LA-4003

LOS ALAMOS SCIENTIFIC LABORATORY
of the
University of California
LOS ALAMOS • NEW MEXICO

Compilation of Calculated Data Useful in Predicting Metallurgical Behavior of the Elements in Binary Alloy Systems

UNITED STATES
ATOMIC ENERGY COMMISSION
CONTRACT W-7405-ENG. 36

DISCLAIMER

LEGAL NOTICE

This report expresses the opinions of the author or authors and does not necessarily reflect the opinions or views of the Los Alamos Scientific Laboratory.

Printed in the United States of America. Available from Clearinghouse for Federal Scientific and Technical Information National Bureau of Standards, U. S. Department of Commerce Springfield, Virginia 22151

Price: Printed Copy $3.00; Microfiche $0.65

LA-4003*
UC-25, METALS, CERAMICS, AND MATERIALS
TID-4500

LOS ALAMOS SCIENTIFIC LABORATORY
of the
University of California
LOS ALAMOS • NEW MEXICO

Report written: August 29, 1968

Report distributed: December 24, 1968

Compilation of Calculated Data Useful in Predicting Metallurgical Behavior of the Elements in Binary Alloy Systems

by

E. T. Teatum
K. A. Gschneidner, Jr.**
J. T. Waber***

*This report supersedes LA-2345.

**Present address: Department of Metallurgy, Iowa State University.

***Present address: Department of Materials Science, Northwestern University.

THIS PAGE

WAS INTENTIONALLY

LEFT BLANK

COMPILATION OF CALCULATED DATA USEFUL IN PREDICTING METALLURGICAL BEHAVIOR OF THE ELEMENTS IN BINARY ALLOY SYSTEMS

by

E. T. Teatum, K. A. Gschneidner, Jr.,
and J. T. Waber

ABSTRACT

Physicometallurgical data have been computed for all the binary combinations of elements in the periodic table with the exception of the halogens, rare gases, and those elements having atomic numbers higher than that of americium. Brief descriptions are given of the formulae for the following quantities: the radius ratio, the sublimation energy ratio, the Mott bonding number, the Hildebrand or heat of mixing factor, and the electronegativity difference. Some possible uses of these quantities are also described. The sources of data selected for the calculations and the arrangement of the tables are discussed.

INTRODUCTION

The physicometallurgical data presented in this report relate to the possible binary alloy systems of the elements considered and have been compiled in order to form a convenient source of information that should be helpful in predicting whether or not solid solubility, liquid miscibility, or compound formation will occur for a given pair of elements. At the time the first edition of this compilation was written (August, 1959), it was expected that it would be useful in saving research time and that it might also aid others in advancing new methods or theories for studying the alloying behavior of the elements. The present revision was undertaken because some of the physical properties of the pure metals have been redetermined and are considered to be more accurate than those used in the first edition. Some of the values, especially the electronegativities, have changed significantly from those used in the first compilation. Also, in this revised report the Mott numbers were evaluated at the melting points of the solvents instead of at 25°C as was done in the original version. Data are included for all the binary combinations of elements in the periodic table with the exception of the halogens, rare gases, and those elements having atomic numbers higher than that of americium.

EXPLANATION OF THE DATA IN TABLE I

The numerical values of the physical properties of the elements as given in Table I were used in calculating the physicometallurgical data for the possible binary alloy combinations.

Valence. The valences for the metals were assumed to be equal to the number of electrons outside the filled inner electron levels, except for the inner transition metals having unpaired f electrons. A valence of 3 was assigned to the lanthanide elements because of their similarity to the Group III elements Sc, Y, and La. The valences for Th, Pa, U, Np, Pu, and Am are based on the values given by Zachariasen.[1]

For several metals a second valence has also been included. The elements which have been assigned dual valences are: Mn, 5 and 7; Sn, 2 and 4; Ce, 3 and 4; Eu, 2 and 3; Yb, 2 and 3; and Pu, 4.76 and 5.

Radius. The radii for the coordination number of 12 were calculated from the lattice constants of most of the elements. The lattice constants, except for radium, which has recently been measured by Weigel,[2] were taken from Pearson.[3]

The radius calculated from the lattice constants of an element having the face-centered cubic (type A1) lattice (Al, α-Ca, γ-Mn, γ-Fe, Co, Ni, Cu, α-Sr, Rh, Pd, Ag, Ir, Pt, Au, Pb, Ac, or α-Th) is for the coordination number of 12.

An element having the hexagonal-close packed (A3) structure (α-Be, Mg, α-Ti, Co, Zn, α-Zr, Tc, Ru, Cd, α-Hf, Re, Os, or α-Tl) or the related hexagonal structure with twice the normal c-axis (Am) has two radii and the coordination number of 6 associated with each radius. In general the two radii are approximately equal and can be averaged to give a mean radius having essentially the coordination number of 12. When the c/a ratio equals 1.633, the two radii are identical and the element has the coordination number of 12.

The body-centered cubic (A2) structure has the coordination number of 8. Therefore, the radii calculated for the elements having that structure (Li, Na, K, γ-Ca, β-Ti, V, Cr, δ-Mn, α-Fe, Rb, β-Zr, Nb, Mo, Cs, Ba, Ta, W, or Ra) were converted to the coordination number of 12 by using the curve given in Fig. 1. The data used to construct the line in

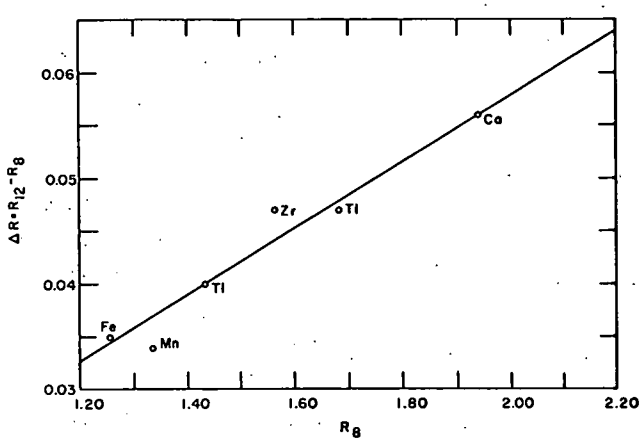

Fig. 1. Difference in radii ($R_{12} - R_8$) versus the radius for a coordination number of 8.

Fig. 1 were calculated from the physical properties of elements having at least two allotropic modifications, body-centered cubic and either face-centered cubic or hexagonal close-packed. The two different radii were compared at the same temperature. If the lattice constants were not given for the same temperature, then the known coefficients of expansion were used in calculating new lattice parameters at the desired temperature.

