>16</sub> H <sub>32</sub> O	(E) 13-hexadecen-1-ol (373–413)	112.6	(298)	CGC	[69282-66-2] [00/10][94/13]
C <sub>16</sub> H <sub>32</sub> O	2-hexadecanone (382–580)	72.3	(397)	A	[18787-63-8] [87/5]
C <sub>16</sub> H <sub>32</sub> O	hexadecanal (343–383)	89.7	(298)	CGC	[629-80-1] [96/7][00/10]
C <sub>16</sub> H <sub>32</sub> O	(394–594)	67.6	(409)	A	[87/5][47/5]
C <sub>16</sub> H <sub>32</sub> O <sub>2</sub>	methyl pentadecanoate	82.1	(350)		[7132-64-1] [02/26]
		79.8±0.2	(372)		[02/26]
		89.3±0.8	(298)		[02/26]
	(433–473)	88.8	(298)	CGC	[95/21]
		91.6±0.9	(298)	GC,C	[80/5]
		93.5±1.0	(298)	C	[77/1]
	(295–303)	87.9±1.3	(299)		[68/20]
	(400–527)	78.3	(415)	A, EST	[87/5][63/16]
C <sub>16</sub> H <sub>32</sub> O <sub>2</sub>	ethyl tetradecanoate (407–568)	71.8	(422)	A	[124-06-1] [87/5]
C <sub>16</sub> H <sub>32</sub> O <sub>2</sub>	butyl dodecanoate (423–483)	89.2	(298)	GC	[106-18-3] [97/28]
	(343–383)	75.8	(358)	A	[87/5]
C <sub>16</sub> H <sub>32</sub> O <sub>2</sub>	isobutyl dodecanoate (345–452)	80.0	(360)		[01/10]
C <sub>16</sub> H <sub>32</sub> O <sub>2</sub>	tetradecyl acetate (353–398)	91.7	(298)	GC	[638-59-5] [97/13][00/10]
	(411–462)	72.7	(426)	A	[87/5]
C <sub>16</sub> H <sub>32</sub> O <sub>2</sub>	hexadecanoic acid (palmitic acid) (440–625)	97.5	(455)	A	[57-10-3] [87/5]
	(347–374)	110.2±2.0	(364)	ME, TE	[82/4]
		90.1	(475)	I	[43/7]
C <sub>16</sub> H <sub>33</sub> Br	1-bromohexadecane (461–673)	94.4±1.5	(298)	C	[112-82-3] [96/6]
		71.9	(476)	A, EST	[87/5][61/13] [70/14]
C <sub>16</sub> H <sub>33</sub> Cl	1-chlorohexadecane	96.4±0.9	(298)	GS	[4860-03-1] [01/1]
		91.8±1.1	(298)	C	[77/1]
	(439–600)	73.3	(454)	DTA	[69/5]
C <sub>16</sub> H <sub>33</sub> F	1-fluorohexadecane (425–608)	66.1	(440)	A, EST	[408-38-8] [87/5][61/13]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>16</sub> H <sub>33</sub> I	1-iodohexadecane (475–673)	73.0	(490)	A, EST	[70/14] [544-77-4] [87/5][61/13]
	C <sub>16</sub> H <sub>34</sub>	hexadecane			
(453–503)		81.8±1.3	(298)	CGC	[00/9]
(423–473)		81.4	(298)	CGC	[95/21]
(363–413)		81.4	(298)	CGC	[95/21]
(393–583)		81.2	(298)	CGC	[95/21]
		68.5	(408)		[94/14]
		81.4	(298)		[94/12]
(505–589)		59.8	(520)		[92/2]
(323–423)		74.9	(338)	A	[87/5]
		66.9	(343)	GC	[77/34]
		66.2	(353)	GC	[77/34]
		65.6	(363)	GC	[77/34]
		64.9	(373)	GC	[77/34]
		64.2	(383)	GC	[77/34]
		81.4±0.4	(298)	C	[72/29]
	81.1	(298)		[71/28]	
	(467–563)	61.7	(482)	A, MM	[87/5][54/7]
	(299–324)	93.4	(311)	ME	[49/14]
	(293–308)	80.2	(300)	ME	[49/17]
	(442–469)	65.7	(455)	ME	[38/8]
C <sub>16</sub> H <sub>34</sub>	2-methylpentadecane (417–554)	62.0	(432)	A	[1560-93-6] [87/5]
C <sub>16</sub> H <sub>34</sub>	3-methylpentadecane (417–555)	61.0	(432)	A	[2882-96-4] [87/5]
C <sub>16</sub> H <sub>34</sub>	4-methylpentadecane (411–553)	57.8	(426)	A	[2801-87-8] [87/5]
C <sub>16</sub> H <sub>34</sub>	5-methylpentadecane (408–551)	57.3	(423)	A	[25117-33-3] [87/5]
C <sub>16</sub> H <sub>34</sub>	7-methylpentadecane (355–410)	66.3	(370)	A	[6165-40-8] [87/5]
C <sub>16</sub> H <sub>34</sub>	2,3-dimethyltetradecane (412–554)	57.4	(427)	A	[18435-23-9] [87/5]
C <sub>16</sub> H <sub>34</sub>	2,4-dimethyltetradecane (404–539)	60.6	(419)	A	[61868-06-2] [87/5]
C <sub>16</sub> H <sub>34</sub>	2,4,6-trimethyltridecane (395–521)	59.1	(410)	A	[87/5]
C <sub>16</sub> H <sub>34</sub>	2,2,4,4,6,8,8-heptamethylnonane (423–545)	52.4	(438)		[4390-04-9] [88/8]
C <sub>16</sub> H <sub>34</sub>	3,3,6,6-tetraethyloctane (301–330)	73.0±1.9	(308)	HSA	[95/27]
		74.3±1.9	(298)		[95/27]
		72.3±1.8	(298)	CGC	[95/27]
C <sub>16</sub> H <sub>34</sub> N <sub>2</sub>	bis(1,1,3,3-tetramethylbutyl)diazene	66.5±0.6	(298)	C	[39198-34-0] [76/3]
C <sub>16</sub> H <sub>34</sub> O	1-hexadecanol				[36653-82-4]
	(328–362)	100.4	(347)	GS	[01/3]
	(328–362)	108.8	(298)	GS	[01/3]
		112.5	(298)	CGC	[00/10]
	(343–463)	88.2	(403)		[92/14]
	(509–569)	68.9	(524)	A	[87/5]
	(415–487)	83.2	(430)	A	[87/5][74/13]
	(323–376)	112.3	(338)		[73/26]
	(418–463)	78.8	(423)		[73/26]
	(498–569)	70.0	(513)	A, EB	[87/5][70/2]
	(445–598)	77.3	(460)	DTA	[69/5]
(323–335)	109.5	(329)	ME	[65/15]	
C <sub>16</sub> H <sub>34</sub> O	2-hexadecanol (333–453)	102.2	(348)		[14852-31-4] [99/11]
C <sub>16</sub> H <sub>34</sub> O <sub>3</sub>	2[2-(dodecyloxy)ethoxy]ethanol (448–489)	82.1	(463)	A	[3055-93-4] [87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>16</sub> H <sub>34</sub> S	1-hexadecanethiol (470–643)	72.4	(485)		[2917-26-2] [99/16]
C <sub>16</sub> H <sub>34</sub> S	dioctyl sulfide (465–550)	95.0±10.7	(298)	EB	[2690-08-6] [97/7]
C <sub>16</sub> H <sub>34</sub> S <sub>2</sub>	dioctyl disulfide (479–656)	73.9	(494)		[822-27-5] [99/16]
C <sub>16</sub> H <sub>35</sub> N	dioctylamine (448–597)	87.1±1.3	(298)	EB	[1120-48-5] [96/4]
C <sub>16</sub> H <sub>35</sub> N	hexadecylamine (498–609)	66.9	(513)	A	[143-27-1] [87/5]
C <sub>16</sub> H <sub>35</sub> N	N,N-dimethyl-2-pentylnonylamine (401–552)	64.8	(425)	EB	[87/3]
C <sub>16</sub> H <sub>36</sub> N <sub>2</sub>	tetraethyl hydrazine (392–453)	51.1	(407)	A	[60678-70-8] [87/5]
C <sub>17</sub> H <sub>10</sub> O	benzanthrone (498–673)	91.4	(513)	A	[82-05-3] [87/5][47/5]
C <sub>17</sub> H <sub>12</sub>	1,2-benzofluorene (323–473)	83.7	(398)	GC	[238-84-6] [02/18]
C <sub>17</sub> H <sub>12</sub>	2,3-benzofluorene (323–473)	84.7	(398)	GC	[243-17-4] [02/18]
C <sub>17</sub> H <sub>13</sub> N	5-methyl-5 <i>H</i> -indeno[2,1- <i>b</i> ]quinoline (375–388)	122.2	(381)	A	[6626-64-8] [87/5]
C <sub>17</sub> H <sub>18</sub> O <sub>3</sub>	2-hydroxy-4-butoxybenzophenone (393–443)	92.7	(418)	ME	[84/1]
C <sub>17</sub> H <sub>18</sub> O <sub>3</sub>	4-( <i>tert</i> -butylphenyl) salicylate (336–438)	90.4	(351)	A, UV	[87-18-3] [87/5][60/2]
C <sub>17</sub> H <sub>24</sub> O <sub>2</sub>	menthyl benzoate (396–574)	69.9	(411)	A	[6284-35-1] [87/5][47/5]
C <sub>17</sub> H <sub>28</sub>	undecylbenzene (450–622)	66.7 84.7	(465) (298)		[6742-54-7] [99/16] [71/28]
C <sub>17</sub> H <sub>28</sub> O	4-methyl-2,6-di- <i>tert</i> -pentylphenol (438–556)	65.9	(453)	A	[56103-67-4] [87/5]
C <sub>17</sub> H <sub>28</sub> O <sub>2</sub>	1,3-dimethoxy-2-nonylbenzene (443–509)	79.2	(458)	A, GC	[55095-35-7] [87/5][75/24]
C <sub>17</sub> H <sub>32</sub>	1-heptadecyne (438–607)	62.7	(453)		[26186-00-5] [99/16]
C <sub>17</sub> H <sub>32</sub>	2-heptadecyne (446–619)	63.7	(461)		[61847-96-9] [99/16]
C <sub>17</sub> H <sub>32</sub>	3-heptadecyne (438–607)	62.5	(453)		[61886-63-3] [99/16]
C <sub>17</sub> H <sub>32</sub> Cl <sub>4</sub>	1,1,1,1,17-tetrachloroheptadecane (351–418)	108.0	(366)	A	[93479-16-4] [87/5]
C <sub>17</sub> H <sub>32</sub> O <sub>2</sub>	oxa-2-cyclooctadecanone (403–463)	73.5	(418)	A	[5637-97-8] [87/5]
C <sub>17</sub> H <sub>32</sub> O <sub>2</sub>	tetradecyl acrylate (458–601)	69.4	(473)	A	[21643-42-5] [87/5]
C <sub>17</sub> H <sub>32</sub> O <sub>2</sub>	( <i>Z</i> ) 9-pentadecenyl acetate (363–408)	93.6	(298)	GC	[35835-77-9] [97/13][00/10]
C <sub>17</sub> H <sub>32</sub> O <sub>2</sub>	( <i>E</i> ) 9-pentadecenyl acetate (363–408)	94.3	(298)	GC	[64437-41-8] [97/13][00/10]
C <sub>17</sub> H <sub>32</sub> O <sub>2</sub>	( <i>Z</i> ) 10-pentadecenyl acetate (363–408)	94.1	(298)	GC	[64437-43-0] [97/13][00/10]
C <sub>17</sub> H <sub>32</sub> O <sub>2</sub>	( <i>E</i> ) 10-pentadecenyl acetate (363–408)	94.6	(298)	GC	[64437-45-2] [97/13][00/10]
C <sub>17</sub> H <sub>32</sub> O <sub>2</sub>	( <i>Z</i> ) 11-pentadecenyl acetate (363–408)	94.6	(298)	GC	[35153-25-4] [97/13][00/10]
C <sub>17</sub> H <sub>32</sub> O <sub>2</sub>	( <i>E</i> ) 11-pentadecenyl acetate (363–408)	94.9	(298)	GC	[40535-40-8] [97/13][00/10]
C <sub>17</sub> H <sub>32</sub> O <sub>2</sub>	( <i>Z</i> ) 12-pentadecenyl acetate (363–408)	95.1	(298)	GC	[70711-45-4] [97/13][00/10]
C <sub>17</sub> H <sub>32</sub> O <sub>2</sub>	( <i>E</i> ) 12-pentadecenyl acetate (363–408)	94.5	(298)	GC	[73304-17-3] [97/13][00/10]
C <sub>17</sub> H <sub>32</sub> O <sub>2</sub>	( <i>Z</i> ) 13-pentadecenyl acetate				[70711-46-5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>17</sub> H <sub>32</sub> O <sub>2</sub>	(363–408)	95.9	(298)	GC	[97/13][00/10]
	(E) 13-pentadecenyl acetate				
C <sub>17</sub> H <sub>32</sub> O <sub>3</sub>	(363–408)	95.9	(298)	GC	[97/13][00/10]
	1,8-dioxa-9-cyclononadecanone				[1725-00-4]
C <sub>17</sub> H <sub>32</sub> O <sub>4</sub>	(403–463)	77.0	(418)	A	[87/5]
	dibutyl nonadioate				[2917-73-9]
C <sub>17</sub> H <sub>32</sub> O <sub>5</sub>	(313–450)	88.4	(328)	A	[87/5]
	nonyl[1-(butoxycarbonyl)ethyl]carbonate				
C <sub>17</sub> H <sub>33</sub> N	(420–534)	73.8	(435)	A	[87/5]
	heptadecanonitrile				[5399-02-0]
C <sub>17</sub> H <sub>34</sub>	(425–620)	81.2	(440)	A	[87/5]
	dodecylcyclopentane				[5634-30-0]
C <sub>17</sub> H <sub>34</sub>	(450–619)	68.0	(465)		[99/16]
		85.5	(298)		[71/28]
	undecylcyclohexane				[54105-66-7]
	(450–622)	67.0	(465)		[99/16]
C <sub>17</sub> H <sub>34</sub>		84.6	(298)		[71/28]
	1-heptadecene				[6765-39-5]
	(598–746)	55.5	(613)		[99/16]
	(376–432)	72.3	(391)	A	[87/5]
C <sub>17</sub> H <sub>34</sub> O		84.9	(298)		[71/28]
	2-heptadecanone				[2922-51-2]
C <sub>17</sub> H <sub>34</sub> O	(402–593)	77.0	(417)	A	[87/5][47/5]
	9-heptadecanone				[540-08-9]
C <sub>17</sub> H <sub>34</sub> O <sub>2</sub>	(439–482)	78.3	(454)	A, ME	[87/5][38/8]
	methyl hexadecanoate (methyl palmitate)				[112-39-0]
		93.4	(350)		[02/27]
		83.3 ± 0.4	(397)		[02/27]
		96.8 ± 0.6	(298)		[02/27]
	(463–523)	96.4	(298)	GC	[97/28]
	(433–473)	93.2	(298)	CGC	[95/21]
	(453–543)	78.2	(498)	GC	[93/9]
	(287–322)	U69.6	(302)	A	[87/5]
	(411–543)	82.4	(426)	A	[87/5][63/16]
	(378–445)	82.6	(393)	MG, OM	[52/13]
	(422–475)	71.4	(437)		[48/8]
C <sub>17</sub> H <sub>34</sub> O <sub>2</sub>	isopropyl tetradecanoate				[110-27-0]
	(413–466)	70.2	(428)	A	[87/5][48/8]
C <sub>17</sub> H <sub>34</sub> O <sub>2</sub>					[84/9]
	propyl tetradecanoate				[14303-70-9]
C <sub>17</sub> H <sub>34</sub> O <sub>2</sub>	(420–474)	71.3	(435)	A	[87/5][48/8]
					[84/9]
C <sub>17</sub> H <sub>34</sub> O <sub>2</sub>	heptadecanoic acid				[506-12-7]
	(449–637)	100.7	(464)	A	[87/5]
C <sub>17</sub> H <sub>34</sub> O <sub>3</sub>	(357–382)	112.7 ± 2.0	(372)	ME, TE	[82/4]
	tetradecyl lactate				[1323-03-1]
C <sub>17</sub> H <sub>34</sub> O <sub>3</sub>	(388–608)	86.4	(403)	A	[87/5]
	1-bromoheptadecane				[3508-00-7]
C <sub>17</sub> H <sub>35</sub> Br	(472–673)	71.6	(487)	A, EST	[87/5][61/13]
					[70/14]
C <sub>17</sub> H <sub>35</sub> Cl	1-chloroheptadecane				[62016-75-5]
	(450–673)	73.2	(465)	A, EST	[87/5][70/14]
C <sub>17</sub> H <sub>35</sub> F					[61/13]
	1-fluoroheptadecane				[117374-49-9]
C <sub>17</sub> H <sub>35</sub> F	(437–623)	68.4	(452)	A, EST	[87/5][61/13]
					[70/14]
C <sub>17</sub> H <sub>35</sub> I	1-iodoheptadecane				[26825-83-2]
	(517–673)	73.0	(532)	A, EST	[87/5][61/13]
C <sub>17</sub> H <sub>35</sub> NO <sub>2</sub>					[70/14]
	N-tetradecyllactamide				[87/5]
C <sub>17</sub> H <sub>36</sub>	(413–491)	107.5	(428)	A	[87/5]
	heptadecane				[629-78-7]
		86.5	(298)		[94/12]
	(289–320)	91.1	(304)	A	[87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(488–577)	62.9	(503)	A	[87/5]
		86.0±0.8	(298)	C	[72/29]
		86.2	(298)		[71/28]
	(445–470)	71.6	(457)	ME	[38/8]
C <sub>17</sub> H <sub>36</sub>	2-methylhexadecane				[1560-92-5]
	(428–569)	63.5	(443)	A	[87/5][59/15]
C <sub>17</sub> H <sub>36</sub>	3-methylhexadecane				[6418-43-5]
	(428–567)	63.4	(443)	A	[87/5][59/15]
C <sub>17</sub> H <sub>36</sub>	4-methylhexadecane				[25117-26-4]
	(420–567)	58.7	(435)	A	[87/5][59/15]
C <sub>17</sub> H <sub>36</sub>	5-methylhexadecane				[25117-34-4]
	(422–566)	59.8	(437)	A	[87/5][59/15]
C <sub>17</sub> H <sub>36</sub>	2,3-dimethylpentadecane				[2882-97-5]
	(424–569)	60.6	(439)	A	[87/5][59/15]
C <sub>17</sub> H <sub>36</sub>	2,4-dimethylpentadecane				[61868-07-3]
	(419–546)	65.2	(434)	A	[87/5][59/15]
C <sub>17</sub> H <sub>36</sub>	2,4,6-trimethyltetradecane				[101791-53-1]
	(411–534)	64.5	(426)	A	[87/5]
C <sub>17</sub> H <sub>36</sub>	4,4-dipropyldundecane				
		78.0±1.8	(298)	CGC	[95/27]
C <sub>17</sub> H <sub>36</sub> O	1-heptadecanol				[1454-85-9]
	(460–620)	78.3	(475)	A	[87/5]
	(473–623)	75.9	(488)	A	[87/5]
C <sub>17</sub> H <sub>36</sub> S	1-heptadecanethiol				[53193-22-9]
	(481–657)	74.6	(496)		[99/16]
C <sub>17</sub> H <sub>37</sub> N	heptadecylamine				[4200-95-7]
	(522–636)	68.2	(537)	A	[87/5][56/17]
C <sub>18</sub> H <sub>12</sub>	benz[a]anthracene				[56-55-3]
	(343–453)	91.0	(398)	GC	[90/2]
C <sub>18</sub> H <sub>12</sub>	triphenylene				[217-59-4]
	(323–473)	88.5	(398)	GC	[02/18]
	(535–768)	67.7	(550)		[99/16]
C <sub>18</sub> H <sub>12</sub>	chrysene				[218-01-9]
	(323–473)	89.6	(398)	GC	[02/18]
C <sub>18</sub> H <sub>14</sub>	<i>o</i> -terphenyl				[84-15-1]
	(335–368)	81.0±0.4	(352)	GS	[97/1]
	(335–368)	84.2±0.4	(298)	GS	[97/1]
	(576–786)	60.5	(591)	DSC	[96/10]
	(343–462)	77.6	(403)		[89/14]
	(462–650)	68.5	(477)	A	[87/5]
C <sub>18</sub> H <sub>14</sub>	<i>m</i> -terphenyl				[92-06-8]
		97.2±0.3	(298)	CGC	[01/1]
	(462–691)	76.1	(477)	A	[87/5]
C <sub>18</sub> H <sub>14</sub>	<i>p</i> -terphenyl				[92-94-4]
	(323–473)	79.2	(398)	GC	[02/18]
	(499–700)	79.2	(514)	A	[87/5]
C <sub>18</sub> H <sub>14</sub> N <sub>4</sub> O <sub>2</sub>	1,4- <i>bis</i> [(4-hydroxyphenyl)azo]benzene				[21811-64-3]
	(473–533)	68.0	(488)	A	[87/5]
C <sub>18</sub> H <sub>15</sub> N	triphenylamine				[603-34-9]
	(473–640)	65.2	(488)	A	[87/5]
C <sub>18</sub> H <sub>15</sub> NO <sub>2</sub>	N-9-anthryldiacetamide				[3808-37-5]
	(399–455)	106.3	(414)	A	[87/5]
C <sub>18</sub> H <sub>15</sub> O <sub>4</sub> P	triphenyl phosphate				[115-86-6]
	(548–683)	81.4	(563)	IA	[87/5][57/8]
C <sub>18</sub> H <sub>15</sub> P	triphenylphosphine				[603-35-0]
	(483–660)	71.2	(498)	A	[87/5]
	(364–392)	91.4±2	(378)	TE, ME	[81/3]
C <sub>18</sub> H <sub>16</sub> O <sub>2</sub>	2- <i>tert</i> -butyl-9,10-anthraquinone				[84-47-9]
	(483–523)	101.4	(498)	A	[87/5]
C <sub>28</sub> H <sub>18</sub>	2-( <i>tert</i> -butyl)anthracene				
	(323–473)	84.5	(398)	GC	[02/18]
C <sub>18</sub> H <sub>18</sub>	9-butylanthracene				[1498-69-7]
	(422–492)	77.1	(437)	A	[87/5]
	(328–373)	83.9	(343)	A	[87/5][64/12]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>18</sub> H <sub>18</sub>	1-methyl-7-isopropylphenanthrene (539–678)	54.0	(554)	A	[483-65-8] [87/5]
C <sub>18</sub> H <sub>22</sub>	1,6-diphenylhexane (293–373)	88.0	(308)	A	[1087-49-6] [87/5][64/12]
C <sub>18</sub> H <sub>22</sub>	2,2-di(p-tolyl)butane (298–473)	85.4	(313)		[99/16]
C <sub>18</sub> H <sub>22</sub>	1-p-tolyl-(1-p-propylphenyl)ethane (298–473)	85.4	(313)		[99/16]
C <sub>18</sub> H <sub>22</sub>	1-o-tolyl-p-tolylbutane (298–473)	85.4	(313)		[99/16]
C <sub>18</sub> H <sub>22</sub> N <sub>4</sub>	<i>trans, trans</i> -1,6-diphenyl-3,3,4,4-tetramethyl-1,2,5,6-tetraazaahexane (348–388)	92.8 ± 1.5	(368)	GS	[93/16]
C <sub>18</sub> H <sub>24</sub>	1,2,3,4,4a,7,8,9,10,12,12a-dodecahydrochrysene (318–358)	84.2	(333)	A	[1610-22-6] [87/5][47/5]
C <sub>18</sub> H <sub>24</sub> O <sub>4</sub>	butylcyclohexylphthalate (368–485)	94.3	(383)	A	[84-64-0] [87/5]
C <sub>18</sub> H <sub>26</sub> O <sub>4</sub>	diisopentylphthalate (390–610)	81.6	(405)	A	[606-50-5] [87/5]
C <sub>18</sub> H <sub>26</sub> O <sub>4</sub>	dipentylphthalate (323–390) (303–500)	87.3 99.4	(338) (318)	T A, ME	[131-18-0] [49/9] [87/5][48/10]
C <sub>18</sub> H <sub>28</sub>	1,2,3,4-tetrahydro-6-octyl-naphthalene (503–574)	103.3	(538)		[66553-12-6] [99/16]
C <sub>18</sub> H <sub>30</sub>	dodecylbenzene (333–453) (496–609) (336–456)	92.0 83.2 67.4 80.6 89.6	(275) (348) (511) (356) (298)	A GS	[123-01-3] [00/4] [93/10] [87/5] [86/6] [71/28]
C <sub>18</sub> H <sub>30</sub>	perhydrochrysene (273–353)	82.4	(288)		[2090-14-4] [64/12]
C <sub>18</sub> H <sub>30</sub>	hexaethylbenzene (407–572)	62.6	(422)	A	[604-88-6] [87/5][47/5]
C <sub>18</sub> H <sub>30</sub>	1,2,4,5-tetraisopropylbenzene (410–575) (410–575) (410–575) (410–575)	61.1 ± 0.3 56.8 ± 0.3 52.3 ± 0.5 47.5 ± 0.9	(420) (460) (500) (540)	EB EB EB EB	[635-11-0] [02/20] [02/20] [02/20] [02/20]
C <sub>18</sub> H <sub>30</sub> O <sub>2</sub>	1,3-dimethoxy-4-decylbenzene (443–493)	76.6	(458)	A, GC	[59968-12-6] [87/5][75/24]
C <sub>18</sub> H <sub>30</sub> O <sub>2</sub>	1,3-dimethoxy-5-decylbenzene (459–519)	78.4	(474)	A, GC	[41442-52-8] [87/5][75/24]
C <sub>18</sub> H <sub>30</sub> O <sub>4</sub>	1,4- <i>bis</i> (1,1-diethoxyethyl)benzene (329–347)	88.5	(338)	A	[47189-08-2] [87/5]
C <sub>18</sub> H <sub>30</sub> O <sub>6</sub>	<i>trans</i> aconitic acid, tributyl ester (385–483)	87.4	(400)	A	[7568-58-3] [87/5]
C <sub>18</sub> H <sub>30</sub> O <sub>6</sub>	diethylene glycol dicarboxylic acid, di[1-(isopropoxycarbonyl) ethyl] ester (418–493)	97.6	(433)	A	[87/5]
C <sub>18</sub> H <sub>30</sub> O <sub>6</sub>	diethylene glycol dicarboxylic acid, di[1-(propoxycarbonyl) ethyl] ester (418–514)	101.5	(433)	A	[87/5]
C <sub>18</sub> H <sub>32</sub>	9-butyltetrahydroanthracene (420–456)	72.8	(435)	A	[87/5]
C <sub>18</sub> H <sub>32</sub>	1,2-dicyclohexylcyclohexane (375–563)	72.8	(390)	A	[2456-43-1] [87/5]
C <sub>18</sub> H <sub>32</sub>	1,6-dicyclohexylcyclohexane (288–373)	85.9	(303)	A	[1610-23-7] [87/5][64/12]
C <sub>18</sub> H <sub>32</sub> O	6,10,14-trimethyl-3,5-pentadecadien-2-one (404–560)	43.4 ± 0.5	(482)		[1604-32-6] [88/4]
C <sub>18</sub> H <sub>32</sub> O <sub>6</sub>	tributyl 1,2,3-propanetricarboxylate (385–482) (323–368)	87.8 81.9	(400) (328)	A T	[38094-11-0] [87/5] [49/16]
C <sub>18</sub> H <sub>34</sub>	1-octadecyne (450–623)	64.9	(465)		[629-89-0] [99/16]
C <sub>18</sub> H <sub>34</sub>	2-octadecyne				[61847-97-0]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>18</sub> H <sub>34</sub>	(458–633)	65.7	(473)		[99/16]
	3-octadecyne				[61886-64-4]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(449–622)	64.5	(464)		[99/16]
	<i>cis</i> 9-octadecenoic acid				[112-80-1]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(441–633)	83.8	(456)	A	[87/5]
	<i>trans</i> 9-octadecenoic acid				[112-79-8]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(444–635)	82.3	(459)	A	[87/5][47/5]
	tetradecyl methacrylate				[2549-53-3]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(463–611)	69.1	(478)	A	[87/5]
	(Z) 3-hexadecenyl acetate				[141694-86-2]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	98.5	(298)	GC	[97/13][00/10]
	(E) 3-hexadecenyl acetate				[128984-60-1]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	99.1	(298)	GC	[97/13][00/10]
	(Z) 4-hexadecenyl acetate				[65954-24-7]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	97.7	(298)	GC	[97/13][00/10]
	(E) 4-hexadecenyl acetate				[155055-27-9]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	98.9	(298)	GC	[97/13][00/10]
	(Z) 5-hexadecenyl acetate				[34010-18-9]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	98.0	(298)	GC	[97/13][00/10]
	(E) 5-hexadecenyl acetate				[56218-65-6]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	98.8	(298)	GC	[97/13][00/10]
	(Z) 6-hexadecenyl acetate				[34010-19-0]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	97.8	(298)	GC	[97/13][00/10]
	(E) 6-hexadecenyl acetate				[56218-66-7]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	98.6	(298)	GC	[97/13][00/10]
	(Z) 7-hexadecenyl acetate				[23192-42-9]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	97.8	(298)	GC	[97/13][00/10]
	(E) 7-hexadecenyl acetate				[23192-83-8]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	98.5	(298)	GC	[97/13][00/10]
	(Z) 8-hexadecenyl acetate				[56218-67-8]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	97.8	(298)	GC	[97/13][00/10]
	(E) 8-hexadecenyl acetate				[56218-68-9]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	98.6	(298)	GC	[97/13][00/10]
	(Z) 9-hexadecenyl acetate				[34010-20-3]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	98.2	(298)	GC	[97/13][00/10]
	(E) 9-hexadecenyl acetate				[56218-69-0]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	98.9	(298)	GC	[97/13][00/10]
	(Z) 10-hexadecenyl acetate				[56218-70-3]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	98.5	(298)	GC	[97/13][00/10]
	(E) 10-hexadecenyl acetate				[56218-71-4]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	99.1	(298)	GC	[97/13][00/10]
	(Z) 11-hexadecenyl acetate				[34010-21-4]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	98.9	(298)	GC	[97/13][00/10]
	(E) 11-hexadecenyl acetate				[56218-72-5]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	99.5	(298)	GC	[97/13][00/10]
	(Z) 12-hexadecenyl acetate				[56218-73-6]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	99.5	(298)	GC	[97/13][00/10]
	(E) 12-hexadecenyl acetate				[64789-90-8]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	99.8	(298)	GC	[97/13][00/10]
	(Z) 13-hexadecenyl acetate				[56218-74-7]
C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	(373–418)	100.0	(298)	GC	[97/13][00/10]
	(E) 13-hexadecenyl acetate				[69282-67-3]
C <sub>18</sub> H <sub>34</sub> O <sub>4</sub>	(373–418)	100.3	(298)	GC	[97/13][00/10]
	dihexyl adipate				[110-33-8]
C <sub>18</sub> H <sub>34</sub> O <sub>4</sub>	(470–595)	80.4	(485)	A	[87/5]
	dibutyl decanedioate				[109-43-3]
C <sub>18</sub> H <sub>34</sub> O <sub>5</sub>	(401–520)	94.3	(416)	A	[87/5]
	decyl[1-(butoxycarbonyl)ethyl]carbonate				[391-503]
C <sub>18</sub> H <sub>34</sub> O <sub>6</sub>	(391–503)	79.3	(406)	A	[87/5]
	triethylene glycol, <i>bis</i> (2-ethylbutyrate)				[95-08-9]
C <sub>18</sub> H <sub>35</sub> N	(313–528)	91.7	(328)	A	[87/5]
	stearonitrile				[638-65-3]
C <sub>18</sub> H <sub>36</sub>	(478–631)	78.6	(493)	A	[87/5]
	tridecylcyclopentane				[6006-34-4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>18</sub> H <sub>36</sub>	(463–634)	70.9	(478)		[99/16]
	dodecylcyclohexane	90.5	(298)		[71/28]
C <sub>18</sub> H <sub>36</sub>	(299–324)	88.9±0.8	(298)	GCC	[1795-17-1]
	1-octadecene	89.5	(298)		[78/16]
C <sub>18</sub> H <sub>36</sub> O	(399–589)	93.4	(311)	A, ME	[71/28]
		76.4	(414)	A	[87/5][49/14]
C <sub>18</sub> H <sub>36</sub> O	(Z) 3-octadecen-1-ol	90.0	(298)		[112-88-9]
	(393–433)	120.5	(298)	CGC	[87/5]
C <sub>18</sub> H <sub>36</sub> O	(E) 3-octadecen-1-ol	120.0	(298)	CGC	[71/28]
	(393–433)	119.3	(298)	CGC	[41207-35-6]
C <sub>18</sub> H <sub>36</sub> O	(Z) 9-octadecen-1-ol	120.1	(298)	CGC	[00/10][94/13]
	(393–433)	119.6	(298)	CGC	[41207-36-7]
C <sub>18</sub> H <sub>36</sub> O	(E) 9-octadecen-1-ol	120.4	(298)	CGC	[00/10][94/13]
	(393–433)	120.8	(298)	CGC	[143-28-2]
C <sub>18</sub> H <sub>36</sub> O	(Z) 11-octadecen-1-ol	121.2	(298)	CGC	[00/10][94/13]
	(393–433)	119.6	(298)	CGC	[506-42-3]
C <sub>18</sub> H <sub>36</sub> O	(E) 11-octadecen-1-ol	120.4	(298)	CGC	[00/10][94/13]
	(393–433)	120.8	(298)	CGC	[57716-88-8]
C <sub>18</sub> H <sub>36</sub> O	(Z) 13-octadecen-1-ol	120.8	(298)	CGC	[00/10][94/13]
	(393–433)	121.2	(298)	CGC	[62972-93-4]
C <sub>18</sub> H <sub>36</sub> O	(E) 13-octadecen-1-ol	121.2	(298)	CGC	[00/10][94/13]
	(393–433)	121.2	(298)	CGC	[76836-10-7]
C <sub>18</sub> H <sub>36</sub> O	6,10,14-trimethyl-2-pentadecanone	56.0±0.6	(451)		[00/10][94/13]
	(402–500)	56.0±0.6	(451)		[502-69-2]
C <sub>18</sub> H <sub>36</sub> O	octadecanal	75.7	(428)	A	[88/4]
	(413–616)	75.7	(428)	A	[638-66-4]
C <sub>18</sub> H <sub>36</sub> O <sub>2</sub>	hexadecyl acetate	102.3	(298)	GC	[87/5][47/5]
	(373–418)	102.3	(298)	GC	[629-70-9]
C <sub>18</sub> H <sub>36</sub> O <sub>2</sub>	(431–469)	70.3	(446)	A	[97/13][00/10]
	ethyl palmitate	73.9	(444)	A	[87/5]
C <sub>18</sub> H <sub>36</sub> O <sub>2</sub>	(298–318)	100.7	(308)	ME	[628-97-7]
	methyl heptadecanoate	89.3	(350)		[87/5][67/22]
C <sub>18</sub> H <sub>36</sub> O <sub>2</sub>		89.0±0.7	(353)		[1731-92-6]
		97.0±1.2	(298)		[02/27]
C <sub>18</sub> H <sub>36</sub> O <sub>2</sub>	(421–525)	84.4	(436)	A, EST	[02/27]
	octadecanoic acid (stearic acid)	124.3	(364)	A	[87/5][63/16]
C <sub>18</sub> H <sub>36</sub> O <sub>2</sub>	(349–415)	100.6	(472)	A	[55-11-4]
	(457–649)	118.9±2.0	(379)	ME, TE	[87/5]
C <sub>18</sub> H <sub>37</sub> Br	(366–389)	79.8	(515)	I	[87/5]
	1-bromooctadecane	81.0	(445)	A, EST	[82/4]
C <sub>18</sub> H <sub>37</sub> Cl	(430–673)	81.0	(445)	A, EST	[43/7]
	1-chlorooctadecane	96.9	(333)	GC	[112-89-0]
C <sub>18</sub> H <sub>37</sub> F	(333–393)	93.4	(353)	GC	[87/5][61/13]
	(333–393)	88.4	(373)	GC	[70/14]
C <sub>18</sub> H <sub>37</sub> F	(333–393)	86.7	(393)	GC	[3386-33-2]
	(472–673)	74.2	(487)	A	[80/14]
C <sub>18</sub> H <sub>37</sub> I	(477–633)	68.2	(492)	A, EST	[80/14]
	1-fluorooctadecane	77.2	(511)	A, EST	[87/5][70/14]
C <sub>18</sub> H <sub>37</sub> I	(496–673)	77.2	(511)	A, EST	[1649-73-6]
	1-iodooctadecane	90.6±1.0	(298)	CGC	[87/5][61/13]
C <sub>18</sub> H <sub>38</sub>		91.3±2.9	(298)	GS	[629-93-6]
	octadecane	91.4±1.3	(298)	CGC	[87/5][61/13]
C <sub>18</sub> H <sub>38</sub>		91.4±1.3	(298)	CGC	[70/14]
		91.4±1.3	(298)	CGC	[593-45-3]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(363–413)	91.8	(298)	CGC	[95/21]
	(423–473)	91.8	(298)	CGC	[95/21]
	(453–503)	92.8	(298)	CGC	[95/21]
	(413–588)	74.4	(428)		[94/14]
		91.4	(298)		[94/12]
	(501–548)	64.8	(516)		[87/5]
	(335–439)	80.0	(348)	GS	[86/6]
	(318–361)	84.3	(333)	A, GS	[87/5][79/11]
		72.5	(343)	GC	[77/34]
		71.8	(353)	GC	[77/34]
		71.1	(363)	GC	[77/34]
		70.5	(373)	GC	[77/34]
		69.8	(383)	GC	[77/34]
		90.8	(298)		[71/28]
	(447–474)	78.1	(460)	ME	[38/8]
	(447–590)	69.4	(462)		[1882/1][84/9]
C <sub>18</sub> H <sub>38</sub>	2-methylheptadecane				[1560-89-0]
	(442–581)	67.8	(457)	A	[87/5][59/15]
C <sub>18</sub> H <sub>38</sub>	3-methylheptadecane				[6418-44-6]
	(441–583)	65.6	(456)	A	[87/5][59/15]
C <sub>18</sub> H <sub>38</sub>	4-methylheptadecane				[26429-11-8]
	(429–580)	58.9	(444)	A	[87/5][59/15]
C <sub>18</sub> H <sub>38</sub>	5-methylheptadecane				[26730-95-0]
	(432–581)	61.1	(447)	A	[87/5][59/15]
C <sub>18</sub> H <sub>38</sub>	2,3-dimethylhexadecane				[61868-02-8]
	(466–583)	64.9	(481)	A	[87/5][59/15]
C <sub>18</sub> H <sub>38</sub>	2,4-dimethylhexadecane				[61868-08-4]
	(434–562)	69.0	(449)	A	[87/5][59/15]
C <sub>18</sub> H <sub>38</sub>	2,4,6-trimethylpentadecane				[101882-67-1]
	(420–550)	64.3	(435)	A	[87/5][99/16]
C <sub>18</sub> H <sub>38</sub>	4,9-diisopropyldodecane				[59/15]
	(368–424)	70.0	(383)	A	[87/5]
C <sub>18</sub> H <sub>38</sub> O	1-octadecanol				[112-92-5]
	(435–504)	86.4	(450)	A	[87/5]
	(500–573)	76.3	(515)	A	[87/5]
	(494–575)	76.9	(509)	A, EB	[87/5][70/2]
	(334–356)	113.5	(345)	A, ME	[87/5][65/15]
C <sub>18</sub> H <sub>38</sub> S	1-octadecanethiol				[2885-00-9]
	(492–670)	77.1	(507)	EST	[99/16]
C <sub>18</sub> H <sub>38</sub> S <sub>2</sub>	dinonyl disulfide				[4485-77-2]
	(490–650)	78.3	(514)		[99/16]
C <sub>18</sub> H <sub>38</sub> O <sub>4</sub>	2-[2-(2-[dodecyloxy]ethoxy)ethoxy]ethanol				[3055-94-5]
	(475–523)	102.7	(490)	A	[87/5]
C <sub>18</sub> H <sub>39</sub> N	N,N-dimethylhexadecylamine				[112-69-6]
	(483–671)	67.3	(498)	A	[87/5]
C <sub>18</sub> H <sub>39</sub> N	dinonylamine				[2044-21-5]
	(486–676)	67.7	(501)	A	[87/5]
C <sub>18</sub> H <sub>39</sub> N	N-ethylhexadecylamine				[5877-76-9]
	(406–613)	66.4	(421)	A	[87/5][47/5]
C <sub>18</sub> H <sub>39</sub> N	octadecylamine				[124-30-1]
	(450–635)	76.2	(465)	A	[87/5]
C <sub>19</sub> H <sub>13</sub> NO	2-(1-naphthyl)-5-phenyloxazole				[846-63-9]
	(510–595)	89.2	(525)	A	[87/5]
C <sub>19</sub> H <sub>16</sub>	triphenylmethane				[519-73-3]
		94.6	(298)	CGC	[98/11]
	(453–503)	95.0	(298)	CGC	[95/21]
	(343–462)	82.0	(403)		[89/14]
	(512–643)	58.6	(527)	A	[87/5]
C <sub>19</sub> H <sub>17</sub> NO <sub>2</sub>	1-piperidinoanthraquinone				[4946-83-2]
	(395–404)	82.0	(399)	A	[87/5]
C <sub>19</sub> H <sub>20</sub> O <sub>2</sub>	3-(diphenylmethyl)-3-methyl-2,4-pentanedione				
	(353–386)	83.1 ± 0.5	(370)	GS	[95/28]
C <sub>19</sub> H <sub>20</sub> O <sub>4</sub>	butyl benzyl phthalate				[85-68-7]
	(416–516)	89.0	(431)	A	[87/5]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>19</sub> H <sub>20</sub> O <sub>4</sub>	dibenzyl ethylmalonate (403–483)	94.1	(418)	A	[74254-53-8] [87/5]
C <sub>19</sub> H <sub>24</sub>	dicumenylmethane (303–402) (608–704)	71.0 57.9	(318) (623)		[25566-92-1] [99/16] [99/16]
C <sub>19</sub> H <sub>30</sub>	7-phenyl-6-tridecene (323–402)	73.7	(338)	A	[87/5]
C <sub>19</sub> H <sub>32</sub>	7-phenyltridecane (391–449)	77.2	(406)	A, MG	[87/5][55/11]
C <sub>19</sub> H <sub>32</sub>	tridecylbenzene (473–651) (343–463)	72.0 90.0 94.6	(488) (358) (298)		[123-02-4] [99/16] [90/13] [71/28]
C <sub>19</sub> H <sub>32</sub>	7-phenyltridecane (413–470)	76.2	(428)	A, MG	[2400-01-3] [87/5][55/11]
C <sub>19</sub> H <sub>32</sub> O <sub>2</sub>	methyl linolenate (423–503) (394–459)	102.1 87.7	(298) (409)	GC A, MG, OM	[301-00-8] [97/28] [87/5][52/13]
C <sub>19</sub> H <sub>34</sub>	tricyclohexylmethane (333–365) (428–605)	81.4 73.3	(348) (443)	A A	[1610-24-8] [87/5][64/12] [87/5]
C <sub>19</sub> H <sub>34</sub> O <sub>2</sub>	linoleic acid, methyl ester (methyl linoleate) (423–503) (453–543) (391–459)	102.2 77.2 86.3	(298) (498) (406)	GC GC A, MG, OM	[112-62-9] [97/28] [93/9] [87/5][52/13]
C <sub>19</sub> H <sub>36</sub>	1,1-dicyclohexylheptane (293–368) (422–458)	87.8 73.8	(330) (437)	A A, MG	[2090-15-5] [87/5][99/16] [87/5][55/11]
C <sub>19</sub> H <sub>36</sub>	1-nonadecyne (462–637)	66.9	(477)		[26186-01-6] [99/16]
C <sub>19</sub> H <sub>36</sub>	2-nonadecyne (469–648)	67.8	(484)		[61847-98-1] [99/16]
C <sub>19</sub> H <sub>36</sub>	3-nonadecyne (460–635)	66.5	(475)		[61886-65-5] [99/16]
C <sub>19</sub> H <sub>36</sub> O <sub>2</sub>	methyl <i>cis</i> -9-octadecenoate (methyl oleate) (423–503) (433–473) (453–543)	103.3 99.6 77.2	(298) (298) (498)	GC CGC GC	[112-62-9] [97/28] [95/21] [93/9]
		106.8 ± 1.0	(298)	GCC	[80/5]
		83.0	(443)	A	[87/5][64/13]
		86.7	(416)	MG, OM	[52/13]
C <sub>19</sub> H <sub>36</sub> O <sub>2</sub>	methyl elaidate (453–543)	77.2	(498)	GC	[1937-62-8] [93/9]
C <sub>19</sub> H <sub>36</sub> O <sub>3</sub>	methyl ricinoleate (453–543)	89.3	(498)	GC	[141-24-2] [93/9]
C <sub>19</sub> H <sub>36</sub> O <sub>5</sub>	undecyl[1-(butoxycarbonyl)ethyl]carbonate (438–637)	77.0	(453)	A	[87/5]
C <sub>19</sub> H <sub>37</sub> NO	octadecyl isocyanate (388–494)	77.8	(403)	A	[112-96-9] [87/5]
C <sub>19</sub> H <sub>37</sub> NO <sub>3</sub>	2-[2-ethyl-(hexanoyloxy)]-N,N-dibutylpropionamide (403–448)	83.0	(418)	A	[87/5]
C <sub>19</sub> H <sub>38</sub>	tridecylcyclohexane (474–651)	72.2 94.5	(489) (298)		[6006-33-3] [99/16] [71/28]
C <sub>19</sub> H <sub>38</sub>	7-cyclohexyltridecane (391–449)	75.6	(406)	A, MG	[13151-92-3] [87/5][55/11]
C <sub>19</sub> H <sub>38</sub>	tetradecylcyclopentane (475–648)	73.6 95.4	(490) (298)		[1795-22-8] [99/16] [71/28]
C <sub>19</sub> H <sub>38</sub>	7-(cyclopentylmethyl)tridecane (389–446)	76.5	(404)	A, MG	[55044-77-4] [87/5][55/11]
C <sub>19</sub> H <sub>38</sub>	1-nonadecene (560–604)	63.3 95.0	(575) (298)	A	[18435-45-5] [87/5] [71/28]
C <sub>19</sub> H <sub>38</sub> O <sub>2</sub>	methyl stearate				[112-61-8]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		98.0	(350)		[02/27]
		90.0±0.3	(401)		[02/27]
		105.9±1.4	(298)		[02/27]
	(463–523)	106.2	(298)	GC	[97/28]
	(453–543)	75.4	(498)	GC	[93/9]
	(427–484)	83.2	(442)	A	[87/5][64/13]
C <sub>19</sub> H <sub>38</sub> O <sub>2</sub>	propyl palmitate (439–477)	74.5	(454)	A	[2239-78-3] [87/5][48/8] [84/9]
C <sub>19</sub> H <sub>38</sub> O <sub>2</sub>	isopropyl palmitate (433–471)	73.6	(448)	A	[142-91-6] [87/5][48/8] [84/9]
C <sub>19</sub> H <sub>38</sub> O <sub>2</sub>	nonadecanoic acid (511–659)	94.4	(526)	A	[646-30-0] [87/5]
	(371–394)	121.8	(386)	ME, TE	[82/4]
C <sub>19</sub> H <sub>38</sub> O <sub>3</sub>	hexadecyl lactate (405–556)	90.5	(420)	A	[35274-05-6] [87/5]
C <sub>19</sub> H <sub>38</sub> O <sub>3</sub>	3-octyloxypropionic acid, octyl ester (443–513)	73.6	(458)	A	[87/5]
C <sub>19</sub> H <sub>39</sub> Br	1-bromononadecane (493–673)	77.9	(508)	A, EST	[4434-66-6] [87/5][61/13] [70/14]
C <sub>19</sub> H <sub>39</sub> Cl	1-chlorononadecane (483–673)	76.3	(498)	A	[62016-76-6] [87/5][70/14]
C <sub>19</sub> H <sub>39</sub> F	1-fluorononadecane (458–648)	72.5	(473)	A, EST	[1480-63-3] [87/5][61/13] [70/14]
C <sub>19</sub> H <sub>39</sub> I	1-iodononadecane (506–673)	79.1	(521)	A, EST	[62127-51-9] [87/5][61/13] [70/14]
C <sub>19</sub> H <sub>39</sub> NO <sub>2</sub>	N-hexadecyl lactamide (423–508)	111.0	(438)	A	[87/5]
C <sub>19</sub> H <sub>39</sub> NO <sub>2</sub>	N,N-dioctyl lactamide (453–488)	99.3	(468)	A	[87/5]
C <sub>19</sub> H <sub>40</sub>	nonadecane (423–588)	76.2	(438)		[629-92-5] [94/14]
		96.4	(298)		[94/12]
	(456–606)	73.0	(471)	A	[87/5]
		95.8	(298)		[71/28]
C <sub>19</sub> H <sub>40</sub>	2-methyloctadecane (451–595)	67.5	(466)	A	[1560-88-9] [87/5][99/16] [59/15]
C <sub>19</sub> H <sub>40</sub>	3-methyloctadecane (455–597)	69.2	(470)	A	[6561-44-0] [87/5][99/16] [59/15]
C <sub>19</sub> H <sub>40</sub>	4-methyloctadecane (445–596)	63.3	(460)	A	[10544-95-3] [87/5][99/16] [59/15]
C <sub>19</sub> H <sub>40</sub>	5-methyloctadecane (445–595)	63.8	(460)	A	[25117-35-5] [87/5][99/16] [59/15]
C <sub>19</sub> H <sub>40</sub>	2,3-dimethylheptadecane (447–598)	64.1	(462)		[61868-03-9] [99/16][59/15]
	(493–598)	67.2	(508)	A	[87/5]
C <sub>19</sub> H <sub>40</sub>	2,4-dimethylheptadecane (444–574)	70.6	(459)	A	[61868-09-5] [87/5][99/16] [59/15]
C <sub>19</sub> H <sub>40</sub>	2,4,6-trimethylhexadecane (435–568)	67.3	(450)	A	[102013-94-5] [87/5][99/16] [59/15]
C <sub>19</sub> H <sub>40</sub>	7-hexyltridecane (411–444)	75.2	(426)	A	[7225-66-3] [87/5]
C <sub>19</sub> H <sub>40</sub> O	1-nonadecanol (479–640)	81.7	(494)	A	[1454-84-8] [87/5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>19</sub> H <sub>40</sub> S	(494–635)	80.0	(509)	A	[87/5]
	1-nonadecanethiol				[53193-23-0]
C <sub>19</sub> H <sub>41</sub> N	(502–682)	79.2	(517)	EST	[99/16]
	nonadecylamine				[14130-05-3]
C <sub>20</sub> H <sub>10</sub>	(532–647)	72.7	(547)	A, EST	[87/5][56/17]
	corannulene				[5821-51-2]
C <sub>20</sub> H <sub>12</sub>		115.5±2.5	(298)	CGC	[02/44]
	perylene				[198-55-0]
C <sub>20</sub> H <sub>12</sub>		123.1±1.7	(298)	CGC	[02/44]
	(323–473)	89.9	(398)	GC	[02/18]
	benzo[a]pyrene				[50-32-8]
C <sub>20</sub> H <sub>12</sub>	(323–473)	91.0	(398)	GC	[02/18]
	(343–453)	95.5	(398)	GC	[90/2]
C <sub>20</sub> H <sub>12</sub>	benzo[e]pyrene				[192-97-2]
	(343–453)	92.0	(398)	GC	[90/2]
C <sub>20</sub> H <sub>12</sub>	benzo[k]fluoranthene				[207-08-9]
	(323–473)	88.5	(398)	GC	[02/18]
C <sub>20</sub> H <sub>12</sub>	benzo[b]fluoranthene				[205-99-2]
	(323–473)	89.7	(398)	GC	[02/18]
C <sub>20</sub> H <sub>14</sub>	9-phenylanthracene				[602-55-1]
	(323–473)	91.6	(398)	GC	[02/18]
	(430–510)	84.4	(445)	A	[87/5]
C <sub>20</sub> H <sub>14</sub> O <sub>4</sub>	(435–513)	86.2	(450)		[99/16][74/35]
	dibenzoyl resorcinol				[94-01-9]
	(399–493)	76.0	(414)	A, UV	[87/5][60/2]
C <sub>20</sub> H <sub>16</sub>	7,12-dimethylbenz[a]anthracene				[313-74-6]
	(323–473)	88.9	(398)	GC	[02/18]
	(396–408)	112.9	(402)	A, ME	[87/5][64/22]
C <sub>20</sub> H <sub>16</sub>					[99/16]
	5,6-dimethylchrysene				[3697-27-6]
C <sub>20</sub> H <sub>22</sub> N <sub>2</sub> O <sub>2</sub>	(380–394)	121.7	(387)	A	[87/5]
	1,4-bis(propylamino)anthraquinone				
C <sub>20</sub> H <sub>24</sub> O <sub>6</sub>	(409–463)	118.3	(424)	A	[87/5]
	dibenzo-18-crown-6				[14187-32-7]
C <sub>20</sub> H <sub>26</sub> O <sub>4</sub>		137.0±7.4	(298)	CGC	[00/9]
	dicyclohexyl phthalate				[84-61-7]
C <sub>20</sub> H <sub>28</sub>	(391–475)	97.0	(406)	A	[87/5]
	2-butyl-1-hexylnaphthalene				[55000-56-1]
C <sub>20</sub> H <sub>28</sub>	(422–485)	80.8	(437)		[63/24][84/9]
					[99/16]
C <sub>20</sub> H <sub>16</sub>	triphenylethylene				[58-72-0]
	(353–443)	89.7	(398)		[89/14]
C <sub>20</sub> H <sub>28</sub>	7-butyl-1-hexylnaphthalene				[55000-55-0]
	(418–481)	78.1	(433)		[63/24][84/9]
C <sub>20</sub> H <sub>28</sub>					[99/16]
	1,4-dimethyl-5-octylnaphthalene				[55000-53-8]
C <sub>20</sub> H <sub>28</sub>	(432–496)	81.6	(447)		[63/24][84/9]
					[99/16]
C <sub>20</sub> H <sub>28</sub>	2,6-dimethyl-3-octylnaphthalene				[55000-54-9]
	(430–494)	80.8	(445)		[63/24][84/9]
C <sub>20</sub> H <sub>30</sub>					[99/16]
	hexacyclopropylethane				[26902-55-6]
C <sub>20</sub> H <sub>30</sub> O <sub>4</sub>	(333–373)	85.8±0.2	(298)	GS	[95/27]
	dihexyl phthalate				[84-75-3]
C <sub>20</sub> H <sub>32</sub>	(453–533)	92.0	(468)	A	[87/5]
	(343–387)	103.0	(358)	A, ME	[87/5][48/10]
	1,2,3,4-tetrahydro-6-butyl-7-hexylnaphthalene				[66538-96-3]
C <sub>20</sub> H <sub>32</sub>	(413–475)	78.1	(428)		[63/24][84/9]
					[99/16]
C <sub>20</sub> H <sub>32</sub>	1,2,3,4-tetrahydro-7-butyl-1-hexylnaphthalene				[66205-02-5]
	(409–471)	76.7	(424)		[63/24][84/9]
C <sub>20</sub> H <sub>32</sub>					[99/16]
	1,2,3,4-tetrahydro-2,6-dimethyl-7-octylnaphthalene				[55255-59-9]
	(418–480)	79.4	(433)		[63/24][84/9]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>20</sub> H <sub>32</sub>	1,2,3,4-tetrahydro-5,8-dimethyl-1-octyl-naphthalene (419–481)	78.6	(434)		[99/16] [55255-58-8] [63/24][84/9]
C <sub>20</sub> H <sub>34</sub>	9-cyclohexyltetradecahydroanthracene (419–488)	74.5	(434)	A	[99/16] [55255-70-4] [87/5]
C <sub>20</sub> H <sub>34</sub>	tetradecylbenzene (485–665)	74.5 99.6	(500) (298)		[1459-10-5] [99/16] [71/28]
C <sub>20</sub> H <sub>34</sub> O <sub>2</sub>	ethyl linolenate (447–491)	72.7	(462)	A	[1191-41-9] [87/5]
C <sub>20</sub> H <sub>34</sub> O <sub>11</sub>	diethylene glycol dicarboxylic acid, di[1-(butoxycarbonyl)ethyl] ester (433–525)	103.6	(448)	A	[87/5]
C <sub>20</sub> H <sub>34</sub> O <sub>11</sub>	diethylene glycol dicarboxylic acid, di[1-(sec-butoxycarbonyl)ethyl] ester (418–513)	103.1	(433)	A	[87/5]
C <sub>20</sub> H <sub>34</sub> O <sub>11</sub>	diethylene glycol dicarboxylic acid, di[1-(isobutoxycarbonyl)ethyl] ester (415–513)	103.1	(430)	A	[87/5]
C <sub>20</sub> H <sub>36</sub> O <sub>2</sub>	ethyl linoleate (448–497)	72.6	(463)	A	[544-35-4] [87/5]
C <sub>20</sub> H <sub>36</sub> O <sub>6</sub>	(syn- <i>cis</i> /anti- <i>cis</i> ) dicyclohexano-18-crown-6 124.2 ± 4.0		(298)	CGC	[00/9]
C <sub>20</sub> H <sub>38</sub>	2-butyl-3-hexyldecahydronaphthalene (407–472)	76.9	(422)		[66455-55-8] [63/24][84/9] [99/16]
C <sub>20</sub> H <sub>38</sub>	7-butyl-1-hexyldecahydronaphthalene (407–467)	80.0	(422)		[66455-54-7] [63/24][84/9] [99/16]
C <sub>20</sub> H <sub>38</sub>	1,4-dimethyl-5-octyldecahydronaphthalene (404–466)	73.9	(419)		[54964-83-9] [63/24][84/9] [99/16]
C <sub>20</sub> H <sub>38</sub>	2,6-dimethyl-3-octyldecahydronaphthalene (406–469)	76.4	(421)		[54964-85-1] [63/24][84/9]
C <sub>20</sub> H <sub>38</sub>	3,4-dicyclohexyl-3,4-dimethylhexane (343–365)	78.4	(359)		[26527-76-4] [99/16][80/16]
C <sub>20</sub> H <sub>38</sub>	1-eicosyne (473–651)	68.9	(488)		[765-27-5] [99/16]
C <sub>20</sub> H <sub>38</sub>	2-eicosyne (480–661)	69.8	(495)		[61847-99-2] [99/16]
C <sub>20</sub> H <sub>38</sub>	3-eicosyne (470–648)	68.4	(485)		[61886-66-6] [99/16]
C <sub>20</sub> H <sub>38</sub> O	3,7,11,15-tetramethyl-1-hexadecyn-3-ol (403–457)	43.8 ± 1.9	(430)		[29171-23-1] [88/4]
C <sub>20</sub> H <sub>38</sub> O <sub>2</sub>	ethyl oleate (384–481)	92.4	(399)	A	[111-62-6] [87/5]
C <sub>20</sub> H <sub>38</sub> O <sub>2</sub>	hexadecyl methacrylate (431–541)	73.1	(446)	A	[2495-27-4] [87/5]
C <sub>20</sub> H <sub>38</sub> O <sub>2</sub>	(Z) 3-octadecenyl acetate (393–438)	108.7	(298)	GC	[97/13][00/10]
C <sub>20</sub> H <sub>38</sub> O <sub>2</sub>	(E) 3-octadecenyl acetate (393–438)	109.3	(298)	GC	[97/13][00/10]
C <sub>20</sub> H <sub>38</sub> O <sub>2</sub>	(Z) 9-octadecenyl acetate (393–438)	107.8	(298)	GC	[693-80-1] [97/13][00/10]
C <sub>20</sub> H <sub>38</sub> O <sub>2</sub>	(E) 9-octadecenyl acetate (393–438)	108.7	(298)	GC	[22147-38-2] [97/13][00/10]
C <sub>20</sub> H <sub>38</sub> O <sub>2</sub>	(Z) 11-octadecenyl acetate (393–438)	108.4	(298)	GC	[6186-98-7] [97/13][00/10]
C <sub>20</sub> H <sub>38</sub> O <sub>2</sub>	(E) 11-octadecenyl acetate (393–438)	109.1	(298)	GC	[69282-64-0] [97/13][00/10]
C <sub>20</sub> H <sub>38</sub> O <sub>2</sub>	(Z) 13-octadecenyl acetate (393–438)	108.7	(298)	GC	[60037-58-3] [97/13][00/10]
C <sub>20</sub> H <sub>38</sub> O <sub>2</sub>	(E) 13-octadecenyl acetate (393–438)	109.8	(298)	GC	[97/13][00/10]
C <sub>20</sub> H <sub>38</sub> O <sub>2</sub>	(Z) 15-octadecenyl acetate (393–438)	110.2	(298)	GC	[97/13][00/10]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>20</sub> H <sub>38</sub> O <sub>2</sub>	(E) 15-octadecenyl acetate (393–438)	110.5	(298)	GC	[97/13][00/10]
C <sub>20</sub> H <sub>38</sub> O <sub>4</sub>	dioctyl succinate (503–523)	94.2	(513)	A	[14491-66-8] [87/5]
C <sub>20</sub> H <sub>38</sub> O <sub>4</sub>	dipentyl sebacate (353–408)	99.2	(368)	A	[6819-09-6] [87/5]
C <sub>20</sub> H <sub>38</sub> O <sub>5</sub>	dodecyl[1-(butoxycarbonyl)ethyl] carbonate (408–498)	82.8	(423)	A	[87/5]
C <sub>20</sub> H <sub>40</sub>	1-eicosene (478–638)	74.3	(493)		[3452-07-1] [99/16]
	(573–615)	65.0	(588)	A	[87/5]
		100.0	(298)		[71/28]
C <sub>20</sub> H <sub>40</sub>	tetradecylcyclohexane (486–665)	74.7	(501)		[1795-18-2] [99/16]
		99.4	(298)		[71/28]
C <sub>20</sub> H <sub>40</sub>	pentadecylcyclopentane (486–661)	76.5	(501)		[4669-01-6] [99/16]
		100.3	(298)		[71/28]
C <sub>20</sub> H <sub>40</sub> O	3,7,11,15-tetramethyl-1-hexadecen-3-ol (439–468)	67.0±2.0	(453)		[60046-87-9] [88/4]
C <sub>20</sub> H <sub>40</sub> O <sub>2</sub>	octadecyl acetate (393–438)	113.5	(298)	GC	[822-23-1] [97/13][00/10]
	(341–500)	94.3	(356)	A	[87/5]
C <sub>20</sub> H <sub>40</sub> O <sub>2</sub>	butyl palmitate (353–383)	93.8	(368)	A	[111-06-8] [87/5]
C <sub>20</sub> H <sub>40</sub> O <sub>2</sub>	decyl decanoate (341–398)	97.8	(356)	A	[1654-86-0] [87/5]
C <sub>20</sub> H <sub>40</sub> O <sub>2</sub>	eicosanoic acid (477–670)	114.5	(492)	A	[506-30-9] [87/5]
	(380–404)	125.5	(392)	ME, TE	[82/4]
C <sub>20</sub> H <sub>40</sub> O <sub>2</sub>	ethyl stearate (454–469)	111.9	(461)	A	[111-61-5] [87/5]
	(310–328)	106.8	(319)	A, ME	[87/5][67/22]
C <sub>20</sub> H <sub>40</sub> O <sub>2</sub>	methyl nonadecanoate	101.2	(350)		[1731-94-8] [02/27]
		105.0±2.4	(326)		[02/27]
		109.5±2.7	(298)		[02/27]
	(441–529)	90.1	(456)	A, EST	[87/5][63/16]
C <sub>20</sub> H <sub>40</sub> O <sub>2</sub>	2-ethylhexyl laurate (371–452)	91.4	(386)		[01/10] [97/28]
	(443–503)	104.5	(298)	GC	[4276-49-7] [87/5][61/13]
C <sub>20</sub> H <sub>41</sub> Br	1-bromoeicosane (502–673)	79.8	(517)	A, EST	[70/14]
C <sub>20</sub> H <sub>41</sub> Cl	1-chloroeicosane (492–673)	78.3	(507)	A	[42217-02-7] [87/5][70/14]
C <sub>20</sub> H <sub>41</sub> F	1-fluoroieicosane (468–663)	74.3	(483)	A, EST	[676-44-8] [87/5][61/13]
					[70/14]
C <sub>20</sub> H <sub>41</sub> I	1-iodoeicosane (516–673)	80.9	(531)	A, EST	[34994-81-5] [87/5][61/13]
					[70/14]
C <sub>20</sub> H <sub>42</sub>	5-butylhexadecane (423–457)	77.3	(438)	A, MG	[6912-07-8] [87/5][55/11]
C <sub>20</sub> H <sub>42</sub>	2,3-dimethyloctadecane (458–612)	65.7	(473)	A	[61868-04-0] [87/5][59/15]
C <sub>20</sub> H <sub>42</sub>	2,4-dimethyloctadecane (456–583)	75.8	(471)	A	[61868-10-8] [87/5][59/15]
C <sub>20</sub> H <sub>42</sub>	eicosane	102.6±1.0	(298)	CGC	[112-95-8] [02/44]
		102.8±2.2	(298)	GS	[01/1]
		101.1±2.0	(298)	CGC	[00/9]
	(453–503)	103.5	(298)	CGC	[95/21]
	(433–583)	78.0	(448)		[94/14]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		101.8	(298)		[94/12]
	(347–388)	110±2	(368)	TE	[94/2]
	(345–470)	79.0	(360)	TE, ME, GS	[91/9]
	(388–625)	80.8	(440)	EB, IPM	[89/1]
	(388–625)	68.3	(540)	EB, IPM	[89/1]
	(363–460)	89.6	(378)		[88/12]
	(528–620)	71.1	(543)	A	[87/5]
	(344–380)	93.3	(359)	A, GS	[87/5][79/11]
		100.8	(298)		[71/28]
C <sub>20</sub> H <sub>42</sub>	2-methylnonadecane (465–607)	72.4	(480)	A	[1560-86-7] [87/5][59/19]
C <sub>20</sub> H <sub>42</sub>	3-methylnonadecane (463–609)	71.3	(478)	A	[6418-45-7] [87/5][59/15]
C <sub>20</sub> H <sub>42</sub>	4-methylnonadecane (460–609)	68.4	(475)	A	[25117-27-5] [87/5][59/15]
C <sub>20</sub> H <sub>42</sub>	5-methylnonadecane (462–609)	69.1	(477)	A	[57160-72-2] [87/5][59/15]
C <sub>20</sub> H <sub>42</sub>	4-propylheptadecane (425–459)	79.2	(440)	A, MG	[55044-10-5] [87/5][55/11]
C <sub>20</sub> H <sub>42</sub>	2,4,6-trimethylheptadecane (449–579)	71.9	(464)	A	[102155-32-8] [87/5][99/16]
C <sub>20</sub> H <sub>42</sub> O	1-eicosanol (488–653)	83.5	(503)	A	[629-96-9] [87/5]
	(493–648)	83.4	(508)	A	[87/5]
	(339–358)	118.9	(348)	ME	[87/5][65/15]
C <sub>20</sub> H <sub>42</sub> O <sub>5</sub>	3,6,9,12-tetraoxa-1-tetracosanol (501–543)	135.5	(516)	A	[5274-68-0] [87/5]
C <sub>20</sub> H <sub>42</sub> S	1-eicosanethiol (512–694)	81.3	(527)	EST	[13373-97-2] [99/16]
C <sub>20</sub> H <sub>42</sub> S <sub>2</sub>	didecyl disulfide (518–702)	83.4	(533)	EST	[10496-18-1] [99/16]
C <sub>20</sub> H <sub>43</sub> N	didecylamine (506–705)	70.9	(521)	A	[1120-49-6] [87/5]
C <sub>20</sub> H <sub>43</sub> N	N,N-diethylhexadecylamine (412–628)	71.9	(427)	A	[30951-88-3] [87/5][47/5]
C <sub>20</sub> H <sub>43</sub> N	N,N-dimethyloctadecylamine (504–701)	74.7	(519)	A	[124-28-7] [87/5]
C <sub>20</sub> H <sub>43</sub> N	eicosylamine (543–659)	74.5	(558)	A	[10525-37-8] [87/5][56/17]
C <sub>21</sub> H <sub>8</sub> F <sub>28</sub> O <sub>8</sub>	pentaerythritol, tetraerfluorobutyrate (293–433)	35.5	(308)	IA	[87/5][57/8]
C <sub>21</sub> H <sub>16</sub>	3-methylcholanthrene (323–473)	93.8	(398)	GC	[56-49-5] [02/18]
C <sub>21</sub> H <sub>19</sub> F	1-fluoro-3,3,3-triphenylpropane (349–384)	95.9±0.6	(298)	GS	[97/14]
C <sub>21</sub> H <sub>21</sub> O <sub>4</sub> P	phosphoric acid, tri(2-tolyl) ester (293–700)	86.8	(308)	A, I	[78-30-8] [87/5][57/8]
C <sub>21</sub> H <sub>21</sub> O <sub>4</sub> P	phosphoric acid, tri(3-tolyl) ester (398–530)	123.2	(413)	A	[563-04-2] [87/5]
C <sub>21</sub> H <sub>21</sub> O <sub>4</sub> P	phosphoric acid, tri(4-tolyl) ester (388–530)	104.9	(408)	A	[78-32-0] [87/5]
C <sub>21</sub> H <sub>21</sub> P	tris(4-tolyl)phosphine (372–394)	126±5	(385)	ME, TE	[1038-95-5] [81/3]
C <sub>21</sub> H <sub>24</sub> O <sub>2</sub>	3-(diphenylmethyl)-3-propyl-2,4-pentanedione (364–392)	96.7±1.7	(378)	GS	[95/28]
C <sub>21</sub> H <sub>26</sub> O <sub>3</sub>	2-hydroxy-4-(2-ethylhexyloxy)benzophenone (393–443)	98.7	(418)	ME	[84/1]
C <sub>21</sub> H <sub>26</sub> O <sub>3</sub>	2-hydroxy-4-octyloxybenzophenone (413–453)	102.1	(433)	ME	[84/1]
C <sub>21</sub> H <sub>26</sub> O <sub>3</sub>	2-hydroxy-4-butoxy-5-tert-butylbenzophenone (403–453)	90.2	(428)	ME	[84/1]
C <sub>21</sub> H <sub>30</sub>	1-undecylnaphthalene (436–502)	84.3	(451)	A, MG	[7225-71-0] [87/5][55/11]
C <sub>21</sub> H <sub>36</sub>	pentadecylbenzene				[2131-18-2]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(495–677)	77.0	(510)		[99/16]
		104.6	(298)		[71/28]
C <sub>21</sub> H <sub>36</sub> O <sub>6</sub>	triisopentyl <i>trans</i> aconitate (396–499)	88.3	(411)	A	[87/5]
C <sub>21</sub> H <sub>36</sub> O <sub>6</sub>	tripentyl <i>trans</i> aconitate (403–505)	91.4	(418)	A	[64617-29-4] [87/5]
C <sub>21</sub> H <sub>38</sub> O <sub>6</sub>	glycerol tricaproate (356–410)	94.2	(371)	A, T	[621-70-5] [87/5][49/16]
C <sub>21</sub> H <sub>38</sub> O <sub>6</sub>	triisopentyl 1,2,3-propanetricarboxylate (396–508)	88.2	(411)	A	[87/5]
C <sub>21</sub> H <sub>38</sub> O <sub>6</sub>	tripentyl 1,2,3-propanetricarboxylate (404–508)	90.2	(419)	A	[5333-53-9] [87/5]
C <sub>21</sub> H <sub>40</sub>	1-undecyldecahydronaphthalene (426–488)	83.3	(411)	A	[66326-27-0] [87/5]
C <sub>21</sub> H <sub>42</sub>	1-heneicosene (392–628)	92.8	(407)		[1599-68-4] [99/16]
C <sub>21</sub> H <sub>42</sub>	hexadecylcyclopentane (498–674)	79.2	(513)		[6812-39-1] [99/16]
		105.3	(298)		[71/28]
C <sub>21</sub> H <sub>42</sub>	pentadecylcyclohexane (496–677)	77.2	(511)		[6006-95-7] [99/16]
		104.4	(298)		[71/28]
C <sub>21</sub> H <sub>42</sub> O <sub>2</sub>	methyl eicosanoate	109.2	(350)		[1120-28-1] [02/27]
		97.8±0.2	(406)		[02/27]
		116.4±1.5	(298)		[02/27]
	(463–523)	116.2	(298)	GC	[97/28]
	(453–543)	76.9	(498)	GC	[93/9]
	(450–540)	92.4	(465)	A, EST	[87/5][63/16]
C <sub>21</sub> H <sub>42</sub> O <sub>2</sub>	isopropyl stearate (453–483)	76.6	(468)	A	[112-10-7] [87/5]
C <sub>21</sub> H <sub>42</sub> O <sub>2</sub>	ethyl nonadecanoate (312–328)	111.0	(320)	A, ME	[18281-04-4] [87/5][67/22]
C <sub>21</sub> H <sub>42</sub> O <sub>2</sub>	propyl stearate (458–483)	87.9	(470)	A	[3634-92-2] [87/5]
C <sub>21</sub> H <sub>43</sub> NO <sub>2</sub>	N-octadecyl lactamide (434–542)	112.8	(449)	A	[87/5]
C <sub>21</sub> H <sub>44</sub>	heneicosane	109.4±2.6	(298)	CGC	[629-94-7] [97/17]
	(365–400)	110±2	(382)	TE	[94/2]
	(352–478)	84.7	(367)	TE, ME, GS	[91/9]
	(422–630)	88.4	(437)	A, EST	[87/5][66/8]
C <sub>21</sub> H <sub>44</sub>	2-methyleicosane (473–621)	70.3	(488)	A	[1560-84-5] [87/5]
C <sub>21</sub> H <sub>44</sub>	3-methyleicosane (477–620)	74.5	(492)	A	[6418-46-8] [87/5][99/16]
					[59/15]
C <sub>21</sub> H <sub>44</sub>	4-methyleicosane (471–621)	70.2	(486)	A	[25117-28-6] [87/5][99/16]
					[59/15]
C <sub>21</sub> H <sub>44</sub>	5-methyleicosane (519–621)	73.2	(534)	A	[25117-36-6] [87/5][99/16]
					[59/15]
C <sub>21</sub> H <sub>44</sub>	2,3-dimethylnonadecane (493–635)	68.8	(508)	A	[75163-99-4] [87/5][99/16]
					[59/15]
C <sub>21</sub> H <sub>44</sub>	2,4-dimethylnonadecane (465–594)	77.0	(480)	A	[115209-60-4] [87/5][99/16]
					[59/15]
C <sub>21</sub> H <sub>44</sub>	2,4,6-trimethyloctadecane (460–576)	74.9	(475)	A	[11400-79-2] [87/5][99/16]
C <sub>21</sub> H <sub>44</sub>	8-hexylpentadecane (405–466)	78.5	(420)	A	[13475-75-7] [87/5]
C <sub>21</sub> H <sub>45</sub> PO	trioctylphosphine oxide				

