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A. L. Gosman,* R. D. McCarty,** and J. G. Hust**

*Wichita State University, Wichita, Kansas, and
Cryogenics Division
Institute for Basic Standards
National Bureau of Standards
Boulder, Colorado 80302

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Foreword

The National Standard Reference Data System is a Government-wide effort to provide for the technical community of the United States effective access to the quantitative data of physical science, critically evaluated and compiled for convenience, and readily accessible through a variety of distribution channels. The System was established in 1963 by action of the President's Office of Science and Technology and the Federal Council for Science and Technology.

The responsibility to administer the System was assigned to the National Bureau of Standards and an Office of Standard Reference Data was set up at the Bureau for this purpose. Since 1963, this Office has developed systematic plans for meeting high-priority needs for reliable reference data. It has undertaken to coordinate and integrate existing data evaluation and compilation activities (primarily those under sponsorship of Federal agencies) into a comprehensive program, supplementing and expanding technical coverage when necessary, establishing and maintaining standards for the output of the participating groups, and providing mechanisms for the dissemination of the output as required.

The System now comprises a complex of data centers and other activities, carried on in Government agencies, academic institutions, and nongovernmental laboratories. The independent operational status of existing critical data projects is maintained and encouraged. Data centers that are components of the NSRDS produce compilations of critically evaluated data, critical reviews of the state of quantitative knowledge in specialized areas, and computations of useful functions derived from standard reference data. In addition, the centers and projects establish criteria for evaluation and compilation of data and make recommendations on needed modifications or extensions of experimental techniques.

Data publications of the NSRDS take a variety of physical forms, including books, pamphlets, loose-leaf sheets and computer tapes. While most of the compilations have been issued by the Government Printing Office, several have appeared in scientific journals. Under some circumstances, private publishing houses are regarded as appropriate primary dissemination mechanisms.

The technical scope of the NSRDS is indicated by the principal categories of data compilation projects now active or being planned: nuclear properties, atomic and molecular properties, solid state properties, thermodynamic and transport properties, chemical kinetics, colloid and surface properties, and mechanical properties.

An important aspect of the NSRDS is the advice and planning assistance which the National Research Council of the National Academy of Sciences–National Academy of Engineering provides. These services are organized under an overall Review Committee which considers the program as a whole and makes recommendations on policy, long-term planning, and international collaboration. Advisory Panels, each concerned with a single technical area, meet regularly to examine major portions of the program, assign relative priorities, and identify specific key problems in need of further attention. For selected specific topics, the Advisory Panels sponsor subpanels which make detailed studies of users' needs, the present state of knowledge, and existing data resources as a basis for recommending one or more data compilation activities. This assembly of advisory services contributes greatly to the guidance of NSRDS activities.

The NSRDS–NBS series of publications is intended primarily to include evaluated reference data and critical reviews of long-term interest to the scientific and technical community.

A. V. ASTIN, *Director.*

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Nomenclature

P – absolute pressure
T – absolute temperature
V – specific volume
ρ – density $= 1/V$
R – universal gas constant
Z – compressibility factor $= PV/RT$
U – specific internal energy
H – specific enthalpy
S – specific entropy
C_p – specific heat capacity at constant pressure
C_v – specific heat capacity at constant volume
μ – Joule-Thomson coefficient
B – second virial coefficient
G – Gibbs function
A – Helmholtz function
$\bar{A}$ – residual work content
E – potential energy
r – distance of molecular separation
σ – molecular separation for $E = 0$
ϵ – Maximum energy of attraction
k – Boltzmann constant
N – Avogadro constant
r^* – reduced distance $= r/\sigma$
T^* – reduced temperature $= kT/\epsilon$
b_0 – reducing parameter $= 2\pi N\sigma^3/3$
B^* – reduced second virial coefficient $= B/b_0$
ρ_0 – distance between cores for minimum energy
h – Planck constant
a – radius of core
m – mass of molecule
$\bar{\Lambda}^*$ – de Broglie wave length $= h/(\sigma\sqrt{m\epsilon})$

Superscripts:
o – ideal gas property
$*$ – real or ideal gas property at very low pressures (P approaching 0) except as noted in symbols above
l – saturated liquid property
g – saturated vapor property

Subscripts:
c – critical point
o – reference state property
sat – property at saturation
t – triple point
expr – experimentally determined property value
calc – calculated property value
melt – melting line property

Subscripts on partial derivatives and integrals indicate which property is being held constant.

Conversions and Physical Constants

1 thermochemical calorie = 4.184 joules
0° C = 273.15 K (Triple point of water = 273.16 K)
Gas constant, $R = 0.0820535$ liter-atm/g-mole K
Planck constant, $h = 6.6256 \times 10^{-34}$ joule-sec
Boltzmann constant, $k = 1.38054 \times 10^{-23}$ joule/K
Avogadro constant, $N = 6.02252 \times 10^{23}$ per mole
Molecular weight of argon = 39.948g/g-mole (based on the carbon-12 scale where the isotope $C^{12} = 12.000$. . .).

Fixed Points for Argon

Critical pressure = 48.34* atmospheres
Critical density = 300.4* Amagat = 13.41 g-mole/liter
Critical temperature = 150.86* K
Normal boiling point = 87.280 ± 0.015** K
Triple point temperature = 83.80** K
Triple point pressure = 0.68005** atmospheres.

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* These fixed points are those listed by Michels et al. [1]. Some recent investigations indicate the critical temperature and pressure may be in error. However, these values appear to be the best estimate available at this writing. In reference [1] the Amagat unit of density is given as 4.4647×10^{-5} moles/cm³, based on the chemical scale. In this work the physical scale is used, resulting in an Amagat density unit of 4.4659×10^{-5} moles/cm³.

** These fixed points are those listed by Ziegler et al. [2]. The value of the normal boiling point calculated by the vapor pressure equation developed in this work agrees with that listed by Ziegler [2]. The value of the triple point temperature calculated by the vapor pressure equation developed in this work deviates from Ziegler's reported value by 0.0045 percent.

Thermodynamic Properties of Argon from the Triple Point to 300 K at Pressures to 1000 Atmospheres

A. L. Gosman, R. D. McCarty, and J. G. Hust

Tabular values of density, internal energy, enthalpy, and entropy of liquid and gaseous argon are presented for temperatures from 83.8 to 300 K at pressures of 0.01 to 1000 atmospheres. Diagrams of specific heats, compressibility factor, and entropy are included. The properties presented are calculated from an equation of state which was fitted to experimental P–ρ–T data from the world literature. Extensive comparisons were made between the equation of state and the experimental data, and deviation plots are presented. The second virial coefficient and Joule-Thomson inversion curve were also calculated and comparisons made with values from other sources. A vapor pressure equation which covers the range from the triple point to the critical point is also given.

Key Words: Argon; compressibility factor; enthalpy; entropy; equation of state; internal energy; Joule-Thomson coefficient; P–V–T; specific heat; vapor pressure; virial coefficient.

1. Introduction

In recent years technical interest in pure argon has greatly accelerated. This accelerated interest has been evidenced by a demand which has more than sextupled in 12 years. United States production has continued to increase from less than 200,000,000 cubic feet per year in 1953 to almost 1,300,000,000 cubic feet in 1965, with about 80 percent being shipped in liquid form [3].[1]

In addition, scientific interest in argon has arisen because of its characteristically "ideal" structural makeup. That is, argon is monatomic, with the relatively uncomplicated interatomic forces being approximated by spherically symmetric, nonpolar models. In addition, the quantum effects on argon are relatively small. Although helium and neon might be considered to be more "ideal" fluids from the standpoint of simple models, the quantum effects are relatively large for these two fluids as compared to argon. For these reasons argon might be expected to permit a more direct classical investigation and experimental verification of the theoretical model predictions.

In view of the increased activity in cryogenic engineering and physics, it was apparent that a set of consistent thermodynamic properties, over a relatively large region of the thermodynamic surface, was needed. Although many investigators had published data for the thermodynamic properties of argon, each tabulation was, in general, limited to the property range of interest of the specific investigator, and large gaps in the data existed. In addition, where the ranges of data did overlap, there was a substantial degree of inconsistency in some instances. For these reasons, this laboratory undertook the program of making a critical analysis of the thermodynamic properties of argon in the cryogenic temperature range, including the low temperature—high density region.

In recent years, much of the technical design and synthesis has been done with the aid of high speed digital computers. Thus the need for an analytical equation of state has become quite significant when compared with the use of tables and charts of thermodynamic properties. Many equations of state have been proposed in the literature, each with its own peculiar strengths and weaknesses. Some of these equations represented the data in certain regions of the thermodynamic surface, but were quite inadequate in other regions of the surface. Therefore, the need was established for a single equation of state which could accurately and consistently represent the data for both the liquid and vapor phases with a consistent transition from the low temperature—high density region to the low density region.

In the case of argon, it is difficult to assess the general overall adequacy of an equation of state in terms of deviations from the experimental P-V-T surface. That is, due to the inconsistency of some of the overlapping experimental data sources, there is no single experimental P-V-T surface which can be used as a reference. Also, the significance of the deviations is wholly dependent upon the variable chosen for the comparison and the specific region of the thermodynamic surface which is being studied. In certain regions of the surface,

[1] Figures in brackets indicate the literature references (sec. 17).

large pressure deviations are caused by insignificant density errors, while in other regions the reverse is true. In general, the equation of state presented in section 7 represents the different sources of experimental data to within the accuracy of the data, except at the higher temperatures on the coexistence boundary and the critical region where the deviations are, in a few cases, greater than the accuracy of the data. Numerous deviation plots are presented (sec. 8) in a manner which permits the comparison of the equation of state with each of the experimental data sources over the various regions of the thermodynamic surface.

As a part of the critical analysis, it was deemed necessary to develop a vapor pressure equation which would accurately represent the experimental vapor pressure data from the triple point to the critical point. This vapor pressure equation could then be used, in conjunction with the equation of state, to calculate some of the derived thermodynamic properties such as enthalpy, entropy, etc.

Thus it was concluded that a critical analysis of thermodynamic properties of argon was to be made for temperatures to about 300 K and for pressures to about 1000 atm wherever the experimental data permitted this pressure range.

2. Survey of the Literature

A comprehensive search of the literature resulted in a bibliography of about 425 references. The temperatures which were included in this search covered the range from 0 to 300 K. In addition to manual-reviewing techniques, the data retrieval personnel and the computerized search techniques of the Cryogenic Data Center of the National Bureau of Standards at Boulder, Colo. were utilized. As a result, a bibliography on the thermophysical properties of argon [4] was prepared and published in 1964. The literature search was continually updated so that current data were rapidly assimilated.

From this literature search, the most appropriate *P-V-T* data, vapor pressure data, coexistence density data, and fixed point data were selected for consideration and evaluation. In addition, virial coefficient data, Joule-Thomson data, specific heat data, and information on equations of state were acquired and considered.

Although many equations of state were presented in the literature, none of these equations appeared to have been developed to adequately represent the data for argon for temperatures from below the normal boiling point to twice the critical temperature for the gaseous, dense gas, and liquid regions. Hirschfelder et al. [5] developed a generalized equation of state which arbitrarily divided the *P-V-T* surface into three regions, namely, gas, dense gas, and liquid regions. For these three regions, Hirschfelder et al. [5] developed three equations in such a manner that discontinuities at the junction of these regions were avoided.

Appearing in the literature were other techniques for representing the *P-V-T* data. For some fluids, where perhaps one source of highly precise data were available, the *P-V-T* data could be represented by polynomials along isotherms or polynomials along isochores. One such isothermal representation is the virial equation of state.

The virial equation of state is based on fundamental grounds in that it can be derived from fundamental statistical mechanics. Furthermore, in principle, this equation of state depends upon a very small number of parameters in that once one characterizes the potential function (by assigning values to its parameters) all virial coefficients can be calculated. In practice, however, only the second virial coefficient has been calculated properly. The third virial has been calculated in the approximation where nonadditivity is neglected for a small number of functions. All higher virials have really not been calculated except for the fourth and fifth virials for the hard sphere and (12–6) potentials. Thus, in actual practice, a virial equation of state is, in effect, an equation of state with a number of parameters equal to the number of virials times the number of isotherms (perhaps minus the second virials). Thus, Michels et al. [1, 6] equation of state remains a 100 parameter representation of his 19 isotherms until higher virials can be properly calculated from potential functions.

In addition, where multiple sets of data exist (as with argon) at odd temperature and density spacings, a complete correlation at all points of the *P-V-T* surface becomes very difficult with these polynomials. That is, if isothermal polynomials are used, then each set of coefficients is valid only for the one specific isotherm which was fitted. If a point on the *P-V-T* surface lies between two of the fitted isotherms, then other interpolative techniques must be used to obtain the *P-V-T* coordinates of this point.

3. Summary of *P-V-T* Data

Published experimental *P-V-T* data were reviewed and examined. As a result, the *P-V-T* data which were considered for use in this compilation were distributed as shown in table 1.

Evaluation of the experimental *P-V-T* data of van Itterbeek, Verbeke, and Staes [9] revealed slight inconsistencies. Private communication from Verbeke [12] indicated that there were typographical errors in the original paper [9]. The new values given by Verbeke [12] were then used in this work.

TABLE 1. *Summary of* P-V-T *data*

Number of points	Temperature or volume	Pressure range (atm)	Source
8	−140 °C	6 to 160	Michels, Levelt, and de Graaff [1]
10	−135	7 to 200	[1]
13	−130	7 to 240	[1]
17	−125	7 to 280	[1]
20	−122.5	7 to 300	[1]
24	−120	7 to 320	[1]
26	−110	8 to 400	[1]
26	−100	8 to 480	[1]
26	−85	9 to 600	[1]
27	−70	6 to 700	[1]
27	−50	7 to 850	[1]
28	−25	7 to 1030	[1]
41	Near coexistence region		[1]
48	0 °C	19 to 930	Michels, Wijker, and Wijker [6]
46	25	20 to 870	[6]
15	50 to 150 °C	27 to 750	[6]
7	−183.02 °C	26 to 165	Rogovaya and Kaganer [7]
8	−150.08	25 to 185	[7]
6	−135.03	72 to 196	[7]
6	−120.02	73 to 166	[7]
7	−110.04	47 to 176	[7]
9	−100.01	49 to 192	[7]
7	−90.03	50 to 190	[7]
8	−75.03	26 to 194	[7]
8	−49.93	28 to 197	[7]
8	−24.98	27 to 184	[7]
8	86.63 K	17 to 90	van Itterbeek and Verbeke [8]
14	87.91	13 to 147	[8]
14	89.13	22 to 150	[8]
14	90.55	18 to 146	[8]
8	90.15 K	10 to 242	van Itterbeek, Verbeke, and Staes [9]
12	96.99	11 to 280	[9]
12	108.18	19 to 260	[9]
8	117.10	16 to 284	[9]
7	127.05	30 to 290	[9]
7	130.85	21 to 266	[9]
11	134.40	30 to 258	[9]
16	136.02	40 to 257	[9]
14	138.98	33 to 285	[9]
11	146.63	58 to 248	[9]
9	148.25	45 to 288	[9]

TABLE 1. *Summary of* P-V-T *data*—Continued

Number of points	Temperature or volume	Pressure range (atm)	Source
1	93.15 K	320	van Witzenburg [10]
5	98.15	78 to 350	[10]
7	103.15	76 to 330	[10]
12	123.15	303 to 1042	[10]
12	128.15	302 to 1908	[10]
15	133.15	207 to 1941	[10]
7	108.15	322 to 1210	[10]
3	113.15	74 to 967	[10]
10	118.15	296 to 1590	[10]
13	138.15	315 to 1957	[10]
16	148.15	66 to 1902	[10]
13	153.15	315 to 1925	[10]
14	29.2 cm³/g-mol	21 to 488	Walker [11]
15	29.6	25 to 494	[11]
17	29.8	43 to 520	[11]
20	31.3	39 to 500	[11]
17	33.8	16 to 515	[11]
24	35.7	24 to 500	[11]
22	37.8	27 to 506	[11]
16	39.5	34 to 286	[11]
16	41.2	34 to 483	[11]
23	42.0	38 to 506	[11]
24	43.6	45 to 316	[11]
25	45.5	43 to 272	[11]
14	50.7	45 to 139	[11]
22	58.3	61 to 209	[11]
13	66.5	45 to 122	[11]

A preliminary comparison of Walker's [11] experimental data showed an inconsistency in the published density values. Private communication from Walker [13] indicated that there were errors in the density values quoted in the original paper [11]. A more complete discussion of Walker's [11] data will be given later.

4. Summary of Vapor Pressure Data

Some of the vapor pressure data which are available in the literature were published in the early part of the century. Wherever possible, these early data were replaced by more recent data if there appeared to be sufficient evidence that the recent data were of higher reliability.

Modern experimental instrumentation and techniques generally permit a higher order of accuracy and precision than did the earlier work. In addition, the temperature scales and basic standards which were used in much of the older work were substantially different from those used today. Some of the earlier work may have been conducted with variations in the temperature scales of as much as 0.06 deg. Much of the time, the early investigator did not clearly state which temperature scale was in current use and the results therefore lead to confusion and uncertainty.

As a result of the above considerations, the vapor pressure data which were selected for further analysis are shown in table 2.

In addition to the vapor pressure data shown above, two sources of coexistence or saturation densities were examined. These are indicated in table 3.

TABLE 2. *Summary of vapor pressure data*

Number of points	Temperature range—K	Source
23	90 to 150	van der Waals Laboratory data reported by Clark, Din, Robb, Michels, Wassenaar, and Zwietering [14].
17	86 to 150	British Oxygen Co. Ltd. data reported by Clark et al [14].
23	117 to 150	Michels, Levelt, and de Graaff [1].
6	84 to 87	Flubacher, Leadbetter, and Morrison [15].
34	85 to 148	van Itterbeek, de Boelpaep, Verbeke, Theeuwes, and Staes [16].
9	129 to 147	van Itterbeek, Verbeke, and Staes [9].

TABLE 3. *Coexistence density data*

Number of points	Temperature range—K	Source
23	117–150	Michels, Levelt, and de Graaff [1].
16	90–148	Mathias, Onnes, and Crommelin [17].

5. Saturated Liquid Density

In this analysis, it frequently was found convenient to have an expression which could be used to predict approximate values for the density of the saturated liquid. This type of expression was not needed for the determination of the equation of state or the calculation of the thermodynamic properties. However, it would prove useful in the preliminary analysis, where saturation data were evaluated for consistency. Such an expression also would be useful for obtaining initial approximations in iterative solutions of the equation of state. For these purposes a simple expression, based upon the principle of corresponding states, was developed.

Using the critical point as the reducing parameter, the principle of corresponding states assumes a universal function which may be expressed as

$$P_r = f(T_r, V_r) \tag{1}$$

where

$$P_r = P/P_c$$
$$T_r = T/T_c$$
$$V_r = V/V_c.$$

However, in the coexistence region where the saturated liquid and saturated vapor are in mutual equilibrium, the pressure and temperature are not independent properties. Thus if eq (1) were examined in accordance with the thermodynamic requirements of the coexistence line, it may be deduced that there also exists a universal function for the saturated liquid such that

$$\rho^l/\rho_c = F(T_r). \tag{2}$$

Using a coordinate system of reduced temperature versus reduced density, Guggenheim [18] plotted experimental data points for a number of pure substances and verified the universal form of eq (2). For the data which Guggenheim [18] had available, he found that the coexistence line could be adequately expressed by the relationships

$$\frac{\rho^l + \rho^g}{2\rho_c} = 1 + a(1 - T_r) \tag{3}$$

and

$$\frac{\rho^l - \rho^g}{\rho_c} = b(1 - T_r)^{1/3}, \tag{4}$$

where a and b are constants. Equation (3) represents the "law" of the rectilinear diameter which states that the average of the saturated liquid and saturated vapor densities appears as a straight line on the reduced coordinate system of temperature versus density.

Combining eqs (3) and (4) yields an equation for the saturated liquid density, expressed as

$$\rho^l/\rho_c = 1 + a(1 - T_r) + C(1 - T_r)^{1/3} \tag{5}$$

where $C = b/2$.

In order to represent the data with more accuracy than eq (5) permits, an expanded form of eq (5) was proposed. Physical requirements demand that the derivative

$$\frac{d(T_r)}{d(\rho^l/\rho_c)} = 0 \text{ at } \rho^l = \rho_c, \text{ and } T_r = 1 \tag{6}$$

Thus the possibility of an equation with the saturated liquid density as a function of only integer powers of temperature is ruled out, since such an equation would not fulfill the requirements of eq (6). It then appears that a fractional power term such as the last term in eq (5) is necessary so that zero slope may exist at the critical point. An expanded form of eq (5) may then be written as

$$\rho^l/\rho_c = \sum_{n=0,\,1,\,2,\,3,\,\ldots} d_n (1 - T_r)^{n/3}. \tag{7}$$

For eq (7) to satisfy critical point behavior, the coefficient d_0 should be essentially equal to unity. In addition, if the derivative of eq (7) is written

$$\frac{d(T_r)}{d(\rho^l/\rho_c)} = -\frac{1}{\sum_{n=0,\,1,\,2,\,3,\,\ldots} \frac{n}{3} d_n (1 - T_r)^{\frac{n}{3} - 1}}, \tag{8}$$

it is seen that the requirements of eq (6) are satisfied. In eq (7), fractional exponents other than multiples of 1/3 were investigated. The results showed no apparent advantages, and the 1/3 exponent was retained.

Equation (7) was fitted to the saturated liquid data by least square techniques. A series of successive fits was performed with increasing values of "n." Examination of these fits revealed a continued decrease in the deviations between the calculated density and experimental density until the fit with $n = 6$. For fits with "n" greater than six, the results appeared to be approaching the precision of the data, and, therefore, the final form for the equation was selected to be

$$\rho^l/\rho_c = \sum_{n=0}^{6} d_n K^n \tag{9}$$

where $K = (1 - T_r)^{1/3}$ and T_r is calculated from temperatures in Kelvin units.

An examination of the saturated liquid density data demonstrates that the data from Michels et al. [1] and Mathias et al. [17] are consistent with each other, with Michels' data showing somewhat more precision. This may be seen in figure 1, where

percent density deviation is plotted as a function of temperature.

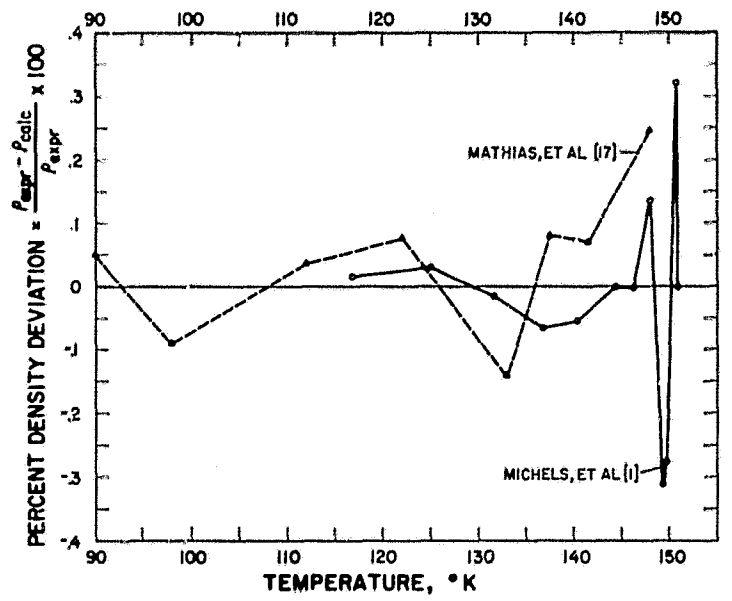

FIGURE 1. *Deviations between calculated (eq (9)) saturation liquid densities and experimental saturated liquid densities.*

In figure 1, it is seen that both sets of data exhibit almost the same characteristics with the Mathias data showing a wider envelope of density deviations. The maximum deviation of the saturated liquid density data from that calculated by eq (9) is 0.32 percent which occurs within 1/2 deg of the critical point. The mean of the absolute values of density deviations for Michels' data is 0.099 percent, and for the data of Mathias, 0.098 percent.

However, the three Michels' data points which exhibit the largest density deviations are all within about a degree and a half of the critical point where the experimental determination of saturated liquid densities becomes most difficult. If these three points are not included, then the mean density deviation is 0.039 percent. On the other hand, the single data point of the Mathias data which exhibits the maximum deviation is within about two and a half degrees of the critical point. If this point is omitted, the mean density deviation for the Mathias data is 0.076 percent.

With these comparisons, it can be concluded that eq (9) adequately represents the data, with precision approaching the precision of the data. In addition, the data of Michels et al. [1] display a precision about twice that of Mathias et al. [17].

The coefficients of eq (9) which resulted from the fit with $n=6$ are shown in table 4.

TABLE 4. *Coefficients for saturated liquid densities for eq (9)*

Temperature in K, coefficients are dimensionless

$d_0 = 0.99995448$	$d_4 = 91.361470$
$d_1 = 0.47354891$	$d_5 = -93.773992$
$d_2 = 11.238328$	$d_6 = 37.769045$
$d_3 = -43.741090$	

Use of the coefficients in table 4 produces a root-mean-square deviation in ρ^l/ρ_c of 0.002 for the data considered.

6. Vapor Pressure

The purpose of developing a vapor pressure equation was twofold. When used in conjunction with an independently obtained equation of state, the vapor pressure equation could be used to define the coexistence boundary. Also, the vapor pressure equation could be used in conjunction with the equation of state to calculate some of the derived thermodynamic properties.

The coexistence boundary may also be defined without the use of a vapor pressure equation, as discussed in section 11. However, this method requires a sufficient number of highly precise experimental *P-V-T* data points along the boundary. Since saturation densities are difficult to measure with a high degree of precision, and since there was only one source of satisfactory coexistence data, it was difficult to perform a critical evaluation of this data for the purpose of establishing the coexistence boundary.

Instead, there was in the literature a relatively large number of experimental *P-T* data points along the coexistence boundary. With these data a vapor pressure equation could be developed. An examination of the literature indicated the existence of many vapor pressure equations which have been used. Some of these have been studied, compared, and listed by Stewart [19].

For this evaluation of argon, a vapor pressure equation was developed which would represent the argon data with sufficient precision and at the same time permit consistency with the equation of state at the critical point.

The argon vapor pressure equation was developed from the application of the Clapeyron equation to a first order phase transition. The Clapeyron equation is

$$\left(\frac{dP}{dT}\right)_{sat} = \frac{H^g - H^l}{T(V^g - V^l)}. \tag{10}$$

If appropriate expressions for the changes in enthalpy and volume as functions of temperature and pressure are substituted in eq (10), the equation can then be integrated to give the desired vapor pressure equation. Some of the simpler and more commonly used vapor pressure equations were obtained with the assumptions of

$$V^g \gg V^l;\ V^g = \frac{RT}{P};\ H^g - H^l = \text{constant}. \tag{11}$$

The first assumption of eq (11) is valid only for coexistence states which are considerably below the critical point. In addition, figures 2 and 3 illustrate that the second and third assumptions of eq (11) are in substantial error.

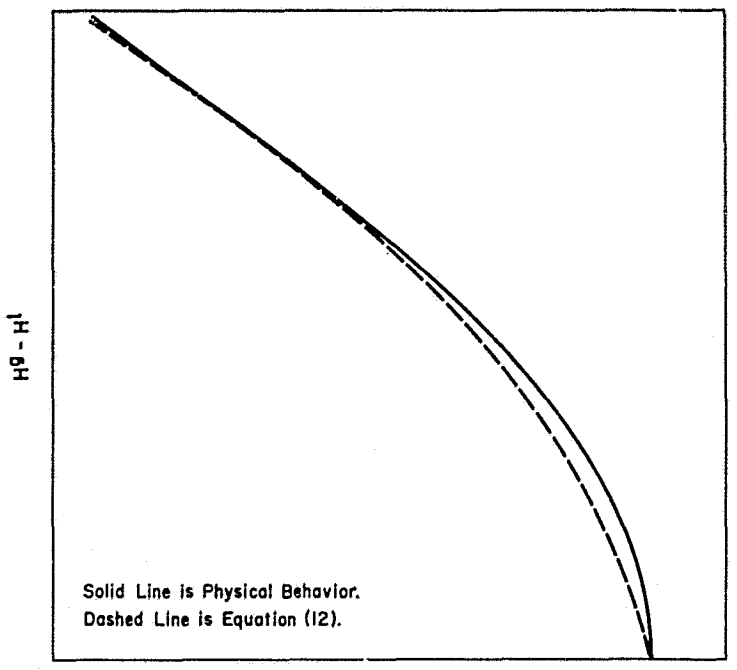

FIGURE 2. *Latent heat of vaporization as a function of temperature.*

Therefore, for this work on argon, the following two approximations were proposed:

$$H^g - H^l = K_1 + K_2 T + K_3 T^2 \tag{12}$$

and

$$V^g - V^l = \left(1 - \frac{P}{P_c}\right)\frac{RT}{P}. \tag{13}$$

The approximations suggested by eqs (12) and (13) are compared with the assumptions of eq (11) and are shown in figures 2 and 3.

Figure 2 illustrates a typical plot of the latent heat of vaporization as a function of temperature. It is observed that the third assumption of eq (11), which approximates the latent heat as a constant, is unsatisfactory both in magnitude and in characteristic nature. It is thus proposed that eq (12) represent the latent heat of vaporization. Equation (12) is shown in figure 2 as the dashed line and is seen to represent more closely the characteristic nature of the physical behavior. The constants in eq (12) may be adjusted to change slightly the nature of the curve. Therefore, it was concluded that the quadratic nature of eq (12) satisfactorily represented the physical behavior in figure 2, and no higher degree temperature terms were considered necessary.

Figure 3 illustrates a typical plot of the volume of vaporization as a function of temperature. It is clear that the perfect gas assumption of eq (11)

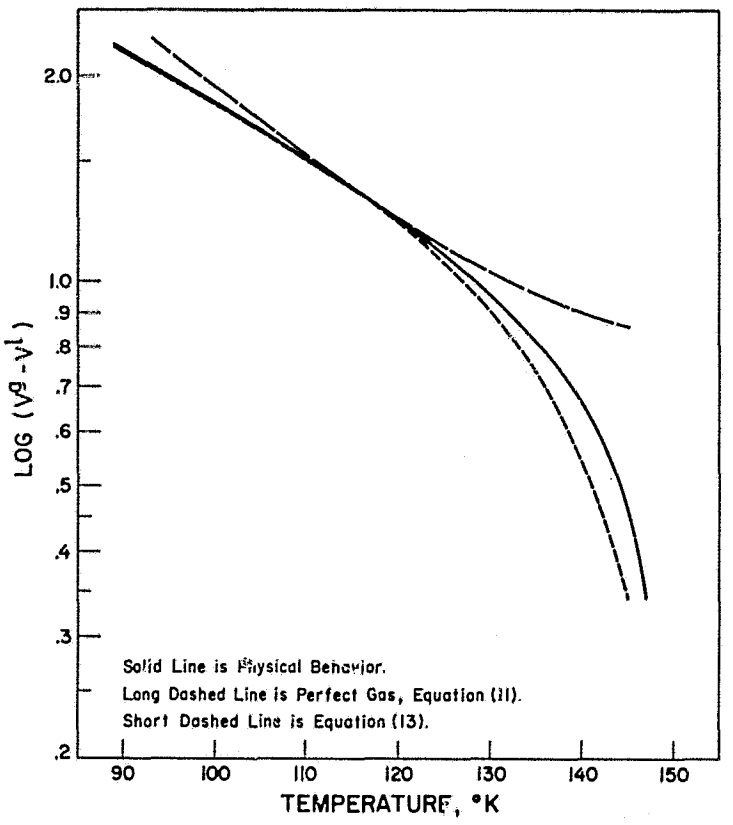

FIGURE 3. *Volume of vaporization as a function of temperature.*

becomes quite unsatisfactory as temperature increases. In addition, it is noted that the characteristic curvature of the perfect gas representation is incorrect. In figure 3, it is seen that the approximation proposed by eq (13) represents the physical behavior more closely and maintains the proper curvature for the entire temperature range. In addition, eq (13) permits the volume of vaporization to reduce to zero as the pressure approaches critical pressure. It should be noted that the deviations between the different models shown in figures 2 and 3 are used only for purposes of illustrating qualitative trends and are not indicative of the actual deviations of the calculated vapor pressure properties.

Substitution of eqs (12) and (13) into eq (10) and integrating give

$$\ln P = A/T + B \ln T + CT + D + EP. \tag{14}$$

Equation (14) was then the equation which was proposed for representing the vapor pressure data, with five constants to be determined by a least-square fit to the data.

In order to fit the vapor pressure eq (14) to the data, considerations were given to the expermental errors in the observed data points so that each of the data points could be appropriately weighted. The weighting scheme, as described by Hust and McCarty [20], is outlined below.

Let a function with "Q" variables

$$y_n = f(x_{1n}, x_{2n}, \ldots, x_{qn}, \ldots, x_{Qn})$$

$$\text{for } n = 1, 2, \ldots, N \tag{15}$$

represent the set of "N" experimental data points

$$Y_n, X_{1n}, X_{2n}, \ldots, X_{qn}, \ldots, X_{Qn} \tag{16}$$

where Y_n is the dependent variable for the nth data point and X_{qn} is the qth independent variable for the nth data point. The weighting factor is most usually described as the reciprocal of the variance

$$W=\frac{1}{\sigma_Y^2}, \tag{17}$$

which takes into account the variance of the dependent variable.

Since both the independent and dependent variables affect the final fit of the function to the data, the weight function for the nth data point is expressed as

$$W_n=\frac{1}{\sigma_{Y_n}^2+\sum_{q=1}^{Q}\left(\frac{\partial f}{\partial x_{qn}}\sigma_{qn}\right)^2}. \tag{18}$$

Since P was chosen as the dependent variable in eq (14), Y becomes

$$Y=\ln P-EP. \tag{19}$$

To obtain σ_{Y_n} for eq (18) for the nth data point,

$$\sigma_{Y_n}=\frac{\partial Y}{\partial P_n}\sigma_{P_n}=\left(\frac{1}{P}-E\right)\sigma_{P_n}. \tag{20}$$

Also from eq (18) and the vapor pressure equation (14),

$$\sum_{q=1}^{Q}\left(\frac{\partial f}{\partial X_{qn}}\sigma_{qn}\right)^2=\left(\frac{\partial f}{\partial T_n}\sigma_{T_n}\right)^2 \tag{21}$$

and

$$\frac{\partial f}{\partial T_n}=\frac{B}{T_n}+C-\frac{A}{T_n^2}. \tag{22}$$

If the experimental uncertainty of the nth data point for the qth variable, "ΔX_{qn}", corresponds to a 95 percent confidence interval on the observed X_{qn}, then the standard deviation "σ_{qn}" is related to ΔX_{qn} as

$$\sigma_{qn}=\tfrac{1}{2}\Delta X_{qn}. \tag{23}$$

The vapor pressure equation (14) is a function of pressure and temperature. Applying eq (23), gives

$$2\sigma_{T_n}=\Delta T_n \tag{24}$$

and

$$2\sigma_{P_n}=\Delta P_n. \tag{25}$$

Substituting the necessary expressions into (18), a weighting function for the nth data point is obtained:

$$W_n=\frac{4}{\left(\frac{B}{T_n}+C-\frac{A}{T_n^2}\right)^2\Delta T_n^2+\left(\frac{1}{P_n}-E\right)^2\Delta P_n^2}. \tag{26}$$

Equation (26) was then used as the weighting function for all of the vapor pressure data except the data of Clark et al. [14]. The vapor pressure data of Clark consisted of several hundred observations. The method which Clark used was a comparison of the vapor pressure of argon with that of oxygen as determined by Hoge [21], and using the latter as a measure of the temperature. In this manner, the temperatures were measured with a mercury-in-glass manometer over most of the temperature range. At higher pressures, the temperature was measured with a copper-constantan thermocouple. Clark stated that the measurements were taken with a reproducibility of about 0.05 percent at low pressures. At higher pressures he found that the temperature control on his apparatus would not maintain the temperature constant with the same precision as at the lower temperatures, resulting in an uncertainty of about 0.2 percent in pressure for a given temperature.

Clark et al. [14] published a plot of deviation (from a fitted equation) in $\Delta \log P$ versus $\log P$. From this plot it appeared that there were about three to four times as many data points at low pressures than at pressures near the critical point. From the description of the experimental techniques used, the uncertainty limits, and the variable density distribution of Clark's data, an arbitrary modifying function was developed to modify the weighting function eq (26) for Clark's data. This function, as described by Gosman [22], is

$$M=\frac{1}{5-\frac{375}{T}}-0.28. \tag{27}$$

Since Clark's lower temperature range included more data points than the high temperature range, and since the temperature control on Clark's apparatus was less precise at the higher temperatures, the modifying function (27) was made to reflect the lower reliability at the higher temperatures.

Equation (27) was used to modify the variance of the fit, so that the weighting factor for Clark's data resulted in

$$W_c=\frac{1}{(\sigma/M)^2}. \tag{28}$$

Using eq (28), the final weighting expression for Clark's data is

$$W_c=WM^2, \tag{29}$$

where W is the general weighting function eq (26).

The nine vapor pressure data points of van Itterbeek, Verbeke, and Staes [9] were not used in the final determination of the vapor pressure equation. These nine points were omitted from the final

evaluation because, within a year of the vapor pressure observations of van Itterbeek et al. [9], a new set of vapor pressure data was reported by van Itterbeek, de Boelpaep, Verbeke, Theeuwes, and Staes [16] which deviated considerably from the earlier data [9], but appeared to be more consistent with the vapor pressure observations from other sources.

The uncertainties in the vapor pressure data were estimated from the statements of the investigators, the description of the experimental procedures, the deviations between the different sets of data, and the apparent random deviations of each set of data.

The resulting uncertainties for all of the vapor pressure data were estimated to be

$$\frac{\Delta T}{T}=0.00025$$

$$\frac{\Delta P}{P}=0.00025. \tag{30}$$

Substituting eqs (30) into (26) and (29),

$$W=\frac{4\times 10^8}{6.25\left[\left(B+CT-\frac{A}{T}\right)^2+(EP)^2+1\right]} \tag{31}$$

and for Clark's data,

$$W_c=WM^2. \tag{32}$$

For each data point, the weighting functions (31) or (32) were substituted into the normal least-square equations as shown by Hust and McCarty [20].

In addition, it was considered desirable to make the vapor pressure equation (14) pass through the critical pressure and temperature so as to be consistent with the equation of state at the critical point. This required adding a constraining equation to the normal least-square equations so that the coefficients of the vapor pressure equation would satisfy the least-square criteria, as well as simultaneously constrain the vapor pressure equation to pass through the critical point. The generalized normal least-square equations with constraints are shown by Hust and McCarty [20] and Gosman [22].

A preliminary weighted-least-square fit with one constraint indicated that the low temperature data of van Itterbeek et al. [16] exhibited a scatter of about three to four times as great as the higher temperature data. Since low temperature vapor pressure data from other investigators were available, these low temperature data of van Itterbeek et al. [16] were omitted from the final fit.

The resulting fit of the vapor pressure equation (14) to the data is illustrated in figure 4, where the deviation between the temperature predicted by eq (14) and the experimental temperature is plotted as a function of pressure.

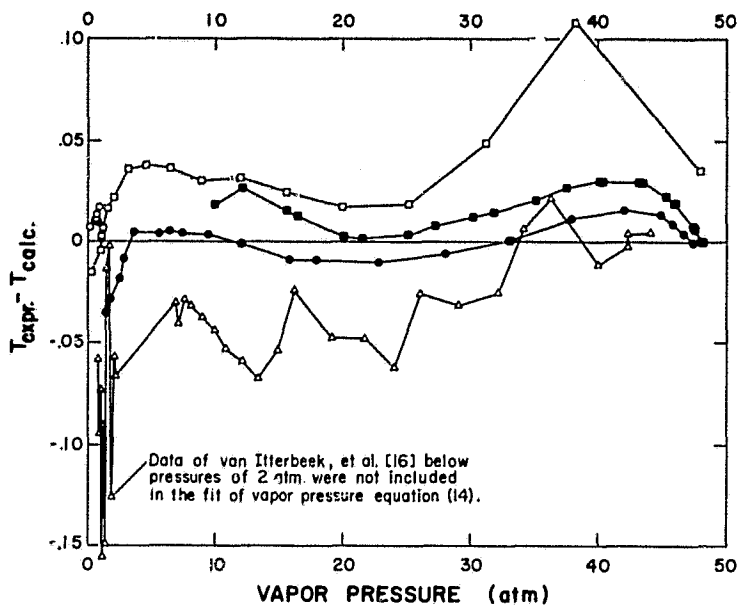

FIGURE 4. *Deviations of vapor pressure data from eq (14).*

In figure 4, it is seen that the characteristic shape of all five of the deviation curves is the same, except for the low temperature data of van Itterbeek et al. [16] (which was not included in the fitted data). From figure 4 it is also noted that the data of van Itterbeek et al. [16] exhibits a pattern of generally wider scatter at the higher temperatures when compared with the other data sources.

The similarity in the basic shape of the deviation curves of figure 4 may be interpreted to indicate a fundamental consistency between the selected vapor pressure data. The deviation curves also indicate the possibility of a disagreement in the temperature scales between the different data sources. This disagreement of temperature scales is inferred from the essentially constant shift or displacement between any one of the deviation curves and any of the others. This displacement of the deviation curves exists despite the fact that an effort was made to convert all of the temperature scales to a common thermodynamic temperature scale. An additional correction of less than 0.01 deg (see sec. 9) was made to the data of Clark et al. [14], since he stated that his data were based on an ice-point temperature of 273.16 K, whereas the other vapor pressure data sources were based on the ice-point temperature of 273.15 K.

From figure 4 it is seen that the maximum temperature deviation is 0.108 deg. This particular point is in the Clark et al. [14] set of data and may be questionable since it contributes a sharp spike in the deviation curve. For Clark's data, the mean of the absolute values of the temperature deviations is 0.0290 deg. If the single questionable data point is omitted, the mean deviation of Clark's data is 0.0240 deg. For the data of Flubacher et al. [15],

the maximum temperature deviation is 0.0174 deg, while the mean of the absolute values of the temperature deviations is 0.0109 deg. The deviations of Clark et al. [14] (experiments by Michels) appear to oscillate slightly about the zero axis except at the lower temperatures where the maximum temperature deviation occurs. For the data of Clark et al. [14], the maximum temperature deviation is 0.0339 deg, while the mean of the absolute values of the temperature deviations is 0.00925 deg. The data of Michels et al. [1] also exhibit a small oscillation with a maximum temperature deviation of 0.0309 deg and a mean of 0.0158 deg. For the data of van Itterbeek et al. [16], the maximum temperature deviation is 0.156 deg, while the mean is 0.0484 deg.

The summary of the deviations between the temperature predicted by the vapor pressure equation (14) and the experimental temperature is given in table 5.

TABLE 5. *Summary of vapor pressure deviations*

Max. temp. deviation	Mean abs. temp deviation	Source
0.0339	0.00925	Clark et al. [14].[a]
.108	.0290	Clark et al. [14].
.0309	.0158	Michels et al. [1].
.0174	.0109	Flubacher et al. [15].
.156	.0484	van Itterbeek et al. [16].

[a] Experiments by Michels.

By independent means, Ziegler et al. [2] obtained "best" values for the normal boiling point temperature and triple point temperature. It is important to note the deviations between the temperatures given by Ziegler et al. [2] and the temperatures predicted by the vapor pressure equation (14). The normal boiling point temperature given by Ziegler is 87.280 ±0.015 K, while the normal boiling point temperature predicted by equation (14) is 87.2838 K. The triple point temperature recommended by Ziegler is 83.80 K, while the triple point temperature predicted by eq (14) is 83.8038 K, which corresponds to a temperature deviation of 0.0045 percent.

TABLE 6. *Least squares estimates of coefficients for vapor pressure eq (14)* [a]

Coefficient	Least squares estimate	Standard deviation of coefficient	Significance level [b]
A	-1.062454904×10^{3}	4.993×10^{1}	99.5%+
B	-4.271440691	1.056	99.5%+
C	1.524254979×10^{-2}	5.670×10^{-3}	99 %
D	2.992927939×10^{1}	4.796	99.5%+
E	2.465760638×10^{-3}	5.049×10^{-4}	99.5%+

[a] Where P is in atm and T is in K.
[b] These parameters are significant at the level indicated when applying the standard F test.

Table 6 lists the five coefficients for eq (14). Also tabulated in table 6 are the standard deviations and a significance level of these parameters. The significance level indicates these parameters are significant at least to the level indicated when applying the standard F test.

7. The *P-V-T* Surface

Many equations of state have been proposed to represent the *P-V-T* surface. Some of these equations represent the experimental data adequately in limited regions of the thermodynamic surface but are quite inadequate in other regions. Other equations, taking the form of polynomials along isotherms or isochores, are well suited to represent a single source of highly precise experimental data. However, the use of these polynomial expressions becomes very difficult in a complete correlation of the *P-V-T* surface with multiple sets of experimental data with odd spacings of temperature and density.

In this analysis the *P-V-T* surface was basically represented by an equation of state proposed by Benedict, Webb, and Rubin [23] with modifications by Bloomer and Rao [24] and further modified and extended by Strobridge [25].

The Benedict-Webb-Rubin equation was developed by defining and utilizing a quantity $\bar{A}$, called the residual work content. The residual work content was defined as the difference between the Helmholtz function for a real substance and the Helmholtz function for an ideal gas.

The Helmholtz function

$$A=U-TS \tag{33}$$

may be combined with the first and second laws of thermodynamics,

$$dU=TdS-PdV. \tag{34}$$

The resulting relationship is

$$dA=-PdV-SdT. \tag{35}$$

From eq (35),

$$\left(\frac{\partial\bar{A}}{\partial\rho}\right)_T\rho^2=\bar{P} \tag{36}$$

where $\bar{P}$ is the difference in pressure between the real and ideal gas. Then

$$P=\rho RT+\rho^2\left(\frac{\partial\bar{A}}{\partial\rho}\right)_T \tag{37}$$

where the first term on the right side of eq (37) is the ideal gas pressure and the second term is the difference between the real and ideal gas pressure. Benedict et al. [23] proposed an expression for the residual work content which was actually an extension of the Beattie and Bridgeman equation. The extension to the Beattie-Bridgeman equation was

necessary in order to represent more accurately the real fluid properties at densities which were higher than the Beattie-Bridgeman equation could adequately represent. Beattie noted that isometrics could be expressed by an equation of the form

$$(P-\rho RT)/\rho^2=RTF_1(\rho)-F_2(\rho)-F_3(\rho)/T^2. \quad (38)$$

Equations for the functions F_1, F_2, and F_3 were then empirically developed to fit experimental data and, at the same time, remain consistent with the residual work content. By these means, Benedict et al. developed an eight adjustable parameter equation of state for hydrocarbons.

After further modifications, Strobridge [25] extended the Benedict-Webb-Rubin equation to represent more accurately the properties of nitrogen. The Strobridge modifications resulted in an equation with sixteen adjustable parameters.

The form of the equation expressed by Strobridge was the one adopted for the determination of the argon *P-V-T* surface. This form of equation appeared justified because corresponding states theory indicated that there should be reasonable correspondence between nitrogen and argon [18]. The equation of state then used is

$$\begin{aligned} P=\rho RT&+\rho^2(n_1T+n_2+n_3/T+n_4/T^2+n_5/T^4)\\ &+\rho^3(n_6T+n_7)+\rho^4n_8T\\ &+\rho^3(n_9/T^2+n_{10}/T^3+n_{11}/T^4)\exp(-n_{16}\rho^2)\\ &+\rho^5(n_{12}/T^2+n_{13}/T^3+n_{14}/T^4)\exp(-n_{16}\rho^2)\\ &+\rho^6n_{15}. \end{aligned} \quad (39)$$

As a matter of convenience, eq (39) was solved for $Z-1$, and the resulting expression was then fitted to the data by least squares. This expression is

$$\begin{aligned} Z-1=&\frac{\rho}{R}(n_1+n_2/T+n_3/T^2+n_4/T^3+n_5/T^5)\\ &+\frac{\rho^2}{R}(n_6+n_7/T)+\frac{\rho^3}{R}n_8\\ &+\frac{\rho^2}{R}(n_9/T^3+n_{10}/T^4+n_{11}/T^5)\exp(-n_{16}\rho^2)\\ &+\frac{\rho^4}{R}(n_{12}/T^3+n_{13}/T^4+n_{14}/T^5)\exp(-n_{16}\rho^2)\\ &+\frac{\rho^5}{R}n_{15}/T. \end{aligned} \quad (40)$$

A preliminary least squares fit of eq (40) to the selected *P-V-T* data indicated possible round-off discrepancies due to the very large number of arithmetic operations involved with the solution of the normal equations. Therefore, the computer program for the least squares fitting routine was written for double precision arithmetic which carried 20 decimal figures throughout the calculations. This procedure essentially doubled the number of significant figures carried by the computer, so that round-off error due to the large number of arithmetic operations would be minimized.

In addition, an effort was made to check the results of the least squares solution to see if round-off error, due to operating on an ill-conditioned matrix, was present. The method used to perform this check is outlined as follows: The set of normal equations was obtained by standard techniques. The second normal equation in the set was multiplied by a constant and added to the first normal equation. This sum then replaced the original second normal equation. The third normal equation was then multiplied by a different constant and added to the new second normal equation, and so forth. Each of the constant multipliers was, in general, different. The constants were selected so that each of the diagonal elements of the matrix formed by the resulting set of normal equations was larger than the elements to its right. This criterion was used since appreciable loss of accuracy may occur if a diagonal is smaller than elements to its right. The entire check procedure is then equivalent to the rotation of each of the normal equations relative to the others. The solution to the matrix with rotated vectors could then be obtained. If the solution was the same as that for the original matrix, then it was considered likely that a sufficient number of significant figures was carried in the double precision computer solution to make round-off errors insignificant. For the preliminary least squares fit mentioned above, the solution to the matrix with rotated vectors was the same as the original matrix, to eight significant figures. Although eight significant figures is not indicative of the precision of the original *P-V-T* data, the agreement of the two solutions indicated that numerical round-off errors were probably insignificant.

The preliminary least squares fit showed that the data of Walker [11] deviated substantially from those of Michels et al. [1] and Rogovaya et al. [7]. Therefore, the data of Walker were not used in the subsequent fits to eq (40). (Further mention of Walker's data will be made later.)

In the subsequent fits it was found desirable to satisfy the standard least squares criteria and, in addition, to simultaneously constrain eq (40) to exactly satisfy three specific requirements at the critical point. The specific constraints which were used are:

1. The critical isotherm of the equation of state (40) has zero slope at the critical point.

$$\left(\frac{\partial P}{\partial \rho}\right)_T=0 \qquad \text{(critical point)}$$

2. The critical isotherm of the equation of state (40) has a point of inflection at the critical point.

$$\left(\frac{\partial^2 P}{\partial \rho^2}\right)_T=0 \qquad \text{(critical point)}$$

3. The equation of state (40) predicts the critical pressure when the critical density and temperature are substituted into it.

In addition, provisions were made to account for the different uncertainties in the experimental data from the different data sources. The weighting function described by eqs (18) and (23) was used in conjunction with the equation of state (40), where

$$Y=Z-1=\frac{P}{\rho RT}-1 \tag{41}$$

$$\sigma_Y^2=\left(\frac{\Delta Y}{2}\right)^2=\frac{Z^2}{4}\left(\frac{\Delta P}{P}+\frac{\Delta\rho}{\rho}+\frac{\Delta T}{T}\right)^2 \tag{42}$$

$$\left(\frac{\partial f}{\partial x_1}\right)=\left(\frac{\partial(Z-1)}{\partial T}\right)_\rho=\left(\frac{\partial Z}{\partial T}\right)_\rho \tag{43}$$

$$\left(\frac{\partial f}{\partial x_2}\right)=\left(\frac{\partial(Z-1)}{\partial \rho}\right)_T=\left(\frac{\partial Z}{\partial \rho}\right)_T \tag{44}$$

$$2\sigma_T=\Delta T;\ 2\sigma_\rho=\Delta_\rho. \tag{45}$$

Substituting eqs (42) through (45) into eq (18), and simplifying,

$$W=\frac{4}{Z^2\left[\frac{\Delta P}{P}+\frac{\Delta\rho}{\rho}+\frac{\Delta T}{T}\right]^2+\left[T\left(\frac{\partial Z}{\partial T}\right)_\rho\frac{\Delta T}{T}\right]^2+\left[\rho\left(\frac{\partial Z}{\partial \rho}\right)_T\frac{\Delta\rho}{\rho}\right]^2}. \tag{46}$$

The uncertainties in the P-V-T data were estimated from the statements of the investigators, from a knowledge of the experimental apparatus, and from preliminary examinations of the data. The estimated uncertainties associated with the various data are given in table 7.

The uncertainties from table 7 were substituted into eq (46) and weights were calculated for each P-V-T data point. These weights were then substituted into the generalized normal least squares equations with constraints as shown by Hust and McCarty [20].

TABLE 7. *Estimated uncertainties of the experimental data*

% Density	% Pressure	% Temperature	Source
0.05	0.02	0.02	[1]
.05	.02	.02	[6]
.1	.1	.1	[7]
.2	.02	.02	[8]
.2	.02	.02	[9]
.2	.2	.2	[10]

Since the normal equations are linear in the coefficients, the coefficient n_{16} in eq (40) had to be determined before the remaining 15 coefficients were evaluated. A systematic search for the optimum value of n_{16} was performed on the digital computer so that a minimum in the sum of the squares of the deviations was obtained. In order to have a realistic range in the search for n_{16}, an approximate value was obtained by corresponding states with nitrogen. A modified corresponding states method, proposed by Kamerlingh Onnes, was used. This method suggests that the reduced density is

$$\rho_r=\frac{\rho RT_c}{P_c}. \tag{47}$$

The difference between eq (47) and eq (1) is discussed by Gosman [22]. In eq (40), n_{16} appears as the coefficient of a squared density term. From eq (47), a corresponding states expression for a squared density term was obtained:

$$\rho_N^2=\left(\frac{P_c}{T_c}\right)_N^2\left(\frac{T_c}{P_c}\right)_A^2\rho_A^2, \tag{48}$$

where the subscripts N and A represent nitrogen and argon, respectively. Equation (48) was substituted into the exponential term in eq (40). From Strobridge, the n_{16} for nitrogen was also substituted into the exponential term of eq (40). The resulting approximate value of the coefficient n_{16} for argon from corresponding states was calculated to be 0.0039. The range of the systematic search for n_{16} was thus determined to be 0.0039 ± 0.0015. The systematic search was accomplished by incrementing 0.0039 by small values and performing a linear least squares fit for each consecutive value of n_{16}. As the search proceeded, it was found that the sum of the squares of the deviations were not much affected by the current value of n_{16}. However, the fit of the equation of state in the region of the critical point was moderately affected by the different trial values of n_{16}. The resulting value of n_{16} and the least square estimates of the remaining 15 coefficients for eq (40) are given in table 8.

TABLE 8. *Least squares estimates of coefficients for equation of state (40)*[a]

Coefficient	Least squares estimate	Standard deviation of coefficient	Significance level % [b]
n_1	0.25978374×10^{-2}	4.927×10^{-5}	99.5+
n_2	$-.89735867$	3.002×10^{-2}	99.5+
n_3	$-.67273638\times10^{2}$	2.939×10	99.5+
n_4	$-.26494177\times10^{4}$	2.475×10^{2}	99.5+
n_5	$.97631231\times10^{7}$	7.133×10^{5}	99.5+
n_6	$.70478556\times10^{-4}$	1.814×10^{-6}	99.5+
n_7	$-.46767764\times10^{-2}$	1.323×10^{-4}	99.5+
n_8	$.22640765\times10^{-5}$	6.177×10^{-8}	99.5+
n_9	$.48141071\times10^{3}$	8.442×10	99.5+
n_{10}	$.64565346\times10^{5}$	3.152×10^{4}	95.0
n_{11}	$-.11485282\times10^{6}$	2.495×10^{6}	99.5+
n_{12}	$-.64835488$	1.942×10^{-1}	99.5+
n_{13}	$.46524812\times10^{3}$	7.373×10^{2}	25.0
n_{14}	$.10933578\times10^{5}$	1.287×10^{3}	99.5+
n_{15}	$.69439530\times10^{-6}$	4.064×10^{-5}	99.5+
n_{16}	$.48\times10^{-2}$	.....	.....

[a] Where P is in atm, T is in degrees K, ρ is in g-mol/l, and $R=0.0820535$ atm l/g-mol K.

[b] These parameters are significant at the level indicated when applying the standard F test.

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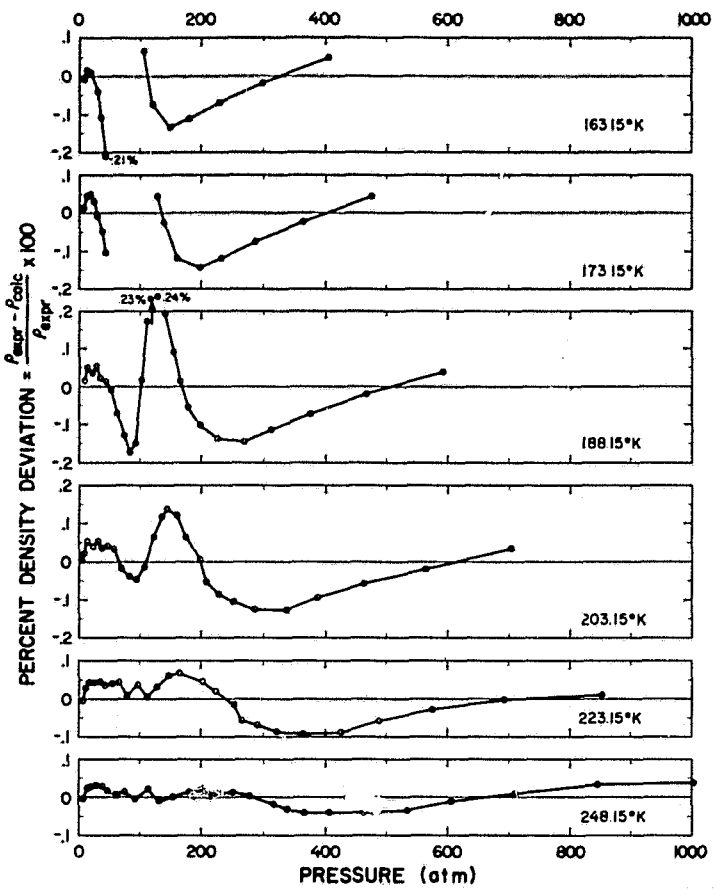
8. Analysis of *P-V-T* Data

Using the coefficients shown in table 8. the equation of state (40) was used to calculate the densities which corresponded to each of the experimental *P-V-T* data points. Percent density deviations between the points calculated by the equation of state and the individual experimental data points which were used in the fit are illustrated in figures 5 through 15. These deviation plots permit the identification of the maximum deviations corresponding to each region of the *P-V-T* surface as well as the specific deviations from each data source.

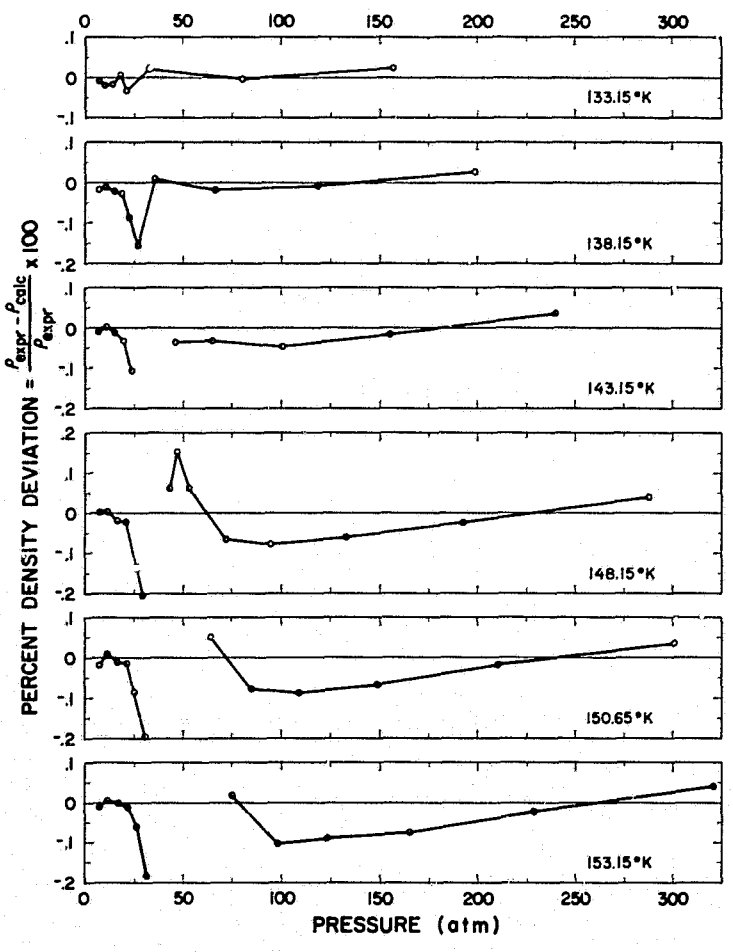
The deviation plots for the data of Michels et al. [1] and Michels et al. [6] are shown by figures 5 through 11. Inspection of figures 5 and 6 shows that the largest density deviations occur in the vicinity of the 153.15 K isotherm. For this isotherm, the largest deviations occur in the region of the critical point. The same phenomenon occurs for the 163.15 K and 150.65 K isotherms and, to a lesser extent, for the 173.15 K and 148.15 K isotherms. This behavior is illustrated in figures 7 and 8.

Figure 16 illustrates the characteristics of the different isotherms as they range over the pressure-density coordinate system. It is seen that the high and low temperature isotherms have relatively large



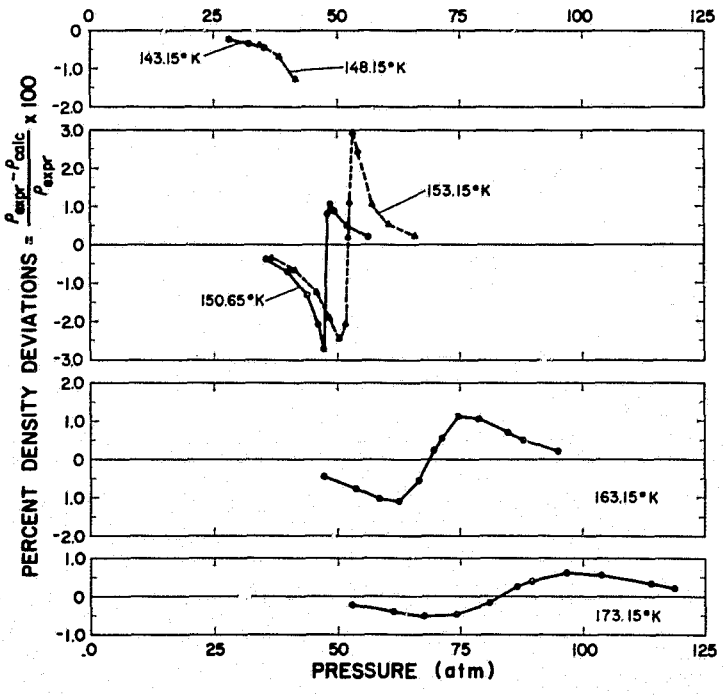
NOTE: Density Deviation Lines are Broken in the Region of Critical Pressure. See Figure 7 for Deviations in this Region.

FIGURE 6. *High temperature density deviations of data by Michels et al. [1] from the equation of state (40).*



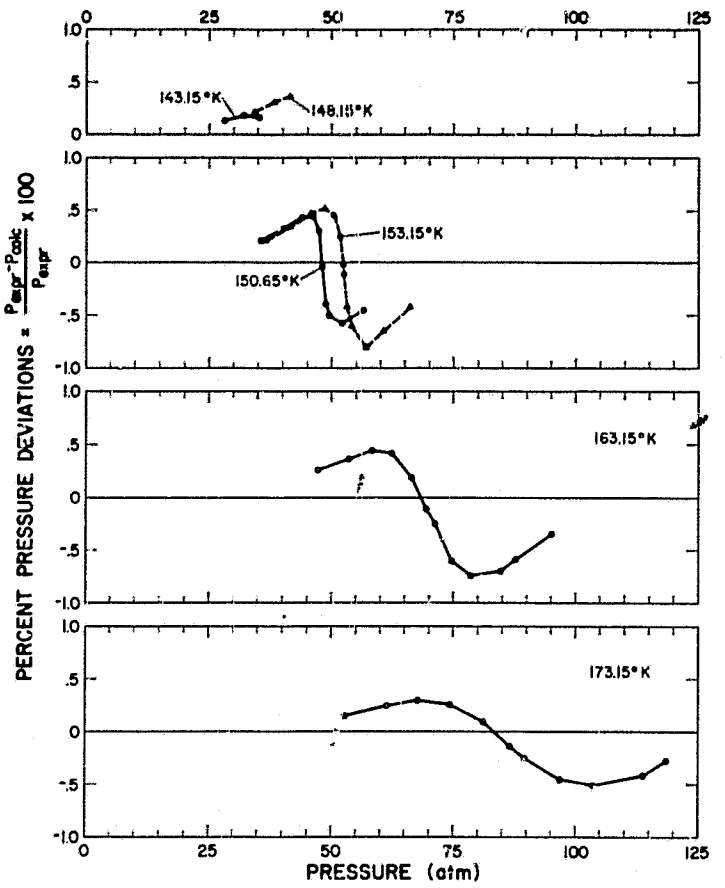
NOTE: Density Deviation Lines are Broken in the Region of Critical Pressure. See Figure 7 for Deviations in this Region.

FIGURE 5. *Low temperature density deviations of data by Michels et al. [1] from the equation of state (40).*



NOTE: These Density Deviations are in the Region of the Critical Point as Shown in Figures 5 and 6.

FIGURE 7. *Density deviations in the region of the critical point.*



NOTE: These Pressure Deviations are in the Region of the Critical Point as Shown in Figures 5 and 6.

FIGURE 8. *Pressure deviations in the region of the critical point.*

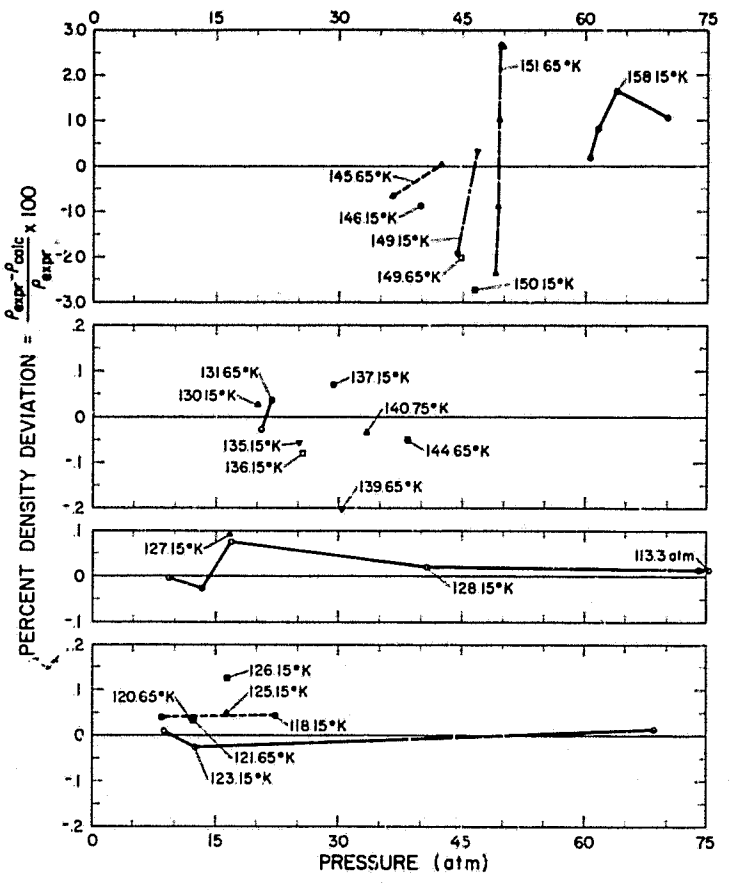


FIGURE 10. *Density deviations for data points near the saturation boundary.*

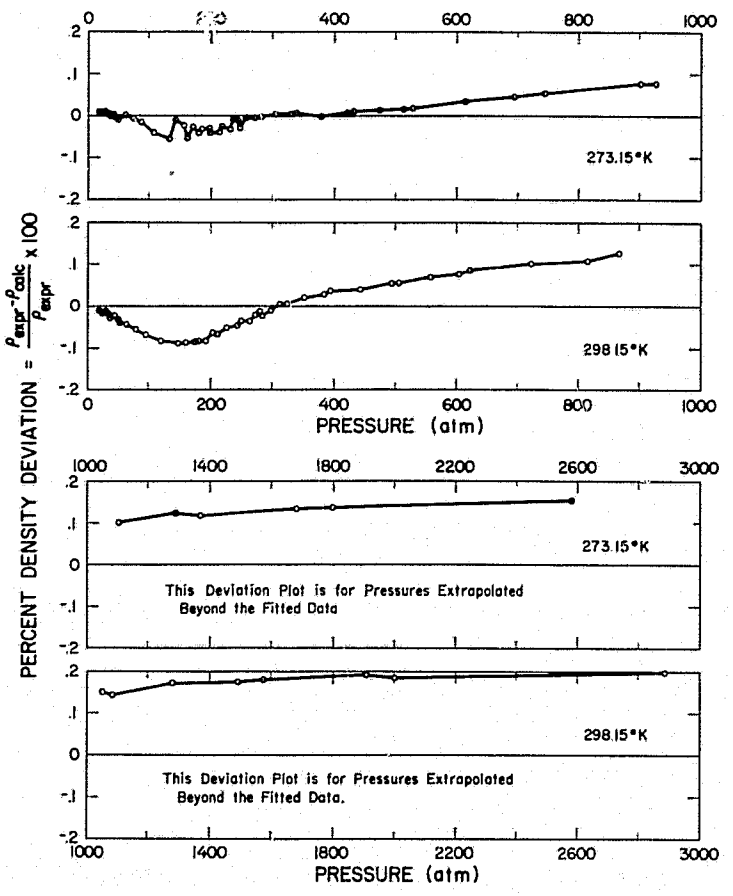


FIGURE 9. *Density deviations of data by Michels et al. [6] from equation of state (40).*

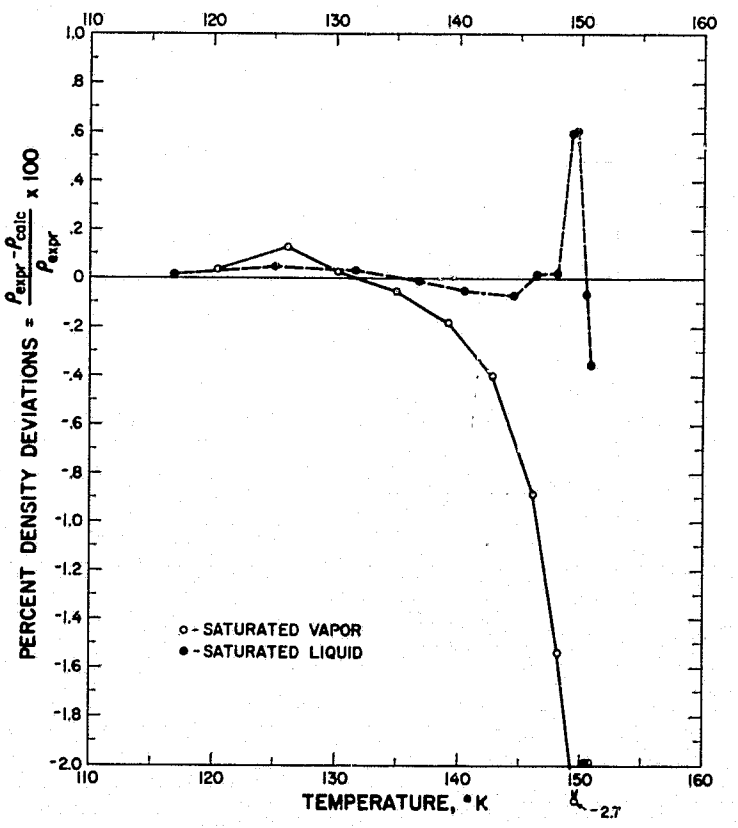


FIGURE 11. *Density deviations of saturation data from equation of state (40).*

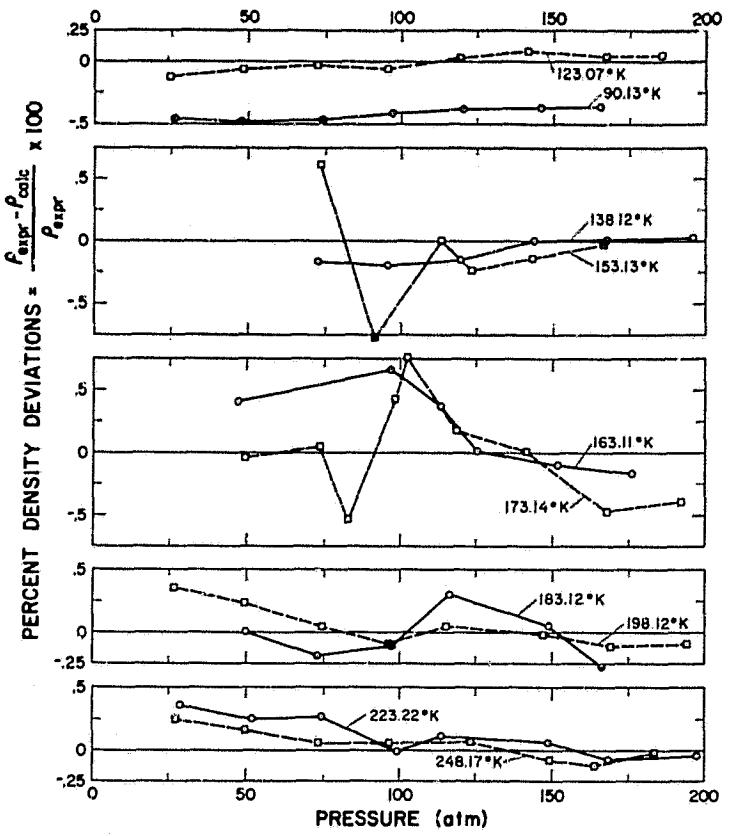


FIGURE 12. *Density deviations of data by Rogovaya et al. [7] from equation of state (40).*

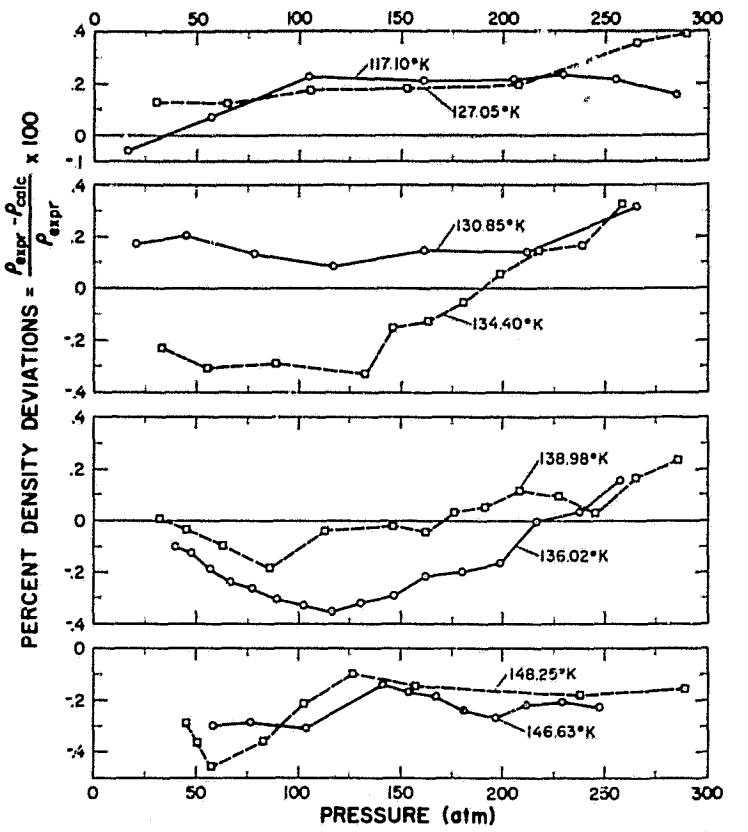


FIGURE 14. *Density deviations of data by van Itterbeek et al. [9] from equation of state (40).*

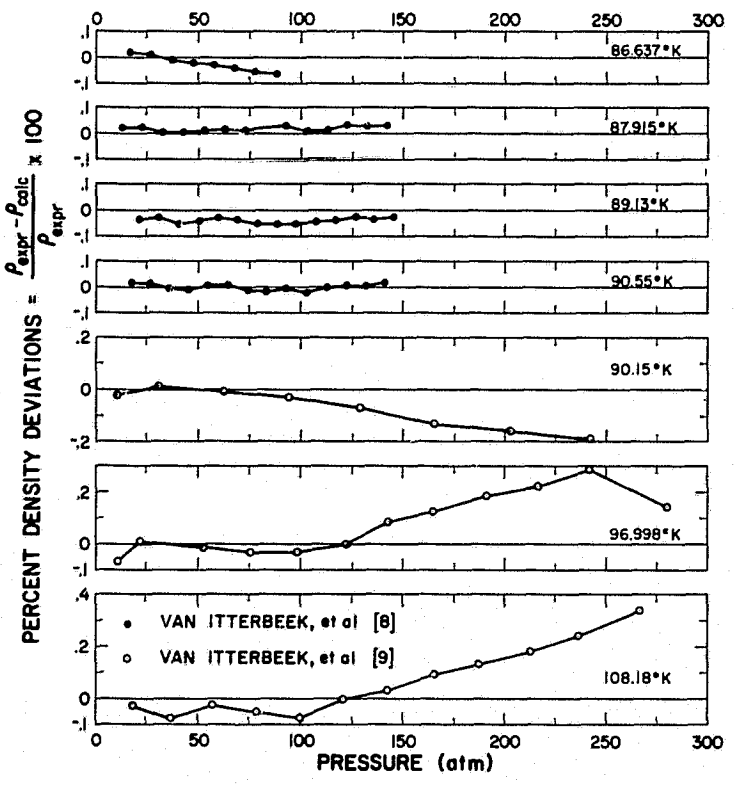


FIGURE 13. *Density deviations of data by van Itterbeek et al. [8, 9] from equation of state (40).*

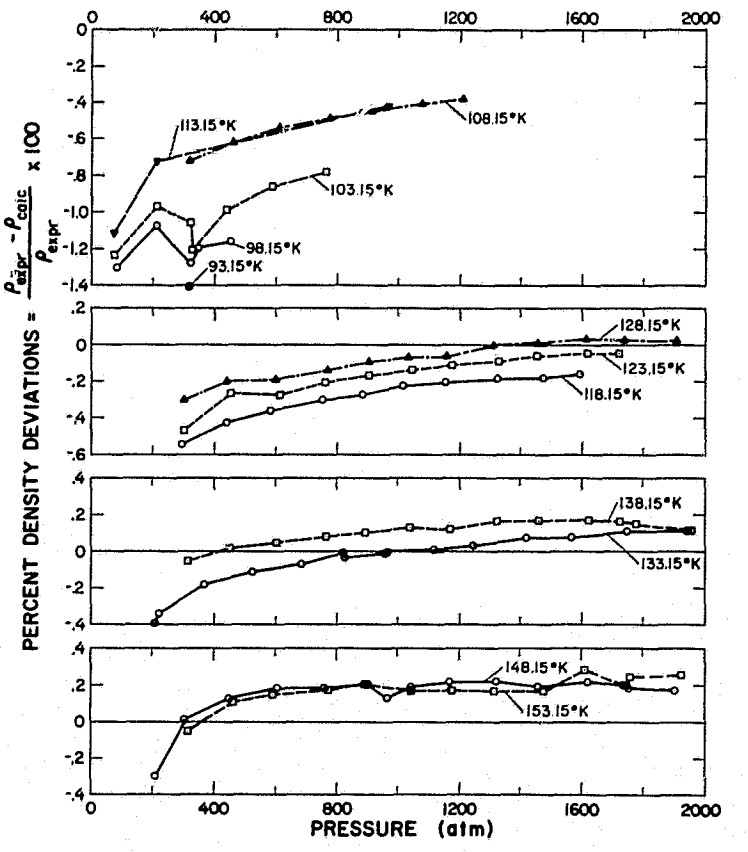


FIGURE 15. *Density deviations of data by van Witzenburg [10] from equation of state (40).*

slopes with not much change in curvature. However, the isotherms between 148 K and 173 K have large variations in the slopes and curvatures. In addition, the slopes of the isotherms in the vicinity of the critical point are small, thus producing large density deviations for rather small pressure or temperature deviations. The small cross-hatched area in figure 16 indicates the region where the density has the great-

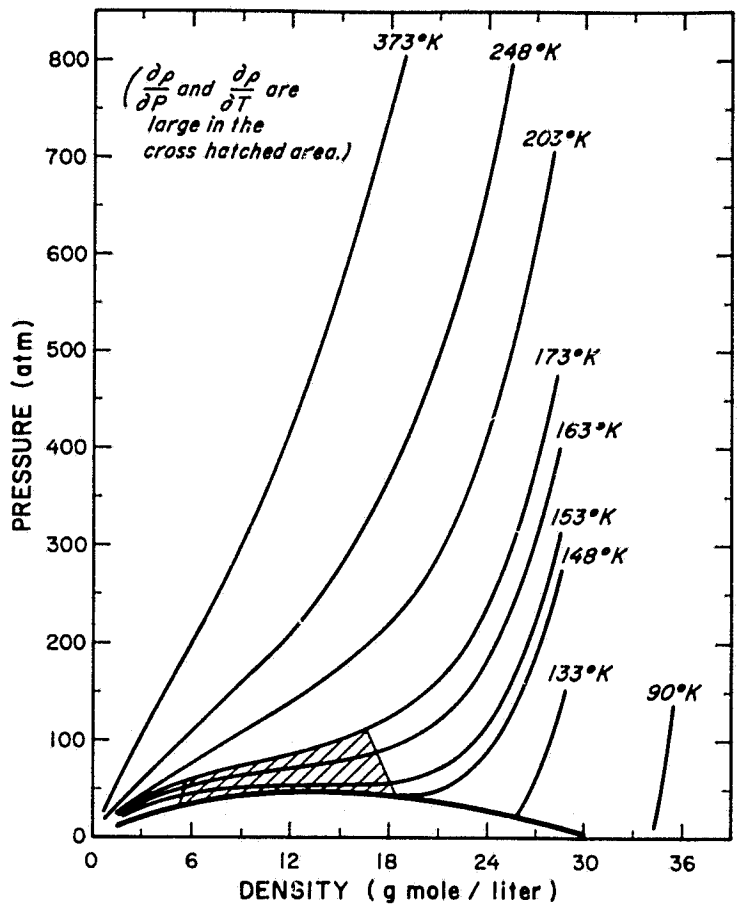


FIGURE 16. *Pressure-density diagram showing isothermal characteristics.*

est sensitivity to small variations in pressure or temperature. If the data points in this region are not included, the mean of the absolute values of the density deviations is 0.08 percent for the data of Michels et al. [1]. If the data points in this region are included, the mean deviation in density becomes 0.26 percent for the data of Michels.

Figures 7 and 8 are expanded-scale deviation plots from figures 5 and 6 and correspond to the region near the critical point. Figure 7 is a density deviation plot and shows a systematic trend which can be attributed to the equation of state. The magnitudes of the density deviations in figure 7 are due to the extreme sensitivity of the density in this region. Figure 8 is a pressure deviation plot for the same region. The systematic trend is still present, but the magnitudes of the pressure deviations are significantly smaller than the corresponding density deviations.

Figure 9 illustrates the density deviations for two isotherms from the data of Michels et al. [6]. A total of 94 data points for these two isotherms were fitted to pressures of about 1000 atm. The mean of the absolute values of the density deviations is 0.034 percent for pressures to 1000 atm, and the data appear to be consistent with the data of Michels et al. [1]. In addition, figure 9 shows density deviation plots for the same two isotherms for pressures from 1000 to about 3000 atm. The equation of state was not fitted to any data above 1000 atm, so the latter deviation plots represent an extrapolation of the equation of state for pressures beyond the fitted data. The density deviations are approximately constant for this pressure range with a mean density deviation of 0.15 percent.

Figure 10 exhibits the density deviations for 41 experimental data points of Michels et al. [1] which are close to the saturation boundary. With the exception of the points close to the critical point the mean density deviation is 0.05 percent. The density deviations for the data close to the critical point are again due to the extreme sensitivity of the density in this region.

Figure 11 is a deviation plot for the saturation line, showing the density deviations between the 23 data points of Michels et al. [1] and the saturation densities calculated by the equation of state. Both saturated liquid and saturated vapor data points are illustrated. With the exception of the saturated liquid data points within about 1.5 K of the critical point, the mean density deviation for the saturated liquid data is 0.03 percent. With the exception of the saturated vapor data points within about 2.5 K of the critical point, the mean density deviation for the saturated vapor data is 0.24 percent.

Figure 12 is the deviation plot for the data of Rogovaya et al. [7]. The mean density deviation is 0.17 percent except for the 90.13 K isotherm. This 90.13 K isotherm appears to be inconsistent with the data of van Itterbeek and Verbeke [8], and van Itterbeek et al. [9], and exhibits a mean density deviation of 0.4 percent. Generally, the data of Rogovaya showed a more random distribution of density deviations than the data from some of the other sources. Rogovaya's data, in general, did not approach the region near the critical point as closely as did Michels et al. [1] and, therefore, no direct comparison of these two data sources is possible in this region where the data are difficult to fit.

Figure 13 illustrates the density deviation plot for the data of van Itterbeek and Verbeke [8]. The mean density deviation for these four isotherms is 0.026 percent. However, the 0.026 percent density deviation of van Itterbeek et al. [8] cannot be directly compared with the deviations of the other data sources since van Itterbeek's data are in the high density–low pressure region of the *P-V-T* surface where the isothermal derivative $(\partial P/\partial \rho)_T$ is large. In this region small displacements in the isotherms result in small density deviations.

Figures 13 and 14 show the deviation plots for the data of van Itterbeek, Verbeke, and Staes [9]. Comparisons of the deviations for isotherms of increasing temperature show a trend of increasing negative density deviations. This trend is not evident in the deviation plots for Michels et al. [1], figures 5 and 6, or Rogovaya et al. [7], figure 12. The mean density deviation is 0.16 percent with the larger deviations occurring at the higher temperatures.

Figure 15 shows the deviation plot for the data of van Witzenburg [10]. The trend here is opposite that of van Itterbeek, Verbeke, and Staes. The data of van Witzenburg exhibit an increasing negative density deviation for increasing temperatures.

However, the van Witzenburg data extend to higher pressures than most of the other data sources for equivalent isotherms, and direct comparisons of density deviations are difficult to make at these higher pressures. The low temperature, low pressure isotherms may be compared with the data of van Itterbeek, Verbeke, and Staes, where it is noted that the van Witzenburg data exhibit density deviations which are about an order of magnitude greater in the negative direction. The mean density deviation for the data of van Witzenburg is 0.30 percent.

Walker [11] displayed his data by isochores. Comparisons with other data sources were difficult to make since most of the other data were obtained isothermally. Therefore, Walker's data were smoothed to a function of the form $P = q_1 + q_2T + q_3T^2$ where the q's are constants. (This function was deemed adequate since the isochoric data of Walker was in the liquid region and exhibited only small deviations from straight lines.) These smoothed isochoric P-T values were plotted and compared with other data sources. This plot showed that the slopes from the fitted function were consistent with the slopes from other data, but the values of the isochores assigned by Walker did not agree with others. This disagreement became greater as the critical point was approached. Therefore, the density values of each of the isochores were redetermined by least squaring the experimental data, one isochore at a time, and extrapolating that isochore to the saturated liquid line. Upon comparison, the original data of Walker deviate from the values predicted by the equation of state by about 2 percent in density, with the deviations increasing to about 10 percent as the critical point is approached. However, when comparing the density deviations between the recalculated least square densities and the densities predicted by the equation of state, the mean deviation was 0.25 percent. This latter comparison is, perhaps, a more valid comparison of Walker's data, since he was not able to actually measure the mass of his sample experimentally. Instead, the density values quoted by Walker were estimated by him from an extrapolation of the isochores to the coexistence line. Private communication from Walker [13] indicated that there were errors in the original values quoted for the densities, especially near the critical point. The new values given to us by Walker [13] agreed much more closely with the values predicted by the equation of state.

Figure 17 illustrates the density deviations for the data of Michels et al. [6]. These data include temperatures above 300 K for pressures to about 2600 atm. Since the equation of state was not fitted to the data in this region, these deviation plots represent an extrapolation of the equation of state for temperatures and pressures beyond the fitted data. The mean density deviation for these data is 0.15 percent for temperatures to 423 K and pressures to 2600 atm, which includes a total of 247 data points. The mean density deviations for

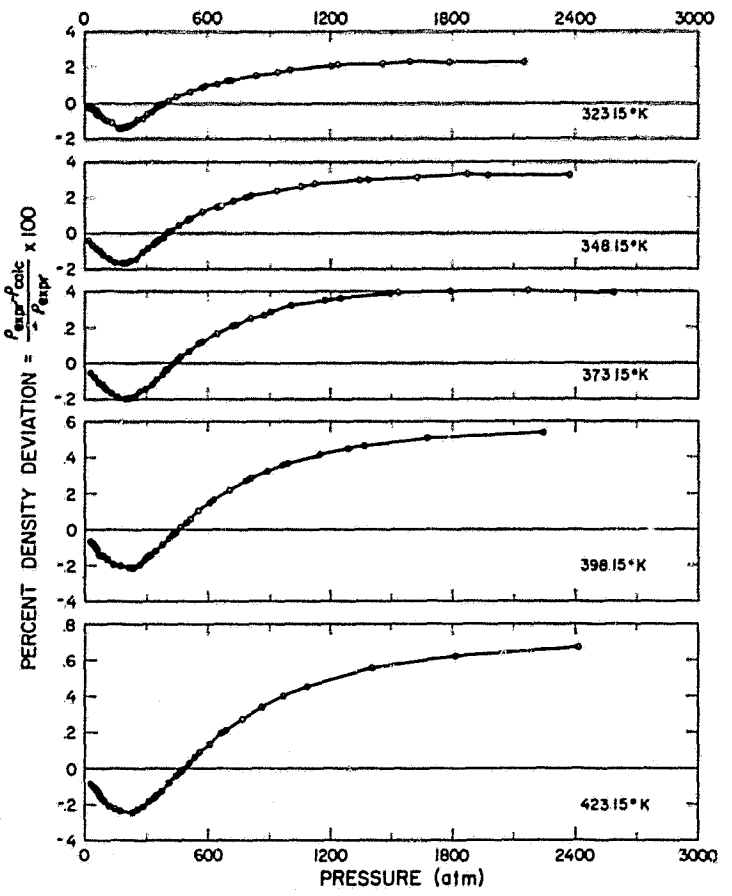


FIGURE 17. *Density deviations for data at temperatures and pressures extrapolated beyond the fitted data points.*

temperatures from 323 to 423 K for pressures to 1000 atm is 0.11 percent. The deviation plots of figures 5 through 17 display varying amounts of systematic deviations between the equation of state and the experimental data. Most of the systematic deviations are small except for the region near the critical point where they become quite marked, as shown in figures 7 and 8. It should be noted that these systematic deviations, although quite small in most cases, are magnified in their contribution to the calculated derivatives.

Although not used for the final fit, the 112 data points of Onnes and Crommelin [26] were compared to the density values predicted by the equation of state. In general, the data of Onnes et al. exhibited a greater scatter than the other data sources, with a mean density deviation of 1.05 percent from the equation of state. Although the Onnes data were limited to pressures below 60 atm, some of the experimental isotherm data overlapped portions of the experimental range investigated by Michels et al. [1]. Generally, the Onnes data showed the same characteristics as the Michels data except for lesser precision. In almost all cases where comparisons could be made, the magnitude of the density quoted by Onnes was smaller than the experimental density of Michels. In a few instances, the Onnes data could be compared with the data of Rogovaya et al. [7]. Again, the densities quoted by Onnes were

smaller than those given by Rogovaya. Some of these latter comparisons indicated that the equation of state predicted density values between those of Onnes and those of Rogovaya.

A final comparison was made between the compilation of the National Bureau of Standards Circular 564 by Hilsenrath et al. [27] and the values predicted by the equation of state. A total of 338 points was used for this comparison. The points were selected so as to well represent the entire range of data compiled by Hilsenrath et al. The temperature range included temperatures from 100 K to 5000 K with pressures ranging from 0.01 to 100 atm. Except for one region, this comparison showed a mean density deviation of 0.08 percent. The one region where the deviations were greatest was at the high pressure–low temperature end of the tables compiled by Hilsenrath et al. (pressures near 100 atm for temperatures near 180 K). For this region, the values of Hilsenrath et al. were obtained essentially by extrapolation of existing experimental data, which may account for the larger deviations.

9. Temperature Scale Conversions

Wherever appropriate, corrections were made to convert the temperatures reported by the investigator to a consistent thermodynamic Kelvin temperature scale based on an ice point of 273.15 K. In some cases the specific temperature scale used by the experimenter was not clearly specified. In these cases, the literature was searched for other papers or information from the same laboratories, and conversions were made from these determinations. Different methods for correcting temperatures are possible, but the following were deemed most appropriate.

Conversions for the data of Michels, Levelt, and de Graaff [1] and Michels, Wijker, and Wijker [6] from the van der Waals Laboratory were made by first correcting the temperatures from the van der Waals thermometer to the International Temperature Scale and then correcting to the thermodynamic temperature scale. The net correction was less than 0.02 °C which is within the precision of the data. The corrections from the van der Waals thermometer to the International Temperature Scale were made by using the information furnished by J. M. H. Levelt-Sengers [28].

The data of Onnes and Crommelin [26], based upon an ice point of 273.09 K, were converted to the International Temperature Scale by

$$T=(t_c+273.09)\,\frac{273.15}{273.09}$$

where t_c is a reported centigrade temperature.

The data of Clark et al. [14], based upon an ice point of 273.16 K, were converted to the International Temperature Scale by

$$T=(t_c+273.16)\,\frac{273.15}{273.16}.$$

Corrections from the International Temperature Scale to the thermodynamic temperature scale were made by using the tabular information furnished by C. R. Barber [29]. The tabular information by Barber is shown in table 9.

TABLE 9. *Conversion from international to thermodynamic temperatures*

Temperature, °C	$T_{th.}-T_{int.}$
−10	0.005
−20	.011
−30	.017
−40	.024
−50	.0295
−60	.034
−70	.0365
−80	.036
−90	.032
−100	.0245
−110	.015
−120	.0025
−130	−.010
−140	−.020
−150	−.024
−183	0

10. Derived Thermodynamic Properties

The calculation of entropy, enthalpy, and internal energy was performed by using the equation of state (40), the zero pressure (ideal gas) and specific heat (c_p°), and the vapor pressure equation (14). The relationships for calculating these derived properties have been described by Gosman [22], and Hust and Gosman [30], and are presented below.

The entropy of the gaseous phase, as well as the saturated vapor, was expressed as

$$S=S_{T_0}^\circ-R\ln\left(\frac{\rho RT}{P_0}\right)+{}_T\int_0^\rho\left[\frac{R}{\rho}-\frac{1}{\rho^2}\left(\frac{\partial P}{\partial T}\right)_\rho\right]d\rho+\int_{T_0}^{T}c_p^\circ\,\frac{dT}{T}. \qquad (49)$$

For eq (49) the reference entropy, $S_{T_0}^\circ=3.23367$ J/g−K, for the ideal gas at $P_0=1$ atm, and the normal boiling point temperature at $T_0=87.28$ K was selected from Hilsenrath et al. [27]. The ideal gas specific heat, $c_p^\circ=\frac{5}{2}R=0.520320$ J/g−K, was also taken from Hilsenrath et al.

The enthalpy of the gaseous phase was expressed as

$$H=H_{T_0}^\circ+{}_T\int_0^\rho\left[\frac{P}{\rho^2}-\frac{T}{\rho^2}\left(\frac{\partial P}{\partial T}\right)_\rho\right]d\rho+\frac{P}{\rho}-RT+\int_{T_0}^{T}c_p^\circ dT. \qquad (50)$$

Compilations often do not tabulate $H^\circ_{T_0}$. Many times these compilations tabulate $H^\circ_{T_0}-U^\circ_0$, where U°_0 is the ground-state energy. For purposes of consistency with these compilations, a value of $H^\circ_{T_0}-U^\circ_0=45.4119$ J/g (for the ideal gas at 87.28 K) was selected from Hilsenrath [27]. Then, in order to obtain $H^\circ_{T_0}$ for eq (50), a value of $U^\circ_0=192.5197$ J/g was assigned to the ground-state energy. This value of U°_0 was selected so that the enthalpy of the saturated liquid at 1 atm pressure agrees with the value given by Din [31].