The equation of the straight line in Fig. 1 is

$$\Delta R = R_{12} - R_8 = 0.0316R_8 - 0.00532. \qquad (1)$$

By rearranging Eqn. (1), we obtain expressions for converting radii from coordination of 12 to 8 and vice-versa:

$$R_{12} = 1.0316R_8 - 0.00532 , \qquad (2a)$$

$$R_8 = 0.96937R_{12} + 0.00516 . \qquad (2b)$$

The radii for the rare-earth metals (Sc, La, Pr, Nd, Sm, Eu(2), Gd, Tb, Dy, Ho, Er, Tm, Yb(2), and Lu) were taken from the data given by Gschneidner.[4]

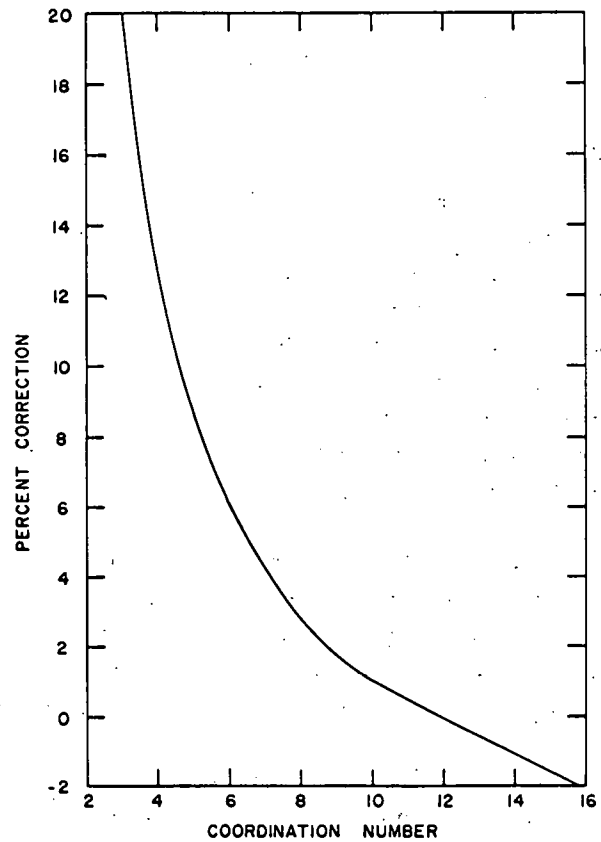

Fig. 2. The percentage correction to be applied to the radius to convert it from a given coordination number to a coordination number of 12.

Since the elemental structures of Si, Ge, Sn (4), Hg, and Po have only one set of equidistant nearest neighbors, the radii calculated from these structures need only to be converted from the coordination number in the elemental structure to the coordination number of 12. This conversion was made by using the curve shown in Fig. 2.

Figure 2 was constructed in the following manner. The correction for coordination 12 is obviously zero. From Eqn. (1) it is seen that the percent correction needed to convert from coordination 8 to 12 is about 3.1, depending upon the magnitude of the radius. If an average radius of 1.60Å is assumed, the correction for coordination number of 8 is 2.83%. The value 20% given by Laves[5] for the coordination number of 3 was used as the third point to establish the curve for coordination numbers lower than 12. For higher coordination numbers the curve was assumed to be linear, and the slope of this straight-line portion of the curve was determined by the tangent to the curve at the point where the coordination number equaled 12.

For most of the other elements, the structures are more complex and involve several sets of near neighbors having various coordination numbers. For In, Sn(2), and Pa the distances between nearest and next nearest neighbors are close enough that a weighted average (the weights being determined by the coordination numbers) can be used. This average value was calculated and then converted from the total coordination number (the sum of the coordination numbers of the two sets of neighbors) to the coordination number of 12.

For Ga, As, Se, Sb, Te, Bi, and α-U, the distances between nearest and next nearest neighbors are too large for the above techniques to be used satisfactorily. Instead, Pauling's bond number scheme[6] was used in weighting the various distances to neighboring atoms. The weighted average radius was then converted to the coordination number of 12.

For the more complex structures, α-Mn, β-Mn, α-Np, and β-Np, the various near-neighbor sets of radii, all of which have large coordination numbers (11-16), were each first converted to the coordination number of 12, and these were then averaged to give the value listed in Table I.

For Mn two sets of radii were obtained. One, which was found in both α- and β-Mn, is significantly smaller (1.254) than the other, which was found in α-, γ-, and δ-Mn (1.307). A valence of 7 was assigned to the smaller radius, since that is more nearly in line with the trend in radii in the series proceeding from V to Cr to Mn to Fe to Co, in which the valence increases from 5 to 9. A valence of 5 was assigned to the larger radius.

The radii for the two valence states of Pu were taken from Zachariasen.[1]

The radii for boron and carbon were averaged from the radii calculated from their allotropic modifications and from the B-B or C-C distances in some compounds that have simple structures. The mean for B is 0.920 ± 0.002Å and that for C is 0.876 ± 0.009Å.

Comparison of the covalent radii given by Wells[7] with the known metallic radii shows that on the average the metallic radii of C, Si, Ge, Sn, As, and Sb are 12.8% larger. This correction was used in calculating the metallic radii of O, S, and P from the covalent radii given by Wells.

For N, two different radii were averaged to give the value used herein. One was obtained, in the same manner as outlined for O, S and P, from the covalent radius of N listed by Wells. The other was calculated from BN and converted to the coordination number of 12. The mean value so derived is 0.825Å and has an error of ± 0.010Å associated with it.

The metallic radius for H was taken from Laves[5] who gives a value of 0.76Å for the coordination number of 8. The value listed in Table I was converted to the coordination number of 12.

The radii of the remaining elements, specifically, Y, Ce(3), Ce(4), Pm, Eu(3), Yb(3), and Fr, were estimated by the authors. The radius of Fr was obtained by plotting the radii of the alkali metals against the principal quantum number and extrapolating to 7. The radii of Ce(3), Pm, Eu(3), and Yb(3) were obtained by plotting the radii of the trivalent rare-earth metals against the atomic number and interpolating. The radius of Ce(4) was taken from Gschneidner and Smoluchowski[8] who estimated it to be 1.627Å. The estimated value of 1.773Å for the radius of Y was used instead of the value of 1.801Å which is based on the lattice constants of metallic Y. The reason for choosing 1.773Å is that Y's alloying behavior in solid solu-

tion alloys and in intermetallic compounds is very nearly like that of Dy (radius-1.775) or Ho (1.767) rather than that of Gd (1.801). Since Y appears to behave more often like Dy than like Ho, the estimated value was chosen so that it lies closer to the radius of Dy than to the radius of Ho.

Electronegativity. The electronegativity values were obtained from several sources[9-15] and in most instances represent average values. For many of the elements the electronegativites were calculated by using the Gordy-Thomas relationship:

$$En = 0.31 \left(\frac{v + 1}{R} \right) + 0.50 , \qquad (3)$$

where En is the electronegativity, v is the valence, and R is the radius.

The references from which the electronegativities were obtained for the various elements are listed in Table II.

The electronegativities of all the elements are given to two significant figures after the decimal point, except for the lanthanides and yttrium which are listed with three significant figures after the decimal point. Although the electronegativities are generally not known more accurately than ± 0.1 electronegativity unit, the use of the additional significant figures reduces the number of elements for which the Mott number k, which will be defined later, must be listed as infinite.