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>22</sub> H <sub>12</sub>	(507–638)	70.8	(573)		[71/32]
	benzo[ghi]perylene (323–473)	96.1	(398)	GC	[191-24-2] [02/18]
C <sub>22</sub> H <sub>14</sub>	dibenz[a,c]anthracene (323–473)	97.5	(398)	GC	[215-58-7] [02/18]
	dibenz[a,h]anthracene (323–473)	99.4	(398)	GC	[53-70-3] [02/18]
C <sub>22</sub> H <sub>22</sub>	tribenzylmethane (395–648)	79.0	(521)		[4742-04-5] [99/16]
C <sub>22</sub> H <sub>18</sub> O <sub>4</sub>	dibenzyl phthalate (445–513)	121.4	(460)	A	[523-31-9] [87/5]
C <sub>22</sub> H <sub>38</sub>	hexadecylbenzene (505–688)	79.5	(520)		[1459-09-2] [99/16]
C <sub>22</sub> H <sub>38</sub>	1,1-bis(decahydro-1-naphthyl)ethane (432–503)	77.3	(447)	A, MG	[54934-70-2] [87/5][55/11]
C <sub>22</sub> H <sub>38</sub>	1,2-bis(decahydro-1-naphthyl)ethane (440–507)	89.3	(455)	A	[54934-69-9] [87/5]
C <sub>22</sub> H <sub>38</sub>	1,5-dicylopentyl-3-(2-cyclopentylethyl)-2-pentene (427–492)	81.4	(442)	A, MG	[54934-71-3] [87/5][55/11]
C <sub>22</sub> H <sub>40</sub>	1,5-dicylopentyl-3-(2-cyclopentylethyl)-2-pentane (430–494)	83.6	(445)	A, MG	[55255-85-1] [87/5][55/11]
C <sub>22</sub> H <sub>42</sub> O <sub>2</sub>	butyl oleate (353–393)	97.7	(368)	A	[142-77-8] [87/5]
C <sub>22</sub> H <sub>42</sub> O <sub>2</sub>	<i>cis</i> 13-docosenoic acid (erucic acid) (479–655)	98.2	(494)	A	[112-86-7] [87/5]
C <sub>22</sub> H <sub>42</sub> O <sub>2</sub>	<i>trans</i> 13-docosenoic acid (482–656)	103.4	(497)	A	[506-33-2] [87/5]
C <sub>22</sub> H <sub>42</sub> O <sub>4</sub>	dioctyl adipate (373–493)	99.0	(388)	A	[123-79-5] [87/5]
C <sub>22</sub> H <sub>42</sub> O <sub>6</sub>	bis(2-butoxyethyl) sebacate (368–423)	120.3	(383)	A, ME	[141-19-5] [87/5][48/10]
C <sub>22</sub> H <sub>44</sub>	1-docosene (401–640)	95.6	(416)		[1599-67-3] [99/16]
	hexadecylcyclohexane (507–689)	79.6	(522)		[6812-38-0] [99/16]
C <sub>22</sub> H <sub>44</sub> O <sub>2</sub>	butyl stearate (352–399)	109.3	(298)		[71/28] [123-95-5]
	ethyl eicosanoate (318–460)	99.9	(367)	A, T	[87/5][49/9] [18281-05-5]
C <sub>22</sub> H <sub>44</sub> O <sub>2</sub>	methyl heneicosanoate (459–529)	113.7	(333)	A	[87/5] [6064-90-0]
C <sub>22</sub> H <sub>44</sub> O <sub>2</sub>	docosanoic acid (373–600)	95.6	(474)	A, EST	[87/5][63/16] [112-85-6]
C <sub>22</sub> H <sub>46</sub>	docosane	122.3	(388)	A	[87/5] [629-97-0]
		114.9±0.3	(298)	CGC	[02/44]
		115.6±1.9	(298)	CGC	[97/17]
	(453–503)	115.6	(298)	CGC	[95/21]
	(453–573)	84.3	(468)		[94/14]
	(372–410)	124±2	(391)	TE	[94/2]
	(358–490)	89.9	(373)	TE, ME, GS	[91/9]
	(353–462)	100.9	(368)		[88/12]
	(431–642)	91.3	(446)	A, EST	[87/5][66/8] [1560-82-3]
	C <sub>22</sub> H <sub>46</sub>	2-methylheneicosane (485–640)	76.1	(500)	A
C <sub>22</sub> H <sub>46</sub>	3-methylheneicosane (484–631)	74.4	(499)	A	[87/5][99/16] [59/15]
	4-methylheneicosane (497–632)	70.9	(494)	A	[25117-29-7] [87/5][99/16] [59/15]
C <sub>22</sub> H <sub>46</sub>	5-methylheneicosane (483–632)	73.9	(498)	A	[25117-37-7] [87/5][99/16]
C <sub>22</sub> H <sub>46</sub>	2,4-dimethyleicosane				[75163-98-3]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(471–603)	77.5	(486)	A	[87/5][99/16] [59/15]
C <sub>22</sub> H <sub>46</sub>	2,4,6-trimethylnonadecane (470–587)	77.3	(485)	A	[102886-19-1] [87/5][99/16] [59/15]
C <sub>22</sub> H <sub>46</sub>	8-heptylpentadecane (298–313)	107.7	(305)	A	[71005-15-7] [87/5]
C <sub>22</sub> H <sub>46</sub> O	1-docosanol (344–459)	115.3	(351)	A, ME	[661-19-8] [87/5][65/15]
C <sub>22</sub> H <sub>46</sub> S	1-docosaneithiol (437–680)	107.7	(452)	EST	[7773-83-3] [99/16]
C <sub>23</sub> H <sub>24</sub> O <sub>6</sub>	<i>tris</i> (ethoxycarbonyl)-9-fluorenylmethane (359–393)	107.5±0.7		GS	[95/8]
C <sub>23</sub> H <sub>26</sub> O <sub>6</sub>	1,1,1- <i>tris</i> (ethoxycarbonyl)-2,2-diphenylethane (344–394)	109.3±1.0		GS	[95/8]
C <sub>23</sub> H <sub>40</sub>	heptadecylbenzene (414–664)	98.5	(429)		[14752-75-1] [99/16]
C <sub>23</sub> H <sub>42</sub> O <sub>3</sub>	tetrahydrofurfuryl oleate (353–398)	98.7	(368)	A	[5420-17-7] [87/5]
C <sub>23</sub> H <sub>44</sub> O <sub>2</sub>	methyl erucate (463–523)	123.8	(298)	GC	[1120-34-9] [97/28]
	(453–543)	93.5	(498)	GC	[93/9]
C <sub>23</sub> H <sub>45</sub> NO <sub>3</sub>	2-lauryloxy-N,N-dibutylpropionamide (443–458)	90.6	(450)	A	[87/5]
C <sub>23</sub> H <sub>46</sub>	9-cyclohexylheptadecane (456–492)	83.9	(471)	A	[55124-77-1] [87/5]
C <sub>23</sub> H <sub>46</sub>	hexadecylcyclohexane (414–664)	97.6	(429)		[19781-73-8] [99/16]
C <sub>23</sub> H <sub>46</sub>	1-tricosene (409–652)	98.5	(424)		[18835-32-0] [99/16]
C <sub>23</sub> H <sub>46</sub> O <sub>2</sub>	methyl docosanoate (methyl behenate) (463–523)	126.1	(298)	GC	[929-77-1] [97/28]
	(453–543)	81.0	(498)		[93/9]
	(467–539)	98.2	(482)	A	[87/5][63/16]
C <sub>23</sub> H <sub>46</sub> O <sub>3</sub>	decyl 3-decyloxypropionate (453–523)	90.2	(468)	A	[87/5]
C <sub>23</sub> H <sub>48</sub>	9-hexylheptadecane (450–486)	82.6	(465)	A	[55124-79-3] [87/5]
C <sub>23</sub> H <sub>48</sub>	2-methyldocosane (495–652)	79.7	(510)	A	[1560-81-2] [87/5]
C <sub>23</sub> H <sub>48</sub>	4-methyldocosane (493–643)	76.3	(508)	A	[25117-30-0] [87/5][99/16] [59/15]
C <sub>23</sub> H <sub>48</sub>	5-methyldocosane (492–644)	75.6	(507)	A	[25163-52-4] [87/5][99/16] [59/15]
C <sub>23</sub> H <sub>48</sub>	tricosane	118.7±0.1	(298)	GS	[638-67-5] [01/1]
		119.7±2.3	(298)	CGC	[00/9]
		120.5±2.0	(298)	CGC	[91/17]
	(370–416)	123±1	(393)	TE	[94/2]
	(370–490)	92.0	(385)	TE, ME, GS	[91/9]
	(314–353)	110.4	(329)	A	[87/5]
	(440–653)	94.0	(455)	A, EST	[87/5][66/8]
C <sub>23</sub> H <sub>48</sub> S	1-tricosaneithiol (444–690)	110.1	(459)	EST	[66375-01-7] [99/16]
C <sub>24</sub> H <sub>12</sub>	coronene	148.0±0.5	(298)	CGC	[191-07-1] [02/44]
	(323–473)	104.2	(398)	GC	[02/18]
C <sub>24</sub> H <sub>18</sub>	1,3,5-triphenylbenzene	140.0	(298)	CGC	[612-71-5] [98/11]
	(500–735)	77.5	(515)	A	[87/5]
	(454–500)	118.0	(469)	A	[87/5][74/29]
C <sub>24</sub> H <sub>20</sub> O <sub>6</sub>	glycerol tribenzoate				[614-33-5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>24</sub> H <sub>27</sub> NO <sub>4</sub>	(423–476)	123.5	(438)	A, T	[87/5][49/6]
	<i>bis</i> [N,N-(2-hydroxy-3-phenoxy)propyl]phenylamine				[3088-05-9]
C <sub>24</sub> H <sub>30</sub> O <sub>4</sub>	(388–423)	131.0	(403)	A	[87/5]
	dibenzyl sebacate				[140-24-9]
	(368–550)	114.3	(383)	A	[87/5]
C <sub>24</sub> H <sub>38</sub> O <sub>4</sub>	(405–463)	112.2	(420)	T	[49/9]
	(373–432)	121	(388)	T	[39/3]
	<i>bis</i> (2-ethylhexyl)phthalate				[117-81-7]
	(373–660)	102.5	(388)	A	[87/5]
C <sub>24</sub> H <sub>38</sub> O <sub>4</sub>	(385–440)	110.7	(390)	T	[49/9]
	<i>bis</i> (1-methylheptyl)phthalate				[131-15-7]
C <sub>24</sub> H <sub>38</sub> O <sub>4</sub>	(393–435)	93.1	(408)	A	[87/5]
C <sub>24</sub> H <sub>38</sub> O <sub>4</sub>	<i>bis</i> (6-methylheptyl)phthalate				[131-20-4]
C <sub>24</sub> H <sub>38</sub> O <sub>4</sub>	(383–490)	92.4	(398)	A	[87/5]
	dioctyl phthalate				[117-84-0]
C <sub>24</sub> H <sub>42</sub>	(423–523)	99.5	(438)	A	[87/5]
	(383–433)	107.6	(398)	T	[49/9]
C <sub>24</sub> H <sub>42</sub>	hexapropylbenzene				[2456-68-0]
C <sub>24</sub> H <sub>42</sub>	(458–606)	68.4	(473)	A	[87/5][37/8]
	octadecylbenzene				[4445-07-2]
C <sub>24</sub> H <sub>42</sub> O <sub>6</sub>	(423–675)	101.0	(438)		[99/16]
	<i>trans</i> trihexyl aconitate				[64617-30-7]
C <sub>24</sub> H <sub>42</sub> O <sub>11</sub>	(423–512)	98.2	(438)	A	[87/5]
C <sub>24</sub> H <sub>42</sub> O <sub>11</sub>	di[1-(2-ethylbutyloxycarbonyl)ethyl] diethylene glycol dicarboxylate				
	(448–538)	110.1	(463)	A	[87/5]
C <sub>24</sub> H <sub>42</sub> O <sub>11</sub>	di[1-(2-hexyloxycarbonyl)ethyl] diethylene glycol dicarboxylate				
	(443–548)	111.0	(458)	A	[87/5]
C <sub>24</sub> H <sub>44</sub>	9-decyltetradecahydroanthracene				
C <sub>24</sub> H <sub>44</sub>	(501–536)	103.2	(516)	A	[87/5]
	9-decyltetradecahydrophenanthrene				
C <sub>24</sub> H <sub>44</sub> O <sub>6</sub>	(502–542)	92.0	(517)	A	[87/5]
	O-acetylricinoleic acid, butyl ester				[140-04-5]
C <sub>24</sub> H <sub>44</sub> O <sub>6</sub>	(378–423)	105.2	(393)	A	[87/5]
	trihexyl 1,2,3-propanetricarboxylate				[38094-13-2]
C <sub>24</sub> H <sub>44</sub> O <sub>6</sub>	(422–526)	98.1	(437)	A	[87/5]
	glycerol triheptanoate				
C <sub>24</sub> H <sub>46</sub> O <sub>4</sub>	(401–452)	84.4	(416)		[01/10]
	<i>bis</i> (3,5,5-trimethylhexyl)adipate				[20270-50-2]
C <sub>24</sub> H <sub>48</sub>	(353–413)	107.6	(368)	A, ME	[87/5][48/10]
	octadecylcyclohexane				[4445-06-1]
C <sub>24</sub> H <sub>48</sub>	(422–675)	100.3	(437)		[99/16]
	1-tetracosene				[10192-32-2]
C <sub>24</sub> H <sub>48</sub> O <sub>2</sub>	(418–663)	101.0	(433)		[99/16]
	ethyl docosanoate				[5908-87-2]
C <sub>24</sub> H <sub>48</sub> O <sub>2</sub>	(327–344)	127.5	(335)	A, ME	[87/5][67/12]
	methyl tricosanoate				[2433-97-8]
C <sub>24</sub> H <sub>49</sub> Cl	(473–528)	99.8	(488)	A, EST	[87/5][63/16]
	1-chlorotetracosane				[6422-18-0]
C <sub>24</sub> H <sub>50</sub>	(543–774)	72.4	(558)	A	[87/5][70/14]
	2-methyltricosane				[1928-30-9]
C <sub>24</sub> H <sub>50</sub>	(450–664)	89.3	(465)	A	[87/5]
	5-methyltricosane				[22331-09-5]
C <sub>24</sub> H <sub>50</sub>	(503–653)	79.6	(518)	A	[87/5][99/16]
	tetracosane				[59/15]
		126.8±0.4	(298)	CGC	[646-31-1]
		125.7±1.6	(298)	CGC	[02/44]
		126.2±2.3	(298)	CGC	[00/9]
	(453–588)	92.6	(468)		[97/17]
	(386–425)	126±2	(405)	TE	[94/14]
	(382–523)	95.2	(397)	TE, ME, GS	[94/2]
	(451–497)	86.2±4.6	(474)	GS	[91/9]
	(373–463)	111.2	(388)		[90/14]
(498–573)	86.6	(513)	A, EST	[88/12]	
				[87/5][66/8]	