The equation of state (40) was then substituted into eqs (49) and (50). Upon integration, the resulting expressions are

$$S=S^\circ_{T_0}-R\ln\left(\frac{\rho RT}{P_0}\right)+\int_{T_0}^{T}\frac{c^\circ_p}{T}dT$$
$$+\rho\left(-n_1+\frac{n_3}{T^2}+\frac{2n_4}{T^3}+\frac{4n_5}{T^5}\right)-\rho^2\left(\frac{n_6}{2}\right)-\rho^3\left(\frac{n_8}{3}\right)$$
$$-\exp\left(-n_{16}\rho^2\right)\left(\frac{2n_9}{T^3}+\frac{3n_{10}}{T^4}+\frac{4n_{11}}{T^5}\right)/2n_{16}$$
$$-\exp\left(-n_{16}\rho^2\right)\left(\frac{\rho^2}{2n_{16}}+\frac{1}{2n_{16}^2}\right)\left(\frac{2n_{12}}{T^3}+\frac{3n_{13}}{T^4}+\frac{4n_{14}}{T^5}\right)$$
$$+\left(\frac{2n_9}{T^3}+\frac{3n_{10}}{T^4}+\frac{4n_{11}}{T^5}\right)/2n_{16}$$
$$+\left(\frac{2n_{12}}{T^3}+\frac{3n_{13}}{T^4}+\frac{4n_{14}}{T^5}\right)/2n_{16}^2, \tag{51}$$

and

$$H=H^\circ_{T_0}+\frac{P}{\rho}-RT+\int_{T_0}^{T}c^\circ_p dT+\rho\left(n_2+\frac{2n_3}{T}+\frac{3n_4}{T^2}+\frac{5n_5}{T^4}\right)$$
$$+\rho^2\left(\frac{n_7}{2}\right)-\frac{1}{2n_{16}}\left(\frac{3n_9}{T^2}+\frac{4n_{10}}{T^3}+\frac{5n_{11}}{T^4}\right)\exp\left(-n_{16}\rho^2\right)$$
$$-\left(\frac{\rho^2}{2n_{16}}+\frac{1}{2n_{16}^2}\right)\left(\frac{3n_{12}}{T^2}+\frac{4n_{13}}{T^3}+\frac{5n_{14}}{T^4}\right)\exp\left(-n_{16}\rho^2\right)$$
$$+\rho^5\left(\frac{n_{15}}{5}\right)+\frac{1}{2n_{16}}\left(\frac{3n_9}{T^2}+\frac{4n_{10}}{T^3}+\frac{5n_{11}}{T^4}\right)$$
$$+\frac{1}{2n_{16}^2}\left(\frac{3n_{12}}{T^2}+\frac{4n_{13}}{T^3}+\frac{5n_{14}}{T^4}\right). \tag{52}$$

The internal energy was obtained from

$$U=H-P/\rho. \tag{53}$$

The method of calculation proceeded as follows:

a. The properties of the gaseous phase and saturated vapor were calculated with the use of eqs (51), (52), and (53).

b. The volume of vaporization (V^g-V^l) was calculated with the use of the equation of state (40) and the vapor pressure equation (14).

c. The slope of the vapor pressure curve dP/dT was obtained from eq. (14).

d. The entropy and enthalpy changes due to vaporization were calculated with

$$\frac{dP}{dT}=\frac{S^g-S^l}{V^g-V^l}$$

and

$$H^g-H^l=T(S^g-S^l).$$

e. The saturated liquid properties were obtained by subtracting the entropy and enthalpy changes due to vaporization from the saturated vapor value.

f. The saturated liquid line, as calculated in step e, was then used as the datum point for calculating properties below the critical temperature and densities greater than those of the saturated liquid. These properties were calculated by the isothermal integration of the appropriate portions of eqs (49) and (50). These expressions are

$$S=S^l-{}_T\int_{\rho^l}^{\rho}\left[\frac{1}{\rho^2}\left(\frac{\partial P}{\partial T}\right)_\rho\right]d\rho$$

and

$$H=H^l+\frac{P}{\rho}-\frac{P}{\rho^l}+{}_T\int_{\rho^l}^{\rho}\left[\frac{P}{\rho^2}-\frac{T}{\rho^2}\left(\frac{\partial P}{\partial T}\right)_\rho\right]d\rho.$$

By progressing through the above procedure, the derived properties were calculated for the entire portion of the thermodynamic surface under consideration. However, the method of calculation outlined above may result in a discontinuity. This discontinuity exists at temperatures below the critical temperature for pressures above the critical pressure. The cause of the discontinuity arises from the fact that the calculation of the derived properties was performed by one procedure for temperatures above the critical temperature and a second procedure for temperatures below the critical. For temperatures below the critical, the changes of entropy and enthalpy due to vaporization had to be calculated as outlined in step d, and the saturated liquid line obtained as outlined in step e. For temperatures above the critical, steps d and e were not needed for the calculation of derived properties. The mutual boundary (at the critical temperature) between these two regions then exhibited the discontinuity. This discontinuity in the derived properties is possibly due to slight disagreement between the isochoric slope of the equation of state (40) at the critical point and the slope of the independently obtained vapor pressure equation (14) at the same point.

When the discontinuities were plotted with a highly expanded scale, it was determined that the discontinuity was independent of pressure. Adjustments to the derived properties were then determined by smoothing the transition region for isobars near the critical. These adjustments were applied to the derived properties by making appropriate corrections to the entropy and enthalpy of vaporization. The adjustments were added to the entropy and enthalpy of vaporization, thus decreasing the values for the entropy and enthalpy of the saturated liquid. Table 10 lists the temperature dependent adjustments which were made.

All of the data which have been calculated were restricted to the liquid and gaseous regions by using

TABLE 10. *Adjustments for entropy and enthalpy of the saturated liquid*

Temperature K	Entropy J/g−K adjustment[a]	Enthalpy J/g adjustment[a]
150	0.009539	1.431
149	.009750	1.453
148	.008768	1.298
147	.007549	1.110
146	.006330	0.924
145	.005189	.752
144	.004160	.599
143	.003249	.465
142	.002460	.349
141	.001789	.252
140	.001239	.173
139	.000811	.113
138	.000490	.068
137	.000260	.036
136	.000100	.014
135	.000010	.001

[a] These adjustments have been subtracted from the entropy and enthalpy of the saturated liquid.

the following melting curve relationship:

$$P_{\text{melt}}=P_t+A\left[\left(\frac{T_{\text{melt}}}{T_t}\right)^C-1\right]. \qquad (54)$$

In eq (54), A and C are constants which were determined by a least squares fit to experimental data. The form of this melting curve relationship is discussed by Goodwin and Weber [32].

The experimental data which were considered for the determination of the constant in eq (54) were taken from Michels and Prins [33], Lahr and Eversole [34], and Bridgman [35]. The constants of eq (54) were determined to be

$$A=2078.76667$$

$$C=1.59817868,$$

with a mean of the absolute pressure deviations of 0.08 percent.

The properties, density, enthalpy, internal energy, and entropy, are presented as functions of pressure and temperature in the tables of appendix A. The number of significant figures given in these tables is not justified on the basis of the uncertainties of the data, but, rather, is desirable to maintain the internal consistency of the tables.

A comparison of the heat of vaporization was made at the normal boiling point. The heat of vaporization of various investigators was compared with the value obtained by using the equation of state (40) and vapor pressure equation (14). This comparison is shown in table 11.

TABLE 11. *Comparison of heat of vaporization at the normal boiling point*

Frank and Clusius [36]	1557.5±1.5	cal/g-mol
Flubacher et al. [15]	1555 .0±4.6	cal/g-mol
Eucken [37]	1501	cal/g-mol
Ziegler et al. [2]	1543.4	cal/g-mol
This work	1546.3	cal/g-mol

11. Equation of State and Saturation Boundary

The saturation boundary can be defined by the equation of state if there is a sufficient number of highly precise experimental P-V-T data points along the entire boundary. However, saturation densities are difficult to measure with high precision. In addition, for argon there was only one source of satisfactory saturation data, and these data did not cover the entire two-phase boundary. Therefore, it was difficult to perform a critical evaluation of these saturation data for the purpose of determining the saturation boundary.

Instead, there was available a relatively large number of P-T data points along the saturation boundary. For these data, the vapor pressure equation (14) was developed. Therefore, the definition of the saturation boundary was obtained by the use of two independent equations—the equation of state (40) and the vapor pressure equation (14).

The saturation boundary, as defined by the equation of state alone, was then examined for internal thermodynamic consistency by using the conditions of thermodynamic equilibrium:

$$\begin{aligned} T^l &= T^g \\ P^l &= P^g \\ G^l &= G^g. \end{aligned} \tag{55}$$

The equation of state (40) is a continuous function with a van der Waals form across the saturation boundary. Therefore, the equation for thermodynamic equilibrium (55) could be substituted into the equation of state (40). This was accomplished for a given saturation temperature by imposing the equilibrium conditions upon both the equation of state and the equation for the Gibbs function derived from the equation of state and solving them iteratively and simultaneously for the corresponding density. By this means the entire saturation boundary was derived by the use of the equation of state and the conditions of thermodynamic equilibrium, without using the independently obtained vapor pressure equation (14).

A comparison of the vapor pressures as derived from the equation of state and the vapor pressures as obtained from the vapor pressure equation was made. The results of this comparison are shown in table 12 for 5-deg temperature increments.

The agreement shown in table 12 indicates that the equation of state is internally consistent with the conditions of thermodynamic equilibrium. Table 12 also indicates that the equation of state satisfactorily predicts P-V-T values in the vicinity of the saturation boundary.

TABLE 12. *Vapor pressure comparison*

T, K	P_1, Atm	P_2, Atm	P_1-P_2
85	0.77945	0.79737	−0.01792
90	1.32133	1.34210	−.02077
95	2.11103	2.13029	−.01926
100	3.20974	3.22249	−.01275
105	4.68121	4.68277	−.00156
110	6.59102	6.57784	.01318
115	9.00650	8.97649	.03001
120	11.99740	11.94960	.04780
125	15.63733	15.57082	.06651
130	20.00587	19.91829	.08758
135	25.19168	25.07827	.11341
140	31.29662	31.15296	.14366
145	38.44154	38.28020	.16134
150	46.77419	46.71197	.06222

P_1 is calculated from vapor pressure equation (14).
P_2 is calculated from equation of state (40).

12. Second Virial Coefficient and Intermolecular Potential

An equation of state which has been extensively used is

$$\frac{PV}{RT} = Z = 1 + B\rho + C\rho^2 + D\rho^3 + \ldots, \tag{56}$$

where B, C, D, . . . are virial coefficients and represent deviations from ideal gas behavior. The virial coefficients are functions of temperature and are related to interactions between molecules. The second virial coefficient, B, is related to interactions between two molecules, the third virial, C, to the interaction between three molecules, etc. When the gas has negligible molecular interaction as compared to interaction with the walls of the confining vessel, then eq (56) reduces to the perfect gas where $Z=1$.

The virial coefficients for the equation of state (40) were obtained by arranging the equation of state into virial form as shown in eq (56). In order to obtain the proper form, the exponential term of eq (40) was expanded as

$$\exp(-n_{16}\rho^2) = 1 - (n_{16}\rho^2) + \frac{(n_{16}\rho^2)^2}{2!} - \frac{(n_{16}\rho^2)^3}{3!} + \ldots. \tag{57}$$

Substituting eq (57) into eq (40),

$$\begin{aligned} Z = 1 &+ \rho\left(\frac{n_1}{R} + \frac{n_2}{RT} + \frac{n_3}{RT^2} + \frac{n_4}{RT^3} + \frac{n_5}{RT^5}\right) \\ &+ \rho^2\left(\frac{n_6}{R} + \frac{n_7}{RT} + \frac{n_9}{RT^3} + \frac{n_{10}}{RT^4} + \frac{n_{11}}{RT^5}\right) + \rho^3\left(\frac{n_8}{R}\right) \\ &+ \rho^4\left(\frac{n_{12}}{RT^3} + \frac{n_{13}}{RT^4} + \frac{n_{14}}{RT^5} - \frac{n_{16}n_9}{RT^3} - \frac{n_{16}n_{10}}{RT^4} - \frac{n_{16}n_{11}}{RT^5}\right) + \ldots. \end{aligned} \tag{58}$$

In eq (58), the coefficient of ρ is the second virial coefficient, the coefficient of ρ^2 is the third virial coefficient, etc.

The second virial coefficient was calculated from eq (58). These coefficients, as functions of temperature are listed in table 13. A comparison between the second virial coefficient calculated by using the virial equation of state (58) and other published data is shown in figure 18.

Except for the data of Kerr [39], figure 18 illustrates that eq (58) represents the second virial coefficients within the uncertainty of the data for temperatures from about 120 to 300 K. Kerr's virial data do not appear to have the precision of the other data sources. For temperatures below 120 K, eq (58) appears to predict virial coefficients which are about 2 percent high. Fender and Halsey [40] estimate their error to be about 1.5 percent, and it is therefore concluded that eq (58) is a satisfactory representation of the virial coefficient data.

TABLE 13. *Second virial coefficients as calculated from virial equation of state (58)*

Temp. K	B	Temp. K	B
90	−215.22	200	−47.18
100	−180.09	210	−42.20
110	−152.39	220	−37.79
120	−130.32	230	−33.86
130	−112.47	240	−30.33
140	− 97.84	250	−27.15
150	− 85.69	260	−24.27
160	− 75.47	270	−21.65
170	− 66.78	280	−19.26
180	− 59.31	290	−17.07
190	− 52.83	300	−15.05

B has units of cm³/mol.

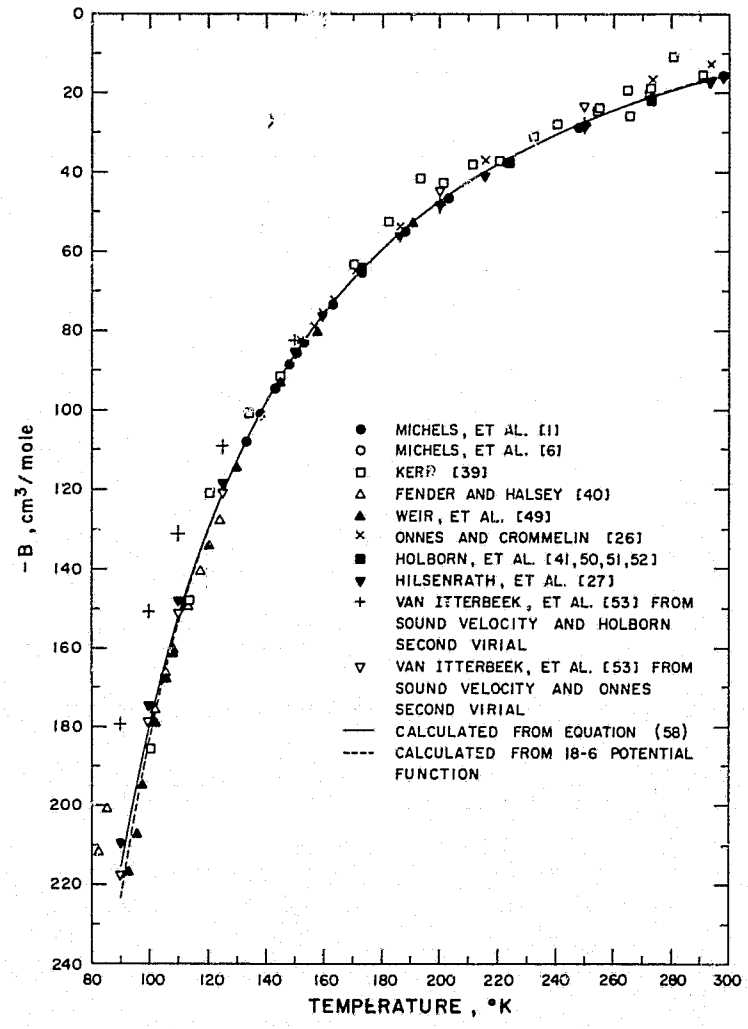


FIGURE 18. *Comparison of second virial coefficients.*

The second virial coefficient may also be theoretically calculated if a mathematical model for the intermolecular force potential is selected. A number of force potentials have been advanced and some of these are discussed in Hirschfelder, Curtiss, and Bird [38] and Gosman [22].

The Lennard-Jones 12–6 model for the potential function is the one most commonly used and was therefore investigated. The expression for the energy for the 12–6 potential is

$$E=4\epsilon\left[\left(\frac{\sigma}{r}\right)^{12}-\left(\frac{\sigma}{r}\right)^{6}\right]. \tag{59}$$

Using eq (59), the expression for the reduced second virial coefficient is obtained as illustrated by Gosman [22]:

$$B^*=\sum_{k=0}^{\infty}\left[-\frac{2^{\left(\frac{2k+1}{2}\right)}}{4k!}\,\Gamma\left(\frac{2k-1}{4}\right)\right]T^{*\left(-\frac{2k+1}{4}\right)}. \tag{60}$$

With eq (60) and the equations

$$T^*=\frac{kT}{\epsilon}$$

$$b_0=\frac{B}{B^*}$$

$$b_0=\frac{2}{3}\pi N\sigma^3, \tag{61}$$

the two parameters ϵ and σ were obtained by the method described in Gosman [22].

It was found that the two parameters, ϵ and σ, of the 12–6 potential are not truly constants, but are somewhat temperature dependent. It was also found that the higher temperature isotherms (about 300 K) are relatively insensitive to variations in the parameters. At the lower temperatures, however, relatively small variations in the parameters result in large variations in the second virial coefficient. This effect was demonstrated for argon by Gosman [22] and shown to be a general property of the relationship between second virial coefficients and potential functions by Hanley and Klein [44].

For the temperature range of 90 to 300 K a set of parameters for the Lennard-Jones 12–6 potential was determined to be

$$\epsilon/k=112.4\text{ K}$$

$$b_0=57.7\text{ cm}^3/\text{mol}.$$

Using these parameters, the mean deviation in B from values calculated by eq (58) was 0.78 cm^3/mol.

It is of interest to compare the values of these parameters with values determined by other sources. Holborn and Otto [41] found $\epsilon/k=122$ and $b_0=49.58$ for temperatures between 173 and 673 K. Michels, Wijker, and Wijker [6] found $\epsilon/k=119.8$ and $b_0=49.8$ for temperatures between 273 and 423 K. Since the latter two sets of parameters were obtained for relatively high temperature data, it is expected that the value of ϵ/k would be larger than that obtained in this evaluation.

Since the 12–6 potential appears to be satisfactory for limited temperature ranges only, other forms of the potential function were investigated. Using the basic technique developed by Hanley [42] the family of "m-6" functions was evaluated along with the Kihara potential function. The "m-6" functions were calculated by using the values of the reduced second virial coefficients as presented by Klein [43]. The results of these calculations are shown in figure 19.

Figure 19 shows the deviations between second virials as calculated by the various potential functions and those calculated by the virial eq (58). The deviations in second virial for the 12–6, 15–6, 18–6, and Kihara potential functions are all illustrated in figure 19. It is noted that the Kihara and the 15–6 functions are almost identical over the whole temperature range. This similarity between potential functions is discussed by Hanley and Klein [44]. For the temperature range of 90 to 300 K the set of parameters for the Kihara potential was determined to be

$$\epsilon/k=125\text{ K}$$
$$\rho_0=3.711\text{ Å}$$
$$a=0.080\text{ Å}.$$

Using these values for the Kihara potential, the mean deviation in B from values calculated by eq (58) was 0.53 cm^3/mol.

The 18–6 potential shows a negligibly small deviation in second virial above 120 K. Below 120 K, figure 19 shows that the virials calculated by the 18–6 function deviate from those calculated by eq (58). However, this was the temperature range where eq (58) predicted virials which were 2 percent too large. A comparison of the virials calculated by the 18–6 function with the original data shows that the 18–6 function predicts the virial coefficients to about the uncertainty of the data. The 18–6 function is also shown in figure 19 to illustrate this point.

The parameters for the 18–6 function were determined to be

$$\epsilon/k=157.5\text{ K}$$
$$\sigma=3.28\text{ Å}.$$

Using these values for the 18–6 function, and omitting the deviations below 120 K, the mean deviation in B is 0.14 cm^3/mol.

A final calculation was made for the second virial coefficient to determine the corrections due to quantum effects. The relationships which were used to calculate these second virials with quantal corrections for both the 12–6 and the Kihara potentials are given by Hirschfelder et al. [38]. The results indicated that the quantal corrections are a fraction of one percent, even at the lower temperatures. The magnitude of the quantal correction is within the uncertainty of the published experimental data.

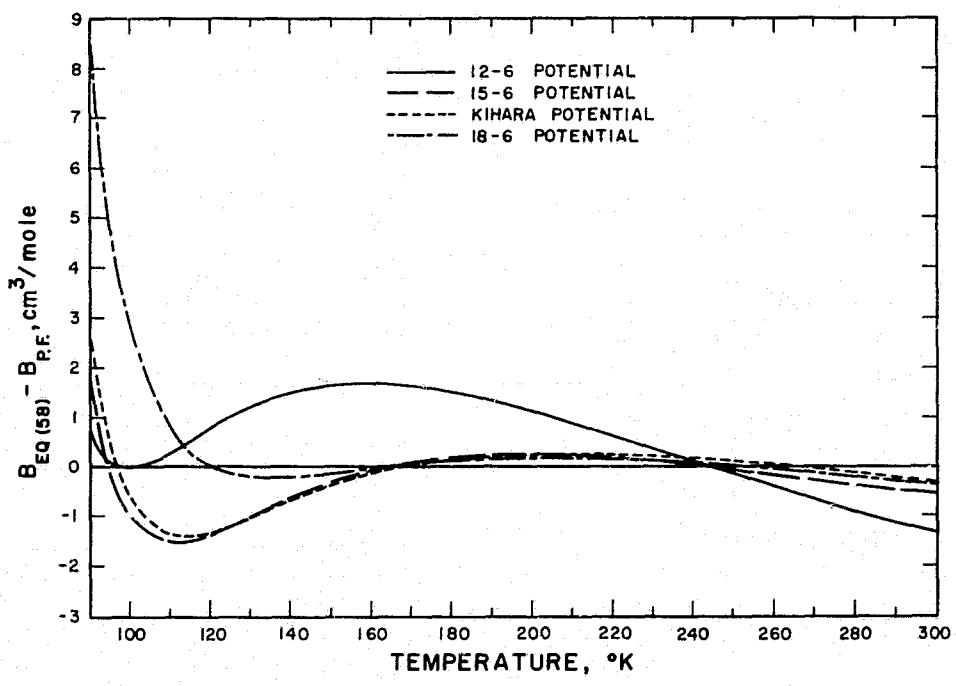


FIGURE 19. *Potential function comparison.*

13. The Joule-Thomson Inversion Curve

The Joule-Thomson coefficient, μ, is defined as the slope of an isenthalpic curve on the P-T coordinate system:

$$\mu=\left(\frac{\partial T}{\partial P}\right)_H. \tag{62}$$

Equation (62) may be rewritten for more convenient evaluation with the equation of state (39):

$$\mu=\frac{1}{C_p}\left[\frac{T}{\rho^2}\frac{\left(\frac{\partial P}{\partial T}\right)_\rho}{\left(\frac{\partial P}{\partial \rho}\right)_T}-\frac{1}{\rho}\right]. \tag{63}$$

The Joule-Thomson inversion curve is defined as the locus of points where $\mu=0$, and may be calculated from

$$\frac{T}{\rho^2}\frac{\left(\frac{\partial P}{\partial T}\right)_\rho}{\left(\frac{\partial P}{\partial \rho}\right)_T}=\frac{1}{\rho}. \tag{64}$$

In eq (64), the partial derivatives were evaluated from the equation of state (39). Equation (64) was programmed for an iterative solution to find the values of density and temperature which satisfied the equation. Pressure values were then calculated from the equation of state for the appropriate densities and temperatures.

The Joule-Thomson inversion curve data as calculated by eqs (64) and (39), are given in table 14 for 10-deg intervals.

TABLE 14. *Inversion curve from eq (64)*

Temp. K	Pressure Atm	Temp. K	Pressure Atm
130	69.27	220	431.68
140	128.64	230	454.08
150	181.92	240	473.88
160	229.83	250	491.23
170	272.96	260	506.28
180	311.83	270	519.19
190	346.81	280	530.07
200	378.27	290	539.04
210	406.48	300	546.22

Figure 20 illustrates the inversion curve and shows the comparison with other data sources. The solid line represents the locus of inversion curve points as calculated by eqs (64) and (39). The solid line is terminated at 300 K, which is the temperature limit of the data fitted by the equation of state (39). The dashed portion of the inversion curve above 300 K represents the locus of points as calculated by eq (64) with data from the equation of state which have been extrapolated beyond the fitted region.

Figure 20 also shows the inversion curve data obtained by Roebuck and Osterberg [45] in 1934. In 1940, Roebuck and Osterberg [46] published a

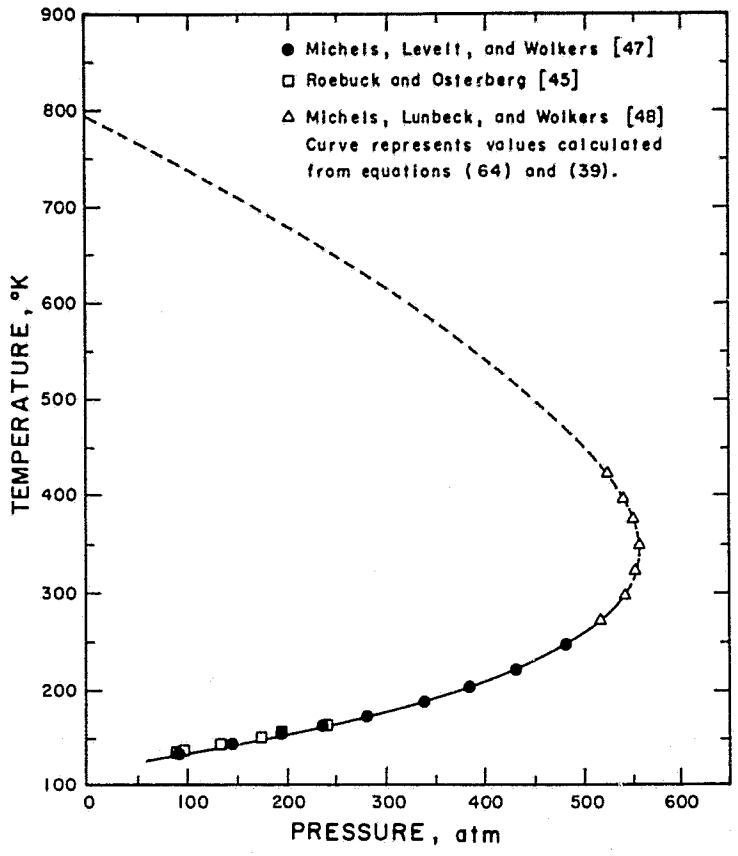


FIGURE 20. *Inversion curve comparisons.*

paper indicating that a numerical error in the pressure data had been made. Therefore, the Roebuck and Osterberg [45] data shown in figure 20 have been adjusted by the appropriate correction. The mean of the absolute values of the deviation in inversion temperatures between the corrected data of Roebuck and the values calculated by eq (64) is 1.1 percent.

Michels, Levelt, and Wolkers [47] published Joule-Thomson coefficient data for temperatures from 133 K to 273 K. From these data, the inversion curve pressures and temperatures were obtained by determining where the Joule-Thomson coefficient was equal to zero. The inversion curve data of Michels et al. [47] determined in this manner, are shown in figure 20. The mean deviation between the Michels inversion curve temperatures and the temperatures calculated by eq (64) is 0.30 percent.

Michels, Lunbeck, and Wolkers [48] published Joule-Thomson coefficient data for temperatures from 273 to 423 K. Although the equation of state was not fitted to data above 300 K, a comparison of the data of Michels and the calculated inversion curve is shown in figure 20. The mean deviation in inversion temperatures between the Michels et al. [48] data and the extrapolated values of eq (64) is 1.1 percent.

The maximum inversion temperature as calculated by eq (64) is about 794 K. Based on the Lennard-Jones 12–6 potential, Hirschfelder et al. [38] shows that the theoretical maximum reduced

inversion temperature is 6.47. With this value of reduced temperature and a selected value for the ϵ/k parameter of the 12–6 potential, the theoretical maximum inversion temperature was calculated. If the value, $\epsilon/k=122$, obtained by Holborn and Otto [41] for temperatures up to 673 K is used, the theoretical maximum inversion temperature is 789 K. The deviation between the theoretical maximum inversion temperature and the value calculated by eq (64) is about 0.6 percent. If the value, $\epsilon/k=119.8$, obtained by Michels et al. [6] for temperatures up to 423 K is used, the theoretical maximum inversion temperature is 775 K, giving a deviation of about 2.5 percent. Based upon the 18–6 potential, with a value of $\epsilon/k=157.5$, the theoretical maximum inversion temperature is 770 K, giving a deviation of about 3 percent from the value calculated by eq (64).

The significance of the inversion curve as a test for the equation of state (39) may be seen by noting that the inversion curve eq (64) involves derivatives of the equation of state. As illustrated in figure 20 and as previously mentioned, the deviations between the calculated inversion curve and the data from other sources are relatively small. Therefore it may be concluded that the geometric slope of the physical thermodynamic surface is adequately described by the equation of state (39).

14. Specific Heats

The specific heats of a gas at constant pressure and constant volume are given by

$$C_v=T\left(\frac{\partial S}{\partial T}\right)_v \tag{65}$$

and

$$C_p=T\left(\frac{\partial S}{\partial T}\right)_p. \tag{66}$$

The C_p and C_v illustrated in figures 21 and 22 were calculated by forming the $\left(\frac{\partial S}{\partial T}\right)_v$ and $\left(\frac{\partial S}{\partial T}\right)_p$ numerically with $(\Delta S/\Delta T)_v$ and $(\Delta S/\Delta T)_p$, where ΔT was 0.005 K and ΔS was calculated using the equations given in section 10. These numerically obtained values were compared with values calculated from continuous analytical expressions derived

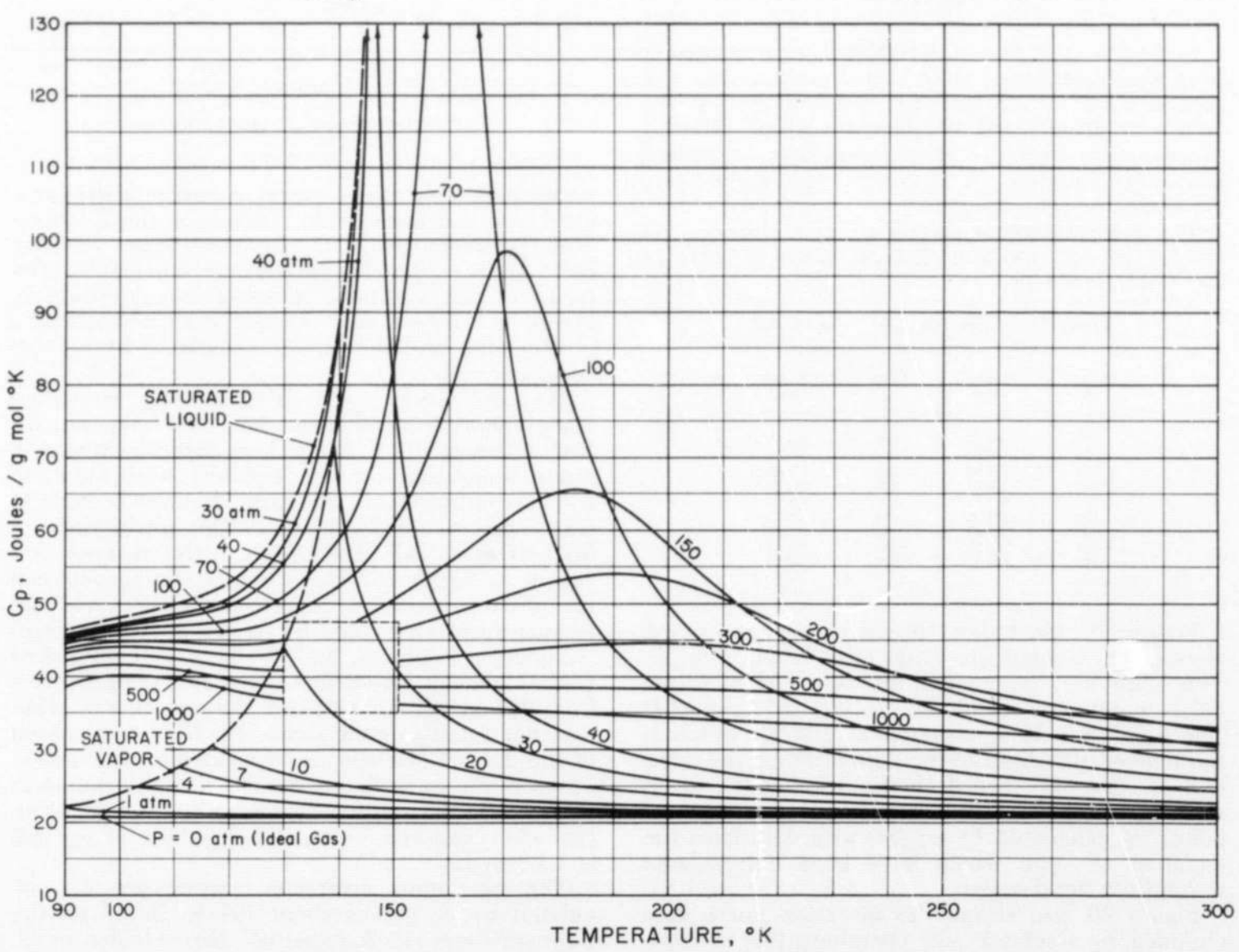


FIGURE 21. *Specific heat at constant pressure calculated by numerical method.*

from the equation of state (39). Such comparisons were made in all regions of the P-V-T surface except the compressed liquid region where the continuous expressions were not possible. The differences in the specific heats obtained by the two methods were on the order of 10^{-5} of the total value.

Both the C_v and the C_p diagrams omit the isobars above 100 atm between 130 and 150 K, i.e., areas enclosed by dashed boxes (figs 21, 22). The specific heats calculated from the equation of state in this range of temperature and pressure exhibited erratic behavior inconsistent with the rest of the surface. This behavior is probably caused by the adjustments made to the entropy and enthalpy values for the saturated liquid (see sec. 10).

Comparisons were made between experimental specific heat data and values calculated from the equation of state. With the exception of the low temperature compressed liquid region and the critical region the agreement was good. The deviations were usually less than 5 percent and averaged about 1 percent. Experimental C_v specific heat data near the critical point such as the data of Voronel et al. [54] disagree with the values calculated from the equation of state by as much as 53 percent with an average deviation of 40 percent. The only experimental specific heat data available for the compressed liquid region below 110 K were those of van Itterbeek et al. [9]. The agreement between these data and values calculated from the equation of state was poor, the average deviation being about 15 percent, in C_v and 5 percent in C_p. However, these experimental data appear to have some internal inconsistency, and it is difficult to assess their reliability. Unfortunately no other experimental data exist in this region, leaving it somewhat in doubt. Good agreement was obtained between the calculated specific heats and the experimental data of Lestz [55]. These data were taken at temperatures of 273.15 and 303.7 K at pressures to 12 atm. The maximum deviation between calculated values and these data for both C_p and C_v is 0.37 percent. The data of Michels et al. [47] and Michels et al. [48] cover a temperature range from 133.15 to 423.15 K with pressures to 2423 atm. Excluding the critical region and the compressed liquid where deviations ranged to 9

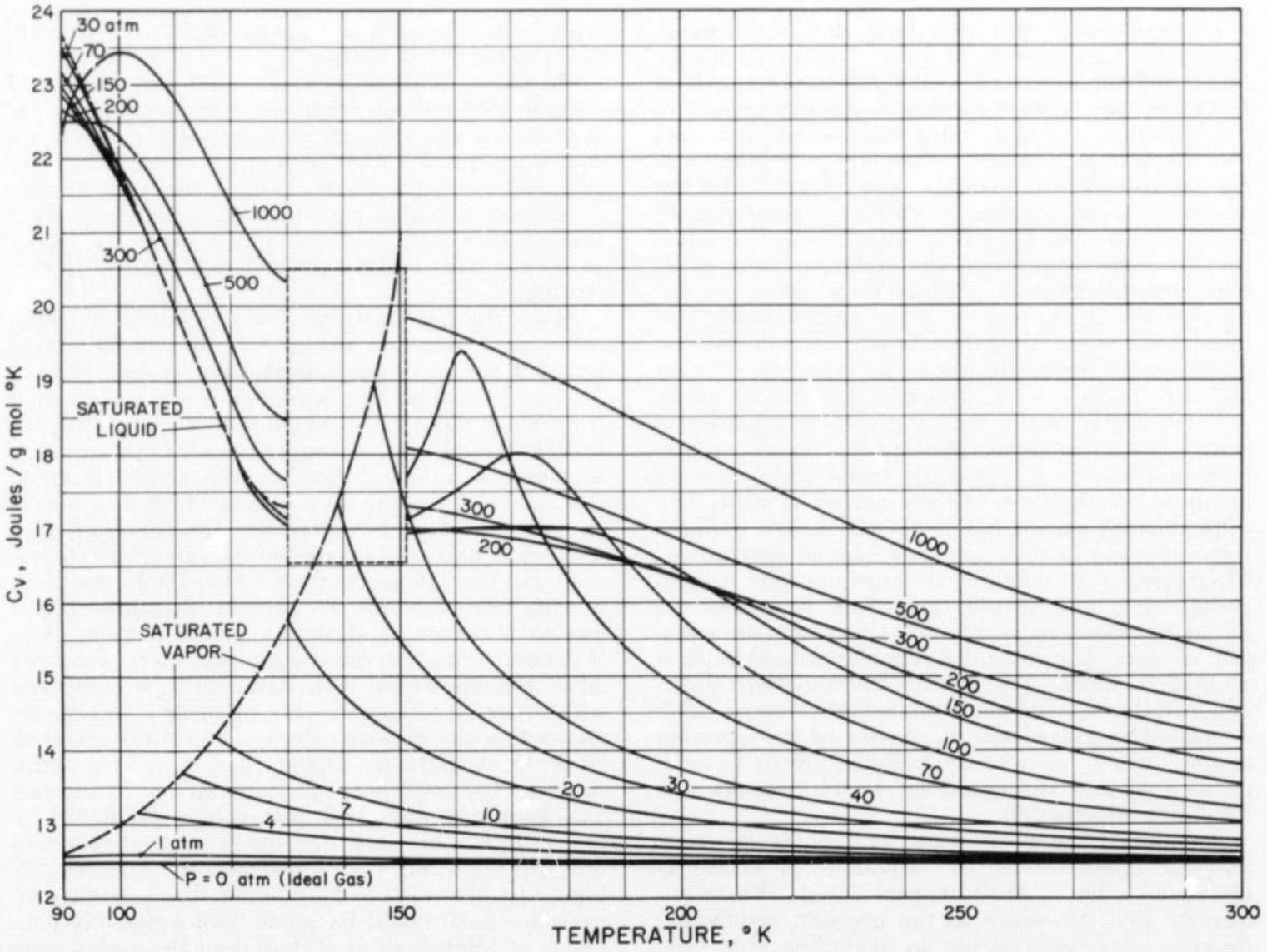


FIGURE 22. *Specific heat at constant volume calculated by numerical method.*

percent, the maximum deviation between experimental and calculated C_v's was 6.4 percent at 2423 atm and 398.15 K. The maximum C_p deviation for this group of data was 5.8 percent at 163.15 K and 70 atm. The specific heat data of Walker [11] were also compared with values calculated from the equation of state. The agreement between these data and the calculated values was slightly worse than the agreement obtained with Michels' data. However, the reliability of these data is believed to be less than that of Michels.

Comparison of the specific heats calculated here and those tabulated by two other correlations revealed satisfactory agreement. The C_p's tabulated by Hilsenrath et al. [27] for temperatures of 240 K and above agree with the values calculated here to better than one percent. However, the C_p's tabulated by Hilsenrath et al. [27] for temperatures below 240 K do not agree as well, especially at the high pressures. For example, at 200 K and 100 atm, the disagreement is about 10 percent in C_p while the value tabulated by Din [31] for this temperature and pressure agrees with this report to within 1.5 percent. The average deviation in C_p between this report and Din [31] is about 1.5 percent, which is much greater than the average deviation between this report and Hilsenrath et al. [27].

It is difficult to formulate a single equation of state which predicts valid *P-V-T* values over the liquid, vapor and critical point regions, and which also permits accurate calculation of specific heats. The specific heat of a fluid is a function of the second derivative of the equation of state. As pointed out in section 8, slight systematic deviations between the experimental *P-V-T* surface and the equation of state become magnified when derivatives are taken. The effect of these deviations becomes greater as higher order derivatives are taken and, in the region of the critical point where the equation of state has the largest systematic deviations, the second order derivatives contribute large errors to the specific heats.

15. Conclusions

An equation of state has been developed which represents the experimental *P-V-T* data for both the liquid and vapor phases, with a consistent transition from the low temperature-high density region to the low density region. Since some of multiple data sources are inconsistent where they overlap, it is difficult to assign an overall "figure of merit" for the adequacy of the equation of state as compared to an experimental *P-V-T* surface. In general, the equation of state represents the different sources of experimental data to within the accuracy of the data except in the region of the critical point. Numerous deviation plots have been presented so that direct comparisons between the equation of state and each source of experimental data can be made.

In the region of the critical point, the equation of state has a mean density deviation of about one percent and shows a systematic trend which can be attributed to the form of the equation of state. The critical point region has isotherms which undergo large changes in their first and second derivatives. Therefore, it is difficult to represent this critical point region and, at the same time, represent the liquid and vapor regions with a single analytic equation of state. The difficulty near the critical point is magnified when considering the apparent divergence of the specific heat at constant volume (which is related to the second derivative of the equation of state) which was found experimentally by Voronel et al. [54] and discussed by Levelt-Sengers and Vicentini-Missoni [56].

Attempts have been made to include the nonanalytic character of the equation of state, as discussed by Levelt-Sengers and Vicentini-Missoni [56]. However, at the present, insufficient progress has been made in including this nonanalytic behavior in equations of state which are explicit in pressure or density and cover a large range of the *P-V-T* surface.

Recent comments by Heller [57] and Pings and Teague [58] indicate that the critical temperature (and hence the critical pressure) stated earlier in this work may be slightly in error. However, definitive experimental verification of these comments is not yet available and the values for the critical temperature and pressure stated in this work appear to be the best estimate which is available at this writing.

Since the development of the equation of state, some new data on the *P-V-T* measurements of liquid argon have been published by van Witzenburg and Stryland [59]. These data cover the region from about 95 to 150 K at pressures from about 100 to 1900 atm. A comparison was made between these data and the values of density predicted by the equation of state. For the 38 points at 115 K and below, the mean density deviation was 0.15 percent, with one point having a maximum deviation of 0.5 percent. For the 126 points from 120 to 150 K, the mean density deviation was 0.3 percent with three points having a maximum deviation of 0.5 percent. Van Witzenburg and Stryland state that there were two small regions where their data could be compared with other investigators. One of these comparisons shows that the density values of van Itterbeek et al. [9] were consistently higher than van Witzenburg by about 0.4 to 0.5 percent. Comparison of the same van Itterbeek data with the values predicted by the equation of state developed here shows that the densities of van Itterbeek are consistently higher by about 0.2 to 0.3 percent. The second comparison which could be made shows that six data points of Michels et al. [1] had densities which were about 0.25 percent lower than van Witzenburg.

Comparison of the same six points of Michels with the values predicted by the equation of state developed here shows a mean density deviation of 0.03 percent.

An abundance of thermodynamic data for argon is available in the literature. However, it is only quite recent that investigators have begun to appreciate the inherent difficulties associated with obtaining good data in the region of the critical point. New techniques are being utilized to investigate critical point behavior, and older techniques are being updated to include the high precision which is necessary to describe this region. Theoretical studies are being made to try to understand the behavior in this interesting region. But much more experimental and theoretical work has yet to be done before a complete and definitive description of this critical region can be obtained.

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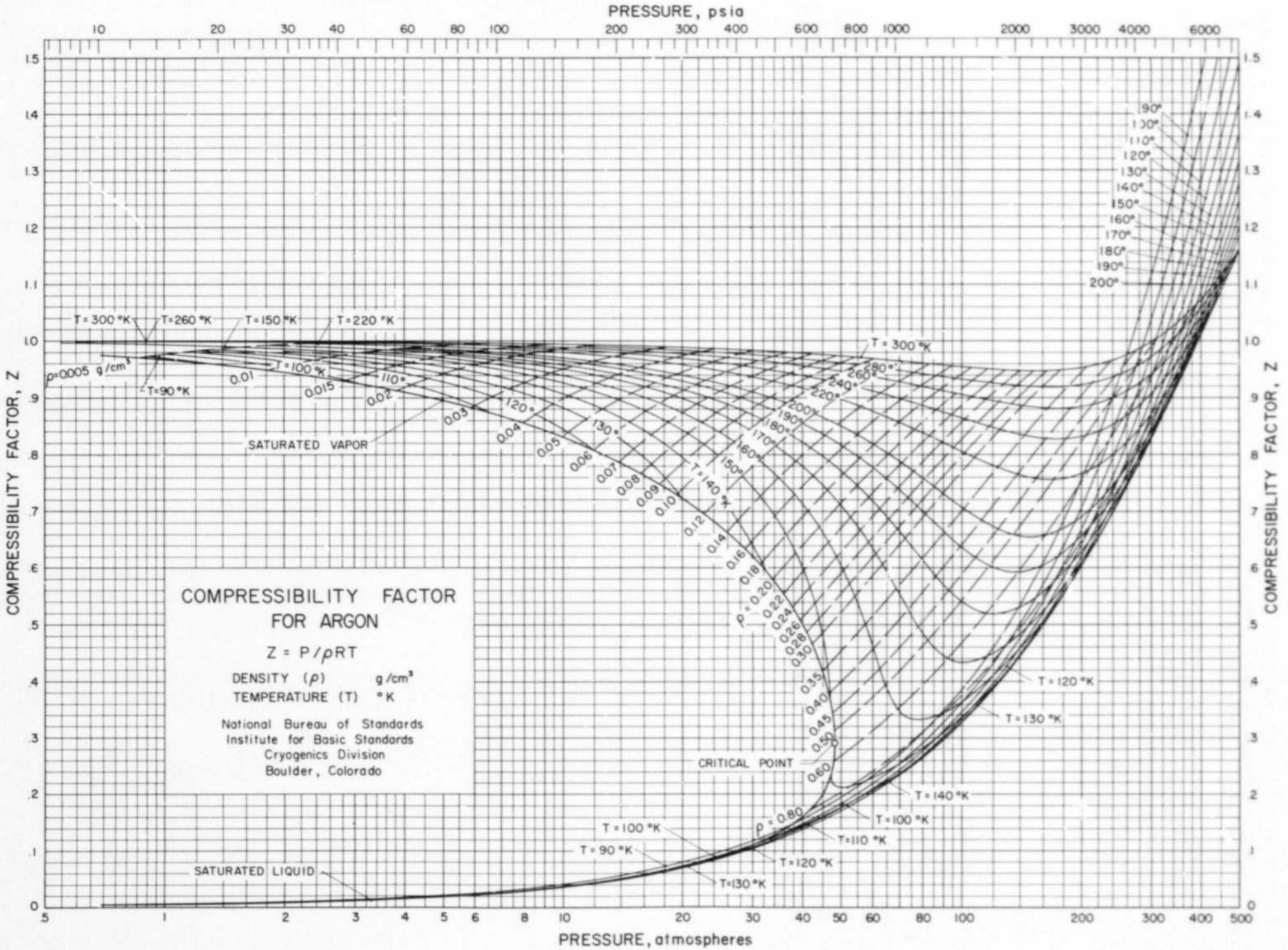

FIGURE 23. *Compressibility factor chart.*

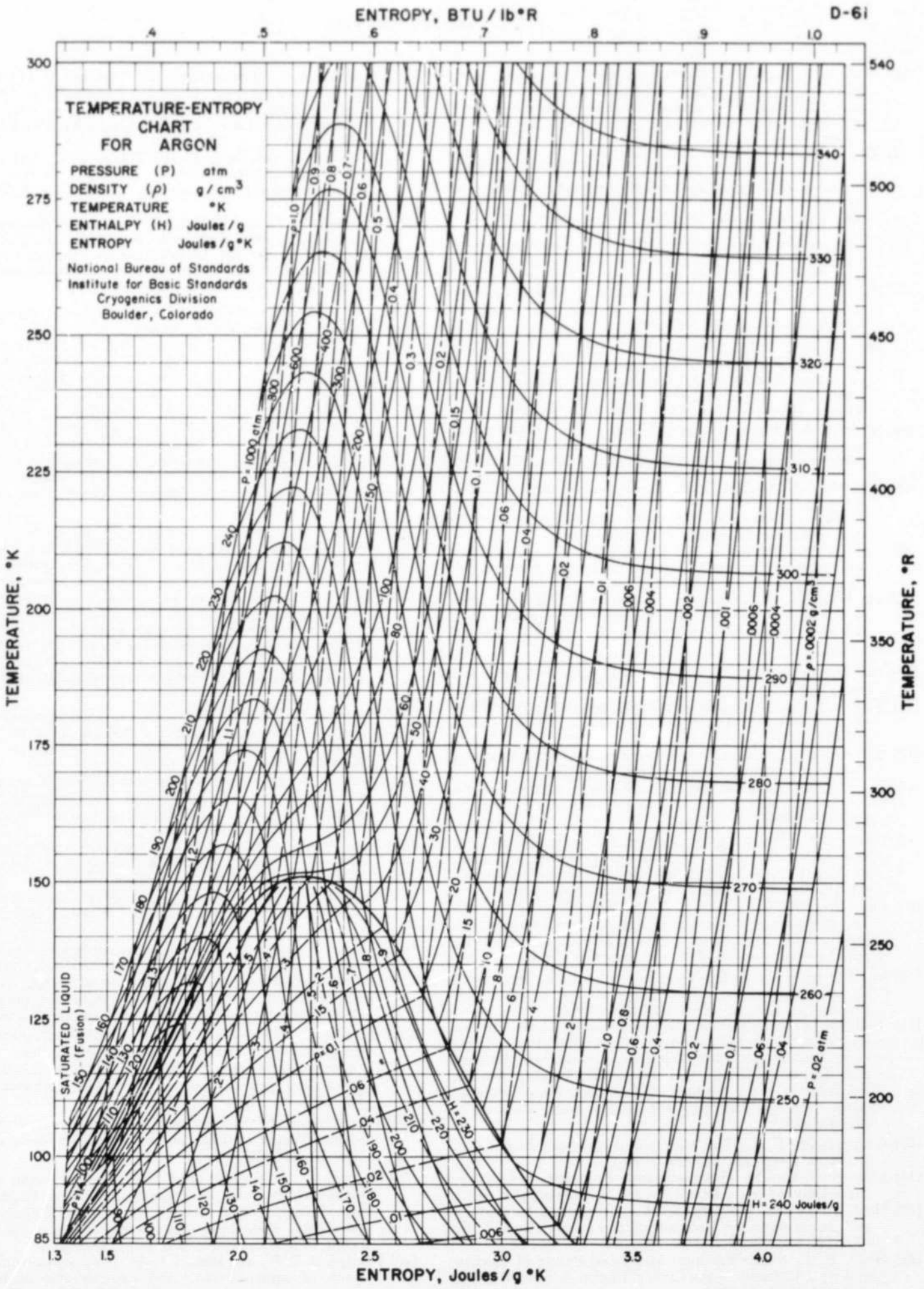

FIGURE 24. *Temperature-entropy chart.*

17. References

[1] Michels, A., Levelt, J. M., and de Graaff, W., Compressibility isotherms of argon at temperatures between −25 and −155 degrees C and at densities up to 640 amagat (pressures up to 1050 atmospheres), Physica **24**, 659–671 (1958).

[2] Ziegler, W. T., Mullins, J. C., and Kirk, B. S., Calculation of the Vapor Pressure and Heats of Vaporization and Sublimation of Liquids and Solids, Especially Below One Atmosphere Pressure. II. Argon, Georgia Inst. Tech., Eng. Exp. Sta., Tech. Rept. No. 2 (June 1962).

[3] Bureau of the Census, U.S. Dept. of Commerce Current Industrial Reports 1928A(65)−13 supplement 2 issued Jan. 20, 1967 for 1965 production of Industrial gases.

[4] Hall, L. A., Hust, J. G., and Gosman, A. L., A Bibliography of Thermophysical Properties of Argon from 0 to 300 °K, NBS Tech. Note 217 (June 1964).

[5] Hirschfelder, J. O., Buehler, R. J., McGee, H. A., and Sutton, J. R., A generalized equation of state for both gases and liquids. I., Wisconsin, Univ. Naval Research Lab., Dept. of Chemistry, Tech. Rept., Wis–Oor–15 (Oct. 5, 1956) Ind. Eng. Chem. **50**, 375–385, 1958.

[6] Michels, A., Wijker, H., and Wijker, H. K., Isotherms of argon between 0 and 150 degrees C and pressures up to 2900 atmospheres, Physica **15**, No. 7, 627–633 (1949).

[7] Rogovaya, I. A., and Kaganer, M. G., Compressibility of argon at low temperatures up to 200 atmospheres, Russ. J. Phys. Chem. **35**, 1049–1050 (1961) (English translation), Zhur. Fiz. Khim. **35**, 2135–2136 (1961).

[8] van Itterbeek, A., and Verbeke, O., Density of liquid nitrogen and argon as a function of pressure and temperature, Physica **26**, No. 11, 931–938 (1960).

[9] van Itterbeek, A., Verbeke, O., and Staes, K., Measurements on the equation of state of liquid argon and methane up to 300 kg/sq cm at low temperatures, Physica **29**, 742–754 (1963).

[10] van Witzenburg, W., The Equation of State of Liquid and Solid Argon, Toronto Univ., Canada, Ph. D. Thesis (1963).

[11] Walker, P. A., The Equation of State and the Specific Heat of Liquid Argon, University of London, Ph. D. Thesis (1956).

[12] Private communication from O. Verbeke, Laboratorium voor Lage temperaturen, Leuven, Belgium (1965).

[13] Private communication from P. A. Walker, Research Laboratories, General Electric Co., Ltd., Wembley, Middlesex, England (1961).

[14] Clark, A. M., Din, F., Robb, J., Michels, A., Wassenaar, T., and Zwietering, Th., The vapour pressure of argon, Physica **17**, No. 10, 876–884 (1951). 116th publication of the van der Waals Fund, Amsterdam, Nederland.

[15] Flubacher, P., Leadbetter, A. J., and Morrison, J. A., Thermodynamic Properties of Argon, Proceedings of the International Conference on Low Temperature Physics, 7th, Toronto, Canada, 1960, pp. 695–697 (1961).

[16] van Itterbeek, A., de Boelpaep, J., Verbeke, O., Theeuwes, F., and Staes, K., Vapour pressure of liquid argon, Physics **30**, No. 12, 2119–2122 (Dec. 1964).

[17] Mathias, E., Onnes, H. K., and Crommelin, C. A., On the rectilinear diameter for argon, Communs. Phys. Lab., Univ. Leiden, No. 131A (1912), Proc. Acad. Sci., Amsterdam **15**, 667–673 and 960–965 (1912); Verslag Gewone Vergader Wis- En Natuurk. Afdeel. Kon. Akad. Wetenschap, 700–706 and 893–898 (1912); Ann. Phys. **17**, 442–455 (1922).

[18] Guggenheim, E. A., The principle of corresponding states, J. Chem. Phys. **13**, 253–261 (1945).

[19] Stewart, R. B., The Thermodynamic Properties of Oxygen, State Univ. of Iowa, Iowa City, Ph. D. Thesis (June 1966).

[20] Hust, J. G., and McCarty, R. D., Curve-fitting techniques and applications to thermodynamics, Cryogenics **7**, **4**, 200–206 (Aug. 1967).

[21] Hoge, H. J., Vapor Pressure and Fixed Points of Oxygen and Heat Capacity in the Critical Region, J. Res. NBS **44**, 321–345 (1950) RP2081.

[22] Gosman, A. L., Thermodynamic Properties of Argon in the Liquid and Gaseous State for Temperatures From the Triple Point to 300 °K With Pressures to 1000 Atmospheres, State Univ. of Iowa, Iowa City, Ph. D. Thesis (Aug. 1965).

[23] Benedict, M., Webb, G. B., and Rubin, L. C., An empirical equation for thermodynamic properties of light hydrocarbons and their mixtures, J. Chem. Phys. **8**, 334–345 (Apr. 1940).

[24] Bloomer, O. T., and Rao, X. N., Thermodynamic properties of nitrogen, Inst. Gas Tech. Res. Bull. **13** (Oct. 1952).

[25] Strobridge, T. R., The Thermodynamic Properties of Nitrogen from 64 to 300 °K between 0.1 and 200 Atmospheres, NBS Tech. Note No. 129, PB 161630 (1962).

[26] Onnes, H. K., and Crommelin, C. A., Isotherms of monatomic gases and of their binary mixtures. VII. Isotherms of argon between 20 degrees and −150 degrees, Proc. Acad. Sci. Amsterdam **13**, 614–625 (1911) reprinted in Communs. Phys. Lab. Univ. Leiden No. 118b (1911).

[27] Hilsenrath, J., Beckett, C. W., Benedict, W. S., Fano, L., Hoge, H. J. Masi, J. F., Nuttall, R. L., Touloukian, Y. S., and Woolley, H. W., Tables of Thermal Properties of Gases, NBS Circ. No. 564 (1955), reprinted as Tables of Thermodynamic and Transport Properties of Air, Argon, Carbon Dioxide, Carbon Monoxide, Hydrogen, Nitrogen, Oxygen, and Steam (Pergamon Press, Oxford, 1960) 478 pp.

[28] Private communication from J. M. H. Levelt-Sengers, National Bureau of Standards, Gaithersburg, Md (1964).

[29] Private communication from C. R. Barber, National Physical Laboratory, Teddington, Middlesex, England (1967).

[30] Hust, J. G., and Gosman, A. L., Functions for the calculation of entropy, enthalpy, and internal energy for real fluids using equations of state and specific heats, Advances in Cryogenic Engineering **9**, 227–233 (1964).

[31] Din, F., Argon, Thermodynamic Functions of Gases, Vol. **2**, pp. 146–201 (Butterworths Scientific Publications, London, 1956).

[32] Goodwin, R. D., and Weber, L. A., A Comparison of Two Melting-Pressure Equations Constrained to the Triple Point Using Data for Eleven Gases and Three Metals, NBS Tech. Note 183 (Oct. 1963).

[33] Michels, A., and Prins, C., The melting lines of argon, krypton and xenon up to 1500 atm; representation of the results by a low of corresponding states, Physica **28**, No. 2, 101–116 (Feb. 1962).

[34] Lahr, P. H., and Eversole, W. G., Compression isotherms of argon, krypton, and xenon through the freezing zone, Chem. Eng. Data **7**, No. 1, 42–47 (Jan. 1962).

[35] Bridgman, P. W., The melting curves and compressibilities of nitrogen and argon, Proc. Am. Acad. Arts Sci. **70**, 1 (1935).

[36] Frank, A., and Clusius, K., Prazisionsmessungen der Verdampfungswarme Der Gase O_2, H_2S, PH_3, A, COS, CH_4, and CH_3D (Precision measurements of the heat of vaporization of gases oxygen, hydrogen sulphide, phosphene, argon, carbon oxisulphide, methane and deuteromethane)

[37] Eucken, A., Uber das thermische verhalten einiger komprimierter und kondonsierter gase bei tiefen temperaturen (On the thermal behavior of a compressed and condensed gas at low temperatures) Verhandl. Deut. Physik. Ges. **18**, 4–27 (1916).

[38] Hirschfelder, J. O., Curtiss, C. F., and Bird, R. B., Molecular Theory of Gases and Liquids (John Wiley & Sons, New York, 1954).

[39] Kerr, E. C., I. Second Virial Coefficient of Argon at Low Temperature and Low Pressure., II. Heat Capacity of Liquid Nitric Oxide Above its Normal Boiling Point., University Microfilms (Ann Arbor, Mich.), Publ. No. 21480, Dissertation Abstracts **17**, 1232 (1957).

[40] Fender, B. E. F., and Halsey, G. D., Jr., Second virial coefficients of argon, krypton, and argon-krypton mixtures at low temperatures, J. Chem. Phys. **36**, 1881–1888 (1962).

[41] Holborn, L., and Otto, J., Uber die isothermen einiger gase zwischen 400 und −183 grad. (On the isotherms of various gases between 400 and −183 degrees C.), Z. Physik **33,** 1–11 (1925).
[42] Hanley, H. J. M., Comparison of the Lennard-Jones, Exp: 6 and Kihara potential functions using viscosity data of dilute argon, J. Chem. Phys. **44,** 4219 (1966).
[43] Private communication from M. Klein, National Bureau of Standards, Gaithersburg, Md. (1967).
[44] Hanley, H. J. M., and Klein, M., On the selection of the intermolecular potential function: application of the statistical mechanical theory to experiment, NBS Tech. Note No. 360 (Nov. 1967).
Hanley, H. J. M., and Klein, M. On the selection of the intermolecular potential function: Part 2, from pair properties, Trans. Faraday Soc. (in press).
[45] Roebuck, J. R., and Osterberg, H., The Joule-Thomson effect in argon, Phys. Rev. **46,** 785–790 (1934).
[46] Roebuck, J. R., and Osterberg, H., The Joule-Thomson effect in mixtures of helium and argon, J. Chem. Phys. **8,** 627–635 (1940).
[47] Michels, A., Levelt, J. M., and Wolkers, G. J., Thermodynamic properties of argon at temperatures between 0 and −140 degrees C and at densities up to 640 amagat (pressures up to 1050 atmospheres.), Physica **24,** 769–794 (1958).
[48] Michels, A., Lunbeck, R. J., and Wolkers, G. J., Thermodynamical properties of argon as function of density and and temperature between 0 and 150 degrees C and densities to 640 amagat, Physica **15,** 689–695 (1949).
[49] Weir, R. D., Jones, I. W., Rowlinson, J. S., and Saville, G., Equation of state of gases at low temperatures. Part 1. Second virial coefficients of argon and krypton., Trans. Faraday Soc. **63,** No. 534, 1320–1329 (1967).
[50] Holborn, L., and Otto, J., The isotherms of several gases up to 400 degrees and their importance for the gas thermometer, Z. Phys. **23,** 77–94 (1924).
[51] Holborn, L., and Otto., J., Isotherms for helium, nitrogen, and argon below 0 degrees C, Z. Phys. **30,** 320–328 (1924).
[52] Holborn, L., and Schultze, H., Uber die Druckwage und die Isothermen von Luft, Argon und Helium Zwischen 0 und 200 Degrees. (Concerning the pressure scale and the isotherms of air, argon, and helium between 0 and 200 Degrees), Ann. Phys. **47,** 1089–1111 (1915).
[53] van Itterbeek, A., and van Paemel, O., Measurements on the velocity of sound in gaseous argon and deuterium respectively at liquid oxygen and hydrogen temperatures. Calculation and discussion of the second virial coefficient of argon, Physica **5,** 845–853 (1938).
[54] Voronel, A. V., Snigirev, V. G., and Chashkin, Yu. R., Behavior of the specific heat C_v of pure substances near the critical point, Sov. Phys. JETP **21,** No. 3, 653–655 (Sept. 1965); Trans. of Zh. Eksp. Teor. Fiz. **48,** 981–984 (Mar. 1965).
[55] Lestz, S. S., Acoustic isotherms for nitrogen, argon, and krypton, J. Chem. Phys. **38,** 2830–2834 (1963).
[56] Sengers, J. M. H. L., and Vicentini-Missoni, M., Thermodynamic Anomalies near the Gas-liquid Critical Point, Proceedings of the Fourth Symposium on Thermophysical Properties, pp. 79–86 (1968).
[57] Heller, P., Experimental investigations of critical phenomena, Repts. Progr. Phys. **30,** Pt. 2, 731–826 (1967).
[58] Pings, C. J., and Teague, R. K., Experimental study of the shape of the coexistence curve of argon near the critical state, Phys. Letters **26A,** No. 10, 496–497 (Apr. 1968).
[59] van Witzenburg, W., and Stryland, J. C., Density measurements of compressed solid and liquid argon, Can. J. Phys. **46,** 811–816 (1968).

18. Appendix A

Table of Thermodynamic Properties of Argon at Saturation

The number of significant figures given in the table is not justified on the basis of the uncertainty of the data, but is presented to maintain internal consistency.

18. APPENDIX A - Table of Thermodynamic Properties of Argon at Saturation

SATURATION DATA

	TEMP. K	PRESSURE ATM	DENSITY MOL/LITER VAPOR	DENSITY MOL/LITER LIQUID	ENTHALPY J/MOL VAPOR	ENTHALPY J/MOL LIQUID	ENTROPY J/MOL-K VAPOR	ENTROPY J/MOL-K LIQUID
TP	83.800	0.67979	0.101354	35.4126	9388.0	2814.2	131.21	52.77
	84.000	0.69567	0.103520	35.3834	9391.2	2823.2	131.06	52.87
	85.000	0.77945	0.114883	35.2363	9407.1	2868.7	130.33	53.41
	86.000	0.87082	0.127166	35.0873	9422.7	2914.3	129.62	53.94
	87.000	0.97024	0.140413	34.9366	9437.9	2960.2	128.92	54.47
	88.000	1.07816	0.154674	34.7841	9452.7	3006.3	128.24	54.99
	89.000	1.19503	0.169995	34.6300	9467.1	3052.6	127.58	55.51
	90.000	1.32133	0.186428	34.4742	9481.0	3099.2	126.93	56.02
	91.000	1.45754	0.204020	34.3169	9494.6	3145.9	126.30	56.54
	92.000	1.60412	0.222826	34.1581	9507.7	3192.8	125.68	57.04
	93.000	1.76157	0.242895	33.9978	9520.3	3240.0	125.08	57.55
	94.000	1.93037	0.264283	33.8360	9532.5	3287.3	124.49	58.05
	95.000	2.11103	0.287044	33.6727	9544.2	3334.8	123.91	58.55
	96.000	2.30404	0.311234	33.5080	9555.4	3382.5	123.34	59.04
	97.000	2.50991	0.336911	33.3418	9566.1	3430.4	122.78	59.53
	98.000	2.72914	0.364134	33.1741	9576.2	3478.5	122.24	60.02
	99.000	2.96224	0.392964	33.0049	9585.8	3526.8	121.70	60.50
	100.000	3.20974	0.423464	32.8342	9594.9	3575.2	121.18	60.98
	101.000	3.47213	0.455699	32.6620	9603.4	3623.8	120.66	61.45
	102.000	3.74996	0.489735	32.4883	9611.3	3672.5	120.15	61.93
	103.000	4.04373	0.525642	32.3129	9618.6	3721.5	119.65	62.39
	104.000	4.35397	0.563492	32.1359	9625.3	3770.6	119.15	62.86
	105.000	4.68121	0.603360	31.9572	9631.4	3819.8	118.67	63.32
	106.000	5.02598	0.645324	31.7768	9636.8	3869.2	118.19	63.78
	107.000	5.38880	0.689465	31.5947	9641.6	3918.8	117.72	64.23
	108.000	5.77023	0.735870	31.4107	9645.6	3968.6	117.25	64.68
	109.000	6.17079	0.784628	31.2247	9649.0	4018.5	116.79	65.13
	110.000	6.59102	0.835832	31.0368	9651.7	4068.7	116.33	65.58
	111.000	7.03147	0.889583	30.8469	9653.6	4119.0	115.88	66.02
	112.000	7.49269	0.945986	30.6547	9654.7	4169.5	115.44	66.46
	113.000	7.97523	1.00515	30.4604	9655.1	4220.3	114.99	66.90
	114.000	8.47964	1.06719	30.2637	9654.7	4271.2	114.55	67.33
	115.000	9.00650	1.13225	30.0645	9653.4	4322.4	114.12	67.76
	116.000	9.55635	1.20044	29.8628	9651.2	4373.9	113.69	68.19
	117.000	10.12979	1.27192	29.6584	9648.2	4425.7	113.26	68.62
	118.000	10.72739	1.34685	29.4511	9644.2	4477.7	112.83	69.05
	119.000	11.34972	1.42538	29.2409	9639.3	4530.1	112.40	69.47
	120.000	11.99740	1.50769	29.0274	9633.4	4582.8	111.98	69.89
	121.000	12.67102	1.59399	28.8107	9626.4	4636.0	111.56	70.31
	122.000	13.37120	1.68449	28.5904	9618.3	4689.6	111.13	70.73
	123.000	14.09855	1.77941	28.3663	9609.1	4743.6	110.71	71.15
	124.000	14.85371	1.87901	28.1382	9598.7	4798.2	110.29	71.57
	125.000	15.63733	1.98357	27.9059	9587.1	4853.3	109.86	71.99
	126.000	16.45007	2.09340	27.6690	9574.1	4909.1	109.44	72.41
	127.000	17.29259	2.20884	27.4273	9559.8	4965.6	109.01	72.84
	128.000	18.16559	2.33026	27.1803	9544.0	5022.8	108.58	73.26
	129.000	19.06978	2.45809	26.9276	9526.6	5080.9	108.15	73.69
	130.000	20.00587	2.59280	26.6689	9507.6	5139.9	107.71	74.11
	131.000	20.97461	2.73495	26.4036	9486.8	5200.0	107.27	74.55
	132.000	21.97677	2.88513	26.1312	9464.1	5261.2	106.82	74.98
	133.000	23.01312	3.04406	25.8508	9439.4	5323.7	106.37	75.42
	134.000	24.08448	3.21255	25.5619	9412.4	5387.7	105.91	75.87
	135.000	25.19168	3.39153	25.2635	9383.1	5453.2	105.44	76.33
	136.000	26.33558	3.58212	24.9546	9351.1	5520.1	104.95	76.79
	137.000	27.51709	3.78563	24.6339	9316.2	5588.7	104.46	77.25
	138.000	28.73712	4.00365	24.3000	9278.0	5659.2	103.95	77.73
	139.000	29.99663	4.23809	23.9510	9236.2	5731.7	103.43	78.21
	140.000	31.29662	4.49134	23.5848	9190.4	5806.7	102.88	78.71
	141.000	32.63813	4.76639	23.1987	9139.8	5884.5	102.31	79.22
	142.000	34.02222	5.06709	22.7890	9083.8	5965.6	101.71	79.76
	143.000	35.45004	5.39851	22.3511	9021.3	6050.8	101.08	80.31
	144.000	36.92273	5.76760	21.8787	8951.1	6141.0	100.41	80.89
	145.000	38.44154	6.18418	21.3629	8871.2	6237.7	99.68	81.51
	146.000	40.00773	6.66296	20.7905	8778.9	6342.6	98.87	82.18
	147.000	41.62265	7.22752	20.1401	8669.9	6459.0	97.97	82.93
	148.000	43.28771	7.91978	19.3746	8536.7	6592.2	96.91	83.77
	149.000	45.00437	8.82745	18.4161	8364.0	6753.8	95.61	84.80
	150.000	46.77419	10.2023	17.0416	8109.1	6977.6	93.78	86.23
	150.860	48.34000	13.4123	13.4123	7557.1	7557.1	90.02	90.02

19. Appendix B

Table of Thermodynamic Properties of Argon at Selected Pressures

The number of significant figures given in the table is not justified on the basis of the uncertainty of the data, but is presented to maintain internal consistency. The shaded parts of the tables indicate areas of extrapolation of the equation of state.

19. APPENDIX B - Table of Thermodynamic Properties of Argon at Selected Pressures

0.01 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	0.0014176	9477.7	8762.9	167.16
87	0.0014013	9498.5	8775.4	167.40
88	0.0013853	9519.3	8787.8	167.63
89	0.0013698	9540.1	8800.3	167.87
90	0.0013545	9560.8	8812.8	168.10
91	0.0013396	9581.6	8825.3	168.33
92	0.0013251	9602.4	8837.7	168.56
93	0.0013108	9623.2	8850.2	168.78
94	0.0012968	9644.0	8862.7	169.01
95	0.0012832	9664.8	8875.2	169.23
96	0.0012698	9685.6	8887.6	169.44
97	0.0012567	9706.4	8900.1	169.66
98	0.0012439	9727.2	8912.6	169.87
99	0.0012313	9748.0	8925.1	170.08
100	0.0012190	9768.8	8937.5	170.29
101	0.0012069	9789.6	8950.0	170.50
102	0.0011951	9810.4	8962.5	170.70
103	0.0011835	9831.2	8975.0	170.91
104	0.0011721	9852.0	8987.4	171.11
105	0.0011609	9872.8	8999.9	171.31
106	0.0011499	9893.5	9012.4	171.50
107	0.0011392	9914.3	9024.9	171.70
108	0.0011286	9935.1	9037.3	171.89
109	0.0011183	9955.9	9049.8	172.08
110	0.0011081	9976.7	9062.3	172.27
111	0.0010981	9997.5	9074.8	172.46
112	0.0010883	10018.3	9087.2	172.65
113	0.0010787	10039.1	9099.7	172.83
114	0.0010692	10059.9	9112.2	173.02
115	0.0010599	10080.7	9124.7	173.20
116	0.0010508	10101.5	9137.1	173.38
117	0.0010418	10122.3	9149.6	173.56
118	0.0010330	10143.0	9162.1	173.73
119	0.0010243	10163.8	9174.6	173.91
120	0.0010157	10184.6	9187.0	174.08
121	0.0010073	10205.4	9199.5	174.26
122	0.0009991	10226.2	9212.0	174.43
123	0.0009909	10247.0	9224.5	174.60
124	0.0009830	10267.8	9236.9	174.76
125	0.0009751	10288.6	9249.4	174.93
126	0.0009673	10309.4	9261.9	175.10
127	0.0009597	10330.2	9274.4	175.26
128	0.0009522	10351.0	9286.8	175.42
129	0.0009448	10371.7	9299.3	175.59
130	0.0009376	10392.5	9311.8	175.75
131	0.0009304	10413.3	9324.3	175.91
132	0.0009234	10434.1	9336.7	176.06
133	0.0009164	10454.9	9349.2	176.22
134	0.0009096	10475.7	9361.7	176.38
135	0.0009028	10496.5	9374.2	176.53
136	0.0008962	10517.3	9386.6	176.69
137	0.0008897	10538.1	9399.1	176.84
138	0.0008832	10558.8	9411.6	176.99
139	0.0008769	10579.6	9424.1	177.14
140	0.0008706	10600.4	9436.5	177.29
141	0.0008644	10621.2	9449.0	177.44
142	0.0008583	10642.0	9461.5	177.58
143	0.0008523	10662.8	9473.9	177.73
144	0.0008464	10683.6	9486.4	177.87
145	0.0008406	10704.4	9498.9	178.02
146	0.0008348	10725.2	9511.4	178.16
147	0.0008291	10746.0	9523.8	178.30
148	0.0008235	10766.7	9536.3	178.44
149	0.0008180	10787.5	9548.8	178.58
150	0.0008125	10808.3	9561.3	178.72
151	0.0008072	10829.1	9573.7	178.86
152	0.0008018	10849.9	9586.2	179.00
153	0.0007966	10870.7	9598.7	179.13
154	0.0007914	10891.5	9611.2	179.27
155	0.0007863	10912.3	9623.6	179.40
156	0.0007813	10933.0	9636.1	179.54
157	0.0007763	10953.8	9648.6	179.67
158	0.0007714	10974.6	9661.0	179.80
159	0.0007665	10995.4	9673.5	179.93
160	0.0007617	11016.2	9686.0	180.06

0.01 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0007570	11037.0	9698.5	180.19	231	0.0005276	12492.1	10571.5	187.70
162	0.0007523	11057.8	9710.9	180.32	232	0.0005253	12512.9	10584.0	187.79
163	0.0007477	11078.6	9723.4	180.45	233	0.0005231	12533.7	10596.5	187.88
164	0.0007432	11099.4	9735.9	180.58	234	0.0005208	12554.5	10608.9	187.97
165	0.0007387	11120.1	9748.4	180.70	235	0.0005186	12575.2	10621.4	188.05
166	0.0007342	11140.9	9760.8	180.83	236	0.0005164	12596.0	10633.9	188.14
167	0.0007298	11161.7	9773.3	180.95	237	0.0005142	12616.8	10646.4	188.23
168	0.0007255	11182.5	9785.8	181.08	238	0.0005121	12637.6	10658.8	188.32
169	0.0007212	11203.3	9798.2	181.20	239	0.0005099	12658.4	10671.3	188.41
170	0.0007169	11224.1	9810.7	181.32	240	0.0005078	12679.2	10683.8	188.49
171	0.0007127	11244.9	9823.2	181.45	241	0.0005057	12700.0	10696.2	188.58
172	0.0007086	11265.7	9835.7	181.57	242	0.0005036	12720.8	10708.7	188.66
173	0.0007045	11286.4	9848.1	181.69	243	0.0005015	12741.5	10721.2	188.75
174	0.0007004	11307.2	9860.6	181.81	244	0.0004995	12762.3	10733.7	188.84
175	0.0006964	11328.0	9873.1	181.93	245	0.0004974	12783.1	10746.1	188.92
176	0.0006925	11348.8	9885.6	182.05	246	0.0004954	12803.9	10758.6	189.01
177	0.0006886	11369.6	9898.0	182.16	247	0.0004934	12824.7	10771.1	189.09
178	0.0006847	11390.4	9910.5	182.28	248	0.0004914	12845.5	10783.6	189.17
179	0.0006809	11411.2	9923.0	182.40	249	0.0004895	12866.3	10796.0	189.26
180	0.0006771	11432.0	9935.4	182.51	250	0.0004875	12887.0	10808.5	189.34
181	0.0006734	11452.7	9947.9	182.63	251	0.0004856	12907.8	10821.0	189.42
182	0.0006697	11473.5	9960.4	182.74	252	0.0004836	12928.6	10833.4	189.51
183	0.0006660	11494.3	9972.9	182.86	253	0.0004817	12949.4	10845.9	189.59
184	0.0006624	11515.1	9985.3	182.97	254	0.0004798	12970.2	10858.4	189.67
185	0.0006588	11535.9	9997.8	183.08	255	0.0004779	12991.0	10870.9	189.75
186	0.0006552	11556.7	10010.3	183.19	256	0.0004761	13011.8	10883.3	189.83
187	0.0006517	11577.5	10022.8	183.31	257	0.0004742	13032.5	10895.8	189.91
188	0.0006483	11598.3	10035.2	183.42	258	0.0004724	13053.3	10908.3	190.00
189	0.0006448	11619.0	10047.7	183.53	259	0.0004706	13074.1	10920.7	190.08
190	0.0006415	11639.8	10060.2	183.64	260	0.0004687	13094.9	10933.2	190.16
191	0.0006381	11660.6	10072.6	183.75	261	0.0004669	13115.7	10945.7	190.24
192	0.0006348	11681.4	10085.1	183.85	262	0.0004652	13136.5	10958.2	190.32
193	0.0006315	11702.2	10097.6	183.96	263	0.0004634	13157.3	10970.6	190.39
194	0.0006282	11723.0	10110.1	184.07	264	0.0004616	13178.1	10983.1	190.47
195	0.0006250	11743.8	10122.5	184.18	265	0.0004599	13198.8	10995.6	190.55
196	0.0006218	11764.6	10135.0	184.28	266	0.0004582	13219.6	11008.0	190.63
197	0.0006187	11785.3	10147.5	184.39	267	0.0004565	13240.4	11020.5	190.71
198	0.0006155	11806.1	10159.9	184.49	268	0.0004547	13261.2	11033.0	190.79
199	0.0006124	11826.9	10172.4	184.60	269	0.0004531	13282.0	11045.5	190.86
200	0.0006094	11847.7	10184.9	184.70	270	0.0004514	13302.8	11057.9	190.94
201	0.0006063	11868.5	10197.4	184.81	271	0.0004497	13323.6	11070.4	191.02
202	0.0006033	11889.3	10209.8	184.91	272	0.0004481	13344.3	11082.9	191.09
203	0.0006004	11910.1	10222.3	185.01	273	0.0004464	13365.1	11095.3	191.17
204	0.0005974	11930.9	10234.8	185.11	274	0.0004448	13385.9	11107.8	191.25
205	0.0005945	11951.6	10247.3	185.22	275	0.0004432	13406.7	11120.3	191.32
206	0.0005916	11972.4	10259.7	185.32	276	0.0004416	13427.5	11132.8	191.40
207	0.0005888	11993.2	10272.2	185.42	277	0.0004400	13448.3	11145.2	191.47
208	0.0005859	12014.0	10284.7	185.52	278	0.0004384	13469.1	11157.7	191.55
209	0.0005831	12034.8	10297.1	185.62	279	0.0004368	13489.8	11170.2	191.62
210	0.0005804	12055.6	10309.6	185.72	280	0.0004353	13510.6	11182.7	191.70
211	0.0005776	12076.4	10322.1	185.82	281	0.0004337	13531.4	11195.1	191.77
212	0.0005749	12097.1	10334.6	185.91	282	0.0004322	13552.2	11207.6	191.84
213	0.0005722	12117.9	10347.0	186.01	283	0.0004306	13573.0	11220.1	191.92
214	0.0005695	12138.7	10359.5	186.11	284	0.0004291	13593.8	11232.5	191.99
215	0.0005669	12159.5	10372.0	186.21	285	0.0004276	13614.6	11245.0	192.06
216	0.0005642	12180.3	10384.4	186.30	286	0.0004261	13635.4	11257.5	192.14
217	0.0005616	12201.1	10396.9	186.40	287	0.0004246	13656.1	11270.0	192.21
218	0.0005591	12221.9	10409.4	186.49	288	0.0004232	13676.9	11282.4	192.28
219	0.0005565	12242.7	10421.9	186.59	289	0.0004217	13697.7	11294.9	192.35
220	0.0005540	12263.4	10434.3	186.68	290	0.0004203	13718.5	11307.4	192.43
221	0.0005515	12284.2	10446.8	186.78	291	0.0004188	13739.3	11319.8	192.50
222	0.0005490	12305.0	10459.3	186.87	292	0.0004174	13760.1	11332.3	192.57
223	0.0005465	12325.8	10471.8	186.97	293	0.0004159	13780.9	11344.8	192.64
224	0.0005441	12346.6	10484.2	187.06	294	0.0004145	13801.6	11357.3	192.71
225	0.0005417	12367.4	10496.7	187.15	295	0.0004131	13822.4	11369.7	192.78
226	0.0005393	12388.2	10509.2	187.24	296	0.0004117	13843.2	11382.2	192.85
227	0.0005369	12409.0	10521.6	187.33	297	0.0004103	13864.0	11394.7	192.92
228	0.0005345	12429.7	10534.1	187.43	298	0.0004090	13884.8	11407.1	192.99
229	0.0005322	12450.5	10546.6	187.52	299	0.0004076	13905.6	11419.6	193.06
230	0.0005299	12471.3	10559.1	187.61	300	0.0004062	13926.4	11432.1	193.13

0.02 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	0.0028361	9477.1	8762.5	161.39
87	0.0028034	9497.9	8775.0	161.63
88	0.0027715	9518.7	8787.5	161.87
89	0.0027403	9539.5	8799.9	162.10
90	0.0027098	9560.3	8812.4	162.33
91	0.0026800	9581.1	8824.9	162.56
92	0.0026508	9601.9	8837.4	162.79
93	0.0026223	9622.7	8849.9	163.02
94	0.0025944	9643.5	8862.3	163.24
95	0.0025670	9664.3	8874.8	163.46
96	0.0025402	9685.1	8887.3	163.68
97	0.0025140	9705.9	8899.8	163.89
98	0.0024883	9726.7	8912.3	164.11
99	0.0024632	9747.5	8924.7	164.32
100	0.0024385	9768.3	8937.2	164.53
101	0.0024143	9789.1	8949.7	164.73
102	0.0023906	9809.9	8962.2	164.94
103	0.0023674	9830.7	8974.7	165.14
104	0.0023446	9851.5	8987.1	165.34
105	0.0023223	9872.3	8999.6	165.54
106	0.0023003	9893.1	9012.1	165.74
107	0.0022788	9913.9	9024.6	165.93
108	0.0022577	9934.7	9037.1	166.13
109	0.0022370	9955.5	9049.5	166.32
110	0.0022166	9976.3	9062.0	166.51
111	0.0021966	9997.1	9074.5	166.70
112	0.0021770	10017.9	9087.0	166.88
113	0.0021577	10038.7	9099.5	167.07
114	0.0021388	10059.5	9111.9	167.25
115	0.0021201	10080.3	9124.4	167.43
116	0.0021018	10101.1	9136.9	167.61
117	0.0020839	10121.9	9149.4	167.79
118	0.0020662	10142.7	9161.8	167.97
119	0.0020488	10163.5	9174.3	168.14
120	0.0020317	10184.3	9186.8	168.32
121	0.0020149	10205.1	9199.3	168.49
122	0.0019984	10225.8	9211.8	168.66
123	0.0019821	10246.6	9224.2	168.83
124	0.0019661	10267.4	9236.7	169.00
125	0.0019504	10288.2	9249.2	169.17
126	0.0019349	10309.0	9261.7	169.33
127	0.0019197	10329.8	9274.1	169.50
128	0.0019047	10350.6	9286.6	169.66
129	0.0018899	10371.4	9299.1	169.82
130	0.0018753	10392.2	9311.6	169.98
131	0.0018610	10413.0	9324.1	170.14
132	0.0018469	10433.8	9336.5	170.30
133	0.0018330	10454.6	9349.0	170.46
134	0.0018193	10475.4	9361.5	170.61
135	0.0018058	10496.2	9374.0	170.77
136	0.0017926	10517.0	9386.4	170.92
137	0.0017795	10537.8	9398.9	171.07
138	0.0017666	10558.6	9411.4	171.22
139	0.0017539	10579.3	9423.9	171.37
140	0.0017413	10600.1	9436.3	171.52
141	0.0017290	10620.9	9448.8	171.67
142	0.0017168	10641.7	9461.3	171.82
143	0.0017048	10662.5	9473.8	171.96
144	0.0016929	10683.3	9486.2	172.11
145	0.0016812	10704.1	9498.7	172.25
146	0.0016697	10724.9	9511.2	172.40
147	0.0016584	10745.7	9523.7	172.54
148	0.0016472	10766.5	9536.1	172.68
149	0.0016361	10787.3	9548.6	172.82
150	0.0016252	10808.1	9561.1	172.96
151	0.0016144	10828.9	9573.6	173.10
152	0.0016038	10849.6	9586.0	173.23
153	0.0015933	10870.4	9598.5	173.37
154	0.0015830	10891.2	9611.0	173.51
155	0.0015727	10912.0	9623.5	173.64
156	0.0015627	10932.8	9635.9	173.77
157	0.0015527	10953.6	9648.4	173.91
158	0.0015429	10974.4	9660.9	174.04
159	0.0015332	10995.2	9673.4	174.17
160	0.0015236	11016.0	9685.8	174.30

0.02 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0015141	11036.8	9698.3	174.43	231	0.0010552	12492.0	10571.4	181.93
162	0.0015048	11057.6	9710.8	174.56	232	0.0010507	12512.8	10583.9	182.02
163	0.0014955	11078.3	9723.3	174.69	233	0.0010461	12533.6	10596.4	182.11
164	0.0014864	11099.1	9735.7	174.81	234	0.0010417	12554.3	10608.9	182.20
165	0.0014774	11119.9	9748.2	174.94	235	0.0010372	12575.1	10621.3	182.29
166	0.0014685	11140.7	9760.7	175.07	236	0.0010328	12595.9	10633.8	182.38
167	0.0014597	11161.5	9773.2	175.19	237	0.0010285	12616.7	10646.3	182.47
168	0.0014510	11182.3	9785.6	175.31	238	0.0010242	12637.5	10658.8	182.55
169	0.0014424	11203.1	9798.1	175.44	239	0.0010199	12658.3	10671.2	182.64
170	0.0014339	11223.9	9810.6	175.56	240	0.0010156	12679.1	10683.7	182.73
171	0.0014255	11244.7	9823.1	175.68	241	0.0010114	12699.9	10696.2	182.82
172	0.0014172	11265.5	9835.5	175.80	242	0.0010072	12720.6	10708.6	182.90
173	0.0014090	11286.2	9848.0	175.92	243	0.0010031	12741.4	10721.1	182.99
174	0.0014009	11307.0	9860.5	176.04	244	0.0009990	12762.2	10733.6	183.07
175	0.0013929	11327.8	9872.9	176.16	245	0.0009949	12783.0	10746.1	183.16
176	0.0013850	11348.6	9885.4	176.28	246	0.0009909	12803.8	10758.5	183.24
177	0.0013772	11369.4	9897.9	176.40	247	0.0009868	12824.6	10771.0	183.33
178	0.0013695	11390.2	9910.4	176.52	248	0.0009829	12845.4	10783.5	183.41
179	0.0013618	11411.0	9922.8	176.63	249	0.0009789	12866.2	10795.9	183.49
180	0.0013542	11431.8	9935.3	176.75	250	0.0009750	12886.9	10808.4	183.58
181	0.0013468	11452.6	9947.8	176.86	251	0.0009711	12907.7	10820.9	183.66
182	0.0013394	11473.4	9960.3	176.98	252	0.0009673	12928.5	10833.4	183.74
183	0.0013320	11494.1	9972.7	177.09	253	0.0009634	12949.3	10845.8	183.83
184	0.0013248	11514.9	9985.2	177.21	254	0.0009596	12970.1	10858.3	183.91
185	0.0013176	11535.7	9997.7	177.32	255	0.0009559	12990.9	10870.8	183.99
186	0.0013105	11556.5	10010.2	177.43	256	0.0009521	13011.7	10883.3	184.07
187	0.0013035	11577.3	10022.6	177.54	257	0.0009484	13032.5	10895.7	184.15
188	0.0012966	11598.1	10035.1	177.65	258	0.0009448	13053.2	10908.2	184.23
189	0.0012897	11618.9	10047.6	177.76	259	0.0009411	13074.0	10920.7	184.31
190	0.0012829	11639.7	10060.1	177.87	260	0.0009375	13094.8	10933.1	184.39
191	0.0012762	11660.5	10072.5	177.98	261	0.0009339	13115.6	10945.6	184.47
192	0.0012696	11681.2	10085.0	178.09	262	0.0009303	13136.4	10958.1	184.55
193	0.0012630	11702.0	10097.5	178.20	263	0.0009268	13157.2	10970.6	184.63
194	0.0012565	11722.8	10109.9	178.31	264	0.0009233	13178.0	10983.0	184.71
195	0.0012500	11743.6	10122.4	178.41	265	0.0009198	13198.7	10995.5	184.79
196	0.0012437	11764.4	10134.9	178.52	266	0.0009163	13219.5	11008.0	184.87
197	0.0012374	11785.2	10147.4	178.62	267	0.0009129	13240.3	11020.4	184.94
198	0.0012311	11806.0	10159.8	178.73	268	0.0009095	13261.1	11032.9	185.02
199	0.0012249	11826.8	10172.3	178.83	269	0.0009061	13281.9	11045.4	185.10
200	0.0012188	11847.6	10184.8	178.94	270	0.0009028	13302.7	11057.9	185.18
201	0.0012127	11868.3	10197.3	179.04	271	0.0008994	13323.5	11070.3	185.25
202	0.0012067	11889.1	10209.7	179.15	272	0.0008961	13344.3	11082.8	185.33
203	0.0012008	11909.9	10222.2	179.25	273	0.0008928	13365.0	11095.3	185.41
204	0.0011949	11930.7	10234.7	179.35	274	0.0008896	13385.8	11107.8	185.48
205	0.0011891	11951.5	10247.2	179.45	275	0.0008864	13406.6	11120.2	185.56
206	0.0011833	11972.3	10259.6	179.55	276	0.0008831	13427.4	11132.7	185.63
207	0.0011776	11993.1	10272.1	179.65	277	0.0008800	13448.2	11145.2	185.71
208	0.0011719	12013.9	10284.6	179.75	278	0.0008768	13469.0	11157.6	185.78
209	0.0011663	12034.6	10297.0	179.85	279	0.0008736	13489.8	11170.1	185.86
210	0.0011607	12055.4	10309.5	179.95	280	0.0008705	13510.6	11182.6	185.93
211	0.0011552	12076.2	10322.0	180.05	281	0.0008674	13531.3	11195.1	186.01
212	0.0011498	12097.0	10334.5	180.15	282	0.0008644	13552.1	11207.5	186.08
213	0.0011444	12117.8	10346.9	180.25	283	0.0008613	13572.9	11220.0	186.15
214	0.0011390	12138.6	10359.4	180.35	284	0.0008583	13593.7	11232.5	186.23
215	0.0011337	12159.4	10371.9	180.44	285	0.0008553	13614.5	11244.9	186.30
216	0.0011285	12180.2	10384.4	180.54	286	0.0008523	13635.3	11257.4	186.37
217	0.0011233	12200.9	10396.8	180.63	287	0.0008493	13656.1	11269.9	186.45
218	0.0011181	12221.7	10409.3	180.73	288	0.0008463	13676.8	11282.4	186.52
219	0.0011130	12242.5	10421.8	180.83	289	0.0008434	13697.6	11294.8	186.59
220	0.0011080	12263.3	10434.2	180.92	290	0.0008405	13718.4	11307.3	186.66
221	0.0011030	12284.1	10446.7	181.01	291	0.0008376	13739.2	11319.8	186.73
222	0.0010980	12304.9	10459.2	181.11	292	0.0008347	13760.0	11332.3	186.81
223	0.0010931	12325.7	10471.7	181.20	293	0.0008319	13780.8	11344.7	186.88
224	0.0010882	12346.5	10484.1	181.29	294	0.0008291	13801.6	11357.2	186.95
225	0.0010833	12367.3	10496.6	181.39	295	0.0008263	13822.4	11369.7	187.02
226	0.0010786	12388.0	10509.1	181.48	296	0.0008235	13843.1	11382.1	187.09
227	0.0010738	12408.8	10521.6	181.57	297	0.0008207	13863.9	11394.6	187.16
228	0.0010691	12429.6	10534.0	181.66	298	0.0008179	13884.7	11407.1	187.23
229	0.0010644	12450.4	10546.5	181.75	299	0.0008152	13905.5	11419.6	187.30
230	0.0010598	12471.2	10559.0	181.84	300	0.0008125	13926.3	11432.0	187.37

0.04 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	0.0056759	9475.8	8761.7	156.62
87	0.0056105	9496.6	8774.2	156.86
88	0.0055465	9517.5	8786.7	157.10
89	0.0054840	9538.3	8799.2	156.33
90	0.0054228	9559.1	8811.7	156.56
91	0.0053631	9579.9	8824.2	156.79
92	0.0053046	9600.8	8836.7	157.02
93	0.0052474	9621.6	8849.2	157.25
94	0.0051914	9642.4	8861.7	157.47
95	0.0051366	9663.2	8874.1	157.69
96	0.0050830	9684.0	8886.6	157.91
97	0.0050304	9704.8	8899.1	158.12
98	0.0049790	9725.7	8911.6	158.34
99	0.0049286	9746.5	8924.1	158.55
100	0.0048792	9767.3	8936.6	158.76
101	0.0048307	9788.1	8949.1	158.96
102	0.0047833	9808.9	8961.6	159.17
103	0.0047367	9829.7	8974.1	159.37
104	0.0046911	9850.6	8986.5	159.57
105	0.0046463	9871.4	8999.0	159.77
106	0.0046024	9892.2	9011.5	159.97
107	0.0045593	9913.0	9024.0	160.16
108	0.0045170	9933.8	9036.5	160.36
109	0.0044755	9954.6	9049.0	160.55
110	0.0044347	9975.4	9061.5	160.74
111	0.0043947	9996.2	9074.0	160.93
112	0.0043554	10017.0	9086.4	161.12
113	0.0043167	10037.9	9098.9	161.30
114	0.0042788	10058.7	9111.4	161.48
115	0.0042415	10079.5	9123.9	161.67
116	0.0042049	10100.3	9136.4	161.85
117	0.0041689	10121.1	9148.9	162.02
118	0.0041335	10141.9	9161.4	162.20
119	0.0040988	10162.7	9173.8	162.38
120	0.0040645	10183.5	9186.3	162.55
121	0.0040309	10204.3	9198.8	162.72
122	0.0039978	10225.1	9211.3	162.89
123	0.0039653	10245.9	9223.8	163.06
124	0.0039332	10266.7	9236.3	163.23
125	0.0039017	10287.5	9248.7	163.40
126	0.0038707	10308.3	9261.2	163.57
127	0.0038402	10329.1	9273.7	163.73
128	0.0038102	10349.9	9286.2	163.89
129	0.0037806	10370.8	9298.7	164.06
130	0.0037515	10391.6	9311.2	164.22
131	0.0037228	10412.4	9323.6	164.38
132	0.0036946	10433.2	9336.1	164.53
133	0.0036668	10454.0	9348.6	164.69
134	0.0036394	10474.8	9361.1	164.85
135	0.0036124	10495.6	9373.6	165.00
136	0.0035858	10516.4	9386.0	165.15
137	0.0035596	10537.2	9398.5	165.31
138	0.0035338	10558.0	9411.0	165.46
139	0.0035083	10578.8	9423.5	165.61
140	0.0034832	10599.6	9436.0	165.76
141	0.0034585	10620.4	9448.4	165.91
142	0.0034341	10641.2	9460.9	166.05
143	0.0034101	10662.0	9473.4	166.20
144	0.0033864	10682.8	9485.9	166.34
145	0.0033630	10703.6	9498.4	166.49
146	0.0033400	10724.4	9510.8	166.63
147	0.0033172	10745.2	9523.3	166.77
148	0.0032948	10766.0	9535.8	166.91
149	0.0032727	10786.8	9548.3	167.05
150	0.0032508	10807.6	9560.8	167.19
151	0.0032293	10828.3	9573.2	167.33
152	0.0032080	10849.1	9585.7	167.47
153	0.0031870	10869.9	9598.2	167.60
154	0.0031663	10890.7	9610.7	167.74
155	0.0031459	10911.5	9623.1	167.87
156	0.0031257	10932.3	9635.6	168.01
157	0.0031058	10953.1	9648.1	168.14
158	0.0030861	10973.9	9660.6	168.27
159	0.0030667	10994.7	9673.1	168.40
160	0.0030475	11015.5	9685.5	168.53