Atomic Volume. The atomic volumes of most of the elements were taken from two recent compendia.[4,16] The atomic volume of Ra was calculated from the recently measured lattice parameter[2] in the normal manner. For the elements, H, N, O, P, S, Mn(7), Y, Ce(3), Ce(4), Pm, Eu(3), Yb(3), δ-Pu(4.76), and Am, the atomic volumes were calculated from the metallic radii, a packing fraction of 0.74048 being assumed for close-packed spheres.

Heat of Sublimation. The heats of sublimation of most of the elements were also taken from the two recent compilations by Gschneidner.[4,16] For H, N, and O the heats of sublimation were obtained from Cottrell.[17] Those of Sr and Tc were obtained from the recent experimental values published by Boerboom and co-workers[18] and Krikorian and Carpenter,[19] respectively. For eight elements the accepted value given by Gschneidner[16] was averaged with that given in more recently published data. These eight elements are: B,[20] Ga,[21] Ru,[22] Pd,[23-25] In,[26] W,[27] Re,[28] and Os[22]. The values for Mn(7), Sn(4), Ce(4), Eu(3), Yb(3), Pu(4.76), and Am were estimated by the authors on the basis of the periodic relationships of the elements.

Melting Point. The melting points for most of the elements were also taken from the above noted compendia.[4,16] The exceptions are H, N, O, Mn(7), Rb, Sn(4), Ce(4), Eu(3), Yb(3), Hf, U, Pu(4.76), and Am. The values for the first three elements were taken from Weast.[29] For Rb, Hf, U, and Am, the more recent experimental data published by Filby and Martin,[30] Siemens and co-workers,[31] Cahill and Kirshenbaum,[32] and McWhan and co-workers,[33] respectively, were used. The values for the remaining elements were estimated by the authors on the basis of the periodic relationships of the elements.

Solubility Parameter. The solubility parameter δ, as defined by Hildebrand and Scott,[34] was calculated from the heat of sublimation ΔH_s and the atomic volume V_A by using the following equation:

$$\delta = \left(\frac{\Delta H_s}{V_A} \right)^{1/2} . \qquad (4)$$

EXPLANATION OF THE DATA IN TABLE III

Table III presents the calculated physicometallurgical data for all binary combinations of the 84 elements under consideration. In each section of Table III a different element has been selected as the solvent and all other elements as the solutes, so that all possible binary systems of the 84 elements are considered.

For six elements, two valence states are considered; thus, separate sections deal with Mn(5) and Mn(7); Sn(2) and Sn(4); Ce(3) and Ce(4); Eu(2) and Eu(3); Yb(2) and Yb(3); and Pu(4.76), and Pu(5), as individual solvents and solutes.

Each section heading names the solvent element and gives its physical properties. Below this heading are listed, for each of the solute elements, the calculated physicometallurgical data; radius ratio, energy ratio, Mott number, Hildebrand factor, and electronegativity difference. These five quantities are defined and some of their uses are discussed below.

The use of 0.000 indicates a calculated value which, when rounded off, becomes zero, while the use of 0. indicates a true calculated value of zero.

Radius Ratio. The radius ratio is defined as

$R_{solute}/R_{solvent}$. This ratio is used directly in describing size effects in various types of crystal structures, e.g., the Laves phases, sodium chloride type structure, cesium chloride type structure, etc. The ratio is also used in part in making a Kubaschewski[35] plot. (This is described in more detail below, under "Energy Ratio.") The reciprocal of this ratio is used in describing the alloying behavior of liquid metals.[36] The radius ratio can easily be converted to the percentage difference between radii, i.e., the Hume-Rothery size factor,[37] which has been used quite successfully in predicting solid solubility relationships. To obtain the percentage difference between the radii

$$\left| \frac{R_{solvent} - R_{solute}}{R_{solvent}} \right| (100),$$

either (1) subtract 1.0000 from the number, if the number is greater than 1.0000, and multiply by 100; or (2) subtract the number from 1.0000, if the number is less than 1.0000, and multiply by 100.

Energy Ratio. The energy ratio is defined as the $\Delta H_s(solute)/\Delta H_s(solvent)$. This value is used as the abscissa in a Kubaschewski plot,[35] and the radius ratio is used as the ordinate. Such a plot appears to be quite useful in predicting whether or not two elements will form a certain type of intermetallic compound. Kubaschewski has given the plots for the following types of intermetallic compounds, which are identified by their Strukturbericht and chemical symbols: $\underline{B}2$, CsCl; $\underline{C}14$, $MgZn_2$; $\underline{C}15$, $MgCu_2$; $\underline{C}36$, $MgNi_2$; $\underline{D}O_{19}$, $CdMg_3$ ($SnNi_3$); $\underline{D}O_{24}$, $TiNi_3$; $\underline{D}2_3$, $CaZn_{13}$; $\underline{L}1_0$, CuAu; and $\underline{L}1_2$, $AuCu_3$.

Hildebrand Factor. This factor, designated HF, was used by Hildebrand[34] as a theoretical expression for the energy of mixing of a regular solution. The formula employed herein is

$$HF = 1/2(V_{solute}+V_{solvent})(\delta_{solute}-\delta_{solvent})^2 , \quad (5)$$

where V is the atomic volume and δ is the Hildebrand solubility parameter for a given element. The values used for computation are listed in Table I.

If the Hildebrand factor exceeds the thermal energy 2RT, separation of liquid phases is to be expected. The Hildebrand criterion for complete liquid miscibility is that HF should be less than 2RT. By this criterion, however, nearly 50% of the alloys known to be miscible would be predicted to be immiscible. Mott suggested that a tendency toward compound formation, as reflected by a large electronegativity difference between elements, might account for some of the discrepancies.

Mott Number. The Mott bonding number k is defined[38] as

$$k = \frac{HF - 2R^*T}{23060\ (\Delta En)^2} , \quad (6)$$

where HF stands for the Hildebrand factor, R^* is the gas constant (1.987 cal/mole-degree), T is the melting point of the solvent, and ΔEn is the difference between the electronegativities of the solute and the solvent elements. In this expression, Mott used $23060\ (\Delta En)^2$ as an approximation to the binding energy (in calories/gram mole) per bond between elements A and B. He stated that if any two elements cannot form at least k bonds of the A-B type, where k is given by Eqn. (6), liquid immiscibility is likely to occur. That is, if the sum of the energy gained by forming the k partially ionic A-B bonds plus the thermal energy is not sufficient to supply the energy of mixing HF, separation of liquids is probable. The arbitrary limits which he has set for k after considering 529 binary systems are: if $k \leq 2$, the metals should be completely miscible, whereas if $k \geq 6$, then some immiscibility should occur. In the range from 2 to 6, the incidence of immiscibility also depends upon the relative atomic sizes. Mott attempted to discern a general guide to this influence by plotting k against the percentage difference in atomic radii. In a later publication[39] he modified these rules as follows: if $k \leq 1$, the metals should be completely miscible; if $k \geq 6$, then some immiscibility should occur; and for $1 < k < 6$, liquid immiscibility will occur if the value of k is larger than the smaller of the two valences for a given pair of metals.