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>24</sub> H <sub>50</sub>	12-methyltricosane (435–454)	84.5	(445)	GC	[22331-52-8] [82/14][99/16]
C <sub>24</sub> H <sub>50</sub> S	1-tetracosanethiol (451–700)	112.2	(466)	EST	[16331-24-1] [99/16]
C <sub>24</sub> H <sub>51</sub> N	trioctylamine (415–536)	110.4 ± 1.5	(298)	EB	[1116-76-3] [96/4]
	(505–702)	70.6	(520)	A	[87/5]
C <sub>25</sub> H <sub>26</sub>	3-phenylethyl-1,5-diphenyl-2-pentene (469–541)	86.8	(484)		[55334-57-1] [99/16]
C <sub>25</sub> H <sub>28</sub>	3-phenylethyl-1,5-diphenylpentane (498–542)	87.3	(513)	A	[66374-88-7] [87/5][99/16]
C <sub>25</sub> H <sub>34</sub> O <sub>3</sub>	2-hydroxy-4-dodecyloxybenzophenone (413–453)	115.5	(433)	ME	[84/1]
C <sub>25</sub> H <sub>36</sub>	1-phenyl-3-phenethylundecane (456–521)	91.9	(471)	A	[7225-70-9] [87/5][99/16]
C <sub>25</sub> H <sub>38</sub>	1-pentadecylnaphthalene (474–524)	98.1	(489)	A	[55191-63-4] [87/5]
	(474–540)	96.7	(489)	A	[87/5]
C <sub>25</sub> H <sub>40</sub>	1-cyclohexyl-6-cyclopentyl-3-phenethylhexane (486–525)	87.7	(501)	A	[55334-30-0] [87/5][99/16]
C <sub>25</sub> H <sub>40</sub>	1,7-dicyclopentyl-4-(2-phenethyl)heptane (487–525)	92.0	(502)	A, MG	[55334-31-1] [87/5][55/11] [99/16]
C <sub>25</sub> H <sub>42</sub>	1-hexadecylindane (495–536)	87.0	(510)	A, MG	[334-29-2] [87/5][55/11] [99/16]
C <sub>25</sub> H <sub>42</sub>	5-pentadecyl-1,2,3,4-tetrahydronaphthalene (471–534)	99.4	(486)	A	[66374-91-2] [87/5][99/16]
C <sub>25</sub> H <sub>44</sub>	nonadecylbenzene (431–686)	103.6	(446)		[29136-19-4] [99/16]
C <sub>25</sub> H <sub>44</sub>	1,5-dicyclohexyl-3-(2-cyclohexylethyl)-2-pentene (485–524)	88.0	(500)	A, MG	[66374-92-3] [87/5][55/11]
C <sub>25</sub> H <sub>44</sub>	1,7-dicyclopentyl-4-(3-cyclopentylpropyl)-3-heptene (483–522)	89.0	(498)	A, MG	[66374-93-4] [87/5][55/11]
C <sub>25</sub> H <sub>44</sub>	3-octyl-1-phenylundecane (476–513)	89.4	(491)	A	[5637-96-7] [87/5]
C <sub>25</sub> H <sub>44</sub>	9-(2-phenylethyl)heptadecane (448–513)	88.3	(463)	A, MG	[5637-96-7] [87/5][55/11]
C <sub>25</sub> H <sub>44</sub>	9-(4-tolyl)octadecane (472–507)	92.0	(487)	A, MG	[4445-08-3] [87/5][55/11] [99/16]
C <sub>25</sub> H <sub>44</sub>	6-octyl(hexylhydrobenz[de]anthracene) (467–534)	93.8	(482)		[7225-65-2] [99/16]
C <sub>25</sub> H <sub>46</sub>	1-cyclohexyl-3-(cyclohexylethyl)-6-cyclopentylhexane (487–524)	91.4	(502)	A	[55401-70-2] [87/5]
C <sub>25</sub> H <sub>46</sub>	4-(2-cyclohexylethyl)-1,7-dicyclopentylheptane (471–524)	88.8	(486)	A	[87/5]
C <sub>25</sub> H <sub>46</sub>	1,5-dicyclohexyl-3-(2-cyclohexylethyl)pentane (318–418)	107.6	(333)	A	[2090-16-6] [87/5][64/12]
	(488–528)	86.2	(503)	A	[87/5]
C <sub>25</sub> H <sub>46</sub>	1,7-dicyclopentyl-4-(3-cyclopentylpropyl)heptane (457–525)	87.6	(472)	A	[55429-35-1] [87/5]
	(486–525)	88.9	(501)	A, MG	[87/5][55/11]
C <sub>25</sub> H <sub>48</sub>	1-cyclohexyl-3-(2-cyclohexylethyl)undecane (480–516)	95.2	(495)	A, MG	[7225-69-6] [87/5][55/11]
C <sub>25</sub> H <sub>48</sub>	1-cyclopentyl-4-(3-cyclopentylpropyl)dodecane (480–518)	88.5	(495)	A, MG	[7225-68-5] [87/5][55/11]
C <sub>25</sub> H <sub>48</sub>	1-hexyldecylhexahydroindane (492–532)	87.6	(507)	A, MG	[55401-73-5] [87/5][55/11]
C <sub>25</sub> H <sub>48</sub>	1-pentadecyldecahydronaphthalene (464–529)	93.4	(479)	A, MG	[66359-82-8] [87/5][55/11]
C <sub>25</sub> H <sub>48</sub> O <sub>4</sub>	dioctyl nonanedioate (393–523)	104.3	(408)	A	[2064-80-4] [87/5]
C <sub>25</sub> H <sub>50</sub>	nonadecylcyclohexane				[22349-03-7]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>25</sub> H <sub>50</sub>	(430–686) 1-pentacosene	102.8	(445)		[99/16] [16980-85-1]
	(426–674) 9-(2-cyclohexylethyl)heptadecane	103.7	(441)		[99/16] [25446-35-9]
C <sub>25</sub> H <sub>50</sub>	(490–513) 9-(3-cyclopentylpropyl)heptadecane	88.6	(495)	A, MG	[87/5][55/11] [5638-09-5]
C <sub>25</sub> H <sub>50</sub>	(476–514) 9-octyl-8-heptadecene	86.9	(491)	A	[87/5][99/16] [24306-18-1]
C <sub>25</sub> H <sub>50</sub> O <sub>2</sub>	(441–500) methyl tetracosanoate	92.3	(456)	A	[87/5][99/16] [2442-49-1]
	(422–452) (483–536) ethyl tricosanoate	146.2 100.8	(437) (498)	A	[01/10] [87/5] [18281-07-7]
C <sub>25</sub> H <sub>50</sub> O <sub>2</sub>	(336–359) 9-octylheptadecane	121.8	(347)	A, ME	[87/5][67/12] [7225-64-1]
C <sub>25</sub> H <sub>52</sub>	(470–505) pentacosane	93.4	(485)	A, MG	[87/5][55/11] [629-99-2]
C <sub>25</sub> H <sub>52</sub>		128.6±2.2	(298)	GS	[01/1]
		127.6±0.8	(298)	CGC	[00/9]
		129.8±2.9	(298)	CGC	[97/17]
	(397–434)	126±1	(415)	TE	[94/2]
	(390–531)	97.6	(405)	TE, ME, GS	[91/9]
	(461–498)	90.9±5.7	(479)	GS	[90/14]
	(457–675)	99.2	(472)	A, EST	[87/5][66/8]
	12-ethyltricosane				[79370-85-7]
C <sub>25</sub> H <sub>52</sub>	(435–454) 2-methyltetracosane	84.6	(444)	GC	[82/14][99/16] [1560-78-7]
	(425–670) 5,5-bis(3,3'-dimethylbutyl)-2,2,8,8-tetramethylnonane	104.6	(440)		[99/16]
C <sub>25</sub> H <sub>52</sub>	7,7-dihexyltridecane	91.9±1.8	(298)	CGC	[95/27]
C <sub>25</sub> H <sub>52</sub> S		115.3±1.8	(298)	CGC	[95/27]
	(458–709) 1-pentacosanethiol	114.2	(473)	EST	[66359-74-8] [99/16]
C <sub>26</sub> H <sub>18</sub>	(323–473) 9,10-diphenylanthracene	102.7	(398)	GC	[1499-10-1] [02/18]
C <sub>26</sub> H <sub>18</sub>	(383–408) 9,9'-bifluorenyl	95.7		B	[1530-12-7] [94/4]
C <sub>26</sub> H <sub>18</sub> N <sub>2</sub> O <sub>4</sub>	(453–523) disperse violet 31	59.9	(468)	A	[87/5]
C <sub>26</sub> H <sub>32</sub>	(503–574) 6-octyl-1,2,3,4-tetrahydronaphthacene	103.2	(518)	A	[87/5]
C <sub>26</sub> H <sub>34</sub>	(495–566) 9-dodecylanthracene	99.4	(510)	A	[2883-70-7] [87/5]
	(495–568) 9-dodecylphenanthrene	95.7	(510)	A	[3788-61-2] [87/5]
C <sub>26</sub> H <sub>38</sub>	(467–530) 1,1-diphenyltetradecane	98.2	(482)	A	[55268-63-8] [87/5]
C <sub>26</sub> H <sub>38</sub>	(466–529) 1,1-di(4-tolyl)dodecane	98.3	(481)	A	[55268-62-7] [87/5]
	(479–549) 5-octyl-1,2,3,4,4a,5,7,8,9,10,12,12a-dodecahydronaphthacene	91.9	(494)	A, MG	[95258-25-6] [87/5][55/11] [99/16]
C <sub>26</sub> H <sub>42</sub>	(482–541) 1,1-bis(dodecahydroacenaphthylene-5-yl)ethane	110.9	(497)	A, MG	[87/5][55/11]
C <sub>26</sub> H <sub>42</sub> O <sub>4</sub>	(333–393) bis(3,5,5-trimethylhexyl)phthalate	113.6	(348)	A	[14103-61-8] [87/5]
	(333–393) dinonyl phthalate	108.9	(348)	A	[84-76-4] [87/5]
C <sub>26</sub> H <sub>46</sub>	(468–536) 1,4-didecylbenzene	95.2	(483)	A	[2655-95-0] [87/5]
C <sub>26</sub> H <sub>46</sub>	(499–538) 1-phenyleicosane	94.7	(514)	A, MG	[2398-68-7] [87/5][55/11]
	2-phenyleicosane				[2398-66-5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>26</sub> H <sub>46</sub>	(492–531) 3-phenyleicosane	90.4	(507)	A, MG	[87/5][55/11] [2400-02-4]
C <sub>26</sub> H <sub>46</sub>	(489–526) 4-phenyleicosane	92.1	(504)	A, MG	[87/5][55/11] [2400-03-5]
C <sub>26</sub> H <sub>46</sub>	(487–527) 5-phenyleicosane	88.2	(502)	A, MG	[87/5][55/11] [2400-04-6]
C <sub>26</sub> H <sub>46</sub>	(485–521) 7-phenyleicosane	94.3	(500)	A, MG	[87/5][55/11] [2398-64-3]
C <sub>26</sub> H <sub>46</sub>	(483–520) 9-phenyleicosane	93.8	(498)	A, MG	[87/5][55/11] [2398-65-4]
C <sub>26</sub> H <sub>46</sub>	(483–520) 8-(4-tolyl)nonadecane	91.9	(498)	A, MG	[87/5][55/11] [55191-36-1]
C <sub>26</sub> H <sub>48</sub>	(482–517) 9-dodecyltetrahydroanthracene	94.5	(497)	A	[87/5] [55401-75-7]
C <sub>26</sub> H <sub>48</sub>	(501–536) 9-dodecyltetrahydrophenanthrene	102.7	(519)		[99/16] [55334-01-5]
C <sub>26</sub> H <sub>50</sub>	(502–542) 9-[ $\alpha$ -( <i>cis</i> -bicyclo[3.3.0]octyl)methyl]heptadecane	90.8	(522)		[99/16] [700004-11-1]
C <sub>26</sub> H <sub>50</sub>	(455–518) 1,1- <i>bis</i> (4-methylcyclohexyl)dodecane	92.3	(470)	A	[87/5][99/16] [55334-09-3]
C <sub>26</sub> H <sub>50</sub>	(484–520) 1,1-dicyclohexyltetradecane	93.5	(499)	A, MG	[87/5][55/11] [55334-08-2]
C <sub>26</sub> H <sub>50</sub>	(493–529) 1,1-dicyclopentylhexadecane	97.7	(508)	A, MG	[87/5][55/11] [55401-76-8]
C <sub>26</sub> H <sub>50</sub>	(471–525) 2-hexadecylbicyclopentyl	113.1	(486)	A, MG	[87/5][55/11] [55334-11-7]
C <sub>26</sub> H <sub>50</sub> O <sub>4</sub>	(495–532) <i>dl</i> <i>bis</i> (2-ethylhexyl)sebacate	97.7	(510)	A, MG	[87/5][55/11] [122-62-3]
C <sub>26</sub> H <sub>50</sub> O <sub>4</sub>	(308–453) dioctyl sebacate	114.9	(323)	A	[87/5] [2432-87-3]
C <sub>26</sub> H <sub>52</sub>	(413–523) 1-cyclohexyleicosane	107.1	(428)	A	[87/5] [4443-55-4]
C <sub>26</sub> H <sub>52</sub>	(499–538) 2-cyclohexyleicosane	94.2	(514)	A, MG	[87/5][55/11] [4443-56-5]
C <sub>26</sub> H <sub>52</sub>	(494–530) 3-cyclohexyleicosane	98.3	(509)	A, MG	[87/5][55/11] [4443-57-6]
C <sub>26</sub> H <sub>52</sub>	(492–530) 4-cyclohexyleicosane	94.0	(507)	A, MG	[87/5][55/11] [4443-58-7]
C <sub>26</sub> H <sub>52</sub>	(488–524) 5-cyclohexyleicosane	98.3	(503)	A, MG	[87/5][55/11] [4443-59-8]
C <sub>26</sub> H <sub>52</sub>	(488–524) 7-cyclohexyleicosane	98.3	(503)	A, MG	[87/5][55/11] [4443-60-1]
C <sub>26</sub> H <sub>52</sub>	(486–523) 9-cyclohexyleicosane	93.6	(501)	A, MG	[87/5][55/11] [4443-61-2]
C <sub>26</sub> H <sub>52</sub>	(486–523) 1-cyclopentylheneicosane	93.6	(501)	A, MG	[87/5][55/11] [6703-82-8]
C <sub>26</sub> H <sub>52</sub>	(498–537) 11-cyclopentylheneicosane	93.8	(513)	A, MG	[87/5][55/11] [6703-81-7]
C <sub>26</sub> H <sub>52</sub>	(486–524) 1-hexacosene	92.4	(501)	A, MG	[87/5][55/11] [18835-33-1]
C <sub>26</sub> H <sub>52</sub>	(434–684) 5-butyl docosane	106.1	(449)		[99/16] [55282-16-1]
C <sub>26</sub> H <sub>54</sub>	(482–518) 7-butyl docosane	94.0	(497)	A, MG	[87/5][55/11] [55282-15-0]
C <sub>26</sub> H <sub>54</sub>	(480–514) 9-butyl docosane	97.2	(495)	A, MG	[87/5][55/11] [55282-14-9]
C <sub>26</sub> H <sub>54</sub>	(479–516) 11-butyl docosane	91.9	(494)	A, MG	[87/5][55/11] [13475-76-8]
C <sub>26</sub> H <sub>54</sub>	(480–516) 5,14-dibutyloctadecane	93.3	(495)	A, MG	[87/5][55/11] [55282-13-8]
C <sub>26</sub> H <sub>54</sub>	(458–508) 6,11-dipentylhexadecane	89.3	(473)	A, MG	[87/5][55/11] [15874-03-0]
C <sub>26</sub> H <sub>54</sub>	(468–504) 3-ethyl-5-(2-ethylbutyl)octadecane	88.9	(483)	A, MG	[87/5][55/11] [55282-12-7]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>26</sub> H <sub>54</sub>	(467–503) 11-(1-ethylpropyl)heneicosane	88.4	(482)	A, MG	[87/5][55/11] [55282-11-6]
	(474–509) 2-methylpentacosane	93.5	(489)	A, MG	[87/5][55/11] [629-87-8]
C <sub>26</sub> H <sub>54</sub>	(433–680) 12-propyltricosane	107.2	(448)		[99/16] [79370-84-6]
	(435–454) 3-ethyltetracosane	91.0	(445)		[82/14][99/16] [55282-17-2]
C <sub>26</sub> H <sub>54</sub>	(490–529) hexacosane	90.0	(505)	A	[87/5] [630-01-3]
		139.3±0.5	(298)	CGC	[02/44]
		136.4±0.2	(298)	GS	[01/1]
		140.0±2.2	(298)	CGC	[97/17]
	(391–437)	132±1	(414)	TE	[94/2]
	(404–546)	97.6	(419)	TE, ME, GS	[91/9]
	(455–519)	99.0±3.8	(487)	GS	[90/14]
	(466–685)	101.6	(481)	A, EST	[87/5][66/8]
	(478–530)	94.5	(493)	A	[87/5]
C <sub>26</sub> H <sub>54</sub>	7-hexyleicosane				[55333-99-8]
	(479–512) 11-neopentylheneicosane	101.1	(494)	A, MG	[87/5][55/11] [55282-10-5]
C <sub>26</sub> H <sub>54</sub>	(476–511) 11-pentylheneicosane	93.0	(491)	A, MG	[87/5][55/11] [14739-72-1]
	(478–512) 1-hexacosanethiol	96.3	(493)	A, MG	[87/5][55/11] [16331-25-2]
C <sub>26</sub> H <sub>54</sub> S	(465–718) 2,5-bis(1,1'-biphenyl)oxazole	116.2	(480)	EST	[99/16] [2083-09-2]
	(595–685)	109.7	(610)	A	[87/5]
C <sub>27</sub> H <sub>40</sub>	5-pentadecylacenaphthene				[55334-13-9]
	(500–568) cholesterol	105.7	(515)	A, MG	[87/5][55/11] [57-88-5]
C <sub>27</sub> H <sub>46</sub> O	(411–447) 5- $\alpha$ -cholestane	114.9	(426)	A	[87/5] [481-21-0]
		108.4	(352)		[00/4]
C <sub>27</sub> H <sub>48</sub>	(481–538) henicosylbenzene	115.6	(496)	A	[87/5] [40775-09-5]
	(446–705) 11-phenylheneicosane	108.4	(461)		[99/16] [6703-80-6]
C <sub>27</sub> H <sub>48</sub>	(491–529) 5-pentadecylododecahydroacenaphthalene	93.5	(506)	A, MG	[87/5][55/11] [55282-69-4]
	(486–554) glycerol trioctanoate	98.1	(501)	A	[87/5] [538-23-8]
C <sub>27</sub> H <sub>50</sub> O <sub>6</sub>	(396–453) 11-cyclohexylheneicosane	116.0	(411)	A, T	[87/5][49/16] [6703-99-7]
	(485–529) 11-(cyclopentylmethyl)heneicosane	107.0	(500)	A	[87/5] [6703-79-3]
C <sub>27</sub> H <sub>54</sub>	(492–529) henicosylcyclohexane	94.4	(507)	A	[87/5] [26718-82-1]
	(445–460) 1-heptacosene	107.8	(460)		[99/16] [15306-27-1]
C <sub>27</sub> H <sub>54</sub>	(441–694) 1-decyl-1-undecylcyclohexane	108.7	(456)		[99/16]
		133.6±1.8	(298)	CGC	[95/27] [593-49-7]
C <sub>27</sub> H <sub>56</sub>	heptacosane				[95/27]
	(401–441)	132±1	(423)	TE	[94/2]
	(508–570)	94.2	(523)	ME, TE, GS	[91/9]
	(401–441)	116.9±3.0	(421)	TE	[90/13]
	(473–695)	104.3	(488)	A, EST	[87/5][66/8] [1561-02-0]
C <sub>27</sub> H <sub>56</sub>	2-methylhexacosane				[1561-02-0]
	(441–690) 8-hexyl-8-pentylhexadecane	109.6	(456)		[99/16]
C <sub>27</sub> H <sub>56</sub>		125.7±1.8	(298)	CGC	[95/27]
	8,8-dipentylheptadecane				[95/27]
C <sub>27</sub> H <sub>56</sub>		128.1±1.8	(298)	CGC	[95/27]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>27</sub> H <sub>56</sub>	10-hexyl-10-methyleicosane	129.9±1.8	(298)	CGC	[95/27]
C <sub>27</sub> H <sub>56</sub>	5-ethyl-5-methyltetracosane	133.8±1.8	(298)	CGC	[95/27]
C <sub>27</sub> H <sub>56</sub> S	1-heptacosanethiol (471–727)	118.3	(486)	EST	[66291-85-8] [99/16]
C <sub>28</sub> H <sub>14</sub>	phenanthro[1,10,9,8-opqra]perylene (580–630)	180.5	(595)	A	[190-39-6] [87/5]
C <sub>28</sub> H <sub>22</sub>	9,9'-dimethyl-9,9'-bifluorenyl (368–403)	94.6		B	[94/4]
C <sub>28</sub> H <sub>32</sub>	1,7-diphenyl-4-(3-phenylpropyl)-3-heptene (488–556)	98.0	(503)	A, MG	[55282-03-6] [87/5][55/11]
C <sub>28</sub> H <sub>34</sub>	1,7-diphenyl-4-(3-phenylpropyl)heptane (490–557)	100.3	(505)	A, MG	[55282-64-9] [87/5][55/11]
C <sub>28</sub> H <sub>44</sub> O	ergosterol (421–454)	118.7	(436)	A	[57-87-4] [87/5]
C <sub>28</sub> H <sub>46</sub> O <sub>4</sub>	diisodecyl phthalate (371–496)	79.3	(386)	A	[26761-40-0] [87/5]
C <sub>28</sub> H <sub>50</sub>	docosylbenzene (453–715)	110.8	(468)		[5634-22-0] [99/16]
C <sub>28</sub> H <sub>50</sub>	2-decyl-1-phenyldecane (497–532)	102.5	(512)	A	[55334-72-0] [87/5]
C <sub>28</sub> H <sub>50</sub> O <sub>11</sub>	di[1-(2-ethylhexyl)oxycarbonyl]ethyl diethylene glycol dicarboxylate (463–553)	116.6	(478)	A	[87/5]
C <sub>28</sub> H <sub>50</sub> O <sub>11</sub>	di[1-(octyloxycarbonyl)ethyl] diethylene glycol dicarboxylate (463–564)	112.5	(478)	A	[87/5]
C <sub>28</sub> H <sub>52</sub>	1,7-dicyclohexyl-4-(3-cyclohexylpropyl)heptane (482–549)	98.7	(497)	A, MG	[55334-73-1] [87/5][55/11]
C <sub>28</sub> H <sub>54</sub>	1-cyclohexyl-2-(cyclohexylmethyl)pentadecane (501–536)	105.4	(516)	A, MG	[55255-74-8] [87/5][55/11]
C <sub>28</sub> H <sub>56</sub>	docosylcyclohexane (452–715)	110.0	(467)		[61828-07-7] [99/16]
C <sub>28</sub> H <sub>56</sub>	1-octacosene (448–703)	111.0	(463)		[18835-34-2] [99/16]
C <sub>28</sub> H <sub>56</sub>	11-(cyclohexylmethyl)heneicosane (499–538)	94.2	(514)	A, MG	[87/5][55/11]
C <sub>28</sub> H <sub>56</sub>	2,2,4,10,12,12-hexamethyl-7-(3,5,5-trimethylhexyl)-6-tridecene (426–488)	83.8	(441)	A, MG	[55255-73-7] [87/5][55/11]
C <sub>28</sub> H <sub>58</sub>	2-methylheptacosane (448–700)	111.9	(463)		[1561-00-8] [99/16]
C <sub>28</sub> H <sub>58</sub>	2,2,4,10,12,12-hexamethyl-7-(3,5,5-trimethylhexyl)tridecane (308–393)	98.5	(323)	A	[3035-75-4] [87/5][64/12]
	(429–491)	84.9	(444)	A, MG	[87/5][55/11]
C <sub>28</sub> H <sub>58</sub>	7-hexyldocosane (506–531)	100.7	(518)	A	[55373-86-9] [87/5]
C <sub>28</sub> H <sub>58</sub>	octacosane	150.8±0.5	(298)	CGC	[630-02-4] [02/44]
		150.7±1.7	(298)	CGC	[00/9]
		152.4±2.9	(298)	CGC	[97/17]
	(483–588)	100.5	(498)		[94/14]
	(407–456)	135±3	(431)	TE	[94/2]
	(426–493)	105.5	(441)	TE, ME, GS	[91/9]
	(473–515)	103.1±3.0	(494)	GS	[90/14]
	(450–575)	100.6	(500)	EB, IPM	[89/1]
	(450–575)	98.1	(560)	EB, IPM	[89/1]
	(300–390)	131.7	(315)	A	[87/5]
	(481–705)	106.6	(496)	A, EST	[87/5][66/8]
C <sub>28</sub> H <sub>58</sub>	9-octyleicosane (460–530)	106.8	(475)	A	[13475-77-9] [87/5]
C <sub>28</sub> H <sub>58</sub> S	1-octacosanethiol (477–736)	120.2	(492)	EST	[16331-26-3] [99/16]
C <sub>29</sub> H <sub>50</sub>	11-(2,5-dimethylphenyl)-10-heneicosene (471–534)	99.2	(486)	A, MG	[87/5][55/11]
C <sub>29</sub> H <sub>52</sub>	tricosylbenzene				[61828-04-4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>29</sub> H <sub>52</sub>	(459–724) 1-nonacosene	113.2	(474)		[99/16] [18835-35-3]
	(455–713) 11-(2,5-dimethylphenyl)heneicosane	113.3	(470)		[99/16] [55373-91-6]
C <sub>29</sub> H <sub>52</sub>	(472–535) tricosylcyclohexane	100.8	(487)	A, MG	[87/5][55/11] [61828-08-8]
	(459–724) 2-methyloctacosane	112.3	(474)		[99/16] [1560-98-1]
C <sub>29</sub> H <sub>60</sub>	(455–709) nonacosane	114.2	(470)		[99/16] [630-03-5]
	(423–457) (423–456) (488–714)	137±3 137.1±3.0 109.0	(440) (439) (503)	TE TE A, EST	[94/2] [90/13] [87/5][66/8]
C <sub>29</sub> H <sub>60</sub> S	(483–744) 1-nonacosanethiol	122.0	(498)	EST	[66213-92-1] [99/16]
	(511–579) 1,1,6,6-tetraphenylhexane	108.1	(526)	A, MG	[2819-41-2] [87/5][55/11]
C <sub>30</sub> H <sub>34</sub>	(540–616) 1,10-di(1-naphthyl)decane	108.6	(555)	A, MG	[40339-27-3] [87/5][55/11]
	(520–583) 1,10-bis(decahydro-1-naphthyl)decane	119.7	(535)	A, MG	[55268-64-9] [87/5][55/11]
C <sub>30</sub> H <sub>54</sub>	(501–569) 1,1,6,6-tetracyclohexylhexane	103.0	(516)	A	[87/5] [55281-91-9]
	(466–732) tetracosylbenzene	115.3	(481)		[61828-05-5] [99/16]
C <sub>30</sub> H <sub>54</sub> O <sub>6</sub>	(437–551) <i>trans, tris</i> (2-ethylhexyl) aconitate	97.1	(452)	A	[52193-50-7] [87/5]
	(438–551) <i>tris</i> (2-ethylhexyl) 1,2,3-propanetricarboxylate	97.9	(453)	A	[5400-99-7] [87/5]
C <sub>30</sub> H <sub>60</sub>	(465–733) tetracosylcyclohexane	114.6	(480)		[61828-09-9] [99/16]
	(462–721) 1-tricontene	115.4	(477)		[18435-53-5] [99/16]
C <sub>30</sub> H <sub>62</sub>	(363–513) 2,6,10,15,19,23-hexamethyltetracosane (squalane)	116.2	(378)	A	[111-01-3] [87/5]
	(518–588) 9-octyldocosane	109.3	(533)	A	[55319-83-0] [87/5]
C <sub>30</sub> H <sub>62</sub>	(422–487) triacontane	164.5±0.4 143±2	(298) (454)	CGC TE	[00/9] [94/2]
	(495–723) 2-methylnonacosane	111.3	(510)	A, EST	[87/5][66/8] [1560-75-4]
C <sub>30</sub> H <sub>62</sub> S	(461–718) 1-triacontanethiol	116.8	(476)		[99/16] [66213-99-8]
	(488–751) tridecylamine	124.0	(503)	EST	[99/16] [2869-34-3]
C <sub>31</sub> H <sub>34</sub>	(545–759) 1,1-di(1-naphthyl)-1-undecene	76.8	(560)	A	[87/5] [56247-76-8]
	(518–588) 1-(1-decylundec-1-enyl)naphthalene	109.3	(533)	A	[87/5] [55319-81-8]
C <sub>31</sub> H <sub>48</sub>	(499–567) $\alpha$ -tocopherol acetate	105.1	(514)	A, MG	[87/5][55/11] [58-95-7]
	(466–524) 1,1-bis(decahydro-1-naphthyl)undecane	60.1±1.3	(496)		[88/4] [55373-96-1]
C <sub>31</sub> H <sub>56</sub>	(525–561) pentacosylbenzene	110.5	(540)	A, MG	[87/5][55/11] [61828-06-6]
	(472–741) 13-phenylpentacosane	117.5	(487)		[99/16] [6006-90-2]
C <sub>31</sub> H <sub>56</sub>	(495–560) 1-(1-decylundecyl)decahydronaphthalene	106.7	(510)	A, MG	[87/5][55/11] [55320-00-8]
	(523–560) 1-hentriacontene	107.0	(538)	A, MG	[87/5][55/11] [18435-54-6]
C <sub>31</sub> H <sub>62</sub>	(468–730) pentacosylcyclohexane	117.7	(483)		[99/16] [61828-10-2]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>31</sub> H <sub>62</sub>	(472–741)	116.6	(487)		[99/16]
	13-cyclohexylpentaconsane				[6697-15-0]
C <sub>31</sub> H <sub>64</sub>	(495–560)	106.7	(510)	A, MG	[87/5][55/11]
	2-methyltriacontane				[1560-72-1]
C <sub>31</sub> H <sub>64</sub>	(468–726)	118.8	(483)		[99/16]
	11-decylheneicosane				[55320-06-4]
C <sub>31</sub> H <sub>64</sub>	(298–313)	110.9	(305)	A, MG	[87/5][55/11]
	hentriacontane				[630-04-6]
C <sub>31</sub> H <sub>64</sub> S	(433–474)	146±2	(450)	TE	[94/2]
	(503–732)	113.8	(518)	A, EST	[87/5][66/8]
	1-hentriacontanethiol				[534-24-9]
C <sub>32</sub> H <sub>58</sub>	(494–759)	125.7	(509)	EST	[99/16]
	hexacosylbenzene				[13024-80-1]
C <sub>32</sub> H <sub>64</sub>	(478–749)	119.6	(493)		[99/16]
	1-dotriacontene				[18435-55-7]
C <sub>32</sub> H <sub>64</sub>	(474–738)	119.8	(489)		[99/16]
	hexacosylcyclohexane				[61828-11-3]
C <sub>32</sub> H <sub>66</sub>	(478–749)	118.6	(493)		[99/16]
	11-decyldocosane				[55401-55-3]
C <sub>32</sub> H <sub>66</sub>	(523–559)	108.7	(538)	A, MG	[87/5][55/11]
	dotriacontane				[544-85-4]
	(437–477)	147±1	(456)	TE	[94/2]
C <sub>32</sub> H <sub>66</sub>	(361–395)	130.5	(376)	A	[87/5]
	(510–741)	116.0	(535)	A, EST	[87/5][66/8]
	9-octyltetracosane				[55401-54-2]
C <sub>32</sub> H <sub>66</sub>	(501–563)	114.8	(516)	A, MG	[87/5][55/11]
	2-methylhentriacontane				[1720-12-3]
C <sub>32</sub> H <sub>66</sub> S	(474–735)	120.9	(489)		[99/16]
	1-dotriacontanethiol				[66256-05-1]
C <sub>33</sub> H <sub>54</sub> O <sub>6</sub>	(499–766)	127.5	(514)	EST	[99/16]
	tri(2-ethylhexyl)trimellitate				
C <sub>33</sub> H <sub>54</sub> O <sub>6</sub>	(331–371)	81.1	(346)	ME	[00/11]
	triisooctyltrimellitate				
C <sub>33</sub> H <sub>60</sub>	(331–372)	79.0	(346)	ME	[00/11]
	heptacosylbenzene				[61828-25-9]
C <sub>33</sub> H <sub>62</sub> O <sub>6</sub>	(484–756)	121.5	(499)		[99/16]
	glycerol tricaprato				[621-71-6]
C <sub>33</sub> H <sub>66</sub>	(437–485)	124.6	(452)	A	[87/5]
	heptacosylcyclohexane				[61828-12-4]
C <sub>33</sub> H <sub>66</sub>	(484–757)	120.6	(499)		[99/16]
	1-tritriacontene				[61868-11-9]
C <sub>33</sub> H <sub>68</sub>	(480–746)	121.8	(495)		[99/16]
	tritriacontane				[630-05-7]
C <sub>33</sub> H <sub>68</sub>	(438–480)	148±1	(458)	TE	[94/2]
	(517–749)	118.0	(532)	A, EST	[87/5][66/8]
	2-methyldotriacontane				[1720-11-2]
C <sub>33</sub> H <sub>68</sub> S	(480–743)	122.9	(495)		[99/16]
	1-tritriacontanethiol				[66214-20-8]
C <sub>34</sub> H <sub>62</sub>	(504–773)	129.1	(519)	EST	[99/16]
	octacosylbenzene				[61828-26-0]
C <sub>34</sub> H <sub>68</sub>	(490–764)	123.4	(505)		[99/16]
	octacosylcyclohexane				[61828-13-5]
C <sub>34</sub> H <sub>68</sub>	(490–764)	122.4	(505)		[99/16]
	1-tetratriacontene				[61868-12-0]
C <sub>34</sub> H <sub>70</sub>	(486–754)	123.7	(501)		[99/16]
	11-decyltetracosane				[55429-84-0]
C <sub>34</sub> H <sub>70</sub>	(537–574)	113.1	(552)	A, MG	[87/5][55/11]
	9-octylhexacosane				[55429-83-9]
C <sub>34</sub> H <sub>70</sub>	(537–575)	110.3	(552)	A, MG	[87/5][55/11]
	tetratriacontane				[14167-59-0]
	(446–497)	152±2	(471)	TE	[94/2]
C <sub>34</sub> H <sub>70</sub>	(372–402)	149.7	(387)	A	[87/5]
	(523–756)	120.3	(538)	A, EST	[87/5][66/8]
	2-methyltritriacontane				[66214-27-5]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>34</sub> H <sub>70</sub> S	(486–750)	124.8	(501)		[99/16]
	1-tetraatriacontanethiol				[66214-28-6]
C <sub>35</sub> H <sub>64</sub>	(509–780)	130.7	(524)	EST	[99/16]
	15-phenylnonacosane				[56247-97-3]
C <sub>35</sub> H <sub>64</sub>	(523–550)	126.5	(536)	A, MG	[87/5][55/11]
	nonacosylbenzene				[61828-27-1]
C <sub>35</sub> H <sub>70</sub>	(495–771)	125.4	(510)		[99/16]
	nonacosylcyclohexane				[61828-14-6]
C <sub>35</sub> H <sub>70</sub>	(495–771)	124.4	(510)		[99/16]
	1-pentatriacontene				[61868-13-1]
C <sub>35</sub> H <sub>70</sub>	(492–761)	125.5	(507)		[99/16]
	15-cyclohexylnonacosane				[55521-27-2]
C <sub>35</sub> H <sub>72</sub>	(548–581)	129.0	(563)	A, MG	[87/5][55/11]
	pentatriacontane				[630-07-9]
C <sub>35</sub> H <sub>72</sub>	(529–764)	122.4	(544)	A, EST	[87/5][66/8]
	2-methyltetraatriacontane				[14167-65-8]
C <sub>35</sub> H <sub>72</sub> S	(491–758)	126.9	(506)		[99/16]
	1-pentatriacontanethiol				[66576-86-1]
C <sub>36</sub> H <sub>60</sub> O <sub>6</sub>	(514–787)	132.2	(529)	EST	[99/16]
	triisononyltrimellitate				
C <sub>36</sub> H <sub>62</sub> O <sub>4</sub>	(334–372)	102.2	(349)	ME	[00/11]
	ditetradecyl phthalate				[2915-60-8]
C <sub>36</sub> H <sub>66</sub>	(416–465)	126.0	(431)	T	[87/5][49/9]
	triacontylbenzene				[50715-02-1]
C <sub>36</sub> H <sub>72</sub>	(501–778)	127.0	(516)		[99/16]
	1-hexatriacontene				[61868-14-2]
C <sub>36</sub> H <sub>72</sub>	(497–768)	127.4	(512)		[99/16]
	triacontylcyclohexane				[61828-15-7]
C <sub>36</sub> H <sub>74</sub>	(500–778)	126.3	(515)		[99/16]
	hexatriacontane				[630-06-8]
C <sub>36</sub> H <sub>74</sub>	(452–516)	157±2	(484)	TE	[94/2]
	(535–571)	124.4	(550)	A, EST	[87/5][66/8]
C <sub>36</sub> H <sub>74</sub>	13-undecylpentacosane				[55517-89-0]
	(548–580)	132.9	(563)	A, MG	[87/5][55/11]
C <sub>36</sub> H <sub>74</sub>	2-methylpentatriacontane				[66576-73-6]
	(497–765)	128.7	(512)		[99/16]
C <sub>36</sub> H <sub>74</sub> S	1-hexatriacontanethiol				[66577-23-9]
	(518–793)	134.0	(533)	EST	[99/16]
C <sub>36</sub> H <sub>75</sub> N	tridodecylamine				[102-87-4]
	(579–807)	82.1	(594)	A	[87/5]
C <sub>37</sub> H <sub>68</sub>	hexatriacontylbenzene				[61828-28-2]
	(506–785)	128.8	(521)		[99/16]
C <sub>37</sub> H <sub>70</sub> O <sub>6</sub>	1-caprylic-2-lauryl-3-myristic glycerol				[30283-10-4]
	(464–526)	131.7	(479)	A, T	[87/5][49/16]
C <sub>37</sub> H <sub>74</sub>	hentriacontylcyclohexane				[61828-16-8]
	(505–785)	128.1	(520)		[99/16]
C <sub>37</sub> H <sub>74</sub>	1-heptatriacontene				[61868-15-3]
	(502–775)	129.2	(517)		[99/16]
C <sub>37</sub> H <sub>76</sub>	heptatriacontane				[7194-84-5]
	(471–511)	155±2	(491)	TE	[94/2]
C <sub>37</sub> H <sub>76</sub>	(541–778)	126.4	(556)	A, EST	[87/5][66/8]
	2-methylhexatriacontane				[66577-06-8]
C <sub>37</sub> H <sub>76</sub>	(502–772)	130.5	(517)		[99/16]
	1-heptatriacontanethiol				[66577-07-9]
C <sub>37</sub> H <sub>76</sub> S	(523–799)	135.3	(538)	EST	[99/16]
	dotriacontylbenzene				[61828-29-3]
C <sub>38</sub> H <sub>70</sub>	(511–791)	130.4	(526)		[99/16]
	ditetradecyl sebacate				[26719-47-1]
C <sub>38</sub> H <sub>74</sub> O <sub>4</sub>	(431–483)	135.5	(446)	A, T	[87/5][49/9]
	dotriacontylcyclohexane				[61828-17-9]
C <sub>38</sub> H <sub>76</sub>	(510–792)	129.8	(525)		[99/16]
	1-octatriacontene				[61868-16-4]
C <sub>38</sub> H <sub>76</sub>	(507–782)	131.0	(522)		[99/16]
	octatriacontane				[7194-85-6]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(471–511)	160±2	(491)	TE	[94/2]
	(546–785)	128.5	(561)	A, EST	[87/5][66/8]
C <sub>38</sub> H <sub>78</sub>	2-methylheptatriacontane				[66576-92-9]
	(507–779)	132.2	(522)		[99/16]
C <sub>38</sub> H <sub>78</sub> S	1-octatriacontanethiol			EST	[66576-93-0]
	(527–805)	136.7	(542)		[99/16]
C <sub>39</sub> H <sub>72</sub>	17-phenyltritiacontane			A, MG	[55517-74-3]
	(544–571)	147.1	(557)		[87/5][55/11]
C <sub>39</sub> H <sub>72</sub>	tritiacontylbenzene				[61828-30-6]
	(516–798)	132.0	(531)		[99/16]
C <sub>39</sub> H <sub>74</sub> O <sub>6</sub>	glycerol trilaurate			TGA	[538-24-9]
		221.1			[02/33]
	(458–520)	137.6	(473)	A, T	[87/5][49/16]
C <sub>39</sub> H <sub>78</sub>	1-nontriacontene				[61868-17-5]
	(512–788)	132.5	(527)		[99/16]
C <sub>39</sub> H <sub>78</sub>	tritiacontylcyclohexane				[61828-18-0]
	(515–798)	131.4	(530)		[99/16]
C <sub>39</sub> H <sub>78</sub>	17-cyclohexyltritiacontane				[55517-75-4]
	(570–602)	131.9	(585)	A, MG	[87/5][55/11]
C <sub>39</sub> H <sub>80</sub>	nontriacontane				[7194-86-7]
	(552–791)	130.3	(567)	A, EST	[87/5][66/8]
C <sub>39</sub> H <sub>80</sub>	2-methyloctatriacontane				[66576-59-8]
	(512–785)	133.8	(527)		[99/16]
C <sub>39</sub> H <sub>80</sub> S	1-nontriacontanethiol			EST	[66576-60-1]
	(531–811)	138.1	(546)		[99/16]
C <sub>40</sub> H <sub>74</sub>	tetracontylbenzene				[61828-31-7]
	(520–804)	133.8	(535)		[99/16]
C <sub>40</sub> H <sub>80</sub>	1-tetracontene				[61868-18-6]
	(517–794)	134.0	(532)		[99/16]
C <sub>40</sub> H <sub>80</sub>	tetracontylcyclohexane				[61828-19-1]
	(520–804)	132.9	(535)		[99/16]
C <sub>40</sub> H <sub>82</sub>	tetracontane				[4181-95-7]
	(557–798)	132.2	(572)	A, EST	[87/5][66/8]
C <sub>40</sub> H <sub>82</sub>	2-methylnonatriacontane				[66576-48-5]
	(517–791)	135.3	(532)		[99/16]
C <sub>40</sub> H <sub>82</sub> S	1-tetracontanethiol			EST	[66576-49-6]
	(535–817)	139.6	(550)		[99/16]
C <sub>41</sub> H <sub>76</sub>	pentatriacontylbenzene				[61828-32-8]
	(525–810)	135.2	(540)		[99/16]
C <sub>41</sub> H <sub>82</sub>	1-hentetracontene				[66576-37-2]
	(521–800)	135.8	(536)		[99/16]
C <sub>41</sub> H <sub>82</sub>	pentatriacontylcyclohexane				[61828-20-4]
	(524–810)	134.5	(539)		[99/16]
C <sub>41</sub> H <sub>84</sub>	hentetracontane				[7194-87-8]
	(562–804)	134.1	(577)	A, EST	[87/5][66/8]
C <sub>41</sub> H <sub>84</sub>	2-methyltetracontane				[66575-38-3]
	(521–797)	137.1	(536)		[99/16]
C <sub>41</sub> H <sub>84</sub> S	1-hentetracontanethiol			EST	[66576-39-4]
	(539–822)	140.8	(554)		[99/16]
C <sub>42</sub> H <sub>78</sub>	hexatriacontylbenzene				[61828-33-9]
	(529–815)	129.0	(544)		[99/16]
C <sub>42</sub> H <sub>84</sub>	1-dotetracontene				[21807-60-3]
	(526–806)	137.1	(541)		[99/16]
C <sub>42</sub> H <sub>84</sub>	hexatriacontylcyclohexane				[61828-21-5]
	(529–816)	135.8	(544)		[99/16]
C <sub>42</sub> H <sub>86</sub>	dotetracontane				[7098-20-6]
	(567–810)	136.0	(582)	A, EST	[87/5][66/8]
C <sub>42</sub> H <sub>86</sub>	2-methylhentetracontane				[66576-40-7]
	(526–803)	138.5	(541)		[99/16]
C <sub>42</sub> H <sub>86</sub>	2,2,4,15,17,17-hexamethyl-7,12-bis(3,5,5-trimethylhexyl)octadecane			A, MG	[55470-97-8]
	(512–575)	118.3	(527)		[87/5][55/11]
C <sub>42</sub> H <sub>86</sub> S	1-dotetracontanethiol			EST	[66576-41-8]
	(543–828)	142.1	(558)		[99/16]
C <sub>42</sub> H <sub>87</sub> N	tritradecylamine				[27911-72-4]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>43</sub> H <sub>80</sub>	(609–848) heptatriacontylbenzene	86.6	(624)	A	[87/5]
	(533–821)	138.3	(548)		[66576-74-7] [99/16]
C <sub>43</sub> H <sub>86</sub>	(533–821) heptatriacontylcyclohexane	137.4	(548)	A, EST	[66576-75-8] [99/16]
	(530–812) 1-tritetracontene	138.7	(545)		[66576-76-9] [99/16]
C <sub>43</sub> H <sub>88</sub>	(572–820) tritetracontane	137.7	(587)	A, EST	[66576-76-9] [87/5][66/8]
	(530–809) 2-methyltetracontane	140.0	(545)		[66576-77-0] [99/16]
C <sub>43</sub> H <sub>88</sub> S	(547–833) 1-tritetracontanethiol	143.2	(562)	EST	[66576-78-1] [99/16]
	C <sub>44</sub> H <sub>82</sub>	(537–826) octatriacontylbenzene	139.7		(552)
C <sub>44</sub> H <sub>88</sub>		(537–827) octatriacontylcyclohexane	138.7	(552)	A, EST
	(534–818) 1-tetratetracontene	140.1	(549)	[66576-81-6] [99/16]	
C <sub>44</sub> H <sub>90</sub>	(577–821) tetratetracontane	139.3	(592)	A, EST	[7098-22-8] [87/5][66/8]
	(534–815) 2-methyltritetracontane	141.5	(549)		[66576-82-7] [99/16]
C <sub>44</sub> H <sub>90</sub> S	(551–838) 1-tetratetracontanethiol	144.1	(566)	EST	[66576-83-8] [99/16]
	C <sub>45</sub> H <sub>84</sub>	(541–832) nontriacontylbenzene	141.0		(556)
C <sub>45</sub> H <sub>86</sub> O <sub>6</sub>		(491–551) <i>(dl)</i> 1-lauric-2-myristic-3-plamitic glycerol	147.8	(506)	A, T
	C <sub>45</sub> H <sub>86</sub> O <sub>6</sub>	(490–551) <i>(dl)</i> 1-myristic-2-capric-3-stearic glycerol	148.4	(505)	
C <sub>45</sub> H <sub>86</sub> O <sub>6</sub>		glycerol trimyristate	199.1		TGA
	C <sub>45</sub> H <sub>90</sub>	(488–551) nonatriacontylcyclohexane	147.8	(503)	A, T
C <sub>45</sub> H <sub>90</sub>		(541–832) 1-pentatetracontene	140.1	(556)	
	C <sub>45</sub> H <sub>92</sub>	(538–823) pentatetracontane	141.5	(553)	A, EST
(582–827) 2-methyltetracontane		141.0	(597)	[87/5][66/8] [66576-64-5]	
C <sub>45</sub> H <sub>92</sub>	(538–820) 1-pentatetracontanethiol	142.9	(553)	EST	[99/16] [66576-65-6]
	(554–843) tetracontylbenzene	145.6	(569)		[99/16] [66576-67-8]
C <sub>46</sub> H <sub>86</sub>	(545–837) 1-hexatetracontene	142.3	(560)	A, EST	[99/16] [66576-68-9]
	(542–828) tetracontylcyclohexane	142.8	(557)		[99/16] [66576-69-0]
C <sub>46</sub> H <sub>92</sub>	(545–837) hexatetracontane	141.3	(560)	A, EST	[99/16] [7098-24-0]
	(586–832) 2-methylpentatetracontane	142.8	(601)		[87/5][66/8] [66564-10-1]
C <sub>46</sub> H <sub>94</sub>	(542–826) 1-hexatetracontanethiol	144.2	(557)	EST	[99/16] [66564-11-2]
	(557–847) hentetracontylbenzene	146.7	(572)		[99/16] [66564-12-3]
C <sub>47</sub> H <sub>88</sub>	(549–842) <i>(dl)</i> 1-myristic-2-lauric-3-stearic glycerol	143.5	(564)	A, T	[99/16] [87/5][49/16]
	(493–558) <i>(dl)</i> 1-palmitic-2-capric-3-stearic glycerol	150.5	(508)		[87/5][49/16] [66564-13-4]
C <sub>47</sub> H <sub>90</sub> O <sub>6</sub>	(507–559) hentetracontylcyclohexane	154.8	(522)	A, T	[87/5][49/16] [99/16]
	(548–842)	142.8	(563)		[99/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>47</sub> H <sub>94</sub>	1-heptatetracontene (546–833)	143.9	(561)		[66576-01-0] [99/16]
C <sub>47</sub> H <sub>96</sub>	heptatetracontane (591–837)	144.2	(606)	A, EST	[7098-25-1] [87/5][66/8]
C <sub>47</sub> H <sub>96</sub>	2-methylhexatetracontane (546–831)	145.3	(561)		[66576-02-1] [99/16]
C <sub>47</sub> H <sub>96</sub> S	1-heptatetracontanethiol (561–852)	147.6	(576)	EST	[66576-03-2] [99/16]
C <sub>48</sub> H <sub>90</sub>	dotetracontylbenzene (552–846)	144.9	(567)		[66576-04-3] [99/16]
C <sub>48</sub> H <sub>96</sub>	dotetracontylcyclohexane (552–847)	143.9	(567)		[66576-05-4] [99/16]
C <sub>48</sub> H <sub>96</sub>	1-octatetracontene (549–838)	145.4	(564)		[66576-06-5] [99/16]
C <sub>48</sub> H <sub>98</sub>	octatetracontane (595–843)	145.9	(610)	A, EST	[7098-26-2] [87/5][66/8]
C <sub>48</sub> H <sub>98</sub>	2-methylheptatetracontane (550–836)	146.5	(565)		[66576-07-6] [99/16]
C <sub>48</sub> H <sub>98</sub> S	1-octatetracontanethiol (564–856)	148.7	(579)	EST	[66576-08-7] [99/16]
C <sub>49</sub> H <sub>92</sub>	tritetracontylbenzene (556–851)	145.9	(571)		[66576-09-8] [99/16]
C <sub>49</sub> H <sub>94</sub> O <sub>6</sub>	( <i>dl</i> ) 1-palmitic-2-lauryl-3-stearic glycerol (506–567)	160.0	(521)	A, T	[87/5][49/16] [66576-19-1]
C <sub>49</sub> H <sub>98</sub>	1-nonatetracontene (553–843)	146.4	(568)		[99/16]
C <sub>49</sub> H <sub>98</sub>	tritetracontylcyclohexane (556–852)	144.9	(571)		[66576-11-2] [99/16]
C <sub>49</sub> H <sub>100</sub>	nonatetracontane (599–847)	147.5	(614)	A, EST	[7098-27-3] [87/5][66/8]
C <sub>49</sub> H <sub>100</sub>	2-methyloctatetracontane (553–840)	147.9	(568)		[66576-12-3] [99/16]
C <sub>49</sub> H <sub>100</sub> S	1-nonatetracontanethiol (567–861)	149.7	(582)	EST	[66576-13-4] [99/16]
C <sub>50</sub> H <sub>94</sub>	tetratetracontylbenzene (559–856)	147.1	(574)		[66576-14-5] [99/16]
C <sub>50</sub> H <sub>100</sub>	1-pentacontene (556–848)	147.8	(571)		[63911-02-4] [99/16]
C <sub>50</sub> H <sub>100</sub>	tetratetracontylcyclohexane (559–856)	146.2	(574)		[66576-15-6] [99/16]
C <sub>50</sub> H <sub>102</sub>	pentacontane (603–852)	149.0	(618)	A, EST	[6596-40-3] [87/5][66/8]
C <sub>50</sub> H <sub>102</sub>	2-methylnonatetracontane (557–845)	148.8	(572)		[66576-16-7] [99/16]
C <sub>50</sub> H <sub>102</sub> S	1-pentacontanethiol (570–865)	150.7	(585)	EST	[66576-17-8] [99/16]
C <sub>51</sub> H <sub>96</sub>	pentatetracontylbenzene (562–860)	148.3	(577)		[66576-18-9] [99/16]
C <sub>51</sub> H <sub>98</sub> O <sub>6</sub>	1-myristic-2-palmitic-3-stearic glycerol (508–572)	157.9	(523)	A, T	[60138-20-7] [87/5][49/16]
C <sub>51</sub> H <sub>98</sub> O <sub>6</sub>	glycerol tripalmitate (506–572)	474.3 160.8	(521)	TGA A, T	[555-44-2] [02/33] [87/5][49/16]
C <sub>51</sub> H <sub>102</sub>	1-henpentacontene (560–852)	148.6	(575)		[66576-19-0] [99/16]
C <sub>51</sub> H <sub>102</sub>	pentatetracontylcyclohexane (562–861)	147.4	(577)		[66576-20-3] [99/16]
C <sub>51</sub> H <sub>104</sub>	henpentacontane (607–857)	150.6	(622)	A, EST	[7667-76-7] [87/5][66/8]
C <sub>51</sub> H <sub>104</sub>	2-methylpentacontane (560–850)	150.0	(575)		[66575-81-3] [99/16]
C <sub>51</sub> H <sub>104</sub> S	1-henpentacontanethiol (573–869)	151.6	(588)	EST	[66575-82-4] [99/16]
C <sub>52</sub> H <sub>98</sub>	hexatetracontylbenzene				[66575-84-6]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>52</sub> H <sub>104</sub>	(566–864) 1-dopentacontene	149.1	(581)		[99/16] [66575-85-7]
C <sub>52</sub> H <sub>104</sub>	(563–857) hexatetracontylcyclohexane	149.8	(578)		[99/16] [66575-86-8]
C <sub>52</sub> H <sub>106</sub>	(565–865) dopentacontane	148.5	(580)		[99/16] [7719-79-1]
C <sub>52</sub> H <sub>106</sub>	(611–861) 2-methylhenpentacontane	152.0	(626)	A, EST	[87/5][66/8] [66575-87-9]
C <sub>52</sub> H <sub>106</sub> S	(563–854) 1-dopentacontanethiol	151.2	(578)		[99/16] [66575-88-0]
C <sub>53</sub> H <sub>100</sub>	(575–873) heptatetracontylbenzene	152.6	(590)	EST	[99/16] [66575-89-1]
C <sub>53</sub> H <sub>106</sub>	(569–868) heptatetracontylcyclohexane	150.1	(584)		[99/16] [66563-49-3]
C <sub>53</sub> H <sub>106</sub>	(568–869) 1-tripentacontene	149.6	(583)		[99/16] [66577-50-2]
C <sub>53</sub> H <sub>106</sub>	(566–861) tripentacontane	150.9	(581)		[99/16] [7719-80-4]
C <sub>53</sub> H <sub>108</sub>	(615–866) 2-methylpentacontane	153.4	(630)	A, EST	[87/5][66/8] [66575-90-4]
C <sub>53</sub> H <sub>108</sub> S	(566–858) 1-tripentacontanethiol	152.3	(581)		[99/16] [66575-91-5]
C <sub>54</sub> H <sub>102</sub>	(578–877) octatetracontylbenzene	153.7	(593)	EST	[99/16] [66575-92-6]
C <sub>54</sub> H <sub>108</sub>	(572–873) octatetracontylcyclohexane	151.1	(587)		[99/16] [66575-93-7]
C <sub>54</sub> H <sub>110</sub>	(571–873) 1-tetrapentacontene	150.6	(586)		[99/16] [66575-94-8]
C <sub>54</sub> H <sub>110</sub>	(569–865) tetrapentacontane	151.9	(584)		[99/16] [5856-66-6]
C <sub>54</sub> H <sub>110</sub>	(618–870) 2-methyltripentacontane	155.0	(633)	A, EST	[87/5][66/8] [66575-95-9]
C <sub>54</sub> H <sub>110</sub> S	(569–863) 1-tetrapentacontanethiol	153.4	(584)		[99/16] [66575-96-0]
C <sub>55</sub> H <sub>104</sub>	(581–881) nontetracontylbenzene	154.4	(596)	EST	[99/16] [66575-98-2]
C <sub>55</sub> H <sub>110</sub>	(575–877) nonatetracontylcyclohexane	152.1	(590)		[99/16] [66575-99-3]
C <sub>55</sub> H <sub>110</sub>	(574–877) 1-pentapentacontene	151.6	(589)		[99/16] [66576-00-9]
C <sub>55</sub> H <sub>112</sub>	(572–869) pentapentacontane	152.9	(587)		[99/16] [5846-40-2]
C <sub>55</sub> H <sub>112</sub>	(622–874) 2-methyltetrapentacontane	156.3	(637)	A, EST	[87/5][66/8] [66575-60-8]
C <sub>55</sub> H <sub>112</sub> S	(572–867) 1-pentapentacontanethiol	154.3	(587)		[99/16] [66575-61-9]
C <sub>56</sub> H <sub>106</sub>	(584–885) pentacontylbenzene	155.0	(599)	EST	[99/16] [66575-62-0]
C <sub>56</sub> H <sub>108</sub>	(577–880) 1-hexapentacontene	153.2	(592)		[99/16] [66575-63-1]
C <sub>56</sub> H <sub>108</sub>	(575–873) pentacontylcyclohexane	154.5	(588)		[99/16] [66575-64-2]
C <sub>56</sub> H <sub>114</sub>	(577–881) hexapentacontane	152.4	(592)		[99/16] [7719-82-6]
C <sub>56</sub> H <sub>114</sub>	(625–878) 2-methylpentapentacontane	157.8	(640)	A, EST	[87/5][66/8] [66575-65-3]
C <sub>56</sub> H <sub>114</sub> S	(575–871) 1-hexapentacontanethiol	155.9	(588)		[99/16] [66575-66-4]
C <sub>57</sub> H <sub>108</sub>	(586–888) henpentacontylbenzene	156.0	(601)	EST	[99/16] [66575-67-5]
C <sub>57</sub> H <sub>108</sub> O <sub>6</sub>	(580–884) 1,3-distearic-2-oleic glycerol	154.1	(595)		[99/16] [2846-04-0]
C <sub>57</sub> H <sub>108</sub> O <sub>6</sub>	(523–593) glycerol tristearate	165.8	(538)	A, T	[87/5][49/16] [555-43-1]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
		220.8		TGA	[02/33]
C <sub>57</sub> H <sub>114</sub>	(521–588) henpentacontylcyclohexane	167.5	(536)	A, T	[87/5][49/16] [66575-68-6]
C <sub>57</sub> H <sub>114</sub>	(580–885) 1-heptapentacontene	153.3	(595)		[99/16] [66575-69-7]
C <sub>57</sub> H <sub>116</sub>	(578–877) heptapentacontane	154.6	(593)		[99/16] [5856-67-7]
C <sub>57</sub> H <sub>116</sub>	(629–882) 2-methylhexapentacontane	158.9	(644)	A, EST	[87/5][66/8] [66575-70-0]
C <sub>57</sub> H <sub>116</sub> S	(578–875) 1-heptapentacontanethiol	155.9	(593)		[99/16] [66575-75-1]
C <sub>58</sub> H <sub>110</sub>	(589–892) dopentacontylbenzene	156.7	(604)	EST	[99/16] [66575-73-3]
C <sub>58</sub> H <sub>116</sub>	(583–888) dopentacontylcyclohexane	155.7	(598)		[99/16] [66575-74-4]
C <sub>58</sub> H <sub>116</sub>	(582–888) 1-octapentacontene	154.3	(597)		[99/16] [66575-75-5]
C <sub>58</sub> H <sub>118</sub>	(580–881) octapentacontane	155.8	(595)		[99/16] [7667-78-9]
C <sub>58</sub> H <sub>118</sub>	(632–886) 2-methylheptapentacontane	160.3	(647)	A, EST	[87/5][66/8] [66575-76-6]
C <sub>58</sub> H <sub>118</sub>	(581–879) 1-octapentacontanethiol	156.8	(596)		[99/16] [66575-77-7]
C <sub>58</sub> H <sub>118</sub> S	(591–895) tripentacontylbenzene	157.4	(606)	EST	[99/16] [66575-78-8]
C <sub>59</sub> H <sub>112</sub>	(585–891) tripentacontylcyclohexane	155.9	(600)		[99/16] [66575-80-2]
C <sub>59</sub> H <sub>118</sub>	(585–892) 1-nonapentacontene	155.0	(600)		[99/16] [66575-79-9]
C <sub>59</sub> H <sub>120</sub>	(583–885) nonapentacontane	156.4	(598)		[99/16] [7667-70-0]
C <sub>59</sub> H <sub>120</sub>	(635–890) 2-methyloctapentacontane	161.8	(650)	A, EST	[87/5][66/8] [66575-49-3]
C <sub>59</sub> H <sub>120</sub>	(583–882) 1-nonapentacontanethiol	157.9	(598)		[99/16] [66575-50-6]
C <sub>59</sub> H <sub>120</sub> S	(593–899) tetrapentacontylbenzene	158.3	(608)	EST	[99/16] [66575-51-7]
C <sub>60</sub> H <sub>114</sub>	(588–895) 1-hexacontene	156.6	(603)		[99/16] [66575-52-8]
C <sub>60</sub> H <sub>120</sub>	(586–888) tetrapentacontylcyclohexane	157.1	(601)		[99/16] [66575-53-9]
C <sub>60</sub> H <sub>120</sub>	(587–895) hexacontane	156.0	(602)		[99/16] [7667-80-3]
C <sub>60</sub> H <sub>122</sub>	(638–893) 2-methylnonapentacontane	163.0	(653)	A, EST	[87/5][66/8] [66575-54-0]
C <sub>60</sub> H <sub>122</sub>	(586–886) 1-hexacontanethiol	158.5	(601)		[99/16] [66575-55-1]
C <sub>60</sub> H <sub>122</sub> S	(595–902) pentapentacontylbenzene	159.1	(610)	EST	[99/16] [66563-50-6]
C <sub>61</sub> H <sub>116</sub>	(590–898) 1-henhexacontene	157.5	(605)		[99/16] [66563-51-7]
C <sub>61</sub> H <sub>122</sub>	(588–891) pentapentacontylcyclohexane	158.0	(603)		[99/16] [66563-52-8]
C <sub>61</sub> H <sub>124</sub>	(590–899) henhexacontane	156.6	(605)		[99/16] [7667-81-4]
C <sub>61</sub> H <sub>124</sub>	(642–897) 2-methylhexacontane	163.9	(657)	A, EST	[87/5][66/8] [66563-53-9]
C <sub>61</sub> H <sub>124</sub>	(588–889) 1-henhexacontanethiol	159.4	(603)		[99/16] [66563-54-0]
C <sub>61</sub> H <sub>124</sub> S	(597–905) hexapentacontylbenzene	159.6	(612)	EST	[99/16] [66563-55-1]
C <sub>62</sub> H <sub>118</sub>	(592–902) 1-dohexacontene	158.4	(607)		[99/16] [66563-56-2]
C <sub>62</sub> H <sub>124</sub>	(590–895) 1-dohexacontene	158.6	(605)		[99/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>62</sub> H <sub>126</sub>	hexapentacontylcyclohexane (592–902)	157.5	(607)		[66563-57-3] [99/16]
C <sub>62</sub> H <sub>126</sub>	dohexacontane (645–901)	165.2	(660)	A, EST	[7719-83-7] [87/5][66/8]
C <sub>62</sub> H <sub>126</sub>	2-methylhenhexacontane (590–892)	160.1	(605)		[66563-58-4] [99/16]
C <sub>62</sub> H <sub>122</sub> S	1-dohexacontanethiol (599–908)	160.1	(614)	EST	[66563-59-5] [99/16]
C <sub>63</sub> H <sub>120</sub>	heptapentacontylbenzene (595–905)	158.9	(610)		[66563-60-8] [99/16]
C <sub>63</sub> H <sub>126</sub>	heptapentacontylcyclohexane (594–905)	158.2	(609)		[66563-61-9] [99/16]
C <sub>63</sub> H <sub>126</sub>	1-trihexacontene (593–899)	159.8	(608)		[66563-62-0] [99/16]
C <sub>63</sub> H <sub>128</sub>	trihexacontane (647–904)	116.7	(662)	A, EST	[7719-84-8] [87/5][66/8]
C <sub>63</sub> H <sub>128</sub>	2-methyl-dohexacontane (593–897)	161.3	(608)		[66563-63-1] [99/16]
C <sub>63</sub> H <sub>128</sub> S	1-trihexacontanethiol (602–911)	161.1	(617)	EST	[66563-64-2] [99/16]
C <sub>64</sub> H <sub>122</sub>	octapentacontylbenzene (597–908)	159.5	(612)		[66563-65-3] [99/16]
C <sub>64</sub> H <sub>128</sub>	octapentacontylcyclohexane (596–908)	158.8	(611)		[66563-66-4] [99/16]
C <sub>64</sub> H <sub>128</sub>	1-tetrahexacontene (595–902)	160.5	(610)		[66563-36-8] [99/16]
C <sub>64</sub> H <sub>130</sub>	tetrahexacontane (650–907)	168.3	(665)	A, EST	[7719-87-1] [87/5][66/8]
C <sub>64</sub> H <sub>130</sub>	2-methyltrihexacontane (595–900)	161.9	(610)		[66563-37-9] [99/16]
C <sub>64</sub> H <sub>130</sub> S	1-tetrahexacontanethiol (604–914)	161.6	(619)	EST	[66563-38-0] [99/16]
C <sub>65</sub> H <sub>124</sub>	nonapentacontylbenzene (599–911)	160.1	(614)		[66563-39-1] [99/16]
C <sub>65</sub> H <sub>130</sub>	nonapentacontylcyclohexane (599–912)	159.9	(614)		[66563-40-4] [99/16]
C <sub>65</sub> H <sub>130</sub>	1-penta-hexacontene (597–905)	161.1	(612)		[66563-41-5] [99/16]
C <sub>65</sub> H <sub>132</sub>	penta-hexacontane (653–910)	169.0	(668)	A, EST	[7719-88-2] [87/5][66/8]
C <sub>65</sub> H <sub>132</sub>	2-methyltetrahexacontane (597–903)	162.5	(612)		[66563-42-6] [99/16]
C <sub>65</sub> H <sub>132</sub> S	1-penta-hexacontanethiol (606–917)	162.1	(621)	EST	[66563-43-7] [99/16]
C <sub>66</sub> H <sub>126</sub>	hexacontylbenzene (602–914)	161.2	(617)		[66563-44-8] [99/16]
C <sub>66</sub> H <sub>132</sub>	hexacontylcyclohexane (601–915)	160.5	(616)		[66563-45-9] [99/16]
C <sub>66</sub> H <sub>132</sub>	1-hexa-hexacontene (599–908)	161.7	(614)		[66563-46-0] [99/16]
C <sub>66</sub> H <sub>134</sub>	hexa-hexacontane (656–914)	170.0	(671)	A, EST	[7719-89-3] [87/5][66/8]
C <sub>66</sub> H <sub>134</sub>	2-methylpenta-hexacontane (599–906)	163.1	(614)		[66563-47-1] [99/16]
C <sub>66</sub> H <sub>134</sub> S	1-hexa-hexacontanethiol (607–920)	162.8	(622)	EST	[66563-48-2] [99/16]
C <sub>67</sub> H <sub>128</sub>	henhexacontylbenzene (603–917)	162.1	(618)		[66563-72-2] [99/16]
C <sub>67</sub> H <sub>134</sub>	henhexacontylcyclohexane (603–917)	160.9	(618)		[66563-73-3] [99/16]
C <sub>67</sub> H <sub>134</sub>	1-hepta-hexacontene (601–911)	162.3	(616)		[66563-74-4] [99/16]
C <sub>67</sub> H <sub>136</sub>	hepta-hexacontane (659–937)	170.9	(674)	A, EST	[7719-90-6] [87/5][66/8]



TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>67</sub> H <sub>136</sub>	2-methylhexahexacontane (601–909)	163.7	(616)		[66563-75-5] [99/16]
C <sub>67</sub> H <sub>136</sub> S	1-heptahexacontanethiol (609–922)	163.2	(624)	EST	[66563-76-6] [99/16]
C <sub>68</sub> H <sub>130</sub>	dohexacontylbenzene (605–920)	162.6	(620)		[66563-75-5] [99/16]
C <sub>68</sub> H <sub>136</sub>	dohexacontylcyclohexane (605–920)	161.5	(620)		[66563-78-8] [99/16]
C <sub>68</sub> H <sub>136</sub>	1-octahexacontene (603–913)	162.8	(618)		[66563-79-9] [99/16]
C <sub>68</sub> H <sub>138</sub>	octahexacontane (661–920)	172.3	(676)	A, EST	[7719-91-7] [87/5][66/8]
C <sub>68</sub> H <sub>138</sub>	2-methylheptahexacontane (603–912)	164.3	(618)		[66563-80-2] [99/16]
C <sub>68</sub> H <sub>138</sub> S	1-octahexacontanethiol (611–925)	163.6	(626)	EST	[66563-81-3] [99/16]
C <sub>69</sub> H <sub>132</sub>	trihexacontylbenzene (607–923)	163.1	(622)		[66563-82-4] [99/16]
C <sub>69</sub> H <sub>138</sub>	1-nonhexacontene (605–916)	163.4	(620)		[66563-83-5] [99/16]
C <sub>69</sub> H <sub>138</sub>	trihexacontylcyclohexane (607–923)	162.0	(622)		[66563-93-7] [99/16]
C <sub>69</sub> H <sub>140</sub>	nonahexacontane (664–923)	173.2	(679)	A, EST	[7719-92-8] [87/5][66/8]
C <sub>69</sub> H <sub>140</sub>	2-methyloctahexacontane (605–914)	164.9	(620)		[66563-94-8] [99/16]
C <sub>69</sub> H <sub>140</sub> S	1-nonahexacontanethiol (612–928)	164.4	(627)	EST	[66577-83-1] [99/16]
C <sub>70</sub> H <sub>134</sub>	tetrahexacontylbenzene (609–925)	163.6	(624)		[66577-84-2] [99/16]
C <sub>70</sub> H <sub>140</sub>	1-heptacontene (607–919)	163.9	(622)		[66577-85-3] [99/16]
C <sub>70</sub> H <sub>140</sub>	tetrahexacontylcyclohexane (608–926)	162.8	(623)		[66577-86-4] [99/16]
C <sub>70</sub> H <sub>142</sub>	heptacontane (666–926)	174.4	(681)	A, EST	[7719-93-9] [87/5][66/8]
C <sub>70</sub> H <sub>142</sub>	2-methylnonahexacontane (607–917)	165.4	(622)		[66577-87-5] [99/16]
C <sub>70</sub> H <sub>142</sub> S	1-heptacontanethiol (614–930)	164.8	(621)	EST	[66577-88-6] [99/16]
C <sub>71</sub> H <sub>136</sub>	pentahexacontylbenzene (611–928)	164.4	(626)		[66577-89-7] [99/16]
C <sub>71</sub> H <sub>142</sub>	1-henheptacontene (609–922)	164.4	(624)		[66577-90-0] [99/16]
C <sub>71</sub> H <sub>142</sub>	pentahexacontylcyclohexane (610–928)	163.3	(625)		[66577-91-1] [99/16]
C <sub>71</sub> H <sub>144</sub>	henheptacontane (669–928)	175.2	(684)	A, EST	[7667-82-5] [87/5][66/8]
C <sub>71</sub> H <sub>144</sub>	2-methylheptacontane (609–920)	165.9	(624)		[66577-92-2] [99/16]
C <sub>71</sub> H <sub>144</sub> S	1-henheptacontanethiol (616–933)	165.1	(631)	EST	[66577-93-3] [99/16]
C <sub>72</sub> H <sub>138</sub>	hexahexacontylbenzene (613–931)	164.5	(628)		[66577-94-4] [99/16]
C <sub>72</sub> H <sub>144</sub>	1-doheptacontene (610–924)	165.3	(625)		[66577-95-5] [99/16]
C <sub>72</sub> H <sub>144</sub>	hexahexacontylcyclohexane (612–931)	163.8	(627)		[66577-96-6] [99/16]
C <sub>72</sub> H <sub>146</sub>	doheptacontane (671–931)	176.4	(686)	A, EST	[7668-83-6] [87/5][66/8]
C <sub>72</sub> H <sub>146</sub>	2-methylhenheptacontane (611–923)	166.4	(626)		[66577-97-7] [99/16]
C <sub>72</sub> H <sub>146</sub> S	1-doheptacontanethiol (617–935)	165.8	(632)	EST	[66577-98-8] [99/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>73</sub> H <sub>140</sub>	heptahexacontylbenzene (614–933)	165.4	(629)		[66577-99-9] [99/16]
C <sub>73</sub> H <sub>146</sub>	heptahexacontylcyclohexane (614–933)	164.2	(629)		[66578-00-5] [99/16]
C <sub>73</sub> H <sub>146</sub>	1-triheptacontene (612–927)	165.7	(627)		[66578-01-6] [99/16]
C <sub>73</sub> H <sub>148</sub>	triheptacontane (674–934)	177.1	(689)	A, EST	[7667-84-7] [87/5][66/8]
C <sub>73</sub> H <sub>148</sub>	2-methylheptacontane (613–926)	166.9	(628)		[66578-02-7] [99/16]
C <sub>73</sub> H <sub>148</sub> S	1-triheptacontanethiol (619–938)	166.2	(634)	EST	[66577-64-8] [99/16]
C <sub>74</sub> H <sub>142</sub>	octahexacontylbenzene (616–936)	165.8	(631)		[66577-65-9] [99/16]
C <sub>74</sub> H <sub>148</sub>	octahexacontylcyclohexane (615–936)	165.0	(630)		[66577-66-0] [99/16]
C <sub>74</sub> H <sub>148</sub>	1-tetraheptacontene (614–930)	166.2	(629)		[66577-67-1] [99/16]
C <sub>74</sub> H <sub>150</sub>	tetraheptacontane (676–936)	178.2	(691)	A, EST	[7667-85-8] [87/5][66/8]
C <sub>74</sub> H <sub>150</sub>	2-methyltriheptacontane (615–928)	167.4	(630)		[66577-68-2] [99/16]
C <sub>74</sub> H <sub>150</sub> S	1-tetraheptacontanethiol (620–940)	166.9	(635)	EST	[66577-69-3] [99/16]
C <sub>75</sub> H <sub>144</sub>	nonahexacontylbenzene (618–938)	166.3	(633)		[66577-70-6] [99/16]
C <sub>75</sub> H <sub>150</sub>	nonahexacontylcyclohexane (617–632)	165.4	(632)		[66577-71-7] [99/16]
C <sub>75</sub> H <sub>150</sub>	1-pentaheptacontene (616–932)	166.7	(631)		[66577-72-8] [99/16]
C <sub>75</sub> H <sub>152</sub>	pentaheptacontane (678–939)	179.4	(693)	A, EST	[7667-86-9] [87/5][66/8]
C <sub>75</sub> H <sub>152</sub>	2-methyltetraheptacontane (616–931)	168.2	(631)		[66577-73-9] [99/16]
C <sub>75</sub> H <sub>152</sub> S	1-pentaheptacontanethiol (622–942)	167.2	(637)	EST	[66577-74-0] [99/16]
C <sub>76</sub> H <sub>146</sub>	heptacontylbenzene (619–941)	167.0	(634)		[66577-75-1] [99/16]
C <sub>76</sub> H <sub>152</sub>	heptacontylcyclohexane (619–941)	165.8	(634)		[66577-76-2] [99/16]
C <sub>76</sub> H <sub>152</sub>	1-hexaheptacontene (617–935)	167.5	(632)		[66577-77-3] [99/16]
C <sub>76</sub> H <sub>154</sub>	hexaheptacontane (680–941)	180.4	(695)	A, EST	[7667-87-0] [87/5][66/8]
C <sub>76</sub> H <sub>154</sub>	2-methylpentaheptacontane (618–933)	168.7	(633)		[66577-78-4] [99/16]
C <sub>76</sub> H <sub>154</sub> S	1-hexaheptacontanethiol (623–945)	169.8	(638)	EST	[66577-79-5] [99/16]
C <sub>77</sub> H <sub>148</sub>	henheptacontylbenzene (621–943)	167.4	(636)		[66577-80-8] [99/16]
C <sub>77</sub> H <sub>154</sub>	henheptacontylcyclohexane (620–943)	166.6	(635)		[66577-81-9] [99/16]
C <sub>77</sub> H <sub>154</sub>	1-heptaheptacontene (619–937)	167.9	(634)		[66577-82-0] [99/16]
C <sub>77</sub> H <sub>156</sub>	heptaheptacontane (682–944)	181.4	(697)	A, EST	[7719-94-0] [87/5][66/8]
C <sub>77</sub> H <sub>156</sub>	2-methylhexaheptacontane (620–936)	169.1	(635)		[66575-56-2] [99/16]
C <sub>77</sub> H <sub>156</sub> S	1-heptaheptacontanethiol (625–947)	168.2	(640)	EST	[66575-57-3] [99/16]
C <sub>78</sub> H <sub>150</sub>	doheptacontylbenzene (622–945)	167.3	(637)		[66327-30-8] [99/16]
C <sub>78</sub> H <sub>156</sub>	doheptacontylcyclohexane (622–945)	166.9	(637)		[66327-31-9] [99/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>78</sub> H <sub>156</sub>	1-octaheptacontene (621–940)	168.3	(636)		[66327-32-0] [99/16]
C <sub>78</sub> H <sub>158</sub>	octaheptacontane (685–946)	181.8	(700)	A, EST	[7719-85-9] [87/5][66/8]
C <sub>78</sub> H <sub>158</sub>	2-methylheptaheptacontane (621–939)	169.9	(636)		[66327-33-1] [99/16]
C <sub>78</sub> H <sub>158</sub> S	1-octaheptacontanethiol (626–949)	168.8	(641)	EST	[66375-13-1] [99/16]
C <sub>79</sub> H <sub>152</sub>	triheptacontylbenzene (623–947)	168.0	(638)		[66327-34-2] [99/16]
C <sub>79</sub> H <sub>158</sub>	1-nonaheptacontene (622–942)	169.1	(637)		[66327-35-3] [99/16]
C <sub>79</sub> H <sub>158</sub>	triheptacontylcyclohexane (623–948)	167.7	(638)		[66327-36-4] [99/16]
C <sub>79</sub> H <sub>160</sub>	nonaheptacontane (687–949)	182.7	(702)	A, EST	[7719-86-0] [87/5][66/8]
C <sub>79</sub> H <sub>160</sub>	2-methyloctaheptacontane (622–940)	167.8	(637)		[66327-37-5] [99/16]
C <sub>79</sub> H <sub>160</sub> S	1-nonaheptacontanethiol (628–952)	169.1	(643)	EST	[66327-38-6] [99/16]
C <sub>80</sub> H <sub>154</sub>	tetraheptacontylbenzene (625–949)	168.4	(640)		[66327-39-7] [99/16]
C <sub>80</sub> H <sub>160</sub>	1-octacontene (624–945)	169.4	(639)		[66327-40-0] [99/16]
C <sub>80</sub> H <sub>160</sub>	tetraheptacontylcyclohexane (625–950)	168.0	(640)		[66327-41-1] [99/16]
C <sub>80</sub> H <sub>162</sub>	octacontane (689–951)	183.6	(704)	A, EST	[7667-88-1] [87/5][66/8]
C <sub>80</sub> H <sub>162</sub>	2-methylnonaheptacontane (624–943)	170.2	(639)		[66327-42-2] [99/16]
C <sub>80</sub> H <sub>162</sub> S	1-octacontanethiol (629–954)	169.6	(644)	EST	[66327-43-3] [99/16]
C <sub>81</sub> H <sub>156</sub>	pentaheptacontylbenzene (636–952)	169.1	(641)		[66327-44-4] [99/16]
C <sub>81</sub> H <sub>162</sub>	1-henooctacontene (625–946)	169.3	(640)		[66327-45-5] [99/16]
C <sub>81</sub> H <sub>162</sub>	pentaheptacontylcyclohexane (627–952)	168.4	(642)		[66327-46-6] [99/16]
C <sub>81</sub> H <sub>164</sub>	henooctacontane (691–953)	184.5	(706)	A, EST	[7667-89-2] [87/5][66/8]
C <sub>81</sub> H <sub>164</sub>	2-methyloctacontane (625–945)	170.9	(640)		[66327-47-7] [99/16]
C <sub>81</sub> H <sub>164</sub> S	1-henooctacontanethiol (630–955)	169.4	(645)	EST	[66327-48-8] [99/16]
C <sub>82</sub> H <sub>158</sub>	hexaheptacontylbenzene (628–954)	169.4	(643)		[66327-49-9] [99/16]
C <sub>82</sub> H <sub>164</sub>	1-dooctacontene (626–949)	157.6	(641)		[66327-50-2] [99/16]
C <sub>82</sub> H <sub>164</sub>	hexaheptacontylcyclohexane (627–954)	168.5	(642)		[66327-09-1] [99/16]
C <sub>82</sub> H <sub>166</sub>	dooctacontane (693–955)	185.3	(708)	A, EST	[7719-95-1] [87/5][66/8]
C <sub>82</sub> H <sub>166</sub>	2-methylhenooctacontane (627–947)	171.3	(642)		[66327-10-4] [99/16]
C <sub>82</sub> H <sub>166</sub> S	1-dooctacontanethiol (631–957)	170.0	(646)	EST	[66327-11-5] [99/16]
C <sub>83</sub> H <sub>160</sub>	heptaheptacontylbenzene (628–955)	169.6	(643)		[66327-12-6] [99/16]
C <sub>83</sub> H <sub>166</sub>	heptaheptacontylcyclohexane (629–956)	168.9	(644)		[66327-13-7] [99/16]
C <sub>83</sub> H <sub>166</sub>	1-trioctacontene (628–951)	170.4	(643)		[66327-14-8] [99/16]
C <sub>83</sub> H <sub>168</sub>	trioctacontane (694–957)	186.5	(709)	A, EST	[7667-90-5] [87/5][66/8]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>83</sub> H <sub>168</sub>	2-methyldooctacontane (628–949)	171.1	(643)		[66327-15-9] [99/16]
C <sub>83</sub> H <sub>168</sub> S	1-trioctacontanethiol (633–959)	170.2	(648)	EST	[66327-16-0] [99/16]
C <sub>84</sub> H <sub>162</sub>	octaheptacontylbenzene (630–957)	169.9	(645)		[66327-17-1] [99/16]
C <sub>84</sub> H <sub>168</sub>	octaheptacontylcyclohexane (630–958)	169.5	(645)		[66327-18-2] [99/16]
C <sub>84</sub> H <sub>168</sub>	1-tetraoctacontene (629–953)	170.1	(644)		[66327-19-3] [99/16]
C <sub>84</sub> H <sub>170</sub>	tetraoctacontane (696–960)	187.3	(711)	A, EST	[7667-91-6] [87/5][66/8]
C <sub>84</sub> H <sub>170</sub>	2-methyltrioctacontane (629–951)	171.8	(644)		[66327-20-6] [99/16]
C <sub>84</sub> H <sub>170</sub> S	1-tetraoctacontanethiol (634–962)	170.8	(649)	EST	[66327-21-7] [99/16]
C <sub>85</sub> H <sub>164</sub>	nonheptacontylbenzene (631–960)	170.6	(646)		[66327-22-8] [99/16]
C <sub>85</sub> H <sub>170</sub>	nonheptacontylcyclohexane (632–960)	169.8	(647)		[66327-23-9] [99/16]
C <sub>85</sub> H <sub>170</sub>	1-pentaoctacontene (630–955)	170.9	(645)		[66327-24-0] [99/16]
C <sub>85</sub> H <sub>172</sub>	pentaoctacontane (698–962)	187.9	(713)	A, EST	[7719-96-2] [87/5][66/8]
C <sub>85</sub> H <sub>172</sub>	2-methyltetraoctacontane (631–953)	172.1	(646)		[66327-25-1] [99/16]
C <sub>85</sub> H <sub>172</sub> S	1-pentaoctacontanethiol (634–963)	170.8	(649)	EST	[66327-26-2] [99/16]
C <sub>86</sub> H <sub>166</sub>	octacontylbenzene (633–962)	170.9	(648)		[66327-27-3] [99/16]
C <sub>86</sub> H <sub>172</sub>	1-hexaoctacontene (631–957)	171.5	(646)		[66327-28-4] [99/16]
C <sub>86</sub> H <sub>172</sub>	octacontylcyclohexane (632–962)	169.9	(647)		[66327-29-5] [99/16]
C <sub>86</sub> H <sub>174</sub>	hexaoctacontane (700–964)	188.6	(715)	A, EST	[7667-92-7] [87/5][66/8]
C <sub>86</sub> H <sub>174</sub>	2-methylpentaoctacontane (632–956)	172.8	(647)		[66426-88-3] [99/16]
C <sub>86</sub> H <sub>174</sub> S	1-hexaoctacontanethiol (636–965)	171.1	(651)	EST	[66326-89-4] [99/16]
C <sub>87</sub> H <sub>168</sub>	henooctacontylbenzene (633–963)	171.0	(648)		[66326-90-7] [99/16]
C <sub>87</sub> H <sub>174</sub>	henooctacontylcyclohexane (633–964)	170.6	(648)		[66326-91-8] [99/16]
C <sub>87</sub> H <sub>174</sub>	1-heptaoctacontene (633–959)	171.8	(648)		[66326-92-9] [99/16]
C <sub>87</sub> H <sub>176</sub>	heptaoctacontane (702–966)	189.3	(717)	A, EST	[7667-93-8] [87/5][66/8]
C <sub>87</sub> H <sub>176</sub>	2-methylhexaoctacontane (633–957)	172.6	(648)		[66326-93-0] [99/16]
C <sub>87</sub> H <sub>176</sub> S	1-heptaoctacontanethiol (637–967)	171.7	(652)	EST	[66326-94-1] [99/16]
C <sub>88</sub> H <sub>170</sub>	dooctacontylbenzene (635–965)	171.3	(650)		[66326-95-2] [99/16]
C <sub>88</sub> H <sub>176</sub>	dooctacontylcyclohexane (635–966)	170.8	(650)		[66326-96-3] [99/16]
C <sub>88</sub> H <sub>176</sub>	1-octaoctacontene (634–961)	172.5	(649)		[66326-97-4] [99/16]
C <sub>88</sub> H <sub>178</sub>	octaoctacontane (703–967)	190.4	(718)	A, EST	[7667-94-9] [87/5][66/8]
C <sub>88</sub> H <sub>178</sub>	2-methylheptaoctacontane (634–959)	173.3	(649)		[66326-98-5] [99/16]
C <sub>88</sub> H <sub>178</sub> S	1-octaoctanethiol (639–969)	171.9	(654)	EST	[66326-99-6] [99/16]