0.04 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0030286	11036.3	9698.0	168.66	231	0.0021105	12491.7	10571.3	176.17
162	0.0030098	11057.1	9710.5	168.79	232	0.0021014	12512.5	10583.7	176.26
163	0.0029914	11077.9	9723.0	168.92	233	0.0020924	12533.3	10596.2	176.35
164	0.0029731	11098.7	9735.4	169.05	234	0.0020834	12554.1	10608.7	176.44
165	0.0029551	11119.5	9747.9	169.17	235	0.0020745	12574.9	10621.2	176.53
166	0.0029373	11140.3	9760.4	169.30	236	0.0020658	12595.7	10633.6	176.62
167	0.0029197	11161.1	9772.9	169.43	237	0.0020570	12616.5	10646.1	176.70
168	0.0029023	11181.9	9785.3	169.55	238	0.0020484	12637.3	10658.6	176.79
169	0.0028851	11202.7	9797.8	169.67	239	0.0020398	12658.1	10671.1	176.88
170	0.0028681	11223.5	9810.3	169.80	240	0.0020313	12678.8	10683.5	176.97
171	0.0028513	11244.3	9822.8	169.92	241	0.0020229	12699.6	10696.0	177.05
172	0.0028347	11265.1	9835.3	170.04	242	0.0020145	12720.4	10708.5	177.14
173	0.0028184	11285.8	9847.7	170.16	243	0.0020062	12741.2	10721.0	177.22
174	0.0028021	11306.6	9860.2	170.28	244	0.0019980	12762.0	10733.4	177.31
175	0.0027861	11327.4	9872.7	170.40	245	0.0019899	12782.8	10745.9	177.39
176	0.0027703	11348.2	9885.2	170.52	246	0.0019818	12803.6	10758.4	177.48
177	0.0027546	11369.0	9897.6	170.63	247	0.0019737	12824.4	10770.8	177.56
178	0.0027391	11389.8	9910.1	170.75	248	0.0019658	12845.2	10783.3	177.65
179	0.0027238	11410.6	9922.6	170.87	249	0.0019579	12865.9	10795.8	177.73
180	0.0027087	11431.4	9935.1	170.98	250	0.0019501	12886.7	10808.3	177.81
181	0.0026937	11452.2	9947.5	171.10	251	0.0019423	12907.5	10820.7	177.90
182	0.0026789	11473.0	9960.0	171.21	252	0.0019346	12928.3	10833.2	177.98
183	0.0026643	11493.8	9972.5	171.33	253	0.0019269	12949.1	10845.7	178.06
184	0.0026498	11514.6	9985.0	171.44	254	0.0019193	12969.9	10858.2	178.14
185	0.0026355	11535.4	9997.4	171.55	255	0.0019118	12990.7	10870.6	178.23
186	0.0026213	11556.2	10009.9	171.67	256	0.0019043	13011.5	10883.1	178.31
187	0.0026073	11576.9	10022.4	171.78	257	0.0018969	13032.3	10895.6	178.39
188	0.0025934	11597.7	10034.9	171.89	258	0.0018896	13053.0	10908.1	178.47
189	0.0025797	11618.5	10047.3	172.00	259	0.0018823	13073.8	10920.5	178.55
190	0.0025661	11639.3	10059.8	172.11	260	0.0018750	13094.6	10933.0	178.63
191	0.0025526	11660.1	10072.3	172.22	261	0.0018678	13115.4	10945.5	178.71
192	0.0025393	11680.9	10084.8	172.33	262	0.0018607	13136.2	10957.9	178.79
193	0.0025262	11701.7	10097.2	172.43	263	0.0018536	13157.0	10970.4	178.87
194	0.0025131	11722.5	10109.7	172.54	264	0.0018466	13177.8	10982.9	178.95
195	0.0025002	11743.3	10122.2	172.65	265	0.0018397	13198.6	10995.4	179.03
196	0.0024875	11764.1	10134.7	172.75	266	0.0018327	13219.3	11007.8	179.10
197	0.0024749	11784.9	10147.1	172.86	267	0.0018259	13240.1	11020.3	179.18
198	0.0024623	11805.7	10159.6	172.97	268	0.0018191	13260.9	11032.8	179.26
199	0.0024500	11826.4	10172.1	173.07	269	0.0018123	13281.7	11045.3	179.34
200	0.0024377	11847.2	10184.6	173.17	270	0.0018056	13302.5	11057.7	179.41
201	0.0024256	11868.0	10197.0	173.28	271	0.0017989	13323.3	11070.2	179.49
202	0.0024136	11888.8	10209.5	173.38	272	0.0017923	13344.1	11082.7	179.57
203	0.0024017	11909.6	10222.0	173.48	273	0.0017857	13364.9	11095.1	179.64
204	0.0023899	11930.4	10234.5	173.59	274	0.0017792	13385.7	11107.6	179.72
205	0.0023782	11951.2	10246.9	173.69	275	0.0017727	13406.4	11120.1	179.80
206	0.0023667	11972.0	10259.4	173.79	276	0.0017663	13427.2	11132.6	179.87
207	0.0023553	11992.8	10271.9	173.89	277	0.0017599	13448.0	11145.0	179.95
208	0.0023439	12013.6	10284.4	173.99	278	0.0017536	13468.8	11157.5	180.02
209	0.0023327	12034.4	10296.8	174.09	279	0.0017473	13489.6	11170.0	180.10
210	0.0023216	12055.1	10309.3	174.19	280	0.0017411	13510.4	11182.5	180.17
211	0.0023106	12075.9	10321.8	174.29	281	0.0017349	13531.2	11194.9	180.24
212	0.0022997	12096.7	10334.3	174.39	282	0.0017287	13552.0	11207.4	180.32
213	0.0022889	12117.5	10346.7	174.48	283	0.0017226	13572.7	11219.9	180.39
214	0.0022782	12138.3	10359.2	174.58	284	0.0017166	13593.5	11232.3	180.46
215	0.0022676	12159.1	10371.7	174.68	285	0.0017105	13614.3	11244.8	180.54
216	0.0022571	12179.9	10384.2	174.77	286	0.0017046	13635.1	11257.3	180.61
217	0.0022467	12200.7	10396.6	174.87	287	0.0016986	13655.9	11269.8	180.68
218	0.0022364	12221.5	10409.1	174.97	288	0.0016927	13676.7	11282.2	180.76
219	0.0022262	12242.3	10421.6	175.06	289	0.0016869	13697.5	11294.7	180.83
220	0.0022160	12263.1	10434.1	175.16	290	0.0016810	13718.3	11307.2	180.90
221	0.0022060	12283.8	10446.5	175.25	291	0.0016753	13739.0	11319.7	180.97
222	0.0021961	12304.6	10459.0	175.34	292	0.0016695	13759.8	11332.1	181.04
223	0.0021862	12325.4	10471.5	175.44	293	0.0016638	13780.6	11344.6	181.11
224	0.0021765	12346.2	10484.0	175.53	294	0.0016582	13801.4	11357.1	181.18
225	0.0021668	12367.0	10496.4	175.62	295	0.0016525	13822.2	11369.5	181.25
226	0.0021572	12387.8	10508.9	175.72	296	0.0016470	13843.0	11382.0	181.32
227	0.0021477	12408.6	10521.4	175.81	297	0.0016414	13863.8	11394.5	181.40
228	0.0021383	12429.4	10533.8	175.90	298	0.0016359	13884.6	11407.0	181.46
229	0.0021289	12450.2	10546.3	175.99	299	0.0016304	13905.4	11419.4	181.53
230	0.0021197	12470.9	10558.8	176.08	300	0.0016250	13926.1	11431.9	181.60

0.06 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	0.0085195	9474.6	8761.0	152.24
87	0.0084211	9495.4	8773.5	152.48
88	0.0083249	9516.3	8786.0	152.72
89	0.0082309	9537.1	8798.5	152.95
90	0.0081390	9557.9	8811.0	153.18
91	0.0080492	9578.8	8823.5	153.41
92	0.0079613	9599.6	8836.0	153.64
93	0.0078753	9620.5	8848.5	153.87
94	0.0077912	9641.3	8861.0	154.09
95	0.0077088	9662.1	8873.5	154.31
96	0.0076282	9683.0	8886.0	154.53
97	0.0075493	9703.8	8898.5	154.74
98	0.0074719	9724.6	8911.0	154.96
99	0.0073962	9745.5	8923.5	155.17
100	0.0073220	9766.3	8936.0	155.38
101	0.0072492	9787.1	8948.5	155.59
102	0.0071779	9808.0	8961.0	155.79
103	0.0071080	9828.8	8973.5	155.99
104	0.0070394	9849.6	8986.0	156.20
105	0.0069721	9870.4	8998.4	156.40
106	0.0069062	9891.3	9010.9	156.59
107	0.0068414	9912.1	9023.4	156.79
108	0.0067779	9932.9	9035.9	156.98
109	0.0067155	9953.7	9048.4	157.17
110	0.0066543	9974.6	9060.9	157.36
111	0.0065942	9995.4	9073.4	157.55
112	0.0065351	10016.2	9085.9	157.74
113	0.0064772	10037.0	9098.4	157.92
114	0.0064202	10057.9	9110.9	158.11
115	0.0063642	10078.7	9123.4	158.29
116	0.0063092	10099.5	9135.9	158.47
117	0.0062552	10120.3	9148.4	158.65
118	0.0062020	10141.1	9160.9	158.83
119	0.0061498	10161.9	9173.4	159.00
120	0.0060984	10182.8	9185.8	159.18
121	0.0060479	10203.6	9198.3	159.35
122	0.0059982	10224.4	9210.8	159.52
123	0.0059494	10245.2	9223.3	159.69
124	0.0059013	10266.0	9235.8	159.86
125	0.0058540	10286.8	9248.3	160.03
126	0.0058074	10307.7	9260.8	160.19
127	0.0057616	10328.5	9273.3	160.36
128	0.0057165	10349.3	9285.8	160.52
129	0.0056721	10370.1	9298.2	160.68
130	0.0056284	10390.9	9310.7	160.84
131	0.0055854	10411.7	9323.2	161.00
132	0.0055430	10432.5	9335.7	161.16
133	0.0055012	10453.3	9348.2	161.32
134	0.0054601	10474.1	9360.7	161.47
135	0.0054196	10495.0	9373.2	161.63
136	0.0053797	10515.8	9385.6	161.78
137	0.0053404	10536.6	9398.1	161.93
138	0.0053016	10557.4	9410.6	162.08
139	0.0052634	10578.2	9423.1	162.23
140	0.0052257	10599.0	9435.6	162.38
141	0.0051886	10619.8	9448.1	162.53
142	0.0051520	10640.6	9460.6	162.68
143	0.0051160	10661.4	9473.0	162.82
144	0.0050804	10682.2	9485.5	162.97
145	0.0050453	10703.0	9498.0	163.11
146	0.0050107	10723.8	9510.5	163.26
147	0.0049766	10744.6	9523.0	163.40
148	0.0049429	10765.4	9535.4	163.54
149	0.0049097	10786.2	9547.9	163.68
150	0.0048769	10807.0	9560.4	163.82
151	0.0048446	10827.8	9572.9	163.96
152	0.0048127	10848.6	9585.4	164.09
153	0.0047812	10869.4	9597.9	164.23
154	0.0047501	10890.2	9610.3	164.37
155	0.0047194	10911.1	9622.8	164.50
156	0.0046891	10931.9	9635.3	164.64
157	0.0046592	10952.7	9647.8	164.77
158	0.0046297	10973.5	9660.3	164.90
159	0.0046005	10994.3	9672.7	165.03
160	0.0045718	11015.1	9685.2	165.16

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0.06 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0045433	11035.9	9697.7	165.29	231	0.0031658	12491.5	10571.1	172.80
162	0.0045153	11056.7	9710.2	165.42	232	0.0031522	12512.3	10583.6	172.89
163	0.0044875	11077.5	9722.7	165.55	233	0.0031386	12533.1	10596.0	172.98
164	0.0044601	11098.3	9735.1	165.68	234	0.0031252	12553.9	10608.5	173.07
165	0.0044331	11119.1	9747.6	165.80	235	0.0031119	12574.7	10621.0	173.16
166	0.0044064	11139.9	9760.1	165.93	236	0.0030987	12595.5	10633.5	173.24
167	0.0043800	11160.7	9772.6	166.05	237	0.0030857	12616.2	10645.9	173.33
168	0.0043539	11181.5	9785.1	166.18	238	0.0030727	12637.0	10658.4	173.42
169	0.0043281	11202.3	9797.5	166.30	239	0.0030598	12657.8	10670.9	173.51
170	0.0043026	11223.1	9810.0	166.42	240	0.0030471	12678.6	10683.4	173.59
171	0.0042774	11243.8	9822.5	166.54	241	0.0030344	12699.4	10695.8	173.68
172	0.0042525	11264.6	9835.0	166.67	242	0.0030219	12720.2	10708.3	173.77
173	0.0042279	11285.4	9847.5	166.79	243	0.0030094	12741.0	10720.8	173.85
174	0.0042036	11306.2	9859.9	166.91	244	0.0029971	12761.8	10733.3	173.94
175	0.0041796	11327.0	9872.4	167.03	245	0.0029849	12782.6	10745.7	174.02
176	0.0041558	11347.8	9884.9	167.14	246	0.0029727	12803.4	10758.2	174.11
177	0.0041323	11368.6	9897.4	167.26	247	0.0029607	12824.2	10770.7	174.19
178	0.0041091	11389.4	9909.9	167.38	248	0.0029488	12844.9	10783.2	174.28
179	0.0040861	11410.2	9922.3	167.50	249	0.0029369	12865.7	10795.6	174.36
180	0.0040634	11431.0	9934.8	167.61	250	0.0029252	12886.5	10808.1	174.44
181	0.0040409	11451.8	9947.3	167.73	251	0.0029135	12907.3	10820.6	174.53
182	0.0040187	11472.6	9959.8	167.84	252	0.0029019	12928.1	10833.1	174.61
183	0.0039967	11493.4	9972.2	167.96	253	0.0028905	12948.9	10845.5	174.69
184	0.0039750	11514.2	9984.7	168.07	254	0.0028791	12969.7	10858.0	174.77
185	0.0039535	11535.0	9997.2	168.18	255	0.0028678	12990.5	10870.5	174.85
186	0.0039322	11555.8	10009.7	168.29	256	0.0028566	13011.3	10883.0	174.94
187	0.0039112	11576.6	10022.2	168.40	257	0.0028455	13032.1	10895.4	175.02
188	0.0038903	11597.4	10034.6	168.52	258	0.0028344	13052.8	10907.9	175.10
189	0.0038697	11618.2	10047.1	168.63	259	0.0028235	13073.6	10920.4	175.18
190	0.0038494	11639.0	10059.6	168.74	260	0.0028126	13094.4	10932.9	175.26
191	0.0038292	11659.8	10072.1	168.84	261	0.0028018	13115.2	10945.3	175.34
192	0.0038092	11680.6	10084.5	168.95	262	0.0027911	13136.0	10957.8	175.42
193	0.0037895	11701.4	10097.0	169.06	263	0.0027805	13156.8	10970.3	175.50
194	0.0037699	11722.2	10109.5	169.17	264	0.0027700	13177.6	10982.7	175.57
195	0.0037506	11743.0	10122.0	169.28	265	0.0027595	13198.4	10995.2	175.65
196	0.0037315	11763.8	10134.5	169.38	266	0.0027492	13219.2	11007.7	175.73
197	0.0037125	11784.5	10146.9	169.49	267	0.0027389	13240.0	11020.2	175.81
198	0.0036937	11805.3	10159.4	169.59	268	0.0027286	13260.7	11032.6	175.89
199	0.0036752	11826.1	10171.9	169.70	269	0.0027185	13281.5	11045.1	175.96
200	0.0036568	11846.9	10184.4	169.80	270	0.0027084	13302.3	11057.6	176.04
201	0.0036386	11867.7	10196.8	169.91	271	0.0026984	13323.1	11070.1	176.12
202	0.0036206	11888.5	10209.3	170.01	272	0.0026885	13343.9	11082.5	176.20
203	0.0036027	11909.3	10221.8	170.11	273	0.0026786	13364.7	11095.0	176.27
204	0.0035850	11930.1	10234.3	170.21	274	0.0026689	13385.5	11107.5	176.35
205	0.0035675	11950.9	10246.7	170.32	275	0.0026592	13406.3	11120.0	176.42
206	0.0035502	11971.7	10259.2	170.42	276	0.0026495	13427.1	11132.4	176.50
207	0.0035331	11992.5	10271.7	170.52	277	0.0026400	13447.8	11144.9	176.57
208	0.0035161	12013.3	10284.2	170.62	278	0.0026305	13468.6	11157.4	176.65
209	0.0034992	12034.1	10296.6	170.72	279	0.0026210	13489.4	11169.9	176.72
210	0.0034826	12054.9	10309.1	170.82	280	0.0026117	13510.2	11182.3	176.80
211	0.0034660	12075.7	10321.6	170.92	281	0.0026024	13531.0	11194.8	176.87
212	0.0034497	12096.4	10334.1	171.01	282	0.0025931	13551.8	11207.3	176.95
213	0.0034335	12117.2	10346.5	171.11	283	0.0025840	13572.6	11219.7	177.02
214	0.0034174	12138.0	10359.0	171.21	284	0.0025749	13593.4	11232.2	177.09
215	0.0034015	12158.8	10371.5	171.31	285	0.0025658	13614.2	11244.7	177.17
216	0.0033858	12179.6	10384.0	171.40	286	0.0025569	13634.9	11257.2	177.24
217	0.0033702	12200.4	10396.4	171.50	287	0.0025480	13655.7	11269.6	177.31
218	0.0033547	12221.2	10408.9	171.59	288	0.0025391	13676.5	11282.1	177.38
219	0.0033394	12242.0	10421.4	171.69	289	0.0025303	13697.3	11294.6	177.46
220	0.0033242	12262.8	10433.9	171.78	290	0.0025216	13718.1	11307.1	177.53
221	0.0033091	12283.6	10446.3	171.88	291	0.0025129	13738.9	11319.5	177.60
222	0.0032942	12304.4	10458.8	171.97	292	0.0025043	13759.7	11332.0	177.67
223	0.0032795	12325.2	10471.3	172.07	293	0.0024958	13780.5	11344.5	177.74
224	0.0032648	12346.0	10483.8	172.16	294	0.0024873	13801.3	11357.0	177.81
225	0.0032503	12366.7	10496.2	172.25	295	0.0024788	13822.0	11369.4	177.88
226	0.0032359	12387.5	10508.7	172.34	296	0.0024705	13842.8	11381.9	177.95
227	0.0032216	12408.3	10521.2	172.44	297	0.0024621	13863.6	11394.4	178.02
228	0.0032075	12429.1	10533.7	172.53	298	0.0024539	13884.4	11406.8	178.09
229	0.0031935	12449.9	10546.1	172.62	299	0.0024457	13905.2	11419.3	178.16
230	0.0031796	12470.7	10558.6	172.71	300	0.0024375	13926.0	11431.8	178.23

0.08 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	0.0113669	9473.4	8760.2	149.84
87	0.0112353	9494.2	8772.7	150.08
88	0.0111068	9515.1	8785.2	150.32
89	0.0109812	9535.9	8797.7	150.55
90	0.0108584	9556.8	8810.2	150.78
91	0.0107384	9577.6	8822.8	151.01
92	0.0106209	9598.5	8835.3	151.24
93	0.0105061	9619.3	8847.8	151.47
94	0.0103937	9640.2	8860.3	151.69
95	0.0102837	9661.1	8872.8	151.91
96	0.0101760	9681.9	8885.3	152.13
97	0.0100705	9702.8	8897.8	152.35
98	0.0099672	9723.6	8910.3	152.56
99	0.0098661	9744.5	8922.8	152.77
100	0.0097669	9765.3	8935.3	152.98
101	0.0096698	9786.1	8947.8	153.19
102	0.0095745	9807.0	8960.3	153.39
103	0.0094811	9827.8	8972.8	153.60
104	0.0093896	9848.7	8985.4	153.80
105	0.0092998	9869.5	8997.9	154.00
106	0.0092117	9890.4	9010.4	154.20
107	0.0091252	9911.2	9022.9	154.39
108	0.0090404	9932.0	9035.4	154.58
109	0.0089571	9952.9	9047.9	154.78
110	0.0088754	9973.7	9060.4	154.97
111	0.0087951	9994.5	9072.9	155.16
112	0.0087163	10015.4	9085.4	155.34
113	0.0086389	10036.2	9097.9	155.53
114	0.0085629	10057.0	9110.4	155.71
115	0.0084882	10077.9	9122.9	155.89
116	0.0084148	10098.7	9135.4	156.07
117	0.0083426	10119.5	9147.9	156.25
118	0.0082717	10140.4	9160.4	156.43
119	0.0082020	10161.2	9172.9	156.61
120	0.0081334	10182.0	9185.4	156.78
121	0.0080660	10202.8	9197.9	156.95
122	0.0079997	10223.7	9210.4	157.12
123	0.0079345	10244.5	9222.8	157.29
124	0.0078703	10265.3	9235.3	157.46
125	0.0078072	10286.1	9247.8	157.63
126	0.0077450	10307.0	9260.3	157.80
127	0.0076839	10327.8	9272.8	157.96
128	0.0076237	10348.6	9285.3	158.12
129	0.0075645	10369.4	9297.8	158.29
130	0.0075061	10390.2	9310.3	158.45
131	0.0074487	10411.1	9322.8	158.61
132	0.0073921	10431.9	9335.3	158.76
133	0.0073364	10452.7	9347.8	158.92
134	0.0072816	10473.5	9360.3	159.08
135	0.0072275	10494.3	9372.8	159.23
136	0.0071742	10515.2	9385.2	159.39
137	0.0071218	10536.0	9397.7	159.54
138	0.0070701	10556.8	9410.2	159.69
139	0.0070191	10577.6	9422.7	159.84
140	0.0069688	10598.4	9435.2	159.99
141	0.0069193	10619.2	9447.7	160.14
142	0.0068705	10640.0	9460.2	160.28
143	0.0068224	10660.9	9472.7	160.43
144	0.0067749	10681.7	9485.2	160.58
145	0.0067281	10702.5	9497.6	160.72
146	0.0066819	10723.3	9510.1	160.86
147	0.0066364	10744.1	9522.6	161.00
148	0.0065915	10764.9	9535.1	161.15
149	0.0065472	10785.7	9547.6	161.29
150	0.0065034	10806.5	9560.1	161.43
151	0.0064603	10827.3	9572.6	161.56
152	0.0064177	10848.1	9585.0	161.70
153	0.0063757	10869.0	9597.5	161.84
154	0.0063343	10889.8	9610.0	161.97
155	0.0062933	10910.6	9622.5	162.11
156	0.0062529	10931.4	9635.0	162.24
157	0.0062130	10952.2	9647.5	162.37
158	0.0061737	10973.0	9660.0	162.51
159	0.0061348	10993.8	9672.4	162.64
160	0.0060964	11014.6	9684.9	162.77

0.08 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0060585	11035.4	9697.4	162.90	231	0.0042213	12491.3	10570.9	170.41
162	0.0060210	11056.2	9709.9	163.03	232	0.0042031	12512.1	10583.4	170.50
163	0.0059840	11077.0	9722.4	163.15	233	0.0041850	12532.8	10595.9	170.59
164	0.0059475	11097.8	9734.9	163.28	234	0.0041671	12553.6	10608.4	170.67
165	0.0059114	11118.6	9747.3	163.41	235	0.0041494	12574.4	10620.8	170.76
166	0.0058758	11139.4	9759.8	163.53	236	0.0041318	12595.2	10633.3	170.85
167	0.0058405	11160.2	9772.3	163.66	237	0.0041143	12616.0	10645.8	170.94
168	0.0058057	11181.0	9784.8	163.78	238	0.0040970	12636.8	10658.3	171.03
169	0.0057713	11201.8	9797.3	163.91	239	0.0040799	12657.6	10670.7	171.11
170	0.0057373	11222.6	9809.7	164.03	240	0.0040629	12678.4	10683.2	171.20
171	0.0057037	11243.4	9822.2	164.15	241	0.0040460	12699.2	10695.7	171.29
172	0.0056705	11264.2	9834.7	164.27	242	0.0040293	12720.0	10708.2	171.37
173	0.0056377	11285.0	9847.2	164.39	243	0.0040127	12740.8	10720.6	171.46
174	0.0056053	11305.8	9859.7	164.51	244	0.0039963	12761.6	10733.1	171.54
175	0.0055732	11326.6	9872.2	164.63	245	0.0039799	12782.4	10745.6	171.63
176	0.0055415	11347.4	9884.6	164.75	246	0.0039638	12803.1	10758.1	171.71
177	0.0055102	11368.3	9897.1	164.87	247	0.0039477	12823.9	10770.5	171.80
178	0.0054792	11389.1	9909.6	164.99	248	0.0039318	12844.7	10783.0	171.88
179	0.0054486	11409.9	9922.1	165.10	249	0.0039160	12865.5	10795.5	171.97
180	0.0054183	11430.7	9934.6	165.22	250	0.0039003	12886.3	10808.0	172.05
181	0.0053883	11451.5	9947.0	165.33	251	0.0038848	12907.1	10820.4	172.13
182	0.0053587	11472.3	9959.5	165.45	252	0.0038693	12927.9	10832.9	172.22
183	0.0053294	11493.1	9972.0	165.56	253	0.0038540	12948.7	10845.4	172.30
184	0.0053004	11513.9	9984.5	165.68	254	0.0038389	12969.5	10857.9	172.38
185	0.0052717	11534.7	9997.0	165.79	255	0.0038238	12990.3	10870.3	172.46
186	0.0052433	11555.5	10009.4	165.90	256	0.0038089	13011.1	10882.8	172.54
187	0.0052152	11576.2	10021.9	166.01	257	0.0037940	13031.9	10895.3	172.62
188	0.0051875	11597.0	10034.4	166.12	258	0.0037793	13052.6	10907.8	172.70
189	0.0051600	11617.8	10046.9	166.23	259	0.0037647	13073.4	10920.2	172.78
190	0.0051328	11638.6	10059.4	166.34	260	0.0037502	13094.2	10932.7	172.86
191	0.0051059	11659.4	10071.8	166.45	261	0.0037359	13115.0	10945.2	172.94
192	0.0050793	11680.2	10084.3	166.56	262	0.0037216	13135.8	10957.7	173.02
193	0.0050530	11701.0	10096.8	166.67	263	0.0037074	13156.6	10970.1	173.10
194	0.0050269	11721.8	10109.3	166.78	264	0.0036934	13177.4	10982.6	173.18
195	0.0050011	11742.6	10121.7	166.88	265	0.0036795	13198.2	10995.1	173.26
196	0.0049756	11763.4	10134.2	166.99	266	0.0036656	13219.0	11007.6	173.34
197	0.0049503	11784.2	10146.7	167.10	267	0.0036519	13239.8	11020.0	173.42
198	0.0049253	11805.0	10159.2	167.20	268	0.0036383	13260.6	11032.5	173.50
199	0.0049005	11825.8	10171.7	167.31	269	0.0036247	13281.3	11045.0	173.57
200	0.0048760	11846.6	10184.1	167.41	270	0.0036113	13302.1	11057.5	173.65
201	0.0048517	11867.4	10196.6	167.51	271	0.0035980	13322.9	11069.9	173.73
202	0.0048277	11888.2	10209.1	167.62	272	0.0035847	13343.7	11082.4	173.80
203	0.0048039	11909.0	10221.6	167.72	273	0.0035716	13364.5	11094.9	173.88
204	0.0047803	11929.8	10234.1	167.82	274	0.0035586	13385.3	11107.4	173.96
205	0.0047570	11950.6	10246.5	167.92	275	0.0035456	13406.1	11119.8	174.03
206	0.0047339	11971.4	10259.0	168.02	276	0.0035328	13426.9	11132.3	174.11
207	0.0047110	11992.2	10271.5	168.12	277	0.0035200	13447.7	11144.8	174.18
208	0.0046883	12013.0	10284.0	168.23	278	0.0035073	13468.5	11157.2	174.26
209	0.0046659	12033.8	10296.4	168.32	279	0.0034948	13489.3	11169.7	174.33
210	0.0046436	12054.6	10308.9	168.42	280	0.0034823	13510.0	11182.2	174.41
211	0.0046216	12075.4	10321.4	168.52	281	0.0034699	13530.8	11194.7	174.48
212	0.0045998	12096.2	10333.9	168.62	282	0.0034576	13551.6	11207.1	174.55
213	0.0045782	12117.0	10346.3	168.72	283	0.0034454	13572.4	11219.6	174.63
214	0.0045568	12137.8	10358.8	168.82	284	0.0034332	13593.2	11232.1	174.70
215	0.0045356	12158.6	10371.3	168.91	285	0.0034212	13614.0	11244.6	174.77
216	0.0045146	12179.3	10383.8	169.01	286	0.0034092	13634.8	11257.0	174.85
217	0.0044938	12200.1	10396.3	169.11	287	0.0033973	13655.6	11269.5	174.92
218	0.0044731	12220.9	10408.7	169.20	288	0.0033855	13676.4	11282.0	174.99
219	0.0044527	12241.7	10421.2	169.30	289	0.0033738	13697.2	11294.5	175.06
220	0.0044324	12262.5	10433.7	169.39	290	0.0033622	13717.9	11306.9	175.14
221	0.0044124	12283.3	10446.2	169.49	291	0.0033506	13738.7	11319.4	175.21
222	0.0043925	12304.1	10458.6	169.58	292	0.0033391	13759.5	11331.9	175.28
223	0.0043728	12324.9	10471.1	169.67	293	0.0033277	13780.3	11344.4	175.35
224	0.0043532	12345.7	10483.6	169.77	294	0.0033164	13801.1	11356.8	175.42
225	0.0043339	12366.5	10496.1	169.86	295	0.0033052	13821.9	11369.3	175.49
226	0.0043147	12387.3	10508.5	169.95	296	0.0032940	13842.7	11381.8	175.56
227	0.0042957	12408.1	10521.0	170.04	297	0.0032829	13863.5	11394.3	175.63
228	0.0042768	12428.9	10533.5	170.13	298	0.0032719	13884.3	11406.7	175.70
229	0.0042581	12449.7	10546.0	170.23	299	0.0032609	13905.1	11419.2	175.77
230	0.0042396	12470.5	10558.5	170.32	300	0.0032501	13925.8	11431.7	175.84

0.10 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	0.0142180	9472.1	8759.4	147.97
87	0.0140532	9493.0	8772.0	148.21
88	0.0138922	9513.9	8784.5	148.45
89	0.0137348	9534.7	8797.0	148.69
90	0.0135810	9555.6	8809.5	148.92
91	0.0134306	9576.5	8822.0	149.15
92	0.0132835	9597.4	8834.6	149.38
93	0.0131397	9618.2	8847.1	149.61
94	0.0129989	9639.1	8859.6	149.83
95	0.0128611	9660.0	8872.1	150.05
96	0.0127262	9680.8	8884.6	150.27
97	0.0125942	9701.7	8897.1	150.48
98	0.0124649	9722.6	8909.7	150.70
99	0.0123382	9743.4	8922.2	150.91
100	0.0122140	9764.3	8934.7	151.12
101	0.0120924	9785.2	8947.2	151.33
102	0.0119732	9806.0	8959.7	151.53
103	0.0118563	9826.9	8972.2	151.74
104	0.0117416	9847.7	8984.8	151.94
105	0.0116292	9868.6	8997.3	152.14
106	0.0115189	9889.4	9009.8	152.33
107	0.0114107	9910.3	9022.3	152.53
108	0.0113045	9931.1	9034.8	152.72
109	0.0112003	9952.0	9047.3	152.92
110	0.0110980	9972.8	9059.8	153.11
111	0.0109976	9993.7	9072.3	153.30
112	0.0108989	10014.5	9084.8	153.48
113	0.0108021	10035.4	9097.3	153.67
114	0.0107069	10056.2	9109.9	153.85
115	0.0106134	10077.1	9122.4	154.03
116	0.0105215	10097.9	9134.9	154.21
117	0.0104312	10118.8	9147.4	154.39
118	0.0103425	10139.6	9159.9	154.57
119	0.0102552	10160.4	9172.4	154.75
120	0.0101695	10181.3	9184.9	154.92
121	0.0100851	10202.1	9197.4	155.09
122	0.0100021	10222.9	9209.9	155.26
123	0.0099205	10243.8	9222.4	155.44
124	0.0098402	10264.6	9234.9	155.60
125	0.0097613	10285.4	9247.4	155.77
126	0.0096835	10306.3	9259.9	155.94
127	0.0096070	10327.1	9272.4	156.10
128	0.0095317	10347.9	9284.9	156.27
129	0.0094576	10368.8	9297.4	156.43
130	0.0093847	10389.6	9309.9	156.59
131	0.0093128	10410.4	9322.4	156.75
132	0.0092420	10431.2	9334.9	156.91
133	0.0091724	10452.1	9347.4	157.06
134	0.0091037	10472.9	9359.9	157.22
135	0.0090361	10493.7	9372.4	157.37
136	0.0089695	10514.5	9384.9	157.53
137	0.0089038	10535.4	9397.3	157.68
138	0.0088391	10556.2	9409.8	157.83
139	0.0087754	10577.0	9422.3	157.98
140	0.0087125	10597.8	9434.8	158.13
141	0.0086506	10618.7	9447.3	158.28
142	0.0085895	10639.5	9459.8	158.43
143	0.0085293	10660.3	9472.3	158.57
144	0.0084700	10681.1	9484.8	158.72
145	0.0084114	10701.9	9497.3	158.86
146	0.0083537	10722.8	9509.8	159.00
147	0.0082967	10743.6	9522.3	159.15
148	0.0082405	10764.4	9534.8	159.29
149	0.0081851	10785.2	9547.2	159.43
150	0.0081304	10806.0	9559.7	159.57
151	0.0080765	10826.8	9572.2	159.71
152	0.0080232	10847.6	9584.7	159.84
153	0.0079707	10868.5	9597.2	159.98
154	0.0079189	10889.3	9609.7	160.12
155	0.0078677	10910.1	9622.2	160.25
156	0.0078171	10930.9	9634.7	160.38
157	0.0077673	10951.7	9647.2	160.52
158	0.0077180	10972.5	9659.6	160.65
159	0.0076694	10993.3	9672.1	160.78
160	0.0076214	11014.1	9684.6	160.91

0.10 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0075739	11035.0	9697.1	161.04	231	0.0052768	12491.0	10570.8	168.55
162	0.0075271	11055.8	9709.6	161.17	232	0.0052540	12511.8	10583.2	168.64
163	0.0074809	11076.6	9722.1	161.30	233	0.0052314	12532.6	10595.7	168.73
164	0.0074352	11097.4	9734.6	161.42	234	0.0052091	12553.4	10608.2	168.82
165	0.0073900	11118.2	9747.0	161.55	235	0.0051869	12574.2	10620.7	168.91
166	0.0073455	11139.0	9759.5	161.68	236	0.0051649	12595.0	10633.1	169.00
167	0.0073014	11159.8	9772.0	161.80	237	0.0051431	12615.8	10645.6	169.08
168	0.0072579	11180.6	9784.5	161.93	238	0.0051215	12636.6	10658.1	169.17
169	0.0072149	11201.4	9797.0	162.05	239	0.0051000	12657.4	10670.6	169.26
170	0.0071724	11222.2	9809.5	162.17	240	0.0050788	12678.2	10683.0	169.34
171	0.0071304	11243.0	9822.0	162.29	241	0.0050577	12699.0	10695.5	169.43
172	0.0070888	11263.8	9834.4	162.42	242	0.0050368	12719.8	10708.0	169.52
173	0.0070478	11284.6	9846.9	162.54	243	0.0050160	12740.6	10720.5	169.60
174	0.0070072	11305.5	9859.4	162.66	244	0.0049955	12761.3	10733.0	169.69
175	0.0069672	11326.3	9871.9	162.78	245	0.0049751	12782.1	10745.4	169.77
176	0.0069275	11347.1	9884.4	162.89	246	0.0049548	12802.9	10757.9	169.86
177	0.0068883	11367.9	9896.9	163.01	247	0.0049348	12823.7	10770.4	169.94
178	0.0068496	11388.7	9909.3	163.13	248	0.0049149	12844.5	10782.9	170.03
179	0.0068113	11409.5	9921.8	163.25	249	0.0048951	12865.3	10795.3	170.11
180	0.0067734	11430.3	9934.3	163.36	250	0.0048755	12886.1	10807.8	170.19
181	0.0067359	11451.1	9946.8	163.48	251	0.0048561	12906.9	10820.3	170.28
182	0.0066988	11471.9	9959.3	163.59	252	0.0048368	12927.7	10832.8	170.36
183	0.0066622	11492.7	9971.8	163.71	253	0.0048177	12948.5	10845.2	170.44
184	0.0066259	11513.5	9984.2	163.82	254	0.0047987	12969.3	10857.7	170.52
185	0.0065901	11534.3	9996.7	163.93	255	0.0047799	12990.1	10870.2	170.61
186	0.0065546	11555.1	10009.2	164.04	256	0.0047612	13010.9	10882.7	170.69
187	0.0065195	11575.9	10021.7	164.16	257	0.0047427	13031.7	10895.1	170.77
188	0.0064848	11596.7	10034.2	164.27	258	0.0047243	13052.5	10907.6	170.85
189	0.0064505	11617.5	10046.6	164.38	259	0.0047060	13073.2	10920.1	170.93
190	0.0064165	11638.3	10059.1	164.49	260	0.0046879	13094.0	10932.6	171.01
191	0.0063828	11659.1	10071.6	164.60	261	0.0046699	13114.8	10945.0	171.09
192	0.0063496	11679.9	10084.1	164.70	262	0.0046521	13135.6	10957.5	171.17
193	0.0063166	11700.7	10096.6	164.81	263	0.0046344	13156.4	10970.0	171.25
194	0.0062840	11721.5	10109.0	164.92	264	0.0046168	13177.2	10982.5	171.33
195	0.0062518	11742.3	10121.5	165.03	265	0.0045994	13198.0	10994.9	171.41
196	0.0062199	11763.1	10134.0	165.13	266	0.0045821	13218.8	11007.4	171.48
197	0.0061882	11783.9	10146.5	165.24	267	0.0045650	13239.6	11019.9	171.56
198	0.0061570	11804.7	10159.0	165.34	268	0.0045479	13260.4	11032.4	171.64
199	0.0061260	11825.5	10171.4	165.45	269	0.0045310	13281.2	11044.8	171.72
200	0.0060953	11846.3	10183.9	165.55	270	0.0045142	13302.0	11057.3	171.79
201	0.0060650	11867.1	10196.4	165.66	271	0.0044975	13322.8	11069.8	171.87
202	0.0060349	11887.9	10208.9	165.76	272	0.0044810	13343.5	11082.3	171.95
203	0.0060052	11908.7	10221.4	165.86	273	0.0044646	13364.3	11094.7	172.02
204	0.0059757	11929.5	10233.8	165.97	274	0.0044483	13385.1	11107.2	172.10
205	0.0059465	11950.3	10246.3	166.07	275	0.0044321	13405.9	11119.7	172.18
206	0.0059176	11971.1	10258.8	166.17	276	0.0044160	13426.7	11132.2	172.25
207	0.0058890	11991.9	10271.3	166.27	277	0.0044001	13447.5	11144.6	172.33
208	0.0058607	12012.7	10283.8	166.37	278	0.0043843	13468.3	11157.1	172.40
209	0.0058326	12033.5	10296.2	166.47	279	0.0043685	13489.1	11169.6	172.48
210	0.0058048	12054.3	10308.7	166.57	280	0.0043529	13509.9	11182.1	172.55
211	0.0057773	12075.1	10321.2	166.67	281	0.0043374	13530.7	11194.5	172.62
212	0.0057500	12095.9	10333.7	166.77	282	0.0043220	13551.5	11207.0	172.70
213	0.0057230	12116.7	10346.2	166.86	283	0.0043068	13572.3	11219.5	172.77
214	0.0056962	12137.5	10358.6	166.96	284	0.0042916	13593.0	11232.0	172.84
215	0.0056697	12158.3	10371.1	167.06	285	0.0042765	13613.8	11244.4	172.92
216	0.0056435	12179.1	10383.6	167.15	286	0.0042616	13634.6	11256.9	172.99
217	0.0056174	12199.9	10396.1	167.25	287	0.0042467	13655.4	11269.4	173.06
218	0.0055917	12220.7	10408.5	167.35	288	0.0042320	13676.2	11281.9	173.14
219	0.0055661	12241.5	10421.0	167.44	289	0.0042173	13697.0	11294.3	173.21
220	0.0055408	12262.3	10433.5	167.54	290	0.0042028	13717.8	11306.8	173.28
221	0.0055157	12283.1	10446.0	167.63	291	0.0041883	13738.6	11319.3	173.35
222	0.0054908	12303.9	10458.5	167.72	292	0.0041740	13759.4	11331.8	173.42
223	0.0054662	12324.7	10470.9	167.82	293	0.0041597	13780.2	11344.2	173.49
224	0.0054418	12345.4	10483.4	167.91	294	0.0041456	13801.0	11356.7	173.56
225	0.0054176	12366.2	10495.9	168.00	295	0.0041315	13821.7	11369.2	173.64
226	0.0053936	12387.0	10508.4	168.09	296	0.0041176	13842.5	11381.7	173.71
227	0.0053698	12407.8	10520.8	168.19	297	0.0041037	13863.3	11394.1	173.78
228	0.0053462	12428.6	10533.3	168.28	298	0.0040899	13884.1	11406.6	173.85
229	0.0053229	12449.4	10545.8	168.37	299	0.0040762	13904.9	11419.1	173.92
230	0.0052997	12470.2	10558.3	168.46	300	0.0040626	13925.7	11431.6	173.98

0.20 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	0.0285311	9465.9	8755.6	142.16
87	0.0281975	9486.9	8768.2	142.41
88	0.0278717	9507.8	8780.7	142.65
89	0.0275534	9528.8	8793.3	142.88
90	0.0272424	9549.8	8805.9	143.12
91	0.0269384	9570.7	8818.4	143.35
92	0.0266412	9591.7	8831.0	143.58
93	0.0263505	9612.7	8843.6	143.80
94	0.0260662	9633.6	8856.1	144.03
95	0.0257880	9654.6	8868.7	144.25
96	0.0255157	9675.5	8881.3	144.47
97	0.0252492	9696.5	8893.8	144.69
98	0.0249882	9717.4	8906.4	144.90
99	0.0247326	9738.4	8919.0	145.11
100	0.0244823	9759.3	8931.5	145.32
101	0.0242370	9780.2	8944.1	145.53
102	0.0239966	9801.2	8956.6	145.74
103	0.0237610	9822.1	8969.2	145.94
104	0.0235300	9843.0	8981.8	146.15
105	0.0233035	9863.9	8994.3	146.35
106	0.0230813	9884.9	9006.9	146.54
107	0.0228634	9905.8	9019.4	146.74
108	0.0226496	9926.7	9032.0	146.94
109	0.0224398	9947.6	9044.5	147.13
110	0.0222338	9968.5	9057.1	147.32
111	0.0220316	9989.4	9069.6	147.51
112	0.0218331	10010.4	9082.2	147.70
113	0.0216382	10031.3	9094.7	147.88
114	0.0214467	10052.2	9107.2	148.07
115	0.0212587	10073.1	9119.8	148.25
116	0.0210739	10094.0	9132.3	148.43
117	0.0208923	10114.9	9144.9	148.61
118	0.0207139	10135.8	9157.4	148.79
119	0.0205384	10156.6	9169.9	148.96
120	0.0203660	10177.5	9182.5	149.14
121	0.0201964	10198.4	9195.0	149.31
122	0.0200297	10219.3	9207.5	149.48
123	0.0198657	10240.2	9220.1	149.65
124	0.0197044	10261.1	9232.6	149.82
125	0.0195457	10282.0	9245.1	149.99
126	0.0193895	10302.8	9257.6	150.16
127	0.0192358	10323.7	9270.2	150.32
128	0.0190846	10344.6	9282.7	150.49
129	0.0189357	10365.5	9295.2	150.65
130	0.0187892	10386.3	9307.7	150.81
131	0.0186449	10407.2	9320.3	150.97
132	0.0185028	10428.1	9332.8	151.13
133	0.0183629	10448.9	9345.3	151.28
134	0.0182251	10469.8	9357.8	151.44
135	0.0180894	10490.7	9370.4	151.60
136	0.0179556	10511.5	9382.9	151.75
137	0.0178239	10532.4	9395.4	151.90
138	0.0176940	10553.2	9407.9	152.05
139	0.0175661	10574.1	9420.4	152.21
140	0.0174400	10595.0	9432.9	152.35
141	0.0173157	10615.8	9445.5	152.50
142	0.0171932	10636.7	9458.0	152.65
143	0.0170724	10657.5	9470.5	152.80
144	0.0169533	10678.4	9483.0	152.94
145	0.0168358	10699.2	9495.5	153.09
146	0.0167200	10720.1	9508.0	153.23
147	0.0166057	10740.9	9520.5	153.37
148	0.0164931	10761.8	9533.0	153.51
149	0.0163819	10782.6	9545.5	153.65
150	0.0162722	10803.5	9558.0	153.79
151	0.0161640	10824.3	9570.6	153.93
152	0.0160573	10845.1	9583.1	154.07
153	0.0159519	10866.0	9595.6	154.21
154	0.0158479	10886.8	9608.1	154.34
155	0.0157453	10907.7	9620.6	154.48
156	0.0156440	10928.5	9633.1	154.61
157	0.0155440	10949.3	9645.6	154.74
158	0.0154453	10970.2	9658.1	154.88
159	0.0153478	10991.0	9670.6	155.01
160	0.0152515	11011.8	9683.1	155.14

0.20 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0151565	11032.7	9695.6	155.27	231	0.0105554	12489.8	10569.9	162.78
162	0.0150626	11053.5	9708.1	155.40	232	0.0105098	12510.6	10582.4	162.87
163	0.0149699	11074.4	9720.6	155.53	233	0.0104647	12531.4	10594.9	162.96
164	0.0148783	11095.2	9733.1	155.65	234	0.0104199	12552.2	10607.3	163.05
165	0.0147878	11116.0	9745.6	155.78	235	0.0103755	12573.0	10619.8	163.14
166	0.0146985	11136.8	9758.1	155.91	236	0.0103315	12593.8	10632.3	163.23
167	0.0146102	11157.7	9770.6	156.03	237	0.0102878	12614.6	10644.8	163.32
168	0.0145230	11178.5	9783.1	156.15	238	0.0102446	12635.4	10657.3	163.40
169	0.0144368	11199.3	9795.6	156.28	239	0.0102017	12656.2	10669.7	163.49
170	0.0143516	11220.2	9808.1	156.40	240	0.0101591	12677.0	10682.2	163.58
171	0.0142674	11241.0	9820.6	156.52	241	0.0101169	12697.9	10694.7	163.66
172	0.0141842	11261.8	9833.1	156.64	242	0.0100751	12718.7	10707.2	163.75
173	0.0141020	11282.6	9845.6	156.77	243	0.0100335	12739.5	10719.7	163.84
174	0.0140208	11303.5	9858.1	156.89	244	0.0099924	12760.3	10732.2	163.92
175	0.0139404	11324.3	9870.6	157.00	245	0.0099516	12781.1	10744.6	164.01
176	0.0138610	11345.1	9883.1	157.12	246	0.0099111	12801.9	10757.1	164.09
177	0.0137825	11365.9	9895.6	157.24	247	0.0098709	12822.7	10769.6	164.18
178	0.0137048	11386.8	9908.1	157.36	248	0.0098310	12843.5	10782.1	164.26
179	0.0136281	11407.6	9920.5	157.48	249	0.0097915	12864.3	10794.6	164.34
180	0.0135522	11428.4	9933.0	157.59	250	0.0097523	12885.1	10807.0	164.43
181	0.0134771	11449.2	9945.5	157.71	251	0.0097134	12905.9	10819.5	164.51
182	0.0134029	11470.1	9958.0	157.82	252	0.0096748	12926.7	10832.0	164.59
183	0.0133295	11490.9	9970.5	157.94	253	0.0096366	12947.5	10844.5	164.68
184	0.0132569	11511.7	9983.0	158.05	254	0.0095986	12968.3	10857.0	164.76
185	0.0131850	11532.5	9995.5	158.16	255	0.0095609	12989.1	10869.4	164.84
186	0.0131140	11553.3	10008.0	158.27	256	0.0095235	13009.9	10881.9	164.92
187	0.0130437	11574.2	10020.5	158.39	257	0.0094864	13030.7	10894.4	165.00
188	0.0129742	11595.0	10033.0	158.50	258	0.0094496	13051.5	10906.9	165.08
189	0.0129054	11615.8	10045.5	158.61	259	0.0094131	13072.3	10919.4	165.16
190	0.0128373	11636.6	10058.0	158.72	260	0.0093769	13093.1	10931.8	165.24
191	0.0127700	11657.4	10070.5	158.83	261	0.0093409	13113.9	10944.3	165.32
192	0.0127033	11678.2	10082.9	158.94	262	0.0093052	13134.7	10956.8	165.40
193	0.0126373	11699.1	10095.4	159.04	263	0.0092698	13155.5	10969.3	165.48
194	0.0125721	11719.9	10107.9	159.15	264	0.0092347	13176.3	10981.8	165.56
195	0.0125075	11740.7	10120.4	159.26	265	0.0091998	13197.1	10994.2	165.64
196	0.0124435	11761.5	10132.9	159.36	266	0.0091652	13217.9	11006.7	165.72
197	0.0123802	11782.3	10145.4	159.47	267	0.0091308	13238.7	11019.2	165.80
198	0.0123176	11803.1	10157.9	159.58	268	0.0090967	13259.5	11031.7	165.87
199	0.0122556	11823.9	10170.4	159.68	269	0.0090629	13280.3	11044.2	165.95
200	0.0121942	11844.8	10182.9	159.78	270	0.0090293	13301.1	11056.6	166.03
201	0.0121334	11865.6	10195.3	159.89	271	0.0089960	13321.9	11069.1	166.11
202	0.0120732	11886.4	10207.8	159.99	272	0.0089629	13342.7	11081.6	166.18
203	0.0120136	11907.2	10220.3	160.09	273	0.0089300	13363.5	11094.1	166.26
204	0.0119547	11928.0	10232.8	160.20	274	0.0088974	13384.2	11106.5	166.33
205	0.0118962	11948.8	10245.3	160.30	275	0.0088650	13405.0	11119.0	166.41
206	0.0118384	11969.6	10257.8	160.40	276	0.0088329	13425.8	11131.5	166.49
207	0.0117811	11990.4	10270.3	160.50	277	0.0088009	13446.6	11144.0	166.56
208	0.0117244	12011.3	10282.8	160.60	278	0.0087693	13467.4	11156.5	166.64
209	0.0116682	12032.1	10295.2	160.70	279	0.0087378	13488.2	11168.9	166.71
210	0.0116125	12052.9	10307.7	160.80	280	0.0087066	13509.0	11181.4	166.78
211	0.0115574	12073.7	10320.2	160.90	281	0.0086756	13529.8	11193.9	166.86
212	0.0115028	12094.5	10332.7	161.00	282	0.0086448	13550.6	11206.4	166.93
213	0.0114487	12115.3	10345.2	161.10	283	0.0086142	13571.4	11218.9	167.01
214	0.0113951	12136.1	10357.7	161.19	284	0.0085839	13592.2	11231.3	167.08
215	0.0113420	12156.9	10370.2	161.29	285	0.0085537	13613.0	11243.8	167.15
216	0.0112894	12177.7	10382.6	161.39	286	0.0085238	13633.8	11256.3	167.23
217	0.0112373	12198.5	10395.1	161.48	287	0.0084941	13654.6	11268.8	167.30
218	0.0111857	12219.3	10407.6	161.58	288	0.0084646	13675.4	11281.2	167.37
219	0.0111346	12240.1	10420.1	161.67	289	0.0084353	13696.2	11293.7	167.44
220	0.0110839	12261.0	10432.6	161.77	290	0.0084062	13717.0	11306.2	167.51
221	0.0110337	12281.8	10445.1	161.86	291	0.0083772	13737.8	11318.7	167.59
222	0.0109839	12302.6	10457.5	161.96	292	0.0083485	13758.6	11331.2	167.66
223	0.0109346	12323.4	10470.0	162.05	293	0.0083200	13779.4	11343.6	167.73
224	0.0108857	12344.2	10482.5	162.14	294	0.0082917	13800.2	11356.1	167.80
225	0.0108372	12365.0	10495.0	162.24	295	0.0082636	13821.0	11368.6	167.87
226	0.0107892	12385.8	10507.5	162.33	296	0.0082356	13841.8	11381.1	167.94
227	0.0107416	12406.6	10520.0	162.42	297	0.0082079	13862.6	11393.5	168.01
228	0.0106945	12427.4	10532.4	162.51	298	0.0081803	13883.4	11406.0	168.08
229	0.0106477	12448.2	10544.9	162.60	299	0.0081530	13904.2	11418.5	168.15
230	0.0106013	12469.0	10557.4	162.69	300	0.0081258	13925.0	11431.0	168.22

0.30 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	0.0429413	9459.6	8751.7	138.75
87	0.0424348	9480.7	8764.3	138.99
88	0.0419403	9501.7	8776.9	139.23
89	0.0414574	9522.8	8789.6	139.47
90	0.0409857	9543.9	8802.2	139.70
91	0.0405247	9564.9	8814.8	139.94
92	0.0400742	9586.0	8827.4	140.17
93	0.0396337	9607.0	8840.0	140.40
94	0.0392029	9628.1	8852.7	140.62
95	0.0387815	9649.1	8865.3	140.84
96	0.0383693	9670.2	8877.9	141.06
97	0.0379658	9691.2	8890.5	141.28
98	0.0375709	9712.2	8903.1	141.50
99	0.0371842	9733.2	8915.7	141.71
100	0.0368055	9754.3	8928.3	141.92
101	0.0364345	9775.3	8940.9	142.13
102	0.0360710	9796.3	8953.5	142.34
103	0.0357148	9817.3	8966.1	142.54
104	0.0353657	9838.3	8978.7	142.75
105	0.0350234	9859.3	8991.3	142.95
106	0.0346877	9880.3	9003.9	143.15
107	0.0343585	9901.3	9016.5	143.34
108	0.0340356	9922.3	9029.1	143.54
109	0.0337187	9943.2	9041.7	143.73
110	0.0334078	9964.2	9054.3	143.92
111	0.0331026	9985.2	9066.9	144.11
112	0.0328029	10006.2	9079.5	144.30
113	0.0325088	10027.1	9092.0	144.49
114	0.0322199	10048.1	9104.6	144.67
115	0.0319361	10069.0	9117.2	144.85
116	0.0316574	10090.0	9129.8	145.04
117	0.0313835	10110.9	9142.3	145.22
118	0.0311143	10131.9	9154.9	145.39
119	0.0308498	10152.8	9167.5	145.57
120	0.0305898	10173.8	9180.0	145.75
121	0.0303342	10194.7	9192.6	145.92
122	0.0300828	10215.7	9205.2	146.09
123	0.0298356	10236.6	9217.7	146.26
124	0.0295925	10257.5	9230.3	146.43
125	0.0293534	10278.5	9242.9	146.60
126	0.0291181	10299.4	9255.4	146.77
127	0.0288865	10320.3	9268.0	146.93
128	0.0286587	10341.2	9280.5	147.10
129	0.0284345	10362.1	9293.1	147.26
130	0.0282137	10383.0	9305.6	147.42
131	0.0279964	10404.0	9318.2	147.58
132	0.0277824	10424.9	9330.7	147.74
133	0.0275718	10445.8	9343.3	147.90
134	0.0273642	10466.7	9355.8	148.05
135	0.0271599	10487.6	9368.3	148.21
136	0.0269585	10508.5	9380.9	148.36
137	0.0267602	10529.4	9393.4	148.52
138	0.0265648	10550.3	9406.0	148.67
139	0.0263722	10571.2	9418.5	148.82
140	0.0261824	10592.1	9431.0	148.97
141	0.0259953	10613.0	9443.6	149.12
142	0.0258110	10633.8	9456.1	149.27
143	0.0256292	10654.7	9468.6	149.41
144	0.0254500	10675.6	9481.2	149.56
145	0.0252732	10696.5	9493.7	149.70
146	0.0250990	10717.4	9506.2	149.85
147	0.0249271	10738.3	9518.8	149.99
148	0.0247576	10759.1	9531.3	150.13
149	0.0245904	10780.0	9543.8	150.27
150	0.0244254	10800.9	9556.4	150.41
151	0.0242627	10821.8	9568.9	150.55
152	0.0241021	10842.6	9581.4	150.69
153	0.0239436	10863.5	9593.9	150.82
154	0.0237873	10884.4	9606.4	150.96
155	0.0236329	10905.2	9619.0	151.10
156	0.0234806	10926.1	9631.5	151.23
157	0.0233302	10947.0	9644.0	151.36
158	0.0231818	10967.8	9656.5	151.50
159	0.0230352	10988.7	9669.0	151.63
160	0.0228905	11009.6	9681.6	151.76

0.30 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0227476	11030.4	9694.1	151.89	231	0.0158359	12488.6	10569.0	159.41
162	0.0226064	11051.3	9706.6	152.02	232	0.0157675	12509.4	10581.5	159.50
163	0.0224671	11072.1	9719.1	152.14	233	0.0156997	12530.2	10594.0	159.59
164	0.0223294	11093.0	9731.6	152.27	234	0.0156325	12551.1	10606.5	159.68
165	0.0221934	11113.8	9744.1	152.40	235	0.0155659	12571.9	10619.0	159.77
166	0.0220591	11134.7	9756.7	152.53	236	0.0154998	12592.7	10631.5	159.85
167	0.0219264	11155.5	9769.2	152.65	237	0.0154343	12613.5	10644.0	159.94
168	0.0217953	11176.4	9781.7	152.78	238	0.0153693	12634.3	10656.4	160.03
169	0.0216657	11197.2	9794.2	152.90	239	0.0153049	12655.1	10668.9	160.12
170	0.0215377	11218.1	9806.7	153.02	240	0.0152410	12675.9	10681.4	160.20
171	0.0214112	11238.9	9819.2	153.14	241	0.0151777	12696.7	10693.9	160.29
172	0.0212862	11259.8	9831.7	153.27	242	0.0151148	12717.5	10706.4	160.38
173	0.0211627	11280.6	9844.2	153.39	243	0.0150525	12738.4	10718.9	160.46
174	0.0210405	11301.5	9856.7	153.51	244	0.0149907	12759.2	10731.4	160.55
175	0.0209198	11322.3	9869.2	153.63	245	0.0149295	12780.0	10743.8	160.63
176	0.0208005	11343.2	9881.8	153.74	246	0.0148687	12800.8	10756.3	160.72
177	0.0206825	11364.0	9894.3	153.86	247	0.0148084	12821.6	10768.8	160.80
178	0.0205658	11384.9	9906.8	153.98	248	0.0147486	12842.4	10781.3	160.89
179	0.0204505	11405.7	9919.3	154.10	249	0.0146893	12863.2	10793.8	160.97
180	0.0203365	11426.5	9931.8	154.21	250	0.0146304	12884.0	10806.3	161.05
181	0.0202237	11447.4	9944.3	154.33	251	0.0145720	12904.8	10818.8	161.14
182	0.0201122	11468.2	9956.8	154.44	252	0.0145141	12925.6	10831.2	161.22
183	0.0200019	11489.1	9969.3	154.56	253	0.0144567	12946.4	10843.7	161.30
184	0.0198928	11509.9	9981.8	154.67	254	0.0143997	12967.3	10856.2	161.38
185	0.0197849	11530.7	9994.3	154.78	255	0.0143431	12988.1	10868.7	161.47
186	0.0196781	11551.6	10006.8	154.90	256	0.0142870	13008.9	10881.2	161.55
187	0.0195725	11572.4	10019.3	155.01	257	0.0142314	13029.7	10893.7	161.63
188	0.0194681	11593.2	10031.8	155.12	258	0.0141761	13050.5	10906.2	161.71
189	0.0193647	11614.1	10044.3	155.23	259	0.0141213	13071.3	10918.6	161.79
190	0.0192625	11634.9	10056.8	155.34	260	0.0140669	13092.1	10931.1	161.87
191	0.0191613	11655.7	10069.3	155.45	261	0.0140130	13112.9	10943.6	161.95
192	0.0190612	11676.6	10081.8	155.56	262	0.0139594	13133.7	10956.1	162.03
193	0.0189621	11697.4	10094.3	155.67	263	0.0139062	13154.5	10968.6	162.11
194	0.0188641	11718.2	10106.8	155.77	264	0.0138535	13175.3	10981.1	162.19
195	0.0187671	11739.1	10119.3	155.88	265	0.0138012	13196.1	10993.5	162.27
196	0.0186710	11759.9	10131.8	155.99	266	0.0137492	13216.9	11006.0	162.34
197	0.0185760	11780.7	10144.3	156.09	267	0.0136977	13237.7	11018.5	162.42
198	0.0184819	11801.5	10156.8	156.20	268	0.0136465	13258.5	11031.0	162.50
199	0.0183887	11822.4	10169.3	156.30	269	0.0135957	13279.3	11043.5	162.58
200	0.0182965	11843.2	10181.8	156.41	270	0.0135453	13300.2	11055.9	162.65
201	0.0182053	11864.0	10194.3	156.51	271	0.0134952	13321.0	11068.4	162.73
202	0.0181149	11884.9	10206.8	156.62	272	0.0134456	13341.8	11080.9	162.81
203	0.0180254	11905.7	10219.3	156.72	273	0.0133962	13362.6	11093.4	162.88
204	0.0179368	11926.5	10231.8	156.82	274	0.0133473	13383.4	11105.9	162.96
205	0.0178491	11947.3	10244.3	156.92	275	0.0132987	13404.2	11118.4	163.04
206	0.0177622	11968.2	10256.8	157.02	276	0.0132505	13425.0	11130.8	163.11
207	0.0176762	11989.0	10269.2	157.12	277	0.0132026	13445.8	11143.3	163.19
208	0.0175910	12009.8	10281.7	157.22	278	0.0131550	13466.6	11155.8	163.26
209	0.0175066	12030.6	10294.2	157.32	279	0.0131078	13487.4	11168.3	163.34
210	0.0174230	12051.4	10306.7	157.42	280	0.0130610	13508.2	11180.8	163.41
211	0.0173403	12072.3	10319.2	157.52	281	0.0130144	13529.0	11193.3	163.49
212	0.0172583	12093.1	10331.7	157.62	282	0.0129682	13549.8	11205.7	163.56
213	0.0171771	12113.9	10344.2	157.72	283	0.0129224	13570.6	11218.2	163.63
214	0.0170966	12134.7	10356.7	157.82	284	0.0128768	13591.4	11230.7	163.71
215	0.0170169	12155.5	10369.2	157.91	285	0.0128316	13612.2	11243.2	163.78
216	0.0169380	12176.4	10381.7	158.01	286	0.0127867	13633.0	11255.7	163.85
217	0.0168597	12197.2	10394.2	158.11	287	0.0127421	13653.8	11268.1	163.92
218	0.0167822	12218.0	10406.7	158.20	288	0.0126978	13674.6	11280.6	164.00
219	0.0167054	12238.8	10419.2	158.30	289	0.0126538	13695.4	11293.1	164.07
220	0.0166293	12259.6	10431.6	158.39	290	0.0126101	13716.2	11305.6	164.14
221	0.0165539	12280.5	10444.1	158.49	291	0.0125668	13737.0	11318.1	164.21
222	0.0164792	12301.3	10456.6	158.58	292	0.0125237	13757.8	11330.5	164.28
223	0.0164051	12322.1	10469.1	158.67	293	0.0124809	13778.6	11343.0	164.36
224	0.0163317	12342.9	10481.6	158.77	294	0.0124384	13799.4	11355.5	164.43
225	0.0162590	12363.7	10494.1	158.86	295	0.0123962	13820.2	11368.0	164.50
226	0.0161869	12384.5	10506.6	158.95	296	0.0123543	13841.0	11380.5	164.57
227	0.0161155	12405.4	10519.1	159.04	297	0.0123126	13861.8	11392.9	164.64
228	0.0160447	12426.2	10531.6	159.14	298	0.0122713	13882.6	11405.4	164.71
229	0.0159745	12447.0	10544.1	159.23	299	0.0122302	13903.4	11417.9	164.78
230	0.0159049	12467.8	10556.5	159.32	300	0.0121894	13924.2	11430.4	164.85

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TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	0.0574508	9453.3	8747.8	136.31
87	0.0567671	9474.5	8760.5	136.55
88	0.0560999	9495.6	8773.1	136.80
89	0.0554485	9516.8	8785.8	137.03
90	0.0548124	9537.9	8798.5	137.27
91	0.0541910	9559.1	8811.2	137.51
92	0.0535838	9580.2	8823.8	137.74
93	0.0529904	9601.4	8836.5	137.96
94	0.0524103	9622.5	8849.2	138.19
95	0.0518430	9643.6	8861.9	138.41
96	0.0512880	9664.8	8874.5	138.64
97	0.0507451	9685.9	8887.2	138.85
98	0.0502137	9707.0	8899.8	139.07
99	0.0496936	9728.1	8912.5	139.29
100	0.0491843	9749.2	8925.1	139.50
101	0.0486856	9770.3	8937.8	139.71
102	0.0481970	9791.4	8950.4	139.91
103	0.0477183	9812.5	8963.1	140.12
104	0.0472492	9833.5	8975.7	140.32
105	0.0467894	9854.6	8988.4	140.53
106	0.0463386	9875.7	9001.0	140.73
107	0.0458965	9896.7	9013.6	140.92
108	0.0454629	9917.8	9026.3	141.12
109	0.0450376	9938.8	9038.9	141.31
110	0.0446203	9959.9	9051.5	141.51
111	0.0442107	9980.9	9064.1	141.70
112	0.0438087	10001.9	9076.8	141.88
113	0.0434141	10023.0	9089.4	142.07
114	0.0430265	10044.0	9102.0	142.26
115	0.0426460	10065.0	9114.6	142.44
116	0.0422722	10086.0	9127.2	142.62
117	0.0419050	10107.0	9139.8	142.80
118	0.0415442	10128.0	9152.4	142.98
119	0.0411896	10149.0	9165.0	143.16
120	0.0408411	10170.0	9177.6	143.33
121	0.0404986	10191.0	9190.2	143.51
122	0.0401618	10212.0	9202.8	143.68
123	0.0398306	10233.0	9215.4	143.85
124	0.0395049	10254.0	9228.0	144.02
125	0.0391845	10274.9	9240.6	144.19
126	0.0388694	10295.9	9253.2	144.36
127	0.0385593	10316.9	9265.7	144.52
128	0.0382542	10337.8	9278.3	144.69
129	0.0379539	10358.8	9290.9	144.85
130	0.0376584	10379.8	9303.5	145.01
131	0.0373674	10400.7	9316.1	145.17
132	0.0370810	10421.7	9328.6	145.33
133	0.0367990	10442.6	9341.2	145.49
134	0.0365213	10463.6	9353.8	145.65
135	0.0362477	10484.5	9366.3	145.80
136	0.0359783	10505.4	9378.9	145.96
137	0.0357129	10526.4	9391.5	146.11
138	0.0354514	10547.3	9404.0	146.26
139	0.0351938	10568.2	9416.6	146.41
140	0.0349398	10589.2	9429.1	146.56
141	0.0346896	10610.1	9441.7	146.71
142	0.0344430	10631.0	9454.3	146.86
143	0.0341998	10651.9	9466.8	147.01
144	0.0339601	10672.9	9479.4	147.15
145	0.0337238	10693.8	9491.9	147.30
146	0.0334907	10714.7	9504.5	147.44
147	0.0332609	10735.6	9517.0	147.59
148	0.0330342	10756.5	9529.6	147.73
149	0.0328106	10777.4	9542.1	147.87
150	0.0325901	10798.3	9554.7	148.01
151	0.0323725	10819.2	9567.2	148.15
152	0.0321576	10840.1	9579.7	148.28
153	0.0319460	10861.0	9592.3	148.42
154	0.0317369	10881.9	9604.8	148.56
155	0.0315306	10902.8	9617.4	148.69
156	0.0313270	10923.7	9629.9	148.83
157	0.0311260	10944.6	9642.4	148.96
158	0.0309276	10965.5	9655.0	149.09
159	0.0307317	10986.4	9667.5	149.23
160	0.0305383	11007.3	9680.0	149.36

0.40 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0303473	11028.1	9692.6	149.49	231	0.0211182	12487.4	10568.2	157.01
162	0.0301587	11049.0	9705.1	149.62	232	0.0210270	12508.2	10580.7	157.10
163	0.0299724	11069.9	9717.6	149.74	233	0.0209365	12529.1	10593.2	157.19
164	0.0297885	11090.8	9730.2	149.87	234	0.0208468	12549.9	10605.6	157.28
165	0.0296068	11111.7	9742.7	150.00	235	0.0207579	12570.7	10618.1	157.37
166	0.0294273	11132.5	9755.2	150.12	236	0.0206698	12591.5	10630.6	157.46
167	0.0292500	11153.4	9767.7	150.25	237	0.0205823	12612.3	10643.1	157.55
168	0.0290749	11174.3	9780.3	150.37	238	0.0204957	12633.2	10655.6	157.63
169	0.0289018	11195.2	9792.8	150.50	239	0.0204097	12654.0	10668.1	157.72
170	0.0287308	11216.0	9805.3	150.62	240	0.0203245	12674.8	10680.6	157.81
171	0.0285618	11236.9	9817.8	150.74	241	0.0202399	12695.6	10693.1	157.90
172	0.0283948	11257.8	9830.4	150.87	242	0.0201561	12716.4	10705.6	157.98
173	0.0282297	11278.6	9842.9	150.99	243	0.0200730	12737.3	10718.1	158.07
174	0.0280666	11299.5	9855.4	151.11	244	0.0199906	12758.1	10730.6	158.15
175	0.0279053	11320.4	9867.9	151.23	245	0.0199088	12778.9	10743.1	158.24
176	0.0277459	11341.2	9880.4	151.35	246	0.0198277	12799.7	10755.5	158.32
177	0.0275884	11362.1	9893.0	151.46	247	0.0197472	12820.5	10768.0	158.41
178	0.0274326	11383.0	9905.5	151.58	248	0.0196675	12841.4	10780.5	158.49
179	0.0272785	11403.8	9918.0	151.70	249	0.0195883	12862.2	10793.0	158.57
180	0.0271262	11424.7	9930.5	151.81	250	0.0195098	12883.0	10805.5	158.66
181	0.0269756	11445.5	9943.0	151.93	251	0.0194319	12903.8	10818.0	158.74
182	0.0268267	11466.4	9955.5	152.04	252	0.0193547	12924.6	10830.5	158.82
183	0.0266794	11487.2	9968.0	152.16	253	0.0192780	12945.4	10843.0	158.91
184	0.0265337	11508.1	9980.6	152.27	254	0.0192020	12966.2	10855.5	158.99
185	0.0263896	11529.0	9993.1	152.39	255	0.0191265	12987.1	10868.0	159.07
186	0.0262471	11549.8	10005.6	152.50	256	0.0190517	13007.9	10880.4	159.15
187	0.0261061	11570.7	10018.1	152.61	257	0.0189774	13028.7	10892.9	159.23
188	0.0259666	11591.5	10030.6	152.72	258	0.0189037	13049.5	10905.4	159.31
189	0.0258286	11612.4	10043.1	152.83	259	0.0188306	13070.3	10917.9	159.39
190	0.0256921	11633.2	10055.6	152.94	260	0.0187580	13091.1	10930.4	159.47
191	0.0255570	11654.1	10068.1	153.05	261	0.0186860	13111.9	10942.9	159.55
192	0.0254233	11674.9	10080.6	153.16	262	0.0186146	13132.8	10955.4	159.63
193	0.0252910	11695.7	10093.2	153.27	263	0.0185437	13153.6	10967.9	159.71
194	0.0251601	11716.6	10105.7	153.38	264	0.0184733	13174.4	10980.3	159.79
195	0.0250306	11737.4	10118.2	153.48	265	0.0184035	13195.2	10992.8	159.87
196	0.0249024	11758.3	10130.7	153.59	266	0.0183342	13216.0	11005.3	159.95
197	0.0247755	11779.1	10143.2	153.70	267	0.0182654	13236.8	11017.8	160.03
198	0.0246498	11800.0	10155.7	153.80	268	0.0181971	13257.6	11030.3	160.11
199	0.0245255	11820.8	10168.2	153.91	269	0.0181294	13278.4	11042.8	160.18
200	0.0244024	11841.7	10180.7	154.01	270	0.0180621	13299.2	11055.3	160.26
201	0.0242806	11862.5	10193.2	154.11	271	0.0179954	13320.1	11067.8	160.34
202	0.0241599	11883.3	10205.7	154.22	272	0.0179291	13340.9	11080.2	160.41
203	0.0240405	11904.2	10218.2	154.32	273	0.0178633	13361.7	11092.7	160.49
204	0.0239222	11925.0	10230.7	154.42	274	0.0177980	13382.5	11105.2	160.57
205	0.0238051	11945.8	10243.2	154.53	275	0.0177332	13403.3	11117.7	160.64
206	0.0236892	11966.7	10255.7	154.63	276	0.0176689	13424.1	11130.2	160.72
207	0.0235743	11987.5	10268.2	154.73	277	0.0176050	13444.9	11142.7	160.79
208	0.0234606	12008.4	10280.7	154.83	278	0.0175416	13465.7	11155.2	160.87
209	0.0233480	12029.2	10293.2	154.93	279	0.0174786	13486.5	11167.6	160.94
210	0.0232364	12050.0	10305.7	155.03	280	0.0174161	13507.3	11180.1	161.02
211	0.0231259	12070.9	10318.2	155.13	281	0.0173540	13528.2	11192.6	161.09
212	0.0230165	12091.7	10330.7	155.23	282	0.0172924	13549.0	11205.1	161.17
213	0.0229081	12112.5	10343.2	155.32	283	0.0172312	13569.8	11217.6	161.24
214	0.0228007	12133.4	10355.7	155.42	284	0.0171704	13590.6	11230.1	161.31
215	0.0226944	12154.2	10368.2	155.52	285	0.0171101	13611.4	11242.5	161.39
216	0.0225890	12175.0	10380.7	155.61	286	0.0170502	13632.2	11255.0	161.46
217	0.0224846	12195.8	10393.2	155.71	287	0.0169907	13653.0	11267.5	161.53
218	0.0223811	12216.7	10405.7	155.81	288	0.0169316	13673.8	11280.0	161.60
219	0.0222786	12237.5	10418.2	155.90	289	0.0168730	13694.6	11292.5	161.68
220	0.0221771	12258.3	10430.7	156.00	290	0.0168147	13715.4	11305.0	161.75
221	0.0220764	12279.2	10443.2	156.09	291	0.0167569	13736.2	11317.4	161.82
222	0.0219767	12300.0	10455.7	156.19	292	0.0166994	13757.0	11329.9	161.89
223	0.0218779	12320.8	10468.2	156.28	293	0.0166423	13777.8	11342.4	161.96
224	0.0217799	12341.6	10480.7	156.37	294	0.0165856	13798.6	11354.9	162.03
225	0.0216829	12362.5	10493.2	156.46	295	0.0165294	13819.4	11367.4	162.10
226	0.0215867	12383.3	10505.7	156.56	296	0.0164734	13840.3	11379.9	162.17
227	0.0214913	12404.1	10518.2	156.65	297	0.0164179	13861.1	11392.3	162.24
228	0.0213968	12424.9	10530.7	156.74	298	0.0163627	13881.9	11404.8	162.31
229	0.0213032	12445.8	10543.2	156.83	299	0.0163080	13902.7	11417.3	162.38
230	0.0212103	12466.6	10555.7	156.92	300	0.0162535	13923.5	11429.8	162.45

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TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	0.0720617	9446.9	8743.8	134.41
87	0.0711964	9468.2	8756.6	134.65
88	0.0703522	9489.4	8769.3	134.90
89	0.0695283	9510.7	8782.0	135.14
90	0.0687241	9532.0	8794.7	135.37
91	0.0679387	9553.2	8807.5	135.61
92	0.0671716	9574.4	8820.2	135.84
93	0.0664220	9595.7	8832.9	136.07
94	0.0656894	9616.9	8845.6	136.30
95	0.0649733	9638.1	8858.4	136.52
96	0.0642729	9659.3	8871.1	136.74
97	0.0635879	9680.5	8883.8	136.96
98	0.0629176	9701.7	8896.5	137.18
99	0.0622617	9722.9	8909.2	137.40
100	0.0616196	9744.1	8921.9	137.61
101	0.0609909	9765.3	8934.6	137.82
102	0.0603752	9786.4	8947.3	138.03
103	0.0597721	9807.6	8960.0	138.24
104	0.0591812	9828.8	8972.7	138.44
105	0.0586021	9849.9	8985.4	138.64
106	0.0580344	9871.0	8998.0	138.84
107	0.0574779	9892.2	9010.7	139.04
108	0.0569321	9913.3	9023.4	139.24
109	0.0563968	9934.4	9036.1	139.43
110	0.0558717	9955.5	9048.7	139.62
111	0.0553564	9976.6	9061.4	139.82
112	0.0548507	9997.7	9074.0	140.00
113	0.0543544	10018.8	9086.7	140.19
114	0.0538671	10039.9	9099.3	140.38
115	0.0533886	10061.0	9112.0	140.56
116	0.0529187	10082.0	9124.6	140.74
117	0.0524571	10103.1	9137.3	140.93
118	0.0520036	10124.2	9149.9	141.10
119	0.0515581	10145.2	9162.6	141.28
120	0.0511202	10166.3	9175.2	141.46
121	0.0506898	10187.3	9187.8	141.63
122	0.0502667	10208.3	9200.4	141.81
123	0.0498507	10229.4	9213.1	141.98
124	0.0494416	10250.4	9225.7	142.15
125	0.0490393	10271.4	9238.3	142.32
126	0.0486435	10292.4	9250.9	142.48
127	0.0482542	10313.5	9263.5	142.65
128	0.0478712	10334.5	9276.1	142.82
129	0.0474942	10355.5	9288.7	142.98
130	0.0471233	10376.5	9301.3	143.14
131	0.0467581	10397.5	9313.9	143.30
132	0.0463987	10418.5	9326.5	143.46
133	0.0460447	10439.5	9339.1	143.62
134	0.0456962	10460.4	9351.7	143.78
135	0.0453530	10481.4	9364.3	143.93
136	0.0450150	10502.4	9376.9	144.09
137	0.0446821	10523.4	9389.5	144.24
138	0.0443540	10544.3	9402.1	144.39
139	0.0440309	10565.3	9414.7	144.55
140	0.0437124	10586.3	9427.3	144.70
141	0.0433985	10607.2	9439.8	144.84
142	0.0430892	10628.2	9452.4	144.99
143	0.0427843	10649.2	9465.0	145.14
144	0.0424838	10670.1	9477.6	145.29
145	0.0421874	10691.1	9490.1	145.43
146	0.0418952	10712.0	9502.7	145.58
147	0.0416071	10732.9	9515.3	145.72
148	0.0413229	10753.9	9527.8	145.86
149	0.0410426	10774.8	9540.4	146.00
150	0.0407662	10795.7	9553.0	146.14
151	0.0404934	10816.7	9565.5	146.28
152	0.0402244	10837.6	9578.1	146.42
153	0.0399589	10858.5	9590.6	146.56
154	0.0396969	10879.5	9603.2	146.69
155	0.0394383	10900.4	9615.7	146.83
156	0.0391832	10921.3	9628.3	146.96
157	0.0389313	10942.2	9640.9	147.10
158	0.0386827	10963.1	9653.4	147.23
159	0.0384372	10984.0	9666.0	147.36
160	0.0381949	11005.0	9678.5	147.49

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TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0379556	11025.9	9691.1	147.62	231	0.0264025	12486.2	10567.3	155.15
162	0.0377194	11046.8	9703.6	147.75	232	0.0262883	12507.0	10579.8	155.24
163	0.0374860	11067.7	9716.1	147.88	233	0.0261751	12527.9	10592.3	155.33
164	0.0372556	11088.6	9728.7	148.01	234	0.0260630	12548.7	10604.8	155.42
165	0.0370280	11109.5	9741.2	148.13	235	0.0259517	12569.5	10617.3	155.51
166	0.0368032	11130.4	9753.8	148.26	236	0.0258414	12590.4	10629.8	155.60
167	0.0365811	11151.3	9766.3	148.39	237	0.0257321	12611.2	10642.3	155.69
168	0.0363617	11172.2	9778.8	148.51	238	0.0256236	12632.0	10654.8	155.78
169	0.0361449	11193.1	9791.4	148.63	239	0.0255161	12652.9	10667.3	155.86
170	0.0359307	11214.0	9803.9	148.76	240	0.0254095	12673.7	10679.8	155.95
171	0.0357191	11234.9	9816.5	148.88	241	0.0253038	12694.5	10692.3	156.04
172	0.0355100	11255.7	9829.0	149.00	242	0.0251989	12715.3	10704.8	156.12
173	0.0353032	11276.6	9841.5	149.12	243	0.0250949	12736.2	10717.3	156.21
174	0.0350990	11297.5	9854.1	149.24	244	0.0249918	12757.0	10729.8	156.29
175	0.0348970	11318.4	9866.6	149.36	245	0.0248895	12777.8	10742.3	156.38
176	0.0346974	11339.3	9879.1	149.48	246	0.0247881	12798.6	10754.8	156.46
177	0.0345001	11360.2	9891.7	149.60	247	0.0246875	12819.5	10767.3	156.55
178	0.0343050	11381.0	9904.2	149.72	248	0.0245877	12840.3	10779.8	156.63
179	0.0341121	11401.9	9916.7	149.84	249	0.0244887	12861.1	10792.2	156.72
180	0.0339214	11422.8	9929.2	149.95	250	0.0243905	12881.9	10804.7	156.80
181	0.0337329	11443.7	9941.8	150.07	251	0.0242931	12902.8	10817.2	156.88
182	0.0335464	11464.6	9954.3	150.18	252	0.0241964	12923.6	10829.7	156.97
183	0.0333620	11485.4	9966.8	150.30	253	0.0241006	12944.4	10842.2	157.05
184	0.0331796	11506.3	9979.3	150.41	254	0.0240054	12965.2	10854.7	157.13
185	0.0329992	11527.2	9991.9	150.52	255	0.0239111	12986.1	10867.2	157.21
186	0.0328207	11548.0	10004.4	150.64	256	0.0238175	13006.9	10879.7	157.29
187	0.0326442	11568.9	10016.9	150.75	257	0.0237246	13027.7	10892.2	157.38
188	0.0324696	11589.8	10029.4	150.86	258	0.0236324	13048.5	10904.7	157.46
189	0.0322969	11610.6	10041.9	150.97	259	0.0235409	13069.3	10917.2	157.54
190	0.0321260	11631.5	10054.5	151.08	260	0.0234502	13090.2	10929.7	157.62
191	0.0319569	11652.4	10067.0	151.19	261	0.0233602	13111.0	10942.2	157.70
192	0.0317896	11673.2	10079.5	151.30	262	0.0232708	13131.8	10954.7	157.78
193	0.0316240	11694.1	10092.0	151.41	263	0.0231821	13152.6	10967.1	157.86
194	0.0314602	11715.0	10104.5	151.51	264	0.0230941	13173.4	10979.6	157.93
195	0.0312980	11735.8	10117.1	151.62	265	0.0230068	13194.3	10992.1	158.01
196	0.0311375	11756.7	10129.6	151.73	266	0.0229201	13215.1	11004.6	158.09
197	0.0309787	11777.5	10142.1	151.84	267	0.0228341	13235.9	11017.1	158.17
198	0.0308215	11798.4	10154.6	151.94	268	0.0227487	13256.7	11029.6	158.25
199	0.0306659	11819.2	10167.1	152.05	269	0.0226640	13277.5	11042.1	158.33
200	0.0305118	11840.1	10179.6	152.15	270	0.0225799	13298.3	11054.6	158.40
201	0.0303593	11860.9	10192.1	152.25	271	0.0224964	13319.2	11067.1	158.48
202	0.0302083	11881.8	10204.7	152.36	272	0.0224135	13340.0	11079.6	158.56
203	0.0300588	11902.7	10217.2	152.46	273	0.0223312	13360.8	11092.0	158.63
204	0.0299108	11923.5	10229.7	152.56	274	0.0222496	13381.6	11104.5	158.71
205	0.0297643	11944.4	10242.2	152.67	275	0.0221685	13402.4	11117.0	158.78
206	0.0296192	11965.2	10254.7	152.77	276	0.0220880	13423.2	11129.5	158.86
207	0.0294755	11986.1	10267.2	152.87	277	0.0220082	13444.1	11142.0	158.94
208	0.0293332	12006.9	10279.7	152.97	278	0.0219288	13464.9	11154.5	159.01
209	0.0291922	12027.7	10292.2	153.07	279	0.0218501	13485.7	11167.0	159.08
210	0.0290527	12048.6	10304.7	153.17	280	0.0217719	13506.5	11179.5	159.16
211	0.0289144	12069.4	10317.2	153.27	281	0.0216943	13527.3	11192.0	159.23
212	0.0287775	12090.3	10329.7	153.37	282	0.0216172	13548.1	11204.4	159.31
213	0.0286418	12111.1	10342.3	153.46	283	0.0215407	13568.9	11216.9	159.38
214	0.0285075	12132.0	10354.8	153.56	284	0.0214647	13589.8	11229.4	159.45
215	0.0283744	12152.8	10367.3	153.66	285	0.0213893	13610.6	11241.9	159.53
216	0.0282425	12173.7	10379.8	153.75	286	0.0213144	13631.4	11254.4	159.60
217	0.0281119	12194.5	10392.3	153.85	287	0.0212400	13652.2	11266.9	159.67
218	0.0279824	12215.3	10404.8	153.95	288	0.0211661	13673.0	11279.4	159.75
219	0.0278542	12236.2	10417.3	154.04	289	0.0210927	13693.8	11291.9	159.82
220	0.0277271	12257.0	10429.8	154.14	290	0.0210199	13714.6	11304.3	159.89
221	0.0276012	12277.9	10442.3	154.23	291	0.0209475	13735.4	11316.8	159.96
222	0.0274765	12298.7	10454.8	154.33	292	0.0208757	13756.3	11329.3	160.03
223	0.0273528	12319.5	10467.3	154.42	293	0.0208043	13777.1	11341.8	160.10
224	0.0272303	12340.4	10479.8	154.51	294	0.0207335	13797.9	11354.3	160.17
225	0.0271089	12361.2	10492.3	154.61	295	0.0206631	13818.7	11366.8	160.25
226	0.0269885	12382.0	10504.8	154.70	296	0.0205931	13839.5	11379.3	160.32
227	0.0268692	12402.9	10517.3	154.79	297	0.0205237	13860.3	11391.7	160.39
228	0.0267510	12423.7	10529.8	154.88	298	0.0204547	13881.1	11404.2	160.46
229	0.0266338	12444.5	10542.3	154.97	299	0.0203862	13901.9	11416.7	160.53
230	0.0265176	12465.4	10554.8	155.06	300	0.0203182	13922.7	11429.2	160.60

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TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	0.0867764	9440.4	8739.8	132.84
87	0.0857248	9461.8	8752.6	133.09
88	0.0846992	9483.2	8765.4	133.34
89	0.0836988	9504.6	8778.2	133.58
90	0.0827225	9525.9	8791.0	133.82
91	0.0817694	9547.3	8803.8	134.05
92	0.0808388	9568.6	8816.5	134.29
93	0.0799298	9589.9	8829.3	134.52
94	0.0790416	9611.3	8842.1	134.74
95	0.0781736	9632.6	8854.9	134.97
96	0.0773250	9653.9	8867.6	135.19
97	0.0764952	9675.2	8880.4	135.41
98	0.0756835	9696.5	8893.2	135.63
99	0.0748893	9717.7	8905.9	135.85
100	0.0741121	9739.0	8918.7	136.06
101	0.0733513	9760.2	8931.4	136.27
102	0.0726064	9781.5	8944.1	136.48
103	0.0718769	9802.7	8956.9	136.69
104	0.0711622	9824.0	8969.6	136.89
105	0.0704620	9845.2	8982.3	137.10
106	0.0697758	9866.4	8995.1	137.30
107	0.0691031	9887.6	9007.8	137.50
108	0.0684436	9908.8	9020.5	137.69
109	0.0677968	9930.0	9033.2	137.89
110	0.0671624	9951.1	9045.9	138.08
111	0.0665401	9972.3	9058.6	138.27
112	0.0659294	9993.5	9071.3	138.46
113	0.0653301	10014.6	9084.0	138.65
114	0.0647418	10035.8	9096.7	138.84
115	0.0641642	10056.9	9109.4	139.02
116	0.0635971	10078.0	9122.1	139.21
117	0.0630401	10099.2	9134.7	139.39
118	0.0624929	10120.3	9147.4	139.57
119	0.0619553	10141.4	9160.1	139.75
120	0.0614271	10162.5	9172.7	139.92
121	0.0609080	10183.6	9185.4	140.10
122	0.0603977	10204.7	9198.1	140.27
123	0.0598961	10225.8	9210.7	140.44
124	0.0594028	10246.8	9223.4	140.61
125	0.0589178	10267.9	9236.0	140.78
126	0.0584407	10289.0	9248.7	140.95
127	0.0579715	10310.0	9261.3	141.12
128	0.0575098	10331.1	9273.9	141.28
129	0.0570555	10352.1	9286.6	141.45
130	0.0566085	10373.2	9299.2	141.61
131	0.0561685	10394.2	9311.8	141.77
132	0.0557354	10415.3	9324.4	141.93
133	0.0553091	10436.3	9337.1	142.09
134	0.0548893	10457.3	9349.7	142.25
135	0.0544759	10478.3	9362.3	142.40
136	0.0540688	10499.4	9374.9	142.56
137	0.0536678	10520.4	9387.5	142.71
138	0.0532727	10541.4	9400.1	142.86
139	0.0528836	10562.4	9412.7	143.02
140	0.0525001	10583.4	9425.3	143.17
141	0.0521223	10604.4	9437.9	143.32
142	0.0517498	10625.4	9450.5	143.46
143	0.0513828	10646.4	9463.1	143.61
144	0.0510210	10667.3	9475.7	143.76
145	0.0506643	10688.3	9488.3	143.90
146	0.0503126	10709.3	9500.9	144.05
147	0.0499658	10730.3	9513.5	144.19
148	0.0496238	10751.2	9526.1	144.33
149	0.0492865	10772.2	9538.7	144.47
150	0.0489538	10793.2	9551.3	144.61
151	0.0486256	10814.1	9563.8	144.75
152	0.0483019	10835.1	9576.4	144.89
153	0.0479824	10856.1	9589.0	145.03
154	0.0476672	10877.0	9601.6	145.17
155	0.0473562	10898.0	9614.1	145.30
156	0.0470492	10918.9	9626.7	145.44
157	0.0467462	10939.8	9639.3	145.57
158	0.0464471	10960.8	9651.8	145.70
159	0.0461519	10981.7	9664.4	145.83
160	0.0458604	11002.7	9677.0	145.97

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TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0455727	11023.6	9689.5	146.10	231	0.0316886	12485.0	10566.4	153.63
162	0.0452885	11044.5	9702.1	146.23	232	0.0315515	12505.9	10578.9	153.72
163	0.0450079	11065.5	9714.7	146.35	233	0.0314156	12526.7	10591.5	153.81
164	0.0447308	11086.4	9727.2	146.48	234	0.0312808	12547.5	10604.0	153.90
165	0.0444571	11107.3	9739.8	146.61	235	0.0311472	12568.4	10616.5	153.99
166	0.0441867	11128.2	9752.3	146.74	236	0.0310148	12589.2	10629.0	154.08
167	0.0439197	11149.1	9764.9	146.86	237	0.0308835	12610.0	10641.5	154.17
168	0.0436558	11170.1	9777.4	146.99	238	0.0307532	12630.9	10654.0	154.26
169	0.0433952	11191.0	9790.0	147.11	239	0.0306241	12651.7	10666.5	154.34
170	0.0431377	11211.9	9802.5	147.23	240	0.0304961	12672.6	10679.0	154.43
171	0.0428832	11232.8	9815.1	147.36	241	0.0303691	12693.4	10691.5	154.52
172	0.0426317	11253.7	9827.6	147.48	242	0.0302432	12714.2	10704.0	154.60
173	0.0423832	11274.6	9840.2	147.60	243	0.0301184	12735.1	10716.5	154.69
174	0.0421376	11295.5	9852.7	147.72	244	0.0299945	12755.9	10729.0	154.78
175	0.0418949	11316.4	9865.3	147.84	245	0.0298717	12776.7	10741.5	154.86
176	0.0416549	11337.3	9877.8	147.96	246	0.0297499	12797.6	10754.0	154.95
177	0.0414177	11358.2	9890.3	148.08	247	0.0296291	12818.4	10766.5	155.03
178	0.0411832	11379.1	9902.9	148.20	248	0.0295092	12839.2	10779.0	155.11
179	0.0409514	11400.0	9915.4	148.31	249	0.0293904	12860.1	10791.5	155.20
180	0.0407221	11420.9	9928.0	148.43	250	0.0292724	12880.9	10804.0	155.28
181	0.0404955	11441.8	9940.5	148.54	251	0.0291555	12901.7	10816.5	155.36
182	0.0402714	11462.7	9953.0	148.66	252	0.0290394	12922.6	10829.0	155.45
183	0.0400497	11483.6	9965.6	148.77	253	0.0289243	12943.4	10841.5	155.53
184	0.0398305	11504.5	9978.1	148.89	254	0.0288101	12964.2	10854.0	155.61
185	0.0396137	11525.4	9990.6	149.00	255	0.0286968	12985.1	10866.5	155.69
186	0.0393992	11546.3	10003.2	149.11	256	0.0285844	13005.9	10879.0	155.78
187	0.0391871	11567.2	10015.7	149.23	257	0.0284729	13026.7	10891.5	155.86
188	0.0389773	11588.0	10028.2	149.34	258	0.0283622	13047.5	10904.0	155.94
189	0.0387697	11608.9	10040.8	149.45	259	0.0282524	13068.4	10916.5	156.02
190	0.0385643	11629.8	10053.3	149.56	260	0.0281434	13089.2	10928.9	156.10
191	0.0383611	11650.7	10065.8	149.67	261	0.0280353	13110.0	10941.4	156.18
192	0.0381600	11671.6	10078.4	149.78	262	0.0279280	13130.8	10953.9	156.26
193	0.0379611	11692.4	10090.9	149.89	263	0.0278216	13151.7	10966.4	156.34
194	0.0377642	11713.3	10103.4	149.99	264	0.0277159	13172.5	10978.9	156.42
195	0.0375694	11734.2	10115.9	150.10	265	0.0276111	13193.3	10991.4	156.49
196	0.0373765	11755.1	10128.5	150.21	266	0.0275070	13214.1	11003.9	156.57
197	0.0371857	11775.9	10141.0	150.31	267	0.0274037	13235.0	11016.4	156.65
198	0.0369968	11796.8	10153.5	150.42	268	0.0273012	13255.8	11028.9	156.73
199	0.0368098	11817.7	10166.0	150.52	269	0.0271995	13276.6	11041.4	156.81
200	0.0366247	11838.5	10178.6	150.63	270	0.0270985	13297.4	11053.9	156.88
201	0.0364415	11859.4	10191.1	150.73	271	0.0269982	13318.3	11066.4	156.96
202	0.0362601	11880.3	10203.6	150.84	272	0.0268988	13339.1	11078.9	157.04
203	0.0360805	11901.1	10216.1	150.94	273	0.0268000	13359.9	11091.4	157.11
204	0.0359027	11922.0	10228.6	151.04	274	0.0267020	13380.7	11103.9	157.19
205	0.0357267	11942.9	10241.2	151.14	275	0.0266046	13401.6	11116.4	157.27
206	0.0355523	11963.7	10253.7	151.25	276	0.0265080	13422.4	11128.9	157.34
207	0.0353797	11984.6	10266.2	151.35	277	0.0264121	13443.2	11141.3	157.42
208	0.0352087	12005.5	10278.7	151.45	278	0.0263169	13464.0	11153.8	157.49
209	0.0350394	12026.3	10291.2	151.55	279	0.0262224	13484.8	11166.3	157.57
210	0.0348718	12047.2	10303.7	151.65	280	0.0261285	13505.7	11178.8	157.64
211	0.0347057	12068.0	10316.2	151.75	281	0.0260353	13526.5	11191.3	157.72
212	0.0345412	12088.9	10328.8	151.84	282	0.0259428	13547.3	11203.8	157.79
213	0.0343783	12109.7	10341.3	151.94	283	0.0258509	13568.1	11216.3	157.86
214	0.0342169	12130.6	10353.8	152.04	284	0.0257597	13588.9	11228.8	157.94
215	0.0340570	12151.4	10366.3	152.14	285	0.0256691	13609.8	11241.3	158.01
216	0.0338986	12172.3	10378.8	152.23	286	0.0255792	13630.6	11253.8	158.08
217	0.0337417	12193.2	10391.3	152.33	287	0.0254899	13651.4	11266.3	158.16
218	0.0335862	12214.0	10403.8	152.43	288	0.0254012	13672.2	11278.7	158.23
219	0.0334322	12234.9	10416.3	152.52	289	0.0253131	13693.0	11291.2	158.30
220	0.0332795	12255.7	10428.9	152.62	290	0.0252257	13713.8	11303.7	158.37
221	0.0331283	12276.6	10441.4	152.71	291	0.0251388	13734.7	11316.2	158.44
222	0.0329785	12297.4	10453.9	152.81	292	0.0250526	13755.5	11328.7	158.51
223	0.0328300	12318.3	10466.4	152.90	293	0.0249669	13776.3	11341.2	158.59
224	0.0326828	12339.1	10478.9	152.99	294	0.0248818	13797.1	11353.7	158.66
225	0.0325369	12359.9	10491.4	153.09	295	0.0247973	13817.9	11366.2	158.73
226	0.0323924	12380.8	10503.9	153.18	296	0.0247134	13838.7	11378.7	158.80
227	0.0322491	12401.6	10516.4	153.27	297	0.0246300	13859.5	11391.2	158.87
228	0.0321071	12422.5	10528.9	153.36	298	0.0245472	13880.4	11403.6	158.94
229	0.0319664	12443.3	10541.4	153.45	299	0.0244650	13901.2	11416.1	159.01
230	0.0318269	12464.2	10553.9	153.54	300	0.0243833	13922.0	11428.6	159.08

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TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	0.101597	9433.9	8735.8	131.52
87	0.100354	9455.4	8748.6	131.76
88	0.0991430	9476.9	8761.5	132.01
89	0.0979616	9498.4	8774.3	132.25
90	0.0968092	9519.9	8787.2	132.49
91	0.0956847	9541.3	8800.0	132.73
92	0.0945869	9562.7	8812.9	132.96
93	0.0935150	9584.2	8825.7	133.19
94	0.0924681	9605.6	8838.5	133.42
95	0.0914451	9627.0	8851.3	133.65
96	0.0904454	9648.4	8864.2	133.87
97	0.0894680	9669.8	8877.0	134.10
98	0.0885122	9691.1	8889.8	134.32
99	0.0875773	9712.5	8902.6	134.53
100	0.0866627	9733.9	8915.4	134.75
101	0.0857675	9755.2	8928.2	134.96
102	0.0848912	9776.5	8941.0	135.17
103	0.0840332	9797.8	8953.8	135.38
104	0.0831929	9819.1	8966.5	135.58
105	0.0823697	9840.4	8979.3	135.79
106	0.0815631	9861.7	8992.1	135.99
107	0.0807726	9883.0	9004.9	136.19
108	0.0799978	9904.3	9017.6	136.39
109	0.0792380	9925.5	9030.4	136.58
110	0.0784929	9946.7	9043.1	136.78
111	0.0777621	9968.0	9055.8	136.97
112	0.0770451	9989.2	9068.6	137.16
113	0.0763415	10010.4	9081.3	137.35
114	0.0756510	10031.6	9094.0	137.53
115	0.0749732	10052.8	9106.8	137.72
116	0.0743077	10074.0	9119.5	137.90
117	0.0736541	10095.2	9132.2	138.08
118	0.0730122	10116.4	9144.9	138.26
119	0.0723817	10137.5	9157.6	138.44
120	0.0717622	10158.7	9170.3	138.62
121	0.0711534	10179.8	9183.0	138.80
122	0.0705551	10201.0	9195.7	138.97
123	0.0699670	10222.1	9208.4	139.14
124	0.0693888	10243.2	9221.0	139.31
125	0.0688203	10264.4	9233.7	139.48
126	0.0682611	10285.5	9246.4	139.65
127	0.0677112	10306.6	9259.1	139.82
128	0.0671702	10327.7	9271.7	139.98
129	0.0666380	10348.8	9284.4	140.15
130	0.0661142	10369.9	9297.0	140.31
131	0.0655988	10391.0	9309.7	140.47
132	0.0650915	10412.0	9322.4	140.63
133	0.0645921	10433.1	9335.0	140.79
134	0.0641005	10454.2	9347.6	140.95
135	0.0636164	10475.2	9360.3	141.11
136	0.0631396	10496.3	9372.9	141.26
137	0.0626701	10517.3	9385.6	141.42
138	0.0622076	10538.4	9398.2	141.57
139	0.0617520	10559.4	9410.8	141.72
140	0.0613031	10580.5	9423.4	141.87
141	0.0608608	10601.5	9436.1	142.02
142	0.0604249	10622.5	9448.7	142.17
143	0.0599953	10643.6	9461.3	142.32
144	0.0595718	10664.6	9473.9	142.46
145	0.0591544	10685.6	9486.5	142.61
146	0.0587428	10706.6	9499.1	142.75
147	0.0583370	10727.6	9511.7	142.90
148	0.0579369	10748.6	9524.4	143.04
149	0.0575422	10769.6	9537.0	143.18
150	0.0571530	10790.6	9549.6	143.32
151	0.0567691	10811.6	9562.2	143.46
152	0.0563903	10832.6	9574.7	143.60
153	0.0560166	10853.6	9587.3	143.74
154	0.0556480	10874.5	9599.9	143.87
155	0.0552841	10895.5	9612.5	144.01
156	0.0549251	10916.5	9625.1	144.14
157	0.0545707	10937.5	9637.7	144.28
158	0.0542210	10958.4	9650.3	144.41
159	0.0538757	10979.4	9662.9	144.54
160	0.0535349	11000.4	9675.4	144.67