Electronegativity Difference. The electronegativity difference is defined as:

$$\Delta En = En_{solvent} - En_{solute} . \quad (7)$$

This quantity is used in the calculation of the Mott number [see Eqn. (6)] and may also be used to predict compound formation. In general, if the absolute value of the electronegativity difference is large, then compounds of a more ionic nature with simple formulae are expected to be formed.

In Table III there are 40 pairs of elements for which the Mott number equals $+\infty$ or $-\infty$ because the elements in each pair have identical electronegativ-

ity values, which causes Eqn. (6) to go to infinity. The sign is determined by the numerator; a minus sign indicates that the Hildebrand factor is smaller than 2RT, where T is the melting temperature of the solute, and the positive sign occurs where the Hildebrand factor exceeds 2RT.

MULTIPLE VALENCES

As mentioned above, two valences were used for Mn, Sn, Ce, Eu, Yb, and Pu. It is reasonable to suppose that, except for the actinides, both the heats of sublimation and the melting points of metals increase when the number of valence electrons is increased. For the actinides it has been observed that a plot of melting point vs. valence exhibits a minimum near Pu(5). This behavior is different from that of the lanthanides and seems to be due to competition between the occupancies of the 5f and 6d orbitals, perhaps because of the larger spin-orbit coupling and enhanced importance of other relativistic effects in the 5f series. Corrections for the effect of valence on the heat of sublimation and melting point were not made in Table I. These corrections are shown in Table IV.

Effect of Valence on Heats of Sublimation. The values of ΔH_s for Mn(7), Sn(4), Ce(4), Eu(3), Yb(3), Pu(4.76), and Am were estimated by the authors. It should be noted that the experimentally determined heats of sublimation for Mn, Sn, Ce, Eu, Yb, and Pu are considered to be valid for Mn(5), Sn(2), Ce(3), Eu(2), Yb(2), and Pu(5). For Mn(7) the heat of sublimation was assumed to lie midway between the values for Cr and Fe, since Mn(7) behaves much like its cogener Re with respect to Re's neighbors W and Os.[16]

The value for the heat of sublimation of Sn(4), the diamond form, was estimated as 85 kcal/mole since it would be expected to be lower than that of germanium (89.5) but significantly higher than that of metallic Sn(2) (72.0 kcal/mole).

The heat of sublimation of Ce(4) was assumed to be about the same as those of Zr and Hf, and the sublimation energies of Eu(3) and Yb(3) were assumed to be about the same as the average value of those of La and Lu.

The values for Pu(4.76) and Am were estimated from a plot of the heat of sublimation versus valence. The heats of sublimation of U, Np, and Pu(5) were used to establish the curve from which the values for Pu(4.76) and Am were determined.

Effect of Valence on Melting Points. The values of T for Mn(7), Sn(4), Ce(4), Eu(3), Yb(3), and Pu(4.76) were estimated by the authors on the basis of the periodic relationships of the elements. It should be noted that the experimentally determined melting points for Mn, Sn, Ce, Eu, Yb, and Pu are considered to be valid for Mn(5), Sn(2), Ce(3), Eu (2), Yb(2) and Pu(5).

For Mn(7) the melting point was assumed to lie approximately midway between the values for Cr and Fe. The behavior of Mn(7) is much like that of its cogener Re with respect to Re's neighbors W and Os.[16]

The melting point of Sn(4), the diamond form, was estimated from the coefficient of thermal expansion of this low-temperature allotrope. The relationship between the melting point, T, and the coefficient of thermal expansion, α, has been known for almost 90 years and is expressed as $\alpha = K/T$, where K is a constant. For those elements that crystallize in the diamond structure,[16] the appropriate value of K is 0.0049. Combining this value of K with the known coefficient of thermal expansion,[16] 5.3×10^{-6}, leads to 920°K as the estimated melting point of Sn(4).

The melting point of Ce(4) was estimated to be as many degrees above the melting point of La (the element immediately preceding Ce in the periodic table) as the melting point of Hf is above that of Lu (the element immediately preceding Hf).

The values for the melting points of Eu(3) and Yb(3) were obtained by interpolation from a plot of the melting points of the trivalent lanthanide metals versus their atomic numbers.

The melting point of Pu(4.76) was assumed to be higher than the melting point of Pu(5) by approximately one-fourth of the difference between the melting points of Pu(5) and Am, which is tetravalent.

To illustrate the significance of these changes in the heat of sublimation and the melting point and their effects on the values of the energy ratios, the Mott numbers, and the Hildebrand factors, Table V has been included. This table has the same format for the six modified solvents as does Table III. Other values, which pertain to situations in which these six valence forms act as solutes rather than as solvents can readily be obtained through use of the data contained in Tables I and IV and the equa-

tions presented in the text.