TABLE 6. Enthalpies of vaporization of organic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>89</sub> H <sub>172</sub>	trioctacontylbenzene (636–967)	172.0	(651)		[66327-00-2] [99/16]
C <sub>89</sub> H <sub>178</sub>	1-nonaoctacontene (635–962)	172.3	(650)		[66327-01-3] [99/16]
C <sub>89</sub> H <sub>178</sub>	trioctacontylcyclohexane (636–968)	171.5	(651)		[66327-02-4] [99/16]
C <sub>89</sub> H <sub>180</sub>	nonaoctacontane (705–969)	190.9	(720)	A, EST	[7719-76-8] [87/5][66/8]
C <sub>89</sub> H <sub>180</sub>	2-methyloctaoctacontane (636–962)	173.6	(651)		[66327-03-5] [99/16]
C <sub>89</sub> H <sub>180</sub> S	1-nonaoctacontanethiol (639–970)	171.9	(654)	EST	[66327-04-6] [99/16]
C <sub>90</sub> H <sub>174</sub>	tetraoctacontylbenzene (637–968)	171.7	(652)		[66327-05-7] [99/16]
C <sub>90</sub> H <sub>182</sub>	nonacontane (707–971)	191.6	(722)	A, EST	[7667-51-8] [87/5][66/8]
C <sub>91</sub> H <sub>184</sub>	hennonacontane (708–973)	192.5	(723)	A, EST	[7719-97-3] [87/5][66/8]
C <sub>92</sub> H <sub>186</sub>	dononacontane (710–975)	193.0	(725)	A, EST	[7667-95-0] [87/5][66/8]
C <sub>93</sub> H <sub>188</sub>	trinonacontane (711–977)	194.1	(726)	A, EST	[7667-96-1] [87/5][66/8]
C <sub>94</sub> H <sub>190</sub>	tetranonacontane (713–978)	194.5	(728)	A, EST	[1574-32-9] [87/5][66/8]
C <sub>95</sub> H <sub>192</sub>	pentanonacontane (714–980)	195.4	(729)	A, EST	[7667-97-2] [87/5][66/8]
C <sub>96</sub> H <sub>194</sub>	hexanonacontane (716–982)	195.8	(731)	A, EST	[7763-13-5] [87/5][66/8]
C <sub>97</sub> H <sub>196</sub>	heptanonacontane (717–983)	196.6	(732)	A, EST	[7670-25-9] [87/5][66/8]
C <sub>98</sub> H <sub>198</sub>	octanonacontane (719–985)	196.9	(734)	A, EST	[7670-26-0] [87/5][66/8]
C <sub>99</sub> H <sub>200</sub>	nonanonacontane (720–986)	197.8	(735)	A, EST	[7670-27-1] [87/5][66/8]
C <sub>100</sub> H <sub>202</sub>	hectane (721–988)	198.5	(736)	A, EST	[6703-98-6] [87/5][66/8]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
<b>Al</b>					
C <sub>3</sub> H <sub>9</sub> Al	trimethylaluminum (336–400)	39.8 63.2±1.7 41.1	(351)		[75-24-1] [63/5] [63/34][82/15] [46/13]
C <sub>4</sub> H <sub>10</sub> AlCl	diethylaluminum chloride (278–318)	50.5	(293)		[96-10-6] [91/1]
C <sub>4</sub> H <sub>11</sub> Al	diethylaluminum hydride (273–473)	53.9	(373)		[91/1] [871-27-2] [67/33][82/15]
C <sub>6</sub> H <sub>15</sub> Al	triethylaluminum	57.7±2.1 46.9 73.2±2.1			[65/27] [65/27] [97-93-8] [67/33][82/15] [65/27]
C <sub>6</sub> H <sub>15</sub> AlO	diethylaluminum ethoxide (403–463)	60.2 54.1		BG	[65/27] [46/13] [1586-92-1] [74/16]
C <sub>7</sub> H <sub>17</sub> AlO	diethylaluminum propoxide (398–463)	48.7±0.8	(433)		
C <sub>8</sub> H <sub>19</sub> Al	diisobutylaluminum hydride	51.0±0.8	(430)		[74/16] [1191-15-7] [67/33][82/15]
C <sub>9</sub> H <sub>21</sub> Al	tripropylaluminum	42.3±2.1 35.6 42.5±1.2			[65/27] [65/27] [102-67-0] [67/33][82/15]
C <sub>9</sub> H <sub>21</sub> AlO <sub>3</sub>	aluminum isopropoxide (353–399)	48.1±6.3	(376)		[555-31-7] [72/18]
C <sub>12</sub> H <sub>27</sub> Al	triisobutylaluminum (273–322)	38.3	(298)		[100-99-2] [64/20]
C <sub>12</sub> H <sub>27</sub> AlO <sub>3</sub>	tributoxyaluminum (503–533)	104.1	(518)	A, I	[3085-30-1] [87/5][57/26]
C <sub>12</sub> H <sub>27</sub> AlO <sub>3</sub>	triisobutoxyaluminum (500–550)	139.4	(515)	A, I	[3453-79-0] [87/5][57/26]
C <sub>12</sub> H <sub>27</sub> AlO <sub>3</sub>	tri-sec-butoxyaluminum (425–469)	81.5	(440)	A, I	[2269-22-9] [87/5][57/26]
C <sub>15</sub> H <sub>12</sub> AlF <sub>9</sub> O <sub>6</sub>	<i>tris</i> (1,1,1-trifluoro-2,4-pentanedionato)aluminum(III) (349–411)	58.7±0.7	(380)	BG	[14354-59-7] [88/18]
C <sub>15</sub> H <sub>21</sub> AlO <sub>6</sub>	<i>tris</i> (pentane-2,4-dionato)aluminum(III) (392–484)	69.6±0.5	(438)		[78/10] [13963-57-0]
AlB <sub>3</sub> H <sub>12</sub>	aluminum borohydride (231–290)	78.7±0.9 30.0	(298) (260)	T	[86/11] [40/13]
<b>As</b>					
CAsCl <sub>2</sub> F <sub>3</sub> S	dichloro (trifluoromethylthio)arsine (293–373)	37.1	(333)		[60/25] [676-70-0]
CH <sub>3</sub> AsBr <sub>2</sub>	methyl dibromoarsine (293–333)	49.9	(313)		[48/12]
CH <sub>3</sub> AsCl <sub>2</sub>	methyl dichloroarsine (273–313)	41.0	(293)		[593-89-5] [48/12]
CH <sub>3</sub> AsF <sub>2</sub>	methyl difluoroarsine (244–350)	35.5	(297)	MM	[46/15]
C <sub>2</sub> AsClF <sub>6</sub> S <sub>2</sub>	chloro <i>bis</i> (trifluoromethylthio)arsine (293–373)	39.6	(333)		[60/25]
C <sub>2</sub> H <sub>2</sub> AsCl <sub>3</sub>	$\beta$ -chlorovinylchloroarsine (339–383)	U88.3	(354)		[47/3]
C <sub>2</sub> H <sub>2</sub> AsCl <sub>3</sub>	<i>cis</i> -2-chlorovinylchloroarsine (341–382)	48.5	(356)		[48/4]
C <sub>2</sub> H <sub>2</sub> AsCl <sub>3</sub>	<i>trans</i> -2-chlorovinylchloroarsine (323–423)	54.5	(338)		[50/1]
C <sub>2</sub> H <sub>2</sub> AsCl <sub>3</sub>	2-chlorovinylchloroarsine (293–333)	53.4	(313)		[541-25-3] [48/12]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>2</sub> H <sub>2</sub> AsF <sub>6</sub> N	(amino) <i>bis</i> (trifluoromethyl)arsine (313–358)	31.8	(335)		[59/22]
C <sub>2</sub> H <sub>5</sub> AsCl <sub>2</sub>	ethyl dichloroarsine (293–333)	44.6	(313)		[598-14-1] [48/12]
C <sub>2</sub> H <sub>5</sub> AsF <sub>2</sub>	ethyl difluoroarsine (248–367)	33.9	(307)	MM	[46/15]
C <sub>3</sub> AsF <sub>9</sub> S	<i>bis</i> (trifluoromethyl) trifluoromethylthioarsine (263–312)	34.0	(287)		[62/32]
C <sub>3</sub> AsF <sub>9</sub> Se	<i>bis</i> (trifluoromethyl) trifluoromethylselenoarsine (227–295)	34.8	(261)		[62/32]
C <sub>3</sub> H <sub>4</sub> AsF <sub>6</sub> N	(methylamino) <i>bis</i> (trifluoromethyl)arsine (293–355)	34.9	(324)		[59/22]
C <sub>3</sub> H <sub>7</sub> AsCl <sub>2</sub>	propyl dichloroarsine (293–333)	49.2	(313)		[926-53-4] [48/12]
C <sub>3</sub> H <sub>9</sub> As	trimethyl arsine (240–280)	27.7±0.2 28.9±1.3	(260)		[593-88-4] [01/9] [56/24][82/15] [6596-95-8]
C <sub>3</sub> H <sub>9</sub> AsO <sub>3</sub>	trimethyl arsenite (300–335)	42.3±1.3	(298)		[53/16][70/31]
C <sub>4</sub> HAs <sub>2</sub> F <sub>12</sub> N	iminobis[ <i>bis</i> (trifluoromethyl)arsine] (357–398)	38.9	(377)		[59/22]
C <sub>4</sub> H <sub>6</sub> AsF <sub>6</sub> N	(ethylamino) <i>bis</i> (trifluoromethyl)arsine (292–368)	32.8	(330)		[59/22]
C <sub>4</sub> H <sub>6</sub> AsF <sub>6</sub> N	(dimethylamino) <i>bis</i> (trifluoromethyl)arsine (296–358)	35.6	(327)		[59/22]
C <sub>4</sub> H <sub>11</sub> As	diethyl arsine (281–366)	35.2	(273)	MM	[692-42-2] [01/5]
C <sub>4</sub> H <sub>12</sub> AsN	(dimethylamino) dimethylarsine (274–342)	36.7	(298)	MM	[01/5]
C <sub>5</sub> AsF <sub>13</sub> Se	heptafluoropropylseleno <i>bis</i> (trifluoromethyl)arsine (277–348)	40.3	(312)		[62/32]
C <sub>5</sub> H <sub>7</sub> AsCl <sub>2</sub>	<i>bis</i> (2-chlorovinyl)methylarsine (293–333)	55.6	(313)		[48/12]
C <sub>5</sub> H <sub>11</sub> AsBr <sub>2</sub>	pentyl dibromoarsine (293–333)	60.0	(313)		[48/12]
C <sub>5</sub> H <sub>15</sub> AsN <sub>2</sub>	<i>bis</i> (dimethylamino) methylarsine (273–333)	39.2			[59/20]
C <sub>6</sub> H <sub>5</sub> AsCl <sub>2</sub>	phenyl dichloroarsine (313–333)	58.4	(323)		[696-28-6] [48/12]
C <sub>6</sub> H <sub>9</sub> As	trivinylarsine (295–339)	48.7	(350)		[47/5]
C <sub>6</sub> H <sub>12</sub> AsN	cyano(ethyl)propylarsine (293–313)	35.6	(310)		[57/15][84/9]
C <sub>6</sub> H <sub>15</sub> As	triethylarsine (273–339)	54.6	(303)		[48/12]
C <sub>6</sub> H <sub>15</sub> AsO <sub>3</sub>	arsenic (III) triethoxide (305–340)	38.1±1.5 38.5±0.7 43.1±4.2	(306) (334)		[617-75-4] [01/9] [01/9] [63/37][82/15]
C <sub>6</sub> H <sub>15</sub> AsO <sub>3</sub>	arsenic (III) triethoxide (305–340)	47.9±1.1 50.6±4.2	(298)	DSC	[96/7] [53/16][70/31]
C <sub>6</sub> H <sub>18</sub> AsN <sub>3</sub>	<i>tris</i> (dimethylamino)arsine (288–359)	45.8			[59/20]
C <sub>8</sub> H <sub>12</sub> AsNO <sub>3</sub>	dimethyl arsanilate (288–433)	48.8	(303)		[47/5]
C <sub>9</sub> H <sub>21</sub> As	triisopropylarsine (346–405)	45.2±0.5	(376)		[01/9]
C <sub>9</sub> H <sub>21</sub> As	tripropylarsine (314–420)	44.0±0.7	(367)		[5852-57-3] [95/5][01/9]
C <sub>9</sub> H <sub>21</sub> AsO <sub>3</sub>	arsenic (III) tripropoxide	51.2±1.8		DSC	[15606-91-4] [96/7]
C <sub>9</sub> H <sub>21</sub> AsO <sub>3</sub>	arsenic (III) triisopropoxide	80.1±0.9		DSC	[96/7]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>16</sub> AsNO <sub>3</sub>	diethyl arsinate (311–454)	54.2	(326)	A	[87/5][47/5]
C <sub>12</sub> H <sub>27</sub> AsO <sub>3</sub>	arsenic (III) tributoxide	64.0±1.8		DSC	[3141-10-4] [96/7]
C <sub>12</sub> H <sub>27</sub> AsO <sub>3</sub>	arsenic (III) triisobutoxide	75.7±1.2		DSC	[96/7]
C <sub>13</sub> H <sub>10</sub> AsN	diphenylarsine carbonitrile (296–326)	84.6	(311)	A	[23525-22-6] [87/5]
C <sub>15</sub> H <sub>33</sub> As	tripentylarsine (408–466)	62.3	(432)		[32/4]
C <sub>18</sub> H <sub>15</sub> As	triphenylarsine (493–563)	75.7	(508)	A	[603-32-7] [87/5]
AsF <sub>3</sub>	arsenic trifluoride	35.8	(293)		[7784-35-2] [41/11]
AsH <sub>3</sub>	arsine	16.7	(210)		[7784-42-1] [55/19]
As <sub>2</sub> S <sub>2</sub>	arsenic (II) sulfide (663–838)	69.6	(750)		[1303-32-8] [68/25]
<b>B</b>					
CH <sub>3</sub> BO	borine carbonyl (134–209)	19.7	(194)		[47/5]
CH <sub>11</sub> B <sub>5</sub>	1-methylpentaborane (9) (241–349)	32.7	(295)		[63/26]
C <sub>2</sub> BF <sub>3</sub>	perfluorovinyl difluoroborane (177–238)	26.6	(207)	T	[32038-87-2] [60/12]
C <sub>2</sub> BCl <sub>2</sub> F <sub>3</sub>	perfluorovinyl dichloroborane (238–301)	31.5	(269)	T	[758-99-6] [60/12]
C <sub>2</sub> H <sub>3</sub> BF <sub>2</sub>	vinyl difluoroborane (178–228)	22.6	(203)	T	[358-95-2] [60/10]
C <sub>2</sub> H <sub>3</sub> BCl <sub>2</sub>	vinyl dichloroborane (237–282)	27.7	(260)	T	[3677-80-3] [60/10]
C <sub>2</sub> H <sub>3</sub> BCl <sub>2</sub> O	ethoxydichloroborane	35.1±0.8	(298)		[31/3][70/31]
C <sub>2</sub> H <sub>6</sub> BCl <sub>2</sub> N	dimethylaminodichloroborane	37.2±1.3	(298)		[51/14][70/31]
C <sub>2</sub> H <sub>6</sub> B <sub>4</sub>	carborane-4 (241–287)	26.2	(272)		[63/3]
C <sub>2</sub> H <sub>6</sub> O-BF <sub>3</sub>	dimethyl ether—boron trifluoride complex (311–346)	53.1	(328)		[60/7]
C <sub>2</sub> H <sub>6</sub> ClBO <sub>2</sub>	dimethoxychloroborane	34.3±1.2	(298)		[31/3][70/31]
C <sub>2</sub> H <sub>6</sub> S-BH <sub>3</sub>	dimethyl sulfide—borane complex (273–314)	44.9	(293)		[13292-87-0] [99/16]
C <sub>2</sub> H <sub>7</sub> B <sub>5</sub>	2,4-dicarba-closo-heptaborane (273–323)	31.6	(288)	I	[20693-69-0] [76/17]
C <sub>2</sub> H <sub>8</sub> BSb	dimethylstibinoborane (234–273)	32.1	(254)		[59/6]
C <sub>2</sub> H <sub>10</sub> BP	dimethylphosphine borane (303–383)	45.1	(318)		[53/4]
C <sub>2</sub> H <sub>11</sub> B <sub>2</sub> N	N-dimethylaminodiborane (220–267)	29.3	(252)		[55/14]
C <sub>2</sub> H <sub>13</sub> B <sub>5</sub>	1-ethylpentaborane (9) (273–383)	35.0	(328)		[63/26]
C <sub>3</sub> BF <sub>9</sub> S <sub>3</sub>	tris(trifluoromethylthio)borane (242–298)	33.9	(270)		[36884-78-3] [99/16]
C <sub>3</sub> H <sub>3</sub> BF <sub>2</sub>	allyl difluoroborane (194–249)	28.0	(221)	T	[60/10]
C <sub>3</sub> H <sub>7</sub> BF <sub>2</sub>	propyl difluoroborane (195–248)	29.4	(221)	T	[60/10]
C <sub>3</sub> H <sub>9</sub> BO <sub>3</sub>	trimethylborate (304–340)	34.2	(319)		[121-43-7] [67/2]
C <sub>3</sub> H <sub>9</sub> B	trimethylborane	20.2±0.1 23.9		BG	[61/13][61/15] [46/13]



TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>3</sub> H <sub>9</sub> BS	dimethyl(methylthio)borane (227–304)	31.6	(265)		[19163-05-4] [99/16]
C <sub>3</sub> H <sub>9</sub> BS <sub>2</sub>	methylbis(methylthio)borane (300–373)	44.7	(315)		[19163-08-7] [99/16]
C <sub>3</sub> H <sub>9</sub> BS <sub>3</sub>	tris(methylthio)borane (325–462)	44.9	(394)		[997-49-9] [99/16]
	(303–493)	51.6	(398)		[67/8]
	(303–493)	54.0±0.8	(298)		[67/8]
C <sub>3</sub> H <sub>9</sub> B <sub>3</sub> O <sub>3</sub>	methylboric acid anhydride (273–327)	37.4	(288)		[40/4]
C <sub>3</sub> H <sub>12</sub> BN	borine trimethylamine (136–195)	19.9	(180)		[37/6]
C <sub>3</sub> H <sub>15</sub> B <sub>5</sub>	1-isopropylpentaborane (9) (273–398)	37.2	(335)		[63/26]
C <sub>4</sub> BClF <sub>6</sub>	bis(perfluorovinyl)chloroborine (280–322)	35.6	(301)	T	[60/12]
C <sub>4</sub> H <sub>6</sub> BF	divinylfluoroborane (193–273)	25.8	(233)	T	[60/10]
C <sub>4</sub> H <sub>6</sub> BCl	divinylchloroborane (275–298)	33.0	(286)	T	[60/10]
C <sub>5</sub> H <sub>10</sub> O-BF <sub>3</sub>	tetrahydropyran—boron trifluoride complex (323–368)	60.9	(345)		[60/8]
C <sub>4</sub> H <sub>10</sub> O-BF <sub>3</sub>	diethyl ether—boron trifluoride complex (283–353)	55.1	(318)		[60/7]
C <sub>4</sub> H <sub>10</sub> BClO <sub>2</sub>	diethoxychloroborane	38.9±0.8	(298)		[31/3][70/31]
C <sub>4</sub> H <sub>12</sub> BClN <sub>2</sub>	bis(dimethylamino)chloroborane	41.8±2.1	(298)		[51/14][70/31]
C <sub>4</sub> H <sub>11</sub> N-C <sub>3</sub> H <sub>9</sub> B	N,N-dimethylethylamine—trimethylborane complex (303–339)	58.2	(321)		[60/9]
C <sub>4</sub> H <sub>12</sub> B <sub>2</sub> O <sub>4</sub>	tetramethoxydiboron (273–348)	44.0	(310)		[60/13]
		44.7			[72/32]
C <sub>4</sub> H <sub>17</sub> B <sub>5</sub>	1-sec-butylpentaborane (9) (299–428)	41.4	(364)		[63/26]
C <sub>5</sub> H <sub>16</sub> B <sub>10</sub>	isopropenyl-o-carborane (323–473)	36.7	(398)		[63/46]
C <sub>5</sub> H <sub>16</sub> B <sub>10</sub> O <sub>2</sub>	1-acetoxymethyl-o-carborane	56.5	(569)		[19528-60-0] [74/31]
C <sub>5</sub> H <sub>19</sub> B <sub>5</sub>	1-methyl-2-sec-butylpentaborane (301–423)	41.0	(362)		[63/26]
C <sub>6</sub> BF <sub>9</sub>	tris(perfluorovinyl)borine (297–335)	41.1	(316)	T	[60/12]
C <sub>6</sub> H <sub>5</sub> BBr <sub>2</sub>	phenylboron dibromide (391–433)	43.9±2.1	(412)	T	[67/1]
C <sub>6</sub> H <sub>5</sub> BCl <sub>2</sub>	phenylboron dichloride (273–318)	33.7±0.8	(296)	T	[67/1]
C <sub>6</sub> H <sub>12</sub> BCl <sub>3</sub> O <sub>3</sub>	tris(2-chloroethyl) orthoborate (390–448)	57.7	(419)		[46/9]
C <sub>6</sub> H <sub>13</sub> BO <sub>2</sub>	1-butaneboronic acid, cyclic ethylene ester	40.2	(329)		[10173-39-4] [70/29]
C <sub>6</sub> H <sub>15</sub> B	triethylborane	33.6	(293)		[97-94-9] [83/1]
		36.8±0.4			[63/32][82/15]
C <sub>6</sub> H <sub>15</sub> BO <sub>3</sub>	triethylborate (302–382)	41.0	(317)		[150-46-9] [67/2]
	(302–382)	38.2	(391)		[67/2]
C <sub>6</sub> H <sub>15</sub> BS <sub>3</sub>	triethylthioborane	61.5±2.1			[66/27][70/31]
C <sub>6</sub> H <sub>15</sub> B <sub>3</sub> O <sub>3</sub>	triethylboroxin (347–424)	46.0	(362)	EB	[90/19]
C <sub>6</sub> H <sub>16</sub> BN	(N-ethylamino)diethylborane	60.7±0.8			[67/32][82/15]
C <sub>6</sub> H <sub>17</sub> B <sub>5</sub> Br <sub>2</sub> Si <sub>2</sub>	2,4-bis(bromodimethylsilyl)-2,4-dicarbo-closo-heptaborane (7)				[66798-29-6]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>17</sub> B <sub>5</sub> Cl <sub>2</sub> Si <sub>2</sub>	(388–463)	53.1	(403)	I	[79/25]
	2,4- <i>bis</i> (chlorodimethylsilyl)-2,4-dicarba-closo-heptaborane (7)	46.2	(374)	I	[28699-83-4] [79/25]
C <sub>6</sub> H <sub>18</sub> BN	triethylaminoborane	69.7±0.8			[67/32][70/31]
C <sub>6</sub> H <sub>18</sub> BN <sub>3</sub>	<i>tris</i> (triethylamino)borane	46.9±0.8			[51/14][70/31]
C <sub>6</sub> H <sub>19</sub> B <sub>5</sub> Si <sub>2</sub>	2,4- <i>bis</i> (dimethylsilyl)-2,4-dicarba-closo-heptaborane	41.3	(388)	I	[59351-11-0] [76/17]
C <sub>6</sub> H <sub>20</sub> B <sub>2</sub> N <sub>2</sub>	dimethylaminomethyl borane cyclic dimer	57.8	(314)		[66/6]
C <sub>6</sub> H <sub>20</sub> B <sub>10</sub>	1-butyl-o-carbaborane (12)	77.3±3.8	(298)	EB	[79/26]
	(433–534)	50.6±1.3	(571)	EB	[79/26]
C <sub>6</sub> H <sub>20</sub> B <sub>10</sub>	1-isobutyl-o-carbaborane (12)	72.8±2.1	(298)	EB	[79/26]
	(427–536)	49.1±0.9	(564)	EB	[79/26]
C <sub>6</sub> H <sub>20</sub> B <sub>10</sub>	1-butyl-m-carbaborane (12)	67.7±0.8	(298)	EB	[79/26]
	(406–527)	46.7±0.6	(537)	EB	[79/26]
C <sub>6</sub> H <sub>20</sub> B <sub>10</sub>	1-isobutyl-m-carbaborane (12)	64.1±2.8	(298)	EB	[79/26]
	(400–488)	44.6±1.3	(532)	EB	[79/26]
C <sub>7</sub> H <sub>15</sub> BO <sub>2</sub>	1-butaneboronic acid, cyclic trimethylene ester	43.1	(348)		[30169-71-2] [70/29]
	(400–488)	43.1	(348)		[70/29]
C <sub>7</sub> H <sub>15</sub> B <sub>3</sub> F <sub>3</sub> N <sub>3</sub>	1,2,3,4,5-pentamethyl-6-(trifluorovinyl)borazaine	18.4	(302)		[20453-68-3] [99/16]
C <sub>7</sub> H <sub>22</sub> B <sub>10</sub>	1-pentyl-o-carbaborane (12)	84.3±6.0	(298)	EB	[79/26]
	(446–549)	52.0±1.5	(571)	EB	[79/26]
C <sub>7</sub> H <sub>22</sub> B <sub>10</sub>	1-pentyl-m-carbaborane (12)	74.6±2.4	(298)	EB	[79/26]
	(421–544)	48.6±0.8	(555)	EB	[79/26]
C <sub>8</sub> H <sub>17</sub> BO <sub>2</sub>	1-butaneboronic acid, cyclic tetramethylene ester	76.6	(364)		[31044-62-9] [70/29]
	(400–488)	76.6	(364)		[70/29]
C <sub>8</sub> H <sub>18</sub> BBr	dibutylboron bromide	50.6	(328)		[5674-70-4] [53/11]
C <sub>8</sub> H <sub>18</sub> BCl	dibutylboron chloride	48.2	(328)		[1730-69-4] [53/11]
	(293–363)	48.2	(328)		[53/11]
C <sub>8</sub> H <sub>19</sub> BO <sub>2</sub>	1-butaneboronic acid, diethyl ester	43.3	(346)		[10394-51-1] [70/29]
C <sub>8</sub> H <sub>20</sub> B <sub>2</sub> O	tetraethyldiboroxane	42.9	(358)	EB	[90/19]
C <sub>8</sub> H <sub>20</sub> B <sub>2</sub> O <sub>4</sub>	tetraethoxydiboron	52.9	(315)		[60/13]
C <sub>8</sub> H <sub>24</sub> B <sub>2</sub> N <sub>4</sub>	tetra(dimethylamino)diboron	52.7	(352)		[60/14]
C <sub>8</sub> H <sub>24</sub> B <sub>10</sub>	1-hexyl-o-carbaborane (12)	93.5±6.0	(298)	EB	[79/26]
	(458–530)	54.1±2.1	(601)	EB	[79/26]
C <sub>8</sub> H <sub>24</sub> B <sub>10</sub>	1-hexyl-m-carbaborane (12)	79.8±2.4	(298)	EB	[79/26]
	(434–544)	50.7±1.0	(572)	EB	[79/26]
C <sub>8</sub> H <sub>23</sub> B <sub>5</sub> Si <sub>2</sub>	2,4- <i>bis</i> (trimethylsilyl)-2,4-dicarba-closo-heptaborane	45.0	(388)	I	[59351-10-9] [76/17]
C <sub>9</sub> H <sub>11</sub> BO <sub>2</sub>	benzeneboronic acid, cyclic trimethylene ester	47.3	(426)		[4406-77-3] [70/29]
	(373–473)	47.3	(426)		[70/29]
C <sub>9</sub> H <sub>15</sub> BCl <sub>6</sub> O <sub>3</sub>	<i>tris</i> (2,2'-dichloroisopropyl) orthoborate	77.0	(465)		[46/9]
C <sub>9</sub> H <sub>21</sub> B	tripropylborane	41.8±1.3			[63/33][82/15]
	(273–393)	40.0		BG	[46/13]
C <sub>9</sub> H <sub>21</sub> B	triisopropylborane	41.8±1.3			[1776-66-5] [63/33][82/15]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>9</sub> H <sub>21</sub> BO <sub>3</sub>	(273–393) tripropylborate	40.0		BG	[46/13] [688-71-1]	
	(340–453)	52.3	(355)		[80/15]	
	(358–452)	47.6	(452)		[67/2]	
C <sub>9</sub> H <sub>21</sub> BO <sub>3</sub>	triisopropylborate (338–412)	42.4	(412)		[5419-55-6] [67/2]	
C <sub>9</sub> H <sub>21</sub> BS <sub>3</sub>	tri(propylthio)borane (423–483)	76.2	(453)		[998-38-9] [67/8]	
	(423–483)	87.0±2.1	(298)		[67/8]	
	C <sub>9</sub> H <sub>22</sub> BNO butyl(dimethylamino)methoxyborane (369–427)	48.1	(384)	EB	[73/17]	
C <sub>10</sub> H <sub>13</sub> BO <sub>2</sub>	benzeneboronic acid, cyclic tetramethylene ester	58.2±2.5	(298)		[73/17]	
		57.3	(441)		[4406-76-2] [70/29]	
C <sub>10</sub> H <sub>15</sub> BO <sub>2</sub>	benzeneboronic acid, diethyl ester	67.4	(332)		[31044-59-4] [70/29]	
C <sub>11</sub> H <sub>24</sub> B <sub>10</sub> O <sub>3</sub>	3-methyl-3-(7-isopropyl- <i>m</i> -carboranoylperoxy)-1-butyne (353–368)	140.6±4.4	(360)	ME	[99/17]	
C <sub>12</sub> H <sub>10</sub> BBr	diphenylboron bromide (436–516)	60.2±2.5	(476)	T	[5123-17-1] [67/1]	
C <sub>12</sub> H <sub>10</sub> BCl	diphenylboron chloride (363–485)	41.4±2.1	(424)	T	[3677-81-4] [67/1]	
C <sub>12</sub> H <sub>21</sub> B	dodecahydro-9-boraphenylene (304–404)	53.1	(319)	A	[16664-33-8] [87/5]	
C <sub>12</sub> H <sub>27</sub> B	tributylboron (293–363)	54.7	(328)		[122-56-5] [53/11]	
					[688-74-4]	
C <sub>12</sub> H <sub>27</sub> BO <sub>3</sub>	tributylborate (380–504)	58.1	(395)		[80/15]	
		(390–491)	55.9	(405)		[67/2]
		C <sub>12</sub> H <sub>27</sub> BO <sub>3</sub>	triisobutylborate (372–472)	51.7	(483)	
C <sub>12</sub> H <sub>27</sub> BS <sub>3</sub>	tri(butylthio)borane (440–503)	83.9	(471)		[998-46-9] [67/8]	
		(440–503)	95.8±2.1	(298)		[67/8]
		C <sub>15</sub> H <sub>32</sub> B <sub>10</sub> O <sub>5</sub>	2,5-dimethyl-(2- <i>tert</i> -butylperoxy-5- <i>m</i> -carboranoylperoxy)-3-hexyne (353–366)	86.8±5.4	(360)	ME
C <sub>15</sub> H <sub>33</sub> BO <sub>3</sub>	tripentylborate (410–505)	67.7	(425)		[80/15]	
C <sub>15</sub> H <sub>33</sub> BS <sub>3</sub>	tri(pentylthio)borane (446–503)	92.3	(474)		[67/8]	
		(446–503)	104.6±2.1	(298)		[67/8]
		C <sub>18</sub> H <sub>12</sub> BCl <sub>3</sub> O <sub>3</sub>	<i>tris</i> (4-chlorophenoxy)borane (428–476)	30.6±0.9	(452)	MM
C <sub>18</sub> H <sub>12</sub> BCl <sub>3</sub> O <sub>3</sub>	<i>tris</i> (3-chlorophenoxy)borane (476–524)	49.6±1.6	(500)	MM	[42080-72-8] [73/2]	
C <sub>18</sub> H <sub>15</sub> B	triphenylborane (423–568)	64.3	(438)	A	[960-71-4] [87/5]	
		(423–548)	64.4±2.1	(486)		[67/1]
		C <sub>21</sub> H <sub>12</sub> BN <sub>3</sub> O <sub>3</sub>	<i>tris</i> (4-cyanophenoxy)borane (448–506)	46.2±2.0	(477)	MM
C <sub>21</sub> H <sub>21</sub> BO <sub>3</sub>	<i>tris</i> (4-methylphenoxy)borane (475–525)	76.1±1.7	(500)	MM	[14643-62-0] [73/2]	
		C <sub>21</sub> H <sub>21</sub> BO <sub>3</sub>	<i>tris</i> (3-methylphenoxy)borane (477–523)	77.1±2.2	(500)	MM
C <sub>21</sub> H <sub>21</sub> BO <sub>6</sub>	<i>tris</i> (3-methoxyphenoxy)borane (440–496)	57.8±2.4	(468)	MM	[42080-76-2] [73/2]	
C <sub>21</sub> H <sub>21</sub> BO <sub>6</sub>	<i>tris</i> (4-methoxyphenoxy)borane (448–500)	42.4±2.7	(474)	MM	[42080-75-1] [73/2]	
B <sub>2</sub> D <sub>6</sub>	perdeuterodiborane (118–179)	15.3	(164)		[61/29]	
B <sub>2</sub> H <sub>6</sub>	diborane (118–179)	15.3	(164)		[19287-45-7] [61/29]	
		14.2	(180)	C	[59/19]	
		12.6	(210)	C	[59/19]	

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
B <sub>3</sub> Br <sub>3</sub> H <sub>3</sub> N <sub>3</sub>	2,4,6-tribromoborazine (404–415)	10.5	(240)	C	[59/19]
		7.3	(270)	C	[59/19]
		47.0±5.1	(409)	I	[13703-88-3] [66/1]
B <sub>3</sub> Cl <sub>3</sub> H <sub>3</sub> N <sub>3</sub>	2,4,6-trichloroborazine (363–409) (360–386)	49.6±0.2	(386)	I	[933-18-6] [66/1]
		47.8	(373)		[55/18]
<b>Be</b>					
C <sub>2</sub> H <sub>6</sub> Be	dimethyl beryllium (373–453)	88.7	(388)		[506-63-8] [52/4]
C <sub>10</sub> H <sub>8</sub> BeF <sub>6</sub> O <sub>4</sub>	<i>bis</i> (1,1,1-trifluoro-2,4-pentanedionato)beryllium(II) (387–474)	59.8±0.4	(431)	BG	[13939-10-1] [88/18]
C <sub>10</sub> H <sub>14</sub> BeO <sub>4</sub>	<i>bis</i> (2,4-pentanedionato)beryllium(II) (382–511)	65.7±1.1	(447)	BG	[10210-64-7] [88/18]
C <sub>22</sub> H <sub>38</sub> BeO <sub>4</sub>	<i>bis</i> (2,2,6,6-tetramethylheptane-3,5-dionato)beryllium (383–525)	65.1	(454)	BG	[36915-22-7] [88/18]
BeF <sub>2</sub>	beryllium fluoride (823–1223) (802–1021) (821–1002) (745–968)	222.8	(1923)	TE, ME, GS	[7787-49-7] [63/26]
		209.6	(911)		[58/16]
		196.6	(911)		[58/17]
		212.9	(856)	GS	[54/16]
<b>Bi</b>					
CH <sub>5</sub> Bi	methylbismuthine (190–258)	29.9	(224)		[66172-95-0] [61/28]
C <sub>2</sub> H <sub>7</sub> Bi	dimethylbismuthine (206–250)	32.7	(228)		[1438-45-4] [61/28]
C <sub>3</sub> H <sub>9</sub> Bi	trimethylbismuthine (215–380)	35.8	(298)		[593-91-9] [61/28]
		36.0±1.3			[54/18][82/15]
		34.8		BG	[46/13]
C <sub>6</sub> H <sub>9</sub> Bi	trivinylbismuthine (293–346)	48.5	(308)		[65313-35-1] [57/15][84/9]
C <sub>6</sub> H <sub>15</sub> Bi	triethylbismuthine (301–343)	46.0±4.2			[63/37][82/15]
		43.9	(322)		[57/15]
<b>Br</b>					
BrF <sub>3</sub>	bromine trifluoride (311–428)	45.9	(326)		[52/19]
BrF <sub>5</sub>	bromine pentafluoride (297–314) (213–297)	30.6	(304)		[7789-30-2] [56/21]
		31.2	(255)		[31/2]
Br <sub>2</sub>	bromine (343–383) (297–389)	29.8	(358)		[7726-95-6] [73/36]
		31.3	(312)		[55/23]
Br <sub>3</sub> FO <sub>3</sub>	perbromyl fluoride (188–291)	25.3	(250)		[72/36]
HBr	hydrogen bromide	17.6	(206)	C	[10035-10-6] [28/6]
<b>Cd</b>					
C <sub>2</sub> H <sub>6</sub> Cd	dimethyl cadmium (271–378) (270–295)	37.1±0.1	(324)		[506-82-1] [85/8][01/9]
		38.9	(282)		[56/4]
		37.9±0.1			[49/22][82/15]
		35.4		BG	[46/13]
C <sub>4</sub> H <sub>10</sub> Cd	diethyl cadmium (286–362)	46.0±0.4	(324)		[592-02-9] [85/8][01/9]
		46.0±2.1			[49/21][82/15]
C <sub>6</sub> H <sub>14</sub> Cd	dipropyl cadmium (312–373)	54.2±0.4	(342)		[5905-48-6] [85/8][01/9]
C <sub>8</sub> H <sub>18</sub> Cd	dibutyl cadmium (336–376)	67.7±1.2	(356)		[3431-67-2] [85/8][01/9]
CdCl <sub>2</sub>	cadmium chloride (875–1026)	132.6	(950)		[10108-64-2] [58/28]
<b>Cl</b>					