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TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0531984	11021.3	9688.0	144.81	231	0.0369765	12483.8	10565.6	152.35
162	0.0528661	11042.3	9700.6	144.93	232	0.0368165	12504.7	10578.1	152.44
163	0.0525380	11063.2	9713.2	145.06	233	0.0366578	12525.5	10590.6	152.53
164	0.0522140	11084.2	9725.7	145.19	234	0.0365005	12546.4	10603.1	152.62
165	0.0518940	11105.1	9738.3	145.32	235	0.0363445	12567.2	10615.6	152.71
166	0.0515779	11126.1	9750.9	145.45	236	0.0361898	12588.1	10628.1	152.80
167	0.0512657	11147.0	9763.4	145.57	237	0.0360365	12608.9	10640.6	152.88
168	0.0509573	11168.0	9776.0	145.70	238	0.0358845	12629.7	10653.1	152.97
169	0.0506526	11188.9	9788.6	145.82	239	0.0357337	12650.6	10665.7	153.06
170	0.0503515	11209.8	9801.1	145.94	240	0.0355843	12671.4	10678.2	153.15
171	0.0500541	11230.8	9813.7	146.07	241	0.0354360	12692.3	10690.7	153.23
172	0.0497602	11251.7	9826.3	146.19	242	0.0352890	12713.1	10703.2	153.32
173	0.0494697	11272.6	9838.8	146.31	243	0.0351433	12734.0	10715.7	153.40
174	0.0491826	11293.5	9851.4	146.43	244	0.0349987	12754.8	10728.2	153.49
175	0.0488989	11314.5	9863.9	146.55	245	0.0348553	12775.7	10740.7	153.58
176	0.0486185	11335.4	9876.5	146.67	246	0.0347131	12796.5	10753.2	153.66
177	0.0483412	11356.3	9889.0	146.79	247	0.0345720	12817.3	10765.7	153.74
178	0.0480673	11377.2	9901.6	146.91	248	0.0344321	12838.2	10778.2	153.83
179	0.0477962	11398.1	9914.1	147.02	249	0.0342934	12859.0	10790.7	153.91
180	0.0475284	11419.1	9926.7	147.14	250	0.0341557	12879.9	10803.2	154.00
181	0.0472635	11440.0	9939.2	147.26	251	0.0340192	12900.7	10815.7	154.08
182	0.0470016	11460.9	9951.8	147.37	252	0.0338837	12921.5	10828.2	154.16
183	0.0467426	11481.8	9964.3	147.49	253	0.0337493	12942.4	10840.7	154.24
184	0.0464864	11502.7	9976.9	147.60	254	0.0336160	12963.2	10853.2	154.33
185	0.0462331	11523.6	9989.4	147.71	255	0.0334837	12984.0	10865.7	154.41
186	0.0459825	11544.5	10002.0	147.83	256	0.0333525	13004.9	10878.2	154.49
187	0.0457347	11565.4	10014.5	147.94	257	0.0332223	13025.7	10890.7	154.57
188	0.0454895	11586.3	10027.1	148.05	258	0.0330931	13046.6	10903.2	154.65
189	0.0452470	11607.2	10039.6	148.16	259	0.0329649	13067.4	10915.7	154.73
190	0.0450070	11628.1	10052.1	148.27	260	0.0328377	13088.2	10928.2	154.81
191	0.0447696	11649.0	10064.7	148.38	261	0.0327115	13109.1	10940.7	154.89
192	0.0445347	11669.9	10077.2	148.49	262	0.0325863	13129.9	10953.2	154.97
193	0.0443023	11690.8	10089.7	148.60	263	0.0324620	13150.7	10965.7	155.05
194	0.0440723	11711.7	10102.3	148.71	264	0.0323387	13171.6	10978.2	155.13
195	0.0438447	11732.6	10114.8	148.81	265	0.0322163	13192.4	10990.7	155.21
196	0.0436194	11753.4	10127.3	148.92	266	0.0320948	13213.2	11003.2	155.29
197	0.0433965	11774.3	10139.9	149.03	267	0.0319743	13234.0	11015.7	155.37
198	0.0431758	11795.2	10152.4	149.13	268	0.0318546	13254.9	11028.2	155.44
199	0.0429574	11816.1	10164.9	149.24	269	0.0317359	13275.7	11040.7	155.52
200	0.0427412	11837.0	10177.5	149.34	270	0.0316180	13296.5	11053.2	155.60
201	0.0425272	11857.9	10190.0	149.45	271	0.0315010	13317.4	11065.7	155.68
202	0.0423153	11878.7	10202.5	149.55	272	0.0313848	13338.2	11078.2	155.75
203	0.0421055	11899.6	10215.1	149.65	273	0.0312696	13359.0	11090.7	155.83
204	0.0418978	11920.5	10227.6	149.76	274	0.0311551	13379.9	11103.2	155.91
205	0.0416922	11941.4	10240.1	149.86	275	0.0310415	13400.7	11115.7	155.98
206	0.0414886	11962.3	10252.6	149.96	276	0.0309288	13421.5	11128.2	156.06
207	0.0412869	11983.1	10265.2	150.06	277	0.0308168	13442.3	11140.7	156.13
208	0.0410873	12004.0	10277.7	150.16	278	0.0307057	13463.2	11153.2	156.21
209	0.0408895	12024.9	10290.2	150.26	279	0.0305953	13484.0	11165.7	156.28
210	0.0406937	12045.7	10302.7	150.36	280	0.0304858	13504.8	11178.2	156.36
211	0.0404997	12066.6	10315.3	150.46	281	0.0303770	13525.6	11190.7	156.43
212	0.0403076	12087.5	10327.8	150.56	282	0.0302690	13546.5	11203.2	156.51
213	0.0401174	12108.3	10340.3	150.66	283	0.0301618	13567.3	11215.7	156.58
214	0.0399289	12129.2	10352.8	150.75	284	0.0300554	13588.1	11228.1	156.65
215	0.0397422	12150.1	10365.3	150.85	285	0.0299496	13608.9	11240.6	156.73
216	0.0395572	12170.9	10377.9	150.95	286	0.0298447	13629.8	11253.1	156.80
217	0.0393739	12191.8	10390.4	151.04	287	0.0297404	13650.6	11265.6	156.87
218	0.0391924	12212.7	10402.9	151.14	288	0.0296369	13671.4	11278.1	156.94
219	0.0390125	12233.5	10415.4	151.24	289	0.0295341	13692.2	11290.6	157.02
220	0.0388343	12254.4	10427.9	151.33	290	0.0294321	13713.0	11303.1	157.09
221	0.0386577	12275.3	10440.4	151.43	291	0.0293307	13733.9	11315.6	157.16
222	0.0384827	12296.1	10453.0	151.52	292	0.0292300	13754.7	11328.1	157.23
223	0.0383093	12317.0	10465.5	151.61	293	0.0291300	13775.5	11340.6	157.30
224	0.0381374	12337.8	10478.0	151.71	294	0.0290307	13796.3	11353.1	157.37
225	0.0379671	12358.7	10490.5	151.80	295	0.0289321	13817.2	11365.6	157.44
226	0.0377984	12379.5	10503.0	151.89	296	0.0288342	13838.0	11378.1	157.51
227	0.0376311	12400.4	10515.5	151.98	297	0.0287369	13858.8	11390.6	157.58
228	0.0374653	12421.2	10528.0	152.08	298	0.0286402	13879.6	11403.0	157.65
229	0.0373009	12442.1	10540.6	152.17	299	0.0285442	13900.4	11415.5	157.72
230	0.0371380	12463.0	10553.1	152.26	300	0.0284489	13921.3	11428.0	157.79

0.80 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	0.116526	9427.4	8731.7	130.36
87	0.115087	9449.0	8744.6	130.61
88	0.113685	9470.6	8757.5	130.85
89	0.112318	9492.2	8770.4	131.10
90	0.110986	9513.7	8783.4	131.34
91	0.109686	9535.3	8796.3	131.58
92	0.108417	9556.8	8809.1	131.81
93	0.107179	9578.4	8822.0	132.04
94	0.105970	9599.9	8834.9	132.27
95	0.104789	9621.4	8847.8	132.50
96	0.103635	9642.9	8860.7	132.73
97	0.102507	9664.3	8873.6	132.95
98	0.101404	9685.8	8886.4	133.17
99	0.100326	9707.3	8899.3	133.39
100	0.0992720	9728.7	8912.1	133.60
101	0.0982402	9750.1	8925.0	133.82
102	0.0972303	9771.5	8937.8	134.03
103	0.0962418	9792.9	8950.6	134.24
104	0.0952738	9814.3	8963.5	134.44
105	0.0943258	9835.7	8976.3	134.65
106	0.0933970	9857.0	8989.1	134.85
107	0.0924870	9878.4	9001.9	135.05
108	0.0915951	9899.7	9014.7	135.25
109	0.0907208	9921.0	9027.5	135.44
110	0.0898635	9942.3	9040.3	135.64
111	0.0890228	9963.6	9053.1	135.83
112	0.0881981	9984.9	9065.8	136.02
113	0.0873890	10006.2	9078.6	136.21
114	0.0865950	10027.5	9091.4	136.40
115	0.0858157	10048.7	9104.1	136.59
116	0.0850507	10070.0	9116.9	136.77
117	0.0842996	10091.2	9129.6	136.95
118	0.0835619	10112.5	9142.4	137.13
119	0.0828374	10133.7	9155.1	137.31
120	0.0821256	10154.9	9167.8	137.49
121	0.0814263	10176.1	9180.6	137.67
122	0.0807391	10197.3	9193.3	137.84
123	0.0800636	10218.5	9206.0	138.01
124	0.0793996	10239.7	9218.7	138.18
125	0.0787468	10260.8	9231.4	138.35
126	0.0781049	10282.0	9244.1	138.52
127	0.0774735	10303.1	9256.8	138.69
128	0.0768526	10324.3	9269.5	138.86
129	0.0762416	10345.4	9282.2	139.02
130	0.0756406	10366.6	9294.9	139.18
131	0.0750491	10387.7	9307.6	139.35
132	0.0744670	10408.8	9320.3	139.51
133	0.0738940	10429.9	9332.9	139.67
134	0.0733299	10451.0	9345.6	139.82
135	0.0727745	10472.1	9358.3	139.98
136	0.0722277	10493.2	9370.9	140.14
137	0.0716891	10514.3	9383.6	140.29
138	0.0711587	10535.4	9396.2	140.44
139	0.0706361	10556.5	9408.9	140.60
140	0.0701214	10577.6	9421.5	140.75
141	0.0696142	10598.6	9434.2	140.90
142	0.0691144	10619.7	9446.8	141.05
143	0.0686218	10640.7	9459.5	141.19
144	0.0681363	10661.8	9472.1	141.34
145	0.0676578	10682.8	9484.7	141.49
146	0.0671860	10703.9	9497.4	141.63
147	0.0667208	10724.9	9510.0	141.77
148	0.0662622	10746.0	9522.6	141.92
149	0.0658099	10767.0	9535.2	142.06
150	0.0653638	10788.0	9547.8	142.20
151	0.0649238	10809.0	9560.5	142.34
152	0.0644898	10830.1	9573.1	142.48
153	0.0640616	10851.1	9585.7	142.62
154	0.0636391	10872.1	9598.3	142.75
155	0.0632223	10893.1	9610.9	142.89
156	0.0628109	10914.1	9623.5	143.02
157	0.0624049	10935.1	9636.1	143.16
158	0.0620042	10956.1	9648.7	143.29
159	0.0616087	10977.1	9661.3	143.42
160	0.0612183	10998.1	9673.9	143.55

0.80 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0608328	11019.0	9686.5	143.69	231	0.0422664	12482.6	10564.7	151.23
162	0.0604522	11040.0	9699.1	143.82	232	0.0420833	12503.5	10577.2	151.32
163	0.0600764	11061.0	9711.7	143.94	233	0.0419018	12524.3	10589.7	151.41
164	0.0597053	11082.0	9724.3	144.07	234	0.0417219	12545.2	10602.3	151.50
165	0.0593388	11102.9	9736.8	144.20	235	0.0415435	12566.0	10614.8	151.59
166	0.0589768	11123.9	9749.4	144.33	236	0.0413666	12586.9	10627.3	151.68
167	0.0586192	11144.9	9762.0	144.45	237	0.0411912	12607.8	10639.8	151.77
168	0.0582660	11165.8	9774.6	144.58	238	0.0410174	12628.6	10652.3	151.86
169	0.0579171	11186.8	9787.2	144.70	239	0.0408450	12649.5	10664.8	151.94
170	0.0575724	11207.8	9799.7	144.83	240	0.0406740	12670.3	10677.3	152.03
171	0.0572318	11228.7	9812.3	144.95	241	0.0405045	12691.2	10689.9	152.12
172	0.0568952	11249.7	9824.9	145.07	242	0.0403364	12712.0	10702.4	152.20
173	0.0565627	11270.6	9837.5	145.19	243	0.0401696	12732.9	10714.9	152.29
174	0.0562340	11291.6	9850.0	145.31	244	0.0400043	12753.7	10727.4	152.38
175	0.0559091	11312.5	9862.6	145.43	245	0.0398403	12774.6	10739.9	152.46
176	0.0555880	11333.4	9875.2	145.55	246	0.0396777	12795.4	10752.4	152.55
177	0.0552707	11354.4	9887.7	145.67	247	0.0395164	12816.3	10764.9	152.63
178	0.0549569	11375.3	9900.3	145.79	248	0.0393564	12837.1	10777.4	152.72
179	0.0546467	11396.2	9912.9	145.91	249	0.0391977	12858.0	10789.9	152.80
180	0.0543401	11417.2	9925.4	146.02	250	0.0390403	12878.8	10802.4	152.88
181	0.0540369	11438.1	9938.0	146.14	251	0.0388841	12899.7	10814.9	152.97
182	0.0537371	11459.0	9950.5	146.25	252	0.0387292	12920.5	10827.5	153.05
183	0.0534406	11480.0	9963.1	146.37	253	0.0385755	12941.4	10840.0	153.13
184	0.0531474	11500.9	9975.7	146.48	254	0.0384231	12962.2	10852.5	153.21
185	0.0528574	11521.8	9988.2	146.60	255	0.0382718	12983.0	10865.0	153.30
186	0.0525706	11542.7	10000.8	146.71	256	0.0381217	13003.9	10877.5	153.38
187	0.0522869	11563.7	10013.3	146.82	257	0.0379729	13024.7	10890.0	153.46
188	0.0520063	11584.6	10025.9	146.93	258	0.0378251	13045.6	10902.5	153.54
189	0.0517287	11605.5	10038.4	147.04	259	0.0376786	13066.4	10915.0	153.62
190	0.0514541	11626.4	10051.0	147.15	260	0.0375331	13087.3	10927.5	153.70
191	0.0511824	11647.3	10063.5	147.26	261	0.0373888	13108.1	10940.0	153.78
192	0.0509136	11668.2	10076.1	147.37	262	0.0372456	13128.9	10952.5	153.86
193	0.0506476	11689.1	10088.6	147.48	263	0.0371035	13149.8	10965.0	153.94
194	0.0503844	11710.0	10101.2	147.59	264	0.0369625	13170.6	10977.5	154.02
195	0.0501239	11730.9	10113.7	147.70	265	0.0368225	13191.5	10990.0	154.10
196	0.0498661	11751.8	10126.2	147.80	266	0.0366836	13212.3	11002.5	154.18
197	0.0496110	11772.7	10138.8	147.91	267	0.0365457	13233.1	11015.0	154.25
198	0.0493585	11793.6	10151.3	148.02	268	0.0364089	13254.0	11027.5	154.33
199	0.0491086	11814.5	10163.9	148.12	269	0.0362731	13274.8	11040.0	154.41
200	0.0488612	11835.4	10176.4	148.23	270	0.0361384	13295.6	11052.5	154.49
201	0.0486163	11856.3	10188.9	148.33	271	0.0360046	13316.5	11065.0	154.56
202	0.0483738	11877.2	10201.5	148.43	272	0.0358718	13337.3	11077.5	154.64
203	0.0481338	11898.1	10214.0	148.54	273	0.0357400	13358.1	11090.0	154.72
204	0.0478962	11919.0	10226.5	148.64	274	0.0356091	13379.0	11102.5	154.79
205	0.0476609	11939.9	10239.1	148.74	275	0.0354793	13399.8	11115.0	154.87
206	0.0474279	11960.8	10251.6	148.84	276	0.0353503	13420.6	11127.5	154.94
207	0.0471972	11981.7	10264.1	148.95	277	0.0352223	13441.5	11140.0	155.02
208	0.0469688	12002.5	10276.7	149.05	278	0.0350952	13462.3	11152.5	155.10
209	0.0467426	12023.4	10289.2	149.15	279	0.0349691	13483.1	11165.0	155.17
210	0.0465185	12044.3	10301.7	149.25	280	0.0348438	13504.0	11177.5	155.24
211	0.0462966	12065.2	10314.3	149.34	281	0.0347195	13524.8	11190.0	155.32
212	0.0460768	12086.1	10326.8	149.44	282	0.0345960	13545.6	11202.5	155.39
213	0.0458591	12107.0	10339.3	149.54	283	0.0344734	13566.5	11215.0	155.47
214	0.0456435	12127.8	10351.9	149.64	284	0.0343517	13587.3	11227.5	155.54
215	0.0454299	12148.7	10364.4	149.74	285	0.0342308	13608.1	11240.0	155.61
216	0.0452183	12169.6	10376.9	149.83	286	0.0341108	13628.9	11252.5	155.69
217	0.0450087	12190.5	10389.4	149.93	287	0.0339916	13649.8	11265.0	155.76
218	0.0448010	12211.3	10402.0	150.03	288	0.0338733	13670.6	11277.5	155.83
219	0.0445952	12232.2	10414.5	150.12	289	0.0337558	13691.4	11290.0	155.90
220	0.0443913	12253.1	10427.0	150.22	290	0.0336391	13712.3	11302.5	155.98
221	0.0441893	12274.0	10439.5	150.31	291	0.0335232	13733.1	11315.0	156.05
222	0.0439892	12294.8	10452.0	150.41	292	0.0334081	13753.9	11327.5	156.12
223	0.0437908	12315.7	10464.6	150.50	293	0.0332937	13774.7	11340.0	156.19
224	0.0435942	12336.6	10477.1	150.59	294	0.0331802	13795.6	11352.5	156.26
225	0.0433994	12357.4	10489.6	150.69	295	0.0330675	13816.4	11365.0	156.33
226	0.0432064	12378.3	10502.1	150.78	296	0.0329555	13837.2	11377.5	156.40
227	0.0430150	12399.2	10514.6	150.87	297	0.0328442	13858.0	11390.0	156.47
228	0.0428254	12420.0	10527.2	150.96	298	0.0327337	13878.9	11402.5	156.54
229	0.0426374	12440.9	10539.7	151.05	299	0.0326240	13899.7	11414.9	156.61
230	0.0424511	12461.7	10552.2	151.14	300	0.0325150	13920.5	11427.4	156.68

0.90 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.0875	2914.4	2911.8	53.94
* 86.302	35.0419	2928.2	2925.6	54.10
* 86.302	0.131066	9427.3	8731.5	129.40
87	0.129926	9442.5	8740.6	129.58
88	0.128328	9464.2	8753.6	129.83
89	0.126772	9485.9	8766.5	130.07
90	0.125254	9507.6	8779.5	130.32
91	0.123775	9529.2	8792.5	130.55
92	0.122332	9550.9	8805.4	130.79
93	0.120923	9572.5	8818.4	131.03
94	0.119548	9594.1	8831.3	131.26
95	0.118206	9615.7	8844.2	131.48
96	0.116895	9637.3	8857.2	131.71
97	0.115614	9658.9	8870.1	131.93
98	0.114362	9680.4	8883.0	132.16
99	0.113138	9702.0	8895.9	132.37
100	0.111941	9723.5	8908.8	132.59
101	0.110770	9745.0	8921.7	132.80
102	0.109624	9766.5	8934.6	133.02
103	0.108503	9788.0	8947.5	133.23
104	0.107405	9809.4	8960.4	133.43
105	0.106330	9830.9	8973.2	133.64
106	0.105278	9852.3	8986.1	133.84
107	0.104246	9873.7	8998.9	134.04
108	0.103236	9895.1	9011.8	134.24
109	0.102245	9916.5	9024.6	134.44
110	0.101274	9937.9	9037.4	134.63
111	0.100322	9959.3	9050.3	134.83
112	0.0993888	9980.6	9063.1	135.02
113	0.0984728	10002.0	9075.9	135.21
114	0.0975741	10023.3	9088.7	135.40
115	0.0966922	10044.6	9101.5	135.58
116	0.0958265	10066.0	9114.3	135.77
117	0.0949766	10087.2	9127.1	135.95
118	0.0941422	10108.5	9139.8	136.13
119	0.0933226	10129.8	9152.6	136.31
120	0.0925177	10151.1	9165.4	136.49
121	0.0917268	10172.3	9178.1	136.67
122	0.0909498	10193.6	9190.9	136.84
123	0.0901861	10214.8	9203.6	137.01
124	0.0894355	10236.1	9216.4	137.19
125	0.0886976	10257.3	9229.1	137.36
126	0.0879721	10278.5	9241.9	137.53
127	0.0872586	10299.7	9254.6	137.69
128	0.0865569	10320.9	9267.3	137.86
129	0.0858667	10342.1	9280.0	138.02
130	0.0851876	10363.3	9292.7	138.19
131	0.0845194	10384.4	9305.4	138.35
132	0.0838619	10405.6	9318.1	138.51
133	0.0832147	10426.7	9330.8	138.67
134	0.0825777	10447.9	9343.5	138.83
135	0.0819505	10469.0	9356.2	138.99
136	0.0813330	10490.2	9368.9	139.14
137	0.0807249	10511.3	9381.6	139.30
138	0.0801260	10532.4	9394.3	139.45
139	0.0795361	10553.5	9407.0	139.60
140	0.0789550	10574.6	9419.6	139.75
141	0.0783825	10595.8	9432.3	139.90
142	0.0778184	10616.8	9445.0	140.05
143	0.0772625	10637.9	9457.6	140.20
144	0.0767146	10659.0	9470.3	140.35
145	0.0761745	10680.1	9482.9	140.49
146	0.0756422	10701.2	9495.6	140.64
147	0.0751173	10722.3	9508.2	140.78
148	0.0745998	10743.3	9520.9	140.93
149	0.0740895	10764.4	9533.5	141.07
150	0.0735862	10785.4	9546.1	141.21
151	0.0730899	10806.5	9558.8	141.35
152	0.0726003	10827.5	9571.4	141.49
153	0.0721173	10848.6	9584.0	141.63
154	0.0716408	10869.6	9596.7	141.76
155	0.0711706	10890.6	9609.3	141.90
156	0.0707067	10911.7	9621.9	142.03
157	0.0702488	10932.7	9634.5	142.17
158	0.0697969	10953.7	9647.1	142.30
159	0.0693509	10974.7	9659.8	142.43
160	0.0689106	10995.7	9672.4	142.57

* PHASE CHANGE

0.90 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0684760	11016.8	9685.0	142.70	231	0.0475581	12481.4	10563.9	150.25
162	0.0680468	11037.8	9697.6	142.83	232	0.0473520	12502.3	10576.4	150.34
163	0.0676231	11058.8	9710.2	142.96	233	0.0471476	12523.1	10588.9	150.43
164	0.0672047	11079.8	9722.8	143.08	234	0.0469450	12544.0	10601.4	150.52
165	0.0667915	11100.8	9735.4	143.21	235	0.0467442	12564.9	10613.9	150.61
166	0.0663834	11121.7	9748.0	143.34	236	0.0465450	12585.7	10626.5	150.70
167	0.0659803	11142.7	9760.6	143.46	237	0.0463476	12606.6	10639.0	150.79
168	0.0655821	11163.7	9773.2	143.59	238	0.0461519	12627.5	10651.5	150.87
169	0.0651888	11184.7	9785.8	143.71	239	0.0459578	12648.3	10664.0	150.96
170	0.0648002	11205.7	9798.4	143.84	240	0.0457653	12669.2	10676.5	151.05
171	0.0644163	11226.7	9810.9	143.96	241	0.0455745	12690.1	10689.0	151.14
172	0.0640370	11247.6	9823.5	144.08	242	0.0453852	12710.9	10701.6	151.22
173	0.0636621	11268.6	9836.1	144.21	243	0.0451975	12731.8	10714.1	151.31
174	0.0632917	11289.6	9848.7	144.33	244	0.0450114	12752.6	10726.6	151.39
175	0.0629256	11310.5	9861.3	144.45	245	0.0448268	12773.5	10739.1	151.48
176	0.0625637	11331.5	9873.9	144.57	246	0.0446437	12794.4	10751.6	151.56
177	0.0622060	11352.4	9886.4	144.68	247	0.0444621	12815.2	10764.1	151.65
178	0.0618524	11373.4	9899.0	144.80	248	0.0442820	12836.1	10776.6	151.73
179	0.0615029	11394.4	9911.6	144.92	249	0.0441033	12856.9	10789.2	151.82
180	0.0611573	11415.3	9924.2	145.04	250	0.0439261	12877.8	10801.7	151.90
181	0.0608157	11436.3	9936.7	145.15	251	0.0437503	12898.6	10814.2	151.98
182	0.0604778	11457.2	9949.3	145.27	252	0.0435759	12919.5	10826.7	152.07
183	0.0601437	11478.1	9961.9	145.38	253	0.0434029	12940.3	10839.2	152.15
184	0.0598134	11499.1	9974.4	145.50	254	0.0432313	12961.2	10851.7	152.23
185	0.0594866	11520.0	9987.0	145.61	255	0.0430611	12982.0	10864.2	152.31
186	0.0591635	11541.0	9999.6	145.72	256	0.0428921	13002.9	10876.7	152.40
187	0.0588439	11561.9	10012.1	145.84	257	0.0427245	13023.7	10889.3	152.48
188	0.0585277	11582.8	10024.7	145.95	258	0.0425583	13044.6	10901.8	152.56
189	0.0582150	11603.8	10037.2	146.06	259	0.0423933	13065.4	10914.3	152.64
190	0.0579056	11624.7	10049.8	146.17	260	0.0422296	13086.3	10926.8	152.72
191	0.0575995	11645.6	10062.4	146.28	261	0.0420671	13107.1	10939.3	152.80
192	0.0572966	11666.5	10074.9	146.39	262	0.0419059	13128.0	10951.8	152.88
193	0.0569970	11687.5	10087.5	146.50	263	0.0417459	13148.8	10964.3	152.96
194	0.0567005	11708.4	10100.0	146.60	264	0.0415872	13169.7	10976.8	153.04
195	0.0564071	11729.3	10112.6	146.71	265	0.0414297	13190.5	10989.3	153.12
196	0.0561167	11750.2	10125.1	146.82	266	0.0412733	13211.4	11001.8	153.19
197	0.0558293	11771.1	10137.7	146.93	267	0.0411182	13232.2	11014.3	153.27
198	0.0555449	11792.1	10150.2	147.03	268	0.0409642	13253.0	11026.8	153.35
199	0.0552633	11813.0	10162.8	147.14	269	0.0408113	13273.9	11039.3	153.43
200	0.0549847	11833.9	10175.3	147.24	270	0.0406596	13294.7	11051.8	153.51
201	0.0547088	11854.8	10187.9	147.35	271	0.0405090	13315.6	11064.3	153.58
202	0.0544358	11875.7	10200.4	147.45	272	0.0403596	13336.4	11076.9	153.66
203	0.0541654	11896.6	10213.0	147.55	273	0.0402112	13357.3	11089.4	153.74
204	0.0538978	11917.5	10225.5	147.66	274	0.0400640	13378.1	11101.9	153.81
205	0.0536328	11938.4	10238.0	147.76	275	0.0399178	13398.9	11114.4	153.89
206	0.0533704	11959.3	10250.6	147.86	276	0.0397726	13419.8	11126.9	153.96
207	0.0531106	11980.2	10263.1	147.96	277	0.0396286	13440.6	11139.4	154.04
208	0.0528533	12001.1	10275.7	148.06	278	0.0394856	13461.4	11151.9	154.11
209	0.0525985	12022.0	10288.2	148.16	279	0.0393436	13482.3	11164.4	154.19
210	0.0523462	12042.9	10300.7	148.26	280	0.0392026	13503.1	11176.9	154.26
211	0.0520963	12063.8	10313.3	148.36	281	0.0390626	13524.0	11189.4	154.34
212	0.0518488	12084.7	10325.8	148.46	282	0.0389237	13544.8	11201.9	154.41
213	0.0516036	12105.6	10338.3	148.56	283	0.0387857	13565.6	11214.4	154.49
214	0.0513608	12126.5	10350.9	148.66	284	0.0386487	13586.5	11226.9	154.56
215	0.0511203	12147.3	10363.4	148.75	285	0.0385126	13607.3	11239.4	154.63
216	0.0508820	12168.2	10375.9	148.85	286	0.0383776	13628.1	11251.9	154.70
217	0.0506459	12189.1	10388.5	148.95	287	0.0382434	13649.0	11264.4	154.78
218	0.0504120	12210.0	10401.0	149.04	288	0.0381103	13669.8	11276.9	154.85
219	0.0501803	12230.9	10413.5	149.14	289	0.0379780	13690.6	11289.4	154.92
220	0.0499507	12251.8	10426.1	149.23	290	0.0378466	13711.5	11301.9	154.99
221	0.0497233	12272.6	10438.6	149.33	291	0.0377162	13732.3	11314.4	155.07
222	0.0494979	12293.5	10451.1	149.42	292	0.0375867	13753.1	11326.9	155.14
223	0.0492745	12314.4	10463.7	149.52	293	0.0374580	13774.0	11339.4	155.21
224	0.0490532	12335.3	10476.2	149.61	294	0.0373302	13794.8	11351.9	155.28
225	0.0488338	12356.2	10488.7	149.70	295	0.0372033	13815.6	11364.4	155.35
226	0.0486165	12377.0	10501.2	149.79	296	0.0370773	13836.5	11376.9	155.42
227	0.0484010	12397.9	10513.8	149.89	297	0.0369521	13857.3	11389.4	155.49
228	0.0481875	12418.8	10526.3	149.98	298	0.0368278	13878.1	11401.9	155.56
229	0.0479758	12439.7	10538.8	150.07	299	0.0367043	13898.9	11414.4	155.63
230	0.0477660	12460.5	10551.3	150.16	300	0.0365816	13919.8	11426.9	155.70

1.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.0883	2914.6	2911.7	53.94
87	34.9368	2960.3	2957.4	54.47
* 87.284	34.8934	2973.3	2970.4	54.61
* 87.284	0.144358	9442.1	8740.2	128.73
88	0.143075	9457.7	8749.5	128.91
89	0.141324	9479.6	8762.6	129.15
90	0.139617	9501.3	8775.6	129.40
91	0.137954	9523.1	8788.6	129.64
92	0.136332	9544.9	8801.6	129.87
93	0.134749	9566.6	8814.7	130.11
94	0.133205	9588.3	8827.7	130.34
95	0.131698	9610.0	8840.7	130.57
96	0.130227	9631.7	8853.6	130.80
97	0.128789	9653.4	8866.6	131.02
98	0.127385	9675.0	8879.6	131.24
99	0.126012	9696.7	8892.6	131.46
100	0.124670	9718.3	8905.5	131.68
101	0.123358	9739.9	8918.5	131.90
102	0.122074	9761.4	8931.4	132.11
103	0.120818	9783.0	8944.3	132.32
104	0.119588	9804.5	8957.2	132.53
105	0.118385	9826.1	8970.2	132.73
106	0.117206	9847.6	8983.1	132.94
107	0.116052	9869.1	8996.0	133.14
108	0.114921	9890.6	9008.8	133.34
109	0.113813	9912.0	9021.7	133.54
110	0.112726	9933.5	9034.6	133.73
111	0.111661	9954.9	9047.5	133.93
112	0.110617	9976.3	9060.3	134.12
113	0.109593	9997.7	9073.2	134.31
114	0.108588	10019.1	9086.0	134.50
115	0.107602	10040.5	9098.8	134.68
116	0.106635	10061.9	9111.7	134.87
117	0.105685	10083.3	9124.5	135.05
118	0.104753	10104.6	9137.3	135.23
119	0.103837	10125.9	9150.1	135.41
120	0.102938	10147.3	9162.9	135.59
121	0.102055	10168.6	9175.7	135.77
122	0.101187	10189.9	9188.5	135.94
123	0.100334	10211.2	9201.3	136.12
124	0.0994966	10232.4	9214.0	136.29
125	0.0986729	10253.7	9226.8	136.46
126	0.0978630	10275.0	9239.6	136.63
127	0.0970667	10296.2	9252.3	136.80
128	0.0962835	10317.5	9265.1	136.97
129	0.0955133	10338.7	9277.8	137.13
130	0.0947555	10359.9	9290.6	137.29
131	0.0940100	10381.1	9303.3	137.46
132	0.0932765	10402.4	9316.0	137.62
133	0.0925545	10423.6	9328.8	137.78
134	0.0918439	10444.7	9341.5	137.94
135	0.0911444	10465.9	9354.2	138.09
136	0.0904557	10487.1	9366.9	138.25
137	0.0897776	10508.3	9379.6	138.41
138	0.0891098	10529.4	9392.3	138.56
139	0.0884520	10550.6	9405.0	138.71
140	0.0878042	10571.7	9417.7	138.86
141	0.0871659	10592.9	9430.4	139.01
142	0.0865370	10614.0	9443.1	139.16
143	0.0859173	10635.1	9455.8	139.31
144	0.0853066	10656.2	9468.4	139.46
145	0.0847047	10677.4	9481.1	139.61
146	0.0841114	10698.5	9493.8	139.75
147	0.0835265	10719.6	9506.5	139.89
148	0.0829498	10740.7	9519.1	140.04
149	0.0823811	10761.8	9531.8	140.18
150	0.0818204	10782.8	9544.4	140.32
151	0.0812673	10803.9	9557.1	140.46
152	0.0807219	10825.0	9569.7	140.60
153	0.0801838	10846.1	9582.4	140.74
154	0.0796529	10867.1	9595.0	140.88
155	0.0791292	10888.2	9607.7	141.01
156	0.0786124	10909.3	9620.3	141.15
157	0.0781024	10930.3	9632.9	141.28
158	0.0775991	10951.4	9645.6	141.42
159	0.0771023	10972.4	9658.2	141.55
160	0.0766119	10993.4	9670.8	141.68

* PHASE CHANGE

1.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.0781279	11014.5	9683.4	141.81	231	0.0528517	12480.2	10563.0	149.37
162	0.0776500	11035.5	9696.1	141.94	232	0.0526225	12501.1	10575.5	149.46
163	0.0771781	11056.5	9708.7	142.07	233	0.0523952	12522.0	10588.0	149.55
164	0.0767122	11077.5	9721.3	142.20	234	0.0521699	12542.8	10600.6	149.64
165	0.0762521	11098.6	9733.9	142.33	235	0.0519466	12563.7	10613.1	149.73
166	0.0757977	11119.6	9746.5	142.45	236	0.0517252	12584.6	10625.6	149.82
167	0.0753489	11140.6	9759.1	142.58	237	0.0515057	12605.5	10638.1	149.91
168	0.0749056	11161.6	9771.7	142.71	238	0.0512880	12626.3	10650.7	150.00
169	0.0744677	11182.6	9784.4	142.83	239	0.0510722	12647.2	10663.2	150.08
170	0.0740351	11203.6	9797.0	142.95	240	0.0508582	12668.1	10675.7	150.17
171	0.0736077	11224.6	9809.6	143.08	241	0.0506460	12688.9	10688.2	150.26
172	0.0731854	11245.6	9822.2	143.20	242	0.0504355	12709.8	10700.8	150.34
173	0.0727681	11266.6	9834.8	143.32	243	0.0502268	12730.7	10713.3	150.43
174	0.0723557	11287.6	9847.3	143.44	244	0.0500199	12751.5	10725.8	150.51
175	0.0719482	11308.6	9859.9	143.56	245	0.0498146	12772.4	10738.3	150.60
176	0.0715454	11329.5	9872.5	143.68	246	0.0496111	12793.3	10750.8	150.69
177	0.0711473	11350.5	9885.1	143.80	247	0.0494092	12814.1	10763.4	150.77
178	0.0707537	11371.5	9897.7	143.92	248	0.0492089	12835.0	10775.9	150.85
179	0.0703647	11392.5	9910.3	144.04	249	0.0490103	12855.9	10788.4	150.94
180	0.0699801	11413.4	9922.9	144.15	250	0.0488132	12876.7	10800.9	151.02
181	0.0695998	11434.4	9935.5	144.27	251	0.0486178	12897.6	10813.4	151.10
182	0.0692238	11455.4	9948.0	144.39	252	0.0484239	12918.5	10825.9	151.19
183	0.0688521	11476.3	9960.6	144.50	253	0.0482316	12939.3	10838.5	151.27
184	0.0684844	11497.3	9973.2	144.61	254	0.0480408	12960.2	10851.0	151.35
185	0.0681208	11518.2	9985.8	144.73	255	0.0478515	12981.0	10863.5	151.43
186	0.0677612	11539.2	9998.3	144.84	256	0.0476637	13001.9	10876.0	151.52
187	0.0674056	11560.1	10010.9	144.95	257	0.0474774	13022.7	10888.5	151.60
188	0.0670538	11581.1	10023.5	145.06	258	0.0472925	13043.6	10901.0	151.68
189	0.0667058	11602.0	10036.1	145.18	259	0.0471091	13064.5	10913.5	151.76
190	0.0663615	11623.0	10048.6	145.29	260	0.0469271	13085.3	10926.1	151.84
191	0.0660209	11643.9	10061.2	145.40	261	0.0467465	13106.2	10938.6	151.92
192	0.0656839	11664.9	10073.8	145.51	262	0.0465673	13127.0	10951.1	152.00
193	0.0653505	11685.8	10086.3	145.61	263	0.0463894	13147.9	10963.6	152.08
194	0.0650206	11706.7	10098.9	145.72	264	0.0462130	13168.7	10976.1	152.16
195	0.0646942	11727.7	10111.5	145.83	265	0.0460378	13189.6	10988.6	152.24
196	0.0643711	11748.6	10124.0	145.94	266	0.0458640	13210.4	11001.1	152.32
197	0.0640514	11769.5	10136.6	146.04	267	0.0456915	13231.3	11013.6	152.39
198	0.0637350	11790.5	10149.1	146.15	268	0.0455203	13252.1	11026.1	152.47
199	0.0634218	11811.4	10161.7	146.26	269	0.0453504	13273.0	11038.6	152.55
200	0.0631118	11832.3	10174.2	146.36	270	0.0451818	13293.8	11051.2	152.63
201	0.0628049	11853.2	10186.8	146.46	271	0.0450144	13314.7	11063.7	152.70
202	0.0625011	11874.2	10199.3	146.57	272	0.0448482	13335.5	11076.2	152.78
203	0.0622004	11895.1	10211.9	146.67	273	0.0446833	13356.4	11088.7	152.86
204	0.0619026	11916.0	10224.5	146.77	274	0.0445196	13377.2	11101.2	152.93
205	0.0616079	11936.9	10237.0	146.88	275	0.0443571	13398.1	11113.7	153.01
206	0.0613160	11957.8	10249.6	146.98	276	0.0441958	13418.9	11126.2	153.08
207	0.0610270	11978.7	10262.1	147.08	277	0.0440356	13439.7	11138.7	153.16
208	0.0607408	11999.6	10274.6	147.18	278	0.0438766	13460.6	11151.2	153.24
209	0.0604574	12020.6	10287.2	147.28	279	0.0437188	13481.4	11163.7	153.31
210	0.0601767	12041.5	10299.7	147.38	280	0.0435621	13502.3	11176.2	153.38
211	0.0598988	12062.4	10312.3	147.48	281	0.0434065	13523.1	11188.7	153.46
212	0.0596235	12083.3	10324.8	147.58	282	0.0432520	13544.0	11201.2	153.53
213	0.0593508	12104.2	10337.4	147.68	283	0.0430986	13564.8	11213.7	153.61
214	0.0590807	12125.1	10349.9	147.78	284	0.0429464	13585.6	11226.2	153.68
215	0.0588132	12146.0	10362.4	147.87	285	0.0427951	13606.5	11238.7	153.75
216	0.0585482	12166.9	10375.0	147.97	286	0.0426450	13627.3	11251.2	153.83
217	0.0582856	12187.8	10387.5	148.07	287	0.0424959	13648.2	11263.8	153.90
218	0.0580255	12208.7	10400.1	148.16	288	0.0423479	13669.0	11276.3	153.97
219	0.0577678	12229.6	10412.6	148.26	289	0.0422008	13689.8	11288.8	154.04
220	0.0575125	12250.5	10425.1	148.35	290	0.0420548	13710.7	11301.3	154.12
221	0.0572595	12271.3	10437.7	148.45	291	0.0419098	13731.5	11313.8	154.19
222	0.0570088	12292.2	10450.2	148.54	292	0.0417659	13752.4	11326.3	154.26
223	0.0567604	12313.1	10462.7	148.64	293	0.0416229	13773.2	11338.8	154.33
224	0.0565143	12334.0	10475.3	148.73	294	0.0414808	13794.0	11351.3	154.40
225	0.0562704	12354.9	10487.8	148.82	295	0.0413398	13814.9	11363.8	154.47
226	0.0560286	12375.8	10500.3	148.92	296	0.0411997	13835.7	11376.3	154.54
227	0.0557890	12396.7	10512.9	149.01	297	0.0410605	13856.5	11388.8	154.61
228	0.0555516	12417.6	10525.4	149.10	298	0.0409223	13877.4	11401.3	154.68
229	0.0553162	12438.4	10537.9	149.19	299	0.0407851	13898.2	11413.8	154.75
230	0.0550829	12459.3	10550.5	149.28	300	0.0406487	13919.0	11426.3	154.82

1.50 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.0921	2915.5	2911.2	53.93
87	34.9407	2961.2	2956.8	54.46
88	34.7874	3007.1	3002.7	54.98
89	34.6324	3053.2	3048.8	55.50
90	34.4757	3099.5	3095.1	56.02
91	34.3173	3146.0	3141.5	56.54
* 91.297	34.2698	3159.8	3155.4	56.69
* 91.297	0.209481	9498.5	8773.0	126.12
92	0.207674	9514.2	8782.3	126.29
93	0.205161	9536.5	8795.7	126.53
94	0.202714	9558.8	8809.0	126.77
95	0.200328	9581.0	8822.3	127.00
96	0.198003	9603.2	8835.6	127.24
97	0.195736	9625.4	8848.9	127.46
98	0.193524	9647.5	8862.2	127.69
99	0.191365	9669.7	8875.4	127.92
100	0.189257	9691.7	8888.6	128.14
101	0.187199	9713.8	8901.9	128.36
102	0.185188	9735.8	8915.1	128.57
103	0.183222	9757.8	8928.3	128.79
104	0.181301	9779.8	8941.4	129.00
105	0.179422	9801.7	8954.6	129.21
106	0.177585	9823.6	8967.7	129.42
107	0.175787	9845.5	8980.9	129.62
108	0.174027	9867.4	8994.0	129.83
109	0.172304	9889.2	9007.1	130.03
110	0.170617	9911.0	9020.2	130.23
111	0.168965	9932.8	9033.3	130.43
112	0.167346	9954.6	9046.3	130.62
113	0.165760	9976.3	9059.4	130.81
114	0.164204	9998.1	9072.4	131.01
115	0.162680	10019.8	9085.5	131.20
116	0.161185	10041.5	9098.5	131.38
117	0.159718	10063.1	9111.5	131.57
118	0.158280	10084.8	9124.5	131.75
119	0.156868	10106.4	9137.5	131.94
120	0.155482	10128.0	9150.5	132.12
121	0.154122	10149.6	9163.4	132.30
122	0.152786	10171.2	9176.4	132.47
123	0.151475	10192.7	9189.3	132.65
124	0.150187	10214.3	9202.3	132.82
125	0.148921	10235.8	9215.2	133.00
126	0.147677	10257.3	9228.1	133.17
127	0.146455	10278.8	9241.0	133.34
128	0.145254	10300.3	9253.9	133.51
129	0.144073	10321.8	9266.8	133.67
130	0.142912	10343.2	9279.7	133.84
131	0.141770	10364.7	9292.6	134.00
132	0.140647	10386.1	9305.4	134.17
133	0.139542	10407.5	9318.3	134.33
134	0.138455	10428.9	9331.1	134.49
135	0.137385	10450.3	9344.0	134.65
136	0.136333	10471.7	9356.8	134.81
137	0.135297	10493.0	9369.6	134.96
138	0.134277	10514.4	9382.5	135.12
139	0.133273	10535.7	9395.3	135.27
140	0.132284	10557.1	9408.1	135.42
141	0.131310	10578.4	9420.9	135.58
142	0.130351	10599.7	9433.7	135.73
143	0.129406	10621.0	9446.5	135.88
144	0.128475	10642.3	9459.3	136.02
145	0.127558	10663.6	9472.0	136.17
146	0.126655	10684.9	9484.8	136.32
147	0.125764	10706.1	9497.6	136.46
148	0.124886	10727.4	9510.3	136.61
149	0.124021	10748.6	9523.1	136.75
150	0.123168	10769.9	9535.8	136.89
151	0.122326	10791.1	9548.6	137.03
152	0.121497	10812.3	9561.3	137.17
153	0.120679	10833.5	9574.1	137.31
154	0.119872	10854.7	9586.8	137.45
155	0.119076	10875.9	9599.5	137.59
156	0.118291	10897.1	9612.3	137.72
157	0.117517	10918.3	9625.0	137.86
158	0.116752	10939.5	9637.7	137.99
159	0.115998	10960.7	9650.4	138.13
160	0.115254	10981.9	9663.1	138.26

* PHASE CHANGE

1.50 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.114519	11003.0	9675.8	138.39	231	0.0793477	12474.2	10558.7	145.98
162	0.113794	11024.2	9688.5	138.52	232	0.0790025	12495.1	10571.2	146.07
163	0.113079	11045.3	9701.2	138.65	233	0.0786603	12516.0	10583.8	146.16
164	0.112372	11066.5	9713.9	138.78	234	0.0783211	12537.0	10596.3	146.25
165	0.111674	11087.6	9726.6	138.91	235	0.0779848	12557.9	10608.9	146.34
166	0.110986	11108.7	9739.3	139.04	236	0.0776514	12578.8	10621.4	146.43
167	0.110305	11129.9	9751.9	139.17	237	0.0773209	12599.7	10634.0	146.52
168	0.109634	11151.0	9764.6	139.29	238	0.0769932	12620.6	10646.5	146.61
169	0.108970	11172.1	9777.3	139.42	239	0.0766683	12641.5	10659.1	146.69
170	0.108315	11193.2	9790.0	139.54	240	0.0763461	12662.5	10671.6	146.78
171	0.107667	11214.3	9802.6	139.67	241	0.0760266	12683.4	10684.2	146.87
172	0.107028	11235.4	9815.3	139.79	242	0.0757099	12704.3	10696.7	146.96
173	0.106396	11256.5	9828.0	139.91	243	0.0753958	12725.2	10709.3	147.04
174	0.105772	11277.6	9840.6	140.03	244	0.0750843	12746.1	10721.8	147.13
175	0.105155	11298.7	9853.3	140.15	245	0.0747753	12767.0	10734.4	147.21
176	0.104545	11319.8	9865.9	140.27	246	0.0744690	12787.9	10746.9	147.30
177	0.103943	11340.8	9878.6	140.39	247	0.0741651	12808.8	10759.4	147.38
178	0.103347	11361.9	9891.2	140.51	248	0.0738637	12829.7	10772.0	147.47
179	0.102759	11383.0	9903.9	140.63	249	0.0735648	12850.6	10784.5	147.55
180	0.102177	11404.0	9916.5	140.75	250	0.0732683	12871.5	10797.1	147.64
181	0.101602	11425.1	9929.1	140.86	251	0.0729742	12892.4	10809.6	147.72
182	0.101033	11446.1	9941.8	140.98	252	0.0726825	12913.3	10822.1	147.80
183	0.100471	11467.2	9954.4	141.09	253	0.0723931	12934.2	10834.7	147.88
184	0.0999156	11488.2	9967.0	141.21	254	0.0721061	12955.1	10847.2	147.97
185	0.0993660	11509.3	9979.7	141.32	255	0.0718213	12976.0	10859.8	148.05
186	0.0988224	11530.3	9992.3	141.44	256	0.0715387	12996.9	10872.3	148.13
187	0.0982849	11551.4	10004.9	141.55	257	0.0712584	13017.8	10884.8	148.21
188	0.0977533	11572.4	10017.5	141.66	258	0.0709803	13038.7	10897.4	148.29
189	0.0972275	11593.4	10030.2	141.77	259	0.0707044	13059.6	10909.9	148.37
190	0.0967073	11614.4	10042.8	141.88	260	0.0704306	13080.5	10922.4	148.45
191	0.0961928	11635.5	10055.4	141.99	261	0.0701590	13101.4	10935.0	148.53
192	0.0956839	11656.5	10068.0	142.10	262	0.0698894	13122.2	10947.5	148.61
193	0.0951803	11677.5	10080.6	142.21	263	0.0696219	13143.1	10960.0	148.69
194	0.0946821	11698.5	10093.2	142.32	264	0.0693565	13164.0	10972.6	148.77
195	0.0941891	11719.5	10105.8	142.43	265	0.0690931	13184.9	10985.1	148.85
196	0.0937014	11740.5	10118.4	142.54	266	0.0688317	13205.8	10997.6	148.93
197	0.0932187	11761.5	10131.0	142.64	267	0.0685723	13226.7	11010.1	149
198	0.0927410	11782.5	10143.6	142.75	268	0.0683148	13247.5	11022.7	149.09
199	0.0922682	11803.5	10156.2	142.86	269	0.0680593	13268.4	11035.2	149.17
200	0.0918003	11824.5	10168.8	142.96	270	0.0678057	13289.3	11047.7	149.24
201	0.0913372	11845.5	10181.4	143.07	271	0.0675540	13310.2	11060.3	149.32
202	0.0908788	11866.5	10194.0	143.17	272	0.0673042	13331.1	11072.8	149.40
203	0.0904250	11887.5	10206.6	143.27	273	0.0670562	13351.9	11085.3	149.47
204	0.0899758	11908.5	10219.2	143.38	274	0.0668100	13372.8	11097.8	149.55
205	0.0895311	11929.4	10231.8	143.48	275	0.0665657	13393.7	11110.4	149.63
206	0.0890908	11950.4	10244.4	143.58	276	0.0663231	13414.6	11122.9	149.70
207	0.0886549	11971.4	10257.0	143.68	277	0.0660824	13435.4	11135.4	149.78
208	0.0882232	11992.4	10269.6	143.79	278	0.0658433	13456.3	11147.9	149.85
209	0.0877958	12013.3	10282.2	143.89	279	0.0656060	13477.2	11160.5	149.93
210	0.0873725	12034.3	10294.7	143.99	280	0.0653704	13498.1	11173.0	150.00
211	0.0869534	12055.3	10307.3	144.09	281	0.0651365	13518.9	11185.5	150.08
212	0.0865383	12076.2	10319.9	144.18	282	0.0649043	13539.8	11198.0	150.15
213	0.0861272	12097.2	10332.5	144.28	283	0.0646738	13560.7	11210.5	150.22
214	0.0857200	12118.2	10345.0	144.38	284	0.0644448	13581.5	11223.1	150.30
215	0.0853167	12139.1	10357.6	144.48	285	0.0642175	13602.4	11235.6	150.37
216	0.0849172	12160.1	10370.2	144.58	286	0.0639919	13623.3	11248.1	150.44
217	0.0845214	12181.0	10382.8	144.67	287	0.0637678	13644.1	11260.6	150.52
218	0.0841294	12202.0	10395.3	144.77	288	0.0635452	13665.0	11273.1	150.59
219	0.0837410	12222.9	10407.9	144.87	289	0.0633242	13685.9	11285.7	150.66
220	0.0833562	12243.9	10420.5	144.96	290	0.0631048	13706.7	11298.2	150.73
221	0.0829750	12264.8	10433.0	145.06	291	0.0628869	13727.6	11310.7	150.81
222	0.0825973	12285.8	10445.6	145.15	292	0.0626705	13748.5	11323.2	150.88
223	0.0822230	12306.7	10458.2	145.24	293	0.0624556	13769.3	11335.7	150.95
224	0.0818522	12327.7	10470.7	145.34	294	0.0622421	13790.2	11348.2	151.02
225	0.0814847	12348.6	10483.3	145.43	295	0.0620301	13811.0	11360.8	151.09
226	0.0811205	12369.5	10495.9	145.52	296	0.0618196	13831.9	11373.3	151.16
227	0.0807596	12390.5	10508.4	145.62	297	0.0616105	13852.8	11385.8	151.23
228	0.0804019	12411.4	10521.0	145.71	298	0.0614028	13873.6	11398.3	151.30
229	0.0800474	12432.3	10533.6	145.80	299	0.0611965	13894.5	11410.8	151.37
230	0.0796960	12453.3	10546.1	145.89	300	0.0609916	13915.3	11423.3	151.44

2.00 ATMOSPHERE ISOBAR

	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
	86	35.0960	2916.4	2910.6	53.92
	87	34.9446	2962.1	2956.3	54.45
	88	34.7914	3008.0	3002.1	54.98
	89	34.6365	3054.0	3048.2	55.50
	90	34.4799	3100.3	3094.5	56.01
	91	34.3216	3146.8	3140.9	56.53
	92	34.1616	3193.5	3187.6	57.04
	93	33.9999	3240.4	3234.4	57.55
	94	33.8366	3287.4	3281.4	58.05
*	94.393	33.7719	3306.0	3300.0	58.25
*	94.393	0.273070	9537.2	8795.0	124.26
	95	0.271039	9551.0	8803.3	124.40
	96	0.267765	9573.8	8816.9	124.64
	97	0.264577	9596.5	8830.6	124.88
	98	0.261472	9619.2	8844.2	125.11
	99	0.258447	9641.9	8857.7	125.34
	100	0.255498	9664.4	8871.3	125.57
	101	0.252622	9687.0	8884.8	125.79
	102	0.249817	9709.5	8898.3	126.01
	103	0.247079	9732.0	8911.8	126.23
	104	0.244406	9754.4	8925.2	126.45
	105	0.241795	9776.8	8938.6	126.66
	106	0.239245	9799.1	8952.1	126.88
	107	0.236752	9821.4	8965.4	127.09
	108	0.234315	9843.7	8978.8	127.29
	109	0.231932	9865.9	8992.2	127.50
	110	0.229601	9888.1	9005.5	127.70
	111	0.227319	9910.3	9018.8	127.90
	112	0.225086	9932.4	9032.1	128.10
	113	0.222900	9954.5	9045.4	128.30
	114	0.220759	9976.6	9058.6	128.49
	115	0.218661	9998.7	9071.9	128.68
	116	0.216606	10020.7	9085.1	128.87
	117	0.214592	10042.7	9098.3	129.06
	118	0.212617	10064.6	9111.5	129.25
	119	0.210681	10086.6	9124.7	129.43
	120	0.208782	10108.5	9137.8	129.62
	121	0.206919	10130.4	9151.0	129.80
	122	0.205091	10152.2	9164.1	129.98
	123	0.203296	10174.1	9177.2	130.16
	124	0.201535	10195.9	9190.3	130.33
	125	0.199806	10217.7	9203.4	130.51
	126	0.198108	10239.4	9216.5	130.68
	127	0.196440	10261.2	9229.5	130.86
	128	0.194801	10282.9	9242.6	131.03
	129	0.193191	10304.6	9255.6	131.19
	130	0.191609	10326.3	9268.7	131.36
	131	0.190054	10348.0	9281.7	131.53
	132	0.188525	10369.6	9294.7	131.69
	133	0.187022	10391.3	9307.7	131.86
	134	0.185543	10412.9	9320.7	132.02
	135	0.184089	10434.5	9333.6	132.18
	136	0.182659	10456.1	9346.6	132.34
	137	0.181251	10477.7	9359.6	132.50
	138	0.179866	10499.2	9372.5	132.65
	139	0.178503	10520.8	9385.4	132.81
	140	0.177162	10542.3	9398.4	132.96
	141	0.175841	10563.8	9411.3	133.12
	142	0.174540	10585.3	9424.2	133.27
	143	0.173260	10606.8	9437.1	133.42
	144	0.171999	10628.2	9450.0	133.57
	145	0.170756	10649.7	9462.9	133.72
	146	0.169533	10671.1	9475.8	133.86
	147	0.168327	10692.6	9488.6	134.01
	148	0.167139	10714.0	9501.5	134.16
	149	0.165968	10735.4	9514.4	134.30
	150	0.164814	10756.8	9527.2	134.44
	151	0.163677	10778.2	9540.0	134.58
	152	0.162555	10799.6	9552.9	134.73
	153	0.161450	10820.9	9565.7	134.87
	154	0.160360	10842.3	9578.5	135.01
	155	0.159285	10863.6	9591.3	135.14
	156	0.158225	10885.0	9604.2	135.28
	157	0.157179	10906.3	9617.0	135.42
	158	0.156147	10927.6	9629.8	135.55
	159	0.155129	10948.9	9642.6	135.69
	160	0.154125	10970.2	9655.3	135.82

* PHASE CHANGE

2.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.153134	10991.5	9668.1	135.95	231	0.105890	12468.2	10554.3	143.57
162	0.152157	11012.8	9680.9	136.08	232	0.105428	12489.1	10566.9	143.66
163	0.151191	11034.1	9693.7	136.22	233	0.104970	12510.1	10579.5	143.75
164	0.150239	11055.3	9706.4	136.35	234	0.104516	12531.1	10592.1	143.84
165	0.149299	11076.6	9719.2	136.47	235	0.104066	12552.0	10604.7	143.93
166	0.148370	11097.8	9732.0	136.60	236	0.103620	12573.0	10617.2	144.02
167	0.147454	11119.1	9744.7	136.73	237	0.103177	12594.0	10629.8	144.11
168	0.146549	11140.3	9757.5	136.86	238	0.102739	12614.9	10642.4	144.20
169	0.145655	11161.5	9770.2	136.98	239	0.102304	12635.9	10655.0	144.29
170	0.144772	11182.8	9782.9	137.11	240	0.101873	12656.8	10667.5	144.37
171	0.143901	11204.0	9795.7	137.23	241	0.101445	12677.8	10680.1	144.46
172	0.143040	11225.2	9808.4	137.36	242	0.101022	12698.7	10692.7	144.55
173	0.142189	11246.4	9821.1	137.48	243	0.100601	12719.7	10705.3	144.63
174	0.141349	11267.6	9833.8	137.60	244	0.100185	12740.6	10717.8	144.72
175	0.140519	11288.8	9846.6	137.72	245	0.0997717	12761.6	10730.4	144.80
176	0.139699	11309.9	9859.3	137.84	246	0.0993618	12782.5	10743.0	144.89
177	0.138888	11331.1	9872.0	137.96	247	0.0989553	12803.5	10755.5	144.98
178	0.138088	11352.3	9884.7	138.08	248	0.0985522	12824.4	10768.1	145.06
179	0.137296	11373.4	9897.4	138.20	249	0.0981524	12845.4	10780.7	145.14
180	0.136514	11394.6	9910.1	138.32	250	0.0977558	12866.3	10793.2	145.23
181	0.135741	11415.7	9922.8	138.44	251	0.0973624	12887.2	10805.8	145.31
182	0.134976	11436.9	9935.5	138.55	252	0.0969723	12908.2	10818.4	145.39
183	0.134221	11458.0	9948.2	138.67	253	0.0965852	12929.1	10830.9	145.48
184	0.133474	11479.2	9960.9	138.78	254	0.0962013	12950.0	10843.5	145.56
185	0.132735	11500.3	9973.5	138.90	255	0.0958204	12971.0	10856.0	145.64
186	0.132005	11521.4	9986.2	139.01	256	0.0954426	12991.9	10868.6	145.72
187	0.131283	11542.5	9998.9	139.13	257	0.0950678	13012.8	10881.1	145.81
188	0.130569	11563.7	10011.6	139.24	258	0.0946959	13033.8	10893.7	145.89
189	0.129862	11584.8	10024.2	139.35	259	0.0943269	13054.7	10906.3	145.97
190	0.129164	11605.9	10036.9	139.46	260	0.0939609	13075.6	10918.8	146.05
191	0.128473	11627.0	10049.6	139.57	261	0.0935976	13096.5	10931.4	146.13
192	0.127790	11648.1	10062.2	139.68	262	0.0932372	13117.5	10943.9	146.21
193	0.127114	11669.2	10074.9	139.79	263	0.0928796	13138.4	10956.5	146.29
194	0.126445	11690.3	10087.5	139.90	264	0.0925248	13159.3	10969.0	146.37
195	0.125783	11711.3	10100.2	140.01	265	0.0921726	13180.2	10981.6	146.45
196	0.125128	11732.4	10112.9	140.12	266	0.0918232	13201.1	10994.1	146.53
197	0.124481	11753.5	10125.5	140.22	267	0.0914764	13222.0	11006.7	146.60
198	0.123840	11774.6	10138.1	140.33	268	0.0911323	13243.0	11019.2	146.68
199	0.123205	11795.6	10150.8	140.44	269	0.0907907	13263.9	11031.8	146.76
200	0.122578	11816.7	10163.4	140.54	270	0.0904517	13284.8	11044.3	146.84
201	0.121956	11837.8	10176.1	140.65	271	0.0901153	13305.7	11056.8	146.92
202	0.121342	11858.8	10188.7	140.75	272	0.0897813	13326.6	11069.4	146.99
203	0.120733	11879.9	10201.3	140.86	273	0.0894499	13347.5	11081.9	147.07
204	0.120130	11900.9	10214.0	140.96	274	0.0891209	13368.4	11094.5	147.15
205	0.119534	11922.0	10226.6	141.06	275	0.0887943	13389.3	11107.0	147.22
206	0.118944	11943.0	10239.2	141.17	276	0.0884702	13410.2	11119.6	147.30
207	0.118359	11964.1	10251.9	141.27	277	0.0881484	13431.1	11132.1	147.37
208	0.117780	11985.1	10264.5	141.37	278	0.0878289	13452.0	11144.6	147.45
209	0.117207	12006.1	10277.1	141.47	279	0.0875118	13472.9	11157.2	147.52
210	0.116640	12027.2	10289.7	141.57	280	0.0871970	13493.8	11169.7	147.60
211	0.116078	12048.2	10302.3	141.67	281	0.0868844	13514.7	11182.3	147.67
212	0.115522	12069.2	10315.0	141.77	282	0.0865741	13535.6	11194.8	147.75
213	0.114971	12090.2	10327.6	141.87	283	0.0862661	13556.5	11207.3	147.82
214	0.114425	12111.3	10340.2	141.97	284	0.0859602	13577.4	11219.9	147.89
215	0.113885	12132.3	10352.8	142.06	285	0.0856565	13598.3	11232.4	147.97
216	0.113349	12153.3	10365.4	142.16	286	0.0853549	13619.2	11244.9	148.04
217	0.112819	12174.3	10378.0	142.26	287	0.0850555	13640.1	11257.5	148.11
218	0.112294	12195.3	10390.6	142.36	288	0.0847582	13661.0	11270.0	148.19
219	0.111774	12216.3	10403.2	142.45	289	0.0844630	13681.9	11282.5	148.26
220	0.111258	12237.3	10415.8	142.55	290	0.0841698	13702.8	11295.1	148.33
221	0.110747	12258.3	10428.4	142.64	291	0.0838787	13723.7	11307.6	148.40
222	0.110242	12279.3	10441.0	142.74	292	0.0835896	13744.6	11320.1	148.48
223	0.109740	12300.3	10453.6	142.83	293	0.0833024	13765.4	11332.7	148.55
224	0.109244	12321.3	10466.2	142.93	294	0.0830173	13786.3	11345.2	148.62
225	0.108751	12342.3	10478.8	143.02	295	0.0827341	13807.2	11357.7	148.69
226	0.108264	12363.3	10491.4	143.11	296	0.0824529	13828.1	11370.3	148.76
227	0.107781	12384.2	10504.0	143.21	297	0.0821736	13849.0	11382.8	148.83
228	0.107302	12405.2	10516.6	143.30	298	0.0818961	13869.9	11395.3	148.90
229	0.106827	12426.2	10529.2	143.39	299	0.0816206	13890.7	11407.9	148.97
230	0.106357	12447.2	10541.8	143.48	300	0.0813469	13911.6	11420.4	149.04

3.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.1036	2918.2	2909.6	53.91
87	34.9524	2963.9	2955.2	54.44
88	34.7994	3009.7	3001.0	54.96
89	34.6447	3055.8	3047.0	55.48
90	34.4883	3102.1	3093.2	56.00
91	34.3301	3148.5	3139.7	56.51
92	34.1703	3195.2	3186.3	57.02
93	34.0089	3242.0	3233.1	57.53
94	33.8458	3289.0	3280.1	58.03
95	33.6811	3336.3	3327.2	58.53
96	33.5147	3383.6	3374.6	59.03
97	33.3466	3431.2	3422.1	59.52
98	33.1768	3478.9	3469.8	60.01
99	33.0053	3526.8	3517.6	60.50
* 99.156	32.9783	3534.3	3525.1	60.57
* 99.156	0.397624	9587.3	8822.8	121.62
100	0.393495	9607.3	8834.8	121.82
101	0.388728	9631.0	8849.0	122.06
102	0.384092	9654.6	8863.2	122.29
103	0.379583	9678.2	8877.3	122.52
104	0.375193	9701.6	8891.4	122.74
105	0.370918	9725.0	8905.5	122.97
106	0.366753	9748.3	8919.5	123.19
107	0.362693	9771.6	8933.4	123.41
108	0.358733	9794.7	8947.4	123.62
109	0.354870	9817.9	8961.2	123.84
110	0.351100	9840.9	8975.1	124.05
111	0.347418	9863.9	8988.9	124.25
112	0.343822	9886.8	9002.7	124.46
113	0.340309	9909.7	9016.5	124.66
114	0.336874	9932.6	9030.2	124.87
115	0.333516	9955.3	9043.9	125.06
116	0.330231	9978.1	9057.5	125.26
117	0.327017	10000.7	9071.2	125.46
118	0.323871	10023.4	9084.8	125.65
119	0.320791	10046.0	9098.4	125.84
120	0.317775	10068.5	9111.9	126.03
121	0.314821	10091.0	9125.5	126.21
122	0.311926	10113.5	9139.0	126.40
123	0.309089	10135.9	9152.5	126.58
124	0.306307	10158.3	9165.9	126.76
125	0.303580	10180.7	9179.4	126.94
126	0.300904	10203.0	9192.8	127.12
127	0.298280	10225.3	9206.2	127.30
128	0.295704	10247.5	9219.6	127.47
129	0.293176	10269.8	9232.9	127.64
130	0.290695	10292.0	9246.3	127.82
131	0.288258	10314.1	9259.6	127.99
132	0.285865	10336.3	9272.9	128.15
133	0.283514	10358.4	9286.2	128.32
134	0.281205	10380.4	9299.4	128.49
135	0.278935	10402.5	9312.7	128.65
136	0.276704	10424.5	9325.9	128.81
137	0.274511	10446.5	9339.1	128.97
138	0.272355	10468.5	9352.3	129.13
139	0.270234	10490.4	9365.5	129.29
140	0.268149	10512.3	9378.7	129.45
141	0.266097	10534.2	9391.9	129.61
142	0.264079	10556.1	9405.0	129.76
143	0.262093	10578.0	9418.1	129.91
144	0.260138	10599.8	9431.3	130.07
145	0.258214	10621.6	9444.4	130.22
146	0.256320	10643.4	9457.5	130.37
147	0.254454	10665.2	9470.6	130.52
148	0.252618	10687.0	9483.6	130.66
149	0.250809	10708.7	9496.7	130.81
150	0.249027	10730.4	9509.7	130.95
151	0.247272	10752.1	9522.8	131.10
152	0.245542	10773.8	9535.8	131.24
153	0.243838	10795.5	9548.8	131.38
154	0.242158	10817.1	9561.8	131.52
155	0.240503	10838.8	9574.8	131.66
156	0.238871	10860.4	9587.8	131.80
157	0.237262	10882.0	9600.8	131.94
158	0.235675	10903.6	9613.8	132.08
159	0.234111	10925.2	9626.7	132.22
160	0.232568	10946.8	9639.7	132.35

* PHASE CHANGE

3.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.231046	10968.3	9652.6	132.48	231	0.159118	12456.1	10545.7	140.16
162	0.229545	10989.9	9665.6	132.62	232	0.158419	12477.2	10558.3	140.25
163	0.228064	11011.4	9678.5	132.75	233	0.157726	12498.2	10570.9	140.34
164	0.226603	11032.9	9691.4	132.88	234	0.157040	12519.3	10583.6	140.43
165	0.225162	11054.4	9704.3	133.01	235	0.156360	12540.3	10596.2	140.52
166	0.223739	11075.9	9717.2	133.14	236	0.155685	12561.4	10608.8	140.61
167	0.222335	11097.4	9730.1	133.27	237	0.155017	12582.4	10621.5	140.70
168	0.220949	11118.8	9743.0	133.40	238	0.154354	12603.5	10634.1	140.79
169	0.219581	11140.3	9755.9	133.53	239	0.153697	12624.5	10646.7	140.88
170	0.218230	11161.7	9768.8	133.65	240	0.153046	12645.6	10659.4	140.97
171	0.216896	11183.2	9781.7	133.78	241	0.152400	12666.6	10672.0	141.06
172	0.215580	11204.6	9794.5	133.90	242	0.151760	12687.7	10684.6	141.14
173	0.214279	11226.0	9807.4	134.03	243	0.151125	12708.7	10697.2	141.23
174	0.212995	11247.4	9820.2	134.15	244	0.150495	12729.7	10709.8	141.32
175	0.211727	11268.8	9833.1	134.27	245	0.149871	12750.8	10722.5	141.40
176	0.210474	11290.2	9845.9	134.40	246	0.149252	12771.8	10735.1	141.49
177	0.209237	11311.6	9858.8	134.52	247	0.148638	12792.8	10747.7	141.57
178	0.208014	11332.9	9871.6	134.64	248	0.148030	12813.8	10760.3	141.66
179	0.206806	11354.3	9884.4	134.76	249	0.147426	12834.9	10772.9	141.74
180	0.205613	11375.6	9897.2	134.88	250	0.146827	12855.9	10785.5	141.83
181	0.204434	11397.0	9910.0	134.99	251	0.146234	12876.9	10798.1	141.91
182	0.203268	11418.3	9922.8	135.11	252	0.145645	12897.9	10810.7	141.99
183	0.202116	11439.6	9935.6	135.23	253	0.145061	12918.9	10823.4	142.08
184	0.200978	11461.0	9948.4	135.35	254	0.144481	12939.9	10836.0	142.16
185	0.199852	11482.3	9961.2	135.46	255	0.143907	12960.9	10848.6	142.24
186	0.198740	11503.6	9974.0	135.58	256	0.143336	12981.9	10861.2	142.32
187	0.197640	11524.9	9986.8	135.69	257	0.142771	13002.9	10873.8	142.41
188	0.196553	11546.1	9999.6	135.80	258	0.142210	13023.9	10886.4	142.49
189	0.195478	11567.4	10012.3	135.92	259	0.141653	13044.9	10899.0	142.57
190	0.194415	11588.7	10025.1	136.03	260	0.141101	13065.9	10911.5	142.65
191	0.193364	11610.0	10037.9	136.14	261	0.140553	13086.9	10924.1	142.73
192	0.192324	11631.2	10050.6	136.25	262	0.140010	13107.9	10936.7	142.81
193	0.191296	11652.5	10063.4	136.36	263	0.139470	13128.9	10949.3	142.89
194	0.190279	11673.7	10076.1	136.47	264	0.138935	13149.9	10961.9	142.97
195	0.189273	11694.9	10088.9	136.58	265	0.138404	13170.8	10974.5	143.05
196	0.188278	11716.2	10101.6	136.69	266	0.137877	13191.8	10987.1	143.13
197	0.187294	11737.4	10114.4	136.80	267	0.137354	13212.8	10999.7	143.21
198	0.186320	11758.6	10127.1	136.90	268	0.136835	13233.8	11012.3	143.29
199	0.185356	11779.8	10139.8	137.01	269	0.136320	13254.8	11024.9	143.36
200	0.184403	11801.0	10152.6	137.12	270	0.135809	13275.7	11037.4	143.44
201	0.183460	11822.2	10165.3	137.22	271	0.135302	13296.7	11050.0	143.52
202	0.182526	11843.4	10178.0	137.33	272	0.134799	13317.7	11062.6	143.60
203	0.181602	11864.6	10190.7	137.43	273	0.134299	13338.7	11075.2	143.67
204	0.180688	11885.8	10203.4	137.54	274	0.133803	13359.6	11087.8	143.75
205	0.179783	11907.0	10216.2	137.64	275	0.133311	13380.6	11100.3	143.83
206	0.178887	11928.2	10228.9	137.74	276	0.132823	13401.5	11112.9	143.90
207	0.178000	11949.3	10241.6	137.85	277	0.132338	13422.5	11125.5	143.98
208	0.177123	11970.5	10254.3	137.95	278	0.131856	13443.5	11138.1	144.05
209	0.176254	11991.7	10267.0	138.05	279	0.131379	13464.4	11150.6	144.13
210	0.175393	12012.8	10279.7	138.15	280	0.130904	13485.4	11163.2	144.20
211	0.174542	12034.0	10292.4	138.25	281	0.130433	13506.3	11175.8	144.28
212	0.173698	12055.1	10305.0	138.35	282	0.129966	13527.3	11188.4	144.35
213	0.172863	12076.2	10317.7	138.45	283	0.129502	13548.3	11200.9	144.43
214	0.172036	12097.4	10330.4	138.55	284	0.129041	13569.2	11213.5	144.50
215	0.171217	12118.5	10343.1	138.65	285	0.128583	13590.2	11226.1	144.57
216	0.170406	12139.6	10355.8	138.75	286	0.128129	13611.1	11238.6	144.65
217	0.169603	12160.8	10368.5	138.84	287	0.127678	13632.0	11251.2	144.72
218	0.168808	12181.9	10381.1	138.94	288	0.127230	13653.0	11263.8	144.79
219	0.168020	12203.0	10393.8	139.04	289	0.126786	13673.9	11276.3	144.87
220	0.167240	12224.1	10406.5	139.13	290	0.126344	13694.9	11288.9	144.94
221	0.166466	12245.2	10419.1	139.23	291	0.125906	13715.8	11301.5	145.01
222	0.165701	12266.3	10431.8	139.32	292	0.125470	13736.8	11314.0	145.08
223	0.164942	12287.4	10444.5	139.42	293	0.125038	13757.7	11326.6	145.15
224	0.164190	12308.5	10457.1	139.51	294	0.124609	13778.6	11339.1	145.23
225	0.163446	12329.6	10469.8	139.61	295	0.124182	13799.6	11351.7	145.30
226	0.162708	12350.7	10482.4	139.70	296	0.123759	13820.5	11364.3	145.37
227	0.161977	12371.8	10495.1	139.79	297	0.123338	13841.4	11376.8	145.44
228	0.161252	12392.9	10507.7	139.89	298	0.122921	13862.4	11389.4	145.51
229	0.160534	12413.9	10520.4	139.98	299	0.122506	13883.3	11401.9	145.58
230	0.159823	12435.0	10533.0	140.07	300	0.122094	13904.2	11414.5	145.65

4.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.1113	2920.0	2908.5	53.90
87	34.9602	2965.7	2954.1	54.43
88	34.8074	3011.5	2999.9	54.95
89	34.6529	3057.6	3045.9	55.47
90	34.4966	3103.8	3092.0	55.99
91	34.3387	3150.2	3138.4	56.50
92	34.1791	3196.9	3185.0	57.01
93	34.0179	3243.7	3231.8	57.52
94	33.8550	3290.7	3278.7	58.02
95	33.6906	3337.9	3325.8	58.52
96	33.5244	3385.2	3373.1	59.01
97	33.3566	3432.7	3420.6	59.51
98	33.1871	3480.4	3468.2	60.00
99	33.0158	3528.3	3516.0	60.48
100	32.8428	3576.3	3564.0	60.97
101	32.6679	3624.5	3612.1	61.44
102	32.4911	3672.9	3660.4	61.92
* 102.855	32.3384	3714.3	3701.8	62.33
* 102.855	0.520302	9617.6	8838.6	119.72
103	0.519345	9621.2	8840.8	119.75
104	0.512883	9645.9	8855.6	119.99
105	0.506612	9670.4	8870.4	120.23
106	0.500522	9694.9	8885.1	120.46
107	0.494603	9719.2	8899.7	120.69
108	0.488849	9743.4	8914.3	120.91
109	0.483250	9767.5	8928.8	121.14
110	0.477800	9791.6	8943.3	121.36
111	0.472493	9815.5	8957.7	121.57
112	0.467321	9839.3	8972.0	121.79
113	0.462279	9863.1	8986.3	122.00
114	0.457361	9886.8	9000.6	122.21
115	0.452563	9910.4	9014.8	122.41
116	0.447879	9933.9	9029.0	122.62
117	0.443305	9957.4	9043.1	122.82
118	0.438837	9980.8	9057.2	123.02
119	0.434469	10004.1	9071.2	123.21
120	0.430200	10027.3	9085.2	123.41
121	0.426024	10050.5	9099.2	123.60
122	0.421939	10073.7	9113.1	123.79
123	0.417941	10096.7	9127.0	123.98
124	0.414028	10119.8	9140.8	124.17
125	0.410196	10142.7	9154.6	124.35
126	0.406442	10165.7	9168.4	124.53
127	0.402764	10188.5	9182.2	124.71
128	0.399159	10211.3	9195.9	124.89
129	0.395625	10234.1	9209.6	125.07
130	0.392160	10256.8	9223.3	125.24
131	0.388762	10279.5	9236.9	125.42
132	0.385427	10302.2	9250.6	125.59
133	0.382155	10324.7	9264.2	125.76
134	0.378944	10347.3	9277.7	125.93
135	0.375791	10369.8	9291.3	126.10
136	0.372695	10392.3	9304.8	126.26
137	0.369654	10414.8	9318.3	126.43
138	0.366667	10437.2	9331.8	126.59
139	0.363733	10459.5	9345.2	126.75
140	0.360848	10481.9	9358.7	126.91
141	0.358013	10504.2	9372.1	127.07
142	0.355226	10526.5	9385.5	127.23
143	0.352486	10548.7	9398.9	127.39
144	0.349790	10571.0	9412.2	127.54
145	0.347139	10593.1	9425.6	127.69
146	0.344531	10615.3	9438.9	127.85
147	0.341965	10637.4	9452.2	128.00
148	0.339439	10659.6	9465.5	128.15
149	0.336953	10681.6	9478.8	128.30
150	0.334506	10703.7	9492.0	128.44
151	0.332097	10725.7	9505.3	128.59
152	0.329724	10747.7	9518.5	128.73
153	0.327388	10769.7	9531.7	128.88
154	0.325086	10791.7	9544.9	129.02
155	0.322819	10813.7	9558.1	129.16
156	0.320585	10835.6	9571.3	129.31
157	0.318384	10857.5	9584.5	129.45
158	0.316215	10879.4	9597.6	129.58
159	0.314076	10901.2	9610.7	129.72
160	0.311969	10923.1	9623.9	129.86

* PHASE CHANGE

4.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.309891	10944.9	9637.0	130.00	231	0.212534	12444.0	10537.0	137.73
162	0.307842	10966.7	9650.1	130.13	232	0.211595	12465.2	10549.7	137.82
163	0.305821	10988.5	9663.2	130.26	233	0.210664	12486.3	10562.4	137.92
164	0.303829	11010.3	9676.3	130.40	234	0.209742	12507.5	10575.0	138.01
165	0.301863	11032.0	9689.3	130.53	235	0.208828	12528.6	10587.7	138.10
166	0.299924	11053.8	9702.4	130.66	236	0.207922	12549.8	10600.4	138.19
167	0.298012	11075.5	9715.4	130.79	237	0.207024	12570.9	10613.1	138.28
168	0.296124	11097.2	9728.5	130.92	238	0.206134	12592.1	10625.8	138.36
169	0.294262	11118.9	9741.5	131.05	239	0.205251	12613.2	10638.5	138.45
170	0.292424	11140.6	9754.5	131.18	240	0.204376	12634.3	10651.2	138.54
171	0.290611	11162.2	9767.5	131.30	241	0.203509	12655.4	10663.8	138.63
172	0.288820	11183.9	9780.5	131.43	242	0.202649	12676.6	10676.5	138.72
173	0.287053	11205.5	9793.5	131.56	243	0.201797	12697.7	10689.2	138.80
174	0.285308	11227.1	9806.5	131.68	244	0.200952	12718.8	10701.8	138.89
175	0.283585	11248.7	9819.5	131.80	245	0.200114	12739.9	10714.5	138.98
176	0.281884	11270.3	9832.5	131.93	246	0.199283	12761.0	10727.2	139.06
177	0.280204	11291.9	9845.4	132.05	247	0.198460	12782.1	10739.8	139.15
178	0.278545	11313.5	9858.4	132.17	248	0.197643	12803.2	10752.5	139.23
179	0.276906	11335.0	9871.3	132.29	249	0.196833	12824.3	10765.2	139.32
180	0.275288	11356.6	9884.3	132.41	250	0.196029	12845.4	10777.8	139.40
181	0.273688	11378.1	9897.2	132.53	251	0.195233	12866.5	10790.5	139.49
182	0.272109	11399.6	9910.1	132.65	252	0.194443	12887.6	10803.1	139.57
183	0.270548	11421.1	9923.0	132.77	253	0.193659	12908.7	10815.8	139.65
184	0.269005	11442.6	9935.9	132.89	254	0.192882	12929.8	10828.4	139.74
185	0.267481	11464.1	9948.8	133.00	255	0.192111	12950.8	10841.1	139.82
186	0.265974	11485.6	9961.7	133.12	256	0.191346	12971.9	10853.7	139.90
187	0.264486	11507.1	9974.6	133.23	257	0.190588	12993.0	10866.4	139.99
188	0.263014	11528.5	9987.5	133.35	258	0.189835	13014.1	10879.0	140.07
189	0.261559	11550.0	10000.4	133.46	259	0.189089	13035.1	10891.6	140.15
190	0.260121	11571.4	10013.3	133.57	260	0.188348	13056.2	10904.3	140.23
191	0.258699	11592.8	10026.1	133.69	261	0.187614	13077.3	10916.9	140.31
192	0.257293	11614.3	10039.0	133.80	262	0.186885	13098.3	10929.5	140.39
193	0.255903	11635.7	10051.8	133.91	263	0.186162	13119.4	10942.2	140.47
194	0.254529	11657.1	10064.7	134.02	264	0.185445	13140.4	10954.8	140.55
195	0.253169	11678.5	10077.5	134.13	265	0.184733	13161.5	10967.4	140.63
196	0.251825	11699.8	10090.4	134.24	266	0.184027	13182.5	10980.1	140.71
197	0.250495	11721.2	10103.2	134.35	267	0.183326	13203.6	10992.7	140.79
198	0.249180	11742.6	10116.0	134.46	268	0.182630	13224.6	11005.3	140.87
199	0.247879	11764.0	10128.8	134.56	269	0.181940	13245.7	11017.9	140.95
200	0.246591	11785.3	10141.7	134.67	270	0.181255	13266.7	11030.6	141.02
201	0.245318	11806.6	10154.5	134.78	271	0.180576	13287.7	11043.2	141.10
202	0.244058	11828.0	10167.3	134.88	272	0.179901	13308.8	11055.8	141.18
203	0.242811	11849.3	10180.1	134.99	273	0.179232	13329.8	11068.4	141.26
204	0.241578	11870.6	10192.9	135.09	274	0.178568	13350.8	11081.0	141.33
205	0.240357	11891.9	10205.7	135.20	275	0.177908	13371.8	11093.6	141.41
206	0.239149	11913.3	10218.5	135.30	276	0.177254	13392.9	11106.3	141.49
207	0.237953	11934.6	10231.2	135.40	277	0.176604	13413.9	11118.9	141.56
208	0.236770	11955.9	10244.0	135.51	278	0.175960	13434.9	11131.5	141.64
209	0.235599	11977.1	10256.8	135.61	279	0.175320	13455.9	11144.1	141.71
210	0.234439	11998.4	10269.6	135.71	280	0.174684	13476.9	11156.7	141.79
211	0.233291	12019.7	10282.3	135.81	281	0.174054	13498.0	11169.3	141.86
212	0.232155	12041.0	10295.1	135.91	282	0.173428	13519.0	11181.9	141.94
213	0.231030	12062.2	10307.9	136.01	283	0.172806	13540.0	11194.5	142.01
214	0.229916	12083.5	10320.6	136.11	284	0.172189	13561.0	11207.1	142.09
215	0.228813	12104.7	10333.4	136.21	285	0.171577	13582.0	11219.7	142.16
216	0.227721	12126.0	10346.1	136.31	286	0.170968	13603.0	11232.3	142.23
217	0.226640	12147.2	10358.9	136.41	287	0.170365	13624.0	11244.9	142.31
218	0.225569	12168.4	10371.6	136.51	288	0.169765	13645.0	11257.5	142.38
219	0.224508	12189.7	10384.3	136.60	289	0.169170	13666.0	11270.1	142.45
220	0.223458	12210.9	10397.1	136.70	290	0.168579	13687.0	11282.7	142.53
221	0.222418	12232.1	10409.8	136.80	291	0.167992	13708.0	11295.3	142.60
222	0.221387	12253.3	10422.5	136.89	292	0.167409	13729.0	11307.9	142.67
223	0.220366	12274.5	10435.3	136.99	293	0.166831	13750.0	11320.5	142.74
224	0.219355	12295.7	10448.0	137.08	294	0.166256	13770.9	11333.1	142.81
225	0.218353	12316.9	10460.7	137.18	295	0.165685	13791.9	11345.7	142.88
226	0.217361	12338.1	10473.4	137.27	296	0.165119	13812.9	11358.2	142.96
227	0.216378	12359.3	10486.1	137.36	297	0.164556	13833.9	11370.8	143.03
228	0.215404	12380.5	10498.8	137.46	298	0.163997	13854.9	11383.4	143.10
229	0.214438	12401.7	10511.6	137.55	299	0.163442	13875.9	11396.0	143.17
230	0.213482	12422.8	10524.3	137.64	300	0.162890	13896.8	11408.6	143.24

5.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.1189	2921.9	2907.4	53.89
87	34.9680	2967.5	2953.0	54.41
88	34.8154	3013.3	2998.7	54.94
89	34.6610	3059.3	3044.7	55.46
90	34.5050	3105.5	3090.8	55.97
91	34.3472	3151.9	3137.2	56.49
92	34.1879	3198.5	3183.7	57.00
93	34.0269	3245.3	3230.5	57.50
94	33.8642	3292.3	3277.4	58.01
95	33.7000	3339.5	3324.4	58.50
96	33.5341	3386.8	3371.7	59.00
97	33.3665	3434.3	3419.1	59.49
98	33.1973	3482.0	3466.7	59.98
99	33.0263	3529.8	3514.5	60.47
100	32.8536	3577.8	3562.4	60.95
101	32.6790	3625.9	3610.4	61.43
102	32.5026	3674.3	3658.7	61.90
103	32.3242	3722.8	3707.1	62.38
104	32.1437	3771.4	3755.6	62.85
105	31.9612	3820.2	3804.4	63.31
* 105.926	31.7901	3865.6	3849.7	63.74
* 105.926	0.642163	9636.4	8847.5	118.22
106	0.641553	9638.3	8848.6	118.24
107	0.633400	9663.9	8864.1	118.48
108	0.625501	9689.4	8879.4	118.72
109	0.617842	9714.7	8894.7	118.95
110	0.610410	9739.9	8909.8	119.18
111	0.603193	9764.9	8924.9	119.41
112	0.596181	9789.7	8939.9	119.63
113	0.589364	9814.5	8954.9	119.85
114	0.582732	9839.1	8969.7	120.07
115	0.576276	9863.7	8984.5	120.28
116	0.569989	9888.1	8999.2	120.49
117	0.563862	9912.4	9013.9	120.70
118	0.557890	9936.6	9028.5	120.91
119	0.552064	9960.8	9043.0	121.11
120	0.546380	9984.8	9057.5	121.31
121	0.540831	10008.7	9072.0	121.51
122	0.535412	10032.6	9086.3	121.71
123	0.530117	10056.4	9100.7	121.90
124	0.524942	10080.1	9115.0	122.10
125	0.519883	10103.7	9129.2	122.29
126	0.514934	10127.3	9143.4	122.47
127	0.510092	10150.8	9157.5	122.66
128	0.505353	10174.2	9171.7	122.84
129	0.500714	10197.6	9185.7	123.02
130	0.496170	10220.9	9199.8	123.20
131	0.491718	10244.1	9213.8	123.38
132	0.487357	10267.3	9227.7	123.56
133	0.483081	10290.4	9241.7	123.73
134	0.478889	10313.5	9255.5	123.91
135	0.474778	10336.5	9269.4	124.08
136	0.470745	10359.5	9283.2	124.25
137	0.466788	10382.4	9297.0	124.41
138	0.462904	10405.3	9310.8	124.58
139	0.459092	10428.1	9324.5	124.75
140	0.455349	10450.9	9338.3	124.91
141	0.451673	10473.6	9352.0	125.07
142	0.448061	10496.3	9365.6	125.23
143	0.444513	10519.0	9379.3	125.39
144	0.441027	10541.6	9392.9	125.55
145	0.437599	10564.2	9406.5	125.70
146	0.434230	10586.8	9420.0	125.86
147	0.430918	10609.3	9433.6	126.01
148	0.427660	10631.8	9447.1	126.17
149	0.424455	10654.2	9460.6	126.32
150	0.421303	10676.6	9474.1	126.47
151	0.418201	10699.0	9487.5	126.62
152	0.415148	10721.4	9501.0	126.76
153	0.412143	10743.7	9514.4	126.91
154	0.409185	10766.0	9527.8	127.05
155	0.406273	10788.2	9541.2	127.20
156	0.403405	10810.5	9554.6	127.34
157	0.400580	10832.7	9567.9	127.48
158	0.397798	10854.8	9581.2	127.62
159	0.395057	10877.0	9594.6	127.76
160	0.392357	10899.1	9607.9	127.90

* PHASE CHANGE

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5.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.389696	10921.2	9621.2	128.04	231	0.266141	12431.9	10528.2	135.84
162	0.387073	10943.3	9634.4	128.18	232	0.264958	12453.1	10541.0	135.93
163	0.384488	10965.4	9647.7	128.31	233	0.263785	12474.4	10553.7	136.02
164	0.381939	10987.4	9660.9	128.45	234	0.262623	12495.6	10566.5	136.11
165	0.379427	11009.4	9674.2	128.58	235	0.261472	12516.9	10579.2	136.21
166	0.376949	11031.4	9687.4	128.71	236	0.260330	12538.1	10592.0	136.30
167	0.374506	11053.4	9700.6	128.85	237	0.259199	12559.4	10604.7	136.39
168	0.372096	11075.4	9713.8	128.98	238	0.258078	12580.6	10617.5	136.47
169	0.369719	11097.3	9727.0	129.11	239	0.256967	12601.8	10630.2	136.56
170	0.367374	11119.2	9740.1	129.24	240	0.255866	12623.0	10642.9	136.65
171	0.365061	11141.1	9753.3	129.37	241	0.254774	12644.2	10655.7	136.74
172	0.362778	11163.0	9766.4	129.49	242	0.253692	12665.4	10668.4	136.83
173	0.360526	11184.8	9779.6	129.62	243	0.252619	12686.7	10681.1	136.92
174	0.358302	11206.7	9792.7	129.75	244	0.251555	12707.9	10693.8	137.00
175	0.356108	11228.5	9805.8	129.87	245	0.250501	12729.0	10706.5	137.09
176	0.353942	11250.3	9818.9	129.99	246	0.249455	12750.2	10719.3	137.18
177	0.351804	11272.1	9832.0	130.12	247	0.248419	12771.4	10732.0	137.26
178	0.349692	11293.9	9845.1	130.24	248	0.247391	12792.6	10744.7	137.35
179	0.347608	11315.6	9858.1	130.36	249	0.246372	12813.8	10757.4	137.43
180	0.345549	11337.4	9871.2	130.48	250	0.245361	12835.0	10770.1	137.52
181	0.343516	11359.1	9884.2	130.60	251	0.244359	12856.1	10782.8	137.60
182	0.341508	11380.8	9897.3	130.72	252	0.243366	12877.3	10795.5	137.69
183	0.339524	11402.5	9910.3	130.84	253	0.242380	12898.5	10808.2	137.77
184	0.337565	11424.2	9923.3	130.96	254	0.241403	12919.6	10820.9	137.85
185	0.335629	11445.9	9936.4	131.08	255	0.240433	12940.8	10833.6	137.94
186	0.333717	11467.5	9949.4	131.20	256	0.239472	12961.9	10846.3	138.02
187	0.331827	11489.2	9962.4	131.31	257	0.238518	12983.1	10858.9	138.10
188	0.329959	11510.8	9975.4	131.43	258	0.237572	13004.2	10871.6	138.18
189	0.328113	11532.4	9988.3	131.54	259	0.236634	13025.3	10884.3	138.27
190	0.326289	11554.0	10001.3	131.66	260	0.235703	13046.5	10897.0	138.35
191	0.324486	11575.6	10014.3	131.77	261	0.234780	13067.6	10909.7	138.43
192	0.322704	11597.2	10027.2	131.88	262	0.233864	13088.7	10922.3	138.51
193	0.320942	11618.8	10040.2	131.99	263	0.232955	13109.9	10935.0	138.59
194	0.319200	11640.4	10053.1	132.11	264	0.232053	13131.0	10947.7	138.67
195	0.317477	11661.9	10066.1	132.22	265	0.231159	13152.1	10960.4	138.75
196	0.315774	11683.5	10079.0	132.33	266	0.230271	13173.2	10973.0	138.83
197	0.314090	11705.0	10091.9	132.44	267	0.229391	13194.3	10985.7	138.91
198	0.312424	11726.5	10104.9	132.54	268	0.228517	13215.4	10998.4	138.99
199	0.310777	11748.0	10117.8	132.65	269	0.227650	13236.5	11011.0	139.07
200	0.309148	11769.5	10130.7	132.76	270	0.226790	13257.6	11023.7	139.14
201	0.307536	11791.0	10143.6	132.87	271	0.225936	13278.7	11036.3	139.22
202	0.305942	11812.5	10156.5	132.97	272	0.225089	13299.8	11049.0	139.30
203	0.304365	11833.9	10169.4	133.08	273	0.224248	13320.9	11061.6	139.38
204	0.302804	11855.4	10182.2	133.19	274	0.223414	13342.0	11074.3	139.45
205	0.301261	11876.9	10195.1	133.29	275	0.222586	13363.1	11086.9	139.53
206	0.299733	11898.3	10208.0	133.40	276	0.221764	13384.2	11099.6	139.61
207	0.298221	11919.7	10220.9	133.50	277	0.220948	13405.3	11112.2	139.68
208	0.296726	11941.2	10233.7	133.60	278	0.220138	13426.3	11124.9	139.76
209	0.295245	11962.6	10246.6	133.71	279	0.219335	13447.4	11137.5	139.84
210	0.293780	11984.0	10259.4	133.81	280	0.218537	13468.5	11150.2	139.91
211	0.292330	12005.4	10272.3	133.91	281	0.217745	13489.6	11162.8	139.99
212	0.290894	12026.8	10285.1	134.01	282	0.216959	13510.6	11175.5	140.06
213	0.289473	12048.2	10297.9	134.11	283	0.216179	13531.7	11188.1	140.14
214	0.288067	12069.5	10310.8	134.21	284	0.215405	13552.8	11200.7	140.21
215	0.286674	12090.9	10323.6	134.31	285	0.214636	13573.8	11213.4	140.28
216	0.285296	12112.3	10336.4	134.41	286	0.213872	13594.9	11226.0	140.36
217	0.283930	12133.6	10349.2	134.51	287	0.213114	13615.9	11238.6	140.43
218	0.282579	12155.0	10362.1	134.61	288	0.212362	13637.0	11251.3	140.50
219	0.281240	12176.3	10374.9	134.70	289	0.211615	13658.0	11263.9	140.58
220	0.279915	12197.6	10387.7	134.80	290	0.210873	13679.1	11276.5	140.65
221	0.278602	12219.0	10400.5	134.90	291	0.210137	13700.1	11289.1	140.72
222	0.277302	12240.3	10413.3	134.99	292	0.209405	13721.2	11301.8	140.79
223	0.276015	12261.6	10426.0	135.09	293	0.208679	13742.2	11314.4	140.87
224	0.274739	12282.9	10438.8	135.19	294	0.207958	13763.2	11327.0	140.94
225	0.273476	12304.2	10451.6	135.28	295	0.207242	13784.3	11339.6	141.01
226	0.272225	12325.5	10464.4	135.37	296	0.206531	13805.3	11352.2	141.08
227	0.270985	12346.8	10477.2	135.47	297	0.205825	13826.3	11364.8	141.15
228	0.269757	12368.1	10489.9	135.56	298	0.205124	13847.4	11377.5	141.22
229	0.268541	12389.3	10502.7	135.66	299	0.204428	13868.4	11390.1	141.29
230	0.267335	12410.6	10515.5	135.75	300	0.203736	13889.4	11402.7	141.36