REFERENCES

1. W. H. Zachariasen, in "The Metal Plutonium," A. S. Coffinberry and W. N. Miner, Eds., p. 99, University of Chicago Press, Chicago, 1961.
2. F. Weigel, Private Communication to K. A. Gschneidner, Jr. giving the lattice parameter of bcc Ra as 5.148 ± .015Å (October 17, 1967).
3. W. B. Pearson, "Handbook of Lattice Spacings and Structure of Metals and Alloys," Vol. 1, Pergamon Press, New York, 1958; and Vol. 2, 1967.
4. K. A. Gschneidner, Jr. in "Trans. Vacuum Metallurgy Conference, 1965," L. M. Bianchi, ed., p. 99, Am. Vac. Soc., Boston, Mass., 1966.
5. F. Laves, "Crystal Structure and Atomic Sizes" in "Theory of Alloy Phases," p. 124, American Society for Metals, Cleveland, Ohio, 1956.
6. L. Pauling, J. Am. Chem. Soc. 69, 542 (1947).
7. A. F. Wells, "Structural Inorganic Chemistry," 3rd ed., Oxford University Press, London, 1962.
8. K. A. Gschneidner, Jr., and R. Smoluchowski, J. Less-Common Metals 5, 374 (1963).
9. W. Gordy and W. J. O. Thomas, J. Chem. Phys. 24, 439 (1956).
10. A. L. Allred and E. G. Rochow, J. Inorg. Nucl. Chem. 5, 264 (1958).
11. A. L. Allred and E. G. Rochow, J. Inorg. Nucl. Chem. 5, 269 (1958).
12. M. A. Fineman and R. Daignault, J. Inorg. Nucl. Chem. 10, 205 (1959).
13. E. J. Little, Jr., and M. M. Jones, J. Chem. Ed. 37, 231 (1960).
14. A. L. Allred and A. L. Hensely, Jr., J. Inorg. Nucl. Chem. 17, 43 (1961).
15. A. L. Allred, J. Inorg. Nucl. Chem. 17, 215 (1961).
16. K. A. Gschneidner, Jr., Solid State Phyc. 16, 275 (1964).
17. T. L. Cottrell, "Strengths of Chemical Bonds," 2nd ed., Butterworths Scientific Publications, London, 1958.
18. A. J. Boerboom, H. W. Reyn, and J. Kistemaker, Physica 30, 254 (1964).
19. O. H. Krikorian and J. H. Carpenter, Paper No. 143, presented at 149th Meeting Am. Chem. Soc., Div. Phys. Chem., Detroit, Michigan April 5-9 (1965).
20. D. L. Hillenbrand and W. F. Hall, J. Phys. Chem. 68, 989 (1964).
21. Z. A. Munir and A. W. Searcy, J. Electrochem. Soc. 111, 1170 (1964).
22. N. J. Carrera, R. F. Walker, and E. R. Plante, J. Res. NBS 68A, 325 (1964).
23. P. D. Zavitsanos, J. Phys. Chem. 68, 2899 (1964).
24. O. C. Trulson and P. O. Schissel, J. Less-Common Metals 8, 262 (1965).
25. J. H. Norman, H. G. Staley and W. E. Bell, J. Phys. Chem. 69, 1373 (1965).
26. C. C. Herrick, Trans. Met. Soc. AIME 230, 1439 (1964).
27. R. Szwarc, E. R. Plante, and J. J. Diamond, J. Res. NBS 69A, 417 (1965).
28. E. R. Plante and R. Szwarc, J. Res. NBS 70A, 175 (1966).
29. R. C. Weast, "Handbook of Chemistry and Physics," 46th ed., p. D88, The Chemical Rubber Co., Cleveland, 1965.
30. J. D. Filby and D. L. Martin, Proc. Roy. Soc. (London), 284A, 83 (1965).
31. R. E. Siemens, H. R. Babitzke, and H. Kato, U. S. Bur. Mines, Rept. Invest. No. 6492 (1964).
32. J. A. Cahill and A. D. Kirshenbaum, J. Inorg. Nucl. Chem. 27, 73 (1965).
33. D. B. McWhan, B. B. Cunningham, and J. C. Wallmann, J. Inorg. Nucl. Chem. 24, 1025 (1962).
34. J. H. Hildebrand and R. L. Scott, "The Solubility of Nonelectrolytes," Reinhold Publishing Corp., New York, 1950.
35. O. Kubaschewski, in "The Physical Chemistry of Metallic Solutions and Intermetallic Compounds," paper no. 3C, Her Majesty's Stationery Office, London, 1959.
36. S. W. Strauss, J. L. White, and B. F. Brown, Acta Met. 6, 604 (1958).
37. W. Hume-Rothery, G. W. Mabbott, and K. M. Channel-Evans, Phil. Trans. Roy. Soc. London 233A, 1 (1934).
38. B. W. Mott, Phil. Mag. 2, Ser. 8, 259 (1957).
39. B. W. Mott, AERE-R-4388 (1963).

THIS PAGE

WAS INTENTIONALLY

LEFT BLANK

TABLE I. PHYSICAL PROPERTIES OF THE ELEMENTS

At. No.	Element	Valence	Radius (CN=12)	Electronegativity	Atomic Volume (cc/mole)	Heat of Sublimation $\left(\frac{\text{kcal}}{\text{mole}}\right)$	Melting Temp. (°K)	Solubility Parameter
1	H	-1	0.779	2.20	1.611	52.09	14.01	179.8
3	Li	1	1.562	0.96	13.02	38.58	454	54.4
4	Be	2	1.128	1.53	4.891	77.9	1557	126.2
5	B	3	0.920	2.02	4.388	132.5	2498	173.8
6	C	4	0.876	2.55	3.397	170.9	4100	224.3
7	N	-3	0.825	3.03	1.913	112.9	63.29	242.9
8	O	-2	0.897	3.46	2.459	59.54	54.8	155.6
11	Na	1	1.911	0.95	23.79	25.92	370.8	33.0
12	Mg	2	1.602	1.23	14.00	35.6	923	50.4
13	Al	3	1.432	1.52	10.00	77.5	933.2	88.0
14	Si	4	1.322	1.83	12.07	108.4	1685	94.8
15	P	-3	1.241	2.10	6.511	75.3	317.2	107.5
16	S	-2	1.250	2.51	6.654	66.4	392	99.9
19	K	1	2.376	0.84	45.61	21.48	336.6	21.7
20	Ca	2	1.974	1.02	26.19	42.2	1112	40.1
21	Sc	3	1.641	1.28	15.04	91.0	1812	77.8
22	Ti	4	1.462	1.49	12.01	112.7	1941	96.9
23	V	5	1.346	1.64	8.365	122.8	2178	121.2
24	Cr	6	1.282	2.15	7.231	95.0	2148	114.6
25	Mn	5	1.307	1.92	7.357	67.2	1517	95.6
25	Mn	7	1.254	2.24	6.718	67.2	1517	100.0
26	Fe	8	1.274	1.87	7.094	100.0	1808	118.7
27	Co	9	1.252	1.92	6.689	102.1	1765	123.5
28	Ni	10	1.246	1.93	6.593	102.8	1726	124.9
29	Cu	1	1.278	1.82	7.114	81.1	1356	106.8
30	Zn	2	1.394	1.66	9.165	31.1	692.7	58.3
31	Ga	3	1.353	1.80	11.81	65.2	302.8	74.3
32	Ge	4	1.378	1.90	13.64	89.5	1209	81.0
33	As	5	1.366	2.08	12.96	29.0	1090	47.3
34	Se	6	1.412	2.46	16.43	49.4	490	54.8
37	Rb	1	2.546	0.84	56.07	19.9	312.6	18.8
38	Sr	2	2.151	0.98	33.93	36.1	1045	32.6
39	Y	3	1.773	1.177	18.99	99.6	1799	72.4
40	Zr	4	1.602	1.34	14.02	146.0	2123	102.0
41	Nb	5	1.468	1.50	10.83	175.0	2741	127.1
42	Mo	6	1.400	2.10	9.387	157.5	2888	129.5
43	Tc	7	1.365	2.11	8.635	158.1	2443	135.3
44	Ru	8	1.339	2.12	8.178	154.8	2553	137.6
45	Rh	9	1.345	2.20	8.292	133.2	2233	126.7
46	Pd	10	1.376	2.21	8.879	90.4	1825	100.9
47	Ag	1	1.445	1.68	10.27	60.4	1234	81.6
48	Cd	2	1.568	1.58	13.00	26.8	594.2	45.4
49	In	3	1.666	1.82	15.73	57.7	429.8	60.6
50	Sn	2	1.631	1.65	16.30	72.0	505.1	66.5
50	Sn	4	1.580	1.83	20.59	72.0	505.1	59.1
51	Sb	5	1.571	1.98	18.21	62.6	903.6	58.6
52	Te	6	1.642	1.92	20.46	46.6	722.8	47.7
55	Cs	1	2.731	0.79	69.19	18.84	301.8	16.5
56	Ba	2	2.236	0.93	38.08	42.5	998	33.4
57	La	3	1.877	1.117	22.53	103.0	1193	67.6
58	Ce	3	1.846	1.123	21.43	111.6	1071	72.2
58	Ce	4	1.672	1.43	15.92	111.6	1071	83.7
59	Pr	3	1.828	1.130	20.81	89.09	1204	65.4
60	Nd	3	1.822	1.134	20.60	77.3	1289	61.3
61	Pm	3	1.809	1.139	20.17	64	1353	56.3
62	Sm	3	1.802	1.145	19.95	49.3	1346	49.7
63	Eu	2	2.041	0.98	28.93	42.5	1095	38.3
63	Eu	3	1.798	1.152	19.80	42.5	1095	46.3
64	Gd	3	1.801	1.160	19.91	95.75	1585	69.3
65	Tb	3	1.783	1.168	19.30	93.96	1630	69.8
66	Dy	3	1.775	1.176	19.03	71.2	1682	61.2