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
ClFO <sub>3</sub>	perchloryl fluoride (164–228)	19.2	(226)	MM	[58/5]
		19.3	(226)	C	[58/5]
ClF <sub>3</sub>	chlorine trifluoride (299–317) (226–303)	27.5	(313)		[97/16]
		28.4	(288)		[51/11]
ClNO	nitrosyl chloride (203–258)	25.3	(230)		[2696-92-6] [49/24]
Cl <sub>2</sub> O <sub>6</sub>	dichlorine hexaoxide (273–318)	52.3	(295)		[90/18]
HCl	hydrogen chloride	16.2	(188)	C	[7647-01-0] [28/4]
<b>Co</b>					
C <sub>3</sub> CoNO <sub>4</sub>	cobalt nitrosyl tricarbonyl (272–353)	36.3	(287)		[47/5]
C <sub>4</sub> HCoO <sub>4</sub>	hydridocobalt tetracarbonyl (273–295)	28.0		GS	[80/19]
C <sub>4</sub> H <sub>3</sub> CoO <sub>4</sub> Si	silyl tetracarbonyl cobalt (263–357)	37.8	(310)	T	[14652-62-1] [69/36]
C <sub>7</sub> H <sub>5</sub> CoO <sub>2</sub>	(cyclopentadienyl) cobalt dicarbonyl (313–369)	52.1 ± 0.7			[00/19]
C <sub>8</sub> H <sub>2</sub> Co <sub>2</sub> O <sub>8</sub> Si	silylene bis(tetracarbonylcobalt) (297–335)	38.7	(316)	T	[23591-62-0] [69/36]
<b>Cr</b>					
C <sub>6</sub> CrO <sub>6</sub>	chromium hexacarbonyl (309–424)	62.5	(324)		[13007-92-6] [47/5]
C <sub>10</sub> H <sub>10</sub> Cr	chromocene (452–519)	49.5 ± 1.5	(485)		[1271-24-5] [84/32]
C <sub>15</sub> H <sub>12</sub> CrF <sub>9</sub> O <sub>6</sub>	tris(1,1,1-trifluoro-2,4-pentanedionato)chromium(III) (424–486)	76.7 ± 0.6	(455)		[14592-89-2] [78/11]
C <sub>15</sub> H <sub>21</sub> CrO <sub>6</sub>	tris(2,4-pentanedionato)chromium(III) (490–536)	82.2 ± 2.0	(513)	BG	[21679-31-2] [88/18]
C <sub>16</sub> H <sub>20</sub> Cr	bis(ethylbenzene)chromium	75.3 ± 8.4			[73/32][82/15]
C <sub>20</sub> H <sub>28</sub> Cr	bis(1,2-diethylbenzene)chromium	75.3 ± 8.4			[73/32][82/15]
C <sub>21</sub> H <sub>30</sub> Cr	(1,2-diisopropylbenzene)isopropylbenzenechromium	100.4 ± 8.4			[73/32][82/15]
C <sub>24</sub> H <sub>36</sub> Cr	bis(1,2-diisopropylbenzene)chromium	100.4 ± 8.4			[73/32][82/15]
<b>Cu</b>					
C <sub>6</sub> H <sub>12</sub> CuN <sub>2</sub> S <sub>4</sub>	bis(dimethyldithiocarbamate)copper (443–473)	147.4	(458)		[137-29-1] [99/16]
C <sub>14</sub> H <sub>28</sub> CuN <sub>2</sub> S <sub>4</sub>	bis(dipropyldithiocarbamate)copper (422–453)	118.4	(437)		[14358-07-5] [99/16]
C <sub>16</sub> H <sub>20</sub> CuF <sub>6</sub> O <sub>4</sub>	bis(pivaloyltrifluoroacetato)copper (381–443)	76.5 ± 2.0		GS	[93/14]
C <sub>16</sub> H <sub>20</sub> CuF <sub>6</sub> O <sub>4</sub> - (C <sub>10</sub> H <sub>20</sub> O <sub>5</sub> )	bis(pivaloyltrifluoroacetato)copper 15-crown-5 complex (368–443)	80.2 ± 2.0		GS	[93/14]
C <sub>18</sub> H <sub>36</sub> CuN <sub>2</sub> S <sub>4</sub>	bis(dibutyldithiocarbamate)copper (423–468)	121.8	(445)		[13927-71-4] [99/16]
C <sub>18</sub> H <sub>36</sub> CuN <sub>2</sub> S <sub>4</sub>	bis(diisobutyldithiocarbamate)copper (425–445)	101.8	(435)		[51205-55-1] [99/16]
C <sub>22</sub> H <sub>38</sub> CuO <sub>6</sub>	bis(2,2,6,6-tetramethylheptane-3,5-dionato)copper(II) (468–519)	77.8 ± 0.8			[14040-05-2] [79/20]
<b>Dy</b>					
C <sub>33</sub> H <sub>57</sub> DyO <sub>6</sub>	tris(2,2,6,6-tetramethylheptane-3,5-dionato)dyprosium(III) (456–500)	86.2		BG	[15522-69-7] [69/28]
<b>Er</b>					
C <sub>33</sub> H <sub>57</sub> ErO <sub>6</sub>	tris(2,2,6,6-tetramethylheptane-3,5-dionato)erbium(III) (454–490)	85.6		BG	[14319-09-6] [69/28]
<b>Eu</b>					
C <sub>33</sub> H <sub>57</sub> EuO <sub>6</sub>	tris(2,2,6,6-tetramethylheptane-3,5-dionato)europium(III)				[15522-71-1]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(466–490)	87.4		BG	[69/28]
<b>F</b>					
F <sub>3</sub> NO	trifluoroamine oxide (116–191)	16.1			[13847-65-9] [68/30]
F <sub>5</sub> I	iodine pentafluoride (283–378)	39.3	(330)		[7783-66-6] [71/35]
HF	hydrogen fluoride (240–290) (190–320)	25.2 25.2	(265) (255)		[7664-39-3] [34/8] [24/1]
<b>Fe</b>					
C <sub>4</sub> H <sub>6</sub> FeO <sub>4</sub> Si <sub>2</sub>	tetracarbonyl disilyl iron (329–377)	43.8	(353)	T	[26469-80-7] [69/38]
C <sub>5</sub> FeO <sub>5</sub>	iron pentacarbonyl (254–304) (266–353)	40.1±0.5 39.0 38.1±0.4 40.2±0.8	(279) (309) (298)		[13463-40-6] [74/27] [70/25] [59/14] [59/18][82/15]
C <sub>7</sub> H <sub>6</sub> FeO <sub>3</sub>	1,3-butadiene iron tricarbonyl (266–378)	37.6	(281)		[47/5]
C <sub>10</sub> H <sub>10</sub> Fe	ferrocene (456–523) (451–523) (519–604)	49.0±4.2 47.3 49.8 44.7 47.3	(471) (466) (561) (456)	A A	[76/23][82/15] [102-54-5] [87/5][99/16] [87/5] [72/34] [52/21]
C <sub>15</sub> H <sub>12</sub> F <sub>9</sub> FeO <sub>6</sub>	<i>tris</i> (1,1,1-trifluoro-2,4-pentanedionato)iron(III) (392–428)	87.0±1.2	(410)		[14526-22-8] [78/11]
<b>Ga</b>					
C <sub>3</sub> H <sub>9</sub> Ga	trimethyl gallium	33.1±0.8 32.6			[1445-79-0] [58/18][82/15] [33/14][58/20]
C <sub>4</sub> H <sub>10</sub> ClGa	diethylgallium chloride (273–333)	59.9	(303)		[30914-08-0] [91/1]
C <sub>6</sub> H <sub>9</sub> Ga	trivinyl gallium (298–373) [Note: Decomposition noted above 333 K.]	U72.6	(335)		[1188-13-2] [62/27]
C <sub>6</sub> H <sub>15</sub> Ga	triethyl gallium (299–387)	43.1±1.6 38.5±0.4	(343)		[1115-99-7] [01/9][01/24] [73/31][82/15] [54614-59-9]
C <sub>9</sub> H <sub>21</sub> Ga	triisopropyl gallium (298–373)	49.0	(335)		[62/27]
C <sub>9</sub> H <sub>21</sub> Ga	tripropyl gallium (316–385) (298–373)	46.6±0.5 49.2	(350) (335)		[29868-77-7] [01/9] [62/27]
C <sub>11</sub> H <sub>24</sub> GaNS <sub>2</sub>	di- <i>tert</i> -butyl gallium dimethyldithiocarbamate (374–427)	43±1		TGA	[99/33]
C <sub>11</sub> H <sub>24</sub> GaNS <sub>2</sub>	dibutyl gallium dimethyldithiocarbamate (385–424)	53±1		TGA	[99/33]
C <sub>11</sub> H <sub>24</sub> GaNS <sub>2</sub>	di- <i>sec</i> -butyl gallium dimethyldithiocarbamate (366–425)	44±1		TGA	[99/33]
C <sub>12</sub> H <sub>27</sub> Ga	tributyl gallium (330–378) (426–507)	51.6±1.3 56.2	(354) (441)	A	[15677-44-8] [01/9] [87/5]
C <sub>13</sub> H <sub>28</sub> GaNS <sub>2</sub>	di- <i>tert</i> -butyl gallium diethyldithiocarbamate (372–419)	48±6		TGA	[99/33]
C <sub>15</sub> H <sub>12</sub> F <sub>9</sub> GaO <sub>6</sub>	<i>tris</i> (1,1,1-trifluoro-2,4-pentanedionato)gallium(III) (401–459)	75.6±0.5	(430)		[15453-83-5] [78/10]
C <sub>15</sub> H <sub>32</sub> GaNS <sub>2</sub>	di- <i>tert</i> -butyl gallium dipropyldithiocarbamate (365–424)	46±1		TGA	[99/33]
<b>Gd</b>					
C <sub>33</sub> H <sub>57</sub> GdO <sub>6</sub>	<i>tris</i> (2,2,6,6-tetramethylheptane-3,5-dionato)gadolinium(III) (456–500)	90.2		BG	[14768-15-1] [69/28]
<b>Ge</b>					
CHCl <sub>3</sub> Ge	trichloro(dichloromethyl)germane				

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
CH <sub>2</sub> Cl <sub>4</sub> Ge	(303–423) trichloro(chloromethyl)germane	47.9	(318)		[75/29]
CH <sub>3</sub> Cl <sub>3</sub> Ge	(303–423) methyltrichlorogermane	45.9	(318)		[75/29]
CH <sub>4</sub> Cl <sub>2</sub> Ge	(293–385) methylchlorogermane	37.4	(308)		[71/12]
	(281–346) methylchlorogermane	34.5	(313)	SG	[61/1]
	(273–290) methylchlorogermane	33.1	(281)		[61/27]
CH <sub>5</sub> BrGe	(273–333) methylbromogermane	33.3	(303)	SG	[61/1]
CH <sub>5</sub> ClGe	(241–263) methyl chlorogermane	25.8	(252)		[61/27]
CH <sub>6</sub> Ge	(159–230) methylgermane	16.6	(194)	SG	[1449-65-6] [61/1]
	(164–197) methylgermane	21.4	(181)		[61/27]
CH <sub>6</sub> GeS	(223–291) (methylthio)germane	29.8	(257)		[16643-16-8] [99/16]
C <sub>2</sub> H <sub>5</sub> Cl <sub>3</sub> Ge	(293–415) trichloro(ethyl)germane	41.9	(308)		[71/12]
C <sub>2</sub> H <sub>7</sub> ClGe	(273–288) dimethylchlorogermane	29.4	(280)		[61/27]
C <sub>2</sub> H <sub>8</sub> Ge	(196–228) dimethylgermane	26.5	(212)		[1449-64-5] [61/27]
C <sub>2</sub> H <sub>10</sub> Ge <sub>2</sub>	(259–295) 1,1-dimethyldigermane	31.8	(277)		[23830-51-5] [69/39]
C <sub>2</sub> H <sub>10</sub> Ge <sub>2</sub>	(258–295) 1,2-dimethyldigermane	29.3	(277)		[23830-52-6] [69/39]
C <sub>3</sub> H <sub>9</sub> ClGe	(293–363) trimethylchlorogermane	36.3	(308)		[1529-47-1] [72/19]
	(273–341) trimethylchlorogermane	34.4	(307)	SG	[61/1]
C <sub>3</sub> H <sub>9</sub> FGe	(285–345) trimethylfluorogermane	32.4	(315)	SG	[661-37-0] [61/1]
C <sub>3</sub> H <sub>12</sub> Ge <sub>2</sub>	(268–294) 1,1,2-trimethyldigermane	33.5	(281)		[23830-53-7] [69/39]
C <sub>4</sub> H <sub>9</sub> Cl <sub>3</sub> Ge	(313–453) butyltrichlorogermanium	49.2	(328)		[75/30]
	(337–377) butyltrichlorogermanium	45.8	(352)		[72/10]
C <sub>4</sub> H <sub>12</sub> Ge	28.1±0.1 27.6±2.1 tetramethylgermane		(285)	C	[865-52-1] [70/25]
C <sub>4</sub> H <sub>12</sub> GeO	32.4 trimethylmethoxygermane		(304)	SG	[69/27][82/15] [6163-67-3]
C <sub>4</sub> H <sub>12</sub> GeO <sub>4</sub>	40.2±0.4 tetramethoxygermane				[70/32][77/23]
	(303–385) pentyltrichlorogermanium	44.0	(344)		[58/26]
C <sub>5</sub> H <sub>11</sub> Cl <sub>3</sub> Ge	(323–473) pentyltrichlorogermanium	51.9	(338)		[25425-26-7]
	(305–475) pentyltrichlorogermanium	49.7	(320)		[75/30] [72/10]
C <sub>6</sub> H <sub>5</sub> Cl <sub>3</sub> Ge	(343–473) phenyltrichlorogermane	55.4	(358)		[1074-29-9] [72/13]
C <sub>6</sub> H <sub>13</sub> Cl <sub>3</sub> Ge	(315–491) hexyltrichlorogermanium	51.1	(329)		[35460-93-6] [72/10]
C <sub>6</sub> H <sub>15</sub> BrGe	(303–463) bromotriethylgermane	48.3	(318)		[1067-10-3] [71/12]
C <sub>6</sub> H <sub>18</sub> Ge <sub>2</sub> O	(291–345) hexamethyldigermoxane	44.1	(318)	SG	[61/1]
C <sub>6</sub> H <sub>30</sub> ClGeN <sub>3</sub>	(363–493) <i>tris</i> (diethylamino)chlorogermane	64.4	(378)		[70/12]
C <sub>7</sub> H <sub>7</sub> Cl <sub>3</sub> Ge	(373–473) benzyltrichlorogermane	58.8	(388)		[6181-21-1] [72/13]
C <sub>7</sub> H <sub>15</sub> Cl <sub>3</sub> Ge	(323–506) heptyltrichlorogermanium	52.3	(338)		[1190-86-9] [72/10]
C <sub>8</sub> H <sub>20</sub> Ge	(303–423) pentyl(trimethyl)germane	44.3	(318)		[75/30]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>20</sub> Ge	tetraethylgermane (253–293)	43.4	(273)	GS	[597-63-7] [92/5]
		45.7±0.4	(298)	C	[77/7]
	(337–436)	46.1	(352)		[74/12]
		44.8±1.3			[64/27][82/15]
C <sub>8</sub> H <sub>20</sub> GeO <sub>4</sub>	tetraethoxygermane (328–414)	43.1±0.4 47.9	(371)		[70/32][77/23] [58/26]
	C <sub>8</sub> H <sub>24</sub> Ge <sub>4</sub> O <sub>4</sub>	octomethylcyclotetragermoxane (333–473)	51.4	(403)	[7749-82-8] [72/17]
C <sub>10</sub> H <sub>25</sub> GeN	triethyl(diethylamino)germane (303–463)	50.9	(318)		[756-66-1] [70/12]
		46.0±4.8			[71/30][82/15]
C <sub>10</sub> H <sub>25</sub> GeO <sub>2</sub>	<i>tert</i> -butylperoxytriethylgermane	43.5±4.2			[71/29][82/15]
C <sub>12</sub> H <sub>28</sub> Ge	tetrapropylgermane (353–493)	54.7	(368)	A	[994-65-0] [87/5]
		61.5±4.2			[64/28][82/15]
C <sub>12</sub> H <sub>28</sub> GeO <sub>4</sub>	tetrapropoxygermane (343–453)	63.3	(358)	A	[87/5]
	(369–465)	55.0	(417)		[58/26]
C <sub>12</sub> H <sub>28</sub> GeO <sub>4</sub>	tetraisopropoxygermane (313–453)	60.4	(328)	A	[87/5]
	(355–444)	54.9	(400)		[58/26]
C <sub>12</sub> H <sub>30</sub> Ge <sub>2</sub> Hg	<i>bis</i> (triethylgermyl)mercury (383–403)	64.8	(393)		[4149-28-4] [72/15]
		62.8±4.2			[72/31][82/15]
C <sub>12</sub> H <sub>30</sub> Ge <sub>2</sub>	hexaethyldigermene	62.8			[63/35][82/15]
C <sub>12</sub> H <sub>30</sub> Ge <sub>2</sub> O	hexaethyldigermoxane	58.6±4.2			[71/29][82/15]
C <sub>16</sub> H <sub>12</sub> Ge	(diethynyl)diphenylgermane (305–337)	110.8	(320)	A	[87/5]
	C <sub>16</sub> H <sub>36</sub> GeO <sub>4</sub>	tetrabutoxygermane (394–519)	62.4	(456)	
C <sub>16</sub> H <sub>36</sub> GeO <sub>4</sub>	tetraisobutoxygermane (369–482)	59.9	(426)		[58/26]
C <sub>16</sub> H <sub>36</sub> GeO <sub>4</sub>	tetra- <i>sec</i> -butoxygermane (365–475)	59.9	(420)		[58/26]
C <sub>16</sub> H <sub>36</sub> GeO <sub>4</sub>	tetra- <i>tert</i> -butoxygermane (364–460)	53.8	(412)		[58/26]
C <sub>18</sub> H <sub>42</sub> Ge <sub>2</sub> Hg	<i>bis</i> (triisopropylgermyl)mercury (373–483)	68.7	(388)		[24004-54-4] [72/15]
		54.4±4.2			[72/31][82/15]
C <sub>24</sub> H <sub>20</sub> GeO <sub>4</sub>	tetraphenoxgermane	37.4±0.4			[70/32][77/23]
Ge <sub>4</sub> H <sub>10</sub>	tetragermene	32.8			[59/25]
Ge <sub>5</sub> H <sub>12</sub>	pentagermane	34.6			[59/25]
GeH <sub>6</sub> Si	germylsilane (190–250)	25.0	(220)		[63/27]
GeI <sub>4</sub>	germanium tetraiodide (419–613)	64.2±0.2	(419)		[13450-95-8] [99/22]
	<b>Hg</b>				
C <sub>2</sub> H <sub>6</sub> Hg	dimethyl mercury (275–367)	36.7±0.1	(321)		[593-74-8] [01/9]
		34.6±0.8			[50/12][82/15]
C <sub>2</sub> F <sub>6</sub> HgS <sub>2</sub>	<i>bis</i> (trifluoromethylthio)mercury (353–423)	49.9	(368)		[99/16]
C <sub>4</sub> H <sub>10</sub> Hg	diethyl mercury	44.8±1.7			[627-44-1] [51/12][82/15]
		44.9			[35/7]
C <sub>6</sub> H <sub>14</sub> Hg	dipropyl mercury				[628-85-3]



TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>14</sub> Hg	diisopropyl mercury	55.2±1.3			[52/20][82/15] [1071-39-2]
C <sub>12</sub> H <sub>30</sub> Ge <sub>2</sub> Hg	<i>bis</i> (triethylgermyl)mercury (383–403)	53.6±1.7	(393)		[52/20][82/15] [4149-28-4]
C <sub>12</sub> H <sub>30</sub> HgSi <sub>2</sub>	<i>bis</i> (triethylsilyl)mercury (383–433)	64.8	(398)		[72/15] [4149-29-5]
C <sub>18</sub> H <sub>42</sub> Ge <sub>2</sub> Hg	<i>bis</i> (triisopropylgermyl)mercury (373–483)	64.0	(388)		[72/15] [24004-54-4]
HgI <sub>2</sub>	mercuric iodide (537–610)	68.7	(574)	UV	[7774-29-0] [02/7]
<b>Ho</b>					
C <sub>33</sub> H <sub>57</sub> HoO <sub>6</sub>	<i>tris</i> (2,2,6,6-tetramethylheptane-3,5-dionato)holmium(III) (458–500)	147.4		BG	[15522-73-3] [69/28]
<b>I</b>					
HI	hydrogen iodide	19.8	(238)	C	[10034-85-2] [29/4]
<b>In</b>					
C <sub>6</sub> H <sub>15</sub> In	triethyl indium (326–376)	45.0±0.7	(351)		[923-34-2] [01/9][01/24]
C <sub>9</sub> H <sub>21</sub> In	tripropyl indium (400–483)	52.0	(441)		[3015-98-3] [99/16]
C <sub>9</sub> H <sub>21</sub> In	triisopropyl indium (318–366)	52.3±0.7	(342)		[17144-80-8] [01/9]
C <sub>12</sub> H <sub>27</sub> In	tributyl indium (394–478)	51.0	(336)		[99/16] [15676-66-1]
C <sub>15</sub> H <sub>12</sub> F <sub>9</sub> InO <sub>6</sub>	tributyl indium (444–539)	58.5	(459)	A	[87/5] [15453-87-9]
	<i>tris</i> (1,1,1-trifluoro-2,4-pentanedionato)indium(III) (398–478)	77.4±0.6	(438)		[78/10]
<b>Li</b>					
C <sub>4</sub> H <sub>9</sub> Li	butyl lithium	107.1±2.9			[109-72-8] [61/24][82/15]
	[Note: Authors of [61/24] noted that the experimental data was not very reproducible, and subject to considerable error.]				
<b>Lu</b>					
C <sub>33</sub> H <sub>57</sub> LuO <sub>6</sub>	<i>tris</i> (2,2,6,6-tetramethylheptane-3,5-dionato)lutetium(III) (448–490)	83.6		BG	[15497-45-2] [69/28]
<b>Mn</b>					
C <sub>5</sub> H <sub>3</sub> MnO <sub>5</sub> Si	silyl pentacarbonyl manganese (294–391)	39.6	(343)	T	[15770-61-3] [69/37][67/40]
C <sub>10</sub> H <sub>10</sub> Mn	<i>bis</i> (cyclopentadienyl)manganese (378–435)	58.0	(393)	A	[1271-27-8] [87/5]
C <sub>10</sub> O <sub>10</sub> MnRe	manganese rhenium decacarbonyl (440–463)	56.5	(451)		[14693-30-2] [71/14]
C <sub>10</sub> O <sub>10</sub> Mn <sub>2</sub>	dimanganese decacarbonyl (428–463)	60.7±1.3	(446)		[10170-69-1] [71/14]
<b>Mo</b>					
MoF <sub>6</sub>	molybdenum hexafluoride (318–363)	27.4	(340)		[7783-77-9] [68/27]
<b>N</b>					
BrClFN	bromochlorofluoroammonia (240–310)	30.2	(275)		[96/31]
BrF <sub>2</sub> N	bromodifluoroammonia (180–250)	23.2	(215)		[15605-95-5] [96/31]
Br <sub>2</sub> FN	dibromofluoroammonia (280–350)	33.6	(315)		[145543-67-5] [96/31]
Br <sub>3</sub> N	nitrogen tribromide (380–450)	44.1	(415)		[15162-90-0] [96/31]
Cl <sub>2</sub> FN	dichlorofluoroammonia (200–280)	25.7	(240)		[96/31]
Cl <sub>3</sub> N	nitrogen trichloride (280–440)	32.9	(360)		[10025-85-1] [96/31]
HNO <sub>3</sub>	nitric acid (273–356)	38.6	(312)		[7697-37-2] [66/30]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
NH <sub>3</sub>	ammonia				[7664-41-7]
	(293–392)	22.7	(308)		[79/24]
	(199–241)	23.5	(239)		[37/13]
		23.4	(239)	C	[37/13]
NO	nitric oxide	13.8	(212)	C	[29/3]
N <sub>2</sub>	nitrogen				[7727-37-9]
	(63–126)	6.1	(78)		[67/42]
		5.6	(77)		[33/16]
N <sub>2</sub> F <sub>4</sub>	tetrafluorohydrazine	26.4	(200)		[10036-47-2]
N <sub>2</sub> H <sub>4</sub>	hydrazine				[58/15]
	(288–353)	44.5	(303)		[302-01-2]
N <sub>2</sub> O	nitrous oxide				[49/13]
	(182–236)	16.1	(221)		[10024-94-2]
					[45/5]
<b>Nb</b>					
C <sub>10</sub> H <sub>25</sub> NbO <sub>5</sub>	pentaethylniobate	107.6	(391)	A	[87/5]
<b>Nd</b>					
C <sub>33</sub> H <sub>57</sub> NdO <sub>6</sub>	<i>tris</i> (2,2,6,6-tetramethylheptane-3,5-dionato)neodymium(III)	99.1		BG	[15492-47-4]
	(491–510)				[69/28]
<b>Ni</b>					
C <sub>3</sub> NiO <sub>3</sub> - C <sub>3</sub> F <sub>9</sub> P	<i>tris</i> (trifluoromethyl)phosphine—nickel tricarbonyl complex				
	(273–323)	31.2	(298)		[58/21]
C <sub>4</sub> NiO <sub>4</sub>	nickel tetracarbonyl				[13463-39-3]
	(277–412)	29.8	(344)		[70/35]
		27.6 ± 1.3			[57/24][82/15]
		28.0			[55/17]
		27.2	(298)		[55/17]
		30.2 ± 0.1			[53/14]
	(250–315)	29.5	(265)		[47/5]
		30.1			[42/9][55/17]
		27.2			[1903/1][55/17]
C <sub>6</sub> H <sub>12</sub> N <sub>2</sub> NiS <sub>4</sub>	<i>bis</i> (dimethyldithiocarbamate)nickel	139.9	(463)		[15521-65-0]
	(448–478)				[99/16]
C <sub>14</sub> H <sub>28</sub> N <sub>2</sub> NiS <sub>4</sub>	<i>bis</i> (dipropyldithiocarbamate)nickel	126.1	(448)		[14516-30-4]
	(433–462)				[99/16]
C <sub>18</sub> H <sub>36</sub> N <sub>2</sub> NiS <sub>4</sub>	<i>bis</i> (dibutyldithiocarbamate)nickel	136.6	(500)		[13927-77-0]
	(438–562)				[99/16]
C <sub>18</sub> H <sub>36</sub> N <sub>2</sub> NiS <sub>4</sub>	<i>bis</i> (diisobutyldithiocarbamate)nickel	124.0	(463)		[28371-07-5]
	(453–473)				[99/16]
C <sub>22</sub> H <sub>44</sub> N <sub>2</sub> NiS <sub>4</sub>	<i>bis</i> [ <i>bis</i> (3-methylbutyl)dithiocarbamate]nickel	164.5	(448)		[55935-69-8]
	(429–468)				[99/16]
<b>O</b>					
H <sub>2</sub> O <sub>2</sub>	hydrogen peroxide	48.5	(320)		[7722-84-1]
	(277–363)				[24/2]
<b>Os</b>					
C <sub>10</sub> H <sub>10</sub> Os	osmocene	56.3 ± 1.3	(535)		[1273-81-0]
	(506–563)				[84/11]
C <sub>10</sub> O <sub>10</sub> Os <sub>3</sub>	triosmium dodecacarbonyl	101.7	(420)		[15696-40-9]
	(497–543)				[74/19]
<b>P</b> (see table 6 for organophosphorous compounds)					
Br <sub>3</sub> P	tribromophosphine	48.5			[7789-60-8]
					[96/23][63/31]
Cl <sub>3</sub> P	trichlorophosphine	32.6			[7719-12-2]
					[96/23][63/31]
F <sub>2</sub> HOP	hydrophosphoryl difluoride	36.1	(245)	T	[67/36]
	(220–271)				
F <sub>2</sub> HPS	hydrothiophosphoryl difluoride	29.1	(223)	T	[67/36]
	(188–258)				
F <sub>2</sub> N <sub>3</sub> OP	difluorophosphoryl azide	36.4	(296)		[72/23]
F <sub>3</sub> N <sub>3</sub> P <sub>3</sub>	trimeric phosphonitric fluoride				

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
F <sub>4</sub> N <sub>4</sub> P <sub>4</sub>	tetrameric phosphonitric fluoride	32.1			[58/27]
F <sub>6</sub> NP <sub>3</sub>	<i>tris</i> (difluorophosphino)amine	37.3			[58/27]
PH <sub>3</sub>	phosphine	31.2			[75/38]
		14.6±0.1	(186)		[7803-51-2]
		14.6	(185)		[39/5]
F <sub>5</sub> P	phosphorous pentafluoride (179–189)	17.2	(184)	QM	[37/15] [7647-19-0] [37/16]
<b>Pb</b>					
C <sub>2</sub> H <sub>8</sub> Pb	dimethylplumbane (173–223)	25.5	(198)		[60/26]
C <sub>3</sub> H <sub>10</sub> Pb	trimethylplumbane (193–243)	31.1	(218)		[60/26]
C <sub>4</sub> H <sub>12</sub> Pb	tetramethyllead	38.1±0.4			[75-74-1] [59/17][82/15]
		35.7	(303)		[29/6]
C <sub>5</sub> H <sub>9</sub> F <sub>5</sub> Pb	(pentafluoroethyl)trimethyllead (295–329)	39.1	(312)	T	[60/11]
C <sub>8</sub> H <sub>20</sub> Pb	tetraethyllead	56.6±1.0	(298)	C	[78-00-2]
		57.3	(326)		[80/4]
		56.9±2.5			[47/5]
		56.3	(308)		[56/22][82/15] [36/9]
		56.7	(387)		[35/7]
<b>Pr</b>					
C <sub>33</sub> H <sub>57</sub> O <sub>6</sub> Pr	<i>tris</i> (2,2,6,6-tetramethylheptane-3,5-dionato)praseodymium(III) (495–530)	109.2		BG	[15492-48-5] [69/28]
<b>Re</b>					
C <sub>10</sub> O <sub>10</sub> MnRe	manganese rhenium decacarbonyl (440–463)	56.5	(451)		[14693-30-2] [71/14]
C <sub>10</sub> O <sub>10</sub> Re <sub>2</sub>	dirhenium decacarbonyl (454–483)	68.7	(468)		[14285-68-8] [71/14]
<b>Ru</b>					
C <sub>5</sub> O <sub>5</sub> Ru	ruthenium pentacarbonyl (243–323)	42.2	(283)		[91/16]
C <sub>10</sub> H <sub>10</sub> Ru	ruthenocene (479–544)	53.6±1.4	(511)		[1287-13-4] [84/11]
<b>S</b>					
Br <sub>2</sub> OS	thionyl bromide (313–439)	43.6	(330)		[507-16-4] [99/16]
Br <sub>2</sub> S <sub>2</sub>	disulfur dibromide (365–503)	53.9	(380)		[13172-31-1] [99/16]
Br <sub>2</sub> FO <sub>2</sub> S	sulfuryl bromide fluoride (236–333)	32.0	(251)		[13536-61-3] [99/16]
ClF <sub>2</sub> NO <sub>2</sub> S	difluoroamidofuryl chloride (232–290)	31.2	(261)		[71/19]
ClFOS	thionyl chloride fluoride (212–304)	27.7	(227)		[14177-25-4] [99/16]
ClFO <sub>2</sub> S	sulfuryl chloride fluoride (211–300)	29.0	(226)		[13637-84-8] [99/16]
ClFO <sub>5</sub> S <sub>2</sub>	pyrosulfuryl chloride fluoride (284–396)	40.8	(299)		[13637-85-9] [99/16]
ClHO <sub>3</sub> S	chlorosulfonic acid (324–454)	45.8	(339)		[7790-94-5] [99/16]
Cl <sub>2</sub> OS	thionyl chloride (257–372)	32.4	(272)		[7719-09-7] [99/16]
Cl <sub>2</sub> O <sub>2</sub> S	sulfuryl chloride (357–365)	34.5	(272)		[7791-25-5] [99/16]
Cl <sub>2</sub> O <sub>5</sub> S <sub>2</sub>	pyrosulfuryl dichloride (325–450)	44.7	(340)		[7791-27-7] [99/16]
Cl <sub>2</sub> S	sulfur chloride (265–348)	43.8	(280)		[10545-99-0] [99/16]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
Cl <sub>2</sub> S <sub>2</sub>	disulfur dichloride (306–439)	41.1	(321)		[10025-67-9] [99/16]
FHO <sub>3</sub> S	fluorosulfonic acid (343–459)	55.7	(358)		[7789-21-1] [99/16]
FNS	thiazyl fluoride (270–299)	21.7	(285)		[18820-63-8] [99/16]
F <sub>2</sub> HPS	hydrothiophosphoryl difluoride (188–258)	29.1	(223)	T	[67/36]
F <sub>2</sub> N <sub>2</sub> S	dinitrogen sulfur difluoride (192–281)	23.9	(207)		[500010-01-5] [99/16]
F <sub>2</sub> OS	thionyl fluoride (173–244)	23.7	(188)		[7783-42-8] [99/16]
F <sub>2</sub> O <sub>2</sub> S	sulfuryl fluoride (160–233)	20.0	(175)		[2699-79-8] [99/16]
F <sub>2</sub> O <sub>4</sub> S	peroxysulfuryl difluoride (198–248)	25.7	(223)		[75/40]
F <sub>2</sub> O <sub>5</sub> S <sub>2</sub>	pyrosulfuryl difluoride (240–346)	31.4	(255)		[13036-75-4] [99/16]
F <sub>2</sub> O <sub>8</sub> S <sub>3</sub>	trisulfur octoxide difluoride (296–419)	40.7	(311)		[13709-33-6] [99/16]
F <sub>2</sub> S <sub>2</sub>	disulfur difluoride (153–196)	14.9	(168)		[16860-99-4] [99/16]
F <sub>3</sub> NO <sub>3</sub> S	N,N-difluorohydroxylamine-O-fluorosulfonate (206–272)	24.6	(239)		[63/28]
F <sub>3</sub> NS	N-fluorosulfur difluoride amide (213–246)	24.1	(230)		[69/26]
F <sub>3</sub> NS	nitrogen fluoride sulfide (184–268)	23.1	(199)		[15930-75-3] [99/16]
F <sub>4</sub> OS	sulfur oxide tetrafluoride (166–240)	21.4	(181)		[13809-54-1] [99/16]
F <sub>4</sub> O <sub>5</sub> S <sub>2</sub>	disulfur pentoxide tetrafluoride (246–353)	18.0	(261)		[44982-62-9] [99/16]
F <sub>4</sub> S	sulfur tetrafluoride (170–250)	21.1	(185)		[7783-60-0] [99/16]
		24.6	(192)		[55/16]
F <sub>6</sub> O <sub>3</sub> S <sub>2</sub>	pentafluorosulfur fluorosulfane (228–273)	32.2	(250)		[62/36]
F <sub>10</sub> O <sub>2</sub> S <sub>2</sub>	thiosulfuryl decafluoride (239–344)	31.8	(242)		[12395-41-4] [99/16]
F <sub>10</sub> S <sub>2</sub>	disulfur decafluoride (226–322)	30.1	(241)		[5714-22-7] [99/16]
		29.6	(237)		[62/36]
F <sub>14</sub> O <sub>2</sub> S <sub>3</sub>	<i>bis</i> (pentafluorosulfato)tetrafluoro sulfur (SF <sub>5</sub> OSF <sub>4</sub> OSF <sub>5</sub> )	33.4			[108021-40-5] [63/45]
F <sub>10</sub> O <sub>2</sub> S <sub>2</sub>	(pentafluorosulfato)tetrafluoro sulfur peroxide (SF <sub>5</sub> OSF <sub>4</sub> OOSF <sub>4</sub> OSF <sub>5</sub> )	47.5			[63/45]
H <sub>2</sub> S	hydrogen sulfide (185–228)	19.5	(200)		[7783-06-4] [99/16]
		18.6	(243)		[99/16]
H <sub>2</sub> S <sub>2</sub>	dihydrogen disulfide (256–367)	34.0	(271)		[13465-07-1] [99/16]
		33.8±0.1	(293)	C	[58/14]
H <sub>2</sub> S <sub>3</sub>	dihydrogen trisulfide (328–474)	43.1	(343)		[13845-23-3] [99/16]
		45.5±0.2	(293)	C	[58/14]
H <sub>2</sub> S <sub>4</sub>	dihydrogen tetrasulfide (384–547)	52.2	(399)		[13465-25-5] [99/16]
		56.8±0.3	(293)	C	[58/14]
H <sub>2</sub> S <sub>5</sub>	dihydrogen pentasulfide (426–592)	61.5	(441)		[13465-24-4] [99/16]
		68.4±0.6	(293)	C	[58/14]
SO <sub>2</sub>	sulfur dioxide (200–263)	24.9	(263)		[7446-09-5] [38/11]
		24.9	(263)	C	[38/11]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
SO <sub>3</sub>	sulfur trioxide (290–318)	46.7	(290)		[7446-11-9] [85/14]
	(290–318)	45.5±0.8	(298)		[85/14]
	(353–473)	32.4	(368)		[63/43]
<b>Sb</b>					
CH <sub>5</sub> Sb	methylstibine (223–273)	27.4	(248)		[23362-09-6] [59/6]
C <sub>2</sub> H <sub>7</sub> Sb	dimethylstibine (241–273)	30.8	(257)		[23362-10-9] [59/6]
C <sub>2</sub> H <sub>8</sub> BSb	dimethylstibinoborine (234–273)	32.1	(254)		[59/6]
C <sub>3</sub> Cl <sub>2</sub> F <sub>9</sub> Sb	<i>tris</i> (trifluoromethyl)antimony dichloride (243–323)	38.8	(283)		[57/28]
C <sub>3</sub> F <sub>9</sub> Sb	<i>tris</i> (trifluoromethyl)stibine (215–343)	34.7	(279)		[57/28]
C <sub>3</sub> H <sub>9</sub> Sb	trimethylstibine	28.9±1.3			[594-10-5]
		31.2		BG	[55/15][82/15] [46/13]
C <sub>4</sub> H <sub>12</sub> Sb <sub>2</sub>	tetramethylbistibine (325–358)	46.9	(341)		[59/6]
C <sub>6</sub> H <sub>9</sub> Sb	trivinylstibine (293–363)	38.7	(308)		[5613-68-3] [57/15][84/9]
C <sub>6</sub> H <sub>15</sub> Sb	triethylstibine (193–333)	39.9±1.3	(306)		[617-85-6] [01/9]
		43.5±4.2			[63/37][82/15]
		41.8		BG	[46/13]
C <sub>18</sub> H <sub>15</sub> Sb	triphenylantimony (503–553)	83.3	(518)	A	[603-36-1] [87/5]
<b>Sc</b>					
C <sub>15</sub> H <sub>12</sub> F <sub>9</sub> O <sub>6</sub> Sc	<i>tris</i> (1,1,1-trifluoro-2,4-pentanedionato)scandium(III) (397–457)	82.2±0.8	(427)		[14634-68-5] [78/11]
<b>Se</b>					
CBrF <sub>3</sub> Se	trifluoromethylselenyl bromide	30.9			[80/22]
CClF <sub>3</sub> Se	trifluoromethylselenyl chloride	27.6			[80/22]
COSe	carbon oxyselenide (221–252) (156–251)	22.1	(236)		[1603-84-5] [99/16]
		21.7	(236)		[47/5]
		22.1	(211)		[37/12]
CSSe	carbon selenide sulfide (226–359) (273–357)	35.5	(241)		[5951-19-9] [99/16]
		33.6	(288)		[14/1][84/9]
CSe <sub>2</sub>	carbon diselenide (230–290) (290–337)	39.1	(245)		[506-80-9] [99/16]
		35.9	(305)		[99/16]
		37.2±0.8			[66/26][82/15]
		39.0	(288)		[47/2][84/9]
CHF <sub>3</sub> Se	trifluoromethaneselenol	22.5			[55446-31-6] [80/22]
CH <sub>3</sub> FO <sub>3</sub> Se	fluoroselenic acid, methyl ester	46.9			[17697-13-1] [67/41]
CH <sub>3</sub> F <sub>3</sub> SeSi	silyl trifluoromethyl selenide (213–277)	28.0	(245)		[62/31]
C <sub>2</sub> BrF <sub>5</sub> Se	(pentafluoroethane) selenyl bromide (242–293)	34.5	(267)		[6123-59-7] [99/16]
C <sub>2</sub> ClF <sub>5</sub> Se	(pentafluoroethane) selenyl chloride (215–289)	30.3	(252)		[6123-50-8] [99/16]
C <sub>2</sub> F <sub>3</sub> NOSe	trifluoromethyl selenium isocyanate (233–284)	29.5	(259)		[20334-48-9] [68/18]
C <sub>2</sub> F <sub>3</sub> NSSe	trifluoromethyl selenium thiocyanate (233–383)	25.9	(258)		[21438-06-2] [68/18]
C <sub>2</sub> F <sub>3</sub> NSSe	trifluoromethane sulphenyl selenocyanate (263–313)	33.3	(288)		[63/42]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>2</sub> F <sub>3</sub> NSe	trifluoromethyl selenocyanate	37.9			[1717-4903]	
	(233–273)	37.6	(253)		[80/22] [68/18]	
C <sub>2</sub> F <sub>3</sub> NSe <sub>2</sub>	trifluoromethyl selenium selenocyanate	26.6	(245)		[20563-91-1] [68/18]	
CF <sub>6</sub> Se	<i>bis</i> (trifluoromethyl)selenide	24.4			[371-79-9] [80/22]	
CF <sub>6</sub> Se <sub>2</sub>	<i>bis</i> (difluoromethyl) diselenide	33.1			[372-65-6] [80/22]	
		27.7	(251)		[1544-45-2] [99/16][63/41]	
C <sub>2</sub> H <sub>3</sub> F <sub>3</sub> Se	methyl(trifluoromethyl)selenide	27.7	(251)		[99/16][63/41]	
C <sub>2</sub> H <sub>6</sub> Se	dimethyl selenide	(280–318)	30.3±0.1	(295)		[593-79-3] [99/16][97/30]
		(278–313)	31.9	(295)	I	[94/9]
C <sub>2</sub> H <sub>6</sub> Se <sub>2</sub>	dimethyl diselenide	(288–313)	74.9	(300)	I	[7101-31-7] [94/9]
		42.0±1.0	(298)	C	[89/12]	
C <sub>3</sub> AsF <sub>9</sub> Se	<i>bis</i> (trifluoromethyl) trifluoromethylselenoarsine	34.8	(261)		[62/32]	
C <sub>3</sub> BrF <sub>7</sub> Se	(heptafluoro-1-propane) selenyl bromide	35.0	(274)		[662-44-2] [99/16][63/41]	
C <sub>3</sub> ClF <sub>7</sub> Se	(heptafluoro-1-propane) selenyl chloride	33.4	(256)		[662-46-4] [99/16][63/41]	
C <sub>3</sub> F <sub>3</sub> NSe	pentafluoroethyl selenocyanate	32.0	(273)		[20334-51-4] [68/18]	
C <sub>3</sub> H <sub>2</sub> F <sub>6</sub> Se <sub>2</sub>	<i>bis</i> [(trifluoromethyl)seleno]methane	35.4	(315)		[691-25-8] [99/16][63/41]	
C <sub>3</sub> H <sub>3</sub> F <sub>5</sub> Se	methyl pentafluoroethyl selenide	31.9	(260)		[6123-56-4] [99/16]	
C <sub>3</sub> H <sub>3</sub> F <sub>7</sub> SeSi	(heptafluoropropyl)selenyl silane	33.1	(263)		[1647-59-2] [99/16][62/31]	
C <sub>3</sub> H <sub>4</sub> F <sub>5</sub> NSe	(pentafluoroethyl)seleno methylamine	33.8	(280)		[6123-53-1] [99/16]	
C <sub>3</sub> H <sub>5</sub> FOSe	fluoroselenoacetic acid, Se-methyl ester	46.3	(303)		[367-52-2] [99/16]	
C <sub>3</sub> H <sub>5</sub> F <sub>3</sub> Se	ethyl(trifluoromethyl)selenide	31.6	(238)		[690-25-5] [99/16][63/41]	
C <sub>3</sub> H <sub>6</sub> F <sub>3</sub> NSe	N,N-dimethyl(trifluoromethyl)selenenamide	28.1	(276)		[63/41]	
C <sub>4</sub> F <sub>10</sub> Se	<i>bis</i> (pentafluoroethyl)selenide	(232–295)	31.6	(263)		[6123-61-1] [99/16]
		40.0	(295)		[6123-49-5] [99/16]	
C <sub>4</sub> HF <sub>10</sub> NSe <sub>2</sub>	<i>bis</i> [(pentafluoroethyl)seleno]amine	38.3	(296)		[6123-55-3] [99/16]	
C <sub>4</sub> H <sub>3</sub> F <sub>7</sub> Se	methyl(heptafluoropropyl) selenide	30.8	(278)		[662-45-3] [99/16][63/41]	
C <sub>4</sub> H <sub>4</sub> Se	selenophene	(234–300)	40.8	(272)		[288-05-1] [99/16]
		38.1±0.7	(298)	C	[89/12]	
		(234–387)	34.0	(249)		[47/5]
C <sub>4</sub> H <sub>5</sub> F <sub>5</sub> Se	ethyl(pentafluoroethyl) selenide	34.8	(276)		[6123-57-5] [99/16]	
C <sub>4</sub> H <sub>6</sub> F <sub>5</sub> NSe	1,1,2,2,2-pentafluoro-N,N-dimethylethane selenamide	34.8	(288)		[6123-52-0] [99/16]	
C <sub>4</sub> H <sub>6</sub> Se	divinyl selenide	42.0±1.0	(298)	C	[57796-75-5] [89/12]	
C <sub>4</sub> H <sub>8</sub> OSe	1,4-oxaselenane	46.6	(367)		[5368-46-7] [99/16]	
C <sub>4</sub> H <sub>10</sub> Se	diethyl selenide	(243–381)	39.7	(258)		[627-53-2] [99/16]
		38.9±1.0	(298)	C	[89/12]	
		(298–308)	36.8	(303)		[36/5][82/15] [29/6]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>10</sub> Se <sub>2</sub>	diethyl diselenide	47.1±0.9	(298)	C	[628-39-7] [89/12]
C <sub>5</sub> AsF <sub>13</sub> Se	heptafluoropropylseleno <i>bis</i> (trifluoromethyl)arsine (277–348)	40.3	(312)		[62/32]
C <sub>5</sub> H <sub>3</sub> F <sub>10</sub> NSe <sub>2</sub>	N,N- <i>bis</i> [(pentafluoroethyl)seleno]methylamine (282–324)	38.3	(303)		[6123-54-2] [99/16]
C <sub>5</sub> H <sub>5</sub> F <sub>7</sub> Se	ethyl(heptafluoropropyl) selenide (243–333)	36.0	(288)		[755-44-2] [99/16][63/41]
C <sub>5</sub> H <sub>6</sub> F <sub>7</sub> NSe	N,N-dimethyl(heptafluoropropyl)selenenamamide (228–321)	30.8	(274)		[63/41]
C <sub>6</sub> F <sub>14</sub> Se	<i>bis</i> (heptafluoropropyl) selenide (228–343)	34.5	(286)		[755-81-7] [99/16][63/41]
C <sub>6</sub> F <sub>14</sub> Se <sub>2</sub>	<i>bis</i> (heptafluoropropyl) diselenide (260–348)	37.7	(304)		[755-51-1] [99/16][63/41]
C <sub>6</sub> H <sub>6</sub> Se	benzene selenol (331–458)	45.4	(395)		[645-96-5] [99/16]
C <sub>6</sub> H <sub>14</sub> Se	diisopropyl selenide	43.1±1.0	(298)	C	[37773-02-7] [89/12]
C <sub>7</sub> H <sub>8</sub> Se	methyl phenyl selenide (273–291)	52.5	(282)		[4346-64-9] [99/16]
C <sub>8</sub> H <sub>18</sub> Se	dibutyl selenide	47.3±1.0	(298)	C	[14835-66-6] [89/12]
C <sub>10</sub> H <sub>22</sub> Se	dipentyl selenide	51.9±1.0	(298)	C	[14835-67-7] [89/12]
C <sub>12</sub> H <sub>10</sub> Se	diphenyl selenide (379–575) (378–575)	63.4 61.9	(394) (393)	A	[1132-39-4] [99/16] [87/5]
Cl <sub>2</sub> OSe	selenium oxychloride (352–476) (353–453)	59.1 46.9	(367) (403)		[73/33][82/15] [7791-23-3] [99/16] [71/24]
D <sub>2</sub> Se	hydrogen selenide—d <sub>2</sub> (202–256)	22.2	(217)		[13536-95-3] [99/16]
F <sub>2</sub> OSe	seleninyl difluoride (316–420)	52.1	(331)		[7783-43-9] [99/16]
F <sub>4</sub> Se	selenium tetrafluoride (297–398)	46.9±0.8 46.4	(298) (312)	C	[79/27] [13465-66-2] [99/16]
F <sub>6</sub> O <sub>2</sub> Se	<i>trans bis</i> (fluoroxy) tetrafluoroselenium (241–286)	26.5	(263)		[70/13]
<b>Si</b>					
CH <sub>2</sub> Cl <sub>4</sub> OSi	chloromethoxytrichlorosilane (273–323)	9.3	(288)		[58/3]
CH <sub>3</sub> Cl <sub>3</sub> Si	methyltrichlorosilane (328–358) (287–337)	30.7 31.2	(343) (302)	I	[75-79-6] [67/26] [54/1]
CH <sub>4</sub> Cl <sub>2</sub> Si	(dichloromethyl)silane (283–319)	31.0±2.1 32.5	(301)		[69/30][82/15] [57/27]
CH <sub>4</sub> Cl <sub>2</sub> Si	methyldichlorosilane (275–314)	28.3	(290)	I	[75-54-7] [54/1]
CH <sub>5</sub> ClSi	(chloromethyl)silane (246–297)	27.5	(271)		[57/27]
CH <sub>5</sub> BrSi	methylbromosilane (283–295)	28.5	(289)		[58/24]
CH <sub>6</sub> OSi	methoxysilane (184–216)	25.8	(201)		[2171-96-2] [61/5]
CH <sub>8</sub> Si <sub>2</sub>	methyldisilane (190–273)	26.8	(231)	T	[13498-43-6] [66/16]
C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub> Si	trichlorovinylsilane (291–356)	34.2	(306)	I	[75-94-5] [54/1]
C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub> Si	1,2-dichloroethyltrichlorosilane (375–453)	45.7	(390)	I	[684-00-4] [54/1]
C <sub>2</sub> H <sub>4</sub> Cl <sub>6</sub> Si <sub>2</sub>	<i>bis</i> (trichlorosilyl)ethane				