6.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.1265	2923.7	2906.4	53.88
87	34.9758	2969.3	2951.9	54.40
88	34.8233	3015.1	2997.6	54.93
89	34.6692	3061.1	3043.5	55.45
90	34.5133	3107.3	3089.6	55.96
91	34.3557	3153.7	3136.0	56.47
92	34.1966	3200.2	3182.5	56.98
93	34.0358	3247.0	3229.1	57.49
94	33.8734	3293.9	3276.0	57.99
95	33.7094	3341.1	3323.0	58.49
96	33.5438	3388.4	3370.3	58.98
97	33.3765	3435.8	3417.6	59.48
98	33.2075	3483.5	3465.2	59.97
99	33.0368	3531.3	3512.9	60.45
100	32.8644	3579.2	3560.7	60.93
101	32.6901	3627.4	3608.8	61.41
102	32.5140	3675.7	3657.0	61.89
103	32.3360	3724.1	3705.3	62.36
104	32.1559	3772.7	3753.8	62.83
105	31.9738	3821.5	3802.5	63.30
106	31.7894	3870.4	3851.3	63.76
107	31.6028	3919.6	3900.3	64.22
108	31.4138	3968.9	3949.5	64.68
* 108.580	31.3031	3997.5	3978.1	64.94
* 108.580	0.763834	9647.7	8851.7	116.98
109	0.759613	9658.9	8858.5	117.08
110	0.749809	9685.4	8874.5	117.33
111	0.740324	9711.6	8890.4	117.56
112	0.731139	9737.7	8906.2	117.80
113	0.722237	9763.6	8921.8	118.03
114	0.713602	9789.4	8937.4	118.26
115	0.705222	9814.9	8952.8	118.48
116	0.697081	9840.4	8968.2	118.70
117	0.689169	9865.7	8983.5	118.92
118	0.681474	9890.8	8998.7	119.13
119	0.673986	9915.8	9013.8	119.34
120	0.666695	9940.7	9028.8	119.55
121	0.659592	9965.5	9043.8	119.76
122	0.652669	9990.2	9058.7	119.96
123	0.645918	10014.7	9073.5	120.16
124	0.639331	10039.2	9088.3	120.36
125	0.632902	10063.6	9103.0	120.55
126	0.626624	10087.8	9117.6	120.75
127	0.620491	10112.0	9132.2	120.94
128	0.614498	10136.1	9146.7	121.13
129	0.608638	10160.1	9161.2	121.31
130	0.602908	10184.0	9175.6	121.50
131	0.597301	10207.8	9190.0	121.68
132	0.591814	10231.6	9204.3	121.86
133	0.586442	10255.3	9218.6	122.04
134	0.581181	10278.9	9232.8	122.22
135	0.576028	10302.5	9247.0	122.39
136	0.570978	10326.0	9261.2	122.56
137	0.566028	10349.4	9275.3	122.74
138	0.561175	10372.8	9289.4	122.91
139	0.556416	10396.1	9303.4	123.07
140	0.551747	10419.4	9317.5	123.24
141	0.547166	10442.6	9331.4	123.41
142	0.542670	10465.7	9345.4	123.57
143	0.538257	10488.8	9359.3	123.73
144	0.533923	10511.8	9373.2	123.89
145	0.529667	10534.8	9387.0	124.05
146	0.525486	10557.8	9400.8	124.21
147	0.521377	10580.7	9414.6	124.37
148	0.517340	10603.6	9428.4	124.52
149	0.513372	10626.4	9442.1	124.68
150	0.509470	10649.2	9455.8	124.83
151	0.505634	10671.9	9469.5	124.98
152	0.501861	10694.6	9483.2	125.13
153	0.498150	10717.3	9496.8	125.28
154	0.494498	10739.9	9510.4	125.42
155	0.490905	10762.5	9524.0	125.57
156	0.487369	10785.0	9537.6	125.72
157	0.483888	10807.6	9551.1	125.86
158	0.480461	10830.1	9564.7	126.00
159	0.477087	10852.5	9578.2	126.14
160	0.473764	10874.9	9591.7	126.28

* PHASE CHANGE

6.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.470491	10897.3	9605.1	126.42	231	0.319939	12419.7	10519.5	134.29
162	0.467267	10919.7	9618.6	126.56	232	0.318508	12441.1	10532.3	134.38
163	0.464091	10942.0	9632.0	126.70	233	0.317089	12462.5	10545.1	134.47
164	0.460961	10964.4	9645.4	126.84	234	0.315684	12483.8	10557.9	134.56
165	0.457876	10986.6	9658.8	126.97	235	0.314291	12505.1	10570.7	134.65
166	0.454836	11008.9	9672.2	127.11	236	0.312911	12526.5	10583.5	134.74
167	0.451839	11031.1	9685.6	127.24	237	0.311544	12547.8	10596.3	134.83
168	0.448884	11053.3	9698.9	127.37	238	0.310189	12569.1	10609.1	134.92
169	0.445971	11075.5	9712.3	127.50	239	0.308846	12590.4	10621.9	135.01
170	0.443098	11097.7	9725.6	127.64	240	0.307514	12611.7	10634.7	135.10
171	0.440265	11119.8	9738.9	127.76	241	0.306195	12633.0	10647.5	135.19
172	0.437471	11141.9	9752.2	127.89	242	0.304887	12654.3	10660.3	135.28
173	0.434714	11164.0	9765.5	128.02	243	0.303591	12675.6	10673.0	135.37
174	0.431994	11186.1	9778.7	128.15	244	0.302306	12696.9	10685.8	135.45
175	0.429310	11208.1	9792.0	128.28	245	0.301032	12718.2	10698.6	135.54
176	0.426662	11230.2	9805.2	128.40	246	0.299769	12739.4	10711.3	135.63
177	0.424049	11252.2	9818.4	128.53	247	0.298517	12760.7	10724.1	135.71
178	0.421469	11274.1	9831.7	128.65	248	0.297275	12782.0	10736.8	135.80
179	0.418923	11296.1	9844.9	128.77	249	0.296044	12803.2	10749.6	135.89
180	0.416409	11318.1	9858.0	128.89	250	0.294824	12824.5	10762.4	135.97
181	0.413927	11340.0	9871.2	129.02	251	0.293614	12845.7	10775.1	136.06
182	0.411477	11361.9	9884.4	129.14	252	0.292414	12867.0	10787.8	136.14
183	0.409057	11383.8	9897.5	129.26	253	0.291224	12888.2	10800.6	136.22
184	0.406667	11405.7	9910.7	129.38	254	0.290044	12909.4	10813.3	136.31
185	0.404307	11427.5	9923.8	129.49	255	0.288873	12930.7	10826.1	136.39
186	0.401975	11449.4	9936.9	129.61	256	0.287713	12951.9	10838.8	136.47
187	0.399672	11471.2	9950.0	129.73	257	0.286562	12973.1	10851.5	136.56
188	0.397396	11493.0	9963.1	129.85	258	0.285420	12994.3	10864.3	136.64
189	0.395148	11514.8	9976.2	129.96	259	0.284288	13015.5	10877.0	136.72
190	0.392926	11536.6	9989.3	130.08	260	0.283164	13036.7	10889.7	136.80
191	0.390731	11558.4	10002.4	130.19	261	0.282050	13057.9	10902.4	136.88
192	0.388561	11580.1	10015.5	130.30	262	0.280945	13079.1	10915.1	136.97
193	0.386417	11601.8	10028.5	130.42	263	0.279848	13100.3	10927.9	137.05
194	0.384297	11623.6	10041.6	130.53	264	0.278761	13121.5	10940.6	137.13
195	0.382202	11645.3	10054.6	130.64	265	0.277682	13142.7	10953.3	137.21
196	0.380131	11667.0	10067.6	130.75	266	0.276611	13163.9	10966.0	137.29
197	0.378083	11688.7	10080.6	130.86	267	0.275549	13185.1	10978.7	137.37
198	0.376058	11710.3	10093.7	130.97	268	0.274495	13206.2	10991.4	137.44
199	0.374056	11732.0	10106.7	131.08	269	0.273449	13227.4	11004.1	137.52
200	0.372076	11753.6	10119.7	131.19	270	0.272412	13248.6	11016.8	137.60
201	0.370118	11775.3	10132.6	131.30	271	0.271382	13269.7	11029.5	137.68
202	0.368181	11796.9	10145.6	131.40	272	0.270361	13290.9	11042.2	137.76
203	0.366266	11818.5	10158.6	131.51	273	0.269347	13312.1	11054.9	137.84
204	0.364371	11840.1	10171.6	131.62	274	0.268341	13333.2	11067.6	137.91
205	0.362497	11861.7	10184.5	131.72	275	0.267342	13354.4	11080.2	137.99
206	0.360642	11883.3	10197.5	131.83	276	0.266352	13375.5	11092.9	138.07
207	0.358808	11904.8	10210.4	131.93	277	0.265368	13396.6	11105.6	138.14
208	0.356992	11926.4	10223.4	132.04	278	0.264392	13417.8	11118.3	138.22
209	0.355196	11948.0	10236.3	132.14	279	0.263424	13438.9	11131.0	138.30
210	0.353419	11969.5	10249.2	132.24	280	0.262462	13460.0	11143.6	138.37
211	0.351660	11991.0	10262.2	132.35	281	0.261508	13481.2	11156.3	138.45
212	0.349919	12012.5	10275.1	132.45	282	0.260560	13502.3	11169.0	138.52
213	0.348196	12034.0	10288.0	132.55	283	0.259620	13523.4	11181.7	138.60
214	0.346491	12055.5	10300.9	132.65	284	0.258687	13544.5	11194.3	138.67
215	0.344803	12077.0	10313.8	132.75	285	0.257760	13565.6	11207.0	138.75
216	0.343132	12098.5	10326.7	132.85	286	0.256840	13586.8	11219.7	138.82
217	0.341477	12120.0	10339.6	132.95	287	0.255927	13607.9	11232.3	138.89
218	0.339839	12141.4	10352.5	133.05	288	0.255020	13629.0	11245.0	138.97
219	0.338218	12162.9	10365.3	133.14	289	0.254120	13650.1	11257.6	139.04
220	0.336612	12184.3	10378.2	133.24	290	0.253227	13671.2	11270.3	139.11
221	0.335022	12205.8	10391.1	133.34	291	0.252339	13692.3	11283.0	139.18
222	0.333448	12227.2	10403.9	133.44	292	0.251459	13713.4	11295.6	139.26
223	0.331889	12248.6	10416.8	133.53	293	0.250584	13734.5	11308.3	139.33
224	0.330345	12270.1	10429.7	133.63	294	0.249715	13755.6	11320.9	139.40
225	0.328816	12291.5	10442.5	133.72	295	0.248853	13776.6	11333.6	139.47
226	0.327301	12312.9	10455.3	133.82	296	0.247996	13797.7	11346.2	139.54
227	0.325801	12334.2	10468.2	133.91	297	0.247146	13818.8	11358.9	139.62
228	0.324315	12355.6	10481.0	134.01	298	0.246302	13839.9	11371.5	139.69
229	0.322842	12377.0	10493.8	134.10	299	0.245463	13861.0	11384.1	139.76
230	0.321384	12398.4	10506.7	134.19	300	0.244630	13882.0	11396.8	139.83

7.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.1341	2925.5	2905.3	53.86
87	34.9836	2971.1	2950.8	54.39
88	34.8313	3016.9	2996.5	54.91
89	34.6773	3062.8	3042.4	55.43
90	34.5216	3109.0	3088.5	55.95
91	34.3642	3155.4	3134.7	56.46
92	34.2053	3201.9	3181.2	56.97
93	34.0447	3248.7	3227.8	57.47
94	33.8826	3295.6	3274.7	57.98
95	33.7188	3342.7	3321.7	58.47
96	33.5534	3390.0	3368.8	58.97
97	33.3864	3437.4	3416.2	59.46
98	33.2177	3485.0	3463.7	59.95
99	33.0473	3532.8	3511.3	60.43
100	32.8751	3580.7	3559.1	60.92
101	32.7012	3628.8	3607.1	61.39
102	32.5254	3677.0	3655.2	61.87
103	32.3477	3725.4	3703.5	62.34
104	32.1680	3774.0	3752.0	62.81
105	31.9863	3822.7	3800.6	63.28
106	31.8024	3871.6	3849.3	63.74
107	31.6162	3920.7	3898.3	64.20
108	31.4276	3970.0	3947.4	64.66
109	31.2366	4019.4	3996.7	65.12
110	31.0428	4069.1	4046.2	65.57
* 110.930	30.8602	4115.5	4092.5	65.99
* 110.930	0.885740	9653.5	8852.7	115.91
111	0.884899	9655.4	8853.9	115.93
112	0.873112	9682.9	8870.5	116.18
113	0.861731	9710.1	8887.0	116.42
114	0.850732	9737.2	8903.4	116.66
115	0.840091	9763.9	8919.6	116.89
116	0.829788	9790.5	8935.7	117.12
117	0.819803	9816.9	8951.7	117.35
118	0.810119	9843.1	8967.6	117.57
119	0.800720	9869.2	8983.3	117.79
120	0.791592	9895.0	8999.0	118.01
121	0.782719	9920.7	9014.5	118.22
122	0.774091	9946.3	9030.0	118.43
123	0.765694	9971.7	9045.4	118.64
124	0.757518	9997.0	9060.7	118.84
125	0.749553	10022.2	9075.9	119.05
126	0.741790	10047.2	9091.0	119.24
127	0.734219	10072.1	9106.0	119.44
128	0.726832	10096.9	9121.0	119.64
129	0.719622	10121.6	9135.9	119.83
130	0.712581	10146.2	9150.8	120.02
131	0.705702	10170.7	9165.6	120.21
132	0.698979	10195.1	9180.3	120.39
133	0.692406	10219.4	9195.0	120.57
134	0.685978	10243.6	9209.6	120.76
135	0.679688	10267.7	9224.2	120.94
136	0.673531	10291.8	9238.7	121.11
137	0.667504	10315.7	9253.1	121.29
138	0.661601	10339.6	9267.5	121.46
139	0.655817	10363.5	9281.9	121.63
140	0.650150	10387.2	9296.2	121.80
141	0.644594	10410.9	9310.5	121.97
142	0.639147	10434.5	9324.8	122.14
143	0.633804	10458.1	9339.0	122.31
144	0.628562	10481.6	9353.1	122.47
145	0.623418	10505.0	9367.2	122.63
146	0.618370	10528.4	9381.3	122.79
147	0.613413	10551.7	9395.4	122.95
148	0.608545	10574.9	9409.4	123.11
149	0.603764	10598.2	9423.4	123.27
150	0.599067	10621.3	9437.3	123.42
151	0.594452	10644.4	9451.3	123.57
152	0.589916	10667.5	9465.1	123.73
153	0.585456	10690.5	9479.0	123.88
154	0.581072	10713.5	9492.8	124.03
155	0.576760	10736.4	9506.6	124.18
156	0.572519	10759.3	9520.4	124.32
157	0.568346	10782.2	9534.2	124.47
158	0.564241	10805.0	9547.9	124.61
159	0.560200	10827.8	9561.6	124.76
160	0.556224	10850.5	9575.3	124.90

* PHASE CHANGE

7.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.552309	10873.2	9589.0	125.04	231	0.373929	12407.6	10510.7	132.97
162	0.548454	10895.9	9602.6	125.18	232	0.372246	12429.0	10523.6	133.06
163	0.544658	10918.5	9616.2	125.32	233	0.370578	12450.5	10536.5	133.15
164	0.540920	10941.1	9629.8	125.46	234	0.368925	12471.9	10549.3	133.24
165	0.537237	10963.6	9643.4	125.60	235	0.367288	12493.4	10562.2	133.33
166	0.533609	10986.2	9656.9	125.73	236	0.365666	12514.8	10575.0	133.43
167	0.530034	11008.7	9670.5	125.87	237	0.364058	12536.2	10587.9	133.52
168	0.526511	11031.1	9684.0	126.00	238	0.362465	12557.6	10600.7	133.61
169	0.523039	11053.6	9697.5	126.13	239	0.360887	12579.0	10613.6	133.70
170	0.519616	11076.0	9710.9	126.27	240	0.359323	12600.4	10626.4	133.79
171	0.516242	11098.3	9724.4	126.40	241	0.357772	12621.8	10639.3	133.87
172	0.512915	11120.7	9737.8	126.53	242	0.356236	12643.2	10652.1	133.96
173	0.509634	11143.0	9751.3	126.66	243	0.354713	12664.5	10664.9	134.05
174	0.506399	11165.3	9764.7	126.79	244	0.353203	12685.9	10677.7	134.14
175	0.503207	11187.6	9778.1	126.91	245	0.351707	12707.3	10690.6	134.23
176	0.500059	11209.9	9791.4	127.04	246	0.350223	12728.6	10703.4	134.31
177	0.496953	11232.1	9804.8	127.17	247	0.348753	12750.0	10716.2	134.40
178	0.493888	11254.3	9818.1	127.29	248	0.347295	12771.3	10729.0	134.49
179	0.490864	11276.5	9831.5	127.42	249	0.345850	12792.7	10741.8	134.57
180	0.487880	11298.6	9844.8	127.54	250	0.344417	12814.0	10754.6	134.66
181	0.484934	11320.7	9858.1	127.66	251	0.342996	12835.3	10767.4	134.74
182	0.482026	11342.9	9871.4	127.78	252	0.341587	12856.6	10780.2	134.83
183	0.479155	11365.0	9884.7	127.90	253	0.340191	12878.0	10793.0	134.91
184	0.476321	11387.0	9897.9	128.02	254	0.338805	12899.3	10805.8	135.00
185	0.473522	11409.1	9911.2	128.14	255	0.337432	12920.6	10818.5	135.08
186	0.470759	11431.1	9924.4	128.26	256	0.336070	12941.9	10831.3	135.16
187	0.468029	11453.1	9937.6	128.38	257	0.334719	12963.2	10844.1	135.25
188	0.465334	11475.1	9950.8	128.50	258	0.333379	12984.4	10856.9	135.33
189	0.462671	11497.1	9964.0	128.61	259	0.332051	13005.7	10869.6	135.41
190	0.460040	11519.0	9977.2	128.73	260	0.330733	13027.0	10882.4	135.49
191	0.457441	11541.0	9990.4	128.85	261	0.329426	13048.3	10895.2	135.57
192	0.454873	11562.9	10003.6	128.96	262	0.328129	13069.5	10907.9	135.66
193	0.452336	11584.8	10016.7	129.07	263	0.326843	13090.8	10920.7	135.74
194	0.449829	11606.7	10029.9	129.19	264	0.325567	13112.1	10933.4	135.82
195	0.447350	11628.6	10043.0	129.30	265	0.324301	13133.3	10946.2	135.90
196	0.444901	11650.4	10056.2	129.41	266	0.323046	13154.6	10958.9	135.98
197	0.442480	11672.3	10069.3	129.52	267	0.321800	13175.8	10971.7	136.06
198	0.440086	11694.1	10082.4	129.63	268	0.320564	13197.0	10984.4	136.14
199	0.437720	11715.9	10095.5	129.74	269	0.319338	13218.3	10997.1	136.22
200	0.435381	11737.7	10108.6	129.85	270	0.318122	13239.5	11009.9	136.30
201	0.433068	11759.5	10121.7	129.96	271	0.316915	13260.7	11022.6	136.37
202	0.430780	11781.3	10134.7	130.07	272	0.315717	13282.0	11035.3	136.45
203	0.428518	11803.0	10147.8	130.18	273	0.314529	13303.2	11048.1	136.53
204	0.426281	11824.8	10160.9	130.28	274	0.313349	13324.4	11060.8	136.61
205	0.424069	11846.5	10173.9	130.39	275	0.312179	13345.6	11073.5	136.68
206	0.421880	11868.2	10186.9	130.50	276	0.311018	13366.8	11086.2	136.76
207	0.419715	11889.9	10200.0	130.60	277	0.309865	13388.0	11099.0	136.84
208	0.417574	11911.6	10213.0	130.71	278	0.308721	13409.2	11111.7	136.91
209	0.415455	11933.3	10226.0	130.81	279	0.307586	13430.4	11124.4	136.99
210	0.413358	11955.0	10239.0	130.91	280	0.306459	13451.6	11137.1	137.07
211	0.411284	11976.6	10252.0	131.02	281	0.305341	13472.8	11149.8	137.14
212	0.409231	11998.3	10265.0	131.12	282	0.304231	13494.0	11162.5	137.22
213	0.407200	12019.9	10278.0	131.22	283	0.303129	13515.1	11175.2	137.29
214	0.405190	12041.5	10291.0	131.32	284	0.302036	13536.3	11187.9	137.37
215	0.403201	12063.1	10304.0	131.42	285	0.300950	13557.5	11200.6	137.44
216	0.401231	12084.7	10316.9	131.52	286	0.299872	13578.6	11213.3	137.52
217	0.399282	12106.3	10329.9	131.62	287	0.298803	13599.8	11226.0	137.59
218	0.397353	12127.9	10342.8	131.72	288	0.297741	13621.0	11238.7	137.66
219	0.395443	12149.5	10355.8	131.82	289	0.296686	13642.1	11251.4	137.74
220	0.393552	12171.0	10368.7	131.92	290	0.295640	13663.3	11264.1	137.81
221	0.391679	12192.6	10381.7	132.02	291	0.294600	13684.4	11276.8	137.88
222	0.389826	12214.1	10394.6	132.11	292	0.293569	13705.6	11289.5	137.95
223	0.387990	12235.6	10407.5	132.21	293	0.292544	13726.7	11302.1	138.03
224	0.386173	12257.2	10420.4	132.31	294	0.291527	13747.9	11314.8	138.10
225	0.384373	12278.7	10433.4	132.40	295	0.290517	13769.0	11327.5	138.17
226	0.382590	12300.2	10446.3	132.50	296	0.289514	13790.1	11340.2	138.24
227	0.380825	12321.7	10459.2	132.59	297	0.288518	13811.3	11352.9	138.31
228	0.379076	12343.2	10472.1	132.69	298	0.287530	13832.4	11365.5	138.38
229	0.377344	12364.6	10484.9	132.78	299	0.286548	13853.5	11378.2	138.46
230	0.375629	12386.1	10497.8	132.87	300	0.285573	13874.6	11390.9	138.53

8.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.1417	2927.3	2904.3	53.85
87	34.9913	2972.9	2949.7	54.38
88	34.8392	3018.6	2995.4	54.90
89	34.6854	3064.6	3041.2	55.42
90	34.5299	3110.7	3087.3	55.93
91	34.3727	3157.1	3133.5	56.45
92	34.2140	3203.6	3179.9	56.96
93	34.0536	3250.3	3226.5	57.46
94	33.8917	3297.2	3273.3	57.96
95	33.7282	3344.3	3320.3	58.46
96	33.5630	3391.5	3367.4	58.95
97	33.3962	3439.0	3414.7	59.45
98	33.2278	3486.5	3462.1	59.93
99	33.0577	3534.3	3509.7	60.42
100	32.8858	3582.2	3557.5	60.90
101	32.7122	3630.2	3605.4	61.38
102	32.5368	3678.4	3653.5	61.85
103	32.3594	3726.8	3701.7	62.33
104	32.1801	3775.3	3750.1	62.79
105	31.9987	3824.0	3798.7	63.26
106	31.8152	3872.9	3847.4	63.72
107	31.6295	3921.9	3896.3	64.18
108	31.4414	3971.1	3945.3	64.64
109	31.2508	4020.5	3994.6	65.10
110	31.0576	4070.1	4044.0	65.55
111	30.8617	4119.9	4093.7	66.00
112	30.6628	4170.0	4143.5	66.45
113	30.4607	4220.3	4193.7	66.90
* 113.050	30.4505	4222.8	4196.2	66.92
* 113.050	1.00819	9655.1	8851.1	114.97
114	0.995068	9682.2	8867.5	115.21
115	0.981740	9710.4	8884.7	115.46
116	0.968883	9738.3	8901.6	115.70
117	0.956467	9765.9	8918.4	115.93
118	0.944464	9793.3	8935.0	116.17
119	0.932850	9820.5	8951.5	116.40
120	0.921602	9847.5	8967.9	116.62
121	0.910699	9874.2	8984.1	116.84
122	0.900122	9900.8	9000.2	117.06
123	0.889854	9927.1	9016.2	117.28
124	0.879879	9953.3	9032.1	117.49
125	0.870183	9979.4	9047.8	117.70
126	0.860750	10005.2	9063.5	117.91
127	0.851569	10031.0	9079.1	118.11
128	0.842629	10056.6	9094.5	118.31
129	0.833917	10082.0	9109.9	118.51
130	0.825423	10107.3	9125.3	118.70
131	0.817139	10132.5	9140.5	118.90
132	0.809054	10157.6	9155.7	119.09
133	0.801162	10182.6	9170.7	119.28
134	0.793453	10207.4	9185.8	119.46
135	0.785920	10232.1	9200.7	119.65
136	0.778557	10256.8	9215.6	119.83
137	0.771356	10281.3	9230.4	120.01
138	0.764313	10305.8	9245.2	120.19
139	0.757420	10330.2	9259.9	120.36
140	0.750672	10354.4	9274.6	120.54
141	0.744064	10378.6	9289.2	120.71
142	0.737592	10402.7	9303.7	120.88
143	0.731250	10426.8	9318.2	121.05
144	0.725033	10450.7	9332.7	121.21
145	0.718939	10474.6	9347.1	121.38
146	0.712962	10498.5	9361.5	121.54
147	0.707098	10522.2	9375.8	121.70
148	0.701345	10545.9	9390.1	121.87
149	0.695699	10569.5	9404.3	122.02
150	0.690155	10593.1	9418.5	122.18
151	0.684712	10616.6	9432.7	122.34
152	0.679366	10640.0	9446.8	122.49
153	0.674114	10663.4	9460.9	122.65
154	0.668954	10686.8	9475.0	122.80
155	0.663883	10710.1	9489.0	122.95
156	0.658897	10733.3	9503.0	123.10
157	0.653996	10756.5	9517.0	123.25
158	0.649175	10779.6	9530.9	123.39
159	0.644434	10802.7	9544.8	123.54
160	0.639770	10825.8	9558.7	123.68

* PHASE CHANGE

8.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.635181	10848.8	9572.6	123.83	231	0.428112	12395.4	10501.9	131.82
162	0.630665	10871.7	9586.4	123.97	232	0.426173	12417.0	10514.9	131.91
163	0.626220	10894.7	9600.2	124.11	233	0.424251	12438.5	10527.8	132.00
164	0.621845	10917.6	9614.0	124.25	234	0.422348	12460.0	10540.7	132.10
165	0.617536	10940.4	9627.7	124.39	235	0.420462	12481.6	10553.6	132.19
166	0.613294	10963.2	9641.5	124.53	236	0.418594	12503.1	10566.5	132.28
167	0.609115	10986.0	9655.2	124.66	237	0.416743	12524.6	10579.5	132.37
168	0.604999	11008.7	9668.8	124.80	238	0.414909	12546.1	10592.4	132.46
169	0.600944	11031.4	9682.5	124.93	239	0.413092	12567.6	10605.3	132.55
170	0.596949	11054.1	9696.1	125.07	240	0.411291	12589.1	10618.1	132.64
171	0.593011	11076.7	9709.7	125.20	241	0.409506	12610.5	10631.0	132.73
172	0.589130	11099.3	9723.3	125.33	242	0.407738	12632.0	10643.9	132.82
173	0.585305	11121.9	9736.9	125.46	243	0.405985	12653.5	10656.8	132.91
174	0.581533	11144.4	9750.5	125.59	244	0.404248	12674.9	10669.7	133.00
175	0.577815	11166.9	9764.0	125.72	245	0.402526	12696.4	10682.5	133.08
176	0.574148	11189.4	9777.5	125.85	246	0.400820	12717.8	10695.4	133.17
177	0.570531	11211.9	9791.0	125.98	247	0.399128	12739.2	10708.3	133.26
178	0.566964	11234.3	9804.5	126.10	248	0.397451	12760.7	10721.1	133.34
179	0.563445	11256.7	9818.0	126.23	249	0.395789	12782.1	10734.0	133.43
180	0.559973	11279.0	9831.4	126.35	250	0.394140	12803.5	10746.8	133.52
181	0.556547	11301.4	9844.9	126.48	251	0.392507	12824.9	10759.7	133.60
182	0.553166	11323.7	9858.3	126.60	252	0.390887	12846.3	10772.5	133.69
183	0.549830	11346.0	9871.7	126.72	253	0.389280	12867.7	10785.3	133.77
184	0.546537	11368.3	9885.1	126.84	254	0.387688	12889.1	10798.2	133.86
185	0.543286	11390.5	9898.4	126.96	255	0.386109	12910.5	10811.0	133.94
186	0.540077	11412.7	9911.8	127.08	256	0.384543	12931.8	10823.8	134.02
187	0.536908	11434.9	9925.1	127.20	257	0.382990	12953.2	10836.6	134.11
188	0.533780	11457.1	9938.5	127.32	258	0.381450	12974.6	10849.5	134.19
189	0.530690	11479.3	9951.8	127.44	259	0.379923	12995.9	10862.3	134.27
190	0.527638	11501.4	9965.1	127.56	260	0.378408	13017.3	10875.1	134.35
191	0.524624	11523.5	9978.4	127.67	261	0.376906	13038.6	10887.9	134.44
192	0.521646	11545.6	9991.7	127.79	262	0.375416	13059.9	10900.7	134.52
193	0.518705	11567.7	10004.9	127.90	263	0.373938	13081.3	10913.5	134.60
194	0.515799	11589.8	10018.2	128.02	264	0.372472	13102.6	10926.3	134.68
195	0.512927	11611.8	10031.4	128.13	265	0.371018	13123.9	10939.1	134.76
196	0.510090	11633.8	10044.6	128.24	266	0.369576	13145.2	10951.9	134.84
197	0.507286	11655.8	10057.9	128.35	267	0.368145	13166.5	10964.6	134.92
198	0.504514	11677.8	10071.1	128.47	268	0.366725	13187.9	10977.4	135.00
199	0.501775	11699.8	10084.3	128.58	269	0.365317	13209.2	10990.2	135.08
200	0.499067	11721.7	10097.4	128.69	270	0.363919	13230.4	11003.0	135.16
201	0.496390	11743.7	10110.6	128.80	271	0.362533	13251.7	11015.7	135.24
202	0.493744	11765.6	10123.8	128.90	272	0.361158	13273.0	11028.5	135.32
203	0.491127	11787.5	10136.9	129.01	273	0.359793	13294.3	11041.3	135.39
204	0.488539	11809.4	10150.1	129.12	274	0.358439	13315.6	11054.0	135.47
205	0.485981	11831.2	10163.2	129.23	275	0.357095	13336.8	11066.8	135.55
206	0.483450	11853.1	10176.3	129.33	276	0.355761	13358.1	11079.6	135.63
207	0.480947	11874.9	10189.5	129.44	277	0.354438	13379.4	11092.3	135.70
208	0.478472	11896.8	10202.6	129.54	278	0.353125	13400.6	11105.1	135.78
209	0.476024	11918.6	10215.7	129.65	279	0.351822	13421.9	11117.8	135.86
210	0.473601	11940.4	10228.8	129.75	280	0.350528	13443.1	11130.6	135.93
211	0.471205	11962.2	10241.8	129.86	281	0.349245	13464.4	11143.3	136.01
212	0.468834	11983.9	10254.9	129.96	282	0.347971	13485.6	11156.0	136.08
213	0.466488	12005.7	10268.0	130.06	283	0.346706	13506.8	11168.8	136.16
214	0.464167	12027.4	10281.0	130.16	284	0.345451	13528.1	11181.5	136.23
215	0.461870	12049.2	10294.1	130.27	285	0.344205	13549.3	11194.2	136.31
216	0.459597	12070.9	10307.1	130.37	286	0.342968	13570.5	11207.0	136.38
217	0.457347	12092.6	10320.2	130.47	287	0.341741	13591.7	11219.7	136.46
218	0.455120	12114.3	10333.2	130.57	288	0.340522	13613.0	11232.4	136.53
219	0.452916	12136.0	10346.2	130.67	289	0.339312	13634.2	11245.2	136.60
220	0.450735	12157.7	10359.2	130.76	290	0.338111	13655.4	11257.9	136.68
221	0.448575	12179.3	10372.2	130.86	291	0.336919	13676.6	11270.6	136.75
222	0.446437	12201.0	10385.2	130.96	292	0.335735	13697.8	11283.3	136.82
223	0.444320	12222.6	10398.2	131.06	293	0.334560	13719.0	11296.0	136.90
224	0.442224	12244.3	10411.2	131.15	294	0.333393	13740.2	11308.7	136.97
225	0.440149	12265.9	10424.2	131.25	295	0.332235	13761.4	11321.4	137.04
226	0.438094	12287.5	10437.2	131.35	296	0.331084	13782.5	11334.2	137.11
227	0.436059	12309.1	10450.1	131.44	297	0.329942	13803.7	11346.9	137.18
228	0.434043	12330.7	10463.1	131.54	298	0.328808	13824.9	11359.6	137.25
229	0.432047	12352.3	10476.0	131.63	299	0.327682	13846.1	11372.3	137.33
230	0.430070	12373.8	10489.0	131.73	300	0.326563	13867.2	11385.0	137.40

9.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.1492	2929.2	2903.2	53.84
87	34.9990	2974.7	2948.6	54.36
88	34.8471	3020.4	2994.3	54.89
89	34.6934	3066.4	3040.1	55.41
90	34.5381	3112.5	3086.1	55.92
91	34.3812	3158.8	3132.3	56.43
92	34.2227	3205.3	3178.7	56.94
93	34.0625	3252.0	3225.2	57.45
94	33.9008	3298.9	3272.0	57.95
95	33.7375	3345.9	3318.9	58.45
96	33.5726	3393.1	3366.0	58.94
97	33.4061	3440.5	3413.2	59.43
98	33.2379	3488.1	3460.6	59.92
99	33.0681	3535.8	3508.2	60.40
100	32.8965	3583.6	3555.9	60.88
101	32.7232	3631.7	3603.8	61.36
102	32.5481	3679.8	3651.8	61.84
103	32.3711	3728.2	3700.0	62.31
104	32.1921	3776.6	3748.3	62.78
105	32.0112	3825.3	3796.8	63.24
106	31.8281	3874.1	3845.4	63.70
107	31.6427	3923.1	3894.3	64.16
108	31.4551	3972.2	3943.2	64.62
109	31.2650	4021.6	3992.4	65.08
110	31.0723	4071.1	4041.8	65.53
111	30.8769	4120.9	4091.3	65.98
112	30.6786	4170.9	4141.1	66.43
113	30.4772	4221.1	4191.2	66.87
114	30.2726	4271.6	4241.5	67.32
* 114.988	30.0669	4321.8	4291.5	67.76
* 114.988	1.13144	9653.4	8847.4	114.12
115	1.13125	9653.8	8847.6	114.13
116	1.11533	9683.2	8865.6	114.38
117	1.10003	9712.3	8883.3	114.63
118	1.08529	9741.1	8900.8	114.88
119	1.07108	9769.6	8918.2	115.12
120	1.05736	9797.8	8935.3	115.35
121	1.04411	9825.7	8952.3	115.59
122	1.03129	9853.4	8969.1	115.81
123	1.01888	9880.9	8985.8	116.04
124	1.00685	9908.1	9002.3	116.26
125	0.995195	9935.1	9018.7	116.47
126	0.983877	9961.9	9035.0	116.69
127	0.972885	9988.5	9051.2	116.90
128	0.962201	10015.0	9067.2	117.11
129	0.951812	10041.2	9083.1	117.31
130	0.941701	10067.3	9098.9	117.51
131	0.931857	10093.3	9114.7	117.71
132	0.922267	10119.1	9130.3	117.91
133	0.912919	10144.8	9145.8	118.10
134	0.903802	10170.3	9161.3	118.29
135	0.894906	10195.7	9176.7	118.48
136	0.886223	10221.0	9192.0	118.67
137	0.877743	10246.2	9207.2	118.85
138	0.869458	10271.2	9222.3	119.03
139	0.861359	10296.2	9237.4	119.21
140	0.853441	10321.0	9252.4	119.39
141	0.845696	10345.7	9267.4	119.57
142	0.838117	10370.4	9282.3	119.74
143	0.830698	10394.9	9297.1	119.91
144	0.823434	10419.4	9311.9	120.09
145	0.816318	10443.7	9326.6	120.25
146	0.809346	10468.0	9341.3	120.42
147	0.802513	10492.2	9355.9	120.59
148	0.795814	10516.4	9370.4	120.75
149	0.789245	10540.4	9385.0	120.91
150	0.782801	10564.4	9399.4	121.07
151	0.776477	10588.3	9413.9	121.23
152	0.770272	10612.2	9428.2	121.39
153	0.764180	10636.0	9442.6	121.54
154	0.758198	10659.7	9456.9	121.70
155	0.752323	10683.3	9471.2	121.85
156	0.746551	10706.9	9485.4	122.00
157	0.740880	10730.5	9499.6	122.15
158	0.735306	10754.0	9513.7	122.30
159	0.729828	10777.4	9527.9	122.45
160	0.724441	10800.8	9541.9	122.60

* PHASE CHANGE

9.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.719144	10824.1	9556.0	122.74	231	0.482489	12383.2	10493.1	130.80
162	0.713934	10847.4	9570.0	122.89	232	0.480289	12404.8	10506.1	130.89
163	0.708808	10870.6	9584.0	123.03	233	0.478111	12426.5	10519.1	130.99
164	0.703765	10893.8	9598.0	123.17	234	0.475952	12448.1	10532.1	131.08
165	0.698801	10916.9	9611.9	123.31	235	0.473815	12469.7	10545.0	131.17
166	0.693916	10940.0	9625.8	123.45	236	0.471697	12491.4	10558.0	131.26
167	0.689107	10963.1	9639.7	123.59	237	0.469599	12513.0	10571.0	131.36
168	0.684372	10986.1	9653.6	123.73	238	0.467520	12534.6	10583.9	131.45
169	0.679709	11009.1	9667.4	123.86	239	0.465461	12556.1	10596.9	131.54
170	0.675116	11032.0	9681.2	124.00	240	0.463420	12577.7	10609.8	131.63
171	0.670592	11054.9	9695.0	124.13	241	0.461398	12599.3	10622.8	131.72
172	0.666135	11077.7	9708.7	124.27	242	0.459394	12620.8	10635.7	131.81
173	0.661743	11100.6	9722.5	124.40	243	0.457409	12642.4	10648.7	131.90
174	0.657415	11123.3	9736.2	124.53	244	0.455441	12663.9	10661.6	131.98
175	0.653149	11146.1	9749.8	124.66	245	0.453491	12685.5	10674.5	132.07
176	0.648943	11168.8	9763.5	124.79	246	0.451558	12707.0	10687.4	132.16
177	0.644797	11191.5	9777.2	124.92	247	0.449642	12728.5	10700.3	132.25
178	0.640709	11214.1	9790.8	125.05	248	0.447743	12750.0	10713.2	132.33
179	0.636677	11236.7	9804.4	125.17	249	0.445861	12771.5	10726.1	132.42
180	0.632701	11259.3	9818.0	125.30	250	0.443995	12793.0	10739.0	132.51
181	0.628779	11281.9	9831.5	125.42	251	0.442145	12814.5	10751.9	132.59
182	0.624910	11304.4	9845.1	125.55	252	0.440312	12836.0	10764.8	132.68
183	0.621092	11326.9	9858.6	125.67	253	0.438493	12857.4	10777.7	132.76
184	0.617325	11349.4	9872.1	125.79	254	0.436691	12878.9	10790.6	132.85
185	0.613608	11371.8	9885.6	125.92	255	0.434904	12900.3	10803.4	132.93
186	0.609939	11394.3	9899.1	126.04	256	0.433132	12921.8	10816.3	133.02
187	0.606317	11416.6	9912.6	126.16	257	0.431375	12943.2	10829.2	133.10
188	0.602742	11439.0	9926.0	126.28	258	0.429632	12964.7	10842.0	133.18
189	0.599213	11461.4	9939.4	126.39	259	0.427904	12986.1	10854.9	133.26
190	0.595727	11483.7	9952.9	126.51	260	0.426191	13007.5	10867.7	133.35
191	0.592286	11506.0	9966.3	126.63	261	0.424491	13028.9	10880.6	133.43
192	0.588887	11528.2	9979.7	126.75	262	0.422806	13050.3	10893.4	133.51
193	0.585531	11550.5	9993.0	126.86	263	0.421134	13071.7	10906.3	133.59
194	0.582215	11572.7	10006.4	126.98	264	0.419476	13093.1	10919.1	133.67
195	0.578939	11594.9	10019.7	127.09	265	0.417832	13114.5	10931.9	133.76
196	0.575703	11617.1	10033.1	127.20	266	0.416200	13135.9	10944.8	133.84
197	0.572506	11639.3	10046.4	127.32	267	0.414582	13157.3	10957.6	133.92
198	0.569347	11661.4	10059.7	127.43	268	0.412977	13178.6	10970.4	134.00
199	0.566225	11683.6	10073.0	127.54	269	0.411385	13200.0	10983.2	134.08
200	0.563139	11705.7	10086.3	127.65	270	0.409805	13221.4	10996.0	134.15
201	0.560089	11727.7	10099.5	127.76	271	0.408238	13242.7	11008.9	134.23
202	0.557075	11749.8	10112.8	127.87	272	0.406683	13264.1	11021.7	134.31
203	0.554095	11771.9	10126.0	127.98	273	0.405140	13285.4	11034.5	134.39
204	0.551149	11793.9	10139.3	128.09	274	0.403609	13306.8	11047.3	134.47
205	0.548236	11815.9	10152.5	128.20	275	0.402090	13328.1	11060.1	134.55
206	0.545356	11837.9	10165.7	128.30	276	0.400583	13349.4	11072.9	134.62
207	0.542508	11859.9	10178.9	128.41	277	0.399088	13370.7	11085.7	134.70
208	0.539691	11881.9	10192.1	128.51	278	0.397604	13392.1	11098.4	134.78
209	0.536906	11903.8	10205.3	128.62	279	0.396131	13413.4	11111.2	134.85
210	0.534151	11925.7	10218.5	128.72	280	0.394669	13434.7	11124.0	134.93
211	0.531425	11947.7	10231.6	128.83	281	0.393219	13456.0	11136.8	135.01
212	0.528730	11969.6	10244.8	128.93	282	0.391779	13477.3	11149.6	135.08
213	0.526063	11991.5	10257.9	129.04	283	0.390351	13498.6	11162.3	135.16
214	0.523424	12013.3	10271.0	129.14	284	0.388933	13519.8	11175.1	135.23
215	0.520814	12035.2	10284.2	129.24	285	0.387525	13541.1	11187.9	135.31
216	0.518230	12057.0	10297.3	129.34	286	0.386128	13562.4	11200.6	135.38
217	0.515674	12078.9	10310.4	129.44	287	0.384741	13583.7	11213.4	135.46
218	0.513145	12100.7	10323.5	129.54	288	0.383365	13605.0	11226.1	135.53
219	0.510641	12122.5	10336.6	129.64	289	0.381998	13626.2	11238.9	135.60
220	0.508163	12144.3	10349.7	129.74	290	0.380642	13647.5	11251.7	135.68
221	0.505711	12166.1	10362.8	129.84	291	0.379295	13668.7	11264.4	135.75
222	0.503283	12187.8	10375.8	129.94	292	0.377959	13690.0	11277.2	135.82
223	0.500880	12209.6	10388.9	130.04	293	0.376631	13711.2	11289.9	135.90
224	0.498500	12231.3	10401.9	130.13	294	0.375314	13732.5	11302.6	135.97
225	0.496145	12253.0	10415.0	130.23	295	0.374005	13753.7	11315.4	136.04
226	0.493813	12274.8	10428.0	130.33	296	0.372706	13774.9	11328.1	136.11
227	0.491503	12296.5	10441.0	130.42	297	0.371417	13796.2	11340.9	136.18
228	0.489217	12318.2	10454.1	130.52	298	0.370136	13817.4	11353.6	136.26
229	0.486952	12339.9	10467.1	130.61	299	0.368865	13838.6	11366.3	136.33
230	0.484710	12361.5	10480.1	130.71	300	0.367602	13859.9	11379.0	136.40

10.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.1568	2931.0	2902.2	53.83
87	35.0068	2976.5	2947.6	54.35
88	34.8550	3022.2	2993.1	54.87
89	34.7015	3068.1	3038.9	55.39
90	34.5464	3114.2	3084.9	55.91
91	34.3896	3160.5	3131.1	56.42
92	34.2313	3207.0	3177.4	56.93
93	34.0714	3253.7	3223.9	57.43
94	33.9099	3300.5	3270.6	57.93
95	33.7468	3347.5	3317.5	58.43
96	33.5821	3394.7	3364.5	58.93
97	33.4159	3442.1	3411.8	59.42
98	33.2480	3489.6	3459.1	59.90
99	33.0784	3537.3	3506.6	60.39
100	32.9072	3585.1	3554.3	60.87
101	32.7342	3633.1	3602.1	61.35
102	32.5594	3681.2	3650.1	61.82
103	32.3827	3729.5	3698.2	62.29
104	32.2041	3778.0	3746.5	62.76
105	32.0235	3826.6	3794.9	63.22
106	31.8408	3875.3	3843.5	63.69
107	31.6560	3924.3	3892.3	64.15
108	31.4688	3973.4	3941.2	64.60
109	31.2791	4022.7	3990.3	65.06
110	31.0870	4072.1	4039.5	65.51
111	30.8921	4121.8	4089.0	65.96
112	30.6944	4171.8	4138.7	66.41
113	30.4936	4221.9	4188.7	66.85
114	30.2896	4272.4	4238.9	67.30
115	30.0821	4323.1	4289.4	67.74
116	29.8710	4374.2	4340.2	68.18
* 116.777	29.7041	4414.1	4380.0	68.52
* 116.777	1.25571	9649.0	8842.0	113.35
117	1.25160	9655.8	8846.2	113.41
118	1.23359	9686.2	8864.8	113.67
119	1.21630	9716.2	8883.1	113.92
120	1.19967	9745.8	8901.2	114.17
121	1.18367	9775.1	8919.0	114.41
122	1.16824	9804.0	8936.7	114.65
123	1.15335	9832.7	8954.1	114.89
124	1.13897	9861.0	8971.4	115.12
125	1.12506	9889.1	8988.5	115.34
126	1.11160	9917.0	9005.4	115.56
127	1.09856	9944.6	9022.2	115.78
128	1.08591	9972.0	9038.9	116.00
129	1.07364	9999.2	9055.4	116.21
130	1.06172	10026.2	9071.8	116.42
131	1.05013	10052.9	9088.0	116.62
132	1.03887	10079.5	9104.2	116.82
133	1.02791	10106.0	9120.2	117.02
134	1.01724	10132.3	9136.2	117.22
135	1.00685	10158.4	9152.0	117.41
136	0.996718	10184.3	9167.7	117.61
137	0.986837	10210.2	9183.4	117.79
138	0.977197	10235.9	9198.9	117.98
139	0.967787	10261.4	9214.4	118.17
140	0.958597	10286.8	9229.8	118.35
141	0.949618	10312.2	9245.1	118.53
142	0.940843	10337.4	9260.4	118.71
143	0.932262	10362.4	9275.5	118.88
144	0.923869	10387.4	9290.7	119.06
145	0.915656	10412.3	9305.7	119.23
146	0.907617	10437.1	9320.7	119.40
147	0.899745	10461.8	9335.6	119.57
148	0.892034	10486.4	9350.5	119.73
149	0.884479	10510.9	9365.3	119.90
150	0.877074	10535.3	9380.0	120.06
151	0.869814	10559.7	9394.7	120.22
152	0.862695	10583.9	9409.4	120.39
153	0.855711	10608.1	9424.0	120.54
154	0.848858	10632.2	9438.5	120.70
155	0.842132	10656.3	9453.0	120.86
156	0.835529	10680.2	9467.5	121.01
157	0.829045	10704.2	9481.9	121.16
158	0.822677	10728.0	9496.3	121.31
159	0.816421	10751.8	9510.7	121.46
160	0.810274	10775.5	9525.0	121.61

* PHASE CHANGE

10.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	0.804232	10799.2	9539.2	121.76	231	0.537061	12371.0	10484.3	129.89
162	0.798293	10822.8	9553.4	121.91	232	0.534597	12392.7	10497.3	129.98
163	0.792453	10846.3	9567.6	122.05	233	0.532157	12414.5	10510.4	130.07
164	0.786710	10869.8	9581.8	122.20	234	0.529740	12436.2	10523.4	130.17
165	0.781061	10893.2	9595.9	122.34	235	0.527346	12457.9	10536.4	130.26
166	0.775504	10916.6	9610.0	122.48	236	0.524975	12479.6	10549.5	130.35
167	0.770036	10940.0	9624.1	122.62	237	0.522626	12501.3	10562.5	130.44
168	0.764654	10963.3	9638.1	122.76	238	0.520299	12523.0	10575.5	130.54
169	0.759357	10986.5	9652.1	122.90	239	0.517994	12544.7	10588.5	130.63
170	0.754141	11009.7	9666.1	123.03	240	0.515710	12566.3	10601.5	130.72
171	0.749006	11032.9	9680.0	123.17	241	0.513448	12588.0	10614.5	130.81
172	0.743949	11056.0	9694.0	123.30	242	0.511206	12609.6	10627.5	130.90
173	0.738968	11079.1	9707.9	123.44	243	0.508984	12631.3	10640.5	130.99
174	0.734061	11102.1	9721.7	123.57	244	0.506783	12652.9	10653.5	131.07
175	0.729226	11125.1	9735.6	123.70	245	0.504601	12674.5	10666.4	131.16
176	0.724462	11148.0	9749.4	123.83	246	0.502439	12696.1	10679.4	131.25
177	0.719767	11171.0	9763.2	123.96	247	0.500296	12717.7	10692.4	131.34
178	0.715138	11193.8	9776.9	124.09	248	0.498172	12739.3	10705.3	131.43
179	0.710576	11216.7	9790.7	124.22	249	0.496067	12760.9	10718.3	131.51
180	0.706078	11239.5	9804.4	124.35	250	0.493981	12782.5	10731.2	131.60
181	0.701642	11262.3	9818.1	124.47	251	0.491913	12804.0	10744.2	131.69
182	0.697267	11285.0	9831.8	124.60	252	0.489862	12825.6	10757.1	131.77
183	0.692952	11307.7	9845.5	124.72	253	0.487830	12847.1	10770.0	131.86
184	0.688696	11330.4	9859.1	124.85	254	0.485815	12868.7	10783.0	131.94
185	0.684497	11353.0	9872.7	124.97	255	0.483817	12890.2	10795.9	132.03
186	0.680354	11375.7	9886.3	125.09	256	0.481837	12911.7	10808.8	132.11
187	0.676265	11398.3	9899.9	125.21	257	0.479873	12933.3	10821.7	132.19
188	0.672230	11420.8	9913.5	125.33	258	0.477926	12954.8	10834.6	132.28
189	0.668248	11443.3	9927.0	125.45	259	0.475995	12976.3	10847.5	132.36
190	0.664316	11465.9	9940.6	125.57	260	0.474080	12997.8	10860.4	132.44
191	0.660435	11488.3	9954.1	125.69	261	0.472181	13019.2	10873.3	132.53
192	0.656603	11510.8	9967.6	125.81	262	0.470298	13040.7	10886.2	132.61
193	0.652819	11533.2	9981.1	125.92	263	0.468431	13062.2	10899.1	132.69
194	0.649083	11555.6	9994.5	126.04	264	0.466579	13083.7	10911.9	132.77
195	0.645392	11578.0	10008.0	126.15	265	0.464742	13105.1	10924.8	132.85
196	0.641747	11600.3	10021.4	126.27	266	0.462920	13126.6	10937.7	132.93
197	0.638146	11622.7	10034.8	126.38	267	0.461113	13148.0	10950.5	133.01
198	0.634589	11645.0	10048.2	126.49	268	0.459320	13169.4	10963.4	133.09
199	0.631074	11667.3	10061.6	126.61	269	0.457542	13190.9	10976.3	133.17
200	0.627602	11689.5	10075.0	126.72	270	0.455778	13212.3	10989.1	133.25
201	0.624170	11711.8	10088.4	126.83	271	0.454028	13233.7	11002.0	133.33
202	0.620778	11734.0	10101.7	126.94	272	0.452292	13255.1	11014.8	133.41
203	0.617426	11756.2	10115.1	127.05	273	0.450569	13276.5	11027.7	133.49
204	0.614113	11778.4	10128.4	127.16	274	0.448860	13297.9	11040.5	133.57
205	0.610838	11800.5	10141.7	127.27	275	0.447165	13319.3	11053.3	133.65
206	0.607600	11822.7	10155.0	127.37	276	0.445482	13340.7	11066.2	133.72
207	0.604399	11844.8	10168.3	127.48	277	0.443813	13362.1	11079.0	133.80
208	0.601234	11866.9	10181.6	127.59	278	0.442157	13383.5	11091.8	133.88
209	0.598104	11889.0	10194.8	127.69	279	0.440513	13404.8	11104.6	133.95
210	0.595009	11911.1	10208.1	127.80	280	0.438882	13426.2	11117.4	134.03
211	0.591948	11933.1	10221.4	127.90	281	0.437263	13447.6	11130.3	134.11
212	0.588920	11955.2	10234.6	128.01	282	0.435657	13468.9	11143.1	134.18
213	0.585926	11977.2	10247.8	128.11	283	0.434063	13490.3	11155.9	134.26
214	0.582964	11999.2	10261.0	128.21	284	0.432480	13511.6	11168.7	134.33
215	0.580033	12021.2	10274.2	128.32	285	0.430910	13533.0	11181.5	134.41
216	0.577134	12043.1	10287.4	128.42	286	0.429351	13554.3	11194.3	134.48
217	0.574265	12065.1	10300.6	128.52	287	0.427804	13575.6	11207.1	134.56
218	0.571427	12087.0	10313.8	128.62	288	0.426269	13596.9	11219.9	134.63
219	0.568618	12108.9	10326.9	128.72	289	0.424744	13618.3	11232.6	134.71
220	0.565839	12130.9	10340.1	128.82	290	0.423231	13639.6	11245.4	134.78
221	0.563088	12152.7	10353.2	128.92	291	0.421729	13660.9	11258.2	134.85
222	0.560365	12174.6	10366.4	129.02	292	0.420238	13682.2	11271.0	134.93
223	0.557671	12196.5	10379.5	129.12	293	0.418758	13703.5	11283.8	135.00
224	0.555003	12218.3	10392.6	129.22	294	0.417288	13724.8	11296.5	135.07
225	0.552363	12240.2	10405.7	129.31	295	0.415829	13746.1	11309.3	135.14
226	0.549748	12262.0	10418.8	129.41	296	0.414380	13767.4	11322.1	135.22
227	0.547160	12283.8	10431.9	129.51	297	0.412942	13788.6	11334.8	135.29
228	0.544598	12305.6	10445.0	129.60	298	0.411514	13809.9	11347.6	135.36
229	0.542061	12327.4	10458.1	129.70	299	0.410096	13831.2	11360.4	135.43
230	0.539548	12349.2	10471.2	129.79	300	0.408688	13852.5	11373.1	135.50

15.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.1943	2940.2	2897.0	53.77
87	35.0451	2985.6	2942.2	54.29
88	34.8942	3031.2	2987.6	54.81
89	34.7416	3077.0	3033.2	55.33
90	34.5874	3122.9	3079.0	55.84
91	34.4316	3169.1	3125.0	56.35
92	34.2742	3215.5	3171.1	56.86
93	34.1154	3262.0	3217.5	57.36
94	33.9550	3308.8	3264.0	57.86
95	33.7930	3355.6	3310.7	58.36
96	33.6296	3402.7	3357.5	58.85
97	33.4646	3449.9	3404.5	59.34
98	33.2980	3497.3	3451.6	59.83
99	33.1298	3544.8	3498.9	60.31
100	32.9600	3592.5	3546.4	60.79
101	32.7885	3640.3	3593.9	61.26
102	32.6153	3688.3	3641.7	61.74
103	32.4403	3736.4	3689.5	62.21
104	32.2635	3784.6	3737.5	62.67
105	32.0848	3833.0	3785.6	63.13
106	31.9040	3881.6	3833.9	63.60
107	31.7212	3930.3	3882.4	64.05
108	31.5362	3979.1	3930.9	64.51
109	31.3490	4028.2	3979.7	64.96
110	31.1593	4077.4	4028.6	65.41
111	30.9670	4126.8	4077.7	65.86
112	30.7721	4176.4	4127.0	66.30
113	30.5743	4226.2	4176.5	66.74
114	30.3736	4276.3	4226.2	67.18
115	30.1695	4326.6	4276.2	67.62
116	29.9621	4377.2	4326.5	68.06
117	29.7510	4428.2	4377.1	68.50
118	29.5359	4479.5	4428.1	68.94
119	29.3165	4531.3	4479.4	69.37
120	29.0926	4583.5	4531.2	69.81
121	28.8636	4636.2	4583.5	70.25
122	28.6292	4689.5	4636.4	70.69
123	28.3889	4743.4	4689.9	71.13
124	28.1420	4798.1	4744.1	71.57
* 124.189	28.0945	4808.6	4754.5	71.65
* 124.189	1.89844	9596.6	8796.0	110.21
125	1.87228	9626.1	8814.3	110.44
126	1.84154	9661.6	8836.3	110.73
127	1.81234	9696.5	8857.8	111.00
128	1.78453	9730.7	8879.0	111.27
129	1.75799	9764.2	8899.7	111.53
130	1.73260	9797.2	8920.0	111.79
131	1.70829	9829.7	8940.0	112.04
132	1.68495	9861.7	8959.6	112.28
133	1.66252	9893.2	8979.0	112.52
134	1.64094	9924.4	8998.1	112.75
135	1.62014	9955.1	9017.0	112.98
136	1.60007	9985.5	9035.6	113.20
137	1.58068	10015.5	9054.0	113.42
138	1.56194	10045.2	9072.2	113.64
139	1.54380	10074.7	9090.1	113.85
140	1.52623	10103.8	9107.9	114.06
141	1.50919	10132.7	9125.6	114.27
142	1.49266	10161.3	9143.0	114.47
143	1.47661	10189.7	9160.3	114.67
144	1.46101	10217.8	9177.5	114.86
145	1.44584	10245.7	9194.5	115.06
146	1.43108	10273.5	9211.4	115.25
147	1.41671	10301.0	9228.1	115.44
148	1.40271	10328.3	9244.8	115.62
149	1.38906	10355.5	9261.3	115.80
150	1.37576	10382.5	9277.7	115.98
151	1.36277	10409.3	9294.0	116.16
152	1.35009	10436.0	9310.2	116.34
153	1.33771	10462.5	9326.3	116.51
154	1.32561	10488.9	9342.3	116.68
155	1.31379	10515.1	9358.2	116.85
156	1.30222	10541.2	9374.1	117.02
157	1.29091	10567.2	9389.8	117.19
158	1.27984	10593.1	9405.5	117.35
159	1.26900	10618.8	9421.1	117.51
160	1.25838	10644.4	9436.6	117.68

* PHASE CHANGE

15.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	1.24798	10669.9	9452.1	117.83	231	0.812870	12309.5	10439.6	126.32
162	1.23779	10695.4	9467.4	117.99	232	0.809022	12331.7	10453.0	126.42
163	1.22780	10720.7	9482.8	118.15	233	0.805213	12354.0	10466.4	126.51
164	1.21801	10745.9	9498.0	118.30	234	0.801443	12376.2	10479.7	126.61
165	1.20840	10771.0	9513.2	118.45	235	0.797711	12398.4	10493.1	126.70
166	1.19897	10796.0	9528.3	118.61	236	0.794015	12420.6	10506.4	126.80
167	1.18972	10821.0	9543.4	118.76	237	0.790357	12442.8	10519.7	126.89
168	1.18064	10845.8	9558.4	118.90	238	0.786734	12465.0	10533.0	126.99
169	1.17172	10870.6	9573.4	119.05	239	0.783147	12487.1	10546.3	127.08
170	1.16296	10895.3	9588.3	119.20	240	0.779595	12509.2	10559.6	127.17
171	1.15436	10919.9	9603.2	119.34	241	0.776078	12531.4	10572.9	127.26
172	1.14590	10944.4	9618.0	119.48	242	0.772594	12553.5	10586.2	127.35
173	1.13759	10968.9	9632.8	119.63	243	0.769144	12575.5	10599.4	127.45
174	1.12942	10993.2	9647.5	119.77	244	0.765726	12597.6	10612.7	127.54
175	1.12139	11017.6	9662.2	119.91	245	0.762341	12619.7	10625.9	127.63
176	1.11349	11041.8	9676.8	120.04	246	0.758987	12641.7	10639.1	127.72
177	1.10573	11066.0	9691.4	120.18	247	0.755665	12663.7	10652.4	127.81
178	1.09808	11090.1	9706.0	120.32	248	0.752374	12685.7	10665.6	127.89
179	1.09056	11114.2	9720.5	120.45	249	0.749114	12707.7	10678.8	127.98
180	1.08316	11138.2	9735.0	120.59	250	0.745883	12729.7	10692.0	128.07
181	1.07587	11162.1	9749.4	120.72	251	0.742682	12751.7	10705.2	128.16
182	1.06870	11186.0	9763.8	120.85	252	0.739510	12773.6	10718.3	128.25
183	1.06163	11209.9	9778.2	120.98	253	0.736367	12795.6	10731.5	128.33
184	1.05468	11233.6	9792.5	121.11	254	0.733252	12817.5	10744.7	128.42
185	1.04782	11257.4	9806.8	121.24	255	0.730164	12839.4	10757.8	128.51
186	1.04107	11281.1	9821.1	121.37	256	0.727105	12861.4	10771.0	128.59
187	1.03442	11304.7	9835.3	121.49	257	0.724072	12883.2	10784.1	128.68
188	1.02786	11328.3	9849.6	121.62	258	0.721066	12905.1	10797.3	128.76
189	1.02140	11351.8	9863.7	121.74	259	0.718087	12927.0	10810.4	128.85
190	1.01503	11375.3	9877.9	121.87	260	0.715133	12948.9	10823.5	128.93
191	1.00875	11398.7	9892.0	121.99	261	0.712206	12970.7	10836.6	129.01
192	1.00256	11422.1	9906.1	122.11	262	0.709303	12992.6	10849.7	129.10
193	0.996454	11445.5	9920.2	122.23	263	0.706425	13014.4	10862.8	129.18
194	0.990430	11468.8	9934.2	122.35	264	0.703572	13036.2	10875.9	129.26
195	0.984488	11492.1	9948.2	122.47	265	0.700743	13058.0	10889.0	129.35
196	0.978626	11515.3	9962.2	122.59	266	0.697938	13079.8	10902.1	129.43
197	0.972842	11538.5	9976.2	122.71	267	0.695157	13101.6	10915.1	129.51
198	0.967135	11561.7	9990.1	122.83	268	0.692399	13123.4	10928.2	129.59
199	0.961502	11584.8	10004.0	122.94	269	0.689664	13145.1	10941.3	129.67
200	0.955942	11607.9	10017.9	123.06	270	0.686952	13166.9	10954.3	129.75
201	0.950453	11630.9	10031.8	123.18	271	0.684262	13188.6	10967.4	129.83
202	0.945035	11654.0	10045.6	123.29	272	0.681594	13210.4	10980.4	129.91
203	0.939685	11676.9	10059.5	123.40	273	0.678948	13232.1	10993.4	129.99
204	0.934402	11699.9	10073.3	123.52	274	0.676323	13253.8	11006.5	130.07
205	0.929185	11722.8	10087.1	123.63	275	0.673720	13275.5	11019.5	130.15
206	0.924032	11745.7	10100.8	123.74	276	0.671137	13297.2	11032.5	130.23
207	0.918942	11768.6	10114.6	123.85	277	0.668576	13318.9	11045.5	130.31
208	0.913914	11791.4	10128.3	123.96	278	0.666035	13340.6	11058.5	130.39
209	0.908947	11814.2	10142.0	124.07	279	0.663514	13362.2	11071.5	130.47
210	0.904038	11837.0	10155.7	124.18	280	0.661013	13383.9	11084.5	130.54
211	0.899188	11859.7	10169.4	124.29	281	0.658531	13405.6	11097.5	130.62
212	0.894396	11882.4	10183.0	124.39	282	0.656070	13427.2	11110.5	130.70
213	0.889659	11905.1	10196.7	124.50	283	0.653627	13448.8	11123.5	130.77
214	0.884976	11927.8	10210.3	124.61	284	0.651203	13470.5	11136.5	130.85
215	0.880348	11950.4	10223.9	124.71	285	0.648798	13492.1	11149.4	130.93
216	0.875773	11973.0	10237.5	124.82	286	0.646412	13513.7	11162.4	131.00
217	0.871249	11995.6	10251.1	124.92	287	0.644044	13535.3	11175.4	131.08
218	0.866777	12018.2	10264.6	125.02	288	0.641694	13556.9	11188.3	131.15
219	0.862354	12040.7	10278.2	125.13	289	0.639362	13578.5	11201.3	131.23
220	0.857980	12063.2	10291.7	125.23	290	0.637047	13600.1	11214.2	131.30
221	0.853655	12085.7	10305.2	125.33	291	0.634750	13621.7	11227.2	131.38
222	0.849377	12108.2	10318.7	125.43	292	0.632470	13643.2	11240.1	131.45
223	0.845145	12130.6	10332.2	125.53	293	0.630207	13664.8	11253.0	131.52
224	0.840959	12153.1	10345.7	125.64	294	0.627961	13686.3	11266.0	131.60
225	0.836818	12175.5	10359.1	125.74	295	0.625732	13707.9	11278.9	131.67
226	0.832721	12197.8	10372.6	125.83	296	0.623519	13729.4	11291.8	131.74
227	0.828667	12220.2	10386.0	125.93	297	0.621323	13751.0	11304.7	131.82
228	0.824656	12242.5	10399.5	126.03	298	0.619142	13772.5	11317.6	131.89
229	0.820686	12264.9	10412.9	126.13	299	0.616977	13794.0	11330.5	131.96
230	0.816758	12287.2	10426.3	126.23	300	0.614828	13815.5	11343.4	132.03

20.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.2315	2949.4	2891.8	53.70
87	35.0830	2994.6	2936.9	54.23
88	34.9329	3040.1	2982.1	54.75
89	34.7812	3085.8	3027.6	55.26
90	34.6279	3131.7	3073.2	55.78
91	34.4730	3177.8	3119.0	56.29
92	34.3167	3224.0	3165.0	56.79
93	34.1588	3270.4	3211.1	57.29
94	33.9995	3317.0	3257.4	57.79
95	33.8387	3363.8	3303.9	58.29
96	33.6764	3410.7	3350.5	58.78
97	33.5126	3457.8	3397.3	59.27
98	33.3473	3505.0	3444.3	59.75
99	33.1805	3552.4	3491.3	60.23
100	33.0121	3599.9	3538.5	60.71
101	32.8420	3647.6	3585.9	61.18
102	32.6704	3695.4	3633.2	61.65
103	32.4970	3743.3	3680.9	62.12
104	32.3219	3791.4	3728.7	62.59
105	32.1449	3839.6	3776.5	63.05
106	31.9661	3887.9	3824.5	63.51
107	31.7853	3936.4	3872.6	63.96
108	31.6024	3985.0	3920.9	64.41
109	31.4173	4033.8	3969.3	64.86
110	31.2300	4082.7	4017.8	65.31
111	31.0403	4131.9	4066.6	65.75
112	30.8480	4181.2	4115.5	66.20
113	30.6531	4230.7	4164.5	66.64
114	30.4554	4280.4	4213.8	67.07
115	30.2546	4330.3	4263.4	67.51
116	30.0507	4380.6	4313.1	67.95
117	29.8433	4431.1	4363.2	68.38
118	29.6322	4482.0	4413.6	68.81
119	29.4173	4533.2	4464.3	69.24
120	29.1981	4584.8	4515.4	69.68
121	28.9743	4636.9	4567.0	70.11
122	28.7457	4689.5	4619.0	70.54
123	28.5116	4742.7	4671.7	70.98
124	28.2716	4796.6	4724.9	71.41
125	28.0252	4851.2	4778.9	71.85
126	27.7717	4906.7	4833.7	72.29
127	27.5104	4963.2	4889.5	72.74
128	27.2402	5020.7	4946.3	73.19
129	26.9600	5079.6	5004.4	73.65
* 129.994	26.6705	5139.5	5063.6	74.11
* 129.994	2.59195	9507.7	8725.9	107.71
130	2.59162	9508.0	8726.0	107.72
131	2.53921	9551.6	8753.5	109.05
132	2.49036	9593.7	8780.0	108.37
133	2.44461	9634.6	8805.6	108.68
134	2.40159	9674.2	8830.4	108.98
135	2.36099	9712.9	8854.5	109.26
136	2.32255	9750.6	8878.0	109.54
137	2.28606	9787.5	8901.0	109.81
138	2.25134	9823.6	8923.4	110.08
139	2.21822	9859.0	8945.4	110.33
140	2.18656	9893.8	8966.9	110.58
141	2.15625	9927.9	8988.1	110.82
142	2.12717	9961.6	9008.9	111.06
143	2.09923	9994.7	9029.3	111.29
144	2.07236	10027.4	9049.5	111.52
145	2.04647	10059.6	9069.3	111.74
146	2.02150	10091.4	9088.9	111.96
147	1.99739	10122.8	9108.2	112.18
148	1.97408	10153.9	9127.3	112.39
149	1.95153	10184.6	9146.1	112.59
150	1.92969	10215.0	9164.8	112.80
151	1.90852	10245.1	9183.2	113.00
152	1.88798	10274.9	9201.5	113.19
153	1.86803	10304.4	9219.5	113.39
154	1.84866	10333.7	9237.5	113.58
155	1.82982	10362.7	9255.2	113.77
156	1.81149	10391.5	9272.8	113.95
157	1.79364	10420.1	9290.2	114.13
158	1.77626	10448.4	9307.5	114.31
159	1.75931	10476.6	9324.7	114.49
160	1.74279	10504.6	9341.8	114.67

* PHASE CHANGE

20.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	1.72667	10532.4	9358.7	114.84	231	1.09367	12247.4	10394.4	123.74
162	1.71093	10560.0	9375.5	115.01	232	1.08833	12270.2	10408.1	123.83
163	1.69556	10587.4	9392.2	115.18	233	1.08304	12293.0	10421.8	123.93
164	1.68055	10614.7	9408.8	115.35	234	1.07781	12315.7	10435.5	124.03
165	1.66587	10641.8	9425.3	115.51	235	1.07264	12338.5	10449.2	124.13
166	1.65151	10668.7	9441.6	115.68	236	1.06752	12361.2	10462.8	124.22
167	1.63747	10695.6	9457.9	115.84	237	1.06246	12383.8	10476.4	124.32
168	1.62373	10722.2	9474.2	116.00	238	1.05744	12406.5	10490.0	124.41
169	1.61027	10748.8	9490.3	116.15	239	1.05248	12429.1	10503.6	124.51
170	1.59710	10775.2	9506.3	116.31	240	1.04757	12451.7	10517.2	124.60
171	1.58419	10801.5	9522.3	116.46	241	1.04271	12474.3	10530.8	124.70
172	1.57154	10827.7	9538.1	116.62	242	1.03790	12496.9	10544.4	124.79
173	1.55914	10853.7	9553.9	116.77	243	1.03313	12519.4	10557.9	124.88
174	1.54698	10879.7	9569.7	116.92	244	1.02842	12542.0	10571.4	124.98
175	1.53505	10905.5	9585.3	117.06	245	1.02375	12564.5	10584.9	125.07
176	1.52334	10931.2	9600.9	117.21	246	1.01913	12587.0	10598.5	125.16
177	1.51186	10956.9	9616.4	117.36	247	1.01455	12609.4	10611.9	125.25
178	1.50058	10982.4	9631.9	117.50	248	1.01002	12631.9	10625.4	125.34
179	1.48951	11007.8	9647.3	117.64	249	1.00553	12654.3	10638.9	125.43
180	1.47863	11033.2	9662.6	117.78	250	1.00108	12676.7	10652.3	125.52
181	1.46794	11058.4	9677.9	117.92	251	0.996681	12699.1	10665.8	125.61
182	1.45744	11083.6	9693.1	118.06	252	0.992319	12721.5	10679.2	125.70
183	1.44712	11108.7	9708.3	118.20	253	0.987999	12743.8	10692.7	125.79
184	1.43698	11133.7	9723.4	118.34	254	0.983719	12766.2	10706.1	125.88
185	1.42700	11158.6	9738.5	118.47	255	0.979479	12788.5	10719.5	125.96
186	1.41719	11183.5	9753.5	118.61	256	0.975278	12810.8	10732.9	126.05
187	1.40754	11208.3	9768.5	118.74	257	0.971116	12833.1	10746.2	126.14
188	1.39804	11233.0	9783.4	118.87	258	0.966992	12855.3	10759.6	126.23
189	1.38869	11257.6	9798.3	119.00	259	0.962906	12877.6	10773.0	126.31
190	1.37949	11282.2	9813.1	119.13	260	0.958857	12899.8	10786.3	126.40
191	1.37044	11306.7	9827.9	119.26	261	0.954845	12922.0	10799.7	126.48
192	1.36152	11331.1	9842.7	119.39	262	0.950868	12944.2	10813.0	126.57
193	1.35274	11355.5	9857.4	119.51	263	0.946927	12966.4	10826.3	126.65
194	1.34409	11379.8	9872.0	119.64	264	0.943021	12988.6	10839.6	126.74
195	1.33557	11404.1	9886.7	119.76	265	0.939150	13010.8	10852.9	126.82
196	1.32717	11428.2	9901.3	119.89	266	0.935312	13032.9	10866.2	126.90
197	1.31890	11452.4	9915.8	120.01	267	0.931508	13055.1	10879.5	126.99
198	1.31074	11476.5	9930.4	120.13	268	0.927737	13077.2	10892.8	127.07
199	1.30271	11500.5	9944.9	120.25	269	0.923998	13099.3	10906.0	127.15
200	1.29478	11524.5	9959.3	120.37	270	0.920292	13121.4	10919.3	127.23
201	1.28697	11548.4	9973.7	120.49	271	0.916617	13143.4	10932.5	127.31
202	1.27926	11572.3	9988.1	120.61	272	0.912974	13165.5	10945.8	127.40
203	1.27166	11596.1	10002.5	120.73	273	0.909361	13187.6	10959.0	127.48
204	1.26416	11619.9	10016.8	120.85	274	0.905779	13209.6	10972.2	127.56
205	1.25677	11643.6	10031.1	120.96	275	0.902227	13231.6	10985.5	127.64
206	1.24947	11667.3	10045.4	121.08	276	0.898705	13253.6	10998.7	127.72
207	1.24227	11691.0	10059.6	121.19	277	0.895211	13275.6	11011.9	127.80
208	1.23516	11714.6	10073.8	121.31	278	0.891747	13297.6	11025.1	127.88
209	1.22815	11738.1	10088.0	121.42	279	0.888311	13319.6	11038.3	127.96
210	1.22123	11761.6	10102.2	121.53	280	0.884903	13341.6	11051.4	128.03
211	1.21439	11785.1	10116.3	121.64	281	0.881523	13363.5	11064.6	128.11
212	1.20764	11808.5	10130.4	121.75	282	0.878170	13385.5	11077.8	128.19
213	1.20097	11831.9	10144.5	121.86	283	0.874844	13407.4	11090.9	128.27
214	1.19439	11855.3	10158.6	121.97	284	0.871545	13429.3	11104.1	128.34
215	1.18789	11878.6	10172.6	122.08	285	0.868272	13451.2	11117.2	128.42
216	1.18147	11901.9	10186.6	122.19	286	0.865025	13473.1	11130.4	128.50
217	1.17512	11925.2	10200.6	122.30	287	0.861804	13495.0	11143.5	128.58
218	1.16886	11948.4	10214.6	122.40	288	0.858608	13516.9	11156.6	128.65
219	1.16266	11971.6	10228.6	122.51	289	0.855437	13538.8	11169.7	128.73
220	1.15654	11994.7	10242.5	122.61	290	0.852291	13560.6	11182.9	128.80
221	1.15049	12017.8	10256.4	122.72	291	0.849169	13582.5	11196.0	128.88
222	1.14452	12040.9	10270.3	122.82	292	0.846071	13604.3	11209.1	128.95
223	1.13861	12064.0	10284.1	122.93	293	0.842997	13626.1	11222.2	129.03
224	1.13277	12087.0	10298.0	123.03	294	0.839947	13648.0	11235.2	129.10
225	1.12699	12110.0	10311.8	123.13	295	0.836920	13669.8	11248.3	129.18
226	1.12128	12133.0	10325.6	123.23	296	0.833916	13691.6	11261.4	129.25
227	1.11564	12155.9	10339.4	123.34	297	0.830934	13713.4	11274.5	129.32
228	1.11005	12178.8	10353.2	123.44	298	0.827975	13735.1	11287.5	129.40
229	1.10453	12201.7	10367.0	123.54	299	0.825038	13756.9	11300.6	129.47
230	1.09907	12224.6	10380.7	123.64	300	0.822123	13778.7	11313.6	129.54

25.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.2683	2958.6	2886.7	53.64
87	35.1206	3003.8	2931.6	54.17
88	34.9713	3049.1	2976.7	54.69
89	34.8204	3094.7	3022.0	55.20
90	34.6680	3140.5	3067.4	55.71
91	34.5141	3186.4	3113.0	56.22
92	34.3587	3232.6	3158.9	56.72
93	34.2018	3278.9	3204.8	57.22
94	34.0435	3325.4	3251.0	57.72
95	33.8838	3372.0	3297.2	58.22
96	33.7226	3418.8	3343.7	58.71
97	33.5600	3465.7	3390.3	59.19
98	33.3960	3512.8	3437.0	59.67
99	33.2304	3560.1	3483.8	60.15
100	33.0634	3607.4	3530.8	60.63
101	32.8948	3654.9	3577.9	61.10
102	32.7246	3702.6	3625.2	61.57
103	32.5528	3750.3	3672.5	62.04
104	32.3793	3798.2	3720.0	62.50
105	32.2041	3846.2	3767.6	62.96
106	32.0271	3894.4	3815.3	63.42
107	31.8482	3942.6	3863.1	63.87
108	31.6673	3991.0	3911.0	64.32
109	31.4844	4039.6	3959.1	64.77
110	31.2993	4088.3	4007.3	65.21
111	31.1120	4137.1	4055.7	65.65
112	30.9223	4186.1	4104.2	66.09
113	30.7301	4235.3	4152.9	66.53
114	30.5352	4284.7	4201.8	66.97
115	30.3375	4334.3	4250.8	67.40
116	30.1368	4384.2	4300.1	67.83
117	29.9330	4434.3	4349.7	68.26
118	29.7257	4484.7	4399.5	68.69
119	29.5149	4535.5	4449.6	69.12
120	29.3001	4586.6	4500.1	69.55
121	29.0811	4638.1	4551.0	69.97
122	28.8577	4690.1	4602.3	70.40
123	28.6293	4742.6	4654.1	70.83
124	28.3957	4795.7	4706.5	71.26
125	28.1562	4849.5	4759.5	71.69
126	27.9104	4904.1	4813.3	72.13
127	27.6576	4959.5	4867.9	72.57
128	27.3971	5015.8	4923.4	73.01
129	27.1280	5073.3	4980.0	73.46
130	26.8492	5132.1	5037.8	73.91
131	26.5594	5192.4	5097.0	74.37
132	26.2572	5254.4	5157.9	74.84
133	25.9405	5318.4	5220.7	75.33
134	25.6069	5384.8	5285.8	75.82
* 134.829	25.3151	5441.9	5341.9	76.25
* 134.829	3.36017	9388.3	8634.4	105.52
135	3.34525	9397.7	8640.4	105.59
136	3.26288	9451.0	8674.6	105.98
137	3.18785	9501.6	8707.0	106.35
138	3.11895	9549.9	8737.7	106.70
139	3.05522	9596.3	8767.2	107.04
140	2.99593	9641.0	8795.5	107.36
141	2.94050	9684.3	8822.8	107.67
142	2.88846	9726.2	8849.2	107.96
143	2.83941	9767.0	8874.8	108.25
144	2.79304	9806.7	8899.8	108.53
145	2.74906	9845.5	8924.0	108.79
146	2.70725	9883.5	8947.7	109.05
147	2.66740	9920.6	8970.9	109.31
148	2.62935	9957.1	8993.6	109.56
149	2.59294	9992.8	9015.9	109.80
150	2.55804	10028.0	9037.7	110.03
151	2.52454	10062.6	9059.2	110.26
152	2.49232	10096.7	9080.3	110.49
153	2.46131	10130.3	9101.1	110.71
154	2.43141	10163.4	9121.6	110.92
155	2.40255	10196.1	9141.8	111.13
156	2.37467	10228.4	9161.7	111.34
157	2.34770	10260.4	9181.4	111.55
158	2.32159	10291.9	9200.8	111.75
159	2.29629	10323.2	9220.0	111.94
160	2.27176	10354.1	9239.0	112.14

* PHASE CHANGE

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25.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	2.24794	10384.7	9257.8	112.33	231	1.37957	12184.8	10348.6	121.68
162	2.22481	10415.0	9276.4	112.52	232	1.37261	12208.1	10362.6	121.78
163	2.20233	10445.0	9294.8	112.70	233	1.36573	12231.5	10376.7	121.88
164	2.18046	10474.8	9313.1	112.88	234	1.35894	12254.8	10390.7	121.98
165	2.15917	10504.4	9331.1	113.06	235	1.35221	12278.0	10404.7	122.08
166	2.13844	10533.7	9349.1	113.24	236	1.34556	12301.3	10418.6	122.18
167	2.11824	10562.8	9366.9	113.41	237	1.33899	12324.5	10432.6	122.28
168	2.09855	10591.6	9384.5	113.59	238	1.33248	12347.6	10446.5	122.38
169	2.07933	10620.3	9402.0	113.76	239	1.32605	12370.8	10460.4	122.47
170	2.06058	10648.7	9419.4	113.92	240	1.31969	12393.9	10474.3	122.57
171	2.04227	10677.0	9436.6	114.09	241	1.31339	12416.9	10488.2	122.67
172	2.02438	10705.1	9453.8	114.25	242	1.30716	12440.0	10502.1	122.76
173	2.00690	10733.0	9470.8	114.42	243	1.30100	12463.0	10515.9	122.86
174	1.98981	10760.8	9487.7	114.58	244	1.29490	12486.0	10529.7	122.95
175	1.97309	10788.4	9504.5	114.73	245	1.28888	12509.0	10543.5	123.05
176	1.95672	10815.8	9521.2	114.89	246	1.28288	12531.9	10557.3	123.14
177	1.94071	10843.1	9537.8	115.04	247	1.27697	12554.9	10571.1	123.23
178	1.92502	10870.2	9554.3	115.20	248	1.27112	12577.7	10584.9	123.32
179	1.90966	10897.2	9570.7	115.35	249	1.26533	12600.6	10598.6	123.42
180	1.89460	10924.1	9587.0	115.50	250	1.25959	12623.5	10612.3	123.51
181	1.87985	10950.8	9603.3	115.65	251	1.25391	12646.3	10626.1	123.60
182	1.86538	10977.5	9619.5	115.79	252	1.24829	12669.1	10639.8	123.69
183	1.85118	11004.0	9635.5	115.94	253	1.24272	12691.9	10653.4	123.78
184	1.83726	11030.3	9651.5	116.08	254	1.23721	12714.6	10667.1	123.87
185	1.82359	11056.6	9667.5	116.22	255	1.23175	12737.3	10680.8	123.96
186	1.81018	11082.8	9683.3	116.37	256	1.22635	12760.0	10694.4	124.05
187	1.79700	11108.8	9699.1	116.51	257	1.22099	12782.7	10708.0	124.14
188	1.78407	11134.8	9714.9	116.64	258	1.21569	12805.4	10721.6	124.22
189	1.77136	11160.6	9730.5	116.78	259	1.21044	12828.0	10735.2	124.31
190	1.75887	11186.4	9746.1	116.92	260	1.20523	12850.6	10748.8	124.40
191	1.74659	11212.0	9761.7	117.05	261	1.20008	12873.3	10762.4	124.49
192	1.73453	11237.6	9777.2	117.19	262	1.19497	12895.8	10776.0	124.57
193	1.72266	11263.1	9792.6	117.32	263	1.18991	12918.4	10789.5	124.66
194	1.71099	11288.5	9808.0	117.45	264	1.18490	12940.9	10803.1	124.74
195	1.69951	11313.8	9823.3	117.58	265	1.17994	12963.5	10816.6	124.83
196	1.68821	11339.1	9838.5	117.71	266	1.17501	12986.0	10830.1	124.91
197	1.67710	11364.2	9853.8	117.84	267	1.17014	13008.5	10843.6	125.00
198	1.66616	11389.3	9868.9	117.96	268	1.16531	13030.9	10857.1	125.08
199	1.65539	11414.3	9884.0	118.09	269	1.16052	13053.4	10870.6	125.17
200	1.64478	11439.3	9899.1	118.21	270	1.15577	13075.8	10884.0	125.25
201	1.63434	11464.1	9914.1	118.34	271	1.15106	13098.2	10897.5	125.33
202	1.62405	11488.9	9929.1	118.46	272	1.14640	13120.6	10910.9	125.41
203	1.61392	11513.7	9944.1	118.58	273	1.14178	13143.0	10924.4	125.50
204	1.60393	11538.3	9959.0	118.70	274	1.13720	13165.4	10937.8	125.58
205	1.59409	11562.9	9973.8	118.82	275	1.13265	13187.7	10951.2	125.66
206	1.58439	11587.5	9988.6	118.94	276	1.12815	13210.1	10964.6	125.74
207	1.57483	11612.0	10003.4	119.06	277	1.12368	13232.4	10978.0	125.82
208	1.56541	11636.4	10018.1	119.18	278	1.11926	13254.7	10991.4	125.90
209	1.55611	11660.7	10032.9	119.30	279	1.11487	13277.0	11004.8	125.98
210	1.54694	11685.1	10047.5	119.41	280	1.11052	13299.2	11018.2	126.06
211	1.53790	11709.3	10062.2	119.53	281	1.10620	13321.5	11031.5	126.14
212	1.52899	11733.5	10076.7	119.64	282	1.10192	13343.8	11044.9	126.22
213	1.52019	11757.7	10091.3	119.76	283	1.09768	13366.0	11058.2	126.30
214	1.51151	11781.8	10105.8	119.87	284	1.09347	13388.2	11071.5	126.38
215	1.50294	11805.8	10120.3	119.98	285	1.08929	13410.4	11084.9	126.45
216	1.49448	11829.8	10134.8	120.09	286	1.08515	13432.6	11098.2	126.53
217	1.48614	11853.8	10149.3	120.20	287	1.08104	13454.8	11111.5	126.61
218	1.47790	11877.7	10163.7	120.31	288	1.07697	13476.9	11124.8	126.69
219	1.46977	11901.6	10178.0	120.42	289	1.07293	13499.1	11138.1	126.76
220	1.46173	11925.4	10192.4	120.53	290	1.06892	13521.2	11151.4	126.84
221	1.45380	11949.2	10206.7	120.64	291	1.06495	13543.3	11164.6	126.92
222	1.44597	11972.9	10221.0	120.75	292	1.06100	13565.4	11177.9	126.99
223	1.43823	11996.6	10235.3	120.85	293	1.05709	13587.5	11191.2	127.07
224	1.43059	12020.3	10249.5	120.96	294	1.05320	13609.6	11204.4	127.14
225	1.42304	12043.9	10263.8	121.06	295	1.04935	13631.7	11217.7	127.22
226	1.41558	12067.5	10277.9	121.17	296	1.04553	13653.8	11230.9	127.29
227	1.40820	12091.0	10292.1	121.27	297	1.04174	13675.8	11244.1	127.37
228	1.40092	12114.5	10306.3	121.38	298	1.03797	13697.8	11257.3	127.44
229	1.39372	12138.0	10320.4	121.48	299	1.03424	13719.9	11270.6	127.51
230	1.38660	12161.4	10334.5	121.58	300	1.03053	13741.9	11283.8	127.59

30.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.3048	2967.8	2881.7	53.59
87	35.1579	3012.9	2926.4	54.11
88	35.0094	3058.2	2971.3	54.62
89	34.8593	3103.6	3016.4	55.14
90	34.7077	3149.3	3061.7	55.65
91	34.5547	3195.2	3107.2	56.15
92	34.4002	3241.2	3152.8	56.66
93	34.2443	3287.4	3198.6	57.16
94	34.0871	3333.7	3244.6	57.65
95	33.9284	3380.3	3290.7	58.14
96	33.7683	3426.9	3336.9	58.63
97	33.6069	3473.7	3383.3	59.12
98	33.4440	3520.7	3429.8	59.60
99	33.2797	3567.8	3476.4	60.08
100	33.1140	3615.0	3523.2	60.55
101	32.9468	3662.4	3570.1	61.02
102	32.7780	3709.8	3617.1	61.49
103	32.6078	3757.4	3664.2	61.96
104	32.4359	3805.1	3711.4	62.42
105	32.2623	3853.0	3758.7	62.87
106	32.0870	3900.9	3806.2	63.33
107	31.9100	3949.0	3853.7	63.78
108	31.7310	3997.2	3901.4	64.23
109	31.5502	4045.5	3949.1	64.67
110	31.3672	4093.9	3997.0	65.12
111	31.1822	4142.5	4045.0	65.56
112	30.9949	4191.3	4093.2	65.99
113	30.8053	4240.2	4141.5	66.43
114	30.6131	4289.2	4190.0	66.86
115	30.4183	4338.5	4238.6	67.29
116	30.2208	4388.0	4287.4	67.72
117	30.0202	4437.8	4336.5	68.15
118	29.8165	4487.8	4385.8	68.57
119	29.6095	4538.1	4435.4	69.00
120	29.3988	4588.7	4485.3	69.42
121	29.1844	4639.7	4535.5	69.84
122	28.9657	4691.1	4586.2	70.27
123	28.7426	4743.0	4637.2	70.69
124	28.5147	4795.4	4688.8	71.11
125	28.2815	4848.4	4741.0	71.54
126	28.0427	4902.1	4793.7	71.97
127	27.7976	4956.6	4847.3	72.40
128	27.5457	5011.9	4901.6	72.83
129	27.2861	5068.2	4956.8	73.27
130	27.0182	5125.7	5013.2	73.71
131	26.7409	5184.4	5070.7	74.16
132	26.4530	5244.	5129.7	74.62
133	26.1530	5306.5	5190.3	75.09
134	25.8391	5370.4	5252.8	75.57
135	25.5091	5436.6	5317.4	76.06
136	25.1601	5505.1	5384.3	76.57
137	24.7880	5576.6	5454.0	77.09
138	24.3876	5651.8	5527.2	77.64
139	23.9512	5731.7	5604.8	78.21
* 139.003	23.9500	5731.9	5605.0	78.22
* 139.003	4.23873	9236.1	8519.0	103.43
140	4.10309	9305.1	8584.2	103.92
141	3.98419	9368.7	8605.8	104.37
142	3.87842	9428.0	8644.2	104.79
143	3.78310	9483.8	8680.3	105.18
144	3.69628	9536.8	8714.4	105.55
145	3.61655	9587.3	8746.8	105.90
146	3.54283	9635.8	8777.8	106.24
147	3.47426	9682.4	8807.5	106.55
148	3.41016	9727.5	8836.1	106.86
149	3.35000	9771.2	8863.8	107.15
150	3.29331	9813.7	8890.6	107.44
151	3.23973	9855.0	8916.7	107.71
152	3.18893	9895.3	8942.1	107.98
153	3.14064	9934.7	8966.8	108.24
154	3.09464	9973.3	8991.0	108.49
155	3.05072	10011.1	9014.6	108.73
156	3.00870	10048.2	9037.8	108.97
157	2.96843	10084.6	9060.5	109.20
158	2.92978	10120.4	9082.9	109.43
159	2.89263	10155.7	9104.8	109.65
160	2.85686	10190.4	9126.4	109.87

* PHASE CHANGE

30.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	2.82239	10224.7	9147.6	110.08	231	1.67063	12121.6	10302.1	119.97
162	2.78913	10258.4	9168.5	110.29	232	1.66194	12145.6	10316.5	120.07
163	2.75699	10291.8	9189.2	110.50	233	1.65335	12169.5	10330.9	120.17
164	2.72592	10324.7	9209.5	110.70	234	1.64487	12193.3	10345.3	120.27
165	2.69584	10357.3	9229.7	110.90	235	1.63648	12217.1	10359.6	120.38
166	2.66669	10389.4	9249.5	111.09	236	1.62819	12240.9	10373.9	120.48
167	2.63843	10421.3	9269.1	111.28	237	1.62000	12264.7	10388.2	120.58
168	2.61100	10452.8	9288.6	111.47	238	1.61190	12288.4	10402.5	120.68
169	2.58437	10484.0	9307.8	111.66	239	1.60389	12312.0	10416.7	120.78
170	2.55848	10514.9	9326.8	111.84	240	1.59597	12335.6	10431.0	120.87
171	2.53330	10545.5	9345.6	112.02	241	1.58814	12359.2	10445.1	120.97
172	2.50879	10575.9	9364.2	112.20	242	1.58040	12382.8	10459.3	121.07
173	2.48493	10606.0	9382.7	112.37	243	1.57274	12406.3	10473.5	121.17
174	2.46168	10635.9	9401.0	112.54	244	1.56517	12429.8	10487.6	121.26
175	2.43901	10665.5	9419.2	112.71	245	1.55768	12453.2	10501.7	121.36
176	2.41690	10694.9	9437.2	112.88	246	1.55027	12476.6	10515.8	121.46
177	2.39532	10724.1	9455.1	113.05	247	1.54294	12500.0	10529.9	121.55
178	2.37425	10753.1	9472.8	113.21	248	1.53568	12523.4	10543.9	121.64
179	2.35367	10781.9	9490.4	113.37	249	1.52851	12546.7	10558.0	121.74
180	2.33355	10810.5	9507.9	113.53	250	1.52140	12570.0	10572.0	121.83
181	2.31389	10839.0	9525.2	113.69	251	1.51438	12593.3	10586.0	121.92
182	2.29465	10867.2	9542.5	113.84	252	1.50742	12616.5	10599.9	122.02
183	2.27583	10895.3	9559.6	114.00	253	1.50054	12639.7	10613.9	122.11
184	2.25741	10923.2	9576.6	114.15	254	1.49372	12662.9	10627.8	122.20
185	2.23936	10951.0	9593.6	114.30	255	1.48698	12686.0	10641.7	122.29
186	2.22169	10978.6	9610.4	114.45	256	1.48030	12709.1	10655.6	122.38
187	2.20438	11006.1	9627.1	114.60	257	1.47369	12732.2	10669.5	122.47
188	2.18740	11033.4	9643.7	114.74	258	1.46715	12755.3	10683.4	122.56
189	2.17076	11060.7	9660.3	114.89	259	1.46067	12778.3	10697.2	122.65
190	2.15443	11087.7	9676.8	115.03	260	1.45425	12801.4	10711.1	122.74
191	2.13842	11114.7	9693.1	115.17	261	1.44790	12824.4	10724.9	122.83
192	2.12270	11141.5	9709.4	115.31	262	1.44160	12847.3	10738.7	122.92
193	2.10727	11168.2	9725.7	115.45	263	1.43537	12870.3	10752.5	123.00
194	2.09213	11194.8	9741.8	115.59	264	1.42920	12893.2	10766.2	123.09
195	2.07725	11221.3	9757.9	115.72	265	1.42308	12916.1	10780.0	123.18
196	2.06263	11247.7	9773.9	115.86	266	1.41703	12939.0	10793.7	123.26
197	2.04827	11273.9	9789.8	115.99	267	1.41103	12961.8	10807.5	123.35
198	2.03415	11300.1	9805.7	116.12	268	1.40508	12984.6	10821.2	123.43
199	2.02027	11326.2	9821.5	116.26	269	1.39919	13007.4	10834.9	123.52
200	2.00663	11352.2	9837.3	116.39	270	1.39336	13030.2	10848.6	123.60
201	1.99321	11378.0	9852.9	116.51	271	1.38758	13053.0	10862.2	123.69
202	1.98000	11403.8	9868.6	116.64	272	1.38185	13075.7	10875.9	123.77
203	1.96701	11429.5	9884.1	116.77	273	1.37617	13098.4	10889.5	123.85
204	1.95423	11455.2	9899.7	116.90	274	1.37055	13121.1	10903.2	123.94
205	1.94165	11480.7	9915.1	117.02	275	1.36497	13143.8	10916.8	124.02
206	1.92926	11506.2	9930.5	117.14	276	1.35945	13166.5	10930.4	124.10
207	1.91706	11531.5	9945.9	117.27	277	1.35397	13189.1	10944.0	124.18
208	1.90505	11556.8	9961.2	117.39	278	1.34854	13211.8	10957.6	124.27
209	1.89322	11582.1	9976.4	117.51	279	1.34316	13234.4	10971.2	124.35
210	1.88156	11607.2	9991.7	117.63	280	1.33782	13256.9	10984.7	124.43
211	1.87009	11632.3	10006.8	117.75	281	1.33254	13279.5	10998.3	124.51
212	1.85876	11657.3	10021.9	117.87	282	1.32729	13302.1	11011.8	124.59
213	1.84760	11682.3	10037.0	117.99	283	1.32209	13324.6	11025.3	124.67
214	1.83660	11707.2	10052.1	118.10	284	1.31694	13347.1	11038.9	124.75
215	1.82576	11732.0	10067.0	118.22	285	1.31183	13369.6	11052.4	124.83
216	1.81507	11756.8	10082.0	118.33	286	1.30676	13392.1	11065.9	124.90
217	1.80452	11781.5	10096.9	118.45	287	1.30174	13414.6	11079.3	124.98
218	1.79412	11806.1	10111.8	118.56	288	1.29675	13437.0	11092.8	125.06
219	1.78386	11830.7	10126.6	118.67	289	1.29181	13459.4	11106.3	125.14
220	1.77374	11855.2	10141.4	118.78	290	1.28691	13481.9	11119.7	125.22
221	1.76375	11879.7	10156.2	118.90	291	1.28205	13504.3	11133.2	125.29
222	1.75390	11904.1	10170.9	119.01	292	1.27723	13526.6	11146.6	125.37
223	1.74417	11928.5	10185.6	119.11	293	1.27245	13549.0	11160.1	125.45
224	1.73456	11952.8	10200.3	119.22	294	1.26770	13571.4	11173.5	125.52
225	1.72508	11977.1	10214.9	119.33	295	1.26300	13593.7	11186.9	125.60
226	1.71572	12001.3	10229.5	119.44	296	1.25833	13616.0	11200.3	125.67
227	1.70648	12025.4	10244.1	119.55	297	1.25370	13638.3	11213.7	125.75
228	1.69735	12049.6	10258.6	119.65	298	1.24911	13660.6	11227.0	125.82
229	1.68834	12073.6	10273.1	119.76	299	1.24455	13682.9	11240.4	125.90
230	1.67943	12097.7	10287.6	119.86	300	1.24003	13705.2	11253.8	125.97