TABLE I. (continued)

At. No.	Element	Valence	Radius (CN=12)	Electronegativity	Atomic Volume (cc/mole)	Heat of Sublimation $\left(\frac{kcal}{mole}\right)$	Melting Temp. (°K)	Solubility Parameter
67	Ho	3	1.767	1.184	18.78	71.7	1743	61.8
68	Er	3	1.758	1.192	18.49	74.5	1795	63.5
69	Tm	3	1.747	1.200	18.14	58.3	1818	56.7
70	Yb	2	1.939	1.02	24.82	38.2	1089	39.2
70	Yb	3	1.741	1.208	17.98	38.2	1089	46.1
71	Lu	3	1.735	1.216	17.79	102.16	1936	75.8
72	Hf	4	1.580	1.36	13.45	145.5	2463	104.0
73	Ta	5	1.467	1.55	10.80	186.8	3271	131.5
74	W	6	1.408	2.07	9.551	201.2	3653	145.1
75	Re	7	1.375	2.08	8.860	186.2	3433	145.0
76	Os	8	1.353	2.10	8.441	188.2	3300	149.3
77	Ir	9	1.357	2.15	8.524	159.1	2716	136.6
78	Pt	10	1.387	2.18	9.094	135.0	2042	121.8
79	Au	1	1.442	1.90	10.22	87.6	1336	92.6
80	Hg	2	1.594	1.78	14.09	14.66	234.3	32.3
81	Tl	3	1.716	1.86	17.22	43.24	576	50.1
82	Pb	4	1.750	1.93	18.27	46.8	600.8	50.6
83	Bi	5	1.689	1.86	21.33	49.95	544.5	48.4
84	Po	6	1.774	1.75	22.53	34.5	519	39.1
87	Fr	1	2.80	0.81	73.0	18.1	297	15.7
88	Ra	2	2.294	0.94	41.08	42	973	32.0
89	Ac	3	1.878	1.08	22.56	104	1323	67.9
90	Th	4	1.798	1.35	19.79	136.6	2024	83.1
91	Pa	5	1.626	1.64	15.03	132	1698	93.7
92	U	6	1.543	1.90	13.16	125	1406	97.5
93	Np	6	1.528	1.88	13.11	113	910	92.8
94	Pu	4.76	1.640	1.59	15.03	91.8	913	78.2
94	Pu	5	1.592	1.77	12.06	91.8	913	87.2
95	Am	4	1.730	1.40	17.64	66	1267	61.2

TABLE II. SOURCES OF ELECTRONEGATIVITY VALUES USED IN THIS REPORT

Element	Source	Element	Source
H	Ref. 15.	Sb	Mean value: Eqn. 3, Ref.10,12,14,15.
Li	Mean value: Eqn. 3, Ref.9,10,15.	Te	Mean value: Eqn. 3 and Ref.10.
Be	Mean value: Eqn. 3, Ref.10,12,15.	Cs	Mean value: Eqn. 3, Ref.10,15.
B	Mean value: Ref. 10,15.	Ba	Mean value: Eqn. 3, Ref.10,15.
C	Ref. 11.	La	Mean value: Eqn. 3, Ref.10,15.
N	Mean value: Ref.10,12,14,15.	Ce(3)	Mean value: Eqn. 3, Ref.13,15.
O	Mean value: Ref.10,12,15.	Ce(4)	Eqn. 3.
Na	Mean value: Eqn. 3, Ref.10,15.	Pr	Mean value: Eqn. 3, Ref.13,15.
Mg	Mean value: Eqn. 3, Ref.10,15.	Nd	Mean value: Eqn. 3, Ref.13,15.
Al	Mean value: Eqn. 3, Ref.10,15.	Pm	Mean value: Eqn. 3 and Ref. 13.
Si	Ref. 11.	Sm	Mean value: Eqn. 3 and Ref.13,15.
P	Mean value: Eqn. 3, Ref.10,12,15.	Eu(2)	Eqn. 3.
S	Mean value: Ref.10,15.	Eu(3)	Mean value: Eqn. 3 and Ref. 13.
K	Mean value: Eqn. 3, Ref.10,15.	Gd	Mean value: Eqn. 3, Ref.13,15.
Ca	Mean value: Eqn. 3, Ref.10,15.	Tb	Mean value: Eqn. 3 and Ref. 13.
Sc	Mean value: Eqn. 3, Ref.10,15.	Dy	Mean value: Eqn. 3, Ref.13,15.
Ti	Mean value: Eqn. 3, Ref.10,15.	Ho	Mean value: Eqn. 3, Ref.13,15.
V	Mean value: Eqn. 3, Ref.10,15.	Er	Mean value: Eqn. 3, Ref.13,15.
Cr	Eqn. 3.	Tm	Mean value: Eqn. 3, Ref.13,15.
Mn(5)	Eqn. 3.	Yb(2)	Mean value: Eqn. 3 and Ref. 13.
Mn(7)	Eqn. 3.	Yb(3)	Mean value: Eqn. 3, Ref.13,15.
Fe	Mean value: Ref.10,12,15.	Lu	Mean value: Eqn. 3, Ref.13,15.
Co	Mean value: Ref.10,12,15.	Hf	Mean value: Eqn. 3 and Ref. 13.
Ni	Mean value: Ref.10,12,15.	Ta	Mean value: Eqn. 3 and Ref. 13.
Cu	Mean value: Ref.10,15.	W	Mean value: Eqn. 3, Ref.12,13,15.
Zn	Mean value: Ref.10,15.	Re	Mean value: Eqn. 3, Ref.13,15.
Ga	Mean value: Eqn. 3, Ref.10,12,15.	Os	Mean value: Eqn. 3, Ref.13,15.
Ge	Ref. 11.	Ir	Mean value: Eqn. 3 and Ref. 15.
As	Mean value: Eqn. 3, Ref.10,12,14,15.	Pt	Mean value: Eqn. 3 and Ref.15.
Se	Mean value: Ref.10,12,15.	Au	Ref. 9.
Rb	Mean value: Eqn. 3, Ref.10,15.	Hg	Mean value: Eqn. 3, Ref.12,13,15.
Sr	Mean value: Eqn. 3, Ref.10,15.	Tl	Mean value: Eqn. 3, Ref.12,13,15.
Y	Mean value: Eqn. 3, Ref.10,15.	Pb	Mean value: Ref.11,13,15.
Zr	Mean value: Eqn. 3, Ref.13,15.	Bi	Mean value: Eqn. 3, Ref.13,14,15.
Nb	Mean value: Eqn. 3 and Ref.13.	Po	Mean value: Eqn. 3, Ref.13,15.
Mo	Mean value: Eqn. 3 and Ref.15.	Fr	Mean value: Eqn. 3, Ref.13,15.
Tc	Eqn. 3.	Ra	Mean value: Eqn. 3, Ref.13,15.
Ru	Eqn. 3.	Ac	Mean value: Eqn. 3, Ref.13,15.
Rh	Mean value: Eqn. 3 and Ref.15.	Th	Mean value: Eqn. 3, Ref.12,15.
Pd	Mean value: Eqn. 3, Ref.12,15.	Pa	Eqn. 3.
Ag	Mean value: Ref.10,15.	U	Mean value: Eqn. 3 and Ref. 12.
Cd	Mean value: Ref.10,15.	Np	Mean value: Eqn. 3 and Ref. 12.
In	Mean value: Ref.10,12,15.	Pu(4.75)	Eqn. 3.
Sn(2)	Ref.9.	Pu(5)	Eqn. 3.
Sn(4)	Ref.11.	Am	Eqn. 3.