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>2</sub> H <sub>4</sub> Si	(364–432) silylacetylene	48.6	(379)	I	[54/1]
C <sub>2</sub> H <sub>5</sub> Cl <sub>3</sub> Si	(215–251) trichloroethylsilane	22.0	(233)		[63/39] [115-21-9]
	(303–363)	35.1	(318)		[70/37]
	(301–368)	35.9	(316)	I	[54/1]
C <sub>2</sub> H <sub>5</sub> F <sub>3</sub> OSi	ethoxytrifluorosilane (206–248)	26.8	(227)		[49/26]
C <sub>2</sub> H <sub>6</sub> Cl <sub>2</sub> Si	dichlorodimethylsilane (301–345)	31.5	(316)	I	[75-78-5] [54/1]
C <sub>2</sub> H <sub>6</sub> Cl <sub>2</sub> Si	dichloroethylsilane (279–346)	31.5	(294)	I	[1789-58-8] [54/1]
	(301–345)	31.6	(316)		[54/4]
C <sub>2</sub> H <sub>6</sub> Cl <sub>4</sub> Si <sub>2</sub>	1,1,2,2-tetrachloro-1,2-dimethyldisilane (300–375)	42.4	(337)		[67/23]
C <sub>2</sub> H <sub>6</sub> F <sub>3</sub> NSi	1,1,1-trifluoro-N,N-dimethylaminosilane (225–288)	28.5	(273)		[61/4]
C <sub>2</sub> H <sub>10</sub> Si <sub>2</sub>	1,2-dimethyldisilane (227–273)	25.4	(258)		[870-26-8] [62/6]
C <sub>2</sub> H <sub>11</sub> NSi <sub>2</sub>	N,N-dimethyldisilanylamine (207–273)	35.4	(240)	T	[63/30]
C <sub>3</sub> H <sub>4</sub> Cl <sub>3</sub> NSi	trichloro- $\beta$ -cyanoethylsilane (343–443)	53.5	(358)		[78/12]
C <sub>3</sub> H <sub>5</sub> Cl <sub>3</sub> Si	allyltrichlorosilane (319–388)	40.1	(333)	I	[107-37-9] [54/1]
C <sub>3</sub> H <sub>6</sub> Cl <sub>4</sub> Si	$\gamma$ -chloropropyltrichlorosilane (313–443)	49.7	(328)		[2550-06-3] [72/14]
	(360–452)	46.4	(375)	I	[54/1]
C <sub>3</sub> H <sub>6</sub> Cl <sub>4</sub> Si	$\beta$ -chloropropyltrichlorosilane (313–443)	46.9	(328)		[72/14]
C <sub>3</sub> H <sub>8</sub> Cl <sub>2</sub> OSi	dichloroethoxymethylsilane (239–373)	38.0	(254)		[47/5]
C <sub>3</sub> H <sub>9</sub> BrSi	bromotrimethylsilane				[2857-97-8]
		32.6 ± 2.1			[67/34][82/15]
C <sub>3</sub> H <sub>9</sub> ClSi	chlorotrimethylsilane (274–325)	30.8	(289)		[75-77-4]
	(276–329)	30.2	(291)		[64/8] [54/1]
		30.1 ± 1.7			[67/34][82/15]
C <sub>3</sub> H <sub>10</sub> OSi	trimethylsilanol (291–357)	46.8	(306)	A	[1066-40-6] [87/5]
		45.6 ± 1.7			[69/30][82/15]
	(291–358)	44.2	(324)	I	[53/15]
C <sub>3</sub> H <sub>11</sub> NSi	N,N-dimethyl(methylsilyl)amine (273–317)	28.2	(296)		[58/24]
C <sub>3</sub> H <sub>13</sub> NSi <sub>2</sub>	N-methyldi(methylsilyl)amine (303–351)	32.2	(327)		[58/24]
C <sub>3</sub> H <sub>15</sub> NSi <sub>3</sub>	tri(methylsilyl)amine (323–378)	33.7	(350)		[58/24]
C <sub>4</sub> H <sub>8</sub> Cl <sub>6</sub> SSi <sub>2</sub>	2,5-bis(trichlorosilyl)thiophene (374–519)	55.6	(388)		[81/24]
C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub> Si	dichloroethylvinylsilane (318–395)	38.1	(333)	I	[10138-21-3] [54/1]
C <sub>4</sub> H <sub>9</sub> F <sub>6</sub> NSi <sub>2</sub>	1,1,1-trifluoro-N-(1-methylpropyl)-N-(trifluorosilyl)silanamine (193–233)	25.8	(213)		[28245-41-2] [73/30]
C <sub>4</sub> H <sub>10</sub> Cl <sub>2</sub> Si	dichlorodiethylsilane (321–401)	39.2	(336)	I	[1719-53-5] [54/1]
C <sub>4</sub> H <sub>10</sub> F <sub>3</sub> NSi	(N,N-diethylamino)trifluorosilane (208–274)	27.4	(241)		[28245-37-6] [74/34]
C <sub>4</sub> H <sub>10</sub> F <sub>3</sub> NSi	(N- <i>tert</i> -butylamino)trifluorosilane (208–250)	33.6	(229)		[28245-40-1] [73/34]
C <sub>4</sub> H <sub>10</sub> Si	1-methylsilacyclobutane				[765-33-3] [91/4]
		25.1	(298)	C	[542-91-6]
C <sub>4</sub> H <sub>12</sub> Si	diethylsilane				[72/30][82/15]
		30.0 ± 0.4			



TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>12</sub> Cl <sub>2</sub> OSi <sub>2</sub>	1,3-dichlorotetramethyldisiloxane (303–403)	40.3	(318)		[2401-73-2] [71/11]
C <sub>4</sub> H <sub>12</sub> O <sub>3</sub> Si	methyltrimethoxysilane	34.3±0.6 34.3±0.3	(298) (298)	C EB	[1185-55-3] [88/15] [85/13]
C <sub>4</sub> H <sub>12</sub> O <sub>4</sub> Si	tetramethoxysilane (364–393)	38.0 41.4±0.7 41.4±0.2	(379) (298) (298)	EB C EB	[681-84-5] [89/5] [88/15] [85/13]
C <sub>4</sub> H <sub>12</sub> Si	(309–394) tetramethylsilane	41.0	(324)		[80/15] [75-76-3]
		26.0±0.6 26.2±0.4	(298)	C	[88/15] [72/30][82/15]
C <sub>4</sub> H <sub>13</sub> NSi	N,1,1,1-tetramethylsilanamine	24.2±0.1	(299)	C	[41/5] [16513-17-0]
		37.4±0.8 36.0±2.1	(298)	C	[91/6] [67/34][82/15]
C <sub>4</sub> H <sub>14</sub> N <sub>2</sub> Si	bis(dimethylamino)silane (288–344)	32.4	(316)	T	[64/29]
C <sub>4</sub> H <sub>16</sub> N <sub>2</sub> Si <sub>2</sub>	N,N,N',N'-tetramethyldisilanylamine (311–354)	39.3	(332)	T	[63/30]
C <sub>5</sub> H <sub>6</sub> Cl <sub>2</sub> SSi <sub>2</sub>	2-(methylchlorosilyl)thiophene (341–467)	46.4	(356)		[81/24]
C <sub>5</sub> H <sub>9</sub> F <sub>6</sub> NOSSi	S,S-bis(trifluoromethyl)-N-(trimethylsilyl)sulfoximine	33.5	(378)	I	[34556-30-4] [72/25]
C <sub>5</sub> H <sub>10</sub> F <sub>3</sub> NSi	1-(trifluorosilyl)piperidine (250–282)	33.9	(266)		[33552-49-7] [73/34]
C <sub>5</sub> H <sub>12</sub> Si	1,2-dimethylsilacyclobutane	33.1	(298)	C	[91/4]
C <sub>5</sub> H <sub>12</sub> Si	1,1-dimethylsilacyclobutane	32.1 33.0±0.8 34.7±2.1	(356) (298)		[2295-12-7] [75/31] [74/22]
				I	[72/30][82/15]
C <sub>5</sub> H <sub>12</sub> Si	vinyltrimethylsilane	33.1±0.6	(298)	C	[754-05-2] [88/15]
C <sub>5</sub> H <sub>14</sub> OSi	ethoxytrimethylsilane	38.4±0.6 38.4±0.3	(298) (298)	C EB	[1825-62-3] [88/15] [85/13]
	(223–349)	35.1	(238)		[47/5]
C <sub>5</sub> H <sub>14</sub> O <sub>3</sub> SSi	trimethoxy[(methylthio)methyl]silane	40.2±0.6	(298)	C	[57557-66-1] [89/11]
C <sub>5</sub> H <sub>14</sub> Si	methyldiethylsilane	34.6±0.7	(298)	C	[760-32-7] [88/15]
C <sub>5</sub> H <sub>15</sub> NSi	pentamethylsilanamine	33.6±0.8 31.8±1.7	(298)	C	[2083-91-2] [91/6] [67/34][82/15]
	(313–357)	31.7	(335)		[58/24]
C <sub>5</sub> H <sub>20</sub> O <sub>5</sub> Si <sub>5</sub>	1,3,5,7,9-pentamethylcyclopentasiloxane	47.0±0.9	(298)	C	[6166-86-5] [91/5]
C <sub>6</sub> H <sub>4</sub> Cl <sub>4</sub> Si	(2-chlorophenyl)trichlorosilane (406–472)	52.1	(439)	EB	[2003-90-9] [74/22]
C <sub>6</sub> H <sub>4</sub> Cl <sub>4</sub> Si	(3-chlorophenyl)trichlorosilane (398–463)	50.7	(430)	EB	[2003-89-6] [74/22]
C <sub>6</sub> H <sub>5</sub> Cl <sub>3</sub> Si	phenyl trichlorosilane (333–453)	51.1	(348)		[98-13-5] [70/37]
	(375–470)	47.9	(390)	I	[54/1]
C <sub>6</sub> H <sub>5</sub> F <sub>3</sub> Si	trifluorophenylsilane (242–371)	40.1	(257)		[368-47-8] [47/5]
C <sub>6</sub> H <sub>8</sub> Cl <sub>4</sub> SSi <sub>2</sub>	2,5-bis(methyldichlorosilyl)thiophene (405–522)	55.7	(420)		[81/24]
C <sub>6</sub> H <sub>9</sub> F <sub>6</sub> NSi	1,1,1-trimethyl-N-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-silanamine	30.5	(358)	I	[17599-55-2] [72/24]
C <sub>6</sub> H <sub>10</sub> Cl <sub>2</sub> Si	diallyldichlorosilane (254–390)	47.9	(269)		[47/5]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>6</sub> H <sub>11</sub> NSi <sub>2</sub>	N-phenyldisilazane (298–356)	34.9	(327)	T	[69/33]
C <sub>6</sub> H <sub>12</sub> Si <sub>2</sub>	1,1,3,3-tetramethyl-1,3-disilacyclobutane	39.5	(391)		[1627-98-1] [75/31]
C <sub>6</sub> H <sub>12</sub> Si	1-methyl-1-vinylsilacyclobutane	33.1	(298)	C	[91/4]
C <sub>6</sub> H <sub>14</sub> Si	1,1,2-trimethylsilacyclobutane	36.0	(298)	C	[30681-90-4] [91/4]
C <sub>6</sub> H <sub>14</sub> Si	1,1-dimethylsilacyclopentane	37.7±2.1			[72/30][82/15]
C <sub>6</sub> H <sub>14</sub> Si	1,1,3-trimethylsilacyclobutane	35.5	(298)	C	[2295-13-8] [91/4]
C <sub>6</sub> H <sub>15</sub> ClSi	chlorotriethylsilane (268–419)	42.9	(419)		[994-30-9] [47/5]
C <sub>6</sub> H <sub>15</sub> FO <sub>3</sub> Si	triethoxyfluorosilane (291–373)	40.3	(332)	I	[49/26]
C <sub>6</sub> H <sub>15</sub> NOSi <sub>2</sub>	pentamethyldisilanyl isocyanate (320–377)	44.2	(348)		[63/40]
C <sub>6</sub> H <sub>16</sub> OSi	propoxytrimethylsilane	34.3±0.6	(298)	C	[1825-63-4] [88/15]
C <sub>6</sub> H <sub>16</sub> OSi	isopropoxytrimethylsilane	34.3±0.3	(298)	C	[85/13]
C <sub>6</sub> H <sub>16</sub> OSi	triethylsilanol (298–413)	31.8±0.6	(298)	C	[88/15]
C <sub>6</sub> H <sub>16</sub> O <sub>2</sub> Si	diethoxydimethylsilane	31.8±0.4	(298)	EB	[85/13]
C <sub>6</sub> H <sub>16</sub> O <sub>2</sub> Si	(254–386)	50.6	(355)	I	[597-52-4] [53/15]
C <sub>6</sub> H <sub>16</sub> O <sub>3</sub> SSi	trimethoxy[2-(methylthio)ethyl]silane	43.1±0.7	(298)	C	[78-62-6] [88/15]
C <sub>6</sub> H <sub>16</sub> O <sub>3</sub> SSi	[(ethylthio)methyl]trimethoxysilane	43.1±0.3	(298)	EB	[85/13]
C <sub>6</sub> H <sub>16</sub> O <sub>3</sub> SSi	(254–386)	43.3	(269)		[47/5]
C <sub>6</sub> H <sub>16</sub> O <sub>3</sub> SSi	trimethoxy[2-(methylthio)ethyl]silane	45.2±0.7	(298)	C	[66785-19-1] [89/11]
C <sub>6</sub> H <sub>16</sub> O <sub>3</sub> SSi	[(ethylthio)methyl]trimethoxysilane	41.4±0.6	(298)	C	[53696-79-0] [89/11]
C <sub>6</sub> H <sub>16</sub> Si	dimethyldiethylsilane	38.9±0.6	(298)	C	[756-81-0] [88/15]
C <sub>6</sub> H <sub>16</sub> Si	triethylsilane	37.4±0.6	(298)	C	[617-86-7] [88/15]
C <sub>6</sub> H <sub>16</sub> Si	(303–373)	33.5		EB, I	[75/34]
C <sub>6</sub> H <sub>16</sub> Si <sub>2</sub>	1,1,3,3-tetramethyl-1,3-disilacyclobutane	36.4±1.3			[72/30][82/15]
C <sub>6</sub> H <sub>17</sub> B <sub>5</sub> Br <sub>2</sub> Si <sub>2</sub>	2,4-bis(bromodimethylsilyl)-2,4-dicarbo-closo-heptaborane (7) (388–463)	36.7±1.1	(298)	I	[1627-98-1] [74/23]
C <sub>6</sub> H <sub>17</sub> B <sub>5</sub> Cl <sub>2</sub> Si <sub>2</sub>	2,4-bis(chlorodimethylsilyl)-2,4-dicarbo-closo-heptaborane (7) (359–439)	41.0±2.1			[72/30][82/15]
C <sub>6</sub> H <sub>18</sub> Cl <sub>2</sub> O <sub>2</sub> Si <sub>3</sub>	1,5-dichlorohexamethyltrisiloxane (299–457)	46.2	(374)	I	[66798-29-6] [79/25]
C <sub>6</sub> H <sub>18</sub> OSi <sub>2</sub>	hexamethyldisiloxane (300–383)	49.8	(314)		[47/5]
C <sub>6</sub> H <sub>18</sub> OSi <sub>2</sub>	(293–361)	36.9	(315)	EB	[107-46-0] [86/4]
C <sub>6</sub> H <sub>18</sub> OSi <sub>2</sub>	(309–411)	33.1	(327)		[71/15]
C <sub>6</sub> H <sub>18</sub> O <sub>3</sub> Si <sub>3</sub>	hexamethylcyclotrisiloxane (342–419)	37.2±1.7			[64/26][82/15]
C <sub>6</sub> H <sub>18</sub> O <sub>3</sub> Si <sub>3</sub>	(353–403)	36.0	(324)	EB	[61/15]
C <sub>6</sub> H <sub>18</sub> O <sub>3</sub> Si <sub>3</sub>	(339–407)	34.6±0.1	(332)	C	[61/15]
C <sub>6</sub> H <sub>18</sub> O <sub>3</sub> Si <sub>3</sub>	(343–388)	33.1±0.1	(351)	C	[61/15]
C <sub>6</sub> H <sub>18</sub> O <sub>3</sub> Si <sub>3</sub>		31.3±0.1	(373)	C	[61/15]
C <sub>6</sub> H <sub>18</sub> O <sub>3</sub> Si <sub>3</sub>		37.2±1.7			[47/5]
C <sub>6</sub> H <sub>18</sub> O <sub>3</sub> Si <sub>3</sub>	hexamethylcyclotrisiloxane (342–419)	40.8	(357)	EB	[541-05-9] [86/4]
C <sub>6</sub> H <sub>18</sub> O <sub>3</sub> Si <sub>3</sub>	(353–403)	39.7	(368)		[74/18]
C <sub>6</sub> H <sub>18</sub> O <sub>3</sub> Si <sub>3</sub>	(339–407)	39.0	(373)		[71/15]
C <sub>6</sub> H <sub>18</sub> O <sub>3</sub> Si <sub>3</sub>	(343–388)	39.7	(365)		[53/20]
C <sub>6</sub> H <sub>18</sub> Si <sub>2</sub>	hexamethyldisilane				[1450-14-2]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
	(305–387)	36.3	(320)	EB	[86/12]
		37.4±0.4			[72/30][82/15]
	(288–310)	37.2			[59/26][86/12]
	(294–334)	36.8			[41/12][86/12]
C <sub>6</sub> H <sub>19</sub> B <sub>5</sub> Si <sub>2</sub>	2,4- <i>bis</i> (dimethylsilyl)-2,4-dicarba-closo-heptaborane (373–453)	41.3	(388)	I	[59351-11-0] [76/17]
C <sub>6</sub> H <sub>19</sub> NSi <sub>2</sub>	hexamethyldisilazane	42.2±0.9	(298)	C	[999-97-3] [91/6]
	(294–395)	36.0	(344)		[72/19]
		41.4±2.1			[66/22][82/15]
C <sub>6</sub> H <sub>19</sub> N <sub>3</sub> Si	<i>tris</i> (dimethylamino)silane (309–387)	41.1	(348)	T	[64/29]
C <sub>6</sub> H <sub>21</sub> N <sub>3</sub> Si <sub>3</sub>	hexamethylcyclotrisilazane (342–456)	45.6	(399)		[1009-93-4] [72/19]
C <sub>7</sub> H <sub>8</sub> Cl <sub>2</sub> Si	benzyl dichlorosilane (318–467)	58.5	(333)		[18173-99-4] [47/5][99/16]
C <sub>7</sub> H <sub>8</sub> Cl <sub>2</sub> Si	phenyldichloromethylsilane (309–479)	51.2	(323)		[149-74-6] [47/5][99/16]
C <sub>7</sub> H <sub>8</sub> Cl <sub>2</sub> Si	dichloro-4-tolylsilane (319–469)	58.0	(334)		[13272-80-5] [47/5][99/16]
C <sub>7</sub> H <sub>8</sub> F <sub>2</sub> Si	difluoromethylphenylsilane (303–413)	44.6	(318)		[328-57-4] [99/16]
C <sub>7</sub> H <sub>9</sub> F <sub>8</sub> NOSSi	2,2,3,3,4,4,5,5-octafluoro-1,1,2,3,4,5-hexahydro-1-[(trifluoromethyl)-silyl]imino]thiophene-1-oxide	31.4	(383)		[77589-40-3] [81/16]
C <sub>7</sub> H <sub>9</sub> F <sub>9</sub> N <sub>2</sub> OSSi	1,1,1-trifluoro-N-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-N'-(trimethylsilyl)methanesulfonimidamide	39.3	(429)	I	[62609-67-0] [77/19][99/16]
C <sub>7</sub> H <sub>16</sub> O <sub>3</sub> SSi	trimethoxy[(2-propenylthio)methyl]silane	38.6±0.5	(298)	C	[57877-58-4] [89/11]
C <sub>7</sub> H <sub>17</sub> ClSi	(1-chloroethyl)diethylmethylsilane (353–445)	41.8	(400)		[18817-17-9] [99/16]
C <sub>7</sub> H <sub>18</sub> OSi	butyl trimethylsilyl ether (344–397)	38.5	(359)	EB	[1825-65-6] [69/13][84/9]
C <sub>7</sub> H <sub>18</sub> O <sub>3</sub> SSi	trimethoxy[3-(methylthio)propyl]silane	43.5±0.6	(298)	C	[94358-36-8] [89/11]
C <sub>7</sub> H <sub>18</sub> O <sub>3</sub> SSi	[2-(ethylthio)ethyl]trimethoxysilane	41.4±0.7	(298)	C	[40532-52-3] [89/11]
C <sub>7</sub> H <sub>18</sub> O <sub>3</sub> Si	triethoxymethylsilane	45.1±0.7	(298)	C	[2031-67-6] [88/15]
		45.1±0.4	(298)	EB	[85/13]
	(272–416)	45.2	(287)		[47/5]
C <sub>7</sub> H <sub>18</sub> SSi	( <i>n</i> -butylthio)trimethylsilane	40.6±2.1			[67/34][82/15]
C <sub>7</sub> H <sub>18</sub> Si	methyltriethylsilane	40.5±0.6	(298)	C	[757-21-1] [88/15]
C <sub>7</sub> H <sub>18</sub> Si	methyldipropylsilane	35.9±0.7	(298)	C	[999-03-1] [88/15]
C <sub>7</sub> H <sub>18</sub> Si	methyl-diisopropylsilane	32.4±0.8	(298)	C	[18442-00-7] [88/15]
C <sub>7</sub> H <sub>19</sub> NSi	N,N-diethyl-1,1,1-trimethylsilanamine	37.9±0.8	(298)	C	[996-50-9] [91/6]
C <sub>7</sub> H <sub>20</sub> Si <sub>2</sub>	methylene- <i>bis</i> (trimethylsilane) (323–407)	40.3±0.3		QM	[2117-28-4] [76/25]
	(323–407)	40.3±0.3	(365)		[75/25][75/31]
C <sub>7</sub> H <sub>21</sub> NSi <sub>2</sub>	N,1,1,1-tetramethyl-N-(trimethylsilyl)silanamine	38.1±0.8	(298)	C	[920-68-3] [91/6]
		38.9±2.1			[67/34][82/15]
C <sub>8</sub> H <sub>10</sub> Cl <sub>2</sub> OSi	dichloroethoxyphenylsilane (325–496)	56.3	(340)		[18236-80-1] [99/16]
C <sub>8</sub> H <sub>10</sub> Cl <sub>2</sub> Si	dichloroethylphenylsilane (316–503)	51.3	(331)		[1125-27-5] [99/16]
C <sub>8</sub> H <sub>11</sub> ClSi	chlorodimethylphenylsilane (302–467)	52.2	(317)		[768-33-2] [99/16]
	(303–466)	49.7	(318)		[47/5]
C <sub>8</sub> H <sub>11</sub> FSi	fluorodimethylphenylsilane				[454-57-9]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>12</sub> Si	(303–423) tetravinylsilane	49.6	(318)		[99/16] [1112-55-6]
C <sub>8</sub> H <sub>12</sub> Si	dimethylphenylsilane (298–432)	42.7±0.7	(298)	C	[88/15] [766-77-8]
C <sub>8</sub> H <sub>16</sub> Cl <sub>4</sub> O <sub>4</sub> Si	tetrakis(2-chloroethoxy)silane (447–500)	45.3	(293)		[47/5] [18290-84-1]
C <sub>8</sub> H <sub>18</sub> F <sub>3</sub> NOSi <sub>2</sub>	CF <sub>3</sub> C[OSi(CH <sub>3</sub> ) <sub>3</sub> ]=NSi(CH <sub>3</sub> ) <sub>3</sub> (316–350)	81.1	(473)		[99/16][46/9]
C <sub>8</sub> H <sub>18</sub> O <sub>3</sub> Si	vinyltriethoxysilane	41.8	(333)		[70/27] [78-08-0]
		50.2±0.8	(298)	C	[88/15]
		50.2±0.4	(298)	EB	[85/13]
C <sub>8</sub> H <sub>20</sub> Cl <sub>2</sub> OSi <sub>2</sub>	(334–421) 1,3-dichloro-1,1,3,3-tetraethyl-disiloxane	46.2	(349)	I	[54/1] [18825-03-1]
C <sub>8</sub> H <sub>20</sub> O <sub>3</sub> SSi	(343–463) [3-(ethylthio)propyl]trimethoxysilane	53.6	(358)		[71/11][99/16] [57557-74-1]
C <sub>8</sub> H <sub>20</sub> O <sub>3</sub> SSi	[3-(ethylthio)propyl]trimethoxysilane	41.8±0.6	(298)	C	[89/11] [57557-68-3]
C <sub>8</sub> H <sub>20</sub> O <sub>3</sub> SSi	[(butylthio)methyl]trimethoxysilane	41.6±0.6	(298)	C	[89/11] [57557-69-4]
C <sub>8</sub> H <sub>20</sub> O <sub>3</sub> SSi	trimethoxy[[2-(methylpropyl)thio]methyl]silane	38.7±0.6	(298)	C	[89/11] [57557-70-7]
C <sub>8</sub> H <sub>20</sub> O <sub>3</sub> SSi	[[1,1-dimethylethyl]thio]methyl]trimethoxysilane	50.6±0.7	(298)	C	[89/11] [78-07-9]
C <sub>8</sub> H <sub>20</sub> O <sub>3</sub> Si	ethyltriethoxysilane (338–426)	47.0	(353)	I	[54/1] [78-10-4]
C <sub>8</sub> H <sub>20</sub> O <sub>4</sub> Si	tetraethoxysilane (323–442)	53.9	(298)	SG	[95/10] [95/10]
	(323–442)	52.3	(298)	SG	[95/10]
	(404–437)	40.9	(419)	EB	[89/5] [85/13]
		48.5±0.3	(298)	EB	[85/13]
	(313–440)	50.0	(328)		[80/15]
	(273–344)	U33.9			[73/16]
	(289–441)	49.5	(304)		[47/5] [995-89-1]
C <sub>8</sub> H <sub>20</sub> Si	dimethyldipropylsilane	40.2±0.6	(298)	C	[88/15] [631-36-7]
C <sub>8</sub> H <sub>20</sub> Si	tetraethylsilane	39.0±0.7	(298)	C	[88/15] [72/30][82/15]
		39.7±2.1			[72/30][82/15]
C <sub>8</sub> H <sub>20</sub> Si	(272–426) ethyldipropylsilane	43.3	(287)		[47/5] [998-14-1]
C <sub>8</sub> H <sub>20</sub> Si	ethyldiisopropylsilane	37.9±0.6	(298)	C	[88/15] [17591-40-1]
C <sub>8</sub> H <sub>20</sub> Si	ethyldiisopropylsilane	38.1±0.7	(298)	C	[88/15]
C <sub>8</sub> H <sub>21</sub> NO <sub>3</sub> Si	γ-aminopropyltriethoxysilane (363–492)	55.8	(388)		[76/24] [59351-10-9]
C <sub>8</sub> H <sub>23</sub> B <sub>5</sub> Si <sub>2</sub>	2,4-bis(trimethylsilyl)-2,4-dicarba-closo-heptaborane (373–473)	45.0	(388)	I	[76/17]
C <sub>8</sub> H <sub>24</sub> Si <sub>3</sub>	octamethyltrisilane	46.0±0.8			[72/30][82/15] [2474-02-4]
C <sub>8</sub> H <sub>24</sub> Cl <sub>2</sub> O <sub>3</sub> Si <sub>4</sub>	1,7-dichloro-1,1,3,3,5,5,7,7-octamethyltetrasiloxane (326–495)	53.8	(341)		[99/16]
C <sub>8</sub> H <sub>24</sub> N <sub>4</sub> Si	tetrakis(dimethylamino)silane (361–415)	40.0	(388)	T	[64/29] [107-51-7]
C <sub>8</sub> H <sub>24</sub> O <sub>2</sub> Si <sub>3</sub>	octamethyltrisiloxane (346–446)	43.2	(361)	EB	[86/4] [72/30][82/15]
		39.7±2.1			[72/30][82/15]
C <sub>8</sub> H <sub>24</sub> O <sub>4</sub> Si <sub>4</sub>	(345–417) octamethylcyclotetrasiloxane	40.2	(381)		[71/16] [556-67-2]
		57.0±0.8	(298)	C	[91/5] [86/4]
	(361–469)	47.6	(376)	EB	[86/4]
	(334–423)	44.1	(378)		[71/15]
	(303–428)	56.1	(298)	I	[54/13]
	(303–428)	48.5	(373)	I	[54/13]
	(303–428)	45.6	(398)	I	[54/13]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>8</sub> H <sub>28</sub> N <sub>4</sub> Si <sub>4</sub>	octamethylcyclotetrasilazane (388–513)	52.3	(450)		[1020-84-4] [72/19]
C <sub>9</sub> H <sub>14</sub> OSi	phenoxytrimethylsilane	56.9±0.8	(298)	C	[1529-17-5] [88/15]
C <sub>9</sub> H <sub>20</sub> OSi	cyclohexyl trimethylsilyl ether (364–441)	45.1	(379)	EB	[13871-89-1] [69/13]
C <sub>9</sub> H <sub>22</sub> O <sub>3</sub> SSi	triethoxy[(ethylthio)methyl]silane	42.3±0.6	(298)	C	[53696-83-6] [89/11]
C <sub>9</sub> H <sub>22</sub> Si	propyltriethylsilane	40.0±0.7	(298)	C	[994-44-5] [88/15]
C <sub>9</sub> H <sub>22</sub> Si	tripropylsilane	39.1±0.7	(298)	C	[998-29-8] [88/15]
C <sub>9</sub> H <sub>22</sub> Si	methylbutylsilane	36.2±0.7	(298)	C	[999-35-9] [88/15]
C <sub>9</sub> H <sub>23</sub> NSi	1,1,1-triethyl-N-(1-methylethyl)silanamine	38.6±0.8	(298)	C	[5277-20-3] [91/6]
C <sub>9</sub> H <sub>23</sub> NSi	1,1,1-triethyl-N-propylsilanamine	41.5±0.8	(298)	C	[17887-11-5] [91/6]
C <sub>9</sub> H <sub>24</sub> Si <sub>2</sub>	1,3-propanediyl- <i>bis</i> (trimethylsilane) (338–443)	43.1±0.5		QM	[2295-05-8] [76/25]
C <sub>9</sub> H <sub>27</sub> NSi <sub>3</sub>	<i>tris</i> (trimethylsilyl)amine	43.1±0.5	(390)		[75/25][75/31]
C <sub>10</sub> H <sub>11</sub> NSi <sub>4</sub>	1,1,3,3-tetramethyl-1,3- <i>bis</i> (trimethylsilyl)disilazane (378–435)	54.4±8.4			[67/34][82/15]
C <sub>10</sub> H <sub>16</sub> OSi	1,1,3,3-tetramethyl-1,3- <i>bis</i> (trimethylsilyl)disilazane (378–435)	58.0	(393)	A	[87/5]
C <sub>10</sub> H <sub>16</sub> OSi	(2-methoxyphenyl)trimethylsilane	59.4±0.8	(298)	C	[704-43-8] [88/15]
C <sub>10</sub> H <sub>16</sub> OSi	(3-methoxyphenyl)trimethylsilane	56.1±0.8	(298)	C	[17876-90-3] [88/15]
C <sub>10</sub> H <sub>16</sub> OSi	(4-methoxyphenyl)trimethylsilane	56.9±0.8	(298)	C	[877-68-9] [88/15]
C <sub>10</sub> H <sub>16</sub> OSi	<i>m</i> -tolyl trimethylsilyl ether (371–398)	49.7	(384)	EB	[17902-31-7] [69/13]
C <sub>10</sub> H <sub>16</sub> OSi	<i>p</i> -tolyl trimethylsilyl ether (374–402)	49.8	(388)	EB	[17902-32-8] [69/13]
C <sub>10</sub> H <sub>16</sub> O <sub>3</sub> SSi	trimethoxy[(phenylthio)methyl]silane	56.4±0.7	(298)	C	[57557-71-8] [89/11]
C <sub>10</sub> H <sub>20</sub> O <sub>2</sub> Si	diallyl(diethoxy)silane (342–459)	48.3	(357)	A	[13081-67-9] [87/5]
C <sub>10</sub> H <sub>24</sub> O <sub>2</sub> Si	dipropyldiethoxysilane	46.5±0.7	(298)	C	[2031-63-2] [88/15]
C <sub>10</sub> H <sub>24</sub> O <sub>3</sub> SSi	triethoxy[2-(ethylthio)ethyl]silane	46.4±0.3	(298)	EB	[85/13]
C <sub>10</sub> H <sub>24</sub> Si	diethyldipropylsilane	46.9±0.7	(298)	C	[57557-72-9] [89/11]
C <sub>10</sub> H <sub>24</sub> Si	diethyldipropylsilane	41.5±0.7	(298)	C	[994-59-2] [88/15]
C <sub>10</sub> H <sub>24</sub> Si	methyltripropylsilane	42.6±0.6	(298)	C	[995-24-4] [88/15]
C <sub>10</sub> H <sub>24</sub> Si	ethylbutylsilane	39.9±0.7	(298)	C	[998-61-8] [88/15]
C <sub>10</sub> H <sub>24</sub> Si	ethyldiisobutylsilane	39.8±0.7	(298)	C	[17591-42-3] [88/15]
C <sub>10</sub> H <sub>25</sub> NO <sub>2</sub> Si <sub>3</sub>	1,1,1,3,5,5,5-heptamethyl-3-(2-cyanoethyl)trisiloxane (367–511)	59.5	(382)	A	[87/5]
C <sub>10</sub> H <sub>25</sub> NSi	pentaethylsilanamine	42.2±1.0	(298)	C	[6022-10-2] [91/6]
C <sub>10</sub> H <sub>25</sub> NSi	N-(1,1-dimethylethyl)-1,1,1-triethylsilanamine	40.3±0.9	(298)	C	[17940-20-4] [91/6]
C <sub>10</sub> H <sub>28</sub> O <sub>4</sub> Si <sub>3</sub>	1,5-diethoxy-1,1,3,3,5,5-hexamethyltrisiloxane (314–470)	56.2	(329)	A	[17928-13-1] [87/5]
C <sub>10</sub> H <sub>30</sub> O <sub>3</sub> Si <sub>4</sub>	methyl <i>tris</i> (trimethylsiloxy)silane (362–476)	49.5	(377)	EB	[86/4]
C <sub>10</sub> H <sub>30</sub> O <sub>3</sub> Si <sub>4</sub>	decamethyl tetrasiloxane (366–479)	50.3	(381)	EB	[86/4]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>10</sub> H <sub>30</sub> O <sub>5</sub> Si <sub>5</sub>	(343–454) decamethyl cyclopentasiloxane	48.2	(358)	A	[87/5][71/16]
		59.0±1.0	(298)	C	[91/5]
	(383–496)	52.1	(398)	EB	[86/4]
	(364–472)	49.0	(379)	A	[87/5][71/15] [72/30][82/15]
C <sub>10</sub> H <sub>30</sub> Si <sub>4</sub>	decamethyltetrasilane	48.1±2.1			
C <sub>10</sub> H <sub>31</sub> NSi <sub>4</sub>	bis(pentamethyldisilanyl)amine (376–435)	52.3±1.7			[72/30][82/15]
	[Note: Molecular formula given in paper is not consistent with chemical name.]	57.8	(405)		[63/40]
C <sub>11</sub> H <sub>18</sub> O <sub>3</sub> SSi	trimethoxy[[phenylmethylthio]methyl]silane	56.1±0.7	(298)	C	[53696-80-3] [89/11]
C <sub>11</sub> H <sub>20</sub> OSi	triallylethoxy silane (349–473)	48.4	(364)	A	[17962-20-8] [87/5]
C <sub>11</sub> H <sub>20</sub> OSi <sub>2</sub>	pentamethylphenyl disiloxane (347–474)	53.3	(362)	A	[14920-92-4] [87/5]
	(347–474)	44.4	(410)		[74/32]
C <sub>11</sub> H <sub>20</sub> O <sub>3</sub> Si <sub>3</sub>	1,1,3,3,5-pentamethyl-5-phenylcyclotrisiloxane (396–503)	48.0	(450)		[74/17]
C <sub>11</sub> H <sub>24</sub> O <sub>3</sub> Si	vinyltriopoxysilane	52.3±0.9	(298)	C	[88/15]
		52.3±0.4	(298)	EB	[85/13]
C <sub>11</sub> H <sub>26</sub> Si	ethyltripropylsilane	41.0±0.7	(298)	C	[994-63-8] [88/15]
C <sub>11</sub> H <sub>26</sub> Si	methylpentylsilane	40.3±0.7	(298)	C	[1001-48-5] [88/15]
C <sub>11</sub> H <sub>26</sub> Si	methyl-di(2,2-dimethylpropyl)silane	38.1±0.1	(298)	C	[88/15]
C <sub>11</sub> H <sub>27</sub> NSi	1,1,1-triethyl-N-(1-methylbutyl)silanamine	46.9±1.0	(298)	C	[133943-80-3] [91/6]
C <sub>11</sub> H <sub>28</sub> O <sub>4</sub> Si <sub>4</sub>	8,8,10,10,12,12-hexamethyl-7,9,11,13-tetrasiloxa-6,8,10,12-tetrasilaspiro[5,7]tridecane (393–504)	47.6	(408)	A	[35331-58-9] [87/5]
	(393–504)	48.8	(449)		[74/17]
C <sub>11</sub> H <sub>28</sub> O <sub>4</sub> Si <sub>4</sub>	hexamethyl(silacyclohexyl)cyclotetrasiloxane (403–504)	48.89	(453)		[74/21]
C <sub>12</sub> H <sub>9</sub> Cl <sub>3</sub> Si	2-(trichlorosilyl)biphenyl (461–552)	67.1	(476)	A	[18030-62-1] [87/5]
C <sub>12</sub> H <sub>9</sub> Cl <sub>3</sub> Si	4-(trichlorosilyl)biphenyl (479–573)	75.7	(494)	A	[18030-61-0] [87/5]
C <sub>12</sub> H <sub>10</sub> Cl <sub>2</sub> Si	dichlorodiphenylsilane (465–555)	62.5	(480)	A, I	[80-10-4] [87/5][54/1]
		69.5±4.2			[66/23][82/15] [312-40-3]
C <sub>12</sub> H <sub>10</sub> F <sub>2</sub> Si	difluorodiphenylsilane (392–516)	50.7	(407)	A	[87/5]
C <sub>12</sub> H <sub>13</sub> NSi	(N,N-diphenylamino)silane (425–495)	50.4	(460)	T	[69/34]
C <sub>12</sub> H <sub>20</sub> Cl <sub>8</sub> O <sub>4</sub> Si	tris(2,2'-dichloroisopropyl) orthosilicate (517–532)	U172.7(524)			[46/9]
C <sub>12</sub> H <sub>20</sub> O <sub>3</sub> Si	triethoxyphenylsilane	58.3±0.9	(298)	C	[780-69-8] [88/15]
		61.8	(359)		[47/5]
C <sub>12</sub> H <sub>28</sub> O <sub>4</sub> Si	tetrapropoxysilane	49.8±0.8	(298)	C	[682-01-9] [88/15]
		66.9	(322)	A	[87/5]
		49.8±0.4	(298)	EB	[85/13]
C <sub>12</sub> H <sub>28</sub> O <sub>4</sub> Si	tetraisopropoxysilane (327–438)	52.7	(342)		[1992-48-9] [80/15]
C <sub>12</sub> H <sub>28</sub> Si	tetrapropylsilane	42.2±0.7	(298)	C	[994-66-1] [88/15]
C <sub>12</sub> H <sub>28</sub> Si	tributylsilane	42.9±0.7	(298)	C	[998-41-4] [88/15]
C <sub>12</sub> H <sub>28</sub> Si	triisobutylsilane	42.9±0.7	(298)	C	[88/15]
		40.0±0.7	(298)	C	[6485-81-0] [88/15]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>12</sub> H <sub>28</sub> Si	ethyldipentylsilane	41.2±0.7	(298)	C	[17591-43-4] [88/15]
C <sub>12</sub> H <sub>28</sub> Si	ethyldiisopentylsilane	42.6±0.7	(298)	C	[18159-61-0] [88/15]
C <sub>12</sub> H <sub>30</sub> HgSi <sub>2</sub>	<i>bis</i> (triethylsilyl)mercury (383–433)	64.0	(398)		[72/15]
C <sub>12</sub> H <sub>30</sub> O <sub>3</sub> Si <sub>3</sub>	hexaethyl cyclotrisiloxane (385–524)	57.9	(400)	A	[2031-79-0] [87/5]
	(434–516)	58.7	(449)	A	[87/5][54/1]
C <sub>12</sub> H <sub>31</sub> N <sub>3</sub> Si	N,N,N',N',N'',N''-hexamethylsilanetriamine	58.4±1.0	(298)	C	[15730-66-2] [91/6]
C <sub>12</sub> H <sub>36</sub> O <sub>4</sub> Si <sub>5</sub>	dodecamethyl pentasiloxane (395–515)	55.4	(410)	EB	[141-63-9] [86/4]
	(389–498)	50.3	(404)	A	[87/5][71/16]
		53.1±2.1			[72/30][82/15]
C <sub>12</sub> H <sub>36</sub> O <sub>6</sub> Si <sub>6</sub>	dodecamethyl cyclohexasiloxane (411–531)	56.1	(426)	EB	[540-97-6] [86/4]
	(340–509)	62.6	(355)	A	[87/5][71/15]
C <sub>12</sub> H <sub>48</sub> O <sub>4</sub> Si <sub>5</sub>	<i>tetrakis</i> (trimethylsiloxy)silane (398–494)	52.3	(413)	EB	[86/4]
C <sub>13</sub> H <sub>14</sub> Si	methyldiphenylsilane	64.6±0.8	(298)	C	[776-76-1] [88/15]
C <sub>13</sub> H <sub>26</sub> O <sub>2</sub> Si <sub>3</sub>	1,1,1,3,5,5,5-heptamethyl-3-phenyl trisiloxane (357–492)	61.5	(372)	A	[546-44-1] [87/5]
C <sub>13</sub> H <sub>26</sub> O <sub>4</sub> Si <sub>4</sub>	2,4,4,6,6,8,8-heptamethyl-2-phenylcyclotetrasiloxane (397–514)	65.6	(412)	A	[10448-09-6] [87/5]
C <sub>13</sub> H <sub>30</sub> O <sub>3</sub> SSi	[3-(butylthio)propyl]triethoxysilane	47.1±0.6	(298)	C	[57557-75-2] [89/11]
C <sub>13</sub> H <sub>30</sub> Si	decyltrimethylsilane (340–513)	57.8	(355)		[47/5]
C <sub>13</sub> H <sub>30</sub> Si	methyldihexylsilane	42.6±0.7	(298)	C	[1001-46-3] [88/15]
C <sub>14</sub> H <sub>16</sub> O <sub>2</sub> Si	diphenoxydimethylsilane	64.4±0.9	(298)	C	[6843-66-9] [88/15]
C <sub>14</sub> H <sub>16</sub> Si	ethyldiphenylsilane	66.1±0.8	(298)	C	[7535-07-1] [88/15]
C <sub>14</sub> H <sub>32</sub> Si	triethyloctylsilane (347–535)	56.1	(361)		[10175-53-8] [47/5]
C <sub>14</sub> H <sub>32</sub> Si	ethyldihexylsilane	44.8±0.7	(298)	C	[17591-45-6] [88/15]
C <sub>14</sub> H <sub>32</sub> Si	dipropyldibutylsilane	44.0±0.8	(298)	C	[88/15]
C <sub>14</sub> H <sub>33</sub> NSi	N,N-dibutyl-1,1,1-triethylsilanamine	56.3±1.0	(298)	C	[17995-32-3] [91/6]
C <sub>14</sub> H <sub>33</sub> NSi	1,1,1-triethyl-N,N- <i>bis</i> (1-methylpropyl)silanamine	51.4±0.9	(298)	C	[133943-79-0] [91/6]
C <sub>14</sub> H <sub>33</sub> NSi	1,1,1-triethyl-N-octylsilanamine	59.1±1.0	(298)	C	[133943-81-4] [91/6]
C <sub>14</sub> H <sub>42</sub> O <sub>5</sub> Si <sub>6</sub>	tetradecamethyl hexasiloxane (449–545)	56.9	(464)	EB	[107-52-8] [86/4]
	(397–522)	56.6	(412)	A	[87/5][71/16]
C <sub>14</sub> H <sub>42</sub> O <sub>7</sub> Si <sub>7</sub>	tetradecamethyl cycloheptasiloxane (359–537)	58.6	(374)	A	[107-50-6] [87/5]
	(431–548)	60.6	(446)	EB	[86/4]
C <sub>15</sub> H <sub>34</sub> Si	propyltributylsilane	45.0±0.8	(298)	C	[994-78-5] [88/15]
C <sub>15</sub> H <sub>34</sub> Si	tripentylsilane	48.1±0.8	(298)	C	[6485-78-5] [88/15]
C <sub>15</sub> H <sub>34</sub> Si	triisopentylsilane	43.8±0.7	(298)	C	[17922-08-6] [88/15]
C <sub>15</sub> H <sub>34</sub> Si	dodecyltrimethylsilane (364–546)	62.0	(379)		[17908-09-7] [47/5]
C <sub>16</sub> H <sub>20</sub> O <sub>2</sub> Si	<i>bis</i> (2-methylphenoxy)dimethylsilane	63.6±0.8	(298)	C	[17964-48-6] [88/15]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>16</sub> H <sub>20</sub> O <sub>2</sub> Si	<i>bis</i> (3-methylphenoxy)dimethylsilane	61.5±0.8	(298)	C	[17964-47-5] [88/15]
C <sub>16</sub> H <sub>20</sub> O <sub>2</sub> Si	<i>bis</i> (4-methylphenoxy)dimethylsilane	65.3±0.9	(298)	C	[17964-49-7] [88/15]
C <sub>16</sub> H <sub>20</sub> O <sub>2</sub> Si	diethoxydiphenylsilane (385–569)	71.5	(399)		[2553-19-7] [47/5]
C <sub>16</sub> H <sub>22</sub> O <sub>3</sub> Si <sub>3</sub>	1,1,3,3-tetramethyl-5,5-diphenylcyclotrisiloxane (439–523)	66.9	(481)		[1693-51-2] [74/17]
C <sub>16</sub> H <sub>22</sub> O <sub>3</sub> Si <sub>3</sub>	<i>cis</i> 1,1,3,5-tetramethyl-3,5-diphenylcyclotrisiloxane (423–541)	66.0	(532)		[31751-60-7] [72/19]
C <sub>16</sub> H <sub>22</sub> O <sub>3</sub> Si <sub>3</sub>	<i>trans</i> 1,1,3,5-tetramethyl-3,5-diphenylcyclotrisiloxane (397–535)	66.4	(466)		[31751-59-4] [72/19]
C <sub>16</sub> H <sub>32</sub> O <sub>4</sub> Si <sub>4</sub>	6,12,18,24-tetraoxa-5,7,13,19-tetrasilatetraspiro[4,1,4,1,4,1,4,1]-tetracosane (452–583)	67.6	(467)	A	[177-49-1] [87/5]
C <sub>16</sub> H <sub>32</sub> O <sub>4</sub> Si <sub>4</sub>	tetra(silacyclopentyl)cyclotetrasiloxane (452–583)	69.5	(517)		[74/21]
C <sub>16</sub> H <sub>36</sub> O <sub>4</sub> Si	tetrabutoxysilane	52.0±1.0	(298)	C	[4766-57-8] [88/15]
	(333–479)	79.6	(348)	A	[87/5]
C <sub>16</sub> H <sub>40</sub> O <sub>4</sub> Si <sub>4</sub>	octaethyl cyclotetrasiloxane (420–574)	69.2	(435)	A	[1451-99-6] [87/5]
C <sub>16</sub> H <sub>46</sub> O <sub>7</sub> Si <sub>6</sub>	1,11-diethoxy-1,1,3,3,5,7,7,9,9,11,11-dodecamethylhexasiloxane (376–547)	66.9	(391)	A	[18143-15-2] [87/5]
C <sub>16</sub> H <sub>48</sub> O <sub>6</sub> Si <sub>7</sub>	hexadecamethylheptasiloxane (443–468)	63.8	(459)	EB	[541-01-5] [86/4]
	(443–551)	60.8	(458)	A	[87/5][71/16]
C <sub>16</sub> H <sub>48</sub> O <sub>8</sub> Si <sub>8</sub>	hexadecamethyl cyclooctasiloxane (378–563)	66.6	(391)	A	[556-68-3] [87/5]
	(454–576)	64.5	(469)	EB	[86/4]
C <sub>17</sub> H <sub>26</sub> O <sub>4</sub> Si <sub>4</sub>	hexamethyl(silaacenaphthenyl)cyclotetrasiloxane (466–548)	68.6	(507)		[74/21]
C <sub>17</sub> H <sub>32</sub> O <sub>2</sub> Si	3-methyl-3-[2-cyclohexylpropylperoxy]-1-trimethylsilyl-1-butyne (307–318)	74.2±2.0		ME	[99/23]
C <sub>17</sub> H <sub>38</sub> Si	tetradecyltrimethylsilane (393–573)	70.9	(408)		[47/5]
C <sub>18</sub> H <sub>28</sub> O <sub>4</sub> Si <sub>4</sub>	2,2,4,4,6,8-hexamethyl-6,8-diphenylcyclotetrasiloxane (459–576)	70.5	(474)	A	[18604-02-9] [87/5]
C <sub>18</sub> H <sub>40</sub> Si	trihexylsilane	51.0±0.7	(298)	C	[2929-52-4] [88/15]
C <sub>18</sub> H <sub>40</sub> Si	ethyldioctylsilane	47.3±0.7	(298)	C	[88/15]
C <sub>18</sub> H <sub>54</sub> O <sub>7</sub> Si <sub>8</sub>	octadecamethyl octasiloxane (378–563)	67.7	(393)	A	[556-69-4] [87/5]
	(464–586)	68.4	(479)	EB	[86/4]
C <sub>18</sub> H <sub>54</sub> O <sub>9</sub> Si <sub>9</sub>	octadecamethyl cyclononasiloxane (463–584)	67.9	(478)	A	[556-71-8] [87/5]
	(473–578)	68.0	(488)	EB	[86/4]
C <sub>19</sub> H <sub>18</sub> O <sub>3</sub> Si	methyltriphenoxysilane	71.5±0.9	(298)	C	[3439-97-2] [88/15]
C <sub>20</sub> H <sub>20</sub> OSi	ethoxytriphenylsilane (440–617)	89.7	(455)		[1516-80-9] [47/5]
C <sub>20</sub> H <sub>24</sub> ClOSi <sub>2</sub>	1,3-dimethyl-1,1,3-triphenyl-3-chlorodisiloxane (468–626)	69	(547)		[74/17]
C <sub>20</sub> H <sub>32</sub> O <sub>4</sub> Si <sub>4</sub>	tetrasilacyclopentylcyclotetrasiloxane (452–583)	69.5	(518)		[74/21]
C <sub>20</sub> H <sub>44</sub> O <sub>4</sub> Si	<i>tetrakis</i> (1-ethylpropoxy)silane (371–427)	89.2	(386)	A	[87/5]
C <sub>20</sub> H <sub>58</sub> O <sub>9</sub> Si <sub>8</sub>	1,15-diethoxy-1,1,3,3,5,5,7,7,9,9,1,1,13,13,15,15-hexadecamethyl-octasiloxane (406–585)	79.7	(421)	A	[87/5]
C <sub>20</sub> H <sub>60</sub> O <sub>8</sub> Si <sub>9</sub>	eicosamethylnonasiloxane (417–581)	85.9	(432)	A	[2652-13-3] [87/5]
C <sub>20</sub> H <sub>60</sub> O <sub>10</sub> Si <sub>10</sub>	eicosamethylcyclodecasiloxane (480–603)	71.3	(495)	A	[18772-36-6] [87/5]
C <sub>21</sub> H <sub>22</sub> Si	tribenzylsilane				[1747-92-8]



TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>21</sub> H <sub>24</sub> OSi <sub>2</sub>	(460–637)	81.9	(475)	A	[87/5]
	1,1,3-trimethyl-1,3,3-triphenyl disiloxane				[14920-93-5]
	(494–624)	80.0	(509)	A	[87/5]
C <sub>21</sub> H <sub>24</sub> O <sub>3</sub> Si <sub>3</sub>	(495–624)	64.4	(560)		[74/17]
	<i>trans</i> trimethyltriphenylcyclotrisiloxane				
C <sub>21</sub> H <sub>24</sub> O <sub>3</sub> Si <sub>3</sub>	(483–586)	76.1	(534)		[72/16]
	<i>cis</i> trimethyltriphenylcyclotrisiloxane				
C <sub>21</sub> H <sub>46</sub> Si	(473–551)	80.6	(512)		[72/16]
	triheptylsilane				[18753-02-1]
C <sub>21</sub> H <sub>46</sub> Si		57.4±0.8	(298)	C	[88/15]
	methylidodecylsilane				[51502-65-9]
C <sub>22</sub> H <sub>24</sub> O <sub>3</sub> Si		57.4±0.8	(298)	C	[88/15]
	methyltris(2-methylphenoxy)silane				[55893-94-2]
C <sub>22</sub> H <sub>24</sub> O <sub>3</sub> Si		68.2±0.9	(298)	C	[88/15]
	methyltris(3-methylphenoxy)silane				[55893-95-3]
C <sub>22</sub> H <sub>24</sub> O <sub>3</sub> Si		66.9±0.8	(298)	C	[88/15]
	methyltris(4-methylphenoxy)silane				[55893-96-4]
C <sub>22</sub> H <sub>40</sub> O <sub>4</sub> Si		70.3±0.9	(298)	C	[88/15]
	dimethyl-di-[3-methyl-3- <i>tert</i> -amylperoxy-1-butynyl]silane				
C <sub>22</sub> H <sub>48</sub> Si	(318–338)	92.0±1.6		ME	[99/23]
	ethyldodecylsilane				[51502-66-0]
C <sub>22</sub> H <sub>66</sub> O <sub>11</sub> Si <sub>11</sub>		58.7±0.8	(298)	C	[88/15]
	docosamethyl cycloundecasiloxane				[18766-38-6]
C <sub>23</sub> H <sub>30</sub> O <sub>3</sub> Si <sub>3</sub>	(496–620)	74.5	(511)	A	[87/5]
	1,1,1,3,5-pentamethyl-3,5,5-triphenyltrisiloxane				67102-99-2]
C <sub>24</sub> H <sub>22</sub> N <sub>2</sub> Si	(521–678)	69.8	(536)	A	[87/5]
	N,N,N'-tetraphenyl silane diamine				[22519-45-5]
C <sub>24</sub> H <sub>52</sub> O <sub>4</sub> Si	(410–473)	59.1	(425)	A	[87/5]
	(410–473)	57.3	(441)	T	[69/34]
	tetrahexyloxysilane				[7425-86-7]
C <sub>24</sub> H <sub>52</sub> Si	(454–573)	87.0	(469)	A	[87/5]
	trioctylsilane				[18765-09-8]
C <sub>24</sub> H <sub>72</sub> O <sub>12</sub> Si <sub>12</sub>		59.8±0.8	(298)	C	[88/15]
	tetracosamethyl cyclododecasiloxane				[18919-94-3]
C <sub>26</sub> H <sub>26</sub> OSi <sub>2</sub>	(508–636)	76.6	(523)	A	[87/5]
	1,3-dimethyl-1,1,3,3-tetraphenyldisiloxane				[807-28-3]
	(518–616)	93.3	(533)	A	[87/5]
C <sub>27</sub> H <sub>30</sub> O <sub>2</sub> Si	(518–685)	64.4	(602)		[74/17]
	3-methyl-3- <i>tert</i> -butylperoxy-1-triphenylsilyl-1-butyne				
	(378–398)	115.9±3.2		ME	[99/23]
C <sub>27</sub> H <sub>58</sub> Si					[51502-67-1]
	trinonylsilane				
C <sub>28</sub> H <sub>28</sub> O <sub>4</sub> Si		61.8±0.8	(298)	C	[88/15]
	<i>tetrakis</i> (2-methylphenoxy)silane				[16714-40-2]
C <sub>28</sub> H <sub>28</sub> O <sub>4</sub> Si		76.2±1.0	(298)	C	[88/15]
	<i>tetrakis</i> (3-methylphenoxy)silane				[16714-54-8]
C <sub>28</sub> H <sub>28</sub> O <sub>4</sub> Si		73.6±0.9	(298)	C	[88/15]
	<i>tetrakis</i> (4-methylphenoxy)silane				[16714-41-3]
C <sub>28</sub> H <sub>32</sub> O <sub>2</sub> Si		97.1±1.0	(298)	C	[88/15]
	3-methyl-3- <i>tert</i> -amylperoxy-1-triphenylsilyl-1-butyne				
C <sub>28</sub> H <sub>32</sub> O <sub>2</sub> Si <sub>3</sub>	(378–393)	120.3±5.8		ME	[99/23]
	1,1,1,3-tetramethyl-3,5,5,5-tetraphenyltrisiloxane				[67103-00-8]
C <sub>28</sub> H <sub>32</sub> O <sub>2</sub> Si <sub>3</sub>	(549–678)	82.6	(564)	A	[87/5]
	1,1,3,5-tetramethyl-1,3,5,5-tetraphenyltrisiloxane				[67142-05-6]
C <sub>28</sub> H <sub>32</sub> O <sub>2</sub> Si <sub>3</sub>	(566–666)	90.9	(581)	A	[87/5]
	1,3,3,5-tetramethyl-1,1,5,5-tetraphenyltrisiloxane				[3982-82-9]
C <sub>28</sub> H <sub>32</sub> O <sub>2</sub> Si <sub>3</sub>	(544–686)	88.3	(559)	A	[87/5]
	3-methyl-3- <i>tert</i> -hexylperoxy-1-triphenylsilyl-1-butyne				
C <sub>29</sub> H <sub>34</sub> O <sub>2</sub> Si	(383–398)	126.3±3.0		ME	[99/23]
	1,1,1,3,5,5,5-hepta( $\gamma$ -trifluoropropyl)-3- <i>tris</i> ( $\gamma$ -trifluoropropyl)siloxytrisiloxane				
C <sub>30</sub> H <sub>40</sub> F <sub>30</sub> O <sub>3</sub> Si <sub>4</sub>	(502–652)	64.3	(671)		[74/34]
	<i>tris</i> (decyl)silane				[18765-73-6]
C <sub>30</sub> H <sub>64</sub> Si		65.3±0.8	(298)	C	[88/15]
	1,1,3-trimethyl-1,3,5,5,5-pentaphenyltrisiloxane				[67103-01-9]
C <sub>33</sub> H <sub>34</sub> O <sub>2</sub> Si <sub>3</sub>	(603–711)	91.3	(618)	A	[87/5]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference	
C <sub>33</sub> H <sub>34</sub> O <sub>2</sub> Si <sub>3</sub>	1,3,5-trimethyl-1,1,3,5,5-pentaphenyltrisiloxane (575–625)	87.3	(590)	A	[3390-61-2] [87/5]	
C <sub>33</sub> H <sub>34</sub> O <sub>4</sub> Si <sub>4</sub>	1,3,5-trimethyl-1,3,5,7,7-pentaphenylcyclotetrasiloxane (523–676)	86.9	(600)		[74/17]	
AsH <sub>9</sub> Si <sub>3</sub>	trisilylarsine (258–287)	41.0	(272)		[62/34]	
Br <sub>3</sub> HSi	tribromosilane (273–393)	34.8	(333)		[7789-57-3] [34/4]	
Cl <sub>2</sub> H <sub>2</sub> Si	dichlorosilane (290–350)	22.2±0.7			[4109-96-0] [86/14]	
Cl <sub>3</sub> HSi	trichlorosilane (303–325)	24.9	(314)		[10025-78-2] [67/24]	
Cl <sub>4</sub> Si	(275–305)	27.2	(290)	I	[54/1]	
	silicon tetrachloride (298–313)	29.9	(305)		[10026-04-7] [73/29]	
	(273–326)	30.4	(288)		[64/8]	
	(275–330)	30.2	(290)	I	[54/1]	
FH <sub>3</sub> Si	(273–333)	30.1	(303)		[36/4]	
	fluorosilane (145–167)	18.5	(156)		[13537-33-2] [44/9]	
FH <sub>5</sub> Si <sub>2</sub>	disilanyl fluoride (178–227)	26.3	(202)	T	[63/30]	
F <sub>2</sub> H <sub>2</sub> Si	difluorosilane (151–167)	19.9	(159)		[13824-36-7] [44/9]	
F <sub>2</sub> H <sub>4</sub> NPSi	silylamino difluorophosphine (200–273)	34.3	(236)		[72/39]	
F <sub>3</sub> ISi	trifluoroiodosilane (139–227)	21.3	(183)		[73/35]	
F <sub>3</sub> HSi	trifluorosilane (156–168)	20.1	(162)		[13465-71-9] [44/9]	
H <sub>5</sub> ISi <sub>2</sub>	disilanyl iodide (274–363)	33.9	(318)		[60/6]	
H <sub>7</sub> NSi <sub>2</sub>	disilazane (177–250)	23.4	(213)	SG	[69/35]	
H <sub>9</sub> PSi <sub>3</sub>	trisilylphosphine (243–284)	36.4	(263)		[62/35]	
H <sub>9</sub> SbSi <sub>3</sub>	trisilylstibine	32.0			[63/44]	
H <sub>10</sub> Si <sub>4</sub>	tetrasilane (273–369)	35.6		T	[46/14]	
H <sub>10</sub> OSi <sub>4</sub>	bis(disilanyl) ether (273–363)	36.4	(318)		[60/6]	
<b>Sn</b>						
C <sub>3</sub> H <sub>9</sub> BrSn	trimethyltin bromide	47.3±4.2			[57/22][82/15]	
C <sub>3</sub> H <sub>9</sub> ISn	trimethyltin iodide	48.1±4.2			[57/22][82/15]	
C <sub>4</sub> H <sub>9</sub> F <sub>3</sub> Sn	(trifluoromethyl)trimethyltin (276–323)	37.5	(300)	T	[60/11]	
C <sub>4</sub> H <sub>12</sub> Sn	tetramethyltin (273–350)	32.6±0.2	(311)		[594-27-4] [01/9]	
	(313–393)	31.3		GC	[92/21]	
		31.1±0.1	(298)	C	[80/4]	
		32.8±0.1	(298)		[70/1]	
		33.1±1.3			[63/36][82/15]	
		30.5	(298)		[36/1]	
		(273–308)	33.4	(290)	I	[30/2]
		(308–355)	31.6	(331)	I	[30/2]
C <sub>5</sub> H <sub>9</sub> F <sub>5</sub> Sn	(298–308)	33.1	(298)	I	[30/2]	
	(pentafluoroethyl)trimethyltin (295–329)	31.6	(303)		[29/6]	
C <sub>5</sub> H <sub>12</sub> Sn	trimethylvinyltin	35.6	(312)	T	[60/11]	
		37.2±2.1			[59/16][82/15]	

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>5</sub> H <sub>14</sub> Sn	ethyl trimethyltin	37.7±1.7			[3531-44-0] [63/36][82/15]
	(243–381)	38.4	(258)		[47/5]
	(273–336)	37.0	(304)	I	[30/2]
	(336–384)	34.9	(360)	I	[30/2]
C <sub>6</sub> H <sub>16</sub> Sn	trimethylpropyltin				[3531-45-1]
	(261–405)	43.8	(276)		[47/5]
	(286–328)	41.4	(307)	I	[30/2]
C <sub>6</sub> H <sub>16</sub> Sn	(328–405)	38.0	(366)	I	[30/2]
	trimethylisopropyltin	40.6±2.1			[66/24][82/15]
C <sub>6</sub> H <sub>18</sub> Sn <sub>2</sub>	hexamethyldistannane	50.2±4.2			[57/22][82/15]
C <sub>7</sub> H <sub>18</sub> OSn	triethylmethoxystannane				[1067-21-6]
	(312–435)	49.9	(273)	MM	[01/5]
C <sub>7</sub> H <sub>18</sub> Sn	(312–435)	48.7	(298)	MM	[01/5]
	<i>tert</i> -butyltrimethyltin	54.0±4.2			[66/24][82/15]
C <sub>8</sub> H <sub>12</sub> Sn	tetravinyltin				[1112-55-6]
	(313–393)	40.5		GC	[92/21]
C <sub>8</sub> H <sub>15</sub> F <sub>5</sub> Sn	(pentafluoroethyl)triethyltin	39.2	(323)	T	[60/11]
C <sub>8</sub> H <sub>20</sub> Sn	tetraethyltin				[597-64-8]
	(293–455)	46.6±0.6	(374)		[01/9]
	(313–393)	42.4		GC	[92/21]
		50.6±0.2	(298)	C	[80/4]
C <sub>9</sub> H <sub>14</sub> Sn		51.0±2.1			[63/36][82/15]
	phenyltrimethyltin	52.3±4.2			[934-56-5]
C <sub>10</sub> H <sub>16</sub> Sn					[59/16][82/15]
	benzyltrimethyltin	56.5±4.2			[4314-94-7]
C <sub>10</sub> H <sub>24</sub> O <sub>2</sub> Sn					[59/16][82/15]
	triethyltin <i>tert</i> -butylperoxide	48.8±2.1			[71/29][82/15]
C <sub>10</sub> H <sub>25</sub> N <sub>2</sub> Sn					[71/30][82/15]
	(N,N-diethylamino)triethyltin	50.2±4.2			[71/30][82/15]
C <sub>12</sub> H <sub>27</sub> BrSn	tributyltin bromide	83.7±12.6			[59/16][82/15]
C <sub>12</sub> H <sub>20</sub> Sn					[7393-43-3]
	tetraallyltin	52.0		GC	[92/21]
C <sub>12</sub> H <sub>28</sub> Sn					[2176-98-9]
	tetrapropyl tin	55.0±0.7	(400)		[01/9]
	(343–457)	60.8		GC	[92/21]
	(333–393)	52.5	(376)	A	[87/5]
	(361–470)	65.4±2.5	(298)	C	[80/4]
C <sub>12</sub> H <sub>28</sub> Sn		66.9±2.1			[63/36][82/15]
		60.7			[35/7]
					[2949-42-0]
	tetraisopropyl tin	48.0±0.7	(392)		[01/9]
C <sub>12</sub> H <sub>28</sub> Sn	(342–441)	56.4		GC	[92/21]
	(333–393)	64.9±4.2			[66/24][82/15]
C <sub>15</sub> H <sub>26</sub> OSn	<i>bis</i> (triethyltin)oxide	52.3±2.1			[71/29][82/15]
C <sub>15</sub> H <sub>26</sub> O <sub>2</sub> Sn					[71/29][82/15]
	triethyltin dimethylphenylperoxide	56.5±2.1			[71/29][82/15]
C <sub>12</sub> H <sub>36</sub> Sn <sub>2</sub>					[66/25][82/15]
	hexaethyldistannane	62.8±4.2			[1461-25-2]
C <sub>16</sub> H <sub>36</sub> Sn					[01/9]
	tetrabutyl tin	67.8±0.5	(425)		[63/36][82/15]
	(389–462)	82.8±2.1			[3531-43-9]
C <sub>16</sub> H <sub>36</sub> Sn					[01/9]
	tetraisobutyl tin	53.6±1.1	(421)		[01/9]
SnI <sub>4</sub>					[7790-47-8]
	stannic iodide	57.2	(423)		[36/7]
Sm					

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>33</sub> H <sub>57</sub> O <sub>6</sub> Sm	<i>tris</i> (2,2,6,6-tetramethylheptane-3,5-dionato)samarium(III) (468–500)	93.0	BG		[15492-50-9] [69/28]
<b>Ta</b>					
C <sub>10</sub> H <sub>25</sub> O <sub>5</sub> Ta	pentaethyltantalate (388–424)	72.6	(403)	A	[87/5]
<b>Tb</b>					
C <sub>33</sub> H <sub>57</sub> O <sub>6</sub> Tb	<i>tris</i> (2,2,6,6-tetramethylheptane-3,5-dionato)terbium(III) (454–500)	87.0		BG	[15492-51-0] [69/28]
<b>Te</b>					
C <sub>2</sub> H <sub>6</sub> Te	dimethyl telluride (298–367)	34.4	(313)		[593-80-6] [99/16]
	(273–372)	35.6±0.1	(323)		[97/30][96/29]
	(267–369)	36.9	(282)	BG	[96/30]
	(267–369)	36.1±1.0	(298)	BG	[96/30]
		37.4±0.7	(298)	C	[89/12]
		36.0±2.1			[88/1]
C <sub>4</sub> H <sub>6</sub> Te	divinyl telluride	44.8±0.8	(298)	C	[63000-06-6] [89/12]
		38.1±2.1			[88/1]
C <sub>4</sub> H <sub>10</sub> Te	diethyl telluride (295–411)	41.8	(310)		[627-54-3] [99/16]
	(273–415)	41.6±0.2	(344)		[96/29]
		41.6±0.8	(298)	C	[89/12]
C <sub>6</sub> H <sub>14</sub> Te	dipropyl telluride (298–434)	45.5±0.3	(366)		[64501-17-3] [96/29]
		46.5±0.7	(298)	C	[89/12]
C <sub>6</sub> H <sub>14</sub> Te	diisopropyl telluride (298–399)	40.4±0.1	(349)		[96/29]
C <sub>6</sub> H <sub>14</sub> Te <sub>2</sub>	dipropyl ditelluride	52.7±1.0	(298)	C	[79971-42-9] [89/12]
C <sub>8</sub> H <sub>18</sub> Te	dibutyl telluride (303–423)	53.4±0.1	(358)		[38788-38-4] [96/29]
		51.0±1.0	(298)	C	[89/12]
C <sub>8</sub> H <sub>18</sub> Te	diisobutyl telluride (303–410)	47.6±0.1	(356)		[96/29]
C <sub>8</sub> H <sub>18</sub> Te	di-sec-butyl telluride (303–372)	49.6±0.9	(338)		[96/29]
C <sub>8</sub> H <sub>18</sub> Te <sub>2</sub>	dibutyl ditelluride	57.3±1.0	(298)	C	[77129-69-2] [89/12]
C <sub>10</sub> H <sub>22</sub> Te	dipentyl telluride (343–403)	59.5±0.8	(373)		[96/29]
C <sub>10</sub> H <sub>22</sub> Te	diisopentyl telluride (343–403)	51.9±0.7	(373)		[96/29]
TeCl <sub>4</sub>	tellurium tetrachloride (506–660)	77.0	(583)	GS	[30/7]
<b>Ti</b>					
C <sub>8</sub> H <sub>24</sub> N <sub>4</sub> Ti	titanium tetradimethylamide (353–418)	53.8±3.0	(383)		[3275-24-9] [84/33][01/23]
C <sub>12</sub> H <sub>28</sub> O <sub>4</sub> Ti	tetraisopropyl titanate (336–459)	62.3	(351)	A	[87/5]
C <sub>12</sub> H <sub>28</sub> O <sub>4</sub> Ti	tetrapropyl titanate (411–479)	111.9	(426)	A	[87/5]
C <sub>16</sub> H <sub>36</sub> O <sub>4</sub> Ti	tetrabutoxy titanium (462–564)	89.7	(477)	A	[87/5]
	(443–493)	85.0±3.1	(458)	A	[87/5][78/13]
C <sub>16</sub> H <sub>36</sub> O <sub>4</sub> Ti	tetraisobutoxy titanium (436–529)	77.4	(451)	A	[87/5]
C <sub>16</sub> H <sub>36</sub> O <sub>4</sub> Ti	tetra-sec-butoxy titanium (378–414)	76.8	(393)	A	[87/5]
	(370–476)	67.1	(385)	A	[87/5]
C <sub>16</sub> H <sub>36</sub> O <sub>4</sub> Ti	tetra-tert-butoxy titanium (386–486)	55.9	(401)	A	[87/5]
	(322–388)	62.6	(337)	SG	[58/13][84/9]
		66.1±3.3	(298)	SG	[58/13][66/20]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>16</sub> H <sub>36</sub> O <sub>4</sub> Ti	titanium (IV) tetrabutylate (323–418)	47.6±0.7	(370)		[02/39]
C <sub>16</sub> H <sub>40</sub> N <sub>4</sub> Ti	titanium (IV) <i>tetrakis</i> (diethylamide) (423–463)	94.6±4.0	(443)		[01/23]
C <sub>20</sub> H <sub>44</sub> O <sub>4</sub> Ti	<i>tetrakis</i> (1,1-dimethylpropoxy)titanium (397–430)	67.8	(412)	A	[87/5]
	(361–423)	71.0	(376)	SG	[58/13][84/9]
		77.4±3.8	(298)	SG	[58/13][66/20]
C <sub>20</sub> H <sub>44</sub> O <sub>4</sub> Ti	<i>tetrakis</i> (1-ethylpropoxy)titanium (385–445)	103.6	(400)	A	[87/5]
C <sub>20</sub> H <sub>44</sub> O <sub>4</sub> Ti	<i>tetrakis</i> (3-methylbutoxy)titanium (407–493)	119.7	(422)	A	[87/5]
C <sub>20</sub> H <sub>44</sub> O <sub>4</sub> Ti	tetrapentoxytitanium (484–558)	103.4	(499)	A	[87/5]
C <sub>20</sub> H <sub>44</sub> O <sub>4</sub> Ti	tetra- <i>tert</i> -pentoxytitanium (361–423)	71.1	(376)	A	[87/5]
C <sub>24</sub> H <sub>52</sub> O <sub>4</sub> Ti	<i>tetrakis</i> (1,1-dimethylbutoxy)titanium (414–454)	94.6	(429)	A	[87/5]
C <sub>24</sub> H <sub>52</sub> O <sub>4</sub> Ti	<i>tetrakis</i> (1-methyl-ethylpropoxy)titanium (412–460)	86.2	(427)	A	[87/5]
C <sub>24</sub> H <sub>52</sub> O <sub>4</sub> Ti	tetrahexyloxy titanium (520–581)	94.8	(535)	A	[87/5]
Cl <sub>4</sub> Ti	titanium (IV) tetrachloride (250–423)	37.5	(265)		[7550-45-0]
	(363–415)	37.9	(378)		[66/29]
	(313–357)	39.8	(335)	I	[59/29]
I <sub>4</sub> Ti	titanium (IV) tetraiodide (433–643)	58.5	(538)		[53/19]
					[7720-83-4]
					[47/15]
<b>Tl</b>					
C <sub>3</sub> H <sub>9</sub> Tl	trimethylthallium (311–360)	40.6	(335)	I, MM	[3003-15-4]
	(328–349)	37.9	(338)	I	[65/1]
					[46/6]
C <sub>6</sub> H <sub>15</sub> Tl	triethylthallium (282–465)	41.9	(297)		[687-82-1]
					[47/5]
<b>Tm</b>					
C <sub>33</sub> H <sub>57</sub> O <sub>6</sub> Tm	<i>tris</i> (2,2,6,6-tetramethylheptane-3,5-dionato)thulium(III) (446–490)	84.1		BG	[15631-58-0]
					[69/28]
<b>U</b>					
UF <sub>6</sub>	uranium hexafluoride (337–389)	29.5	(352)		[7783-81-5]
					[53/18]
<b>V</b>					
C <sub>12</sub> H <sub>17</sub> O <sub>4</sub> V	vanadic acid, tributyl ester (395–435)	90.2	(410)	A	[1801-76-9]
					[87/5]
C <sub>12</sub> H <sub>17</sub> O <sub>4</sub> V	vanadic acid, triisobutyl ester (383–418)	82.2	(398)	A	[19120-62-8]
					[87/5]
C <sub>12</sub> H <sub>17</sub> O <sub>4</sub> V	vanadic acid, tri- <i>sec</i> -butyl ester (378–413)	82.4	(393)	A	[17838-66-3]
					[87/5]
C <sub>12</sub> H <sub>17</sub> O <sub>4</sub> V	vanadic acid, tri- <i>tert</i> -butyl ester (348–385)	714	(363)	A	[1686-24-4]
					[87/5]
<b>W</b>					
WF <sub>6</sub>	tungsten hexafluoride (290–343)	25.8	(316)		[7783-82-6]
					[68/27]
<b>Xe</b>					
XeF <sub>2</sub>	xenon difluoride (553–663)	53.5	(568)		[13709-36-9]
					[83/15]
XeF <sub>4</sub>	xenon tetrafluoride (553–663)	60.0	(568)		[13709-61-0]
					[83/15]
<b>Yb</b>					
C <sub>33</sub> H <sub>57</sub> O <sub>6</sub> Yb	<i>tris</i> (2,2,6,6-tetramethylheptane-3,5-dionato)ytterbium(III) (444–494)	82.8		BG	[15492-52-1]
					[69/28]
<b>Zn</b>					
C <sub>2</sub> H <sub>6</sub> Zn	dimethyl zinc (273–313)	30.4±0.1 29.5±0.4			[97/30]
					[49/21][82/15]

TABLE 7. Enthalpies of vaporization of select organo-metallic and inorganic compounds, 1880–2002—Continued

Molecular formula	Compound (Temperature range/K)	$\Delta_{\text{vap}}H_m$ (kJ mol <sup>-1</sup> )	Mean temperature ( $T_m$ /K)	Method	CAS registry number Reference
C <sub>4</sub> H <sub>10</sub> Zn	(248–318) diethyl zinc	29.9	(283)	BG	[46/13] [557-20-0]
		37.9	(298)		[83/1]
		40.2±2.1			[49/21][82/15]
C <sub>6</sub> H <sub>14</sub> Zn	(250–391) dipropyl zinc	39.9	(265)	BG	[47/5] [46/13]
		40.2			[628-91-1]
		43±2			[02/43]
		42.1±0.4	(341)		[84/34]
C <sub>6</sub> H <sub>14</sub> Zn	(313–370) diisopropyl zinc	45.6±2.5		BG	[49/21][82/15]
		39.5			[49/25]
		40.3			[46/13]
		41.8±0.5	(324)		[625-81-0] [84/34]
C <sub>8</sub> H <sub>18</sub> Zn	(310–338) dibutyl zinc	47.4	(324)		[46/4]
		50.7±0.3	(342)		[1119-90-0] [84/13]
		54.4±3.3			[49/21][82/15]
C <sub>8</sub> H <sub>18</sub> Zn	(305–379) di-sec-butyl zinc	45.3		BG	[49/25]
		42.9			[46/13]
		40.9±0.2	(330)		[7446-94-8] [84/13]
		44.6±0.2	(330)		[84/13]
C <sub>8</sub> H <sub>18</sub> Zn	diisobutyl zinc (288–372)				[7446-94-8]
C <sub>8</sub> H <sub>18</sub> Zn	di-tert-butyl zinc (300–322)	49.3±0.8	(311)		[84/13]
C <sub>10</sub> H <sub>22</sub> Zn	dipentyl zinc	48.6			[14402-93-8] [49/25]
C <sub>12</sub> H <sub>26</sub> Zn	dihexyl zinc	56.2			[13822-55-4] [49/25]
C <sub>14</sub> H <sub>30</sub> Zn	diheptyl zinc	62.3			[14402-95-0] [49/25]
Cl <sub>2</sub> Zn	zinc chloride (695–826)	134.5	(760)		[7646-85-7] [58/28]
<b>Zr</b>					
C <sub>16</sub> H <sub>36</sub> O <sub>4</sub> Zr	tetra-tert-butoxy zirconium (374–587)	56.6	(389)	A	[87/5]
C <sub>20</sub> H <sub>44</sub> O <sub>4</sub> Zr	tetrakis(1,1-dimethylpropoxy)zirconium (392–426)	68.0	(407)	A	[87/5]
C <sub>20</sub> H <sub>44</sub> O <sub>4</sub> Zr	tetra-tert-pentoxozirconium (361–435)	74.1	(361)	A	[87/5]
C <sub>24</sub> H <sub>52</sub> O <sub>4</sub> Zr	tetrakis(1,1-dimethylbutoxy)zirconium (406–449)	93.3	(421)	A	[87/5]
C <sub>24</sub> H <sub>52</sub> O <sub>4</sub> Zr	tetrakis(1-methyl-1-ethylpropoxy)zirconium (423–460)	91.4	(438)	A	[87/5]

TABLE 8. References to Tables 6 and 7

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## 9. References for Introductory Material

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