35.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.3409	2977.1	2876.7	53.53
87	35.1948	3022.0	2921.3	54.05
88	35.0470	3067.2	2966.0	54.56
89	34.8977	3112.6	3011.0	55.07
90	34.7470	3158.2	3056.1	55.58
91	34.5949	3203.9	3101.4	56.09
92	34.4413	3249.8	3146.8	56.59
93	34.2864	3295.9	3192.5	57.09
94	34.1301	3342.1	3238.2	57.58
95	33.9724	3388.5	3284.2	58.08
96	33.8135	3435.1	3330.2	58.56
97	33.6531	3481.8	3376.4	59.05
98	33.4914	3528.6	3422.7	59.53
99	33.3284	3575.6	3469.2	60.00
100	33.1639	3622.7	3515.7	60.48
101	32.9980	3669.9	3562.4	60.95
102	32.8307	3717.2	3609.2	61.41
103	32.6619	3764.6	3656.0	61.88
104	32.4915	3812.1	3703.0	62.33
105	32.3196	3859.8	3750.1	62.79
106	32.1460	3907.6	3797.2	63.24
107	31.9707	3955.4	3844.5	63.69
108	31.7936	4003.4	3891.9	64.14
109	31.6147	4051.5	3939.3	64.58
110	31.4339	4099.7	3986.9	65.02
111	31.2510	4148.1	4034.6	65.46
112	31.0660	4196.6	4082.4	65.90
113	30.8788	4245.2	4130.3	66.33
114	30.6893	4294.0	4178.4	66.76
115	30.4972	4342.9	4226.6	67.18
116	30.3026	4392.1	4275.1	67.61
117	30.1052	4441.5	4323.7	68.03
118	29.9049	4491.1	4372.5	68.46
119	29.7014	4541.0	4421.6	68.88
120	29.4946	4591.1	4470.9	69.30
121	29.2842	4641.6	4520.5	69.72
122	29.0701	4692.5	4570.5	70.14
123	28.8518	4743.9	4620.9	70.55
124	28.6292	4795.6	4671.8	70.97
125	28.4018	4848.0	4723.1	71.39
126	28.1692	4900.9	4775.0	71.82
127	27.9311	4954.5	4827.5	72.24
128	27.6868	5008.9	4880.8	72.67
129	27.4359	5064.2	4934.9	73.10
130	27.1775	5120.4	4989.9	73.53
131	26.9110	5177.8	5046.0	73.97
132	26.6353	5236.4	5103.3	74.42
133	26.3494	5296.6	5162.0	74.87
134	26.0519	5358.4	5222.3	75.33
135	25.7411	5422.2	5284.4	75.81
136	25.4149	5487.8	5348.2	76.29
137	25.0707	5555.7	5414.2	76.79
138	24.7051	5626.5	5482.9	77.30
139	24.3133	5700.6	5554.8	77.84
140	23.8889	5779.0	5630.6	78.40
141	23.4222	5862.9	5711.5	79.00
142	22.8981	5954.5	5799.6	79.65
* 142.688	22.4910	6023.6	5866.0	80.13
* 142.688	5.29148	9041.6	8371.3	101.28
143	5.21281	9072.9	8392.6	101.50
144	4.99499	9163.6	8453.6	102.13
145	4.81481	9243.4	8506.8	102.69
146	4.66066	9315.5	8554.5	103.18
147	4.52569	9381.8	8598.2	103.64
148	4.40553	9443.6	8638.6	104.05
149	4.29718	9501.8	8676.5	104.45
150	4.19849	9557.0	8712.3	104.82
151	4.10785	9609.6	8746.2	105.17
152	4.02404	9660.0	8778.7	105.50
153	3.94611	9708.5	8809.8	105.82
154	3.87328	9755.3	8839.7	106.12
155	3.80493	9800.7	8868.6	106.41
156	3.74055	9844.7	8896.6	106.70
157	3.67971	9887.6	8923.8	106.97
158	3.62204	9929.4	8950.2	107.24
159	3.56724	9970.1	8976.0	107.49
160	3.51504	10010.1	9001.1	107.74

* PHASE CHANGE

35.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	3.46522	10049.1	9025.7	107.99	231	1.96694	12058.0	10255.0	118.48
162	3.41757	10087.5	9049.7	108.23	232	1.95638	12082.5	10269.8	118.59
163	3.37192	10125.1	9073.3	108.46	233	1.94595	12107.0	10284.5	118.69
164	3.32812	10162.1	9096.5	108.68	234	1.93566	12131.5	10299.3	118.80
165	3.28601	10198.4	9119.2	108.90	235	1.92548	12155.8	10314.0	118.90
166	3.24550	10234.3	9141.5	109.12	236	1.91544	12180.2	10328.7	119.00
167	3.20645	10269.5	9163.5	109.33	237	1.90551	12204.5	10343.3	119.11
168	3.16878	10304.3	9185.1	109.54	238	1.89571	12228.7	10357.9	119.21
169	3.13240	10338.7	9206.5	109.74	239	1.88602	12252.9	10372.5	119.31
170	3.09722	10372.6	9227.5	109.94	240	1.87644	12277.1	10387.1	119.41
171	3.06317	10406.0	9248.3	110.14	241	1.86698	12301.2	10401.6	119.51
172	3.03019	10439.1	9268.8	110.33	242	1.85762	12325.3	10416.1	119.61
173	2.99822	10471.9	9289.0	110.52	243	1.84838	12349.3	10430.6	119.71
174	2.96719	10504.2	9309.0	110.71	244	1.83924	12373.3	10445.0	119.81
175	2.93706	10536.3	9328.8	110.89	245	1.83020	12397.2	10459.5	119.91
176	2.90779	10568.0	9348.4	111.07	246	1.82127	12421.1	10473.9	120.00
177	2.87931	10599.4	9367.7	111.25	247	1.81243	12445.0	10488.2	120.10
178	2.85161	10630.6	9386.9	111.43	248	1.80370	12468.8	10502.6	120.20
179	2.82463	10661.4	9405.9	111.60	249	1.79506	12492.6	10516.9	120.29
180	2.79835	10692.1	9424.7	111.77	250	1.78651	12516.4	10531.2	120.39
181	2.77274	10722.4	9443.4	111.94	251	1.77806	12540.1	10545.5	120.48
182	2.74775	10752.5	9461.9	112.11	252	1.76969	12563.7	10559.7	120.58
183	2.72337	10782.4	9480.2	112.27	253	1.76142	12587.4	10574.0	120.67
184	2.69956	10812.1	9498.4	112.43	254	1.75323	12611.0	10588.2	120.76
185	2.67631	10841.6	9516.5	112.59	255	1.74513	12634.6	10602.4	120.86
186	2.65359	10870.9	9534.4	112.75	256	1.73712	12658.1	10616.6	120.95
187	2.63138	10899.9	9552.2	112.90	257	1.72918	12681.6	10630.7	121.04
188	2.60966	10928.8	9569.8	113.06	258	1.72133	12705.1	10644.8	121.13
189	2.58840	10957.5	9587.4	113.21	259	1.71356	12728.6	10658.9	121.22
190	2.56760	10986.0	9604.8	113.36	260	1.70587	12752.0	10673.0	121.31
191	2.54723	11014.4	9622.1	113.51	261	1.69826	12775.4	10687.1	121.40
192	2.52727	11042.6	9639.3	113.66	262	1.69072	12798.7	10701.1	121.49
193	2.50772	11070.7	9656.5	113.80	263	1.68326	12822.1	10715.2	121.58
194	2.48856	11098.6	9673.5	113.95	264	1.67587	12845.4	10729.2	121.67
195	2.46978	11126.3	9690.4	114.09	265	1.66855	12868.6	10743.2	121.76
196	2.45135	11154.0	9707.2	114.23	266	1.66131	12891.9	10757.2	121.85
197	2.43328	11181.4	9724.0	114.37	267	1.65413	12915.1	10771.1	121.93
198	2.41554	11208.8	9740.6	114.51	268	1.64703	12938.3	10785.1	122.02
199	2.39813	11236.0	9757.2	114.65	269	1.63999	12961.5	10799.0	122.11
200	2.38103	11263.1	9773.7	114.78	270	1.63302	12984.6	10812.9	122.19
201	2.36424	11290.1	9790.1	114.92	271	1.62611	13007.7	10826.8	122.28
202	2.34775	11317.0	9806.4	115.05	272	1.61928	13030.8	10840.7	122.36
203	2.33154	11343.7	9822.6	115.18	273	1.61250	13053.9	10854.5	122.45
204	2.31561	11370.4	9838.8	115.31	274	1.60579	13076.9	10868.4	122.53
205	2.29995	11396.9	9854.9	115.44	275	1.59914	13099.9	10882.2	122.61
206	2.28455	11423.4	9871.0	115.57	276	1.59255	13122.9	10896.0	122.70
207	2.26941	11449.7	9887.0	115.70	277	1.58602	13145.9	10909.8	122.78
208	2.25452	11475.9	9902.9	115.83	278	1.57954	13168.8	10923.6	122.86
209	2.23986	11502.1	9918.8	115.95	279	1.57313	13191.8	10937.4	122.95
210	2.22544	11528.2	9934.6	116.08	280	1.56678	13214.7	10951.1	123.03
211	2.21124	11554.1	9950.3	116.20	281	1.56048	13237.6	10964.9	123.11
212	2.19727	11580.0	9966.0	116.32	282	1.55424	13260.4	10978.6	123.19
213	2.18351	11605.8	9981.6	116.44	283	1.54805	13283.3	10992.3	123.27
214	2.16996	11631.5	9997.2	116.56	284	1.54191	13306.1	11006.0	123.35
215	2.15661	11657.2	10012.7	116.68	285	1.53583	13328.9	11019.7	123.43
216	2.14346	11682.7	10028.2	116.80	286	1.52981	13351.7	11033.4	123.51
217	2.13050	11708.2	10043.6	116.92	287	1.52383	13374.4	11047.1	123.59
218	2.11773	11733.6	10059.0	117.04	288	1.51791	13397.2	11060.7	123.67
219	2.10515	11759.0	10074.3	117.15	289	1.51203	13419.9	11074.4	123.75
220	2.09274	11784.2	10089.6	117.27	290	1.50621	13442.6	11088.0	123.83
221	2.08051	11809.4	10104.8	117.38	291	1.50043	13465.3	11101.6	123.91
222	2.06845	11834.6	10120.0	117.50	292	1.49471	13487.9	11115.2	123.98
223	2.05656	11859.6	10135.2	117.61	293	1.48903	13510.6	11128.8	124.06
224	2.04482	11884.6	10150.3	117.72	294	1.48340	13533.2	11142.4	124.14
225	2.03325	11909.6	10165.3	117.83	295	1.47781	13555.8	11156.0	124.21
226	2.02183	11934.5	10180.4	117.94	296	1.47227	13578.4	11169.6	124.29
227	2.01056	11959.3	10195.4	118.05	297	1.46678	13601.0	11183.1	124.37
228	1.99944	11984.0	10210.3	118.16	298	1.46133	13623.5	11196.7	124.44
229	1.98847	12008.7	10225.2	118.27	299	1.45592	13646.1	11210.2	124.52
230	1.97764	12033.4	10240.1	118.37	300	1.45056	13668.6	11223.7	124.59

40.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.3767	2986.3	2871.8	53.47
87	35.2313	3031.2	2916.2	53.99
88	35.0843	3076.3	2960.8	54.50
89	34.9358	3121.6	3005.6	55.01
90	34.7859	3167.0	3050.5	55.52
91	34.6346	3212.7	3095.6	56.02
92	34.4819	3258.5	3140.9	56.53
93	34.3279	3304.5	3186.4	57.02
94	34.1726	3350.6	3232.0	57.52
95	34.0160	3396.9	3277.7	58.01
96	33.8581	3443.3	3323.6	58.49
97	33.6988	3489.9	3369.6	58.97
98	33.5383	3536.6	3415.7	59.45
99	33.3764	3583.4	3462.0	59.93
100	33.2132	3630.4	3508.3	60.40
101	33.0486	3677.4	3554.8	60.87
102	32.8826	3724.6	3601.3	61.33
103	32.7152	3771.9	3648.0	61.80
104	32.5463	3819.2	3694.7	62.25
105	32.3759	3866.7	3741.5	62.71
106	32.2040	3914.3	3788.4	63.16
107	32.0304	3962.0	3835.4	63.61
108	31.8551	4009.8	3882.5	64.05
109	31.6781	4057.7	3929.7	64.49
110	31.4992	4105.7	3977.0	64.93
111	31.3185	4153.8	4024.3	65.37
112	31.1357	4202.0	4071.8	65.80
113	30.9508	4250.4	4119.4	66.23
114	30.7637	4298.9	4167.1	66.66
115	30.5743	4347.5	4215.0	67.08
116	30.3825	4396.4	4263.0	67.50
117	30.1880	4445.4	4311.1	67.92
118	29.9908	4494.6	4359.5	68.34
119	29.7907	4544.1	4408.1	68.76
120	29.5876	4593.9	4456.9	69.18
121	29.3811	4643.9	4506.0	69.59
122	29.1711	4694.3	4555.4	70.01
123	28.9573	4745.1	4605.1	70.42
124	28.7395	4796.3	4655.3	70.84
125	28.5174	4848.0	4705.9	71.25
126	28.2906	4900.2	4757.0	71.67
127	28.0588	4953.1	4808.6	72.09
128	27.8214	5006.6	4860.9	72.51
129	27.5781	5060.9	4914.0	72.93
130	27.3283	5116.1	4967.8	73.35
131	27.0712	5172.3	5022.6	73.79
132	26.8062	5229.7	5078.5	74.22
133	26.5323	5288.3	5135.5	74.66
134	26.2486	5348.4	5194.0	75.11
135	25.9537	5410.1	5254.0	75.57
136	25.6462	5473.4	5315.3	76.04
137	25.3241	5538.5	5378.4	76.52
138	24.9850	5605.8	5443.6	77.01
139	24.6260	5675.7	5511.1	77.51
140	24.2429	5748.8	5581.6	78.04
141	23.8302	5825.7	5655.6	78.58
142	23.3802	5907.5	5734.2	79.16
143	22.8810	5996.1	5818.9	79.78
144	22.3133	6093.9	5912.3	80.47
145	21.6419	6205.9	6018.7	81.24
* 145.995	20.7934	6342.1	6147.1	82.18
* 145.995	6.66045	8779.4	8170.9	98.88
146	6.65771	8780.3	8171.5	98.88
147	6.20612	8927.8	8274.8	99.89
148	5.88603	9042.0	8353.4	100.66
149	5.63506	9138.2	8418.9	101.31
150	5.42759	9222.6	8475.9	101.88
151	5.25032	9298.8	8526.9	102.38
152	5.09535	9368.8	8573.4	102.84
153	4.95759	9433.9	8616.4	103.27
154	4.83356	9495.1	8656.5	103.67
155	4.72074	9553.0	8694.4	104.04
156	4.61727	9608.1	8730.3	104.40
157	4.52172	9660.8	8764.5	104.74
158	4.43296	9711.5	8797.2	105.06
159	4.35011	9760.4	8828.7	105.37
160	4.27243	9807.7	8859.0	105.66

* PHASE CHANGE

40.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	4.19933	9853.5	8888.4	105.95	231	2.26854	11993.9	10207.2	117.17
162	4.13031	9898.1	8916.8	106.22	232	2.25597	12019.0	10222.4	117.28
163	4.06495	9941.5	8944.4	106.49	233	2.24357	12044.1	10237.6	117.38
164	4.00289	9983.9	8971.3	106.75	234	2.23133	12069.2	10252.7	117.49
165	3.94381	10025.3	8997.5	107.00	235	2.21925	12094.2	10267.8	117.60
166	3.88747	10065.8	9023.2	107.25	236	2.20732	12119.1	10282.9	117.70
167	3.83362	10105.5	9048.2	107.48	237	2.19555	12144.0	10297.9	117.81
168	3.78205	10144.4	9072.7	107.72	238	2.18392	12168.8	10312.9	117.91
169	3.73260	10182.6	9096.8	107.94	239	2.17244	12193.5	10327.8	118.02
170	3.68510	10220.2	9120.4	108.17	240	2.16110	12218.2	10342.7	118.12
171	3.63941	10257.2	9143.5	108.38	241	2.14990	12242.9	10357.6	118.22
172	3.59541	10293.6	9166.3	108.59	242	2.13883	12267.5	10372.5	118.32
173	3.55297	10329.5	9188.7	108.80	243	2.12790	12292.0	10387.3	118.42
174	3.51200	10364.9	9210.8	109.01	244	2.11710	12316.5	10402.1	118.53
175	3.47241	10399.8	9232.6	109.21	245	2.10642	12341.0	10416.8	118.63
176	3.43411	10434.3	9254.0	109.40	246	2.09587	12365.4	10431.5	118.72
177	3.39702	10468.3	9275.2	109.60	247	2.08545	12389.7	10446.2	118.82
178	3.36107	10502.0	9296.1	109.79	248	2.07514	12414.1	10460.9	118.92
179	3.32620	10535.3	9316.7	109.97	249	2.06495	12438.3	10475.5	119.02
180	3.29236	10568.2	9337.1	110.16	250	2.05488	12462.5	10490.1	119.12
181	3.25948	10600.8	9357.3	110.34	251	2.04492	12486.7	10504.7	119.21
182	3.22751	10633.0	9377.2	110.51	252	2.03507	12510.9	10519.2	119.31
183	3.19642	10665.0	9397.0	110.69	253	2.02533	12535.0	10533.8	119.40
184	3.16615	10696.7	9416.5	110.86	254	2.01570	12559.0	10548.3	119.50
185	3.13667	10728.0	9435.9	111.03	255	2.00617	12583.0	10562.7	119.59
186	3.10794	10759.2	9455.1	111.20	256	1.99675	12607.0	10577.2	119.69
187	3.07993	10790.0	9474.1	111.37	257	1.98743	12631.0	10591.6	119.78
188	3.05260	10820.6	9492.9	111.53	258	1.97821	12654.9	10606.0	119.87
189	3.02592	10851.0	9511.6	111.69	259	1.96908	12678.7	10620.4	119.97
190	2.99987	10881.2	9530.1	111.85	260	1.96005	12702.6	10634.7	120.06
191	2.97442	10911.1	9548.5	112.01	261	1.95112	12726.4	10649.0	120.15
192	2.94955	10940.9	9566.7	112.16	262	1.94228	12750.1	10663.3	120.24
193	2.92522	10970.4	9584.8	112.31	263	1.93353	12773.8	10677.6	120.33
194	2.90143	10999.7	9602.8	112.47	264	1.92487	12797.5	10691.9	120.42
195	2.87815	11028.9	9620.7	112.62	265	1.91629	12821.2	10706.1	120.51
196	2.85535	11057.9	9638.4	112.76	266	1.90781	12844.8	10720.3	120.60
197	2.83303	11086.7	9656.0	112.91	267	1.89941	12868.4	10734.5	120.69
198	2.81116	11115.3	9673.5	113.06	268	1.89109	12892.0	10748.7	120.78
199	2.78972	11143.8	9690.9	113.20	269	1.88285	12915.5	10762.9	120.86
200	2.76871	11172.1	9708.2	113.34	270	1.87470	12939.0	10777.0	120.95
201	2.74811	11200.3	9725.4	113.48	271	1.86662	12962.5	10791.1	121.04
202	2.72790	11228.3	9742.5	113.62	272	1.85863	12985.9	10805.2	121.12
203	2.70807	11256.2	9759.5	113.76	273	1.85071	13009.3	10819.3	121.21
204	2.68861	11284.0	9776.4	113.90	274	1.84286	13032.7	10833.4	121.30
205	2.66951	11311.6	9793.3	114.03	275	1.83509	13056.1	10847.4	121.38
206	2.65074	11339.1	9810.0	114.16	276	1.82740	13079.4	10861.5	121.46
207	2.63232	11366.4	9826.7	114.30	277	1.81978	13102.7	10875.5	121.55
208	2.61421	11393.7	9843.3	114.43	278	1.81222	13126.0	10889.5	121.63
209	2.59642	11420.8	9859.8	114.56	279	1.80474	13149.2	10903.6	121.72
210	2.57893	11447.8	9876.2	114.69	280	1.79733	13172.5	10917.4	121.80
211	2.56173	11474.7	9892.6	114.81	281	1.78998	13195.7	10931.3	121.88
212	2.54482	11501.5	9908.8	114.94	282	1.78270	13218.8	10945.3	121.96
213	2.52819	11528.2	9925.1	115.07	283	1.77549	13242.0	10959.2	122.05
214	2.51182	11554.8	9941.2	115.19	284	1.76834	13265.1	10973.1	122.13
215	2.49572	11581.3	9957.3	115.32	285	1.76126	13288.2	10987.0	122.21
216	2.47988	11607.7	9973.3	115.44	286	1.75424	13311.3	11000.8	122.29
217	2.46428	11634.0	9989.3	115.56	287	1.74728	13334.4	11014.7	122.37
218	2.44892	11660.3	10005.2	115.68	288	1.74038	13357.4	11028.5	122.45
219	2.43379	11686.4	10021.0	115.80	289	1.73354	13380.4	11042.4	122.53
220	2.41890	11712.4	10036.8	115.92	290	1.72677	13403.4	11056.2	122.61
221	2.40422	11738.4	10052.6	116.04	291	1.72005	13426.4	11070.0	122.69
222	2.38977	11764.3	10068.3	116.15	292	1.71338	13449.3	11083.7	122.77
223	2.37552	11790.1	10083.9	116.27	293	1.70678	13472.2	11097.5	122.85
224	2.36148	11815.8	10099.5	116.38	294	1.70023	13495.1	11111.3	122.92
225	2.34764	11841.5	10115.0	116.50	295	1.69374	13518.0	11125.0	123.00
226	2.33399	11867.0	10130.5	116.61	296	1.68730	13540.9	11138.8	123.08
227	2.32054	11892.5	10145.9	116.72	297	1.68091	13563.7	11152.5	123.16
228	2.30727	11918.0	10161.3	116.84	298	1.67458	13586.5	11166.2	123.23
229	2.29418	11943.3	10176.6	116.95	299	1.66830	13609.3	11179.9	123.31
230	2.28127	11968.6	10191.9	117.06	300	1.66208	13632.1	11193.6	123.39

45.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
86	35.4122	2995.6	2866.9	53.41
87	35.2675	3040.4	2911.1	53.93
88	35.1213	3085.4	2955.6	54.44
89	34.9736	3130.6	3000.2	54.95
90	34.8244	3175.9	3045.0	55.46
91	34.6740	3221.5	3090.0	55.96
92	34.5222	3267.2	3135.1	56.46
93	34.3691	3313.0	3180.4	56.96
94	34.2147	3359.1	3225.8	57.45
95	34.0591	3405.2	3271.4	57.94
96	33.9022	3451.6	3317.1	58.42
97	33.7440	3498.0	3362.9	58.90
98	33.5845	3544.6	3408.8	59.38
99	33.4238	3591.3	3454.9	59.86
100	33.2618	3638.1	3501.0	60.33
101	33.0985	3685.0	3547.3	60.79
102	32.9338	3732.1	3593.6	61.26
103	32.7678	3779.2	3640.0	61.72
104	32.6003	3826.4	3686.5	62.17
105	32.4314	3873.7	3733.1	62.63
106	32.2610	3921.1	3779.8	63.07
107	32.0891	3968.6	3826.5	63.52
108	31.9156	4016.2	3873.4	63.96
109	31.7403	4063.9	3920.3	64.40
110	31.5634	4111.7	3967.2	64.84
111	31.3846	4159.6	4014.3	65.27
112	31.2040	4207.6	4061.4	65.70
113	31.0213	4255.7	4108.7	66.13
114	30.8366	4303.9	4156.1	66.56
115	30.6497	4352.3	4203.5	66.98
116	30.4605	4400.8	4251.2	67.40
117	30.2688	4449.6	4298.9	67.82
118	30.0746	4498.5	4346.8	68.23
119	29.8777	4547.6	4395.0	68.65
120	29.6779	4596.9	4443.3	69.06
121	29.4751	4646.6	4491.9	69.47
122	29.2690	4696.5	4540.7	69.88
123	29.0594	4746.8	4589.9	70.29
124	28.8461	4797.4	4639.4	70.70
125	28.6289	4848.5	4689.3	71.11
126	28.4074	4900.1	4739.6	71.53
127	28.1813	4952.3	4790.5	71.94
128	27.9502	5005.0	4841.9	72.35
129	27.7138	5058.5	4894.0	72.77
130	27.4715	5112.8	4946.8	73.19
131	27.2229	5167.9	5000.4	73.61
132	26.9672	5224.1	5055.0	74.04
133	26.7039	5281.4	5110.6	74.47
134	26.4320	5340.0	5167.5	74.91
135	26.1506	5400.0	5225.6	75.35
136	25.8586	5461.2	5284.9	75.81
137	25.5545	5524.0	5345.6	76.27
138	25.2366	5588.7	5408.0	76.74
139	24.9028	5655.3	5472.2	77.22
140	24.5505	5724.4	5538.7	77.71
141	24.1760	5796.3	5607.7	78.22
142	23.7749	5871.8	5680.0	78.76
143	23.3407	5951.7	5756.4	79.32
144	22.8642	6037.5	5838.1	79.92
145	22.3312	6131.1	5927.0	80.57
146	21.7184	6235.8	6025.9	81.29
147	20.9816	6357.7	6140.4	82.12
148	20.0171	6511.3	6283.5	83.17
* 148.997	18.4189	6753.4	6505.8	84.80
* 148.997	8.82476	8364.5	7847.8	95.61
149	8.81932	8365.8	7848.8	95.62
150	7.65533	8664.5	8068.8	97.62
151	7.08152	8833.6	8189.7	98.74
152	6.68477	8961.7	8279.6	99.59
153	6.37862	9068.0	8353.2	100.29
154	6.12843	9160.6	8416.6	100.89
155	5.91653	9243.5	8472.8	101.43
156	5.73262	9319.1	8523.7	101.91
157	5.57010	9389.1	8570.5	102.36
158	5.42449	9454.6	8614.0	102.78
159	5.29261	9516.4	8654.8	103.17
160	5.17212	9575.0	8693.4	103.53

* PHASE CHANGE

45.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	5.06121	9630.9	8730.0	103.88	231	2.57545	11929.3	10159.8	115.98
162	4.95849	9684.5	8764.9	104.21	232	2.56073	11955.1	10174.5	116.09
163	4.86285	9736.1	8798.4	104.53	233	2.54622	11980.8	10190.1	116.20
164	4.77341	9785.9	8830.7	104.84	234	2.53190	12006.5	10205.6	116.31
165	4.68942	9834.1	8861.7	105.13	235	2.51778	12032.1	10221.1	116.42
166	4.61027	9880.9	8891.8	105.41	236	2.50385	12057.6	10236.6	116.53
167	4.53545	9926.3	8921.0	105.68	237	2.49010	12083.1	10252.0	116.64
168	4.46453	9970.6	8949.3	105.95	238	2.47654	12108.5	10267.3	116.74
169	4.39713	10013.9	8976.9	106.20	239	2.46315	12133.8	10282.6	116.85
170	4.33294	10056.1	9003.8	106.45	240	2.44993	12159.1	10297.9	116.96
171	4.27166	10097.5	9030.0	106.70	241	2.43688	12184.3	10313.2	117.06
172	4.21307	10138.0	9055.7	106.93	242	2.42400	12209.5	10328.4	117.16
173	4.15694	10177.7	9080.8	107.16	243	2.41128	12234.5	10343.5	117.27
174	4.10309	10216.8	9105.5	107.39	244	2.39871	12259.6	10358.7	117.37
175	4.05134	10255.2	9129.7	107.61	245	2.38630	12284.5	10373.8	117.47
176	4.00155	10292.9	9153.4	107.82	246	2.37405	12309.5	10388.8	117.57
177	3.95358	10330.1	9176.7	108.03	247	2.36194	12334.3	10403.8	117.68
178	3.90730	10366.7	9199.7	108.24	248	2.34997	12359.1	10418.8	117.78
179	3.86262	10402.8	9222.3	108.44	249	2.33815	12383.9	10433.8	117.88
180	3.81943	10438.4	9244.6	108.64	250	2.32647	12408.6	10448.7	117.97
181	3.77764	10473.6	9266.5	108.84	251	2.31493	12433.3	10463.6	118.07
182	3.73716	10508.3	9288.2	109.03	252	2.30351	12457.9	10478.4	118.17
183	3.69792	10542.6	9309.6	109.22	253	2.29223	12482.4	10493.2	118.27
184	3.65986	10576.6	9330.7	109.40	254	2.28108	12507.0	10508.0	118.36
185	3.62291	10610.1	9351.5	109.58	255	2.27006	12531.4	10522.8	118.46
186	3.58701	10643.3	9372.2	109.76	256	2.25916	12555.8	10537.5	118.56
187	3.55211	10676.2	9392.5	109.94	257	2.24838	12580.2	10552.2	118.65
188	3.51815	10708.8	9412.7	110.11	258	2.23772	12604.6	10566.9	118.75
189	3.48509	10741.0	9432.7	110.28	259	2.22718	12628.8	10581.5	118.84
190	3.45289	10773.0	9452.4	110.45	260	2.21675	12653.1	10596.1	118.93
191	3.42151	10804.7	9472.0	110.62	261	2.20643	12677.3	10610.7	119.03
192	3.39090	10836.1	9491.4	110.78	262	2.19623	12701.5	10625.3	119.12
193	3.36105	10867.3	9510.6	110.94	263	2.18613	12725.6	10639.8	119.21
194	3.33190	10898.2	9529.7	111.10	264	2.17614	12749.7	10654.4	119.30
195	3.30344	10928.9	9548.6	111.26	265	2.16626	12773.7	10668.8	119.39
196	3.27563	10959.3	9567.3	111.42	266	2.15648	12797.8	10683.3	119.48
197	3.24845	10989.6	9585.9	111.57	267	2.14680	12821.7	10697.8	119.57
198	3.22186	11019.6	9604.4	111.72	268	2.13721	12845.7	10712.2	119.66
199	3.19586	11049.5	9622.7	111.87	269	2.12773	12869.6	10726.6	119.75
200	3.17041	11079.1	9640.9	112.02	270	2.11834	12893.4	10740.9	119.84
201	3.14550	11108.6	9659.0	112.17	271	2.10905	12917.3	10755.3	119.93
202	3.12110	11137.8	9676.9	112.31	272	2.09985	12941.1	10769.6	120.02
203	3.09720	11166.9	9694.7	112.46	273	2.09074	12964.9	10783.9	120.10
204	3.07377	11195.9	9712.4	112.60	274	2.08172	12988.6	10798.2	120.19
205	3.05080	11224.7	9730.0	112.74	275	2.07279	13012.3	10812.5	120.28
206	3.02828	11253.3	9747.5	112.88	276	2.06395	13036.0	10826.7	120.36
207	3.00619	11281.7	9764.9	113.02	277	2.05519	13059.6	10841.0	120.45
208	2.98451	11310.0	9782.2	113.15	278	2.04652	13083.2	10855.2	120.53
209	2.96324	11338.2	9799.4	113.29	279	2.03793	13106.8	10869.4	120.62
210	2.94235	11366.3	9816.6	113.42	280	2.02942	13130.3	10883.5	120.70
211	2.92184	11394.2	9833.6	113.56	281	2.02099	13153.9	10897.7	120.79
212	2.90169	11421.9	9850.5	113.69	282	2.01264	13177.4	10911.8	120.87
213	2.88189	11449.6	9867.4	113.82	283	2.00436	13200.8	10925.9	120.95
214	2.86244	11477.1	9884.1	113.95	284	1.99617	13224.3	10940.0	121.04
215	2.84331	11504.5	9900.8	114.07	285	1.98804	13247.7	10954.1	121.12
216	2.82451	11531.8	9917.5	114.20	286	1.98000	13271.0	10968.1	121.20
217	2.80602	11559.0	9934.0	114.33	287	1.97202	13294.4	10982.2	121.28
218	2.78783	11586.1	9950.5	114.45	288	1.96412	13317.7	10996.2	121.36
219	2.76994	11613.0	9966.9	114.57	289	1.95629	13341.0	11010.2	121.44
220	2.75233	11639.9	9983.2	114.70	290	1.94853	13364.3	11024.2	121.52
221	2.73500	11666.6	9999.5	114.82	291	1.94083	13387.6	11038.2	121.60
222	2.71794	11693.3	10015.7	114.94	292	1.93321	13410.8	11052.2	121.68
223	2.70115	11719.9	10031.8	115.06	293	1.92565	13434.0	11066.1	121.76
224	2.68461	11746.4	10047.9	115.18	294	1.91816	13457.2	11080.0	121.84
225	2.66832	11772.7	10063.9	115.29	295	1.91073	13480.3	11094.0	121.92
226	2.65227	11799.0	10079.9	115.41	296	1.90337	13503.5	11107.9	122.00
227	2.63646	11825.3	10095.8	115.53	297	1.89607	13526.6	11121.8	122.08
228	2.62087	11851.4	10111.6	115.64	298	1.88883	13549.7	11135.6	122.15
229	2.60552	11877.4	10127.4	115.75	299	1.88165	13572.8	11149.5	122.23
230	2.59038	11903.4	10143.1	115.87	300	1.87453	13595.8	11163.3	122.31

50.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 85.042	35.5839	2962.3	2820.0	52.85
86	35.4474	3004.9	2862.0	53.35
87	35.3034	3049.6	2906.1	53.87
88	35.1579	3094.5	2950.4	54.38
89	35.0109	3139.6	2994.9	54.89
90	34.8626	3184.9	3039.5	55.40
91	34.7129	3230.3	3084.3	55.90
92	34.5620	3275.9	3129.3	56.40
93	34.4098	3321.7	3174.4	56.89
94	34.2563	3367.6	3219.7	57.38
95	34.1017	3413.7	3265.1	57.87
96	33.9457	3459.9	3310.6	58.35
97	33.7886	3506.2	3356.3	58.83
98	33.6302	3552.7	3402.0	59.31
99	33.4707	3599.2	3447.9	59.78
100	33.3098	3645.9	3493.8	60.25
101	33.1477	3692.7	3539.9	60.72
102	32.9843	3739.6	3586.0	61.18
103	32.8196	3786.6	3632.2	61.64
104	32.6535	3833.6	3678.5	62.09
105	32.4861	3880.8	3724.8	62.54
106	32.3172	3928.0	3771.3	62.99
107	32.1469	3975.4	3817.8	63.44
108	31.9750	4022.8	3864.3	63.88
109	31.8015	4070.3	3911.0	64.31
110	31.6264	4117.9	3957.7	64.75
111	31.4496	4165.5	4004.4	65.18
112	31.2710	4213.3	4051.3	65.61
113	31.0904	4261.2	4098.2	66.03
114	30.9080	4309.2	4145.2	66.46
115	30.7234	4357.3	4192.4	66.88
116	30.5367	4405.5	4239.6	67.30
117	30.3478	4453.9	4287.0	67.71
118	30.1564	4502.5	4334.5	68.12
119	29.9625	4551.3	4382.2	68.54
120	29.7659	4600.2	4430.0	68.95
121	29.5664	4649.5	4478.1	69.35
122	29.3640	4699.0	4526.4	69.76
123	29.1583	4748.8	4575.0	70.17
124	28.9492	4798.9	4623.9	70.57
125	28.7365	4849.5	4673.2	70.98
126	28.5199	4900.5	4722.9	71.39
127	28.2990	4952.0	4773.0	71.79
128	28.0737	5004.1	4823.6	72.20
129	27.8436	5056.8	4874.8	72.61
130	27.6081	5110.2	4926.7	73.02
131	27.3670	5164.4	4979.3	73.44
132	27.1197	5219.5	5032.7	73.86
133	26.8656	5275.6	5087.1	74.28
134	26.6041	5332.9	5142.5	74.71
135	26.3343	5391.5	5199.1	75.15
136	26.0555	5451.0	5256.6	75.59
137	25.7664	5511.9	5315.3	76.03
138	25.4659	5574.3	5375.3	76.49
139	25.1524	5638.3	5436.9	76.95
140	24.8240	5704.3	5500.2	77.42
141	24.4784	5772.4	5565.4	77.91
142	24.1126	5843.3	5633.1	78.41
143	23.7226	5917.4	5703.8	78.93
144	23.3034	5995.6	5778.2	79.48
145	22.8477	6078.9	5857.2	80.05
146	22.3450	6168.9	5942.1	80.67
147	21.7793	6267.7	6035.1	81.35
148	21.1238	6379.2	6139.3	82.11
149	20.3278	6510.4	6261.1	82.99
150	19.2741	6678.1	6415.3	84.12
151	17.5415	6944.2	6655.4	85.89
152	11.2264	7980.6	7529.3	92.72
153	9.13533	8431.9	7877.3	95.68
154	8.27788	8651.4	8039.4	97.12
155	7.72594	8808.1	8152.4	98.13
156	7.31726	8933.9	8241.5	98.94
157	6.99241	9040.9	8316.4	99.62
158	6.72280	9135.2	8381.6	100.22
159	6.49240	9220.1	8439.8	100.76
160	6.29132	9297.9	8492.6	101.24

* PHASE CHANGE

50.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	6.11301	9370.1	8541.4	101.69	231	2.88768	11864.3	10109.8	114.89
162	5.95289	9437.8	8586.7	102.11	232	2.87066	11890.8	10125.9	115.01
163	5.80765	9501.6	8629.2	102.51	233	2.85389	11917.2	10142.0	115.12
164	5.67482	9562.2	8669.4	102.88	234	2.83736	11943.5	10157.9	115.24
165	5.55248	9620.0	8707.5	103.23	235	2.82106	11969.8	10173.8	115.35
166	5.43914	9675.4	8743.9	103.56	236	2.80499	11995.9	10189.7	115.46
167	5.33360	9728.7	8778.8	103.88	237	2.78915	12022.0	10205.5	115.57
168	5.23488	9780.1	8812.3	104.19	238	2.77352	12048.0	10221.3	115.68
169	5.14219	9829.8	8844.6	104.49	239	2.75810	12073.9	10237.0	115.79
170	5.05486	9878.1	8875.8	104.77	240	2.74289	12099.8	10252.7	115.89
171	4.97232	9925.0	8906.1	105.05	241	2.72789	12125.5	10268.3	116.00
172	4.89409	9970.7	8935.5	105.31	242	2.71308	12151.2	10283.9	116.11
173	4.81977	10015.2	8964.1	105.57	243	2.69846	12176.9	10299.4	116.21
174	4.74899	10058.7	8991.9	105.82	244	2.68404	12202.5	10314.9	116.32
175	4.68146	10101.3	9019.1	106.06	245	2.66980	12228.0	10330.3	116.42
176	4.61690	10143.0	9045.6	106.30	246	2.65574	12253.4	10345.7	116.53
177	4.55507	10183.9	9071.6	106.53	247	2.64185	12278.8	10361.1	116.63
178	4.49576	10224.0	9097.1	106.76	248	2.62814	12304.1	10376.4	116.73
179	4.43879	10263.4	9122.1	106.98	249	2.61460	12329.4	10391.7	116.83
180	4.38398	10302.2	9146.6	107.20	250	2.60123	12354.6	10406.9	116.94
181	4.33120	10340.4	9170.6	107.41	251	2.58802	12379.7	10422.1	117.04
182	4.28030	10377.9	9194.3	107.62	252	2.57496	12404.8	10437.3	117.14
183	4.23116	10415.0	9217.6	107.82	253	2.56206	12429.8	10452.4	117.23
184	4.18367	10451.5	9240.5	108.02	254	2.54932	12454.8	10467.5	117.33
185	4.13773	10487.5	9263.1	108.21	255	2.53672	12479.8	10482.5	117.43
186	4.09325	10523.1	9285.4	108.40	256	2.52427	12504.6	10497.6	117.53
187	4.05014	10558.3	9307.4	108.59	257	2.51197	12529.5	10512.6	117.62
188	4.00833	10593.0	9329.1	108.78	258	2.49980	12554.2	10527.5	117.72
189	3.96775	10627.4	9350.5	108.96	259	2.48778	12579.0	10542.4	117.82
190	3.92834	10661.3	9371.6	109.14	260	2.47589	12603.6	10557.3	117.91
191	3.89002	10695.0	9392.6	109.32	261	2.46413	12628.3	10572.2	118.01
192	3.85276	10728.3	9413.3	109.49	262	2.45250	12652.8	10587.0	118.10
193	3.81648	10761.2	9433.7	109.66	263	2.44100	12677.4	10601.8	118.19
194	3.78116	10793.9	9454.0	109.83	264	2.42963	12701.9	10616.6	118.29
195	3.74674	10826.3	9474.0	110.00	265	2.41837	12726.3	10631.4	118.38
196	3.71318	10858.3	9493.9	110.16	266	2.40724	12750.7	10646.1	118.47
197	3.68045	10890.2	9513.6	110.32	267	2.39623	12775.1	10660.8	118.56
198	3.64850	10921.7	9533.1	110.48	268	2.38534	12799.4	10675.4	118.65
199	3.61730	10953.0	9552.4	110.64	269	2.37456	12823.7	10690.1	118.74
200	3.58683	10984.1	9571.6	110.80	270	2.36389	12847.9	10704.7	118.83
201	3.55704	11014.9	9590.6	110.95	271	2.35333	12872.1	10719.3	118.92
202	3.52793	11045.6	9609.5	111.10	272	2.34288	12896.3	10733.9	119.01
203	3.49944	11076.0	9628.2	111.25	273	2.33254	12920.4	10748.4	119.10
204	3.47158	11106.2	9646.8	111.40	274	2.32230	12944.5	10762.9	119.19
205	3.44430	11136.2	9665.2	111.55	275	2.31217	12968.6	10777.4	119.28
206	3.41758	11166.0	9683.6	111.69	276	2.30213	12992.6	10791.9	119.36
207	3.39141	11195.6	9701.7	111.84	277	2.29220	13016.6	10806.3	119.45
208	3.36577	11225.1	9719.8	111.98	278	2.28237	13040.5	10820.7	119.54
209	3.34064	11254.4	9737.8	112.12	279	2.27263	13064.4	10835.1	119.62
210	3.31599	11283.5	9755.6	112.26	280	2.26298	13088.3	10849.5	119.71
211	3.29182	11312.4	9773.4	112.39	281	2.25343	13112.2	10863.9	119.79
212	3.26811	11341.2	9791.0	112.53	282	2.24397	13136.0	10878.2	119.88
213	3.24484	11369.9	9808.5	112.67	283	2.23461	13159.8	10892.5	119.96
214	3.22199	11398.4	9826.0	112.80	284	2.22533	13183.5	10906.8	120.05
215	3.19956	11426.8	9843.3	112.93	285	2.21613	13207.2	10921.1	120.13
216	3.17752	11455.0	9860.5	113.06	286	2.20703	13230.9	10935.3	120.21
217	3.15588	11483.1	9877.7	113.19	287	2.19801	13254.6	10949.6	120.29
218	3.13461	11511.0	9894.8	113.32	288	2.18907	13278.2	10963.8	120.38
219	3.11370	11538.9	9911.8	113.45	289	2.18021	13301.8	10978.0	120.46
220	3.09315	11566.6	9928.7	113.57	290	2.17144	13325.4	10992.2	120.54
221	3.07294	11594.2	9945.5	113.70	291	2.16274	13348.9	11006.3	120.62
222	3.05306	11621.7	9962.2	113.82	292	2.15412	13372.4	11020.5	120.70
223	3.03351	11649.0	9978.9	113.95	293	2.14558	13395.9	11034.6	120.78
224	3.01427	11676.3	9995.5	114.07	294	2.13712	13419.4	11048.7	120.86
225	2.99533	11703.5	10012.0	114.19	295	2.12873	13442.8	11062.8	120.94
226	2.97669	11730.5	10028.5	114.31	296	2.12042	13466.2	11076.9	121.02
227	2.95834	11757.5	10044.9	114.43	297	2.11218	13489.6	11091.0	121.10
228	2.94028	11784.3	10061.2	114.55	298	2.10401	13513.0	11105.0	121.18
229	2.92248	11811.1	10077.5	114.66	299	2.09591	13536.3	11119.0	121.26
230	2.90495	11837.7	10093.7	114.78	300	2.08788	13559.6	11133.0	121.33

60.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 85.292	35.6169	2992.3	2821.6	52.87
86	35.5169	3023.6	2852.5	53.24
87	35.3742	3068.1	2896.3	53.75
88	35.2301	3112.8	2940.3	54.26
89	35.0846	3157.7	2984.4	54.77
90	34.9378	3202.8	3028.8	55.27
91	34.7898	3248.0	3073.3	55.77
92	34.6405	3293.4	3117.9	56.27
93	34.4900	3339.0	3162.7	56.76
94	34.3383	3384.7	3207.7	57.25
95	34.1855	3430.6	3252.7	57.74
96	34.0315	3476.6	3297.9	58.22
97	33.8763	3522.7	3343.2	58.69
98	33.7201	3568.9	3388.6	59.17
99	33.5626	3615.3	3434.1	59.64
100	33.4040	3661.7	3479.7	60.11
101	33.2443	3708.2	3525.3	60.57
102	33.0833	3754.8	3571.1	61.03
103	32.9212	3801.6	3616.9	61.48
104	32.7578	3848.3	3662.7	61.94
105	32.5931	3895.2	3708.7	62.38
106	32.4271	3942.1	3754.6	62.83
107	32.2598	3989.1	3800.7	63.27
108	32.0911	4036.2	3846.7	63.71
109	31.9209	4083.3	3892.8	64.14
110	31.7492	4130.5	3939.0	64.57
111	31.5760	4177.8	3985.2	65.00
112	31.4012	4225.1	4031.5	65.43
113	31.2247	4272.5	4077.8	65.85
114	31.0465	4320.0	4124.2	66.27
115	30.8664	4367.6	4170.7	66.68
116	30.6844	4415.4	4217.2	67.09
117	30.5003	4463.2	4263.9	67.51
118	30.3142	4511.2	4310.6	67.91
119	30.1258	4559.3	4357.5	68.32
120	29.9351	4607.6	4404.5	68.72
121	29.7419	4656.1	4451.7	69.13
122	29.5461	4704.8	4499.0	69.53
123	29.3475	4753.8	4546.6	69.93
124	29.1460	4803.0	4594.4	70.33
125	28.9414	4852.6	4642.5	70.72
126	28.7335	4902.5	4691.0	71.12
127	28.5221	4952.9	4739.7	71.52
128	28.3069	5003.7	4789.0	71.92
129	28.0877	5055.1	4838.6	72.32
130	27.8642	5107.0	4888.8	72.72
131	27.6360	5159.6	4939.6	73.12
132	27.4029	5213.0	4991.1	73.53
133	27.1645	5267.1	5043.3	73.94
134	26.9202	5322.2	5096.4	74.35
135	26.6695	5378.4	5150.4	74.77
136	26.4120	5435.2	5205.0	75.19
137	26.1468	5493.0	5260.5	75.61
138	25.8734	5551.9	5316.9	76.04
139	25.5907	5611.9	5374.4	76.47
140	25.2978	5673.3	5432.9	76.91
141	24.9934	5736.0	5492.8	77.36
142	24.6760	5800.5	5554.1	77.82
143	24.3439	5867.0	5617.2	78.28
144	23.9950	5935.9	5682.5	78.76
145	23.6264	6007.6	5750.2	79.26
146	23.2349	6082.6	5820.9	79.78
147	22.8159	6161.6	5895.1	80.32
148	22.3636	6245.5	5973.6	80.89
149	21.8699	6335.2	6057.2	81.50
150	21.3237	6432.6	6147.5	82.15
151	20.7081	6540.4	6246.8	82.87
152	19.9974	6662.5	6358.5	83.68
153	19.1499	6804.9	6487.4	84.61
154	18.0952	6978.7	6642.7	85.74
155	16.7257	7202.3	6838.8	87.19
156	14.9897	7491.1	7085.5	89.05
157	13.1911	7810.2	7349.3	91.03
158	11.7452	8092.7	7575.1	92.88
159	10.6917	8320.1	7751.5	94.31
160	9.91469	8503.4	7890.2	95.46

* PHASE CHANGE

60.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	9.31762	8655.7	8003.2	96.41	231	3.52793	11733.4	10010.1	112.96
162	8.84052	8785.9	8098.2	97.22	232	3.50585	11761.3	10027.1	113.08
163	8.44686	8900.2	8180.4	97.92	233	3.48411	11789.1	10044.1	113.20
164	8.11372	9002.4	8253.1	98.55	234	3.46271	11816.7	10061.0	113.31
165	7.82611	9095.2	8318.4	99.11	235	3.44165	11844.3	10077.8	113.43
166	7.57378	9180.6	8377.8	99.63	236	3.42090	11871.8	10094.5	113.55
167	7.34950	9259.9	8432.6	100.10	237	3.40047	11899.1	10111.2	113.66
168	7.14799	9334.1	8483.5	100.55	238	3.38034	11926.4	10127.8	113.78
169	6.96529	9404.1	8531.2	100.96	239	3.36050	11953.5	10144.4	113.89
170	6.79838	9470.4	8576.1	101.35	240	3.34096	11980.6	10160.8	114.01
171	6.64489	9533.6	8618.7	101.72	241	3.32170	12007.5	10177.2	114.12
172	6.50293	9594.0	8659.1	102.08	242	3.30271	12034.4	10193.6	114.23
173	6.37099	9652.1	8697.8	102.41	243	3.28399	12061.2	10209.9	114.34
174	6.24782	9707.9	8734.9	102.73	244	3.26553	12087.9	10226.1	114.45
175	6.13239	9761.9	8770.5	103.04	245	3.24733	12114.5	10242.3	114.56
176	6.02384	9814.1	8804.9	103.34	246	3.22937	12141.1	10258.4	114.67
177	5.92144	9864.8	8838.1	103.63	247	3.21166	12167.5	10274.5	114.77
178	5.82458	9914.0	8870.3	103.91	248	3.19419	12193.9	10290.5	114.88
179	5.73271	9962.0	8901.5	104.17	249	3.17695	12220.2	10306.5	114.99
180	5.64538	10008.8	8931.8	104.43	250	3.15993	12246.4	10322.4	115.09
181	5.56219	10054.4	8961.4	104.69	251	3.14314	12272.5	10338.3	115.19
182	5.48279	10099.1	8990.2	104.93	252	3.12656	12298.6	10354.1	115.30
183	5.40687	10142.8	9018.4	105.17	253	3.11019	12324.6	10369.9	115.40
184	5.33416	10185.7	9045.9	105.41	254	3.09403	12350.6	10385.6	115.50
185	5.26441	10227.7	9072.8	105.63	255	3.07808	12376.4	10401.3	115.61
186	5.19740	10269.0	9099.2	105.86	256	3.06232	12402.2	10416.9	115.71
187	5.13295	10309.6	9125.1	106.07	257	3.04675	12428.0	10432.5	115.81
188	5.07088	10349.5	9150.5	106.29	258	3.03138	12453.6	10448.1	115.91
189	5.01104	10388.8	9175.5	106.50	259	3.01619	12479.3	10463.6	116.01
190	4.95327	10427.5	9200.1	106.70	260	3.00118	12504.8	10479.1	116.10
191	4.89745	10465.6	9224.2	106.90	261	2.98636	12530.3	10494.5	116.20
192	4.84347	10503.2	9248.0	107.10	262	2.97170	12555.7	10509.9	116.30
193	4.79121	10540.3	9271.4	107.29	263	2.95722	12581.1	10525.2	116.40
194	4.74057	10577.0	9294.5	107.48	264	2.94291	12606.4	10540.6	116.49
195	4.69147	10613.2	9317.3	107.66	265	2.92876	12631.7	10555.8	116.59
196	4.64383	10649.0	9339.8	107.85	266	2.91477	12656.9	10571.1	116.68
197	4.59755	10684.3	9362.0	108.03	267	2.90094	12682.1	10586.3	116.78
198	4.55259	10719.3	9383.9	108.21	268	2.88726	12707.2	10601.5	116.87
199	4.50886	10754.0	9405.6	108.38	269	2.87374	12732.2	10616.6	116.96
200	4.46631	10788.2	9427.0	108.55	270	2.86037	12757.2	10631.7	117.06
201	4.42488	10822.2	9448.2	108.72	271	2.84714	12782.2	10646.8	117.15
202	4.38452	10855.8	9469.2	108.89	272	2.83406	12807.1	10661.9	117.24
203	4.34517	10889.1	9489.9	109.05	273	2.82112	12831.9	10676.9	117.33
204	4.30681	10922.1	9510.4	109.21	274	2.80831	12856.7	10691.9	117.42
205	4.26937	10954.8	9530.8	109.37	275	2.79564	12881.5	10706.8	117.51
206	4.23282	10987.3	9551.0	109.53	276	2.78311	12906.2	10721.7	117.60
207	4.19713	11019.5	9570.9	109.69	277	2.77071	12930.9	10736.6	117.69
208	4.16225	11051.4	9590.7	109.84	278	2.75843	12955.5	10751.5	117.78
209	4.12816	11083.1	9610.4	109.99	279	2.74629	12980.1	10766.3	117.87
210	4.09482	11114.6	9629.9	110.14	280	2.73426	13004.7	10781.2	117.96
211	4.06220	11145.8	9649.2	110.29	281	2.72236	13029.2	10795.9	118.04
212	4.03028	11176.9	9668.4	110.44	282	2.71058	13053.6	10810.7	118.13
213	3.99903	11207.7	9687.4	110.58	283	2.69892	13078.1	10825.4	118.22
214	3.96842	11238.3	9706.3	110.73	284	2.68738	13102.4	10840.1	118.30
215	3.93844	11268.7	9725.0	110.87	285	2.67594	13126.8	10854.8	118.39
216	3.90905	11298.9	9743.7	111.01	286	2.66462	13151.1	10869.5	118.47
217	3.88024	11329.0	9762.2	111.15	287	2.65341	13175.4	10884.1	118.56
218	3.85199	11358.9	9780.5	111.29	288	2.64231	13199.6	10898.7	118.64
219	3.82428	11388.6	9798.8	111.42	289	2.63132	13223.8	10913.3	118.73
220	3.79709	11418.1	9817.0	111.56	290	2.62043	13248.0	10927.9	118.81
221	3.77040	11447.5	9835.0	111.69	291	2.60965	13272.1	10942.4	118.89
222	3.74420	11476.7	9852.9	111.82	292	2.59896	13296.2	10956.9	118.98
223	3.71846	11505.8	9870.8	111.95	293	2.58838	13320.3	10971.4	119.06
224	3.69319	11534.7	9888.5	112.08	294	2.57790	13344.3	10985.9	119.14
225	3.66836	11563.5	9906.2	112.21	295	2.56751	13368.3	11000.4	119.22
226	3.64395	11592.1	9923.7	112.34	296	2.55722	13392.2	11014.8	119.30
227	3.61997	11620.6	9941.1	112.46	297	2.54702	13416.2	11029.2	119.38
228	3.59638	11649.0	9958.5	112.59	298	2.53692	13440.1	11043.6	119.46
229	3.57319	11677.3	9975.8	112.71	299	2.52690	13463.9	11058.0	119.54
230	3.55038	11705.4	9993.0	112.83	300	2.51698	13487.8	11072.3	119.62

70.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 85.542	35.6494	3022.1	2823.2	52.89
86	35.5851	3042.4	2843.1	53.12
87	35.4438	3086.7	2886.6	53.64
88	35.3010	3131.2	2930.3	54.14
89	35.1570	3175.9	2974.2	54.65
90	35.0117	3220.8	3018.2	55.15
91	34.8651	3265.9	3062.5	55.65
92	34.7174	3311.1	3106.8	56.14
93	34.5686	3356.5	3151.3	56.63
94	34.4186	3402.0	3195.9	57.12
95	34.2675	3447.7	3240.7	57.60
96	34.1154	3493.4	3285.5	58.08
97	33.9621	3539.3	3330.5	58.56
98	33.8078	3585.4	3375.6	59.03
99	33.6525	3631.5	3420.7	59.50
100	33.4960	3677.7	3465.9	59.96
101	33.3385	3724.0	3511.2	60.42
102	33.1798	3770.3	3556.6	60.88
103	33.0201	3816.8	3602.0	61.33
104	32.8592	3863.3	3647.4	61.78
105	32.6971	3909.9	3692.9	62.23
106	32.5338	3956.5	3738.5	62.67
107	32.3693	4003.2	3784.0	63.11
108	32.2036	4049.9	3829.7	63.54
109	32.0365	4096.7	3875.3	63.97
110	31.8681	4143.5	3921.0	64.40
111	31.6982	4190.4	3966.7	64.83
112	31.5269	4237.4	4012.4	65.25
113	31.3541	4284.4	4058.2	65.67
114	31.1798	4331.5	4104.0	66.08
115	31.0038	4378.6	4149.8	66.49
116	30.8260	4425.8	4195.7	66.90
117	30.6465	4473.2	4241.7	67.31
118	30.4651	4520.6	4287.8	67.71
119	30.2817	4568.1	4333.9	68.11
120	30.0963	4615.8	4380.1	68.51
121	29.9087	4663.6	4426.5	68.91
122	29.7188	4711.7	4473.0	69.30
123	29.5265	4759.9	4519.7	69.70
124	29.3317	4808.4	4566.5	70.09
125	29.1342	4857.1	4613.6	70.48
126	28.9339	4906.1	4661.0	70.87
127	28.7306	4955.5	4708.6	71.26
128	28.5241	5005.2	4756.6	71.65
129	28.3142	5055.4	4804.9	72.04
130	28.1007	5106.1	4853.7	72.43
131	27.8835	5157.4	4903.0	72.83
132	27.6621	5209.3	4952.9	73.22
133	27.4364	5261.8	5003.3	73.62
134	27.2059	5315.2	5054.5	74.02
135	26.9705	5369.4	5106.4	74.42
136	26.7296	5424.1	5158.8	74.82
137	26.4828	5479.6	5211.7	75.23
138	26.2297	5535.8	5265.4	75.64
139	25.9696	5593.0	5319.8	76.05
140	25.7021	5651.0	5375.0	76.47
141	25.4262	5710.0	5431.0	76.89
142	25.1412	5770.2	5488.1	77.32
143	24.8462	5831.8	5546.3	77.75
144	24.5400	5895.0	5605.9	78.19
145	24.2214	5960.0	5667.2	78.64
146	23.8886	6027.1	5730.2	79.10
147	23.5400	6096.6	5795.3	79.58
148	23.1733	6168.8	5862.8	80.07
149	22.7856	6244.1	5932.8	80.58
150	22.3738	6322.9	6005.9	81.11
151	21.9334	6406.3	6082.9	81.67
152	21.4593	6495.2	6164.7	82.25
153	20.9446	6590.2	6251.5	82.88
154	20.3808	6692.6	6344.5	83.54
155	19.7570	6804.1	6445.1	84.27
156	19.0601	6927.1	6554.9	85.06
157	18.2761	7064.0	6675.9	85.93
158	17.3953	7217.2	6809.5	86.90
159	16.4234	7387.4	6955.5	87.98
160	15.3952	7571.0	7110.3	89.13

* PHASE CHANGE

70.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	14.3725	7760.2	7266.6	90.31	231	4.18861	11601.6	9908.2	111.24
162	13.4174	7945.3	7416.7	91.45	232	4.16082	11631.0	9926.3	111.37
163	12.5661	8119.7	7555.2	92.53	233	4.13351	11660.2	9944.2	111.50
164	11.8273	8280.0	7680.3	93.51	234	4.10665	11689.3	9962.1	111.62
165	11.1926	8425.8	7792.1	94.39	235	4.08025	11718.2	9979.9	111.75
166	10.6475	8558.2	7892.1	95.19	236	4.05428	11747.1	9997.6	111.87
167	10.1767	8678.8	7981.8	95.92	237	4.02873	11775.7	10015.2	111.99
168	9.76684	8789.2	8062.9	96.58	238	4.00359	11804.3	10032.7	112.11
169	9.40667	8890.8	8136.8	97.18	239	3.97885	11832.7	10050.1	112.23
170	9.08737	8985.1	8204.6	97.74	240	3.95450	11861.1	10067.4	112.35
171	8.80189	9073.0	8267.2	98.25	241	3.93053	11889.3	10084.7	112.46
172	8.54466	9155.5	8325.4	98.73	242	3.90692	11917.4	10101.9	112.58
173	8.31125	9233.3	8379.9	99.18	243	3.88367	11945.4	10119.0	112.70
174	8.09809	9307.0	8431.1	99.61	244	3.86077	11973.2	10136.0	112.81
175	7.90233	9377.1	8479.5	100.01	245	3.83820	12001.0	10153.0	112.92
176	7.72161	9444.1	8525.5	100.39	246	3.81597	12028.7	10169.9	113.04
177	7.55401	9508.2	8569.2	100.76	247	3.79406	12056.2	10186.7	113.15
178	7.39794	9569.8	8611.0	101.10	248	3.77246	12083.7	10203.5	113.26
179	7.25204	9629.1	8651.1	101.44	249	3.75117	12111.1	10220.2	113.37
180	7.11519	9686.5	8689.6	101.75	250	3.73018	12138.3	10236.8	113.48
181	6.98643	9741.9	8726.7	102.06	251	3.70947	12165.5	10253.4	113.59
182	6.86494	9795.7	8762.5	102.36	252	3.68906	12192.6	10269.9	113.69
183	6.75002	9848.0	8797.2	102.65	253	3.66892	12219.6	10286.4	113.80
184	6.64104	9898.9	8830.8	102.92	254	3.64905	12246.5	10302.8	113.91
185	6.53747	9948.4	8863.5	103.19	255	3.62944	12273.4	10319.1	114.01
186	6.43885	9996.8	8895.2	103.45	256	3.61010	12300.1	10335.4	114.12
187	6.34477	10044.1	8926.2	103.71	257	3.59100	12326.8	10351.6	114.22
188	6.25486	10090.3	8956.3	103.95	258	3.57216	12353.4	10367.8	114.33
189	6.16879	10135.6	8985.8	104.19	259	3.55355	12379.9	10383.9	114.43
190	6.08628	10180.0	9014.6	104.43	260	3.53518	12406.4	10400.0	114.53
191	6.00707	10223.5	9042.8	104.65	261	3.51705	12432.8	10416.0	114.63
192	5.93093	10266.3	9070.4	104.88	262	3.49913	12459.1	10432.0	114.73
193	5.85764	10308.3	9097.5	105.10	263	3.48145	12485.3	10447.9	114.83
194	5.78703	10349.7	9124.0	105.31	264	3.46397	12511.5	10463.8	114.93
195	5.71892	10390.4	9150.1	105.52	265	3.44671	12537.6	10479.7	115.03
196	5.65314	10430.5	9175.8	105.72	266	3.42966	12563.6	10495.5	115.13
197	5.58957	10470.0	9201.0	105.93	267	3.41281	12589.5	10511.2	115.23
198	5.52807	10508.9	9225.8	106.12	268	3.39616	12615.4	10526.9	115.32
199	5.46852	10547.3	9250.3	106.32	269	3.37970	12641.3	10542.6	115.42
200	5.41081	10585.2	9274.4	106.51	270	3.36344	12667.1	10558.2	115.51
201	5.35485	10622.7	9298.1	106.69	271	3.34736	12692.8	10573.8	115.61
202	5.30053	10659.7	9321.5	106.88	272	3.33147	12718.4	10589.4	115.70
203	5.24778	10696.3	9344.7	107.06	273	3.31576	12744.0	10604.9	115.80
204	5.19650	10732.4	9367.5	107.24	274	3.30022	12769.6	10620.3	115.89
205	5.14664	10768.2	9390.1	107.41	275	3.28486	12795.1	10635.8	115.98
206	5.09812	10803.6	9412.3	107.58	276	3.26966	12820.5	10651.2	116.08
207	5.05088	10838.7	9434.4	107.75	277	3.25464	12845.9	10666.5	116.17
208	5.00485	10873.4	9456.2	107.92	278	3.23978	12871.2	10681.9	116.26
209	4.95999	10907.8	9477.7	108.08	279	3.22508	12896.5	10697.2	116.35
210	4.91624	10941.8	9499.1	108.25	280	3.21053	12921.7	10712.4	116.44
211	4.87355	10975.6	9520.2	108.41	281	3.19614	12946.9	10727.7	116.53
212	4.83188	11009.0	9541.1	108.57	282	3.18191	12972.0	10742.9	116.62
213	4.79118	11042.2	9561.8	108.72	283	3.16782	12997.1	10758.0	116.71
214	4.75141	11075.2	9582.4	108.88	284	3.15388	13022.1	10773.2	116.80
215	4.71255	11107.8	9602.7	109.03	285	3.14009	13047.1	10788.3	116.88
216	4.67454	11140.2	9622.9	109.18	286	3.12643	13072.0	10803.3	116.97
217	4.63736	11172.4	9642.9	109.33	287	3.11292	13096.9	10818.4	117.06
218	4.60097	11204.3	9662.7	109.47	288	3.09954	13121.8	10833.4	117.14
219	4.56535	11236.1	9682.4	109.62	289	3.08629	13146.6	10848.4	117.23
220	4.53046	11267.6	9701.9	109.76	290	3.07318	13171.3	10863.3	117.32
221	4.49629	11298.8	9721.3	109.90	291	3.06020	13196.1	10878.3	117.40
222	4.46280	11329.9	9740.6	110.04	292	3.04735	13220.7	10893.2	117.49
223	4.42997	11360.8	9759.7	110.18	293	3.03462	13245.4	10908.0	117.57
224	4.39778	11391.5	9778.7	110.32	294	3.02201	13270.0	10922.9	117.65
225	4.36621	11422.0	9797.5	110.46	295	3.00953	13294.5	10937.7	117.74
226	4.33523	11452.4	9816.3	110.59	296	2.99717	13319.0	10952.5	117.82
227	4.30483	11482.5	9834.9	110.72	297	2.98492	13343.5	10967.3	117.90
228	4.27498	11512.5	9853.4	110.86	298	2.97279	13368.0	10982.0	117.98
229	4.24567	11542.4	9871.8	110.99	299	2.96078	13392.4	10996.7	118.07
230	4.21689	11572.1	9890.0	111.12	300	2.94887	13416.8	11011.4	118.15

80.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 85.79[1]	35.6815	3052.0	2824.8	52.90
86	35.6523	3061.2	2833.9	53.01
87	35.5122	3105.4	2877.1	53.52
88	35.3708	3149.7	2920.5	54.03
89	35.2281	3194.3	2964.1	54.53
90	35.0842	3239.0	3007.9	55.03
91	34.9391	3283.8	3051.8	55.53
92	34.7929	3328.9	3095.9	56.02
93	34.6456	3374.1	3140.1	56.51
94	34.4973	3419.4	3184.4	56.99
95	34.3479	3464.9	3228.9	57.47
96	34.1975	3510.5	3273.4	57.95
97	34.0461	3556.2	3318.1	58.42
98	33.8937	3602.0	3362.8	58.89
99	33.7403	3647.9	3407.6	59.36
100	33.5858	3693.8	3452.5	59.82
101	33.4304	3739.9	3497.4	60.28
102	33.2740	3786.0	3542.4	60.74
103	33.1165	3832.2	3587.4	61.19
104	32.9579	3878.5	3632.5	61.63
105	32.7983	3924.8	3677.6	62.08
106	32.6376	3971.1	3722.8	62.52
107	32.4758	4017.5	3767.9	62.95
108	32.3128	4064.0	3813.1	63.38
109	32.1486	4110.4	3858.3	63.81
110	31.9832	4157.0	3903.5	64.24
111	31.8165	4203.5	3948.7	64.66
112	31.6485	4250.1	3994.0	65.08
113	31.4791	4296.7	4039.2	65.49
114	31.3083	4343.4	4084.5	65.90
115	31.1360	4390.1	4129.8	66.31
116	30.9623	4436.9	4175.1	66.71
117	30.7869	4483.7	4220.4	67.12
118	30.6098	4530.7	4265.8	67.52
119	30.4310	4577.7	4311.3	67.91
120	30.2503	4624.8	4356.8	68.31
121	30.0678	4672.1	4402.5	68.70
122	29.8832	4719.5	4448.2	69.09
123	29.6966	4767.0	4494.1	69.48
124	29.5077	4814.8	4540.1	69.86
125	29.3165	4862.7	4586.2	70.25
126	29.1229	4911.0	4632.6	70.63
127	28.9267	4959.5	4679.3	71.02
128	28.7277	5008.3	4726.2	71.40
129	28.5259	5057.5	4773.4	71.78
130	28.3211	5107.2	4821.0	72.17
131	28.1131	5157.3	4868.9	72.55
132	27.9016	5207.9	4917.4	72.94
133	27.6865	5259.2	4966.4	73.32
134	27.4676	5311.1	5016.0	73.71
135	27.2446	5363.7	5066.2	74.10
136	27.0171	5416.7	5116.7	74.49
137	26.7850	5470.3	5167.6	74.89
138	26.5479	5524.5	5219.1	75.28
139	26.3054	5579.3	5271.2	75.68
140	26.0571	5634.8	5323.7	76.07
141	25.8025	5691.1	5376.9	76.47
142	25.5411	5748.2	5430.8	76.88
143	25.2724	5806.3	5485.5	77.29
144	24.9956	5865.5	5541.2	77.70
145	24.7101	5926.1	5598.1	78.12
146	24.4150	5988.2	5656.2	78.55
147	24.1094	6051.9	5715.7	78.99
148	23.7922	6117.4	5776.7	79.43
149	23.4620	6184.7	5839.2	79.89
150	23.1175	6254.3	5903.6	80.36
151	22.7570	6326.6	5970.4	80.84
152	22.3784	6402.1	6039.9	81.34
153	21.9796	6480.7	6111.9	81.85
154	21.5578	6562.9	6186.8	82.39
155	21.1100	6649.0	6265.0	82.95
156	20.6329	6739.8	6346.9	83.53
157	20.1227	6835.8	6432.9	84.14
158	19.5757	6937.7	6523.6	84.79
159	18.9887	7046.2	6619.4	85.47
160	18.3601	7162.0	6720.5	86.20

* PHASE CHANGE

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80.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	17.6914	7285.0	6826.8	86.97	231	4.86833	11469.5	9804.4	109.70
162	16.9886	7415.0	6937.9	87.77	232	4.83422	11500.4	9823.6	109.84
163	16.2639	7550.7	7052.3	88.61	233	4.80072	11531.2	9842.6	109.97
164	15.5344	7689.8	7168.0	89.46	234	4.76784	11561.7	9861.5	110.10
165	14.8190	7829.8	7282.8	90.31	235	4.73554	11592.1	9880.3	110.23
166	14.1345	7968.0	7394.5	91.14	236	4.70381	11622.4	9899.0	110.36
167	13.4928	8102.4	7501.6	91.95	237	4.67264	11652.4	9917.6	110.48
168	12.9003	8231.3	7603.0	92.72	238	4.64199	11682.4	9936.1	110.61
169	12.3585	8354.1	7698.2	93.45	239	4.61187	11712.1	9954.4	110.73
170	11.8661	8470.4	7787.2	94.14	240	4.58225	11741.8	9972.7	110.86
171	11.4196	8580.2	7870.3	94.78	241	4.55312	11771.2	9990.9	110.98
172	11.0147	8683.8	7947.9	95.38	242	4.52447	11800.6	10008.9	111.10
173	10.6472	8781.7	8020.3	95.95	243	4.49628	11829.8	10026.9	111.22
174	10.3126	8874.2	8088.2	96.48	244	4.46854	11858.9	10044.8	111.34
175	10.0070	8961.9	8151.9	96.99	245	4.44123	11887.8	10062.6	111.46
176	9.72711	9045.3	8211.9	97.46	246	4.41435	11916.6	10080.3	111.58
177	9.46962	9124.6	8268.5	97.91	247	4.38788	11945.4	10097.9	111.69
178	9.23196	9200.3	8322.2	98.34	248	4.36181	11973.9	10115.5	111.81
179	9.01180	9272.7	8373.2	98.74	249	4.33614	12002.4	10133.0	111.92
180	8.80718	9342.3	8421.8	99.13	250	4.31085	12030.8	10150.3	112.04
181	8.61639	9409.1	8468.3	99.50	251	4.28592	12059.0	10167.7	112.15
182	8.43793	9473.4	8512.8	99.86	252	4.26136	12087.1	10184.9	112.26
183	8.27054	9535.6	8555.5	100.20	253	4.23716	12115.2	10202.1	112.37
184	8.11310	9595.7	8596.6	100.52	254	4.21330	12143.1	10219.2	112.48
185	7.96465	9654.0	8636.2	100.84	255	4.18977	12170.9	10236.2	112.59
186	7.82434	9710.5	8674.5	101.14	256	4.16657	12198.7	10253.1	112.70
187	7.69144	9765.4	8711.5	101.44	257	4.14369	12226.3	10270.0	112.81
188	7.56530	9818.9	8747.4	101.72	258	4.12113	12253.8	10286.9	112.92
189	7.44534	9871.0	8782.2	102.00	259	4.09886	12281.3	10303.6	113.02
190	7.33105	9921.9	8816.1	102.27	260	4.07690	12308.7	10320.3	113.13
191	7.22198	9971.6	8849.1	102.53	261	4.05523	12335.9	10337.0	113.23
192	7.11772	10020.1	8881.3	102.78	262	4.03384	12363.1	10353.6	113.34
193	7.01791	10067.7	8912.6	103.03	263	4.01273	12390.2	10370.1	113.44
194	6.92224	10114.3	8943.3	103.27	264	3.99189	12417.2	10386.6	113.54
195	6.83040	10160.0	8973.3	103.51	265	3.97132	12444.2	10403.0	113.64
196	6.74214	10204.9	9002.6	103.74	266	3.95100	12471.0	10419.4	113.75
197	6.65721	10249.0	9031.3	103.96	267	3.93094	12497.8	10435.7	113.85
198	6.57539	10292.3	9059.5	104.18	268	3.91113	12524.5	10451.9	113.95
199	6.49650	10335.0	9087.2	104.39	269	3.89157	12551.2	10468.1	114.05
200	6.42035	10376.9	9114.3	104.61	270	3.87224	12577.7	10484.3	114.14
201	6.34677	10418.2	9141.0	104.81	271	3.85315	12604.2	10500.4	114.24
202	6.27562	10459.0	9167.3	105.01	272	3.83428	12630.6	10516.5	114.34
203	6.20675	10499.1	9193.1	105.21	273	3.81564	12657.0	10532.5	114.44
204	6.14004	10538.7	9218.5	105.41	274	3.79721	12683.3	10548.5	114.53
205	6.07538	10577.8	9243.6	105.60	275	3.77901	12709.5	10564.4	114.63
206	6.01264	10616.4	9268.2	105.79	276	3.76101	12735.6	10580.3	114.72
207	5.95174	10654.6	9292.6	105.97	277	3.74322	12761.7	10596.2	114.82
208	5.89258	10692.3	9316.6	106.15	278	3.72563	12787.8	10612.0	114.91
209	5.83506	10729.5	9340.3	106.33	279	3.70824	12813.7	10627.7	115.00
210	5.77912	10766.4	9363.7	106.51	280	3.69105	12839.6	10643.5	115.10
211	5.72468	10802.9	9386.8	106.68	281	3.67404	12865.5	10659.1	115.19
212	5.67166	10838.9	9409.7	106.85	282	3.65723	12891.3	10674.8	115.28
213	5.62001	10874.7	9432.3	107.02	283	3.64060	12917.0	10690.4	115.37
214	5.56965	10910.1	9454.6	107.18	284	3.62414	12942.7	10706.0	115.46
215	5.52054	10945.1	9476.7	107.35	285	3.60787	12968.3	10721.5	115.55
216	5.47262	10979.8	9498.6	107.51	286	3.59177	12993.9	10737.0	115.64
217	5.42584	11014.3	9520.3	107.67	287	3.57584	13019.4	10752.4	115.73
218	5.38015	11048.4	9541.7	107.82	288	3.56008	13044.9	10767.9	115.82
219	5.33551	11082.2	9562.9	107.98	289	3.54448	13070.3	10783.3	115.91
220	5.29187	11115.8	9584.0	108.13	290	3.52904	13095.6	10798.6	115.99
221	5.24920	11149.1	9604.9	108.28	291	3.51377	13120.9	10814.0	116.08
222	5.20746	11182.2	9625.5	108.43	292	3.49865	13146.2	10829.2	116.17
223	5.16661	11215.0	9646.0	108.58	293	3.48368	13171.4	10844.5	116.25
224	5.12663	11247.6	9666.4	108.73	294	3.46886	13196.6	10859.7	116.34
225	5.08747	11279.9	9686.5	108.87	295	3.45419	13221.7	10874.9	116.43
226	5.04911	11312.0	9706.5	109.01	296	3.43967	13246.8	10890.1	116.51
227	5.01152	11343.9	9726.4	109.15	297	3.42529	13271.8	10905.3	116.60
228	4.97467	11375.6	9746.1	109.29	298	3.41106	13296.8	10920.4	116.68
229	4.93854	11407.1	9765.7	109.43	299	3.39696	13321.8	10935.5	116.76
230	4.90310	11438.4	9785.1	109.57	300	3.38299	13346.7	10950.5	116.85

90.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 86.039	35.7130	3081.8	2826.5	52.92
87	35.5795	3124.1	2867.8	53.41
88	35.4393	3168.3	2911.0	53.91
89	35.2980	3212.6	2954.3	54.42
90	35.1554	3257.2	2997.8	54.91
91	35.0117	3301.9	3041.4	55.41
92	34.8670	3346.8	3085.2	55.90
93	34.7212	3391.8	3129.1	56.38
94	34.5745	3436.9	3173.2	56.87
95	34.4267	3482.2	3217.3	57.35
96	34.2780	3527.6	3261.6	57.82
97	34.1283	3573.1	3305.9	58.29
98	33.9777	3618.7	3350.3	58.76
99	33.8262	3664.4	3394.8	59.22
100	33.6737	3710.2	3439.4	59.68
101	33.5203	3756.0	3484.0	60.14
102	33.3659	3801.9	3528.6	60.59
103	33.2105	3847.9	3573.3	61.04
104	33.0542	3893.9	3618.0	61.49
105	32.8970	3940.0	3662.7	61.93
106	32.7387	3986.1	3707.5	62.36
107	32.5793	4032.2	3752.3	62.80
108	32.4189	4078.3	3797.0	63.23
109	32.2574	4124.5	3841.8	63.65
110	32.0948	4170.7	3886.6	64.07
111	31.9311	4216.9	3931.3	64.49
112	31.7661	4263.2	3976.1	64.91
113	31.6000	4309.5	4020.9	65.32
114	31.4325	4355.8	4065.6	65.73
115	31.2637	4402.1	4110.4	66.13
116	31.0936	4448.5	4155.2	66.53
117	30.9220	4494.9	4200.0	66.93
118	30.7489	4541.4	4244.8	67.33
119	30.5742	4587.9	4289.6	67.72
120	30.3979	4634.5	4334.5	68.11
121	30.2200	4681.2	4379.5	68.50
122	30.0402	4728.1	4424.5	68.88
123	29.8587	4775.0	4469.6	69.27
124	29.6751	4822.2	4514.8	69.65
125	29.4896	4869.5	4560.2	70.03
126	29.3019	4917.0	4605.7	70.41
127	29.1120	4964.7	4651.5	70.78
128	28.9197	5012.8	4697.4	71.16
129	28.7250	5061.1	4743.6	71.54
130	28.5277	5109.8	4790.1	71.91
131	28.3277	5158.9	4837.0	72.29
132	28.1247	5208.5	4884.3	72.67
133	27.9187	5258.6	4932.0	73.04
134	27.7095	5309.3	4980.2	73.42
135	27.4969	5360.6	5029.0	73.80
136	27.2807	5412.2	5077.9	74.19
137	27.0607	5464.2	5127.2	74.57
138	26.8366	5516.7	5176.9	74.95
139	26.6081	5569.8	5227.0	75.33
140	26.3751	5623.3	5277.5	75.72
141	26.1371	5677.4	5328.4	76.10
142	25.8938	5732.1	5379.9	76.49
143	25.6450	5787.6	5431.9	76.88
144	25.3900	5843.9	5484.7	77.27
145	25.1286	5901.3	5538.4	77.67
146	24.8602	5959.8	5592.9	78.07
147	24.5842	6019.4	5648.5	78.48
148	24.3000	6080.4	5705.1	78.90
149	24.0070	6142.7	5762.8	79.32
150	23.7044	6206.5	5821.8	79.75
151	23.3913	6272.2	5882.3	80.19
152	23.0668	6340.2	5944.8	80.64
153	22.7299	6410.1	6008.9	81.10
154	22.3793	6482.1	6074.6	81.56
155	22.0140	6556.5	6142.2	82.05
156	21.6324	6633.4	6211.9	82.54
157	21.2333	6713.2	6283.7	83.05
158	20.8151	6796.0	6357.9	83.58
159	20.3765	6882.2	6434.7	84.12
160	19.9164	6972.0	6514.2	84.68

* PHASE CHANGE

90.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL.	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	19.4340	7060.7	6596.4	85.27	231	5.56492	11337.9	9699.1	108.29
162	18.9292	7163.3	6681.6	85.87	232	5.52390	11370.4	9719.5	108.43
163	18.4031	7265.0	6769.4	86.50	233	5.48368	11402.7	9739.6	108.57
164	17.8582	7370.5	6859.8	87.14	234	5.44423	11434.7	9759.7	108.71
165	17.2987	7479.4	6952.2	87.80	235	5.40553	11466.6	9779.6	108.84
166	16.7304	7591.0	7045.9	88.48	236	5.36755	11498.3	9799.3	108.98
167	16.1604	7704.5	7140.2	89.16	237	5.33027	11529.8	9818.9	109.11
168	15.5964	7818.7	7234.0	89.84	238	5.29368	11561.1	9838.4	109.24
169	15.0456	7932.7	7326.6	90.52	239	5.25773	11592.2	9857.7	109.37
170	14.5143	8045.3	7417.0	91.18	240	5.22243	11623.2	9877.0	109.50
171	14.0071	8155.8	7504.8	91.83	241	5.18774	11654.0	9896.1	109.63
172	13.5271	8263.5	7589.3	92.46	242	5.15365	11684.6	9915.1	109.76
173	13.0756	8367.9	7670.5	93.06	243	5.12014	11715.0	9933.9	109.88
174	12.6530	8468.7	7748.0	93.65	244	5.08720	11745.4	9952.7	110.01
175	12.2587	8565.9	7821.9	94.20	245	5.05480	11775.5	9971.4	110.13
176	11.8914	8659.3	7892.4	94.73	246	5.02293	11805.5	9989.9	110.25
177	11.5495	8749.1	7959.5	95.24	247	4.99158	11835.4	10008.4	110.37
178	11.2312	8835.3	8023.3	95.73	248	4.96073	11865.1	10026.8	110.49
179	10.9347	8918.2	8084.2	96.19	249	4.93037	11894.7	10045.0	110.61
180	10.6582	8998.0	8142.3	96.64	250	4.90048	11924.1	10063.2	110.73
181	10.4000	9074.7	8197.8	97.06	251	4.87106	11953.4	10081.3	110.85
182	10.1584	9148.6	8250.9	97.47	252	4.84208	11982.6	10099.3	110.96
183	9.93206	9219.9	8301.7	97.86	253	4.81355	12011.7	10117.2	111.08
184	9.71950	9288.8	8350.6	98.24	254	4.78544	12040.7	10135.0	111.19
185	9.51955	9355.4	8397.5	98.60	255	4.75774	12069.5	10152.7	111.31
186	9.33109	9420.0	8442.6	98.95	256	4.73045	12098.2	10170.4	111.42
187	9.15313	9482.5	8486.2	99.28	257	4.70355	12126.8	10188.0	111.53
188	8.98478	9543.2	8528.2	99.60	258	4.67704	12155.3	10205.5	111.64
189	8.82524	9602.3	8568.9	99.92	259	4.65091	12183.7	10222.9	111.75
190	8.67378	9659.7	8608.3	100.22	260	4.62514	12212.0	10240.2	111.86
191	8.52976	9715.7	8646.5	100.51	261	4.59972	12240.1	10257.5	111.97
192	8.39260	9770.2	8683.6	100.80	262	4.57466	12268.2	10274.7	112.07
193	8.26177	9823.5	8719.7	101.08	263	4.54994	12296.2	10291.9	112.18
194	8.13680	9875.6	8754.8	101.35	264	4.52555	12324.1	10309.0	112.29
195	8.01726	9926.5	8789.0	101.61	265	4.50148	12351.9	10326.0	112.39
196	7.90276	9976.4	8822.4	101.86	266	4.47773	12379.6	10342.9	112.50
197	7.79297	10025.2	8855.0	102.11	267	4.45429	12407.2	10359.8	112.60
198	7.68754	10073.1	8886.8	102.35	268	4.43116	12434.7	10376.7	112.70
199	7.58621	10120.1	8918.0	102.59	269	4.40832	12462.1	10393.4	112.81
200	7.48870	10166.3	8948.5	102.82	270	4.38578	12489.5	10410.1	112.91
201	7.39477	10211.6	8978.4	103.05	271	4.36351	12516.7	10426.8	113.01
202	7.30421	10256.2	9007.7	103.27	272	4.34153	12543.9	10443.4	113.11
203	7.21680	10300.1	9036.5	103.49	273	4.31981	12571.0	10459.9	113.21
204	7.13237	10343.3	9064.7	103.70	274	4.29836	12598.1	10476.4	113.31
205	7.05074	10385.9	9092.5	103.91	275	4.27718	12625.0	10492.9	113.40
206	6.97175	10427.8	9119.8	104.11	276	4.25624	12651.9	10509.3	113.50
207	6.89527	10469.2	9146.6	104.31	277	4.23556	12678.7	10525.6	113.60
208	6.82115	10510.0	9173.1	104.51	278	4.21512	12705.4	10541.9	113.69
209	6.74926	10550.3	9199.1	104.70	279	4.19493	12732.1	10558.1	113.79
210	6.67951	10590.0	9224.7	104.89	280	4.17496	12758.7	10574.3	113.89
211	6.61177	10629.3	9250.0	105.08	281	4.15523	12785.2	10590.5	113.98
212	6.54594	10668.1	9275.0	105.26	282	4.13572	12811.6	10606.6	114.07
213	6.48195	10706.5	9299.6	105.44	283	4.11644	12838.0	10622.6	114.17
214	6.41969	10744.4	9323.9	105.62	284	4.09737	12864.4	10638.7	114.26
215	6.35908	10781.9	9347.9	105.79	285	4.07852	12890.6	10654.6	114.35
216	6.30006	10819.1	9371.6	105.97	286	4.05987	12916.8	10670.6	114.44
217	6.24255	10855.8	9395.0	106.14	287	4.04143	12943.0	10686.5	114.54
218	6.18648	10892.2	9418.1	106.30	288	4.02319	12969.0	10702.3	114.63
219	6.13179	10928.3	9441.0	106.47	289	4.00514	12995.1	10718.1	114.72
220	6.07842	10964.0	9463.7	106.63	290	3.98730	13021.0	10733.9	114.81
221	6.02632	10999.4	9486.1	106.79	291	3.96964	13046.9	10749.6	114.90
222	5.97544	11034.5	9508.3	106.95	292	3.95217	13072.8	10765.3	114.98
223	5.92572	11069.3	9530.3	107.11	293	3.93488	13098.6	10781.0	115.07
224	5.87712	11103.8	9552.1	107.26	294	3.91777	13124.3	10796.6	115.16
225	5.82960	11138.0	9573.6	107.41	295	3.90084	13150.0	10812.2	115.25
226	5.78312	11171.9	9595.0	107.56	296	3.88408	13175.6	10827.7	115.33
227	5.73763	11205.6	9616.2	107.71	297	3.86749	13201.2	10843.2	115.42
228	5.69310	11239.0	9637.2	107.86	298	3.85108	13226.8	10858.7	115.51
229	5.64949	11272.2	9658.0	108.00	299	3.83482	13252.2	10874.2	115.59
230	5.60678	11305.2	9678.6	108.15	300	3.81873	13277.7	10889.6	115.68

100.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 86.287	35.7440	3111.6	2828.2	52.94
87	35.6457	3142.9	2858.6	53.30
88	35.5068	3186.9	2901.5	53.80
89	35.3667	3231.1	2944.6	54.30
90	35.2254	3275.5	2987.8	54.80
91	35.0831	3320.0	3031.2	55.29
92	34.9398	3364.7	3074.7	55.78
93	34.7955	3409.6	3118.4	56.26
94	34.6502	3454.5	3162.1	56.74
95	34.5040	3499.7	3206.0	57.22
96	34.3569	3544.9	3249.9	57.69
97	34.2089	3590.2	3294.0	58.16
98	34.0600	3635.6	3338.1	58.63
99	33.9103	3681.1	3382.3	59.09
100	33.7596	3726.7	3426.5	59.55
101	33.6081	3772.3	3470.8	60.00
102	33.4557	3818.0	3515.1	60.45
103	33.3024	3863.8	3559.5	60.90
104	33.1482	3909.5	3603.9	61.34
105	32.9931	3955.4	3648.2	61.78
106	32.8371	4001.2	3692.6	62.21
107	32.6802	4047.1	3737.0	62.65
108	32.5222	4093.0	3781.4	63.07
109	32.3633	4138.9	3825.8	63.50
110	32.2033	4184.8	3870.1	63.91
111	32.0423	4230.7	3914.5	64.33
112	31.8803	4276.6	3958.8	64.74
113	31.7171	4322.6	4003.1	65.15
114	31.5527	4368.5	4047.4	65.56
115	31.3871	4414.5	4091.7	65.96
116	31.2203	4460.5	4136.0	66.36
117	31.0523	4506.5	4180.2	66.75
118	30.8828	4552.6	4224.5	67.14
119	30.7120	4598.7	4268.8	67.53
120	30.5398	4644.9	4313.1	67.92
121	30.3660	4691.1	4357.4	68.30
122	30.1907	4737.4	4401.8	68.68
123	30.0137	4783.8	4446.2	69.06
124	29.8350	4830.4	4490.8	69.44
125	29.6545	4877.1	4535.4	69.81
126	29.4722	4924.0	4580.1	70.19
127	29.2879	4971.0	4625.1	70.56
128	29.1016	5018.3	4670.2	70.93
129	28.9132	5065.9	4715.5	71.30
130	28.7225	5113.8	4761.1	71.67
131	28.5294	5162.1	4806.9	72.04
132	28.3339	5210.8	4853.1	72.41
133	28.1358	5259.9	4899.7	72.78
134	27.9350	5309.5	4946.8	73.15
135	27.7313	5359.7	4994.3	73.53
136	27.5246	5410.1	5041.9	73.90
137	27.3147	5460.8	5089.8	74.27
138	27.1014	5511.9	5138.0	74.64
139	26.8846	5563.5	5186.6	75.01
140	26.6641	5615.4	5235.3	75.39
141	26.4395	5667.7	5284.4	75.76
142	26.2108	5720.5	5333.9	76.13
143	25.9776	5773.9	5383.8	76.51
144	25.7397	5828.0	5434.3	76.89
145	25.4967	5882.9	5485.5	77.27
146	25.2484	5938.7	5537.3	77.65
147	24.9944	5995.4	5590.0	78.04
148	24.7343	6053.1	5643.4	78.43
149	24.4677	6111.7	5697.6	78.83
150	24.1942	6171.5	5752.7	79.23
151	23.9132	6232.8	5809.1	79.64
152	23.6243	6295.8	5866.9	80.06
153	23.3269	6360.2	5925.8	80.48
154	23.0205	6426.0	5985.8	80.91
155	22.7043	6493.3	6047.1	81.35
156	22.3777	6562.4	6109.6	81.79
157	22.0401	6633.2	6173.5	82.24
158	21.6908	6706.0	6238.8	82.71
159	21.3291	6780.8	6305.7	83.18
160	20.9544	6857.8	6374.2	83.66

* PHASE CHANGE

100.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	20.5663	6937.1	6444.4	84.15	231	6.27532	11207.6	9592.9	106.98
162	20.1644	7018.8	6516.3	84.66	232	6.22691	11241.7	9614.4	107.13
163	19.7487	7103.0	6589.9	85.18	233	6.17949	11275.5	9635.8	107.28
164	19.3197	7189.7	6665.2	85.71	234	6.13304	11309.1	9657.0	107.42
165	18.8780	7278.8	6742.1	86.25	235	6.08751	11342.5	9678.0	107.56
166	18.4252	7370.4	6820.4	86.80	236	6.04288	11375.6	9698.8	107.70
167	17.9632	7464.0	6899.9	87.37	237	5.99911	11408.5	9719.5	107.84
168	17.4948	7559.6	6980.4	87.94	238	5.95617	11441.2	9740.0	107.98
169	17.0233	7656.5	7061.3	88.51	239	5.91405	11473.7	9760.4	108.12
170	16.5522	7754.5	7142.3	89.09	240	5.87270	11506.0	9780.6	108.25
171	16.0854	7852.8	7222.9	89.67	241	5.83212	11538.1	9800.7	108.38
172	15.6265	7951.1	7302.7	90.24	242	5.79226	11570.0	9820.6	108.52
173	15.1788	8048.8	7381.3	90.81	243	5.75312	11601.7	9840.4	108.65
174	14.7451	8145.4	7458.2	91.36	244	5.71467	11633.2	9860.1	108.78
175	14.3273	8240.5	7533.3	91.91	245	5.67688	11664.6	9879.7	108.91
176	13.9271	8333.8	7606.2	92.44	246	5.63975	11695.8	9899.1	109.03
177	13.5452	8425.0	7676.9	92.96	247	5.60324	11726.8	9918.4	109.16
178	13.1820	8514.0	7745.3	93.46	248	5.56734	11757.6	9937.6	109.28
179	12.8374	8600.6	7811.3	93.94	249	5.53204	11788.3	9956.7	109.41
180	12.5111	8684.8	7874.9	94.41	250	5.49731	11818.9	9975.6	109.53
181	12.2024	8766.6	7936.2	94.86	251	5.46314	11849.3	9994.5	109.65
182	11.9106	8846.0	7995.3	95.30	252	5.42952	11879.5	10013.3	109.77
183	11.6347	8923.1	8052.2	95.72	253	5.39643	11909.6	10031.9	109.89
184	11.3739	8997.9	8107.0	96.13	254	5.36385	11939.6	10050.5	110.01
185	11.1273	9070.5	8159.8	96.53	255	5.33178	11969.4	10069.0	110.12
186	10.8939	9141.0	8210.8	96.91	256	5.30019	11999.1	10087.3	110.24
187	10.6728	9209.4	8260.0	97.27	257	5.26908	12028.7	10105.6	110.36
188	10.4632	9276.0	8307.6	97.63	258	5.23843	12058.1	10123.8	110.47
189	10.2643	9340.8	8353.6	97.97	259	5.20824	12087.4	10141.9	110.58
190	10.0753	9403.8	8398.1	98.30	260	5.17848	12116.6	10159.9	110.70
191	9.89564	9465.2	8441.2	98.63	261	5.14916	12145.7	10177.9	110.81
192	9.72448	9525.1	8483.1	98.94	262	5.12025	12174.7	10195.7	110.92
193	9.56130	9583.5	8523.7	99.24	263	5.09175	12203.5	10213.5	111.03
194	9.40555	9640.5	8563.2	99.54	264	5.06365	12232.3	10231.2	111.14
195	9.25672	9696.2	8601.6	99.82	265	5.03594	12260.9	10248.8	111.25
196	9.11434	9750.7	8639.0	100.10	266	5.00861	12289.4	10266.4	111.35
197	8.97799	9804.1	8675.4	100.37	267	4.98165	12317.9	10283.9	111.46
198	8.84726	9856.3	8711.0	100.64	268	4.95505	12346.2	10301.3	111.57
199	8.72180	9907.5	8745.7	100.90	269	4.92880	12374.4	10318.6	111.67
200	8.60127	9957.7	8779.6	101.15	270	4.90291	12402.6	10335.9	111.78
201	8.48536	10006.9	8812.8	101.39	271	4.87735	12430.6	10353.1	111.88
202	8.37379	10055.3	8845.2	101.63	272	4.85212	12458.5	10370.2	111.98
203	8.26630	10102.8	8877.0	101.87	273	4.82721	12486.4	10387.3	112.08
204	8.16265	10149.5	8908.2	102.10	274	4.80262	12514.2	10404.3	112.19
205	8.06261	10195.5	8938.7	102.32	275	4.77834	12541.8	10421.3	112.29
206	7.96597	10240.7	8968.7	102.54	276	4.75436	12569.4	10438.2	112.39
207	7.87256	10285.3	8998.2	102.76	277	4.73068	12597.0	10455.0	112.49
208	7.78219	10329.1	9027.1	102.97	278	4.70728	12624.4	10471.8	112.59
209	7.69470	10372.4	9055.5	103.18	279	4.68418	12651.7	10488.5	112.68
210	7.60993	10415.0	9083.5	103.38	280	4.66135	12679.0	10505.2	112.78
211	7.52776	10457.1	9111.0	103.58	281	4.63879	12706.2	10521.8	112.88
212	7.44803	10498.6	9138.1	103.78	282	4.61650	12733.3	10538.4	112.97
213	7.37064	10539.6	9164.8	103.97	283	4.59447	12760.4	10554.9	113.07
214	7.29547	10580.1	9191.2	104.16	284	4.57269	12787.3	10571.4	113.17
215	7.22241	10620.1	9217.1	104.35	285	4.55117	12814.2	10587.8	113.26
216	7.15136	10659.6	9242.7	104.53	286	4.52990	12841.0	10604.2	113.35
217	7.08223	10698.7	9268.0	104.71	287	4.50886	12867.8	10620.5	113.45
218	7.01493	10737.4	9292.9	104.89	288	4.48806	12894.5	10636.8	113.54
219	6.94938	10775.6	9317.6	105.06	289	4.46750	12921.1	10653.0	113.63
220	6.88551	10813.5	9341.9	105.24	290	4.44716	12947.7	10669.2	113.72
221	6.82323	10851.0	9365.9	105.41	291	4.42705	12974.2	10685.3	113.82
222	6.76249	10888.1	9389.7	105.57	292	4.40715	13000.6	10701.4	113.91
223	6.70322	10924.8	9413.2	105.74	293	4.38747	13027.0	10717.5	114.00
224	6.64535	10961.3	9436.5	105.90	294	4.36801	13053.3	10733.5	114.09
225	6.58884	10997.4	9459.5	106.06	295	4.34875	13079.5	10749.5	114.18
226	6.53362	11033.1	9482.3	106.22	296	4.32969	13105.7	10765.4	114.26
227	6.47965	11068.6	9504.8	106.38	297	4.31083	13131.8	10781.3	114.35
228	6.42688	11103.8	9527.1	106.53	298	4.29217	13157.9	10797.2	114.44
229	6.37526	11138.7	9549.3	106.68	299	4.27371	13183.9	10813.0	114.53
230	6.32475	11173.3	9571.2	106.83	300	4.25543	13209.9	10828.8	114.61

120.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 86.782	35.8048	3171.2	2831.6	52.97
87	35.7751	3180.7	2840.8	53.08
88	35.6385	3224.4	2883.2	53.58
89	35.5008	3268.3	2925.8	54.08
90	35.3621	3312.3	2968.5	54.57
91	35.2223	3356.6	3011.3	55.06
92	35.0817	3400.9	3054.3	55.54
93	34.9401	3445.5	3097.5	56.02
94	34.7977	3490.1	3140.7	56.50
95	34.6544	3534.9	3184.0	56.97
96	34.5103	3579.8	3227.4	57.44
97	34.3655	3624.7	3270.9	57.91
98	34.2198	3669.8	3314.5	58.37
99	34.0734	3714.9	3358.1	58.83
100	33.9262	3760.1	3401.7	59.28
101	33.7782	3805.4	3445.4	59.74
102	33.6295	3850.7	3489.1	60.18
103	33.4800	3896.0	3532.9	60.62
104	33.3298	3941.4	3576.6	61.06
105	33.1788	3986.8	3620.3	61.50
106	33.0270	4032.2	3664.0	61.93
107	32.8744	4077.6	3707.7	62.35
108	32.7210	4123.0	3751.4	62.78
109	32.5667	4168.4	3795.0	63.19
110	32.4116	4213.8	3838.6	63.61
111	32.2556	4259.2	3882.2	64.02
112	32.0988	4304.5	3925.7	64.43
113	31.9410	4349.9	3969.2	64.83
114	31.7822	4395.2	4012.6	65.23
115	31.6225	4440.5	4056.0	65.62
116	31.4618	4485.9	4099.4	66.02
117	31.3000	4531.2	4142.7	66.41
118	31.1372	4576.5	4186.0	66.79
119	30.9732	4621.8	4229.2	67.17
120	30.8080	4667.2	4272.5	67.55
121	30.6417	4712.5	4315.7	67.93
122	30.4741	4758.0	4359.0	68.30
123	30.3052	4803.5	4402.2	68.68
124	30.1350	4849.0	4445.5	69.04
125	29.9634	4894.7	4488.9	69.41
126	29.7903	4940.5	4532.3	69.78
127	29.6157	4986.4	4575.8	70.14
128	29.4395	5032.5	4619.5	70.50
129	29.2617	5078.8	4663.2	70.86
130	29.0822	5125.3	4707.2	71.22
131	28.9009	5172.1	4751.4	71.58
132	28.7178	5219.3	4795.9	71.94
133	28.5328	5266.8	4840.6	72.30
134	28.3457	5314.7	4885.7	72.65
135	28.1565	5363.0	4931.2	73.01
136	27.9652	5411.5	4976.7	73.37
137	27.7715	5460.2	5022.3	73.73
138	27.5755	5509.1	5068.1	74.08
139	27.3770	5558.3	5114.1	74.44
140	27.1758	5607.7	5160.2	74.79
141	26.9720	5657.3	5206.4	75.15
142	26.7653	5707.2	5252.9	75.50
143	26.5556	5757.5	5299.6	75.85
144	26.3427	5808.3	5346.7	76.21
145	26.1266	5859.6	5394.2	76.57
146	25.9071	5911.5	5442.2	76.92
147	25.6840	5964.1	5490.6	77.28
148	25.4571	6017.3	5539.6	77.65
149	25.2263	6071.0	5589.0	78.01
150	24.9914	6125.5	5639.0	78.38
151	24.7521	6181.0	5689.8	78.75
152	24.5084	6237.8	5741.7	79.12
153	24.2599	6295.3	5794.1	79.50
154	24.0064	6353.6	5847.1	79.88
155	23.7479	6412.8	5900.8	80.26
156	23.4839	6472.9	5955.2	80.65
157	23.2143	6534.0	6010.2	81.04
158	22.9389	6596.0	6065.9	81.44
159	22.6575	6659.1	6122.4	81.83
160	22.3699	6723.2	6179.7	82.24