TABLE-III- 1

SOLVENT-HYDROGEN

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.200	0.7790	1.611	52090.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
LITHIUM	2.0051	0.7406	3.210	115004.	1.24
BERYLLIUM	1.4480	1.4955	0.788	9345.	0.67
BORON	1.1810	2.5437	-1.449	110.	0.18
CARBON	1.1245	3.2809	1.332	4954.	-0.35
NITROGEN	1.0591	2.1674	0.367	7020.	-0.83
OXYGEN	1.1515	1.1430	0.000	1193.	-1.26
SODIUM	2.4531	0.4976	7.564	273730.	1.25
MAGNESIUM	2.0565	0.6834	5.968	130677.	0.97
ALUMINUM	1.8383	1.4878	4.475	48906.	0.68
SILICON	1.6970	2.0810	15.296	49479.	0.37
PHOSPHOROUS	1.5931	1.4456	86.823	21214.	0.10
SULFUR	1.6046	1.2747	11.373	26396.	-0.31
POTASSIUM	3.0501	0.4124	13.811	590271.	1.36
CALCIUM	2.5340	0.8101	8.409	271188.	1.18
SCANDIUM	2.1065	1.7470	4.380	86672.	0.92
TITANIUM	1.8768	2.1636	3.928	46857.	0.71
VANADIUM	1.7279	2.3575	2.208	17160.	0.56
CHROMIUM	1.6457	1.8238	305.278	18791.	0.05
MANGANESE+5	1.6778	1.2901	16.943	31823.	0.28
MANGANESE+7	1.6098	1.2901	686.484	26521.	-0.04
IRON	1.6354	1.9198	5.993	16242.	0.33
COBALT	1.6072	1.9601	6.609	13140.	0.28
NICKEL	1.5995	1.9735	6.658	12385.	0.27
COPPER	1.6406	1.5569	6.632	23277.	0.38
ZINC	1.7895	0.5970	11.664	79623.	0.54
GALLIUM	1.7368	1.2517	19.926	74710.	0.40
GERMANIUM	1.7689	1.7182	35.301	74455.	0.30
ARSENIC	1.7535	0.5567	381.668	127930.	0.12
SELENIUM	1.8126	0.9484	89.627	140907.	-0.26
RUBIDIUM	3.2683	0.3820	17.495	747364.	1.36
STRONTIUM	2.7612	0.6930	11.184	385038.	1.22
YTTRIUM	2.2760	1.9121	4.873	118803.	1.02
ZIRCONIUM	2.0565	2.8028	2.702	47268.	0.86
NIOBIUM	1.8845	3.3596	1.423	17276.	0.70
MOLYBDENUM	1.7972	3.0236	55.127	13904.	0.10
TECHNETIUM	1.7522	3.0351	47.942	10147.	0.09
RUTHENIUM	1.7189	2.9718	51.078	8731.	0.08
RHODIUM	1.7266	2.5571	$+\infty$	13948.	0.
PALLADIUM	1.7664	1.7355	13647.177	32663.	-0.01
SILVER	1.8549	1.3131	8.997	57293.	0.52
CADMIUM	2.0128	0.5145	14.755	131986.	0.62
INDIUM	2.1386	1.1077	36.671	123302.	0.38
TIN+2	2.0937	1.3822	16.325	115072.	0.55
TIN+4	2.0282	1.3822	50.834	161670.	0.37
ANTIMONY	2.0167	1.2018	129.335	145543.	0.22
TELLURIUM	2.1078	0.8946	105.846	192551.	0.28
CESIUM	3.5058	0.3617	20.569	944196.	1.41

TABLE-III- 2

SOLVENT-HYDROGEN

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	2.8703	0.8159	11.405	425399.	1.27
LANTHANUM	2.4095	1.9773	5.574	151960.	1.08
CERIUM+3	2.3697	2.1424	4.947	133511.	1.08
CERIUM+4	2.1463	2.1424	5.832	80935.	0.77
PRASEODYMIUM	2.3466	1.7103	5.511	146680.	1.07
NEODYMIUM	2.3389	1.4840	5.912	156103.	1.07
PROMETHIUM	2.3222	1.2286	6.351	166069.	1.06
SAMARIUM	2.3132	0.9464	7.063	182486.	1.05
EUROPIUM+2	2.6200	0.8159	8.872	305698.	1.22
EUROPIUM+3	2.3081	0.8159	7.485	190757.	1.05
GADOLINIUM	2.3119	1.8382	5.217	131313.	1.04
TERBIUM	2.2888	1.8038	5.107	126609.	1.03
DYSPROSIUM	2.2786	1.3669	5.959	145288.	1.02
HOLMIUM	2.2683	1.3765	5.917	142028.	1.02
ERBIUM	2.2567	1.4302	5.755	136034.	1.01
THULIUM	2.2426	1.1192	6.441	149711.	1.00
YTTERBIUM+2	2.4891	0.7333	8.098	261194.	1.18
YTTERBIUM+3	2.2349	0.7333	7.666	175162.	0.99
LUTETIUM	2.2272	1.9612	4.649	104995.	0.98
HAFNIUM	2.0282	2.7932	2.586	43276.	0.84
TANTALUM	1.8832	3.5861	1.364	14477.	0.65
TUNGSTEN	1.8074	3.8625	14.160	6711.	0.13
RHENIUM	1.7651	3.5746	15.557	6358.	0.12
OSMIUM	1.7368	3.6130	15.103	4675.	0.10
IRIDIUM	1.7420	3.0543	143.340	9456.	0.05
PLATINUM	1.7805	2.5917	1821.238	17991.	0.02
GOLD	1.8511	1.6817	21.116	45016.	0.30
MERCURY	2.0462	0.2814	41.729	170937.	0.42
THALLIUM	2.2028	0.8301	58.975	158404.	0.34
LEAD	2.2465	0.8984	98.004	165945.	0.27
BISMUTH	2.1682	0.9589	73.875	198123.	0.34
POLONIUM	2.2773	0.6623	50.905	238902.	0.45
FRANCIUM	3.5944	0.3475	22.513	1004227.	1.39
RADIUM	2.9448	0.8063	12.711	466551.	1.26
ACTINIUM	2.4108	1.9965	5.192	151384.	1.12
THORIUM	2.3081	2.6224	5.938	100132.	0.85
PROTACTINIUM	2.0873	2.5341	8.365	61684.	0.56
URANIUM	1.9807	2.3997	23.562	50093.	0.30
NEPTUNIUM	1.9615	2.1693	23.075	55681.	0.32
PLUTONIUM+4.76	2.1053	1.7623	9.883	85997.	0.61
PLUTONIUM+5	2.0436	1.7623	13.458	58575.	0.43
AMERICIUM	2.2208	1.2670	9.101	135503.	0.80