* PHASE CHANGE

120.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	22.0759	6788.5	6237.7	82.64	231	7.72113	10954.9	9380.1	104.63
162	21.7755	6854.9	6296.5	83.05	232	7.65716	10992.0	9404.1	104.79
163	21.4685	6922.4	6356.0	83.47	233	7.59458	11028.9	9427.8	104.95
164	21.1549	6991.2	6416.4	83.89	234	7.53335	11065.3	9451.3	105.11
165	20.8347	7061.2	6477.6	84.31	235	7.47343	11101.5	9474.5	105.26
166	20.5082	7132.4	6539.5	84.75	236	7.41476	11137.5	9497.6	105.41
167	20.1756	7204.9	6602.2	85.18	237	7.35729	11173.1	9520.4	105.56
168	19.8372	7278.6	6665.6	85.62	238	7.30100	11208.5	9543.0	105.71
169	19.4936	7353.4	6729.6	86.06	239	7.24584	11243.6	9565.5	105.86
170	19.1455	7429.2	6794.1	86.51	240	7.19177	11278.4	9587.7	106.01
171	18.7936	7506.1	6859.1	86.96	241	7.13875	11313.0	9609.7	106.15
172	18.4390	7583.9	6924.5	87.42	242	7.08676	11347.4	9631.6	106.29
173	18.0827	7662.4	6990.0	87.87	243	7.03575	11381.5	9653.3	106.43
174	17.7260	7741.5	7055.6	88.33	244	6.98570	11415.4	9674.8	106.57
175	17.3702	7821.1	7121.0	88.78	245	6.93658	11449.1	9696.2	106.71
176	17.0165	7900.8	7186.3	89.24	246	6.88836	11482.6	9717.4	106.85
177	16.6662	7980.6	7251.0	89.69	247	6.84100	11515.8	9738.4	106.98
178	16.3206	8060.3	7315.3	90.14	248	6.79449	11548.9	9759.3	107.11
179	15.9809	8139.6	7378.8	90.58	249	6.74880	11581.8	9780.1	107.25
180	15.6479	8218.5	7441.4	91.02	250	6.70390	11614.4	9800.7	107.38
181	15.3227	8296.7	7503.1	91.46	251	6.65978	11646.9	9821.1	107.51
182	15.0059	8374.0	7563.7	91.88	252	6.61640	11679.2	9841.4	107.64
183	14.6981	8450.5	7623.2	92.30	253	6.57375	11711.3	9861.6	107.76
184	14.3997	8525.9	7681.5	92.71	254	6.53181	11743.3	9881.7	107.89
185	14.1109	8600.2	7738.5	93.11	255	6.49056	11775.0	9901.6	108.01
186	13.8319	8673.4	7794.3	93.51	256	6.44997	11806.6	9921.5	108.14
187	13.5627	8745.3	7848.8	93.89	257	6.41003	11838.1	9941.2	108.26
188	13.3033	8816.0	7902.0	94.27	258	6.37073	11869.4	9960.8	108.38
189	13.0536	8885.4	7953.9	94.64	259	6.33204	11900.5	9980.2	108.50
190	12.8132	8953.5	8004.5	95.00	260	6.29395	11931.5	9999.6	108.62
191	12.5820	9020.3	8053.9	95.35	261	6.25644	11962.4	10018.9	108.74
192	12.3597	9085.8	8102.0	95.69	262	6.21950	11993.1	10038.0	108.86
193	12.1459	9150.1	8149.0	96.03	263	6.18312	12023.6	10057.1	108.97
194	11.9404	9213.1	8194.8	96.35	264	6.14727	12054.0	10076.0	109.09
195	11.7428	9275.0	8239.5	96.67	265	6.11195	12084.3	10094.9	109.20
196	11.5527	9335.6	8283.1	96.98	266	6.07715	12114.5	10113.6	109.32
197	11.3699	9395.1	8325.7	97.28	267	6.04284	12144.5	10132.3	109.43
198	11.1940	9453.5	8367.3	97.58	268	6.00903	12174.4	10150.9	109.54
199	11.0246	9510.8	8407.9	97.87	269	5.97569	12204.2	10169.4	109.65
200	10.8615	9567.1	8447.6	98.15	270	5.94281	12233.9	10187.8	109.76
201	10.7043	9622.3	8486.4	98.42	271	5.91039	12263.4	10206.1	109.87
202	10.5529	9676.6	8524.3	98.69	272	5.87841	12292.8	10224.4	109.98
203	10.4067	9729.9	8561.5	98.96	273	5.84687	12322.2	10242.5	110.09
204	10.2657	9782.3	8597.9	99.21	274	5.81575	12351.4	10260.6	110.19
205	10.1296	9833.9	8633.5	99.47	275	5.78504	12380.5	10278.6	110.30
206	9.99811	9884.6	8668.5	99.71	276	5.75474	12409.5	10296.5	110.41
207	9.87097	9934.5	8702.7	99.96	277	5.72483	12438.4	10314.4	110.51
208	9.74802	9983.7	8736.3	100.19	278	5.69531	12467.1	10332.2	110.61
209	9.62904	10032.1	8769.3	100.42	279	5.66617	12495.8	10349.9	110.72
210	9.51384	10079.8	8801.7	100.65	280	5.63739	12524.4	10367.5	110.82
211	9.40224	10126.7	8833.5	100.88	281	5.60898	12552.9	10385.1	110.92
212	9.29406	10173.1	8864.8	101.09	282	5.58093	12581.3	10402.6	111.02
213	9.18916	10218.8	8895.5	101.31	283	5.55322	12609.7	10420.1	111.12
214	9.08737	10263.8	8925.8	101.52	284	5.52585	12637.9	10437.4	111.22
215	8.98856	10308.3	8955.6	101.73	285	5.49881	12666.0	10454.8	111.32
216	8.89258	10352.2	8984.9	101.93	286	5.47210	12694.1	10472.0	111.42
217	8.79931	10395.6	9013.7	102.13	287	5.44571	12722.0	10489.2	111.52
218	8.70862	10438.4	9042.2	102.33	288	5.41963	12749.9	10506.3	111.61
219	8.62042	10480.8	9070.2	102.52	289	5.39385	12777.7	10523.4	111.71
220	8.53458	10522.6	9097.9	102.71	290	5.36838	12805.4	10540.5	111.81
221	8.45100	10564.0	9125.2	102.90	291	5.34320	12833.1	10557.4	111.90
222	8.36960	10604.9	9152.1	103.09	292	5.31831	12860.7	10574.3	112.00
223	8.29027	10645.3	9178.6	103.27	293	5.29370	12888.1	10591.2	112.09
224	8.21294	10685.4	9204.9	103.45	294	5.26937	12915.6	10608.0	112.18
225	8.13752	10725.0	9230.8	103.62	295	5.24531	12942.9	10624.8	112.28
226	8.06393	10764.3	9256.4	103.80	296	5.22152	12970.2	10641.5	112.37
227	7.99211	10803.1	9281.7	103.97	297	5.19799	12997.4	10658.1	112.46
228	7.92198	10841.6	9306.7	104.14	298	5.17472	13024.5	10674.7	112.55
229	7.85349	10879.7	9331.4	104.30	299	5.15170	13051.6	10691.3	112.64
230	7.78655	10917.5	9355.9	104.47	300	5.12893	13078.5	10707.8	112.73

140.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 87.275	35.8638	3230.6	2835.1	53.00
88	35.7663	3262.1	2865.5	53.36
89	35.6308	3305.7	2907.6	53.86
90	35.4944	3349.5	2949.8	54.34
91	35.3571	3393.4	2992.2	54.83
92	35.2189	3437.5	3034.7	55.31
93	35.0799	3481.7	3077.3	55.79
94	34.9401	3526.1	3120.1	56.26
95	34.7995	3570.5	3162.9	56.73
96	34.6583	3615.1	3205.8	57.20
97	34.5163	3659.8	3248.8	57.66
98	34.3736	3704.5	3291.8	58.12
99	34.2303	3749.3	3334.9	58.58
100	34.0862	3794.2	3378.0	59.03
101	33.9416	3839.1	3421.1	59.48
102	33.7962	3884.0	3464.3	59.92
103	33.6502	3929.0	3507.4	60.36
104	33.5036	3974.0	3550.5	60.79
105	33.3563	4019.0	3593.7	61.22
106	33.2083	4063.9	3636.8	61.65
107	33.0596	4108.9	3679.8	62.07
108	32.9103	4153.9	3722.9	62.49
109	32.7602	4198.9	3765.8	62.90
110	32.6095	4243.8	3808.8	63.31
111	32.4580	4288.7	3851.6	63.72
112	32.3058	4333.5	3894.4	64.12
113	32.1528	4378.4	3937.2	64.52
114	31.9990	4423.2	3979.8	64.92
115	31.8444	4467.9	4022.5	65.31
116	31.6890	4512.7	4065.0	65.69
117	31.5328	4557.4	4107.5	66.08
118	31.3756	4602.1	4149.9	66.46
119	31.2176	4646.7	4192.3	66.84
120	31.0586	4691.4	4234.6	67.21
121	30.8986	4736.0	4276.9	67.58
122	30.7377	4780.7	4319.2	67.95
123	30.5757	4825.4	4361.4	68.31
124	30.4126	4870.1	4403.7	68.67
125	30.2484	4914.9	4445.9	69.03
126	30.0831	4959.8	4488.2	69.39
127	29.9166	5004.8	4530.6	69.75
128	29.7489	5049.8	4573.0	70.10
129	29.5798	5095.1	4615.5	70.45
130	29.4095	5140.5	4658.2	70.80
131	29.2378	5186.2	4701.0	71.15
132	29.0646	5232.1	4744.0	71.50
133	28.8900	5278.3	4787.3	71.85
134	28.7139	5324.9	4830.9	72.20
135	28.5362	5371.8	4874.7	72.55
136	28.3568	5418.8	4918.5	72.90
137	28.1757	5465.8	4962.4	73.24
138	27.9929	5513.1	5006.3	73.58
139	27.8082	5560.5	5050.4	73.93
140	27.6216	5608.0	5094.5	74.27
141	27.4331	5655.7	5138.6	74.61
142	27.2425	5703.5	5182.8	74.95
143	27.0498	5751.6	5227.1	75.28
144	26.8549	5800.0	5271.8	75.62
145	26.6577	5848.8	5316.7	75.96
146	26.4581	5898.1	5361.9	76.30
147	26.2561	5947.8	5407.5	76.64
148	26.0516	5998.0	5453.4	76.99
149	25.8444	6048.5	5499.6	77.33
150	25.6345	6099.6	5546.2	77.67
151	25.4218	6151.5	5593.5	78.02
152	25.2062	6204.3	5641.5	78.37
153	24.9876	6257.7	5690.0	78.72
154	24.7658	6311.6	5738.8	79.07
155	24.5409	6366.0	5788.0	79.42
156	24.3127	6421.1	5837.6	79.78
157	24.0811	6476.7	5887.6	80.13
158	23.8460	6532.9	5938.0	80.49
159	23.6074	6589.8	5988.9	80.85
160	23.3652	6647.3	6040.2	81.21

* PHASE CHANGE

140.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	23.1192	6705.5	6091.9	81.57	231	9.16717	10719.0	9171.5	102.57
162	22.8696	6764.3	6144.0	81.93	232	9.08794	10758.7	9197.8	102.74
163	22.6162	6823.9	6196.6	82.30	233	9.01046	10798.1	9223.7	102.91
164	22.3590	6884.1	6249.7	82.67	234	8.93466	10837.1	9249.3	103.08
165	22.0981	6945.1	6303.1	83.04	235	8.86050	10875.7	9274.7	103.24
166	21.8334	7006.8	6357.0	83.41	236	8.78792	10914.1	9299.8	103.40
167	21.5651	7069.2	6411.4	83.79	237	8.71686	10952.1	9324.7	103.57
168	21.2932	7132.3	6466.1	84.16	238	8.64727	10989.8	9349.3	103.72
169	21.0179	7196.2	6521.2	84.54	239	8.57911	11027.2	9373.7	103.88
170	20.7394	7260.7	6576.7	84.92	240	8.51232	11064.4	9397.9	104.04
171	20.4580	7326.0	6632.6	85.31	241	8.44687	11101.2	9421.8	104.19
172	20.1738	7391.9	6688.7	85.69	242	8.38271	11137.8	9445.5	104.34
173	19.8873	7458.3	6745.0	86.08	243	8.31980	11174.1	9469.0	104.49
174	19.5989	7525.4	6801.6	86.46	244	8.25809	11210.1	9492.3	104.64
175	19.3089	7593.0	6858.3	86.85	245	8.19757	11245.9	9515.4	104.78
176	19.0180	7661.1	6915.1	87.24	246	8.13817	11281.4	9538.3	104.93
177	18.7265	7729.5	6972.0	87.63	247	8.07988	11316.7	9561.0	105.07
178	18.4350	7798.3	7028.8	88.01	248	8.02266	11351.8	9583.5	105.21
179	18.1443	7867.3	7085.4	88.40	249	7.96648	11386.6	9605.9	105.35
180	17.8547	7936.4	7141.9	88.79	250	7.91130	11421.2	9628.1	105.49
181	17.5670	8005.7	7198.1	89.17	251	7.85710	11455.6	9650.1	105.63
182	17.2817	8074.9	7254.0	89.55	252	7.80385	11489.7	9671.9	105.77
183	16.9994	8144.0	7309.5	89.93	253	7.75152	11523.7	9693.6	105.90
184	16.7206	8212.9	7364.5	90.30	254	7.70008	11557.5	9715.2	106.03
185	16.4459	8281.5	7418.9	90.68	255	7.64952	11591.0	9736.5	106.17
186	16.1756	8349.8	7472.8	91.04	256	7.59980	11624.4	9757.8	106.30
187	15.9101	8417.6	7526.0	91.41	257	7.55090	11657.6	9778.9	106.43
188	15.6499	8485.0	7578.5	91.77	258	7.50280	11690.6	9799.8	106.55
189	15.3951	8551.8	7630.3	92.12	259	7.45548	11723.4	9820.6	106.68
190	15.1461	8617.9	7681.3	92.47	260	7.40892	11756.0	9841.3	106.81
191	14.9029	8683.4	7731.6	92.81	261	7.36310	11788.5	9861.9	106.93
192	14.6657	8748.3	7781.0	93.15	262	7.31800	11820.8	9882.3	107.05
193	14.4347	8812.3	7829.6	93.49	263	7.27359	11852.9	9902.6	107.18
194	14.2098	8875.7	7877.3	93.81	264	7.22987	11884.9	9922.8	107.30
195	13.9910	8938.2	7924.3	94.13	265	7.18681	11916.7	9942.9	107.42
196	13.7783	8999.9	7970.4	94.45	266	7.14440	11948.4	9962.8	107.54
197	13.5717	9060.9	8015.6	94.76	267	7.10262	11979.9	9982.7	107.66
198	13.3710	9121.0	8060.0	95.06	268	7.06145	12011.3	10002.4	107.77
199	13.1762	9180.3	8103.7	95.36	269	7.02089	12042.6	10022.0	107.89
200	12.9871	9238.8	8146.5	95.66	270	6.98091	12073.6	10041.6	108.01
201	12.8036	9296.4	8188.5	95.94	271	6.94150	12104.6	10061.0	108.12
202	12.6255	9353.3	8229.7	96.23	272	6.90266	12135.4	10080.3	108.23
203	12.4527	9409.4	8270.2	96.50	273	6.86435	12166.1	10099.5	108.35
204	12.2851	9464.7	8310.0	96.78	274	6.82658	12196.7	10118.6	108.46
205	12.1225	9519.2	8349.0	97.04	275	6.78933	12227.1	10137.7	108.57
206	11.9646	9573.0	8387.3	97.30	276	6.75259	12257.4	10156.6	108.68
207	11.8115	9626.0	8425.0	97.56	277	6.71635	12287.6	10175.5	108.79
208	11.6628	9678.3	8461.9	97.81	278	6.68059	12317.7	10194.3	108.90
209	11.5184	9729.9	8498.3	98.06	279	6.64530	12347.7	10212.9	109.00
210	11.3783	9780.8	8534.0	98.30	280	6.61048	12377.5	10231.5	109.11
211	11.2421	9831.0	8569.1	98.54	281	6.57611	12407.2	10250.1	109.22
212	11.1099	9880.5	8603.7	98.78	282	6.54219	12436.9	10268.5	109.32
213	10.9813	9929.5	8637.6	99.01	283	6.50870	12466.4	10286.9	109.43
214	10.8564	9977.8	8671.1	99.23	284	6.47563	12495.8	10305.1	109.53
215	10.7348	10025.5	8704.0	99.45	285	6.44298	12525.1	10323.3	109.63
216	10.6167	10072.6	8736.4	99.67	286	6.41074	12554.3	10341.5	109.74
217	10.5017	10119.1	8768.3	99.89	287	6.37890	12583.4	10359.5	109.84
218	10.3898	10165.1	8799.7	100.10	288	6.34745	12612.4	10377.5	109.94
219	10.2808	10210.5	8830.7	100.31	289	6.31638	12641.3	10395.5	110.04
220	10.1747	10255.4	8861.2	100.51	290	6.28568	12670.2	10413.3	110.14
221	10.0713	10299.8	8891.3	100.71	291	6.25535	12698.9	10431.1	110.24
222	9.97057	10343.7	8921.0	100.91	292	6.22538	12727.5	10448.8	110.33
223	9.87234	10387.2	8950.2	101.11	293	6.19577	12756.1	10466.5	110.43
224	9.77656	10430.1	8979.1	101.30	294	6.16650	12784.5	10484.1	110.53
225	9.68312	10472.7	9007.6	101.49	295	6.13756	12812.9	10501.6	110.63
226	9.59194	10514.7	9035.8	101.67	296	6.10896	12841.2	10519.1	110.72
227	9.50294	10556.4	9063.6	101.86	297	6.08069	12869.4	10536.5	110.82
228	9.41603	10597.6	9091.1	102.04	298	6.05274	12897.6	10553.8	110.91
229	9.33115	10638.5	9118.2	102.22	299	6.02509	12925.6	10571.1	111.01
230	9.24822	10678.9	9145.0	102.40	300	5.99776	12953.6	10588.4	111.10

160.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 87.767	35.9213	3290.0	2838.7	53.04
88	35.8904	3300.1	2848.3	53.15
89	35.7570	3343.4	2890.0	53.64
90	35.6228	3386.9	2931.8	54.13
91	35.4877	3430.5	2973.7	54.61
92	35.3519	3474.3	3015.7	55.09
93	35.2152	3518.3	3057.9	55.56
94	35.0779	3562.4	3100.2	56.03
95	34.9399	3606.5	3142.5	56.50
96	34.8012	3650.8	3185.0	56.97
97	34.6619	3695.2	3227.5	57.43
98	34.5220	3739.6	3270.0	57.88
99	34.3815	3784.1	3312.6	58.33
100	34.2404	3828.7	3355.2	58.78
101	34.0987	3873.3	3397.8	59.22
102	33.9565	3917.9	3440.4	59.66
103	33.8137	3962.5	3483.1	60.10
104	33.6703	4007.2	3525.6	60.53
105	33.5264	4051.8	3568.2	60.96
106	33.3819	4096.4	3610.8	61.38
107	33.2368	4141.0	3653.2	61.80
108	33.0912	4185.6	3695.7	62.21
109	32.9449	4230.2	3738.1	62.63
110	32.7981	4274.7	3780.4	63.03
111	32.6507	4319.1	3822.6	63.43
112	32.5026	4363.6	3864.8	63.83
113	32.3539	4407.9	3906.8	64.23
114	32.2046	4452.2	3948.8	64.62
115	32.0546	4496.5	3990.7	65.00
116	31.9039	4540.7	4032.6	65.39
117	31.7525	4584.9	4074.3	65.77
118	31.6004	4629.0	4116.0	66.14
119	31.4476	4673.1	4157.6	66.51
120	31.2940	4717.2	4199.1	66.88
121	31.1396	4761.2	4240.6	67.25
122	30.9846	4805.2	4282.0	67.61
123	30.8284	4849.2	4323.3	67.97
124	30.6715	4893.3	4364.7	68.33
125	30.5138	4937.3	4406.0	68.68
126	30.3551	4981.4	4447.3	69.03
127	30.1954	5025.6	4488.7	69.38
128	30.0348	5069.8	4530.1	69.73
129	29.8732	5114.2	4571.5	70.07
130	29.7105	5158.7	4613.1	70.42
131	29.5468	5203.4	4654.7	70.76
132	29.3819	5248.4	4696.6	71.10
133	29.2159	5293.5	4738.6	71.44
134	29.0488	5339.0	4780.9	71.78
135	28.8803	5384.8	4823.4	72.12
136	28.7107	5430.5	4865.8	72.46
137	28.5397	5476.3	4908.3	72.80
138	28.3674	5522.3	4950.8	73.13
139	28.1937	5568.3	4993.2	73.46
140	28.0186	5614.3	5035.7	73.79
141	27.8420	5660.4	5078.1	74.12
142	27.6639	5706.7	5120.6	74.45
143	27.4842	5753.1	5163.2	74.78
144	27.3029	5799.7	5205.9	75.10
145	27.1200	5846.7	5248.9	75.43
146	26.9353	5893.9	5292.0	75.75
147	26.7489	5941.6	5335.5	76.08
148	26.5606	5989.6	5379.2	76.41
149	26.3705	6037.8	5423.0	76.74
150	26.1785	6086.5	5467.2	77.06
151	25.9846	6135.8	5511.9	77.39
152	25.7886	6185.9	5557.3	77.72
153	25.5905	6236.5	5602.9	78.06
154	25.3904	6287.4	5648.8	78.39
155	25.1881	6338.7	5695.0	78.72
156	24.9835	6390.3	5741.4	79.05
157	24.7768	6442.4	5788.1	79.38
158	24.5677	6495.0	5835.1	79.72
159	24.3564	6547.9	5882.3	80.05
160	24.1427	6601.3	5929.8	80.39

* PHASE CHANGE

160.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	23.9266	6655.1	5977.5	80.72	231	10.5720	10506.0	8972.4	100.76
162	23.7081	6709.4	6025.6	81.06	232	10.4794	10547.6	9000.5	100.94
163	23.4872	6764.1	6073.9	81.40	233	10.3889	10588.9	9028.3	101.11
164	23.2639	6819.3	6122.4	81.73	234	10.3002	10629.8	9055.8	101.29
165	23.0382	6875.0	6171.3	82.07	235	10.2133	10670.4	9083.0	101.46
166	22.8102	6931.1	6220.4	82.41	236	10.1283	10710.6	9109.9	101.63
167	22.5798	6987.8	6269.8	82.75	237	10.0450	10750.5	9136.6	101.80
168	22.3471	7044.9	6319.4	83.09	238	9.96346	10790.1	9162.9	101.97
169	22.1122	7102.4	6369.2	83.43	239	9.88348	10829.4	9189.0	102.13
170	21.8751	7160.5	6419.3	83.78	240	9.80510	10868.3	9214.8	102.30
171	21.6360	7218.9	6469.6	84.12	241	9.72825	10907.0	9240.4	102.46
172	21.3949	7277.9	6520.1	84.46	242	9.65289	10945.3	9265.8	102.62
173	21.1521	7337.3	6570.8	84.81	243	9.57898	10983.4	9290.9	102.77
174	20.9077	7397.1	6621.6	85.15	244	9.50648	11021.2	9315.8	102.93
175	20.6618	7457.3	6672.6	85.50	245	9.43535	11058.7	9340.4	103.08
176	20.4146	7517.8	6723.7	85.84	246	9.36553	11095.9	9364.9	103.23
177	20.1665	7578.8	6774.8	86.19	247	9.29701	11132.9	9389.1	103.38
178	19.9177	7640.0	6826.0	86.53	248	9.22974	11169.6	9413.1	103.53
179	19.6683	7701.5	6877.3	86.88	249	9.16368	11206.1	9436.9	103.68
180	19.4188	7763.3	6928.4	87.22	250	9.09880	11242.4	9460.5	103.82
181	19.1693	7825.3	6979.6	87.56	251	9.03507	11278.4	9484.0	103.97
182	18.9203	7887.5	7030.6	87.91	252	8.97245	11314.1	9507.2	104.11
183	18.6720	7949.7	7081.5	88.25	253	8.91092	11349.7	9530.3	104.25
184	18.4247	8012.1	7132.2	88.59	254	8.85044	11385.0	9553.2	104.39
185	18.1789	8074.5	7182.7	88.93	255	8.79099	11420.1	9575.9	104.53
186	17.9347	8136.8	7232.9	89.26	256	8.73254	11455.0	9598.4	104.66
187	17.6925	8199.1	7282.8	89.60	257	8.67506	11489.7	9620.8	104.80
188	17.4526	8261.3	7332.4	89.93	258	8.61853	11524.2	9643.0	104.93
189	17.2154	8323.3	7381.6	90.26	259	8.56292	11558.4	9665.1	105.07
190	16.9809	8385.1	7430.4	90.58	260	8.50820	11592.5	9687.0	105.20
191	16.7496	8446.6	7478.7	90.91	261	8.45436	11626.4	9708.8	105.33
192	16.5215	8507.9	7526.6	91.22	262	8.40137	11660.2	9730.4	105.46
193	16.2970	8568.8	7574.0	91.54	263	8.34922	11693.7	9751.9	105.58
194	16.0762	8629.4	7620.9	91.85	264	8.29787	11727.1	9773.3	105.71
195	15.8592	8689.5	7667.2	92.16	265	8.24731	11760.3	9794.5	105.84
196	15.6461	8749.2	7713.0	92.47	266	8.19752	11793.3	9815.5	105.96
197	15.4371	8808.4	7758.2	92.77	267	8.14847	11826.1	9836.5	106.08
198	15.2323	8867.2	7802.9	93.07	268	8.10017	11858.8	9857.3	106.21
199	15.0317	8925.5	7846.9	93.36	269	8.05257	11891.3	9878.0	106.33
200	14.8352	8983.2	7890.4	93.65	270	8.00567	11923.7	9898.6	106.45
201	14.6431	9040.4	7933.2	93.94	271	7.95946	11955.9	9919.1	106.57
202	14.4552	9097.1	7975.5	94.22	272	7.91391	11988.0	9939.4	106.68
203	14.2715	9153.2	8017.2	94.49	273	7.86900	12019.9	9959.6	106.80
204	14.0920	9208.7	8058.2	94.77	274	7.82473	12051.7	9979.8	106.92
205	13.9168	9263.6	8098.7	95.04	275	7.78108	12083.4	9999.8	107.03
206	13.7456	9318.0	8138.6	95.30	276	7.73804	12114.9	10019.7	107.15
207	13.5785	9371.8	8177.9	95.56	277	7.69558	12146.2	10039.5	107.26
208	13.4154	9425.1	8216.6	95.82	278	7.65371	12177.5	10059.2	107.37
209	13.2562	9477.7	8254.7	96.07	279	7.61240	12208.6	10078.8	107.49
210	13.1009	9529.8	8292.3	96.32	280	7.57164	12239.6	10098.4	107.60
211	12.9493	9581.4	8329.4	96.56	281	7.53142	12270.4	10117.8	107.71
212	12.8014	9632.3	8365.9	96.80	282	7.49173	12301.2	10137.1	107.82
213	12.6571	9682.8	8401.9	97.04	283	7.45256	12331.8	10156.4	107.92
214	12.5163	9732.7	8437.3	97.28	284	7.41390	12362.3	10175.5	108.03
215	12.3789	9782.0	8472.3	97.51	285	7.37573	12392.6	10194.6	108.14
216	12.2448	9830.8	8506.8	97.73	286	7.33804	12422.9	10213.5	108.24
217	12.1139	9879.1	8540.8	97.96	287	7.30083	12453.1	10232.4	108.35
218	11.9862	9926.9	8574.3	98.18	288	7.26408	12483.1	10251.3	108.45
219	11.8615	9974.2	8607.3	98.39	289	7.22779	12513.1	10270.0	108.56
220	11.7398	10020.9	8640.0	98.60	290	7.19195	12542.9	10288.6	108.66
221	11.6209	10067.3	8672.1	98.81	291	7.15654	12572.6	10307.2	108.76
222	11.5048	10113.1	8703.9	99.02	292	7.12156	12602.2	10325.7	108.86
223	11.3914	10158.5	8735.2	99.23	293	7.08700	12631.8	10344.1	108.97
224	11.2806	10203.4	8766.2	99.43	294	7.05286	12661.2	10362.5	109.07
225	11.1724	10247.8	8796.7	99.62	295	7.01911	12690.5	10380.8	109.17
226	11.0666	10291.9	8826.9	99.82	296	6.98576	12719.8	10399.0	109.26
227	10.9632	10335.5	8856.7	100.01	297	6.95280	12748.9	10417.1	109.36
228	10.8621	10378.7	8886.2	100.20	298	6.92022	12778.0	10435.2	109.46
229	10.7633	10421.5	8915.3	100.39	299	6.88801	12806.9	10453.2	109.56
230	10.6666	10463.9	8944.0	100.57	300	6.85616	12835.8	10471.2	109.65

180.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 88.257	35.9774	3349.3	2842.3	53.07
89	35.8797	3381.3	2873.0	53.43
90	35.7475	3424.5	2914.3	53.91
91	35.6146	3467.9	2955.8	54.39
92	35.4809	3511.5	2997.4	54.87
93	35.3465	3555.2	3039.2	55.34
94	35.2115	3599.0	3081.0	55.81
95	35.0758	3642.9	3122.9	56.28
96	34.9396	3686.9	3164.9	56.74
97	34.8028	3731.0	3206.9	57.19
98	34.6654	3775.2	3249.0	57.65
99	34.5276	3819.4	3291.1	58.10
100	34.3892	3863.6	3333.3	58.54
101	34.2503	3907.9	3375.4	58.98
102	34.1109	3952.3	3417.6	59.42
103	33.9711	3996.6	3459.7	59.85
104	33.8307	4040.9	3501.8	60.28
105	33.6899	4085.2	3543.8	60.70
106	33.5486	4129.5	3585.9	61.12
107	33.4068	4173.8	3627.8	61.54
108	33.2645	4218.0	3669.7	61.95
109	33.1217	4262.2	3711.5	62.36
110	32.9785	4306.3	3753.3	62.76
111	32.8347	4350.4	3794.9	63.16
112	32.6904	4394.4	3836.5	63.55
113	32.5456	4438.4	3878.0	63.94
114	32.4003	4482.3	3919.4	64.33
115	32.2544	4526.1	3960.7	64.71
116	32.1080	4569.9	4001.8	65.09
117	31.9610	4613.6	4042.9	65.47
118	31.8134	4657.2	4083.9	65.84
119	31.6652	4700.8	4124.8	66.21
120	31.5164	4744.3	4165.6	66.57
121	31.3669	4787.8	4206.4	66.93
122	31.2168	4831.3	4247.0	67.29
123	31.0660	4874.7	4287.6	67.64
124	30.9145	4918.1	4328.1	68.00
125	30.7623	4961.5	4368.6	68.34
126	30.6094	5005.0	4409.1	68.69
127	30.4557	5048.5	4449.6	69.03
128	30.3013	5092.0	4490.1	69.38
129	30.1460	5135.6	4530.6	69.72
130	29.9899	5179.4	4571.2	70.05
131	29.8329	5223.3	4611.9	70.39
132	29.6751	5267.4	4652.7	70.72
133	29.5164	5311.7	4693.7	71.06
134	29.3567	5356.2	4734.9	71.39
135	29.1961	5401.1	4776.3	71.73
136	29.0345	5445.8	4817.6	72.06
137	28.8719	5490.6	4858.9	72.38
138	28.7083	5535.4	4900.1	72.71
139	28.5436	5580.3	4941.3	73.04
140	28.3778	5625.2	4982.5	73.36
141	28.2108	5670.1	5023.6	73.68
142	28.0427	5715.0	5064.6	74.00
143	27.8735	5760.1	5105.7	74.31
144	27.7030	5805.3	5147.0	74.63
145	27.5313	5850.8	5188.3	74.94
146	27.3582	5896.6	5229.9	75.26
147	27.1839	5942.6	5271.7	75.58
148	27.0083	5988.9	5313.6	75.89
149	26.8313	6035.5	5355.7	76.21
150	26.6528	6082.3	5398.0	76.52
151	26.4730	6129.7	5440.7	76.84
152	26.2917	6177.8	5484.1	77.16
153	26.1089	6226.2	5527.7	77.48
154	25.9246	6275.0	5571.4	77.79
155	25.7388	6324.0	5615.3	78.11
156	25.5514	6373.3	5659.4	78.43
157	25.3625	6422.8	5703.7	78.75
158	25.1719	6472.7	5748.2	79.06
159	24.9797	6523.0	5792.8	79.38
160	24.7860	6573.5	5837.6	79.70

* PHASE CHANGE

180.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	24.5905	6624.3	5882.6	80.01	231	11.9011	10319.2	8786.7	99.17
162	24.3935	6675.5	5927.8	80.33	232	11.7982	10362.1	8816.2	99.35
163	24.1948	6727.0	5973.1	80.65	233	11.6974	10404.7	8845.4	99.54
164	23.9944	6778.8	6018.7	80.96	234	11.5985	10446.8	8874.3	99.72
165	23.7925	6830.9	6064.4	81.28	235	11.5016	10488.7	8902.9	99.89
166	23.5889	6883.4	6110.2	81.60	236	11.4065	10530.2	8931.2	100.07
167	23.3837	6936.2	6156.3	81.91	237	11.3133	10571.4	8959.3	100.25
168	23.1770	6989.4	6202.5	82.23	238	11.2218	10612.3	8987.0	100.42
169	22.9687	7042.9	6248.8	82.55	239	11.1321	10652.9	9014.5	100.59
170	22.7590	7096.7	6295.3	82.87	240	11.0441	10693.1	9041.7	100.76
171	22.5478	7150.8	6341.9	83.18	241	10.9577	10733.1	9068.6	100.92
172	22.3353	7205.3	6388.7	83.50	242	10.8729	10772.8	9095.3	101.09
173	22.1215	7260.1	6435.6	83.82	243	10.7896	10812.1	9121.7	101.25
174	21.9065	7315.1	6482.5	84.14	244	10.7079	10851.2	9147.9	101.41
175	21.6904	7370.5	6529.6	84.45	245	10.6277	10890.0	9173.9	101.57
176	21.4733	7426.2	6576.8	84.77	246	10.5489	10928.6	9199.6	101.72
177	21.2553	7482.1	6624.0	85.09	247	10.4715	10966.9	9225.1	101.88
178	21.0366	7538.3	6671.3	85.40	248	10.3954	11004.9	9250.4	102.03
179	20.8173	7594.7	6718.6	85.72	249	10.3207	11042.7	9275.5	102.19
180	20.5975	7651.4	6765.9	86.04	250	10.2473	11080.2	9300.3	102.34
181	20.3774	7708.2	6813.2	86.35	251	10.1751	11117.5	9325.0	102.48
182	20.1571	7765.2	6860.4	86.67	252	10.1042	11154.5	9349.4	102.63
183	19.9370	7822.4	6907.6	86.98	253	10.0345	11191.3	9373.7	102.78
184	19.7170	7879.7	6954.7	87.29	254	9.96598	11227.9	9397.8	102.92
185	19.4975	7937.2	7001.7	87.60	255	9.89856	11264.2	9421.6	103.06
186	19.2785	7994.7	7048.6	87.91	256	9.83225	11300.4	9445.4	103.21
187	19.0604	8052.2	7095.3	88.22	257	9.76702	11336.3	9468.9	103.35
188	18.8433	8109.8	7141.9	88.53	258	9.70284	11372.0	9492.2	103.48
189	18.6273	8167.4	7188.2	88.83	259	9.63970	11407.5	9515.4	103.62
190	18.4127	8224.9	7234.3	89.14	260	9.57755	11442.8	9538.4	103.76
191	18.1997	8282.3	7280.2	89.44	261	9.51639	11477.9	9561.3	103.89
192	17.9884	8339.7	7325.8	89.74	262	9.45618	11512.8	9584.0	104.03
193	17.7791	8396.9	7371.1	90.04	263	9.39690	11547.5	9606.5	104.16
194	17.5718	8454.0	7416.1	90.33	264	9.33853	11582.0	9628.9	104.29
195	17.3668	8510.9	7460.7	90.62	265	9.28105	11616.3	9651.1	104.42
196	17.1641	8567.6	7505.0	90.91	266	9.22444	11650.5	9673.2	104.55
197	16.9639	8624.1	7548.9	91.20	267	9.16867	11684.5	9695.2	104.68
198	16.7664	8680.3	7592.4	91.48	268	9.11373	11718.3	9717.0	104.80
199	16.5716	8736.2	7635.6	91.77	269	9.05959	11751.9	9738.7	104.93
200	16.3796	8791.8	7678.3	92.05	270	9.00625	11785.4	9760.2	105.05
201	16.1905	8847.1	7720.6	92.32	271	8.95367	11818.7	9781.7	105.17
202	16.0044	8902.1	7762.4	92.59	272	8.90185	11851.8	9802.9	105.30
203	15.8214	8956.7	7803.9	92.86	273	8.85076	11884.8	9824.1	105.42
204	15.6414	9010.9	7844.8	93.13	274	8.80039	11917.7	9845.2	105.54
205	15.4645	9064.8	7885.4	93.39	275	8.75072	11950.4	9866.1	105.66
206	15.2908	9118.2	7925.4	93.65	276	8.70175	11982.9	9886.9	105.78
207	15.1202	9171.3	7965.0	93.91	277	8.65344	12015.3	9907.6	105.89
208	14.9528	9224.0	8004.2	94.16	278	8.60579	12047.6	9928.2	106.01
209	14.7885	9276.2	8042.9	94.41	279	8.55879	12079.7	9948.6	106.12
210	14.6273	9328.0	8081.1	94.66	280	8.51241	12111.6	9969.0	106.24
211	14.4693	9379.4	8118.9	94.91	281	8.46665	12143.5	9989.3	106.35
212	14.3144	9430.4	8156.2	95.15	282	8.42149	12175.2	10009.4	106.46
213	14.1626	9481.0	8193.1	95.39	283	8.37692	12206.8	10029.5	106.58
214	14.0138	9531.1	8229.6	95.62	284	8.33293	12238.2	10049.5	106.69
215	13.8680	9580.7	8265.6	95.85	285	8.28951	12269.6	10069.3	106.80
216	13.7251	9630.0	8301.1	96.08	286	8.24664	12300.8	10089.1	106.91
217	13.5852	9678.8	8336.2	96.31	287	8.20431	12331.9	10108.8	107.02
218	13.4481	9727.2	8370.9	96.53	288	8.16251	12362.8	10128.3	107.12
219	13.3138	9775.2	8405.2	96.75	289	8.12123	12393.7	10147.8	107.23
220	13.1822	9822.7	8439.1	96.96	290	8.08047	12424.4	10167.2	107.34
221	13.0534	9869.8	8472.6	97.18	291	8.04020	12455.0	10186.6	107.44
222	12.9272	9916.5	8505.7	97.39	292	8.00042	12485.5	10205.8	107.55
223	12.8036	9962.8	8538.3	97.60	293	7.96112	12515.9	10224.9	107.65
224	12.6826	10008.8	8570.6	97.80	294	7.92229	12546.2	10244.0	107.75
225	12.5640	10054.3	8602.6	98.00	295	7.88393	12576.4	10263.0	107.86
226	12.4478	10099.4	8634.1	98.20	296	7.84601	12606.5	10281.9	107.96
227	12.3339	10144.1	8665.3	98.40	297	7.80855	12636.5	10300.7	108.06
228	12.2224	10188.4	8696.2	98.60	298	7.77151	12666.4	10319.5	108.16
229	12.1131	10232.4	8726.7	98.79	299	7.73490	12696.2	10338.2	108.26
230	12.0061	10276.0	8756.9	98.98	300	7.69872	12725.9	10356.8	108.36

200.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 88.745	36.0321	3408.5	2846.1	53.10
89	35.9991	3419.4	2856.5	53.23
90	35.8688	3462.4	2897.4	53.71
91	35.7379	3505.6	2938.5	54.18
92	35.6062	3548.9	2979.7	54.66
93	35.4739	3592.3	3021.0	55.13
94	35.3411	3635.9	3062.4	55.59
95	35.2076	3679.5	3103.9	56.05
96	35.0737	3723.3	3145.5	56.51
97	34.9392	3767.1	3187.1	56.97
98	34.8043	3811.0	3228.8	57.42
99	34.6689	3855.0	3270.5	57.86
100	34.5330	3899.0	3312.2	58.31
101	34.3967	3943.0	3353.9	58.74
102	34.2600	3987.1	3395.6	59.18
103	34.1229	4031.1	3437.2	59.61
104	33.9853	4075.2	3478.9	60.03
105	33.8474	4119.2	3520.5	60.45
106	33.7090	4163.2	3562.0	60.87
107	33.5702	4207.1	3603.5	61.28
108	33.4311	4251.1	3644.9	61.69
109	33.2915	4294.9	3686.2	62.10
110	33.1515	4338.7	3727.4	62.50
111	33.0111	4382.4	3768.5	62.89
112	32.8702	4426.1	3809.6	63.28
113	32.7290	4469.7	3850.5	63.67
114	32.5873	4513.2	3891.3	64.06
115	32.4451	4556.7	3932.0	64.43
116	32.3025	4600.0	3972.6	64.81
117	32.1594	4643.3	4013.1	65.18
118	32.0159	4686.5	4053.5	65.55
119	31.8718	4729.6	4093.8	65.91
120	31.7273	4772.7	4134.0	66.27
121	31.5822	4815.7	4174.0	66.63
122	31.4366	4858.7	4214.0	66.98
123	31.2905	4901.6	4253.9	67.33
124	31.1438	4944.5	4293.7	67.68
125	30.9965	4987.3	4333.5	68.03
126	30.8487	5030.2	4373.3	68.37
127	30.7002	5073.1	4413.0	68.71
128	30.5511	5116.0	4452.7	69.04
129	30.4014	5159.0	4492.4	69.38
130	30.2510	5202.1	4532.2	69.71
131	30.0999	5245.3	4572.0	70.04
132	29.9481	5288.6	4612.0	70.37
133	29.7957	5332.2	4652.1	70.70
134	29.6425	5376.0	4692.3	71.03
135	29.4885	5420.0	4732.8	71.36
136	29.3337	5463.9	4773.1	71.68
137	29.1782	5507.9	4813.3	72.00
138	29.0219	5551.8	4853.5	72.32
139	28.8647	5595.8	4893.7	72.64
140	28.7067	5639.7	4933.7	72.95
141	28.5478	5683.6	4973.7	73.27
142	28.3880	5727.4	5013.6	73.58
143	28.2273	5771.4	5053.5	73.89
144	28.0656	5815.5	5093.5	74.19
145	27.9030	5859.8	5133.5	74.50
146	27.7395	5904.4	5173.8	74.81
147	27.5749	5949.1	5214.2	75.12
148	27.4093	5994.1	5254.8	75.42
149	27.2428	6039.3	5295.4	75.73
150	27.0751	6084.6	5336.1	76.04
151	26.9064	6130.5	5377.4	76.34
152	26.7366	6177.1	5419.2	76.65
153	26.5657	6224.0	5461.1	76.96
154	26.3937	6271.0	5503.2	77.27
155	26.2206	6318.2	5545.4	77.57
156	26.0463	6365.7	5587.7	77.88
157	25.8709	6413.4	5630.1	78.18
158	25.6944	6461.4	5672.6	78.49
159	25.5166	6509.5	5715.3	78.79
160	25.3377	6557.9	5758.1	79.09

* PHASE CHANGE

200.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	25.1577	6606.6	5801.0	79.40	231	13.1325	10159.5	8616.3	97.77
162	24.9764	6655.5	5844.1	79.70	232	13.0226	10203.0	8646.8	97.96
163	24.7940	6704.6	5887.3	80.00	233	12.9147	10246.2	8677.0	98.15
164	24.6104	6754.0	5930.5	80.30	234	12.8087	10289.0	8706.9	98.33
165	24.4257	6803.6	5973.9	80.60	235	12.7045	10331.6	8736.4	98.51
166	24.2398	6853.5	6017.4	80.91	236	12.6022	10373.8	8765.7	98.69
167	24.0528	6903.6	6061.0	81.21	237	12.5017	10415.8	8794.8	98.87
168	23.8647	6953.9	6104.8	81.51	238	12.4030	10457.4	8823.5	99.05
169	23.6755	7004.5	6148.6	81.81	239	12.3059	10498.8	8852.0	99.22
170	23.4853	7055.4	6192.5	82.11	240	12.2106	10539.9	8880.2	99.39
171	23.2941	7106.5	6236.5	82.41	241	12.1169	10580.7	8908.2	99.56
172	23.1018	7157.8	6280.6	82.71	242	12.0248	10621.2	8935.9	99.73
173	22.9087	7209.3	6324.7	83.01	243	11.9343	10661.4	8963.3	99.89
174	22.7147	7261.1	6368.9	83.30	244	11.8453	10701.4	8990.5	100.06
175	22.5199	7313.1	6413.2	83.60	245	11.7578	10741.1	9017.5	100.22
176	22.3243	7365.3	6457.6	83.90	246	11.6719	10780.5	9044.3	100.38
177	22.1280	7417.8	6501.9	84.20	247	11.5873	10819.7	9070.8	100.54
178	21.9311	7470.4	6546.3	84.49	248	11.5042	10858.6	9097.1	100.70
179	21.7337	7523.2	6590.8	84.79	249	11.4224	10897.3	9123.1	100.85
180	21.5359	7576.2	6635.2	85.08	250	11.3420	10935.8	9149.0	101.01
181	21.3377	7629.4	6679.6	85.38	251	11.2628	10974.0	9174.7	101.16
182	21.1393	7682.7	6724.0	85.67	252	11.1850	11011.9	9200.1	101.31
183	20.9408	7736.1	6768.4	85.97	253	11.1084	11049.7	9225.3	101.46
184	20.7422	7789.7	6812.7	86.26	254	11.0331	11087.2	9250.4	101.61
185	20.5437	7843.4	6857.0	86.55	255	10.9589	11124.5	9275.3	101.75
186	20.3454	7897.2	6901.1	86.84	256	10.8860	11161.5	9299.9	101.90
187	20.1474	7951.1	6945.2	87.13	257	10.8141	11198.4	9324.4	102.04
188	19.9499	8005.0	6989.2	87.42	258	10.7434	11235.0	9348.7	102.19
189	19.7530	8059.0	7033.1	87.70	259	10.6738	11271.4	9372.8	102.33
190	19.5567	8113.0	7076.8	87.99	260	10.6052	11307.7	9396.8	102.47
191	19.3613	8167.0	7120.3	88.27	261	10.5377	11343.7	9420.5	102.60
192	19.1669	8221.0	7163.7	88.55	262	10.4712	11379.5	9444.2	102.74
193	18.9735	8275.0	7206.9	88.83	263	10.4057	11415.1	9467.6	102.88
194	18.7813	8328.9	7249.9	89.11	264	10.3412	11450.6	9490.9	103.01
195	18.5904	8382.7	7292.6	89.39	265	10.2776	11485.8	9514.0	103.14
196	18.4010	8436.5	7335.1	89.66	266	10.2150	11520.9	9537.0	103.28
197	18.2131	8490.1	7377.4	89.94	267	10.1532	11555.8	9559.8	103.41
198	18.0269	8543.6	7419.4	90.21	268	10.0924	11590.5	9582.5	103.54
199	17.8424	8597.0	7461.2	90.48	269	10.0325	11625.1	9605.1	103.67
200	17.6598	8650.1	7502.6	90.74	270	9.97339	11659.4	9627.5	103.79
201	17.4791	8703.2	7543.7	91.01	271	9.91512	11693.6	9649.7	103.92
202	17.3004	8756.0	7584.6	91.27	272	9.85767	11727.7	9671.9	104.05
203	17.1238	8808.6	7625.1	91.53	273	9.80102	11761.5	9693.9	104.17
204	16.9494	8860.9	7665.3	91.79	274	9.74515	11795.3	9715.7	104.29
205	16.7772	8913.0	7705.1	92.04	275	9.69004	11828.8	9737.4	104.42
206	16.6073	8964.9	7744.6	92.29	276	9.63569	11862.2	9759.1	104.54
207	16.4396	9016.5	7783.8	92.54	277	9.58207	11895.5	9780.5	104.66
208	16.2743	9067.9	7822.6	92.79	278	9.52917	11928.6	9801.9	104.78
209	16.1115	9118.9	7861.1	93.03	279	9.47697	11961.6	9823.2	104.89
210	15.9510	9169.6	7899.1	93.28	280	9.42546	11994.4	9844.3	105.01
211	15.7929	9220.1	7936.9	93.52	281	9.37463	12027.1	9865.3	105.13
212	15.6374	9270.2	7974.2	93.75	282	9.32446	12059.6	9886.2	105.24
213	15.4842	9320.0	8011.2	93.99	283	9.27493	12092.0	9907.0	105.36
214	15.3335	9369.5	8047.9	94.22	284	9.22604	12124.3	9927.7	105.47
215	15.1853	9418.7	8084.1	94.45	285	9.17777	12156.4	9948.3	105.59
216	15.0395	9467.5	8120.0	94.68	286	9.13012	12188.4	9968.8	105.70
217	14.8962	9516.0	8155.5	94.90	287	9.08305	12220.3	9989.2	105.81
218	14.7553	9564.1	8190.7	95.12	288	9.03658	12252.1	10009.5	105.92
219	14.6168	9612.0	8225.5	95.34	289	8.99068	12283.7	10029.7	106.03
220	14.4806	9659.4	8260.0	95.56	290	8.94534	12315.2	10049.8	106.14
221	14.3469	9706.6	8294.1	95.77	291	8.90055	12346.6	10069.8	106.25
222	14.2155	9753.4	8327.8	95.98	292	8.85631	12377.9	10089.7	106.35
223	14.0863	9799.8	8361.2	96.19	293	8.81259	12409.1	10109.5	106.46
224	13.9595	9846.0	8394.2	96.40	294	8.76940	12440.2	10129.2	106.57
225	13.8349	9891.8	8426.9	96.60	295	8.72672	12471.1	10148.9	106.67
226	13.7125	9937.2	8459.3	96.80	296	8.68453	12501.9	10168.4	106.78
227	13.5923	9982.3	8491.4	97.00	297	8.64284	12532.7	10187.9	106.88
228	13.4743	10027.1	8523.1	97.20	298	8.60164	12563.3	10207.3	106.98
229	13.3583	10071.6	8554.5	97.39	299	8.56090	12593.8	10226.6	107.08
230	13.2444	10115.7	8585.6	97.58	300	8.52063	12624.2	10245.8	107.19

220.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 89.232	36.0856	3467.6	2849.9	53.14
90	35.9869	3500.5	2881.0	53.50
91	35.8579	3543.4	2921.7	53.98
92	35.7281	3586.5	2962.6	54.45
93	35.5978	3629.7	3003.5	54.92
94	35.4670	3673.0	3044.5	55.38
95	35.3357	3716.5	3085.6	55.84
96	35.2039	3760.0	3126.8	56.29
97	35.0716	3803.6	3168.0	56.75
98	34.9389	3847.3	3209.2	57.19
99	34.8058	3891.0	3250.5	57.64
100	34.6723	3934.7	3291.8	58.08
101	34.5384	3978.5	3333.1	58.51
102	34.4042	4022.3	3374.4	58.94
103	34.2696	4066.1	3415.6	59.37
104	34.1346	4109.9	3456.8	59.79
105	33.9993	4153.6	3498.0	60.21
106	33.8637	4197.3	3539.1	60.63
107	33.7277	4241.0	3580.1	61.04
108	33.5914	4284.6	3621.0	61.44
109	33.4548	4328.2	3661.9	61.85
110	33.3178	4371.7	3702.6	62.24
111	33.1805	4415.1	3743.3	62.64
112	33.0428	4458.5	3783.8	63.02
113	32.9047	4501.7	3824.3	63.41
114	32.7664	4544.9	3864.6	63.79
115	32.6276	4588.0	3904.8	64.17
116	32.4885	4631.0	3944.8	64.54
117	32.3490	4673.9	3984.8	64.91
118	32.2091	4716.7	4024.6	65.27
119	32.0688	4759.4	4064.3	65.63
120	31.9281	4802.1	4103.9	65.99
121	31.7870	4844.7	4143.4	66.34
122	31.6455	4887.2	4182.7	66.69
123	31.5035	4929.6	4222.0	67.04
124	31.3611	4972.0	4261.2	67.38
125	31.2182	5014.4	4300.4	67.72
126	31.0749	5056.8	4339.4	68.06
127	30.9310	5099.2	4378.5	68.39
128	30.7867	5141.5	4417.5	68.73
129	30.6418	5184.0	4456.5	69.06
130	30.4965	5226.5	4495.5	69.38
131	30.3505	5269.1	4534.6	69.71
132	30.2041	5311.9	4573.8	70.04
133	30.0570	5354.8	4613.1	70.36
134	29.9094	5397.9	4652.6	70.68
135	29.7612	5441.2	4692.2	71.01
136	29.6124	5484.4	4731.7	71.32
137	29.4629	5527.6	4771.0	71.64
138	29.3128	5570.8	4810.3	71.96
139	29.1621	5614.0	4849.6	72.27
140	29.0107	5657.1	4888.7	72.58
141	28.8586	5700.1	4927.7	72.88
142	28.7058	5743.1	4966.6	73.19
143	28.5523	5786.2	5005.5	73.49
144	28.3981	5829.4	5044.4	73.79
145	28.2432	5872.7	5083.4	74.09
146	28.0875	5916.2	5122.5	74.39
147	27.9310	5959.9	5161.8	74.69
148	27.7738	6003.9	5201.2	74.99
149	27.6157	6047.9	5240.6	75.29
150	27.4569	6092.1	5280.2	75.59
151	27.2973	6136.8	5320.1	75.89
152	27.1368	6182.1	5360.7	76.19
153	26.9755	6227.7	5401.3	76.49
154	26.8134	6273.4	5442.0	76.79
155	26.6505	6319.2	5482.8	77.08
156	26.4867	6365.3	5523.6	77.38
157	26.3220	6411.5	5564.6	77.67
158	26.1565	6457.9	5605.6	77.97
159	25.9901	6504.5	5646.8	78.26
160	25.8228	6551.3	5688.0	78.56

* PHASE CHANGE

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220.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	25.6547	6598.2	5729.3	78.85	231	14.2574	10025.2	8461.7	96.55
162	25.4857	6645.4	5770.7	79.14	232	14.1434	10068.9	8492.7	96.74
163	25.3159	6692.7	5812.1	79.43	233	14.0313	10112.2	8523.5	96.93
164	25.1452	6740.2	5853.7	79.72	234	13.9209	10155.3	8553.9	97.11
165	24.9737	6787.9	5895.3	80.01	235	13.8123	10198.1	8584.1	97.29
166	24.8013	6835.8	5937.0	80.30	236	13.7054	10240.6	8614.1	97.48
167	24.6282	6883.9	5978.7	80.59	237	13.6001	10282.6	8643.7	97.65
168	24.4542	6932.1	6020.5	80.88	238	13.4965	10324.8	8673.2	97.83
169	24.2795	6980.6	6062.4	81.17	239	13.3946	10366.6	8702.3	98.01
170	24.1040	7029.2	6104.4	81.45	240	13.2942	10408.1	8731.2	98.18
171	23.9277	7078.0	6146.4	81.74	241	13.1955	10449.3	8759.9	98.35
172	23.7508	7127.0	6188.4	82.03	242	13.0982	10490.2	8788.3	98.52
173	23.5731	7176.2	6230.5	82.31	243	13.0025	10530.9	8816.5	98.69
174	23.3949	7225.5	6272.6	82.59	244	12.9083	10571.4	8844.5	98.85
175	23.2160	7275.0	6314.8	82.88	245	12.8156	10611.6	8872.2	99.02
176	23.0366	7324.7	6357.0	83.16	246	12.7243	10651.6	8899.7	99.18
177	22.8567	7374.5	6399.2	83.44	247	12.6344	10691.3	8926.9	99.34
178	22.6763	7424.5	6441.5	83.73	248	12.5459	10730.8	8954.0	99.50
179	22.4955	7474.7	6483.7	84.01	249	12.4588	10770.1	8980.8	99.66
180	22.3143	7525.0	6526.0	84.29	250	12.3730	10809.1	9007.5	99.82
181	22.1329	7575.4	6568.2	84.57	251	12.2885	10847.9	9033.9	99.97
182	21.9512	7625.9	6610.4	84.84	252	12.2053	10886.5	9060.1	100.12
183	21.7694	7676.6	6652.6	85.12	253	12.1234	10924.9	9086.1	100.28
184	21.5874	7727.4	6694.7	85.40	254	12.0426	10963.0	9111.9	100.43
185	21.4055	7778.2	6736.8	85.67	255	11.9631	11000.9	9137.5	100.58
186	21.2236	7829.2	6778.9	85.95	256	11.8848	11038.7	9163.0	100.72
187	21.0419	7880.2	6820.8	86.22	257	11.8076	11076.2	9188.2	100.87
188	20.8604	7931.4	6862.7	86.50	258	11.7316	11113.5	9213.3	101.02
189	20.6792	7982.5	6904.5	86.77	259	11.6567	11150.6	9238.2	101.16
190	20.4984	8033.7	6946.2	87.04	260	11.5829	11187.5	9262.9	101.30
191	20.3180	8085.0	6987.8	87.31	261	11.5101	11224.2	9287.4	101.44
192	20.1383	8136.2	7029.3	87.57	262	11.4384	11260.7	9311.8	101.58
193	19.9591	8187.5	7070.6	87.84	263	11.3677	11297.0	9336.0	101.72
194	19.7808	8238.7	7111.8	88.10	264	11.2981	11333.1	9360.0	101.86
195	19.6032	8290.0	7152.8	88.37	265	11.2294	11369.1	9383.9	101.99
196	19.4266	8341.2	7193.7	88.63	266	11.1617	11404.8	9407.6	102.13
197	19.2509	8392.3	7234.3	88.89	267	11.0949	11440.4	9431.2	102.26
198	19.0764	8443.4	7274.8	89.15	268	11.0291	11475.8	9454.6	102.39
199	18.9030	8494.4	7315.1	89.41	269	10.9641	11511.1	9477.9	102.52
200	18.7308	8545.3	7355.2	89.66	270	10.9001	11546.1	9501.0	102.65
201	18.5600	8596.1	7395.0	89.91	271	10.8369	11581.0	9524.0	102.78
202	18.3905	8646.8	7434.7	90.17	272	10.7746	11615.8	9546.8	102.91
203	18.2225	8697.4	7474.0	90.42	273	10.7131	11650.4	9569.5	103.04
204	18.0560	8747.8	7513.2	90.68	274	10.6525	11684.8	9592.1	103.16
205	17.8911	8798.1	7552.1	90.91	275	10.5926	11719.0	9614.5	103.29
206	17.7278	8848.2	7590.7	91.15	276	10.5336	11753.1	9636.9	103.41
207	17.5662	8898.1	7629.1	91.39	277	10.4753	11787.1	9659.0	103.54
208	17.4063	8947.8	7667.1	91.63	278	10.4178	11820.9	9681.1	103.66
209	17.2482	8997.4	7704.9	91.87	279	10.3610	11854.5	9703.0	103.78
210	17.0919	9046.7	7742.5	92.11	280	10.3050	11888.0	9724.8	103.90
211	16.9375	9095.8	7779.7	92.34	281	10.2497	11921.4	9746.5	104.02
212	16.7850	9144.8	7816.7	92.57	282	10.1950	11954.6	9768.1	104.14
213	16.6343	9193.4	7853.3	92.80	283	10.1411	11987.7	9789.5	104.25
214	16.4856	9241.9	7889.7	93.03	284	10.0878	12020.7	9810.9	104.37
215	16.3388	9290.1	7925.7	93.25	285	10.0352	12053.5	9832.1	104.48
216	16.1940	9338.0	7961.5	93.48	286	9.98334	12086.2	9853.2	104.60
217	16.0512	9385.7	7996.9	93.70	287	9.93203	12118.7	9874.3	104.71
218	15.9104	9433.2	8032.1	93.91	288	9.88135	12151.2	9895.2	104.82
219	15.7715	9480.3	8066.9	94.13	289	9.83128	12183.5	9916.0	104.94
220	15.6346	9527.3	8101.4	94.34	290	9.78181	12215.6	9936.7	105.05
221	15.4997	9573.9	8135.7	94.56	291	9.73294	12247.7	9957.3	105.16
222	15.3668	9620.3	8169.6	94.76	292	9.68465	12279.6	9977.8	105.27
223	15.2358	9666.4	8203.2	94.97	293	9.63692	12311.5	9998.3	105.38
224	15.1068	9712.2	8236.6	95.18	294	9.58976	12343.2	10018.6	105.48
225	14.9798	9757.8	8269.6	95.38	295	9.54314	12374.7	10038.8	105.59
226	14.8546	9803.0	8302.4	95.58	296	9.49707	12406.2	10059.0	105.70
227	14.7314	9848.0	8334.8	95.78	297	9.45152	12437.6	10079.0	105.80
228	14.6101	9892.7	8367.0	95.98	298	9.40650	12468.8	10099.0	105.91
229	14.4907	9937.2	8398.8	96.17	299	9.36199	12500.0	10118.9	106.01
230	14.3731	9981.4	8430.4	96.36	300	9.31797	12531.0	10138.6	106.12

240.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 89.717	36.1380	3526.7	2853.8	53.17
90	36.1021	3538.8	2865.2	53.30
91	35.9748	3581.5	2905.5	53.78
92	35.8469	3624.3	2945.9	54.24
93	35.7185	3667.3	2986.5	54.71
94	35.5896	3710.4	3027.1	55.17
95	35.4602	3753.7	3067.9	55.63
96	35.3304	3797.0	3108.6	56.08
97	35.2002	3840.4	3149.5	56.53
98	35.0696	3883.8	3190.4	56.98
99	34.9387	3927.3	3231.3	57.42
100	34.8074	3970.8	3272.2	57.85
101	34.6758	4014.4	3313.1	58.29
102	34.5438	4057.9	3353.9	58.72
103	34.4116	4101.5	3394.8	59.14
104	34.2791	4145.0	3435.6	59.56
105	34.1463	4188.5	3476.3	59.98
106	34.0132	4232.0	3517.0	60.39
107	33.8798	4275.4	3557.6	60.80
108	33.7461	4318.7	3598.1	61.20
109	33.6122	4362.0	3638.5	61.60
110	33.4780	4405.3	3678.8	62.00
111	33.3435	4448.4	3719.1	62.39
112	33.2087	4491.4	3759.1	62.77
113	33.0737	4534.4	3799.1	63.15
114	32.9383	4577.3	3839.0	63.53
115	32.8027	4620.0	3878.7	63.91
116	32.6668	4662.7	3918.2	64.27
117	32.5306	4705.3	3957.7	64.64
118	32.3940	4747.7	3997.0	65.00
119	32.2571	4790.1	4036.2	65.36
120	32.1200	4832.4	4075.3	65.71
121	31.9824	4874.6	4114.2	66.06
122	31.8446	4916.7	4153.0	66.41
123	31.7064	4958.8	4191.8	66.75
124	31.5678	5000.7	4230.4	67.09
125	31.4289	5042.7	4268.9	67.43
126	31.2896	5084.6	4307.4	67.76
127	31.1499	5126.5	4345.8	68.10
128	31.0098	5168.4	4384.2	68.42
129	30.8693	5210.4	4422.6	68.75
130	30.7284	5252.4	4461.0	69.07
131	30.5870	5294.5	4499.4	69.40
132	30.4452	5336.7	4537.9	69.72
133	30.3030	5379.1	4576.5	70.04
134	30.1603	5421.6	4615.3	70.36
135	30.0171	5464.4	4654.2	70.67
136	29.8735	5507.0	4692.9	70.99
137	29.7294	5549.5	4731.5	71.30
138	29.5847	5592.0	4770.0	71.61
139	29.4396	5634.5	4808.5	71.92
140	29.2939	5676.9	4846.8	72.22
141	29.1477	5719.2	4884.9	72.52
142	29.0009	5761.5	4923.0	72.82
143	28.8536	5803.8	4961.0	73.12
144	28.7058	5846.2	4999.0	73.42
145	28.5573	5888.7	5037.1	73.71
146	28.4083	5931.4	5075.3	74.01
147	28.2587	5974.2	5113.6	74.30
148	28.1085	6017.2	5152.1	74.59
149	27.9577	6060.3	5190.5	74.89
150	27.8062	6103.6	5229.0	75.18
151	27.6542	6147.3	5267.9	75.47
152	27.5015	6191.6	5307.3	75.76
153	27.3482	6236.1	5346.8	76.06
154	27.1942	6280.7	5386.4	76.35
155	27.0396	6325.4	5426.0	76.64
156	26.8844	6370.3	5465.7	76.92
157	26.7285	6415.3	5505.5	77.21
158	26.5720	6460.5	5545.3	77.50
159	26.4148	6505.8	5585.1	77.78
160	26.2570	6551.2	5625.1	78.07

* PHASE CHANGE

240.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	26.0985	6596.9	5665.1	78.35	231	15.2768	9913.9	8322.0	95.48
162	25.9395	6642.6	5705.1	78.64	232	15.1611	9957.3	8353.3	95.66
163	25.7797	6688.5	5745.2	78.92	233	15.0471	10000.5	8384.3	95.85
164	25.6193	6734.5	5785.3	79.20	234	14.9346	10043.4	8415.1	96.03
165	25.4583	6780.7	5825.5	79.48	235	14.8237	10086.1	8445.6	96.22
166	25.2967	6827.1	5865.7	79.76	236	14.7144	10128.6	8475.9	96.40
167	25.1345	6873.5	5906.0	80.04	237	14.6065	10170.8	8505.9	96.58
168	24.9717	6920.2	5946.3	80.32	238	14.5002	10212.9	8535.7	96.75
169	24.8083	6966.9	5986.7	80.60	239	14.3954	10254.6	8565.3	96.93
170	24.6444	7013.9	6027.1	80.87	240	14.2921	10296.2	8594.7	97.10
171	24.4799	7060.9	6067.5	81.15	241	14.1902	10337.5	8623.8	97.27
172	24.3149	7108.1	6107.9	81.43	242	14.0897	10378.6	8652.6	97.44
173	24.1495	7155.4	6148.4	81.70	243	13.9907	10419.5	8681.3	97.61
174	23.9835	7202.9	6188.9	81.97	244	13.8931	10460.2	8709.7	97.78
175	23.8171	7250.5	6229.4	82.25	245	13.7969	10500.6	8738.0	97.94
176	23.6503	7298.2	6269.9	82.52	246	13.7020	10540.8	8766.0	98.11
177	23.4832	7346.1	6310.5	82.79	247	13.6085	10580.8	8793.8	98.27
178	23.3156	7394.0	6351.0	83.06	248	13.5163	10620.6	8821.4	98.43
179	23.1478	7442.1	6391.5	83.33	249	13.4254	10660.1	8848.7	98.59
180	22.9797	7490.3	6432.1	83.60	250	13.3358	10699.5	8875.9	98.75
181	22.8114	7538.6	6472.6	83.86	251	13.2474	10738.6	8902.9	98.90
182	22.6429	7587.0	6513.0	84.13	252	13.1603	10777.5	8929.7	99.06
183	22.4743	7635.5	6553.5	84.40	253	13.0744	10816.3	8956.2	99.21
184	22.3056	7684.1	6593.9	84.66	254	12.9897	10854.8	8982.6	99.36
185	22.1369	7732.8	6634.3	84.93	255	12.9062	10893.1	9008.8	99.51
186	21.9681	7781.6	6674.6	85.19	256	12.8238	10931.2	9034.9	99.66
187	21.7995	7830.4	6714.8	85.45	257	12.7426	10969.1	9060.7	99.81
188	21.6310	7879.3	6755.0	85.71	258	12.6625	11006.9	9086.4	99.96
189	21.4626	7928.2	6795.2	85.97	259	12.5835	11044.4	9111.8	100.10
190	21.2945	7977.2	6835.2	86.23	260	12.5056	11081.8	9137.1	100.25
191	21.1268	8026.2	6875.2	86.49	261	12.4287	11118.9	9162.3	100.39
192	20.9594	8075.3	6915.0	86.74	262	12.3529	11155.9	9187.2	100.53
193	20.7924	8124.3	6954.8	87.00	263	12.2781	11192.7	9212.1	100.67
194	20.6259	8173.4	6994.4	87.25	264	12.2043	11229.3	9236.7	100.81
195	20.4600	8222.5	7033.9	87.50	265	12.1315	11265.8	9261.2	100.95
196	20.2947	8271.6	7073.3	87.75	266	12.0597	11302.0	9285.5	101.08
197	20.1301	8320.6	7112.5	88.00	267	11.9888	11338.1	9309.7	101.22
198	19.9662	8369.6	7151.6	88.25	268	11.9189	11374.0	9333.7	101.35
199	19.8032	8418.6	7190.6	88.50	269	11.8499	11409.8	9357.6	101.49
200	19.6410	8467.5	7229.4	88.74	270	11.7818	11445.4	9381.3	101.62
201	19.4797	8516.4	7268.0	88.99	271	11.7146	11480.8	9404.9	101.75
202	19.3195	8565.2	7306.4	89.23	272	11.6482	11516.0	9428.3	101.88
203	19.1602	8613.9	7344.7	89.47	273	11.5827	11551.1	9451.6	102.01
204	19.0021	8662.5	7382.7	89.71	274	11.5181	11586.1	9474.7	102.14
205	18.8451	8711.0	7420.6	89.95	275	11.4543	11620.9	9497.8	102.26
206	18.6893	8759.4	7458.2	90.18	276	11.3913	11655.5	9520.7	102.39
207	18.5348	8807.7	7495.7	90.42	277	11.3290	11690.0	9543.4	102.51
208	18.3815	8855.9	7532.9	90.65	278	11.2676	11724.3	9566.0	102.64
209	18.2296	8904.0	7569.9	90.88	279	11.2069	11758.5	9588.6	102.76
210	18.0791	8951.8	7606.7	91.11	280	11.1470	11792.6	9610.9	102.88
211	17.9299	8999.6	7643.3	91.33	281	11.0878	11826.5	9633.2	103.00
212	17.7823	9047.2	7679.6	91.56	282	11.0294	11860.2	9655.3	103.12
213	17.6361	9094.6	7715.7	91.78	283	10.9716	11893.9	9677.4	103.24
214	17.4914	9141.8	7751.5	92.00	284	10.9146	11927.4	9699.3	103.36
215	17.3482	9188.9	7787.1	92.22	285	10.8582	11960.7	9721.1	103.48
216	17.2066	9235.8	7822.5	92.44	286	10.8025	11993.9	9742.8	103.59
217	17.0665	9282.5	7857.6	92.66	287	10.7475	12027.0	9764.3	103.71
218	16.9281	9329.0	7892.4	92.87	288	10.6932	12060.0	9785.8	103.82
219	16.7913	9375.3	7927.0	93.08	289	10.6394	12092.9	9807.2	103.94
220	16.6561	9421.4	7961.3	93.29	290	10.5863	12125.6	9828.4	104.05
221	16.5225	9467.2	7995.4	93.50	291	10.5339	12158.2	9849.6	104.16
222	16.3905	9512.9	8029.2	93.71	292	10.4820	12190.6	9870.6	104.27
223	16.2602	9558.4	8062.8	93.91	293	10.4307	12223.0	9891.6	104.39
224	16.1315	9603.6	8096.1	94.11	294	10.3800	12255.2	9912.4	104.50
225	16.0045	9648.6	8129.1	94.31	295	10.3299	12287.4	9933.2	104.60
226	15.8791	9693.4	8161.9	94.51	296	10.2804	12319.4	9953.8	104.71
227	15.7554	9738.0	8194.4	94.71	297	10.2314	12351.3	9974.4	104.82
228	15.6333	9782.3	8226.7	94.90	298	10.1830	12383.0	9994.9	104.93
229	15.5129	9826.4	8258.7	95.10	299	10.1351	12414.7	10015.3	105.03
230	15.3940	9870.3	8290.5	95.29	300	10.0877	12446.3	10035.6	105.14

260.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 90.201	36.1892	3585.7	2857.7	53.20
91	36.0888	3619.7	2889.7	53.55
92	35.9626	3662.4	2929.8	54.04
93	35.8360	3705.2	2970.0	54.51
94	35.7089	3748.1	3010.3	54.99
95	35.5814	3791.1	3050.7	55.46
96	35.4535	3834.2	3091.1	55.87
97	35.3252	3877.4	3131.6	56.32
98	35.1966	3920.6	3172.1	56.76
99	35.0677	3963.9	3212.6	57.20
100	34.9385	4007.2	3253.2	57.64
101	34.8090	4050.5	3293.7	58.07
102	34.6793	4093.9	3334.2	58.50
103	34.5493	4137.2	3374.7	58.92
104	34.4190	4180.5	3415.1	59.34
105	34.2885	4223.8	3455.5	59.75
106	34.1578	4267.0	3495.7	60.16
107	34.0269	4310.2	3535.9	60.57
108	33.8957	4353.3	3576.1	60.97
109	33.7643	4396.4	3616.1	61.36
110	33.6326	4439.3	3656.0	61.76
111	33.5008	4482.2	3695.8	62.14
112	33.3687	4525.0	3735.4	62.53
113	33.2364	4567.6	3775.0	62.91
114	33.1039	4610.2	3814.4	63.28
115	32.9711	4652.7	3853.7	63.65
116	32.8381	4695.1	3892.8	64.02
117	32.7049	4737.3	3931.8	64.38
118	32.5714	4779.5	3970.6	64.74
119	32.4377	4821.5	4009.4	65.10
120	32.3037	4863.5	4047.9	65.45
121	32.1695	4905.3	4086.4	65.80
122	32.0350	4947.1	4124.7	66.14
123	31.9002	4988.8	4162.9	66.48
124	31.7651	5030.4	4201.0	66.82
125	31.6298	5072.0	4239.1	67.15
126	31.4941	5113.5	4277.0	67.48
127	31.3582	5155.0	4314.9	67.81
128	31.2219	5196.5	4352.7	68.13
129	31.0853	5238.0	4390.5	68.46
130	30.9484	5279.6	4428.3	68.78
131	30.8111	5321.2	4466.2	69.10
132	30.6735	5362.9	4504.1	69.41
133	30.5356	5404.8	4542.1	69.73
134	30.3973	5446.9	4580.2	70.05
135	30.2586	5489.1	4618.4	70.36
136	30.1195	5531.2	4656.5	70.67
137	29.9801	5573.2	4694.4	70.98
138	29.8403	5615.1	4732.3	71.28
139	29.7000	5657.0	4770.0	71.59
140	29.5594	5698.8	4807.6	71.89
141	29.4183	5740.5	4845.0	72.18
142	29.2768	5782.1	4882.3	72.48
143	29.1349	5823.8	4919.5	72.77
144	28.9925	5865.5	4956.8	73.06
145	28.8497	5907.3	4994.1	73.35
146	28.7065	5949.2	5031.5	73.64
147	28.5628	5991.3	5069.0	73.93
148	28.4186	6033.6	5106.5	74.22
149	28.2739	6075.9	5144.1	74.51
150	28.1288	6118.3	5181.7	74.79
151	27.9832	6161.2	5219.7	75.08
152	27.8371	6204.6	5258.2	75.37
153	27.6906	6248.2	5296.8	75.65
154	27.5435	6291.9	5335.4	75.94
155	27.3960	6335.7	5374.1	76.22
156	27.2480	6379.6	5412.8	76.50
157	27.0994	6423.7	5451.5	76.79
158	26.9504	6467.8	5490.3	77.07
159	26.8009	6512.1	5529.1	77.35
160	26.6509	6556.5	5567.9	77.62

* PHASE CHANGE

260.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	26.5005	6601.0	5606.8	77.90	231	16.1978	9822.5	8196.0	94.52
162	26.3495	6645.6	5645.7	78.18	232	16.0822	9865.4	8227.3	94.71
163	26.1981	6690.3	5684.7	78.45	233	15.9679	9908.2	8258.4	94.89
164	26.0462	6735.2	5723.7	78.73	234	15.8550	9950.8	8289.2	95.08
165	25.8938	6780.1	5762.7	79.00	235	15.7435	9993.3	8319.9	95.26
166	25.7410	6825.2	5801.7	79.27	236	15.6334	10035.5	8350.3	95.44
167	25.5877	6870.4	5840.8	79.54	237	15.5246	10077.5	8380.5	95.61
168	25.4340	6915.7	5879.9	79.81	238	15.4172	10119.3	8410.5	95.79
169	25.2799	6961.1	5919.0	80.08	239	15.3111	10160.9	8440.2	95.96
170	25.1254	7006.7	5958.1	80.35	240	15.2064	10202.3	8469.8	96.14
171	24.9704	7052.3	5997.2	80.62	241	15.1030	10243.5	8499.1	96.31
172	24.8151	7098.0	6036.4	80.89	242	15.0009	10284.5	8528.3	96.48
173	24.6595	7143.9	6075.6	81.15	243	14.9001	10325.3	8557.2	96.65
174	24.5035	7189.9	6114.7	81.42	244	14.8006	10366.0	8586.0	96.81
175	24.3471	7235.9	6153.9	81.68	245	14.7023	10406.4	8614.5	96.98
176	24.1905	7282.1	6193.0	81.94	246	14.6053	10446.6	8642.8	97.14
177	24.0336	7328.4	6232.2	82.21	247	14.5096	10486.6	8670.9	97.31
178	23.8765	7374.8	6271.4	82.47	248	14.4151	10526.5	8698.9	97.47
179	23.7191	7421.2	6310.5	82.73	249	14.3218	10566.1	8726.6	97.63
180	23.5615	7467.8	6349.6	82.99	250	14.2297	10605.6	8754.1	97.78
181	23.4038	7514.4	6388.7	83.25	251	14.1388	10644.8	8781.5	97.94
182	23.2460	7561.1	6427.8	83.50	252	14.0490	10683.9	8808.7	98.10
183	23.0880	7607.9	6466.8	83.76	253	13.9605	10722.8	8835.6	98.25
184	22.9300	7654.8	6505.8	84.02	254	13.8730	10761.5	8862.4	98.40
185	22.7720	7701.7	6544.8	84.27	255	13.7867	10800.0	8889.1	98.55
186	22.6140	7748.7	6583.7	84.52	256	13.7015	10838.3	8915.5	98.70
187	22.4560	7795.7	6622.6	84.78	257	13.6174	10876.4	8941.8	98.85
188	22.2981	7842.9	6661.4	85.03	258	13.5343	10914.4	8967.9	99.00
189	22.1404	7890.0	6700.1	85.28	259	13.4523	10952.2	8993.8	99.15
190	21.9829	7937.2	6738.8	85.53	260	13.3714	10989.8	9019.5	99.29
191	21.8256	7984.4	6777.4	85.77	261	13.2915	11027.2	9045.1	99.43
192	21.6685	8031.7	6815.9	86.02	262	13.2126	11064.5	9070.6	99.58
193	21.5118	8079.0	6854.3	86.27	263	13.1347	11101.6	9095.8	99.72
194	21.3554	8126.3	6892.6	86.51	264	13.0578	11138.5	9120.9	99.86
195	21.1995	8173.6	6930.8	86.75	265	12.9819	11175.3	9145.9	100.00
196	21.0440	8220.8	6968.9	87.00	266	12.9069	11211.8	9170.7	100.14
197	20.8890	8268.1	7006.9	87.24	267	12.8328	11248.3	9195.3	100.27
198	20.7345	8315.4	7044.8	87.48	268	12.7597	11284.5	9219.8	100.41
199	20.5806	8362.7	7082.6	87.71	269	12.6875	11320.6	9244.2	100.54
200	20.4274	8409.9	7120.2	87.95	270	12.6162	11356.6	9268.4	100.68
201	20.2749	8457.1	7157.7	88.19	271	12.5457	11392.3	9292.4	100.81
202	20.1231	8504.2	7195.0	88.42	272	12.4762	11428.0	9316.3	100.94
203	19.9721	8551.3	7232.2	88.65	273	12.4074	11463.4	9340.1	101.07
204	19.8219	8598.4	7269.3	88.88	274	12.3395	11498.8	9363.7	101.20
205	19.6726	8645.3	7306.2	89.11	275	12.2725	11533.9	9387.2	101.33
206	19.5242	8692.2	7342.9	89.34	276	12.2062	11569.0	9410.6	101.45
207	19.3767	8739.0	7379.4	89.57	277	12.1408	11603.8	9433.9	101.58
208	19.2303	8785.8	7415.8	89.79	278	12.0761	11638.6	9457.0	101.70
209	19.0848	8832.4	7452.0	90.02	279	12.0122	11673.2	9480.0	101.83
210	18.9404	8878.9	7488.0	90.24	280	11.9491	11707.6	9502.8	101.95
211	18.7972	8925.3	7523.8	90.46	281	11.8867	11741.9	9525.6	102.07
212	18.6550	8971.6	7559.4	90.68	282	11.8250	11776.1	9548.2	102.20
213	18.5140	9017.8	7594.8	90.90	283	11.7641	11810.2	9570.7	102.32
214	18.3742	9063.9	7630.0	91.11	284	11.7038	11844.1	9593.1	102.44
215	18.2356	9109.8	7665.1	91.33	285	11.6443	11877.8	9615.4	102.55
216	18.0982	9155.6	7699.9	91.54	286	11.5855	11911.2	9637.5	102.67
217	17.9621	9201.2	7734.5	91.75	287	11.5273	11945.0	9659.6	102.79
218	17.8273	9246.7	7768.9	91.96	288	11.4698	11978.4	9681.5	102.91
219	17.6938	9292.0	7803.1	92.17	289	11.4129	12011.7	9703.3	103.02
220	17.5616	9337.2	7837.0	92.37	290	11.3567	12044.8	9725.0	103.14
221	17.4308	9382.2	7870.8	92.58	291	11.3012	12077.8	9746.7	103.25
222	17.3013	9427.0	7904.3	92.78	292	11.2462	12110.7	9768.2	103.36
223	17.1731	9471.7	7937.6	92.98	293	11.1919	12143.5	9789.6	103.47
224	17.0464	9516.2	7970.7	93.18	294	11.1381	12176.2	9810.9	103.59
225	16.9210	9560.5	8003.5	93.37	295	11.0850	12208.7	9832.1	103.70
226	16.7970	9604.6	8036.2	93.57	296	11.0324	12241.2	9853.2	103.81
227	16.6743	9648.6	8068.6	93.76	297	10.9805	12273.5	9874.2	103.91
228	16.5531	9692.3	8100.8	93.96	298	10.9290	12305.7	9895.2	104.02
229	16.4333	9735.9	8132.7	94.15	299	10.8782	12337.8	9916.0	104.13
230	16.3149	9779.3	8164.5	94.34	300	10.8278	12369.8	9936.7	104.24

280.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 90.683	36.2395	3644.7	2861.8	53.24
91	36.2001	3658.1	2874.4	53.38
92	36.0756	3700.6	2914.1	53.85
93	35.9506	3743.2	2954.0	54.31
94	35.8252	3785.9	2994.0	54.76
95	35.6995	3828.7	3034.0	55.22
96	35.5734	3871.6	3074.1	55.67
97	35.4470	3914.6	3114.2	56.11
98	35.3203	3957.7	3154.4	56.55
99	35.1933	4000.8	3194.6	56.99
100	35.0661	4043.9	3234.8	57.43
101	34.9386	4087.0	3275.0	57.85
102	34.8109	4130.1	3315.1	58.28
103	34.6829	4173.3	3355.2	58.70
104	34.5548	4216.4	3395.3	59.12
105	34.4265	4259.4	3435.3	59.53
106	34.2980	4302.4	3475.2	59.94
107	34.1693	4345.4	3515.1	60.34
108	34.0404	4388.3	3554.8	60.74
109	33.9114	4431.1	3594.5	61.13
110	33.7822	4473.8	3634.0	61.52
111	33.6528	4516.5	3673.4	61.91
112	33.5232	4559.0	3712.7	62.29
113	33.3935	4601.4	3751.8	62.67
114	33.2635	4643.7	3790.8	63.04
115	33.1334	4686.0	3829.7	63.41
116	33.0032	4728.1	3868.4	63.77
117	32.8727	4770.0	3907.0	64.13
118	32.7420	4811.9	3945.4	64.49
119	32.6112	4853.7	3983.7	64.84
120	32.4802	4895.3	4021.8	65.19
121	32.3489	4936.9	4059.8	65.54
122	32.2175	4978.3	4097.7	65.88
123	32.0858	5019.7	4135.4	66.22
124	31.9540	5061.0	4173.1	66.55
125	31.8219	5102.2	4210.6	66.88
126	31.6896	5143.4	4248.1	67.21
127	31.5570	5184.5	4285.4	67.53
128	31.4242	5225.6	4322.7	67.86
129	31.2912	5266.7	4360.0	68.18
130	31.1579	5307.9	4397.3	68.49
131	31.0243	5349.1	4434.6	68.81
132	30.8905	5390.4	4472.0	69.12
133	30.7564	5431.9	4509.4	69.44
134	30.6220	5473.5	4547.0	69.75
135	30.4873	5515.3	4584.6	70.06
136	30.3524	5556.8	4622.1	70.37
137	30.2171	5598.4	4659.4	70.67
138	30.0816	5639.8	4696.7	70.97
139	29.9457	5681.2	4733.8	71.27
140	29.8095	5722.5	4770.7	71.57
141	29.6730	5763.6	4807.5	71.86
142	29.5361	5804.7	4844.1	72.15
143	29.3990	5845.8	4880.7	72.44
144	29.2614	5886.9	4917.3	72.73
145	29.1236	5928.1	4953.9	73.01
146	28.9854	5969.4	4990.6	73.30
147	28.8468	6010.8	5027.3	73.58
148	28.7079	6052.4	5064.2	73.87
149	28.5686	6094.1	5100.9	74.15
150	28.4290	6135.8	5137.8	74.43
151	28.2890	6178.0	5175.0	74.72
152	28.1486	6220.7	5212.8	75.00
153	28.0078	6263.5	5250.5	75.28
154	27.8667	6306.4	5288.3	75.56
155	27.7252	6349.4	5326.1	75.84
156	27.5834	6392.5	5363.9	76.11
157	27.4411	6435.7	5401.8	76.39
158	27.2985	6479.0	5439.7	76.66
159	27.1555	6522.4	5477.6	76.94
160	27.0122	6565.9	5515.5	77.21

* PHASE CHANGE

280.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	26.8685	6609.4	5553.5	77.48	231	17.0304	9748.0	8082.1	93.67
162	26.7244	6653.1	5591.5	77.75	232	16.9158	9790.5	8113.3	93.86
163	26.5800	6696.9	5629.5	78.02	233	16.8025	9832.8	8144.2	94.04
164	26.4352	6740.7	5667.5	78.29	234	16.6904	9874.9	8175.0	94.22
165	26.2901	6784.7	5705.5	78.56	235	16.5794	9916.9	8205.6	94.40
166	26.1446	6828.7	5743.5	78.82	236	16.4697	9958.7	8236.0	94.58
167	25.9988	6872.8	5781.6	79.09	237	16.3612	10000.3	8266.2	94.75
168	25.8527	6917.1	5819.6	79.35	238	16.2538	10041.8	8296.3	94.93
169	25.7063	6961.4	5857.7	79.62	239	16.1477	10083.1	8326.1	95.10
170	25.5596	7005.8	5895.8	79.88	240	16.0427	10124.2	8355.7	95.27
171	25.4126	7050.3	5933.8	80.14	241	15.9390	10165.2	8385.1	95.44
172	25.2653	7094.8	5971.9	80.40	242	15.8364	10205.9	8414.4	95.61
173	25.1177	7139.5	6010.0	80.66	243	15.7350	10246.5	8443.4	95.78
174	24.9699	7184.3	6048.0	80.91	244	15.6347	10287.0	8472.3	95.94
175	24.8219	7229.1	6086.1	81.17	245	15.5356	10327.2	8501.0	96.11
176	24.6737	7274.0	6124.1	81.43	246	15.4376	10367.3	8529.5	96.27
177	24.5253	7319.0	6162.1	81.68	247	15.3408	10407.2	8557.8	96.43
178	24.3767	7364.0	6200.1	81.94	248	15.2451	10447.0	8585.9	96.59
179	24.2279	7409.2	6238.1	82.19	249	15.1505	10486.5	8613.9	96.75
180	24.0791	7454.4	6276.1	82.44	250	15.0571	10525.9	8641.6	96.91
181	23.9301	7499.6	6314.0	82.69	251	14.9647	10565.1	8669.2	97.07
182	23.7810	7545.0	6351.9	82.94	252	14.8734	10604.2	8696.6	97.22
183	23.6319	7590.4	6389.8	83.19	253	14.7832	10643.1	8723.9	97.38
184	23.4827	7635.8	6427.6	83.44	254	14.6941	10681.8	8750.9	97.53
185	23.3336	7681.3	6465.4	83.68	255	14.6060	10720.3	8777.8	97.68
186	23.1845	7726.9	6503.2	83.93	256	14.5189	10758.7	8804.6	97.83
187	23.0354	7772.5	6540.9	84.17	257	14.4329	10796.9	8831.1	97.98
188	22.8864	7818.2	6578.5	84.42	258	14.3479	10834.9	8857.5	98.13
189	22.7375	7863.9	6616.1	84.66	259	14.2639	10872.8	8883.8	98.28
190	22.5888	7909.6	6653.6	84.90	260	14.1809	10910.5	8909.8	98.42
191	22.4403	7955.3	6691.0	85.14	261	14.0989	10948.1	8935.8	98.56
192	22.2920	8001.1	6728.4	85.38	262	14.0178	10985.5	8961.5	98.71
193	22.1439	8046.9	6765.7	85.62	263	13.9377	11022.7	8987.1	98.85
194	21.9961	8092.7	6802.9	85.86	264	13.8586	11059.8	9012.6	98.99
195	21.8487	8138.5	6840.0	86.09	265	13.7803	11096.7	9037.9	99.13
196	21.7016	8184.4	6877.0	86.33	266	13.7030	11133.5	9063.0	99.27
197	21.5549	8230.2	6913.9	86.56	267	13.6266	11170.1	9088.0	99.41
198	21.4086	8276.0	6950.8	86.79	268	13.5511	11206.6	9112.9	99.54
199	21.2628	8321.8	6987.5	87.02	269	13.4765	11242.9	9137.6	99.68
200	21.1175	8367.6	7024.1	87.25	270	13.4027	11279.0	9162.2	99.81
201	20.9727	8413.4	7060.6	87.48	271	13.3298	11315.0	9186.6	99.94
202	20.8285	8459.1	7097.0	87.71	272	13.2577	11350.9	9210.9	100.08
203	20.6849	8504.8	7133.2	87.93	273	13.1865	11386.6	9235.0	100.21
204	20.5420	8550.5	7169.3	88.16	274	13.1161	11422.2	9259.1	100.34
205	20.3997	8596.1	7205.3	88.38	275	13.0465	11457.6	9283.0	100.47
206	20.2582	8641.6	7241.1	88.60	276	12.9777	11492.9	9306.7	100.59
207	20.1174	8687.1	7276.8	88.82	277	12.9097	11528.1	9330.4	100.72
208	19.9774	8732.6	7312.4	89.04	278	12.8424	11563.1	9353.9	100.85
209	19.8382	8777.9	7347.8	89.26	279	12.7760	11597.9	9377.2	100.97
210	19.6998	8823.2	7383.0	89.47	280	12.7102	11632.7	9400.5	101.10
211	19.5623	8868.4	7418.1	89.69	281	12.6452	11667.3	9423.6	101.22
212	19.4257	8913.5	7453.0	89.90	282	12.5810	11701.8	9446.6	101.34
213	19.2900	8958.5	7487.7	90.11	283	12.5174	11736.1	9469.5	101.46
214	19.1553	9003.5	7522.3	90.32	284	12.4546	11770.3	9492.3	101.59
215	19.0216	9048.3	7556.7	90.53	285	12.3925	11804.4	9515.0	101.71
216	18.8889	9093.0	7591.0	90.74	286	12.3310	11838.4	9537.5	101.82
217	18.7572	9137.6	7625.0	90.95	287	12.2702	11872.2	9560.0	101.94
218	18.6265	9182.1	7658.9	91.15	288	12.2101	11905.9	9582.3	102.06
219	18.4969	9226.5	7692.6	91.35	289	12.1507	11939.5	9604.5	102.18
220	18.3684	9270.7	7726.1	91.56	290	12.0918	11973.0	9626.7	102.29
221	18.2410	9314.8	7759.4	91.76	291	12.0337	12006.4	9648.7	102.41
222	18.1147	9358.8	7792.6	91.95	292	11.9761	12039.6	9670.6	102.52
223	17.9896	9402.6	7825.5	92.15	293	11.9192	12072.7	9692.4	102.63
224	17.8656	9446.3	7858.3	92.35	294	11.8629	12105.7	9714.1	102.75
225	17.7427	9489.9	7890.8	92.54	295	11.8072	12138.6	9735.7	102.86
226	17.6210	9533.3	7923.2	92.73	296	11.7520	12171.4	9757.2	102.97
227	17.5005	9576.5	7955.3	92.92	297	11.6975	12204.1	9778.6	103.08
228	17.3812	9619.6	7987.3	93.11	298	11.6435	12236.6	9799.9	103.19
229	17.2631	9662.6	8019.1	93.30	299	11.5901	12269.1	9821.1	103.30
230	17.1461	9705.4	8050.7	93.49	300	11.5372	12301.4	9842.3	103.41

300.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 91.163	36.2888	3703.6	2865.9	53.27
92	36.1859	3739.0	2898.9	53.66
93	36.0625	3781.4	2938.5	54.11
94	35.9388	3823.9	2978.1	54.57
95	35.8147	3866.6	3017.8	55.02
96	35.6903	3909.3	3057.6	55.47
97	35.5657	3952.1	3097.4	55.91
98	35.4407	3995.0	3137.2	56.35
99	35.3156	4037.9	3177.1	56.79
100	35.1902	4080.8	3217.0	57.22
101	35.0646	4123.8	3256.8	57.64
102	34.9388	4166.7	3296.7	58.07
103	34.8129	4209.6	3336.4	58.49
104	34.6867	4252.5	3376.2	58.90
105	34.5605	4295.4	3415.8	59.31
106	34.4340	4338.2	3455.4	59.72
107	34.3075	4381.0	3494.9	60.12
108	34.1808	4423.6	3534.3	60.52
109	34.0539	4466.2	3573.6	60.91
110	33.9270	4508.8	3612.8	61.30
111	33.7999	4551.2	3651.8	61.68
112	33.6726	4593.5	3690.7	62.06
113	33.5453	4635.7	3729.5	62.44
114	33.4178	4677.8	3768.1	62.81
115	33.2902	4719.7	3806.6	63.17
116	33.1624	4761.6	3844.9	63.53
117	33.0345	4803.3	3883.1	63.89
118	32.9065	4844.9	3921.2	64.25
119	32.7783	4886.4	3959.0	64.60
120	32.6500	4927.8	3996.8	64.94
121	32.5215	4969.1	4034.4	65.29
122	32.3929	5010.2	4071.8	65.62
123	32.2641	5051.3	4109.1	65.96
124	32.1352	5092.3	4146.3	66.29
125	32.0061	5133.2	4183.4	66.62
126	31.8768	5174.0	4220.4	66.95
127	31.7474	5214.8	4257.3	67.27
128	31.6178	5255.6	4294.2	67.59
129	31.4880	5296.4	4331.0	67.91
130	31.3580	5337.2	4367.8	68.22
131	31.2277	5378.1	4404.6	68.53
132	31.0973	5419.0	4441.5	68.85
133	30.9667	5460.1	4478.4	69.16
134	30.8359	5501.3	4515.5	69.46
135	30.7049	5542.6	4552.6	69.77
136	30.5736	5583.8	4589.5	70.08
137	30.4421	5624.9	4626.3	70.38
138	30.3104	5665.9	4663.0	70.67
139	30.1784	5706.9	4699.6	70.97
140	30.0462	5747.7	4736.0	71.26
141	29.9138	5788.3	4772.1	71.55
142	29.7811	5828.9	4808.2	71.84
143	29.6481	5869.5	4844.2	72.13
144	29.5149	5910.1	4880.1	72.41
145	29.3814	5950.7	4916.1	72.69
146	29.2477	5991.5	4952.2	72.97
147	29.1137	6032.4	4988.3	73.26
148	28.9794	6073.4	5024.5	73.54
149	28.8449	6114.4	5060.6	73.81
150	28.7100	6155.6	5096.8	74.09
151	28.5749	6197.1	5133.3	74.37
152	28.4395	6239.2	5170.3	74.65
153	28.3039	6281.4	5207.4	74.92
154	28.1679	6323.6	5244.4	75.20
155	28.0317	6365.9	5281.5	75.47
156	27.8952	6408.3	5318.6	75.75
157	27.7584	6450.8	5355.7	76.02
158	27.6213	6493.4	5392.8	76.29
159	27.4840	6536.0	5430.0	76.56
160	27.3463	6578.7	5467.1	76.82

* PHASE CHANGE

300.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	27.2084	6621.5	5504.3	77.09	231	17.7850	9687.9	7978.7	92.91
162	27.0703	6664.4	5541.4	77.36	232	17.6723	9729.6	8009.7	93.09
163	26.9319	6707.3	5578.6	77.62	233	17.5606	9771.6	8040.5	93.27
164	26.7932	6750.3	5615.8	77.88	234	17.4499	9813.2	8071.2	93.45
165	26.6542	6793.4	5653.0	78.15	235	17.3403	9854.7	8101.6	93.63
166	26.5150	6836.6	5690.1	78.41	236	17.2318	9896.0	8131.9	93.80
167	26.3756	6879.8	5727.3	78.67	237	17.1243	9937.2	8162.0	93.97
168	26.2360	6923.1	5764.5	78.93	238	17.0179	9978.2	8192.0	94.15
169	26.0961	6966.5	5801.7	79.18	239	16.9125	10019.1	8221.7	94.32
170	25.9560	7010.0	5838.8	79.44	240	16.8081	10059.8	8251.3	94.49
171	25.8157	7053.5	5876.0	79.69	241	16.7048	10100.4	8280.7	94.66
172	25.6752	7097.1	5913.1	79.95	242	16.6026	10140.9	8310.0	94.83
173	25.5345	7140.7	5950.3	80.20	243	16.5014	10181.2	8339.0	94.99
174	25.3937	7184.5	5987.4	80.45	244	16.4013	10221.3	8367.9	95.16
175	25.2526	7228.3	6024.5	80.70	245	16.3022	10261.3	8396.6	95.32
176	25.1115	7272.1	6061.6	80.95	246	16.2041	10301.1	8425.2	95.48
177	24.9702	7316.0	6098.7	81.20	247	16.1071	10340.8	8453.6	95.64
178	24.8288	7360.0	6135.7	81.45	248	16.0110	10380.4	8481.8	95.80
179	24.6873	7404.0	6172.7	81.70	249	15.9160	10419.7	8509.8	95.96
180	24.5458	7448.1	6209.7	81.94	250	15.8221	10459.0	8537.7	96.12
181	24.4041	7492.3	6246.7	82.19	251	15.7291	10498.0	8565.4	96.27
182	24.2624	7536.5	6283.6	82.43	252	15.6371	10536.9	8593.0	96.43
183	24.1207	7580.7	6320.5	82.67	253	15.5461	10575.7	8620.3	96.58
184	23.9790	7625.0	6357.3	82.92	254	15.4561	10614.3	8647.6	96.74
185	23.8374	7669.3	6394.1	83.16	255	15.3671	10652.8	8674.6	96.89
186	23.6957	7713.7	6430.8	83.39	256	15.2790	10691.1	8701.5	97.04
187	23.5542	7758.1	6467.5	83.63	257	15.1919	10729.3	8728.3	97.19
188	23.4127	7802.6	6504.2	83.87	258	15.1057	10767.3	8754.9	97.33
189	23.2713	7847.0	6540.8	84.11	259	15.0205	10805.1	8781.3	97.48
190	23.1301	7891.5	6577.3	84.34	260	14.9362	10842.8	8807.6	97.62
191	22.9890	7936.1	6613.8	84.57	261	14.8528	10880.4	8833.8	97.77
192	22.8481	7980.6	6650.2	84.81	262	14.7704	10917.8	8859.8	97.91
193	22.7074	8025.2	6686.5	85.04	263	14.6888	10955.1	8885.6	98.05
194	22.5670	8069.7	6722.7	85.27	264	14.6081	10992.2	8911.3	98.19
195	22.4269	8114.3	6758.9	85.50	265	14.5283	11029.2	8936.8	98.33
196	22.2870	8158.9	6795.0	85.73	266	14.4494	11066.0	8962.2	98.47
197	22.1475	8203.5	6831.0	85.95	267	14.3714	11102.7	8987.5	98.61
198	22.0083	8248.1	6866.9	86.18	268	14.2942	11139.3	9012.6	98.75
199	21.8695	8292.7	6902.7	86.40	269	14.2178	11175.7	9037.6	98.88
200	21.7311	8337.2	6938.4	86.63	270	14.1423	11211.9	9062.5	99.02
201	21.5932	8381.8	6974.0	86.85	271	14.0676	11248.1	9087.2	99.15
202	21.4557	8426.3	7009.5	87.07	272	13.9937	11284.0	9111.8	99.28
203	21.3188	8470.8	7044.9	87.29	273	13.9206	11319.9	9136.2	99.42
204	21.1823	8515.2	7080.2	87.51	274	13.8483	11355.6	9160.5	99.55
205	21.0464	8559.7	7115.3	87.73	275	13.7768	11391.2	9184.7	99.68
206	20.9111	8604.1	7150.4	87.94	276	13.7061	11426.7	9208.8	99.80
207	20.7764	8648.4	7185.3	88.16	277	13.6361	11462.0	9232.7	99.93
208	20.6423	8692.7	7220.1	88.37	278	13.5669	11497.2	9256.5	100.06
209	20.5089	8736.9	7254.7	88.58	279	13.4984	11532.2	9280.2	100.18
210	20.3762	8781.1	7289.3	88.79	280	13.4307	11567.1	9303.8	100.31
211	20.2442	8825.2	7323.6	89.00	281	13.3637	11601.9	9327.3	100.43
212	20.1129	8869.3	7357.9	89.21	282	13.2973	11636.6	9350.6	100.56
213	19.9824	8913.2	7392.0	89.42	283	13.2317	11671.2	9373.8	100.68
214	19.8527	8957.1	7426.0	89.62	284	13.1668	11705.6	9396.9	100.80
215	19.7237	9001.0	7459.8	89.83	285	13.1026	11739.9	9419.9	100.92
216	19.5956	9044.7	7493.4	90.03	286	13.0391	11774.1	9442.8	101.04
217	19.4684	9088.3	7526.9	90.23	287	12.9762	11808.2	9465.5	101.16
218	19.3420	9131.9	7560.3	90.43	288	12.9140	11842.1	9488.2	101.28
219	19.2165	9175.3	7593.5	90.63	289	12.8524	11875.9	9510.7	101.40
220	19.0919	9218.7	7626.5	90.83	290	12.7914	11909.6	9533.2	101.51
221	18.9682	9261.9	7659.3	91.02	291	12.7311	11943.2	9555.5	101.63
222	18.8455	9305.1	7692.0	91.22	292	12.6714	11976.7	9577.8	101.74
223	18.7237	9348.1	7724.6	91.41	293	12.6124	12010.1	9599.9	101.86
224	18.6029	9391.0	7757.0	91.60	294	12.5539	12043.3	9621.9	101.97
225	18.4830	9433.8	7789.1	91.80	295	12.4960	12076.5	9643.9	102.08
226	18.3642	9476.5	7821.2	91.98	296	12.4388	12109.5	9665.7	102.19
227	18.2463	9519.0	7853.0	92.17	297	12.3821	12142.5	9687.4	102.31
228	18.1295	9561.5	7884.7	92.36	298	12.3259	12175.3	9709.1	102.42
229	18.0136	9603.7	7916.2	92.54	299	12.2704	12208.0	9730.6	102.53
230	17.8988	9645.9	7947.6	92.73	300	12.2154	12240.6	9752.1	102.63

350.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 92.358	36.4082	3850.6	2876.5	53.35
93	36.3313	3877.6	2901.5	53.64
94	36.2113	3919.7	2940.3	54.09
95	36.0911	3962.0	2979.3	54.54
96	35.9707	4004.3	3018.3	54.98
97	35.8500	4046.7	3057.4	55.42
98	35.7291	4089.1	3096.5	55.86
99	35.6081	4131.6	3135.7	56.29
100	35.4870	4174.1	3174.8	56.72
101	35.3657	4216.7	3213.9	57.14
102	35.2443	4259.2	3252.9	57.56
103	35.1228	4301.7	3292.0	57.97
104	35.0013	4344.2	3330.9	58.38
105	34.8796	4386.6	3369.8	58.79
106	34.7579	4429.0	3408.7	59.19
107	34.6361	4471.3	3447.4	59.59
108	34.5143	4513.5	3486.0	59.98
109	34.3924	4555.7	3524.5	60.37
110	34.2705	4597.7	3562.8	60.75
111	34.1485	4639.6	3601.1	61.13
112	34.0265	4681.4	3639.2	61.51
113	33.9045	4723.1	3677.1	61.88
114	33.7824	4764.7	3714.9	62.25
115	33.6603	4806.2	3752.6	62.61
116	33.5381	4847.5	3790.0	62.97
117	33.4159	4888.7	3827.4	63.32
118	33.2937	4929.7	3864.5	63.67
119	33.1714	4970.6	3901.5	64.01
120	33.0491	5011.4	3938.3	64.36
121	32.9267	5052.1	3975.0	64.69
122	32.8043	5092.7	4011.6	65.03
123	32.6818	5133.1	4047.9	65.36
124	32.5593	5173.4	4084.2	65.68
125	32.4368	5213.7	4120.3	66.01
126	32.3141	5253.9	4156.4	66.33
127	32.1914	5294.0	4192.3	66.64
128	32.0687	5334.0	4228.1	66.96
129	31.9458	5374.1	4263.9	67.27
130	31.8229	5414.2	4299.7	67.58
131	31.6999	5454.2	4335.5	67.89
132	31.5769	5494.4	4371.3	68.19
133	31.4537	5534.7	4407.1	68.50
134	31.3305	5575.0	4443.1	68.80
135	31.2072	5615.6	4479.1	69.10
136	31.0838	5655.9	4514.9	69.40
137	30.9603	5696.1	4550.6	69.69
138	30.8367	5736.2	4586.1	69.98
139	30.7130	5776.2	4621.5	70.27
140	30.5892	5816.1	4656.7	70.56
141	30.4653	5855.7	4691.6	70.84
142	30.3413	5895.3	4726.4	71.12
143	30.2171	5934.8	4761.2	71.40
144	30.0929	5974.4	4795.9	71.68
145	29.9685	6014.0	4830.6	71.95
146	29.8440	6053.6	4865.3	72.23
147	29.7194	6093.4	4900.1	72.50
148	29.5947	6133.3	4934.9	72.77
149	29.4699	6173.1	4969.7	73.04
150	29.3449	6213.1	5004.5	73.31
151	29.2198	6253.3	5039.6	73.58
152	29.0946	6294.2	5075.2	73.85
153	28.9693	6335.0	5110.8	74.12
154	28.8438	6376.0	5146.4	74.39
155	28.7182	6416.9	5182.0	74.65
156	28.5925	6458.0	5217.6	74.91
157	28.4667	6499.0	5253.2	75.18
158	28.3408	6540.1	5288.8	75.44
159	28.2147	6581.3	5324.4	75.70
160	28.0885	6622.5	5359.9	75.96

* PHASE CHANGE

350.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	27.9622	6663.8	5395.5	76.21	231	19.3941	9586.7	7758.1	91.29
162	27.8358	6705.1	5431.0	76.47	232	19.2872	9627.1	7788.4	91.47
163	27.7093	6746.4	5466.5	76.72	233	19.1810	9667.5	7818.5	91.64
164	27.5827	6787.8	5502.0	76.98	234	19.0756	9707.7	7848.6	91.81
165	27.4560	6829.2	5537.5	77.23	235	18.9709	9747.9	7878.5	91.98
166	27.3292	6870.7	5573.0	77.48	236	18.8670	9788.0	7908.2	92.15
167	27.2023	6912.2	5608.5	77.73	237	18.7639	9827.9	7937.9	92.32
168	27.0753	6953.8	5643.9	77.98	238	18.6615	9867.8	7967.4	92.49
169	26.9482	6995.4	5679.3	78.22	239	18.5600	9907.5	7996.7	92.66
170	26.8211	7037.0	5714.7	78.47	240	18.4592	9947.2	8025.9	92.82
171	26.6939	7078.7	5750.1	78.71	241	18.3592	9986.7	8055.0	92.99
172	26.5666	7120.4	5785.5	78.96	242	18.2599	10026.2	8083.9	93.15
173	26.4393	7162.2	5820.8	79.20	243	18.1615	10065.5	8112.7	93.31
174	26.3119	7203.9	5856.1	79.44	244	18.0639	10104.7	8141.4	93.47
175	26.1845	7245.8	5891.4	79.68	245	17.9670	10143.8	8169.9	93.63
176	26.0571	7287.6	5926.6	79.92	246	17.8710	10182.8	8198.3	93.79
177	25.9296	7329.5	5961.8	80.16	247	17.7757	10221.7	8226.6	93.95
178	25.8021	7371.4	5997.0	80.39	248	17.6812	10260.5	8254.7	94.11
179	25.6747	7413.4	6032.1	80.63	249	17.5876	10299.1	8282.6	94.26
180	25.5472	7455.4	6067.2	80.86	250	17.4947	10337.6	8310.5	94.42
181	25.4198	7497.4	6102.2	81.09	251	17.4026	10376.1	8338.2	94.57
182	25.2924	7539.4	6137.2	81.32	252	17.3113	10414.4	8365.7	94.72
183	25.1650	7581.5	6172.2	81.56	253	17.2208	10452.6	8393.2	94.87
184	25.0377	7623.6	6207.1	81.78	254	17.1311	10490.7	8420.5	95.03
185	24.9104	7665.7	6242.0	82.01	255	17.0421	10528.6	8447.6	95.17
186	24.7833	7707.8	6276.8	82.24	256	16.9540	10566.5	8474.6	95.32
187	24.6562	7750.0	6311.6	82.47	257	16.8666	10604.2	8501.5	95.47
188	24.5292	7792.1	6346.3	82.69	258	16.7800	10641.8	8528.3	95.62
189	24.4024	7834.3	6381.0	82.91	259	16.6942	10679.3	8554.9	95.76
190	24.2757	7876.5	6415.6	83.14	260	16.6091	10716.7	8581.4	95.90
191	24.1491	7918.7	6450.1	83.36	261	16.5248	10753.9	8607.8	96.05
192	24.0227	7960.9	6484.6	83.58	262	16.4413	10791.1	8634.0	96.19
193	23.8965	8003.1	6519.0	83.80	263	16.3585	10828.1	8660.1	96.33
194	23.7705	8045.4	6553.4	84.02	264	16.2765	10865.0	8686.1	96.47
195	23.6447	8087.6	6587.7	84.23	265	16.1952	10901.8	8712.0	96.61
196	23.5191	8129.8	6621.9	84.45	266	16.1147	10938.5	8737.7	96.75
197	23.3938	8172.0	6656.0	84.66	267	16.0349	10975.0	8763.3	96.89
198	23.2687	8214.2	6690.1	84.88	268	15.9558	11011.4	8788.8	97.02
199	23.1439	8256.4	6724.1	85.09	269	15.8775	11047.8	8814.1	97.16
200	23.0194	8298.6	6758.0	85.30	270	15.7999	11084.0	8839.4	97.29
201	22.8952	8340.8	6791.8	85.51	271	15.7230	11120.1	8864.5	97.42
202	22.7714	8383.0	6825.6	85.72	272	15.6468	11156.0	8889.5	97.56
203	22.6479	8425.1	6859.2	85.93	273	15.5713	11191.9	8914.3	97.69
204	22.5247	8467.3	6892.8	86.14	274	15.4965	11227.7	8939.1	97.82
205	22.4019	8509.4	6926.3	86.34	275	15.4224	11263.3	8963.7	97.95
206	22.2796	8551.4	6959.6	86.55	276	15.3490	11298.8	8988.3	98.08
207	22.1576	8593.5	6992.9	86.75	277	15.2763	11334.2	9012.7	98.21
208	22.0361	8635.5	7026.1	86.95	278	15.2042	11369.5	9037.0	98.33
209	21.9150	8677.5	7059.2	87.16	279	15.1328	11404.7	9061.2	98.46
210	21.7943	8719.4	7092.2	87.36	280	15.0621	11439.8	9085.2	98.59
211	21.6742	8761.3	7125.1	87.55	281	14.9920	11474.8	9109.2	98.71
212	21.5545	8803.2	7157.8	87.75	282	14.9226	11509.6	9133.0	98.83
213	21.4354	8845.0	7190.5	87.95	283	14.8538	11544.4	9156.8	98.96
214	21.3168	8886.7	7223.0	88.14	284	14.7857	11579.0	9180.4	99.08
215	21.1987	8928.5	7255.5	88.34	285	14.7182	11613.5	9204.0	99.20
216	21.0812	8970.1	7287.8	88.53	286	14.6513	11648.0	9227.4	99.32
217	20.9642	9011.7	7320.0	88.72	287	14.5850	11682.3	9250.7	99.44
218	20.8479	9053.2	7352.1	88.92	288	14.5193	11716.5	9273.9	99.56
219	20.7321	9094.7	7384.1	89.11	289	14.4543	11750.6	9297.1	99.68
220	20.6169	9136.1	7416.0	89.29	290	14.3898	11784.6	9320.1	99.80
221	20.5024	9177.5	7447.7	89.48	291	14.3259	11818.5	9343.0	99.91
222	20.3885	9218.8	7479.3	89.67	292	14.2626	11852.3	9365.8	100.03
223	20.2753	9260.0	7510.8	89.85	293	14.1999	11886.1	9388.5	100.14
224	20.1627	9301.1	7542.2	90.04	294	14.1378	11919.7	9411.2	100.26
225	20.0508	9342.1	7573.4	90.22	295	14.0762	11953.2	9433.7	100.37
226	19.9396	9383.1	7604.5	90.40	296	14.0152	11986.6	9456.1	100.48
227	19.8290	9424.0	7635.5	90.58	297	13.9547	12019.9	9478.5	100.60
228	19.7192	9464.8	7666.3	90.76	298	13.8948	12053.1	9500.7	100.71
229	19.6101	9505.5	7697.0	90.94	299	13.8355	12086.2	9522.9	100.82
230	19.5017	9546.1	7727.6	91.12	300	13.7766	12119.2	9545.0	100.93

400.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 93.543	36.5228	3997.4	2887.6	53.44
94	36.4695	4016.5	2905.1	53.64
95	36.3527	4058.3	2943.4	54.08
96	36.2357	4100.3	2981.7	54.52
97	36.1186	4142.3	3020.2	54.96
98	36.0014	4184.4	3058.6	55.39
99	35.8841	4226.6	3097.1	55.82
100	35.7667	4268.7	3135.5	56.24
101	35.6492	4310.9	3174.0	56.66
102	35.5317	4353.1	3212.4	57.08
103	35.4141	4395.2	3250.7	57.49
104	35.2965	4437.3	3289.0	57.89
105	35.1789	4479.4	3327.3	58.30
106	35.0613	4521.4	3365.4	58.70
107	34.9438	4563.3	3403.4	59.09
108	34.8262	4605.2	3441.4	59.48
109	34.7086	4646.9	3479.2	59.86
110	34.5911	4688.6	3516.9	60.24
111	34.4736	4730.1	3554.4	60.62
112	34.3561	4771.5	3591.8	60.99
113	34.2386	4812.8	3629.0	61.36
114	34.1212	4854.0	3666.1	61.72
115	34.0038	4895.0	3703.0	62.08
116	33.8864	4935.9	3739.8	62.43
117	33.7691	4976.6	3776.4	62.78
118	33.6518	5017.2	3812.8	63.13
119	33.5345	5057.7	3849.0	63.47
120	33.4172	5098.0	3885.1	63.81
121	33.3000	5138.2	3921.0	64.14
122	33.1829	5178.2	3956.8	64.47
123	33.0657	5218.2	3992.4	64.80
124	32.9486	5258.0	4027.8	65.12
125	32.8314	5297.7	4063.2	65.44
126	32.7144	5337.3	4098.4	65.75
127	32.5973	5376.9	4133.5	66.07
128	32.4802	5416.4	4168.5	66.38
129	32.3632	5455.9	4203.5	66.68
130	32.2461	5495.3	4238.4	66.99
131	32.1291	5534.8	4273.3	67.29
132	32.0121	5574.4	4308.3	67.59
133	31.8951	5614.0	4343.2	67.89
134	31.7780	5653.7	4378.3	68.19
135	31.6610	5693.6	4413.4	68.48
136	31.5440	5733.2	4448.3	68.78
137	31.4270	5772.7	4483.0	69.07
138	31.3099	5812.2	4517.6	69.35
139	31.1929	5851.4	4552.1	69.64
140	31.0758	5890.6	4586.3	69.92
141	30.9588	5929.5	4620.3	70.19
142	30.8417	5968.3	4654.1	70.47
143	30.7246	6007.0	4687.9	70.74
144	30.6074	6045.8	4721.6	71.01
145	30.4903	6084.6	4755.2	71.28
146	30.3731	6123.4	4788.9	71.55
147	30.2559	6162.3	4822.7	71.82
148	30.1387	6201.3	4856.5	72.09
149	30.0215	6240.2	4890.2	72.35
150	29.9042	6279.3	4923.9	72.61
151	29.7869	6318.6	4957.9	72.88
152	29.6696	6358.5	4992.4	73.14
153	29.5523	6398.4	5026.9	73.40
154	29.4349	6438.4	5061.4	73.66
155	29.3175	6478.3	5095.9	73.92
156	29.2001	6518.3	5130.3	74.18
157	29.0826	6558.4	5164.7	74.43
158	28.9652	6598.4	5199.1	74.69
159	28.8477	6638.5	5233.5	74.94
160	28.7302	6678.6	5267.9	75.19

* PHASE CHANGE

400.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	28.6127	6718.7	5302.2	75.44	231	20.7031	9536.0	7578.3	89.98
162	28.4951	6758.9	5336.5	75.69	232	20.6022	9575.2	7607 8	90.15
163	28.3776	6799.1	5370.8	75.94	233	20.5019	9614.3	7637.3	90.32
164	28.2600	6839.3	5405.1	76.18	234	20.4022	9653.3	7666.7	90.48
165	28.1424	6879.5	5439.3	76.43	235	20.3031	9692.2	7695.9	90.65
166	28.0249	6919.8	5473.5	76.67	236	20.2045	9731.1	7725.1	90.82
167	27.9073	6960.0	5507.7	76.91	237	20.1065	9769.9	7754.1	90.98
168	27.7897	7000.3	5541.8	77.15	238	20.0091	9808.7	7783.0	91.14
169	27.6721	7040.7	5576.0	77.39	239	19.9123	9847.3	7811.8	91.31
170	27.5546	7081.0	5610.1	77.63	240	19.8161	9885.9	7840.5	91.47
171	27.4370	7121.4	5644.1	77.87	241	19.7205	9924.4	7869.1	91.63
172	27.3195	7161.7	5678.1	78.10	242	19.6255	9962.8	7897.6	91.79
173	27.2020	7202.1	5712.1	78.34	243	19.5311	10001.1	7925.9	91.94
174	27.0845	7242.5	5746.1	78.57	244	19.4373	10039.4	7954.2	92.10
175	26.9671	7283.0	5780.0	78.80	245	19.3441	10077.5	7982.3	92.26
176	26.8496	7323.4	5813.9	79.03	246	19.2516	10115.6	8010.3	92.41
177	26.7323	7363.9	5847.7	79.26	247	19.1597	10153.6	8038.2	92.57
178	26.6150	7404.4	5881.5	79.49	248	19.0684	10191.5	8066.0	92.72
179	26.4977	7444.9	5915.2	79.72	249	18.9777	10229.3	8093.6	92.87
180	26.3805	7485.4	5949.0	79.94	250	18.8876	10267.1	8121.2	93.02
181	26.2634	7525.9	5982.6	80.17	251	18.7982	10304.7	8148.6	93.17
182	26.1463	7566.4	6016.2	80.39	252	18.7094	10342.3	8175.9	93.32
183	26.0294	7606.9	6049.8	80.61	253	18.6213	10379.7	8203.1	93.47
184	25.9125	7647.5	6083.3	80.83	254	18.5337	10417.1	8230.2	93.62
185	25.7958	7688.0	6116.8	81.05	255	18.4468	10454.4	8257.2	93.76
186	25.6791	7728.6	6150.2	81.27	256	18.3606	10491.6	8284.1	93.91
187	25.5626	7769.1	6183.6	81.49	257	18.2749	10528.7	8310.8	94.05
188	25.4461	7809.7	6216.9	81.71	258	18.1899	10565.7	8337.5	94.20
189	25.3299	7850.3	6250.1	81.92	259	18.1055	10602.6	8364.0	94.34
190	25.2137	7890.8	6283.3	82.14	260	18.0218	10639.4	8390.4	94.48
191	25.0978	7931.4	6316.5	82.35	261	17.9387	10676.2	8416.7	94.62
192	24.9819	7972.0	6349.6	82.56	262	17.8562	10712.8	8442.9	94.76
193	24.8663	8012.5	6382.6	82.77	263	17.7743	10749.3	8469.0	94.90
194	24.7508	8053.1	6415.5	82.98	264	17.6931	10785.8	8495.0	95.04
195	24.6356	8093.7	6448.4	83.19	265	17.6124	10822.1	8520.9	95.18
196	24.5205	8134.2	6481.3	83.40	266	17.5324	10858.4	8546.6	95.32
197	24.4057	8174.7	6514.0	83.60	267	17.4530	10894.6	8572.3	95.45
198	24.2910	8215.3	6546.7	83.81	268	17.3743	10930.6	8597.8	95.59
199	24.1766	8255.8	6579.3	84.01	269	17.2961	10966.6	8623.2	95.72
200	24.0625	8296.3	6611.9	84.22	270	17.2186	11002.5	8648.6	95.85
201	23.9486	8336.8	6644.4	84.42	271	17.1416	11038.2	8673.8	95.99
202	23.8350	8377.3	6676.8	84.62	272	17.0653	11073.9	8698.9	96.12
203	23.7216	8417.7	6709.1	84.82	273	16.9895	11109.5	8723.9	96.25
204	23.6086	8458.2	6741.4	85.02	274	16.9144	11145.0	8748.8	96.38
205	23.4958	8498.6	6773.5	85.21	275	16.8399	11180.4	8773.6	96.51
206	23.3833	8539.0	6805.6	85.41	276	16.7659	11215.7	8798.3	96.63
207	23.2712	8579.3	6837.7	85.61	277	16.6925	11251.0	8822.9	96.76
208	23.1594	8619.7	6869.6	85.80	278	16.6198	11286.1	8847.4	96.89
209	23.0479	8660.0	6901.4	85.99	279	16.5476	11321.1	8871.7	97.01
210	22.9368	8700.3	6933.2	86.19	280	16.4760	11356.0	8896.0	97.14
211	22.8261	8740.5	6964.9	86.38	281	16.4049	11390.9	8920.2	97.26
212	22.7157	8780.7	6996.5	86.57	282	16.3344	11425.6	8944.3	97.39
213	22.6057	8820.9	7028.0	86.76	283	16.2645	11460.3	8968.3	97.51
214	22.4961	8861.1	7059.4	86.94	284	16.1952	11494.8	8992.2	97.63
215	22.3869	8901.2	7090.7	87.13	285	16.1264	11529.3	9016.0	97.75
216	22.2782	8941.2	7121.9	87.32	286	16.0582	11563.7	9039.7	97.87
217	22.1698	8981.2	7153.0	87.50	287	15.9905	11598.0	9063.3	97.99
218	22.0619	9021.2	7184.1	87.69	288	15.9234	11632.2	9086.8	98.11
219	21.9545	9061.1	7215.0	87.87	289	15.8568	11666.3	9110.2	98.23
220	21.8475	9101.0	7245.8	88.05	290	15.7907	11700.3	9133.5	98.35
221	21.7409	9140.8	7276.6	88.23	291	15.7252	11734.2	9156.8	98.46
222	21.6349	9180.6	7307.2	88.41	292	15.6602	11768.1	9179.9	98.58
223	21.5293	9220.3	7337.7	88.59	293	15.5958	11801.8	9203.0	98.70
224	21.4242	9260.0	7368.2	88.77	294	15.5318	11835.5	9225.9	98.81
225	21.3196	9299.6	7398.5	88.94	295	15.4684	11869.0	9248.8	98.92
226	21.2155	9339.2	7428.7	89.12	296	15.4055	11902.5	9271.6	99.04
227	21.1120	9378.7	7458.8	89.29	297	15.3431	11935.9	9294.3	99.15
228	21.0089	9418.1	7488.9	89.47	298	15.2811	11969.2	9316.9	99.26
229	20.9065	9457.5	7518.8	89.64	299	15.2197	12002.5	9339.4	99.37
230	20.8045	9496.8	7548.6	89.81	300	15.1588	12035.6	9361.9	99.48

450.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 94.720	36.6332	4143.9	2899.2	53.52
95	36.6017	4155.5	2909.7	53.64
96	36.4879	4197.2	2947.5	54.08
97	36.3736	4238.9	2985.3	54.51
98	36.2596	4280.7	3023.1	54.94
99	36.1455	4322.5	3061.0	55.37
100	36.0315	4364.4	3098.9	55.79
101	35.9174	4406.2	3136.7	56.20
102	35.8033	4448.1	3174.5	56.62
103	35.6893	4489.9	3212.3	57.02
104	35.5752	4531.7	3250.0	57.43
105	35.4612	4573.5	3287.6	57.83
106	35.3473	4615.2	3325.2	58.22
107	35.2334	4656.8	3362.6	58.61
108	35.1196	4698.3	3399.9	59.00
109	35.0058	4739.7	3437.2	59.38
110	34.8921	4781.0	3474.2	59.76
111	34.7785	4822.2	3511.2	60.13
112	34.6649	4863.3	3547.9	60.50
113	34.5515	4904.3	3584.6	60.86
114	34.4381	4945.1	3621.0	61.22
115	34.3248	4985.7	3657.3	61.58
116	34.2116	5026.3	3693.4	61.93
117	34.0985	5066.6	3729.4	62.28
118	33.9855	5106.8	3765.2	62.62
119	33.8725	5146.9	3800.8	62.96
120	33.7597	5186.9	3836.2	63.29
121	33.6469	5226.6	3871.5	63.62
122	33.5342	5266.3	3906.6	63.95
123	33.4216	5305.8	3941.5	64.27
124	33.3091	5345.2	3976.3	64.59
125	33.1966	5384.5	4010.9	64.90
126	33.0843	5423.7	4045.5	65.22
127	32.9720	5462.8	4079.9	65.53
128	32.8598	5501.9	4114.2	65.83
129	32.7476	5540.9	4148.5	66.14
130	32.6355	5579.9	4182.7	66.44
131	32.5235	5618.9	4216.9	66.74
132	32.4116	5657.9	4251.1	67.03
133	32.2997	5697.0	4285.3	67.33
134	32.1879	5736.3	4319.7	67.62
135	32.0761	5775.6	4354.1	67.91
136	31.9644	5814.7	4388.2	68.20
137	31.8528	5853.6	4422.1	68.49
138	31.7412	5892.5	4456.0	68.77
139	31.6297	5931.2	4489.6	69.05
140	31.5182	5969.8	4523.1	69.33
141	31.4068	6008.1	4556.2	69.60
142	31.2954	6046.3	4589.3	69.87
143	31.1841	6084.4	4622.2	70.14
144	31.0728	6122.5	4655.1	70.41
145	30.9616	6160.6	4687.9	70.67
146	30.8504	6198.8	4720.8	70.93
147	30.7392	6237.1	4753.7	71.20
148	30.6281	6275.4	4786.6	71.46
149	30.5170	6313.6	4819.5	71.72
150	30.4060	6352.0	4852.3	71.98
151	30.2950	6390.6	4885.5	72.24
152	30.1840	6429.8	4919.1	72.50
153	30.0731	6468.9	4952.7	72.75
154	29.9622	6508.1	4986.3	73.01
155	29.8514	6547.3	5019.8	73.26
156	29.7406	6586.5	5053.3	73.51
157	29.6299	6625.7	5086.8	73.76
158	29.5191	6665.0	5120.3	74.01
159	29.4085	6704.2	5153.7	74.26
160	29.2978	6743.5	5187.1	74.51

* PHASE CHANGE

450.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	29.1873	6782.8	5220.5	74.75	231	21.7986	9519.7	7427.9	88.88
162	29.0767	6822.1	5253.9	74.99	232	21.7033	9557.7	7456.8	89.04
163	28.9662	6861.4	5287.2	75.24	233	21.6084	9595.8	7485.6	89.21
164	28.8559	6900.7	5320.5	75.48	234	21.5139	9633.8	7514.3	89.37
165	28.7454	6940.0	5353.7	75.72	235	21.4200	9671.7	7543.0	89.53
166	28.6350	6979.3	5387.0	75.95	236	21.3265	9709.6	7571.5	89.69
167	28.5248	7018.7	5420.1	76.19	237	21.2334	9747.4	7599.9	89.85
168	28.4145	7058.0	5453.3	76.43	238	21.1408	9785.1	7628.3	90.01
169	28.3043	7097.4	5486.4	76.66	239	21.0487	9822.8	7656.5	90.17
170	28.1942	7136.7	5519.5	76.89	240	20.9571	9860.4	7684.7	90.33
171	28.0842	7176.1	5552.5	77.12	241	20.8659	9898.0	7712.7	90.48
172	27.9742	7215.5	5585.5	77.35	242	20.7753	9935.5	7740.7	90.64
173	27.8643	7254.8	5618.4	77.58	243	20.6851	9972.9	7768.5	90.79
174	27.7545	7294.2	5651.3	77.81	244	20.5954	10010.3	7796.3	90.94
175	27.6447	7333.6	5684.2	78.03	245	20.5062	10047.6	7824.0	91.10
176	27.5350	7373.0	5717.0	78.26	246	20.4175	10084.8	7851.6	91.25
177	27.4254	7412.4	5749.8	78.48	247	20.3293	10122.0	7879.0	91.40
178	27.3160	7451.8	5782.5	78.70	248	20.2416	10159.1	7906.4	91.55
179	27.2066	7491.2	5815.2	78.92	249	20.1544	10196.1	7933.7	91.70
180	27.0972	7530.6	5847.9	79.14	250	20.0678	10233.0	7960.9	91.85
181	26.9880	7570.0	5880.5	79.36	251	19.9816	10269.9	7987.9	91.99
182	26.8790	7609.4	5913.0	79.58	252	19.8959	10306.7	8014.9	92.14
183	26.7700	7648.8	5945.5	79.79	253	19.8108	10343.5	8041.8	92.29
184	26.6611	7688.2	5977.9	80.01	254	19.7262	10380.1	8068.6	92.43
185	26.5524	7727.6	6010.3	80.22	255	19.6420	10416.7	8095.3	92.57
186	26.4438	7767.0	6042.7	80.43	256	19.5584	10453.2	8121.9	92.72
187	26.3353	7806.4	6075.0	80.65	257	19.4753	10489.7	8148.4	92.86
188	26.2270	7845.8	6107.2	80.86	258	19.3928	10526.0	8174.8	93.00
189	26.1188	7885.1	6139.4	81.06	259	19.3107	10562.3	8201.1	93.14
190	26.0108	7924.5	6171.5	81.27	260	19.2292	10598.5	8227.3	93.28
191	25.9029	7963.9	6203.5	81.48	261	19.1482	10634.7	8253.4	93.42
192	25.7952	8003.2	6235.5	81.68	262	19.0677	10670.7	8279.4	93.56
193	25.6877	8042.6	6267.5	81.89	263	18.9877	10706.7	8305.3	93.69
194	25.5803	8081.9	6299.4	82.09	264	18.9083	10742.6	8331.1	93.83
195	25.4731	8121.2	6331.2	82.29	265	18.8294	10778.5	8356.9	93.97
196	25.3662	8160.5	6362.9	82.49	266	18.7510	10814.2	8382.5	94.10
197	25.2594	8199.8	6394.6	82.69	267	18.6731	10849.9	8408.0	94.23
198	25.1528	8239.1	6426.3	82.89	268	18.5957	10885.5	8433.4	94.37
199	25.0464	8278.3	6457.8	83.09	269	18.5188	10921.0	8458.8	94.50
200	24.9403	8317.6	6489.3	83.29	270	18.4425	10956.4	8484.0	94.63
201	24.8344	8356.8	6520.8	83.48	271	18.3667	10991.8	8509.2	94.76
202	24.7287	8396.0	6552.1	83.68	272	18.2914	11027.1	8534.2	94.89
203	24.6233	8435.2	6583.4	83.87	273	18.2166	11062.3	8559.2	95.02
204	24.5181	8474.4	6614.6	84.06	274	18.1423	11097.4	8584.1	95.15
205	24.4131	8513.5	6645.8	84.26	275	18.0685	11132.4	8608.9	95.28
206	24.3085	8552.7	6676.9	84.45	276	17.9952	11167.4	8633.5	95.40
207	24.2041	8591.8	6707.9	84.64	277	17.9225	11202.3	8658.1	95.53
208	24.0999	8630.8	6738.8	84.82	278	17.8502	11237.1	8682.6	95.66
209	23.9961	8669.9	6769.7	85.01	279	17.7784	11271.8	8707.1	95.78
210	23.8926	8708.9	6800.5	85.20	280	17.7072	11306.5	8731.4	95.90
211	23.7893	8747.9	6831.2	85.38	281	17.6364	11341.0	8755.6	96.03
212	23.6864	8786.9	6861.8	85.57	282	17.5662	11375.5	8779.8	96.15
213	23.5838	8825.8	6892.4	85.75	283	17.4964	11409.9	8803.8	96.27
214	23.4815	8864.7	6922.9	85.93	284	17.4271	11444.3	8827.8	96.39
215	23.3795	8903.5	6953.2	86.11	285	17.3583	11478.5	8851.7	96.51
216	23.2779	8942.4	6983.5	86.29	286	17.2900	11512.7	8875.5	96.63
217	23.1766	8981.1	7013.8	86.47	287	17.2222	11546.8	8899.2	96.75
218	23.0757	9019.9	7043.9	86.65	288	17.1549	11580.8	8922.8	96.87
219	22.9751	9058.6	7074.0	86.83	289	17.0880	11614.7	8946.3	96.99
220	22.8749	9097.3	7103.9	87.00	290	17.0216	11648.6	8969.8	97.10
221	22.7750	9135.9	7133.8	87.18	291	16.9557	11682.4	8993.2	97.22
222	22.6756	9174.5	7163.6	87.35	292	16.8903	11716.1	9016.4	97.34
223	22.5765	9213.0	7193.4	87.53	293	16.8253	11749.7	9039.6	97.45
224	22.4778	9251.5	7223.0	87.70	294	16.7608	11783.2	9062.8	97.57
225	22.3796	9290.0	7252.5	87.87	295	16.6968	11816.7	9085.8	97.68
226	22.2817	9328.4	7282.0	88.04	296	16.6332	11850.1	9108.8	97.79
227	22.1842	9366.7	7311.3	88.21	297	16.5701	11883.4	9131.6	97.90
228	22.0872	9405.0	7340.6	88.38	298	16.5074	11916.7	9154.4	98.02
229	21.9905	9443.3	7369.8	88.55	299	16.4452	11949.8	9177.1	98.13
230	21.8943	9481.5	7398.9	88.71	300	16.3834	11982.9	9199.8	98.24

500.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 95.888	36.7399	4290.1	2911.1	53.61
96	36.7274	4294.8	2915.3	53.65
97	36.6164	4336.2	2952.6	54.08
98	36.5053	4377.7	2989.9	54.51
99	36.3943	4419.3	3027.2	54.93
100	36.2832	4460.9	3064.5	55.35
101	36.1722	4502.5	3101.8	55.76
102	36.0612	4544.1	3139.1	56.17
103	35.9503	4585.6	3176.4	56.58
104	35.8394	4627.2	3213.5	56.98
105	35.7287	4668.6	3250.6	57.38
106	35.6180	4710.1	3287.6	57.77
107	35.5074	4751.4	3324.5	58.16
108	35.3969	4792.7	3361.3	58.54
109	35.2865	4833.8	3398.0	58.92
110	35.1762	4874.8	3434.6	59.30
111	35.0661	4915.8	3471.0	59.67
112	34.9561	4956.6	3507.2	60.03
113	34.8461	4997.2	3543.3	60.39
114	34.7364	5037.7	3579.2	60.75
115	34.6267	5078.1	3614.9	61.10
116	34.5172	5118.3	3650.5	61.45
117	34.4078	5158.4	3685.9	61.80
118	34.2985	5198.3	3721.1	62.14
119	34.1893	5238.0	3756.2	62.47
120	34.0803	5277.6	3791.0	62.80
121	33.9714	5317.1	3825.7	63.13
122	33.8627	5356.4	3860.3	63.45
123	33.7540	5395.6	3894.6	63.77
124	33.6455	5434.6	3928.8	64.09
125	33.5371	5473.6	3962.9	64.40
126	33.4288	5512.4	3996.8	64.71
127	33.3207	5551.2	4030.7	65.02
128	33.2126	5589.8	4064.4	65.32
129	33.1047	5628.5	4098.1	65.62
130	32.9969	5667.1	4131.7	65.92
131	32.8892	5705.7	4165.2	66.22
132	32.7816	5744.3	4198.8	66.51
133	32.6742	5783.0	4232.4	66.80
134	32.5668	5821.8	4266.1	67.09
135	32.4596	5860.7	4299.9	67.38
136	32.3524	5899.4	4333.4	67.67
137	32.2454	5937.9	4366.7	67.95
138	32.1384	5976.3	4399.9	68.23
139	32.0316	6014.6	4432.9	68.50
140	31.9248	6052.6	4465.6	68.78
141	31.8182	6090.5	4498.2	69.05
142	31.7116	6128.2	4530.5	69.31
143	31.6051	6165.8	4562.8	69.58
144	31.4987	6203.4	4595.0	69.84
145	31.3925	6241.0	4627.1	70.10
146	31.2863	6278.7	4659.3	70.36
147	31.1802	6316.4	4691.5	70.62
148	31.0741	6354.1	4723.7	70.88
149	30.9682	6391.8	4755.9	71.14
150	30.8624	6429.6	4788.0	71.39
151	30.7566	6467.7	4820.4	71.65
152	30.6509	6506.2	4853.3	71.90
153	30.5453	6544.8	4886.2	72.16
154	30.4398	6583.4	4919.0	72.41
155	30.3344	6622.0	4951.8	72.66
156	30.2290	6660.6	4984.6	72.91
157	30.1238	6699.2	5017.3	73.15
158	30.0186	6737.7	5050.0	73.40
159	29.9135	6776.3	5082.7	73.64
160	29.8085	6815.0	5115.3	73.88

* PHASE CHANGE

316-977 O - 69 - 10

500.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	29.7036	6853.6	5147.9	74.12	231	22.7376	9527.5	7299.4	87.93
162	29.5988	6892.2	5180.5	74.36	232	22.6472	9564.8	7327.7	88.09
163	29.4940	6930.8	5213.0	74.60	233	22.5571	9601.9	7355.9	88.25
164	29.3894	6969.4	5245.5	74.84	234	22.4674	9639.0	7384.0	88.41
165	29.2848	7008.0	5278.0	75.07	235	22.3780	9676.1	7412.1	88.56
166	29.1803	7046.6	5310.4	75.30	236	22.2890	9713.1	7440.1	88.72
167	29.0759	7085.2	5342.7	75.54	237	22.2005	9750.1	7468.0	88.88
168	28.9717	7123.8	5375.1	75.77	238	22.1123	9787.0	7495.8	89.03
169	28.8675	7162.4	5407.4	75.99	239	22.0244	9823.8	7523.5	89.19
170	28.7634	7201.0	5439.6	76.22	240	21.9370	9860.6	7551.1	89.34
171	28.6594	7239.6	5471.8	76.45	241	21.8500	9897.4	7578.7	89.49
172	28.5555	7278.2	5504.0	76.67	242	21.7634	9934.1	7606.2	89.65
173	28.4517	7316.8	5536.1	76.90	243	21.6772	9970.7	7633.5	89.80
174	28.3480	7355.4	5568.2	77.12	244	21.5914	10007.3	7660.9	89.95
175	28.2444	7394.0	5600.2	77.34	245	21.5060	10043.9	7688.1	90.10
176	28.1409	7432.5	5632.2	77.56	246	21.4210	10080.3	7715.2	90.25
177	28.0376	7471.1	5664.1	77.78	247	21.3365	10116.8	7742.3	90.39
178	27.9343	7509.7	5696.0	78.00	248	21.2523	10153.1	7769.2	90.54
179	27.8312	7548.2	5727.8	78.21	249	21.1686	10189.4	7796.1	90.69
180	27.7282	7586.8	5759.6	78.43	250	21.0853	10225.7	7822.9	90.83
181	27.6253	7625.3	5791.4	78.64	251	21.0024	10261.9	7849.6	90.98
182	27.5226	7663.9	5823.1	78.85	252	20.9200	10298.0	7876.2	91.12
183	27.4200	7702.4	5854.7	79.06	253	20.8379	10334.1	7902.7	91.26
184	27.3175	7740.9	5886.3	79.27	254	20.7563	10370.1	7929.2	91.41
185	27.2152	7779.4	5917.8	79.48	255	20.6752	10406.0	7955.5	91.55
186	27.1130	7817.9	5949.3	79.69	256	20.5944	10441.9	7981.8	91.69
187	27.0109	7856.4	5980.7	79.90	257	20.5141	10477.7	8008.0	91.83
188	26.9090	7894.8	6012.1	80.10	258	20.4343	10513.5	8034.1	91.97
189	26.8073	7933.3	6043.4	80.31	259	20.3549	10549.2	8060.1	92.10
190	26.7057	7971.7	6074.6	80.51	260	20.2759	10584.8	8086.1	92.24
191	26.6043	8010.2	6105.8	80.71	261	20.1973	10620.4	8111.9	92.38
192	26.5030	8048.6	6137.0	80.91	262	20.1192	10655.9	8137.7	92.51
193	26.4020	8087.0	6168.0	81.11	263	20.0415	10691.3	8163.4	92.65
194	26.3011	8125.4	6199.1	81.31	264	19.9643	10726.7	8188.9	92.78
195	26.2003	8163.7	6230.0	81.51	265	19.8875	10762.0	8214.5	92.92
196	26.0998	8202.1	6260.9	81.70	266	19.8111	10797.2	8239.9	93.05
197	25.9995	8240.4	6291.8	81.90	267	19.7352	10832.4	8265.2	93.18
198	25.8993	8278.7	6322.6	82.09	268	19.6597	10867.5	8290.5	93.31
199	25.7994	8317.0	6353.3	82.28	269	19.5847	10902.5	8315.6	93.44
200	25.6996	8355.3	6383.9	82.48	270	19.5101	10937.5	8340.7	93.57
201	25.6001	8393.6	6414.5	82.67	271	19.4359	10972.4	8365.7	93.70
202	25.5008	8431.8	6445.0	82.86	272	19.3622	11007.3	8390.6	93.83
203	25.4017	8470.0	6475.5	83.05	273	19.2890	11042.0	8415.5	93.96
204	25.3028	8508.2	6505.9	83.23	274	19.2161	11076.7	8440.2	94.08
205	25.2042	8546.4	6536.2	83.42	275	19.1437	11111.4	8464.9	94.21
206	25.1058	8584.5	6566.5	83.61	276	19.0718	11146.0	8489.5	94.34
207	25.0076	8622.6	6596.7	83.79	277	19.0003	11180.5	8514.0	94.46
208	24.9097	8660.7	6626.8	83.97	278	18.9292	11214.9	8538.4	94.58
209	24.8120	8698.8	6656.9	84.16	279	18.8585	11249.3	8562.7	94.71
210	24.7146	8736.8	6686.8	84.34	280	18.7883	11283.6	8587.0	94.83
211	24.6175	8774.8	6716.7	84.52	281	18.7185	11317.8	8611.2	94.95
212	24.5206	8812.8	6746.6	84.70	282	18.6492	11351.9	8635.3	95.07
213	24.4240	8850.7	6776.4	84.88	283	18.5803	11386.0	8659.3	95.19
214	24.3277	8888.6	6806.1	85.05	284	18.5118	11420.1	8683.2	95.31
215	24.2316	8926.5	6835.7	85.23	285	18.4437	11454.0	8707.1	95.43
216	24.1359	8964.4	6865.2	85.41	286	18.3761	11487.9	8730.9	95.55
217	24.0404	9002.2	6894.7	85.58	287	18.3089	11521.7	8754.6	95.67
218	23.9453	9039.9	6924.1	85.75	288	18.2421	11555.5	8778.2	95.79
219	23.8504	9077.7	6953.5	85.93	289	18.1757	11589.2	8801.7	95.90
220	23.7559	9115.4	6982.7	86.10	290	18.1098	11622.8	8825.2	96.02
221	23.6616	9153.1	7011.9	86.27	291	18.0443	11656.3	8848.6	96.14
222	23.5677	9190.7	7041.0	86.44	292	17.9792	11689.8	8871.9	96.25
223	23.4741	9228.3	7070.0	86.61	293	17.9145	11723.2	8895.1	96.37
224	23.3809	9265.8	7099.0	86.78	294	17.8502	11756.6	8918.3	96.48
225	23.2880	9303.4	7127.8	86.94	295	17.7863	11789.9	8941.4	96.59
226	23.1954	9340.8	7156.6	87.11	296	17.7229	11823.1	8964.4	96.70
227	23.1031	9378.3	7185.3	87.28	297	17.6598	11856.2	8987.3	96.82
228	23.0112	9415.6	7213.9	87.44	298	17.5972	11889.3	9010.2	96.93
229	22.9197	9453.0	7242.5	87.60	299	17.5350	11922.3	9033.0	97.04
230	22.8285	9490.3	7271.0	87.77	300	17.4731	11955.2	9055.7	97.15

600.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 98.198	36.9438	4581.9	2936.3	53.78
99	36.8589	4614.9	2965.4	54.11
100	36.7531	4656.0	3001.8	54.53
101	36.6474	4697.2	3038.2	54.94
102	36.5418	4738.3	3074.6	55.34
103	36.4363	4779.5	3110.9	55.74
104	36.3310	4820.6	3147.2	56.14
105	36.2257	4861.6	3183.3	56.53
106	36.1207	4902.6	3219.4	56.92
107	36.0158	4943.5	3255.4	57.31
108	35.9110	4984.3	3291.3	57.69
109	35.8064	5025.0	3327.1	58.06
110	35.7020	5065.6	3362.7	58.43
111	35.5978	5106.1	3398.2	58.80
112	35.4937	5146.4	3433.6	59.16
113	35.3898	5186.6	3468.7	59.52
114	35.2861	5226.7	3503.7	59.87
115	35.1826	5266.6	3538.6	60.22
116	35.0793	5306.3	3573.2	60.56
117	34.9761	5345.9	3607.7	60.90
118	34.8732	5385.3	3642.0	61.24
119	34.7704	5424.6	3676.1	61.57
120	34.6678	5463.7	3710.0	61.90
121	34.5654	5502.7	3743.8	62.22
122	34.4632	5541.5	3777.4	62.54
123	34.3612	5580.1	3810.8	62.85
124	34.2594	5618.6	3844.0	63.17
125	34.1577	5657.0	3877.1	63.47
126	34.0562	5695.3	3910.1	63.78
127	33.9549	5733.5	3943.0	64.08
128	33.8538	5771.6	3975.7	64.38
129	33.7529	5809.6	4008.4	64.68
130	33.6521	5847.7	4041.0	64.97
131	33.5515	5885.7	4073.6	65.26
132	33.4511	5923.7	4106.2	65.55
133	33.3508	5961.8	4138.8	65.84
134	33.2507	5999.9	4171.5	66.12
135	33.1508	6038.2	4204.2	66.41
136	33.0511	6076.2	4236.7	66.69
137	32.9515	6114.0	4269.0	66.97
138	32.8520	6151.7	4301.1	67.24
139	32.7527	6189.3	4333.1	67.51
140	32.6536	6226.6	4364.8	67.78
141	32.5547	6263.8	4396.2	68.04
142	32.4558	6300.7	4427.5	68.31
143	32.3572	6337.6	4458.7	68.57
144	32.2587	6374.5	4489.8	68.82
145	32.1603	6411.3	4520.9	69.08
146	32.0621	6448.2	4552.0	69.33
147	31.9640	6485.1	4583.1	69.59
148	31.8661	6522.0	4614.2	69.84
149	31.7683	6558.9	4645.2	70.09
150	31.6707	6595.8	4676.2	70.34
151	31.5732	6633.1	4707.5	70.59
152	31.4759	6670.8	4739.2	70.84
153	31.3786	6708.4	4770.9	71.09
154	31.2816	6746.1	4802.6	71.33
155	31.1846	6783.8	4834.2	71.58
156	31.0878	6821.5	4865.8	71.82
157	30.9912	6859.1	4897.4	72.06
158	30.8947	6896.8	4928.9	72.30
159	30.7983	6934.4	4960.4	72.54
160	30.7020	6972.1	4991.9	72.77

* PHASE CHANGE

600.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	30.6059	7009.7	5023.3	73.01	231	24.2874	9592.1	7088.9	86.34
162	30.5099	7047.3	5054.6	73.24	232	24.2049	9627.9	7116.2	86.50
163	30.4141	7084.9	5085.9	73.47	233	24.1226	9663.7	7143.4	86.65
164	30.3184	7122.5	5117.2	73.70	234	24.0406	9699.5	7170.6	86.80
165	30.2228	7160.0	5148.4	73.93	235	23.9589	9735.2	7197.7	86.96
166	30.1274	7197.6	5179.6	74.16	236	23.8774	9770.9	7224.7	87.11
167	30.0321	7235.1	5210.7	74.38	237	23.7963	9806.6	7251.7	87.26
168	29.9370	7272.7	5241.8	74.60	238	23.7154	9842.2	7278.6	87.41
169	29.8419	7310.2	5272.9	74.83	239	23.6348	9877.8	7305.4	87.56
170	29.7471	7347.7	5303.9	75.05	240	23.5546	9913.3	7332.2	87.71
171	29.6523	7385.1	5334.8	75.27	241	23.4746	9948.8	7358.9	87.85
172	29.5577	7422.6	5365.7	75.49	242	23.3949	9984.2	7385.5	88.00
173	29.4633	7460.1	5396.6	75.70	243	23.3156	10019.6	7412.0	88.15
174	29.3689	7497.5	5427.4	75.92	244	23.2365	10055.0	7438.5	88.29
175	29.2748	7534.9	5458.1	76.13	245	23.1577	10090.3	7464.9	88.44
176	29.1807	7572.3	5488.9	76.35	246	23.0793	10125.5	7491.3	88.58
177	29.0868	7609.7	5519.5	76.56	247	23.0011	10160.8	7517.6	88.72
178	28.9931	7647.0	5550.1	76.77	248	22.9233	10195.9	7543.8	88.87
179	28.8995	7684.4	5580.7	76.98	249	22.8456	10231.1	7569.9	89.01
180	28.8060	7721.7	5611.2	77.19	250	22.7686	10266.1	7596.0	89.15
181	28.7128	7759.0	5641.6	77.39	251	22.6917	10301.2	7621.9	89.29
182	28.6196	7796.3	5672.0	77.60	252	22.6151	10336.2	7647.9	89.43
183	28.5266	7833.6	5702.3	77.80	253	22.5389	10371.1	7673.7	89.57
184	28.4338	7870.8	5732.6	78.01	254	22.4629	10406.0	7699.5	89.70
185	28.3411	7908.0	5762.8	78.21	255	22.3873	10440.9	7725.2	89.84
186	28.2486	7945.2	5793.0	78.41	256	22.3120	10475.7	7750.9	89.98
187	28.1562	7982.4	5823.1	78.61	257	22.2371	10510.4	7776.4	90.11
188	28.0640	8019.6	5853.2	78.81	258	22.1624	10545.1	7801.9	90.25
189	27.9720	8056.7	5883.2	79.00	259	22.0881	10579.8	7827.4	90.38
190	27.8801	8093.8	5913.2	79.20	260	22.0142	10614.4	7852.7	90.51
191	27.7884	8130.9	5943.1	79.39	261	21.9405	10649.0	7878.0	90.65
192	27.6969	8168.0	5972.9	79.59	262	21.8672	10683.5	7903.2	90.78
193	27.6055	8205.0	6002.7	79.78	263	21.7942	10718.0	7928.4	90.91
194	27.5143	8242.1	6032.4	79.97	264	21.7215	10752.4	7953.5	91.04
195	27.4233	8279.1	6062.1	80.16	265	21.6492	10786.7	7978.5	91.17
196	27.3325	8316.0	6091.7	80.35	266	21.5772	10821.0	8003.4	91.30
197	27.2419	8353.0	6121.3	80.54	267	21.5055	10855.3	8028.3	91.43
198	27.1514	8389.9	6150.7	80.73	268	21.4342	10889.5	8053.1	91.56
199	27.0611	8426.8	6180.2	80.91	269	21.3632	10923.7	8077.8	91.68
200	26.9711	8463.7	6209.5	81.10	270	21.2925	10957.8	8102.5	91.81
201	26.8812	8500.5	6238.9	81.28	271	21.2222	10991.8	8127.1	91.94
202	26.7915	8537.4	6268.1	81.46	272	21.1522	11025.8	8151.6	92.06
203	26.7020	8574.2	6297.3	81.64	273	21.0826	11059.8	8176.1	92.19
204	26.6127	8610.9	6326.4	81.82	274	21.0133	11093.7	8200.5	92.31
205	26.5236	8647.7	6355.5	82.00	275	20.9443	11127.5	8224.8	92.43
206	26.4347	8684.4	6384.5	82.18	276	20.8756	11161.3	8249.0	92.56
207	26.3460	8721.1	6413.5	82.36	277	20.8073	11195.1	8273.2	92.68
208	26.2576	8757.7	6442.3	82.54	278	20.7393	11228.8	8297.3	92.80
209	26.1693	8794.4	6471.2	82.71	279	20.6717	11262.4	8321.4	92.92
210	26.0813	8831.0	6499.9	82.89	280	20.6044	11296.0	8345.4	93.04
211	25.9934	8867.5	6528.6	83.06	281	20.5374	11329.5	8369.3	93.16
212	25.9058	8904.1	6557.2	83.23	282	20.4708	11363.0	8393.1	93.28
213	25.8185	8940.6	6585.8	83.41	283	20.4045	11396.5	8416.9	93.40
214	25.7313	8977.1	6614.3	83.58	284	20.3386	11429.8	8440.6	93.51
215	25.6444	9013.5	6642.8	83.75	285	20.2730	11463.2	8464.3	93.63
216	25.5577	9049.9	6671.1	83.92	286	20.2077	11496.4	8487.8	93.75
217	25.4713	9086.3	6699.4	84.08	287	20.1427	11529.6	8511.4	93.86
218	25.3851	9122.7	6727.7	84.25	288	20.0781	11562.8	8534.8	93.98
219	25.2991	9159.0	6755.9	84.42	289	20.0138	11595.9	8558.2	94.09
220	25.2134	9195.3	6784.0	84.58	290	19.9499	11629.0	8581.5	94.21
221	25.1279	9231.5	6812.0	84.75	291	19.8862	11662.0	8604.8	94.32
222	25.0427	9267.7	6840.0	84.91	292	19.8229	11694.9	8627.9	94.43
223	24.9577	9303.9	6867.9	85.07	293	19.7600	11727.8	8651.1	94.55
224	24.8730	9340.1	6895.8	85.24	294	19.6974	11760.7	8674.1	94.66
225	24.7886	9376.2	6923.6	85.40	295	19.6351	11793.4	8697.1	94.77
226	24.7044	9412.2	6951.3	85.56	296	19.5731	11826.2	8720.1	94.88
227	24.6205	9448.3	6978.9	85.72	297	19.5114	11858.9	8742.9	94.99
228	24.5368	9484.3	7006.5	85.87	298	19.4501	11891.5	8765.7	95.10
229	24.4534	9520.3	7034.0	86.03	299	19.3891	11924.1	8788.5	95.21
230	24.3703	9556.2	7061.5	86.19	300	19.3285	11956.6	8811.1	95.32

700.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 100.477	37.1372	4872.8	2962.9	53.95
101	37.0843	4894.2	2981.5	54.17
102	36.9832	4935.0	3017.1	54.57
103	36.8823	4975.8	3052.7	54.97
104	36.7815	5016.6	3088.2	55.36
105	36.6810	5057.3	3123.6	55.75
106	36.5806	5098.0	3159.0	56.14
107	36.4804	5138.5	3194.2	56.52
108	36.3804	5179.0	3229.4	56.89
109	36.2807	5219.4	3264.4	57.27
110	36.1811	5259.7	3299.3	57.63
111	36.0817	5299.8	3334.0	58.00
112	35.9826	5339.8	3368.6	58.36
113	35.8837	5379.7	3403.0	58.71
114	35.7850	5419.4	3437.3	59.06
115	35.6866	5459.0	3471.4	59.40
116	35.5883	5498.4	3505.3	59.75
117	35.4903	5537.6	3539.1	60.08
118	35.3925	5576.7	3572.6	60.42
119	35.2949	5615.6	3606.0	60.74
120	35.1976	5654.3	3639.2	61.07
121	35.1005	5692.9	3672.2	61.39
122	35.0036	5731.4	3705.0	61.70
123	34.9069	5769.6	3737.7	62.02
124	34.8105	5807.8	3770.2	62.33
125	34.7142	5845.8	3802.5	62.63
126	34.6182	5883.7	3834.8	62.93
127	34.5224	5921.4	3866.9	63.23
128	34.4268	5959.1	3898.8	63.53
129	34.3315	5996.8	3930.8	63.82
130	34.2363	6034.4	3962.6	64.11
131	34.1413	6071.9	3994.4	64.40
132	34.0466	6109.5	4026.2	64.68
133	33.9521	6147.1	4058.0	64.97
134	33.8577	6184.9	4089.9	65.25
135	33.7636	6222.7	4121.9	65.53
136	33.6696	6260.2	4153.6	65.81
137	33.5759	6297.6	4185.0	66.08
138	33.4824	6334.8	4216.4	66.35
139	33.3890	6371.9	4247.5	66.62
140	33.2959	6408.7	4278.4	66.89
141	33.2029	6445.3	4309.1	67.15
142	33.1101	6481.8	4339.6	67.41
143	33.0175	6518.2	4369.9	67.66
144	32.9251	6554.5	4400.2	67.92
145	32.8329	6590.8	4430.5	68.17
146	32.7408	6627.1	4460.7	68.42
147	32.6489	6663.4	4491.0	68.67
148	32.5572	6699.8	4521.2	68.92
149	32.4657	6736.1	4551.4	69.16
150	32.3744	6772.5	4581.6	69.41
151	32.2832	6809.1	4612.0	69.66
152	32.1922	6846.2	4642.9	69.90
153	32.1014	6883.3	4673.7	70.14
154	32.0107	6920.3	4704.5	70.39
155	31.9203	6957.4	4735.3	70.62
156	31.8299	6994.4	4766.0	70.86
157	31.7398	7031.4	4796.7	71.10
158	31.6498	7068.4	4827.4	71.33
159	31.5600	7105.4	4858.0	71.57
160	31.4703	7142.4	4888.5	71.80

* PHASE CHANGE

700.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	31.3808	7179.3	4919.0	72.03	231	25.5393	9698.7	6921.4	85.04
162	31.2915	7216.2	4949.5	72.26	232	25.4628	9733.6	6948.0	85.20
163	31.2023	7253.1	4979.9	72.49	233	25.3865	9768.4	6974.4	85.35
164	31.1133	7290.0	5010.3	72.71	234	25.3105	9803.2	7000.9	85.49
165	31.0245	7326.9	5040.6	72.93	235	25.2347	9838.0	7027.2	85.64
166	30.9358	7363.7	5070.9	73.16	236	25.1591	9872.7	7053.5	85.79
167	30.8473	7400.5	5101.1	73.38	237	25.0838	9907.4	7079.7	85.94
168	30.7589	7437.3	5131.3	73.60	238	25.0086	9942.1	7105.9	86.08
169	30.6707	7474.1	5161.4	73.82	239	24.9338	9976.7	7132.0	86.23
170	30.5826	7510.8	5191.5	74.03	240	24.8592	10011.3	7158.1	86.37
171	30.4947	7547.5	5221.6	74.25	241	24.7848	10045.9	7184.0	86.52
172	30.4070	7584.2	5251.5	74.46	242	24.7106	10080.4	7210.0	86.66
173	30.3194	7620.9	5281.5	74.67	243	24.6367	10114.8	7235.8	86.80
174	30.2320	7657.5	5311.3	74.89	244	24.5631	10149.3	7261.6	86.94
175	30.1448	7694.1	5341.2	75.10	245	24.4897	10183.7	7287.4	87.08
176	30.0577	7730.7	5370.9	75.30	246	24.4165	10218.0	7313.1	87.22
177	29.9707	7767.3	5400.7	75.51	247	24.3436	10252.4	7338.7	87.36
178	29.8840	7803.8	5430.3	75.72	248	24.2709	10286.6	7364.2	87.50
179	29.7974	7840.3	5459.9	75.92	249	24.1985	10320.9	7389.7	87.64
180	29.7109	7876.8	5489.5	76.13	250	24.1264	10355.1	7415.2	87.78
181	29.6246	7913.3	5519.0	76.33	251	24.0545	10389.2	7440.6	87.91
182	29.5385	7949.7	5548.5	76.53	252	23.9828	10423.4	7465.9	88.05
183	29.4525	7986.1	5577.9	76.73	253	23.9114	10457.5	7491.1	88.18
184	29.3667	8022.5	5607.2	76.93	254	23.8403	10491.5	7516.3	88.32
185	29.2811	8058.8	5636.5	77.12	255	23.7694	10525.5	7541.5	88.45
186	29.1956	8095.2	5665.7	77.32	256	23.6988	10559.5	7566.5	88.58
187	29.1103	8131.5	5694.9	77.51	257	23.6285	10593.4	7591.5	88.72
188	29.0252	8167.7	5724.0	77.71	258	23.5584	10627.3	7616.5	88.85
189	28.9402	8204.0	5753.1	77.90	259	23.4886	10661.1	7641.4	88.98
190	28.8554	8240.2	5782.1	78.09	260	23.4190	10694.9	7666.2	89.11
191	28.7708	8276.4	5811.1	78.28	261	23.3497	10728.7	7691.0	89.24
192	28.6863	8312.5	5839.9	78.47	262	23.2806	10762.4	7715.7	89.37
193	28.6020	8348.7	5868.8	78.66	263	23.2119	10796.1	7740.3	89.50
194	28.5179	8384.8	5897.6	78.84	264	23.1433	10829.7	7764.9	89.62
195	28.4340	8420.8	5926.3	79.03	265	23.0751	10863.3	7789.5	89.75
196	28.3502	8456.9	5955.0	79.21	266	23.0071	10896.9	7813.9	89.88
197	28.2666	8492.9	5983.6	79.40	267	22.9394	10930.4	7838.3	90.00
198	28.1832	8528.9	6012.1	79.58	268	22.8720	10963.8	7862.7	90.13
199	28.1000	8564.8	6040.6	79.76	269	22.8048	10997.3	7887.0	90.25
200	28.0169	8600.7	6069.1	79.94	270	22.7379	11030.6	7911.2	90.38
201	27.9340	8636.6	6097.5	80.12	271	22.6712	11064.0	7935.4	90.50
202	27.8513	8672.5	6125.8	80.30	272	22.6049	11097.3	7959.5	90.62
203	27.7688	8708.3	6154.0	80.47	273	22.5388	11130.5	7983.5	90.74
204	27.6865	8744.1	6182.3	80.65	274	22.4729	11163.8	8007.5	90.87
205	27.6044	8779.9	6210.4	80.82	275	22.4074	11196.9	8031.5	90.99
206	27.5224	8815.6	6238.5	81.00	276	22.3421	11230.0	8055.4	91.11
207	27.4406	8851.4	6266.5	81.17	277	22.2771	11263.1	8079.2	91.23
208	27.3591	8887.0	6294.5	81.34	278	22.2123	11296.2	8102.9	91.35
209	27.2777	8922.7	6322.4	81.51	279	22.1479	11329.2	8126.6	91.46
210	27.1965	8958.3	6350.3	81.68	280	22.0837	11362.1	8150.3	91.58
211	27.1155	8993.9	6378.1	81.85	281	22.0197	11395.0	8173.9	91.70
212	27.0347	9029.4	6405.8	82.02	282	21.9561	11427.9	8197.4	91.82
213	26.9542	9065.0	6433.5	82.19	283	21.8927	11460.7	8220.8	91.93
214	26.8738	9100.5	6461.1	82.35	284	21.8296	11493.5	8244.3	92.05
215	26.7936	9135.9	6488.7	82.52	285	21.7667	11526.2	8267.6	92.16
216	26.7136	9171.3	6516.2	82.68	286	21.7041	11558.9	8290.9	92.28
217	26.6338	9206.7	6543.6	82.85	287	21.6418	11591.6	8314.1	92.39
218	26.5542	9242.1	6571.0	83.01	288	21.5798	11624.2	8337.3	92.50
219	26.4749	9277.4	6598.3	83.17	289	21.5181	11656.7	8360.4	92.62
220	26.3957	9312.7	6625.6	83.33	290	21.4566	11689.2	8383.5	92.73
221	26.3168	9348.0	6652.8	83.49	291	21.3954	11721.7	8406.5	92.84
222	26.2380	9383.2	6679.9	83.65	292	21.3344	11754.1	8429.5	92.95
223	26.1595	9418.4	6707.0	83.81	293	21.2737	11786.5	8452.4	93.06
224	26.0812	9453.5	6734.0	83.97	294	21.2133	11818.8	8475.2	93.17
225	26.0032	9488.7	6761.0	84.12	295	21.1532	11851.1	8498.0	93.28
226	25.9253	9523.8	6787.9	84.28	296	21.0933	11883.4	8520.7	93.39
227	25.8477	9558.8	6814.7	84.43	297	21.0337	11915.6	8543.4	93.50
228	25.7702	9593.8	6841.5	84.59	298	20.9744	11947.7	8566.0	93.61
229	25.6930	9628.8	6868.2	84.74	299	20.9154	11979.9	8588.6	93.72
230	25.6161	9663.8	6894.8	84.89	300	20.8566	12011.9	8611.1	93.82

800.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 102.725	37.3220	5162.9	2990.9	54.13
103	37.2953	5174.0	3000.5	54.24
104	37.1985	5214.5	3035.4	54.63
105	37.1019	5255.0	3070.2	55.02
106	37.0056	5295.4	3104.9	55.40
107	36.9094	5335.7	3139.5	55.78
108	36.8135	5376.0	3174.0	56.15
109	36.7178	5416.1	3208.4	56.52
110	36.6224	5456.1	3242.7	56.89
111	36.5272	5496.0	3276.8	57.25
112	36.4323	5535.8	3310.8	57.61
113	36.3375	5575.4	3344.6	57.96
114	36.2431	5614.9	3378.3	58.31
115	36.1489	5654.2	3411.8	58.65
116	36.0549	5693.4	3445.1	58.99
117	35.9612	5732.3	3478.2	59.32
118	35.8677	5771.2	3511.1	59.65
119	35.7745	5809.8	3543.9	59.98
120	35.6816	5848.3	3576.5	60.30
121	35.5889	5886.6	3608.9	60.62
122	35.4964	5924.8	3641.1	60.93
123	35.4042	5962.8	3673.2	61.24
124	35.3122	6000.6	3705.0	61.55
125	35.2205	6038.4	3736.8	61.85
126	35.1290	6076.0	3768.4	62.15
127	35.0377	6113.5	3799.9	62.45
128	34.9467	6150.9	3831.3	62.74
129	34.8559	6188.2	3862.6	63.03
130	34.7654	6225.5	3893.8	63.32
131	34.6751	6262.7	3925.0	63.61
132	34.5850	6300.0	3956.2	63.89
133	34.4951	6337.3	3987.4	64.17
134	34.4055	6374.7	4018.6	64.45
135	34.3161	6412.2	4050.0	64.73
136	34.2269	6449.4	4081.0	65.01
137	34.1379	6486.4	4111.8	65.28
138	34.0492	6523.3	4142.6	65.54
139	33.9606	6560.0	4173.1	65.81
140	33.8723	6596.5	4203.3	66.07
141	33.7842	6632.8	4233.3	66.33
142	33.6963	6668.8	4263.2	66.59
143	33.6086	6704.8	4292.9	66.84
144	33.5211	6740.8	4322.5	67.09
145	33.4338	6776.7	4352.1	67.34
146	33.3467	6812.6	4381.7	67.59
147	33.2598	6848.5	4411.3	67.84
148	33.1731	6884.5	4440.9	68.08
149	33.0866	6920.4	4470.4	68.33
150	33.0003	6956.3	4499.9	68.57
151	32.9142	6992.5	4529.7	68.81
152	32.8283	7029.2	4559.9	69.05
153	32.7425	7065.8	4590.1	69.29
154	32.6570	7102.5	4620.2	69.53
155	32.5716	7139.1	4650.3	69.77
156	32.4864	7175.6	4680.4	70.01
157	32.4014	7212.2	4710.4	70.24
158	32.3166	7248.7	4740.3	70.47
159	32.2320	7285.2	4770.3	70.70
160	32.1475	7321.7	4800.1	70.93

* PHASE CHANGE

800.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	32.0633	7358.1	4829.9	71.16	231	26.5914	9831.9	6783.5	83.94
162	31.9792	7394.6	4859.7	71.38	232	26.5197	9866.1	6809.4	84.09
163	31.8952	7431.0	4889.4	71.61	233	26.4481	9900.2	6835.3	84.23
164	31.8115	7467.3	4919.1	71.83	234	26.3768	9934.3	6861.1	84.38
165	31.7279	7503.7	4948.7	72.05	235	26.3057	9968.3	6886.8	84.52
166	31.6445	7540.0	4978.3	72.27	236	26.2348	10002.4	6912.5	84.67
167	31.5613	7576.3	5007.8	72.49	237	26.1640	10036.4	6938.1	84.81
168	31.4782	7612.5	5037.3	72.70	238	26.0935	10070.3	6963.7	84.96
169	31.3953	7648.7	5066.8	72.92	239	26.0232	10104.2	6989.2	85.10
170	31.3126	7684.9	5096.1	73.13	240	25.9531	10138.1	7014.7	85.24
171	31.2301	7721.1	5125.4	73.34	241	25.8832	10171.9	7040.1	85.38
172	31.1477	7757.2	5154.7	73.55	242	25.8135	10205.8	7065.5	85.52
173	31.0655	7793.3	5183.9	73.76	243	25.7440	10239.5	7090.8	85.66
174	30.9834	7829.4	5213.1	73.97	244	25.6748	10273.3	7116.0	85.80
175	30.9016	7865.4	5242.2	74.18	245	25.6057	10307.0	7141.2	85.94
176	30.8199	7901.5	5271.3	74.38	246	25.5368	10340.6	7166.3	86.07
177	30.7383	7937.4	5300.3	74.59	247	25.4682	10374.3	7191.4	86.21
178	30.6570	7973.4	5329.2	74.79	248	25.3998	10407.9	7216.4	86.35
179	30.5758	8009.3	5358.1	74.99	249	25.3316	10441.4	7241.4	86.48
180	30.4947	8045.2	5387.0	75.19	250	25.2636	10475.0	7266.3	86.61
181	30.4139	8081.0	5415.7	75.39	251	25.1958	10508.5	7291.2	86.75
182	30.3332	8116.9	5444.5	75.59	252	25.1282	10541.9	7316.0	86.88
183	30.2526	8152.7	5473.2	75.78	253	25.0609	10575.3	7340.7	87.01
184	30.1723	8188.4	5501.8	75.98	254	24.9937	10608.7	7365.4	87.15
185	30.0921	8224.1	5530.3	76.17	255	24.9268	10642.1	7390.0	87.28
186	30.0120	8259.8	5558.9	76.36	256	24.8601	10675.4	7414.6	87.41
187	29.9322	8295.5	5587.3	76.56	257	24.7936	10708.6	7439.2	87.54
188	29.8525	8331.1	5615.7	76.75	258	24.7274	10741.9	7463.6	87.67
189	29.7729	8366.7	5644.0	76.93	259	24.6613	10775.1	7488.1	87.79
190	29.6936	8402.3	5672.3	77.12	260	24.5955	10808.2	7512.4	87.92
191	29.6144	8437.8	5700.6	77.31	261	24.5299	10841.4	7536.7	88.05
192	29.5353	8473.3	5728.7	77.49	262	24.4645	10874.4	7561.0	88.18
193	29.4565	8508.8	5756.9	77.68	263	24.3993	10907.5	7585.2	88.30
194	29.3778	8544.2	5784.9	77.86	264	24.3344	10940.5	7609.3	88.43
195	29.2993	8579.6	5812.9	78.04	265	24.2697	10973.5	7633.4	88.55
196	29.2209	8615.0	5840.9	78.22	266	24.2052	11006.4	7657.5	88.68
197	29.1428	8650.3	5868.8	78.40	267	24.1409	11039.3	7681.5	88.80
198	29.0648	8685.6	5896.6	78.58	268	24.0769	11072.2	7705.4	88.92
199	28.9869	8720.9	5924.4	78.76	269	24.0131	11105.0	7729.3	89.04
200	28.9093	8756.1	5952.1	78.94	270	23.9495	11137.8	7753.1	89.17
201	28.8318	8791.3	5979.8	79.11	271	23.8861	11170.6	7776.9	89.29
202	28.7545	8826.5	6007.4	79.29	272	23.8230	11203.3	7800.6	89.41
203	28.6773	8861.7	6035.0	79.46	273	23.7601	11236.0	7824.3	89.53
204	28.6004	8896.8	6062.5	79.63	274	23.6974	11268.6	7847.9	89.65
205	28.5236	8931.8	6089.9	79.80	275	23.6349	11301.2	7871.5	89.77
206	28.4470	8966.9	6117.3	79.98	276	23.5727	11333.8	7895.0	89.88
207	28.3705	9001.9	6144.6	80.14	277	23.5107	11366.3	7918.4	90.00
208	28.2943	9036.8	6171.9	80.31	278	23.4489	11398.8	7941.8	90.12
209	28.2182	9071.8	6199.1	80.48	279	23.3874	11431.3	7965.2	90.24
210	28.1423	9106.7	6226.3	80.65	280	23.3260	11463.7	7988.5	90.35
211	28.0666	9141.6	6253.4	80.81	281	23.2649	11496.1	8011.8	90.47
212	27.9910	9176.4	6280.4	80.98	282	23.2041	11528.4	8035.0	90.58
213	27.9157	9211.2	6307.4	81.14	283	23.1434	11560.7	8058.1	90.70
214	27.8405	9246.0	6334.3	81.30	284	23.0830	11593.0	8081.2	90.81
215	27.7655	9280.7	6361.2	81.47	285	23.0228	11625.2	8104.2	90.92
216	27.6907	9315.4	6388.0	81.63	286	22.9629	11657.4	8127.2	91.04
217	27.6161	9350.1	6414.8	81.79	287	22.9032	11689.5	8150.2	91.15
218	27.5417	9384.7	6441.5	81.95	288	22.8437	11721.6	8173.1	91.26
219	27.4674	9419.3	6468.1	82.11	289	22.7844	11753.7	8195.9	91.37
220	27.3934	9453.9	6494.7	82.26	290	22.7254	11785.7	8218.7	91.48
221	27.3195	9488.4	6521.2	82.42	291	22.6666	11817.7	8241.5	91.59
222	27.2458	9522.9	6547.7	82.57	292	22.6080	11849.7	8264.2	91.70
223	27.1723	9557.4	6574.1	82.73	293	22.5496	11881.6	8286.8	91.81
224	27.0990	9591.8	6600.5	82.88	294	22.4915	11913.5	8309.4	91.92
225	27.0259	9626.2	6626.8	83.04	295	22.4336	11945.4	8331.9	92.03
226	26.9530	9660.6	6653.1	83.19	296	22.3759	11977.2	8354.4	92.13
227	26.8803	9694.9	6679.3	83.34	297	22.3185	12008.9	8376.9	92.24
228	26.8078	9729.2	6705.4	83.49	298	22.2613	12040.7	8399.3	92.35
229	26.7355	9763.5	6731.5	83.64	299	22.2043	12072.3	8421.6	92.45
230	26.6633	9797.7	6757.5	83.79	300	22.1475	12104.0	8443.9	92.56

900.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 104.944	37.4995	5452.0	3020.1	54.31
105	37.4943	5454.2	3022.0	54.33
106	37.4014	5494.5	3056.2	54.71
107	37.3088	5534.8	3090.3	55.09
108	37.2164	5574.6	3124.3	55.46
109	37.1243	5614.6	3158.1	55.83
110	37.0324	5654.4	3191.9	56.19
111	36.9408	5694.2	3225.5	56.55
112	36.8494	5733.7	3258.9	56.90
113	36.7583	5773.2	3292.2	57.26
114	36.6675	5812.5	3325.4	57.60
115	36.5769	5851.6	3358.4	57.94
116	36.4866	5890.6	3391.1	58.28
117	36.3966	5929.4	3423.8	58.61
118	36.3069	5968.0	3456.2	58.94
119	36.2174	6006.4	3488.5	59.27
120	36.1282	6044.7	3520.5	59.59
121	36.0392	6082.9	3552.4	59.90
122	35.9505	6120.8	3584.1	60.22
123	35.8621	6158.6	3615.7	60.52
124	35.7739	6196.3	3647.1	60.83
125	35.6860	6233.8	3678.3	61.13
126	35.5983	6271.2	3709.4	61.43
127	35.5109	6308.5	3740.4	61.72
128	35.4238	6345.7	3771.3	62.02
129	35.3369	6382.8	3802.1	62.30
130	35.2502	6419.9	3832.8	62.59
131	35.1638	6456.9	3863.5	62.87
132	35.0776	6493.9	3894.1	63.16
133	34.9917	6531.0	3924.8	63.44
134	34.9060	6568.2	3955.6	63.71
135	34.8206	6605.4	3986.4	63.99
136	34.7354	6642.3	4016.9	64.26
137	34.6504	6679.1	4047.3	64.53
138	34.5657	6715.8	4077.4	64.80
139	34.4811	6752.2	4107.4	65.06
140	34.3969	6788.4	4137.2	65.32
141	34.3128	6824.4	4166.7	65.59
142	34.2289	6860.2	4196.0	65.83
143	34.1453	6896.0	4225.2	66.08
144	34.0619	6931.6	4254.3	66.33
145	33.9787	6967.2	4283.3	66.58
146	33.8957	7002.9	4312.4	66.83
147	33.8129	7038.5	4341.5	67.07
148	33.7304	7074.2	4370.6	67.32
149	33.6480	7109.8	4399.5	67.56
150	33.5658	7145.4	4428.5	67.80
151	33.4839	7181.3	4457.7	68.04
152	33.4021	7217.6	4487.4	68.28
153	33.3206	7253.9	4517.0	68.52
154	33.2392	7290.2	4546.6	68.76
155	33.1581	7326.5	4576.2	68.99
156	33.0771	7362.7	4605.7	69.22
157	32.9963	7398.9	4635.2	69.45
158	32.9157	7435.1	4664.6	69.68
159	32.8353	7471.3	4693.9	69.91
160	32.7551	7507.4	4723.3	70.14

* PHASE CHANGE

900.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	32.6751	7543.5	4752.5	70.36	231	27.5006	9983.1	6667.0	82.97
162	32.5953	7579.5	4781.7	70.59	232	27.4327	10016.7	6692.4	83.12
163	32.5156	7615.6	4810.9	70.81	233	27.3650	10050.3	6717.7	83.26
164	32.4362	7651.5	4840.0	71.03	234	27.2975	10083.8	6743.0	83.41
165	32.3569	7687.5	4869.1	71.25	235	27.2302	10117.3	6768.3	83.55
166	32.2778	7723.4	4898.1	71.46	236	27.1631	10150.8	6793.5	83.69
167	32.1988	7759.3	4927.1	71.68	237	27.0962	10184.2	6818.6	83.83
168	32.1201	7795.2	4956.0	71.89	238	27.0294	10217.6	6843.7	83.97
169	32.0415	7831.0	4984.9	72.11	239	26.9628	10251.0	6868.7	84.11
170	31.9631	7866.8	5013.7	72.32	240	26.8964	10284.3	6893.7	84.25
171	31.8849	7902.6	5042.4	72.53	241	26.8302	10317.6	6918.7	84.39
172	31.8069	7938.3	5071.1	72.74	242	26.7641	10350.9	6943.5	84.53
173	31.7290	7974.0	5099.8	72.94	243	26.6983	10384.1	6968.4	84.66
174	31.6513	8009.6	5128.4	73.15	244	26.6326	10417.3	6993.1	84.80
175	31.5738	8045.2	5156.9	73.35	245	26.5671	10450.5	7017.9	84.94
176	31.4964	8080.8	5185.4	73.56	246	26.5018	10483.6	7042.5	85.07
177	31.4192	8116.4	5213.8	73.76	247	26.4367	10516.7	7067.2	85.21
178	31.3422	8151.9	5242.2	73.96	248	26.3718	10549.8	7091.7	85.34
179	31.2654	8187.4	5270.5	74.16	249	26.3071	10582.8	7116.2	85.47
180	31.1887	8222.8	5298.8	74.35	250	26.2425	10615.8	7140.7	85.60
181	31.1122	8258.2	5327.0	74.55	251	26.1782	10648.7	7165.1	85.74
182	31.0358	8293.6	5355.2	74.74	252	26.1140	10681.7	7189.5	85.87
183	30.9597	8328.9	5383.3	74.94	253	26.0500	10714.6	7213.8	86.00
184	30.8837	8364.2	5411.3	75.13	254	25.9862	10747.4	7238.1	86.13
185	30.8078	8399.5	5439.3	75.32	255	25.9226	10780.2	7262.3	86.26
186	30.7321	8434.7	5467.3	75.51	256	25.8592	10813.0	7286.4	86.38
187	30.6566	8469.9	5495.1	75.70	257	25.7960	10845.8	7310.6	86.51
188	30.5813	8505.0	5523.0	75.89	258	25.7330	10878.5	7334.6	86.64
189	30.5061	8540.1	5550.7	76.07	259	25.6701	10911.2	7358.6	86.77
190	30.4311	8575.2	5578.5	76.26	260	25.6075	10943.9	7382.6	86.89
191	30.3563	8610.3	5606.1	76.44	261	25.5450	10976.5	7406.5	87.02
192	30.2816	8645.3	5633.7	76.63	262	25.4828	11009.1	7430.4	87.14
193	30.2071	8680.2	5661.3	76.81	263	25.4207	11041.6	7454.2	87.27
194	30.1328	8715.2	5688.8	76.99	264	25.3588	11074.1	7477.9	87.39
195	30.0586	8750.1	5716.2	77.17	265	25.2971	11106.6	7501.7	87.51
196	29.9846	8785.0	5743.6	77.35	266	25.2356	11139.1	7525.3	87.63
197	29.9107	8819.8	5770.9	77.53	267	25.1743	11171.5	7548.9	87.76
198	29.8371	8854.6	5798.1	77.70	268	25.1132	11203.8	7572.5	87.88
199	29.7636	8889.3	5825.4	77.87	269	25.0523	11236.2	7596.0	88.00
200	29.6902	8924.1	5852.5	78.05	270	24.9916	11268.5	7619.5	88.12
201	29.6170	8958.7	5879.6	78.22	271	24.9311	11300.8	7642.9	88.24
202	29.5440	8993.4	5906.7	78.39	272	24.8708	11333.0	7666.3	88.35
203	29.4712	9028.0	5933.6	78.56	273	24.8107	11365.2	7689.6	88.47
204	29.3985	9062.6	5960.6	78.73	274	24.7507	11397.4	7712.9	88.59
205	29.3260	9097.1	5987.4	78.90	275	24.6910	11429.5	7736.1	88.71
206	29.2536	9131.7	6014.3	79.07	276	24.6315	11461.7	7759.3	88.82
207	29.1815	9166.1	6041.0	79.24	277	24.5721	11493.7	7782.4	88.94
208	29.1095	9200.6	6067.7	79.40	278	24.5130	11525.8	7805.5	89.06
209	29.0376	9235.0	6094.4	79.57	279	24.4540	11557.8	7828.5	89.17
210	28.9660	9269.3	6121.0	79.73	280	24.3953	11589.7	7851.5	89.29
211	28.8945	9303.7	6147.5	79.90	281	24.3367	11621.7	7874.5	89.40
212	28.8231	9338.0	6174.0	80.06	282	24.2784	11653.6	7897.4	89.51
213	28.7520	9372.2	6200.5	80.22	283	24.2202	11685.4	7920.2	89.63
214	28.6810	9406.5	6226.8	80.38	284	24.1622	11717.3	7943.0	89.74
215	28.6101	9440.7	6253.2	80.54	285	24.1045	11749.1	7965.8	89.85
216	28.5395	9474.8	6279.4	80.70	286	24.0469	11780.8	7988.5	89.96
217	28.4690	9509.0	6305.7	80.85	287	23.9895	11812.6	8011.1	90.07
218	28.3987	9543.0	6331.8	81.01	288	23.9324	11844.3	8033.7	90.18
219	28.3286	9577.1	6357.9	81.17	289	23.8754	11875.9	8056.3	90.29
220	28.2586	9611.1	6384.0	81.32	290	23.8186	11907.5	8078.8	90.40
221	28.1888	9645.1	6410.0	81.48	291	23.7620	11939.1	8101.3	90.51
222	28.1192	9679.1	6435.9	81.63	292	23.7057	11970.7	8123.7	90.62
223	28.0498	9713.0	6461.8	81.78	293	23.6495	12002.2	8146.1	90.73
224	27.9805	9746.9	6487.6	81.93	294	23.5935	12033.7	8168.5	90.83
225	27.9114	9780.7	6513.4	82.08	295	23.5377	12065.2	8190.8	90.94
226	27.8425	9814.5	6539.1	82.23	296	23.4821	12096.6	8213.0	91.05
227	27.7737	9848.3	6564.8	82.38	297	23.4267	12128.0	8235.2	91.15
228	27.7052	9882.0	6590.4	82.53	298	23.3715	12159.3	8257.4	91.26
229	27.6368	9915.8	6616.0	82.68	299	23.3165	12190.7	8279.5	91.36
230	27.5686	9949.4	6641.5	82.83	300	23.2617	12221.9	8301.6	91.47

1000.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
* 107.135	37.6708	5740.1	3050.3	54.48
108	37.5936	5774.6	3079.3	54.80
109	37.5046	5814.4	3112.7	55.17
110	37.4158	5854.1	3146.0	55.53
111	37.3274	5893.7	3179.1	55.89
112	37.2392	5933.1	3212.2	56.24
113	37.1512	5972.5	3245.0	56.59
114	37.0636	6011.6	3277.7	56.94
115	36.9762	6050.6	3310.3	57.28
116	36.8891	6089.4	3342.6	57.61
117	36.8023	6128.1	3374.8	57.95
118	36.7158	6166.6	3406.8	58.27
119	36.6295	6204.9	3438.6	58.60
120	36.5435	6243.1	3470.3	58.92
121	36.4578	6281.1	3501.7	59.23
122	36.3724	6318.9	3533.0	59.54
123	36.2873	6356.5	3564.2	59.85
124	36.2024	6394.1	3595.1	60.15
125	36.1178	6431.4	3625.9	60.45
126	36.0334	6468.7	3656.6	60.75
127	35.9493	6505.8	3687.2	61.04
128	35.8655	6542.8	3717.6	61.34
129	35.7819	6579.8	3748.0	61.62
130	35.6986	6616.7	3778.3	61.91
131	35.6156	6653.6	3808.5	62.19
132	35.5328	6690.4	3838.8	62.47
133	35.4502	6727.4	3869.1	62.75
134	35.3679	6764.3	3899.4	63.03
135	35.2859	6801.4	3929.8	63.30
136	35.2041	6838.2	3959.9	63.57
137	35.1225	6874.7	3989.8	63.84
138	35.0412	6911.2	4019.5	64.11
139	34.9601	6947.5	4049.1	64.37
140	34.8792	6983.5	4078.4	64.63
141	34.7986	7019.3	4107.5	64.88
142	34.7182	7054.9	4136.3	65.13
143	34.6380	7090.4	4165.1	65.38
144	34.5581	7125.9	4193.8	65.63
145	34.4783	7161.3	4222.4	65.88
146	34.3988	7196.7	4251.0	66.12
147	34.3195	7232.1	4279.7	66.37
148	34.2405	7267.6	4308.3	66.61
149	34.1616	7302.9	4336.8	66.85
150	34.0830	7338.3	4365.3	67.09
151	34.0045	7374.0	4394.1	67.33
152	33.9263	7410.1	4423.4	67.57
153	33.8482	7446.2	4452.6	67.80
154	33.7704	7482.2	4481.7	68.04
155	33.6928	7518.2	4510.8	68.27
156	33.6154	7554.2	4539.9	68.50
157	33.5381	7590.2	4568.9	68.73
158	33.4611	7626.1	4597.9	68.96
159	33.3843	7662.0	4626.8	69.19
160	33.3076	7697.8	4655.6	69.41

* PHASE CHANGE

1000.00 ATMOSPHERE ISOBAR

TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K	TEMP. K	DENSITY MOL/LITER	ENTHALPY J/MOL	INTERNAL ENERGY J/MOL	ENTROPY J/MOL-K
161	33.2312	7733.6	4684.4	69.64	231	28.3025	10146.9	6566.7	82.11
162	33.1549	7769.4	4713.2	69.86	232	28.2379	10180.1	6591.7	82.25
163	33.0788	7805.1	4741.9	70.08	233	28.1734	10213.2	6616.7	82.40
164	33.0029	7840.9	4770.6	70.29	234	28.1091	10246.3	6641.5	82.54
165	32.9272	7876.5	4799.2	70.51	235	28.0450	10279.4	6666.4	82.68
166	32.8517	7912.2	4827.8	70.73	236	27.9810	10312.4	6691.1	82.82
167	32.7764	7947.8	4856.3	70.94	237	27.9172	10345.4	6715.9	82.96
168	32.7012	7983.3	4884.7	71.15	238	27.8536	10378.4	6740.5	83.10
169	32.6262	8018.8	4913.1	71.36	239	27.7901	10411.3	6765.2	83.24
170	32.5514	8054.3	4941.5	71.57	240	27.7268	10444.3	6789.7	83.37
171	32.4768	8089.8	4969.8	71.78	241	27.6637	10477.1	6814.3	83.51
172	32.4024	8125.2	4998.0	71.99	242	27.6007	10510.0	6838.8	83.65
173	32.3281	8160.6	5026.2	72.19	243	27.5379	10542.8	6863.2	83.78
174	32.2540	8195.9	5054.3	72.40	244	27.4752	10575.5	6887.6	83.91
175	32.1801	8231.2	5082.4	72.60	245	27.4127	10608.3	6911.9	84.05
176	32.1063	8266.4	5110.4	72.80	246	27.3504	10641.0	6936.2	84.18
177	32.0327	8301.6	5138.4	73.00	247	27.2883	10673.6	6960.4	84.31
178	31.9593	8336.8	5166.3	73.20	248	27.2263	10706.3	6984.6	84.45
179	31.8861	8372.0	5194.2	73.39	249	27.1645	10738.9	7008.7	84.58
180	31.8130	8407.1	5222.0	73.59	250	27.1029	10771.4	7032.8	84.71
181	31.7401	8442.1	5249.7	73.78	251	27.0414	10804.0	7056.8	84.84
182	31.6674	8477.1	5277.4	73.98	252	26.9801	10836.5	7080.8	84.97
183	31.5948	8512.1	5305.0	74.17	253	26.9190	10868.9	7104.8	85.10
184	31.5224	8547.1	5332.6	74.36	254	26.8580	10901.4	7128.7	85.22
185	31.4502	8582.0	5360.1	74.55	255	26.7972	10933.8	7152.5	85.35
186	31.3782	8616.8	5387.6	74.74	256	26.7366	10966.1	7176.3	85.48
187	31.3063	8651.7	5415.0	74.92	257	26.6762	10998.5	7200.1	85.60
188	31.2345	8686.5	5442.4	75.11	258	26.6159	11030.8	7223.8	85.73
189	31.1629	8721.2	5469.7	75.29	259	26.5558	11063.1	7247.4	85.85
190	31.0915	8755.9	5496.9	75.48	260	26.4959	11095.3	7271.0	85.98
191	31.0203	8790.6	5524.1	75.66	261	26.4361	11127.5	7294.6	86.10
192	30.9492	8825.2	5551.2	75.84	262	26.3765	11159.7	7318.1	86.23
193	30.8783	8859.8	5578.3	76.02	263	26.3171	11191.8	7341.6	86.35
194	30.8075	8894.4	5605.3	76.20	264	26.2578	11223.9	7365.0	86.47
195	30.7369	8928.9	5632.3	76.37	265	26.1988	11256.0	7388.4	86.59
196	30.6665	8963.4	5659.2	76.55	266	26.1399	11288.1	7411.7	86.71
197	30.5962	8997.8	5686.0	76.73	267	26.0811	11320.1	7435.0	86.83
198	30.5261	9032.2	5712.8	76.90	268	26.0226	11352.1	7458.2	86.95
199	30.4562	9066.6	5739.6	77.07	269	25.9642	11384.0	7481.4	87.07
200	30.3864	9100.9	5766.3	77.25	270	25.9060	11415.9	7504.6	87.19
201	30.3167	9135.2	5792.9	77.42	271	25.8479	11447.8	7527.7	87.31
202	30.2473	9169.5	5819.5	77.59	272	25.7901	11479.7	7550.7	87.42
203	30.1780	9203.7	5846.0	77.76	273	25.7324	11511.5	7573.7	87.54
204	30.1088	9237.8	5872.5	77.92	274	25.6748	11543.3	7596.7	87.66
205	30.0398	9272.0	5898.9	78.09	275	25.6175	11575.0	7619.6	87.77
206	29.9710	9306.1	5925.2	78.26	276	25.5603	11606.7	7642.5	87.89
207	29.9023	9340.2	5951.5	78.42	277	25.5033	11638.4	7665.3	88.00
208	29.8338	9374.2	5977.8	78.59	278	25.4465	11670.1	7688.1	88.12
209	29.7655	9408.2	6004.0	78.75	279	25.3899	11701.7	7710.9	88.23
210	29.6973	9442.1	6030.1	78.91	280	25.3334	11733.3	7733.6	88.34
211	29.6293	9476.1	6056.2	79.07	281	25.2771	11764.9	7756.2	88.46
212	29.5614	9509.9	6082.2	79.23	282	25.2210	11796.4	7778.8	88.57
213	29.4937	9543.8	6108.2	79.39	283	25.1650	11827.9	7801.4	88.68
214	29.4261	9577.6	6134.1	79.55	284	25.1092	11859.4	7823.9	88.79
215	29.3587	9611.4	6160.0	79.71	285	25.0536	11890.8	7846.4	88.90
216	29.2915	9645.1	6185.8	79.86	286	24.9982	11922.2	7868.8	89.01
217	29.2245	9678.8	6211.6	80.02	287	24.9429	11953.6	7891.2	89.12
218	29.1576	9712.5	6237.3	80.17	288	24.8878	11985.0	7913.6	89.23
219	29.0908	9746.1	6262.9	80.33	289	24.8329	12016.3	7935.9	89.34
220	29.0242	9779.7	6288.6	80.48	290	24.7782	12047.6	7958.2	89.45
221	28.9578	9813.3	6314.1	80.63	291	24.7237	12078.8	7980.4	89.55
222	28.8916	9846.8	6339.6	80.78	292	24.6693	12110.0	8002.6	89.66
223	28.8255	9880.3	6365.0	80.93	293	24.6151	12141.2	8024.7	89.77
224	28.7595	9913.7	6390.4	81.08	294	24.5610	12172.4	8046.8	89.87
225	28.6938	9947.1	6415.8	81.23	295	24.5072	12203.5	8068.9	89.98
226	28.6281	9980.5	6441.1	81.38	296	24.4535	12234.6	8090.9	90.08
227	28.5627	10013.9	6466.3	81.53	297	24.4000	12265.6	8112.9	90.19
228	28.4974	10047.2	6491.5	81.68	298	24.3466	12296.7	8134.8	90.29
229	28.4323	10080.5	6516.6	81.82	299	24.2935	12327.7	8156.7	90.40
230	28.3673	10113.7	6541.7	81.97	300	24.2405	12358.6	8178.5	90.50