TABLE-III- 3

SOLVENT-LITHIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
0.960	1.5620	13.020	38580.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4987	1.3502	3.210	115004.	-1.24
BERYLLIUM	0.7222	2.0192	5.998	46127.	-0.57
BORON	0.5890	3.4344	4.738	123953.	-1.06
CARBON	0.5608	4.4298	4.042	236841.	-1.59
NITROGEN	0.5282	2.9264	2.673	265302.	-2.07
OXYGEN	0.5743	1.5433	0.541	79218.	-2.50
SODIUM	1.2234	0.6719	3147.232	8450.	0.01
MAGNESIUM	1.0256	0.9228	-0.580	217.	-0.27
ALUMINUM	0.9168	2.0088	1.632	12994.	-0.56
SILICON	0.8464	2.8097	1.101	20408.	-0.87
PHOSPHOROUS	0.7945	1.9518	0.879	27541.	-1.14
SULFUR	0.8003	1.7211	0.345	20329.	-1.55
POTASSIUM	1.5211	0.5568	91.000	31410.	0.12
CALCIUM	1.2638	1.0938	33.888	4005.	-0.06
SCANDIUM	1.0506	2.3587	2.735	7650.	-0.32
TITANIUM	0.9360	2.9212	3.295	22537.	-0.53
VANADIUM	0.8617	3.1830	4.353	47609.	-0.68
CHROMIUM	0.8207	2.4624	1.087	36678.	-1.19
MANGANESE+5	0.8367	1.7418	0.755	17242.	-0.96
MANGANESE+7	0.8028	1.7418	0.511	20503.	-1.28
IRON	0.8156	2.5920	2.115	41572.	-0.91
COBALT	0.8015	2.6464	2.159	47070.	-0.96
NICKEL	0.7977	2.6646	2.187	48650.	-0.97
COPPER	0.8182	2.1021	1.547	27574.	-0.86
ZINC	0.8924	0.8061	-0.091	162.	-0.70
GALLIUM	0.8662	1.6900	0.228	4900.	-0.84
GERMANIUM	0.8822	2.3199	0.403	9410.	-0.94
ARSENIC	0.8745	0.7517	-0.018	661.	-1.12
SELENIUM	0.9040	1.2805	-0.023	2.	-1.50
RUBIDIUM	1.6300	0.5158	128.222	43770.	0.12
STRONTIUM	1.3771	0.9357	1082.047	11173.	-0.02
YTTRIUM	1.1351	2.5816	3.671	5178.	-0.22
ZIRCONIUM	1.0256	3.7843	8.846	30650.	-0.38
NIOBIUM	0.9398	4.5360	9.191	62997.	-0.54
MOLYBDENUM	0.8963	4.0824	2.069	63183.	-1.14
TECHNETIUM	0.8739	4.0980	2.283	70823.	-1.15
RUTHENIUM	0.8572	4.0124	2.323	73276.	-1.16
RHODIUM	0.8611	3.4526	1.538	55714.	-1.24
PALLADIUM	0.8809	2.3432	0.623	23643.	-1.25
SILVER	0.9251	1.7729	0.620	8600.	-0.72
CADMIUM	1.0038	0.6947	-0.015	1061.	-0.62
INDIUM	1.0666	1.4956	-0.038	540.	-0.86
TIN+2	1.0442	1.8663	0.085	2121.	-0.69
TIN+4	1.0115	1.8663	-0.047	371.	-0.87
ANTIMONY	1.0058	1.6226	-0.038	275.	-1.02
TELLURIUM	1.0512	1.2079	-0.021	754.	-0.96
CESIUM	1.7484	0.4883	86.963	59148.	0.17

TABLE-III- 4

SOLVENT-LITHIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.4315	1.1016	486.863	11297.	0.03
LANTHANUM	1.2017	2.6698	3.334	3088.	-0.16
CERIUM+3	1.1818	2.8927	6.891	5414.	-0.16
CERIUM+4	1.0704	2.8927	2.203	12415.	-0.47
PRASEODYMIUM	1.1703	2.3092	1.280	2045.	-0.17
NEODYMIUM	1.1665	2.0036	-0.587	782.	-0.17
PROMETHIUM	1.1581	1.6589	-1.533	60.	-0.18
SAMARIUM	1.1536	1.2779	-1.045	368.	-0.18
EUROPIUM+2	1.3067	1.1016	460.646	5441.	-0.02
EUROPIUM+3	1.1511	1.1016	-0.134	1078.	-0.19
GADOLINIUM	1.1530	2.4819	2.677	3662.	-0.20
TERBIUM	1.1415	2.4355	2.616	3802.	-0.21
DYSPROSIUM	1.1364	1.8455	-0.433	726.	-0.22
HOLMIUM	1.1312	1.8585	-0.287	860.	-0.22
ERBIUM	1.1255	1.9311	0.077	1288.	-0.23
THULIUM	1.1184	1.5111	-0.838	79.	-0.24
YTTERBIUM+2	1.2414	0.9902	38.319	4373.	-0.06
YTTERBIUM+3	1.1146	0.9902	-0.080	1078.	-0.25
LUTETIUM	1.1108	2.6480	3.855	7019.	-0.26
HAFNIUM	1.0115	3.7714	8.493	32526.	-0.40
TANTALUM	0.9392	4.8419	8.667	70762.	-0.59
TUNGSTEN	0.9014	5.2151	3.226	92853.	-1.11
RHENIUM	0.8803	4.8263	3.059	89668.	-1.12
OSMIUM	0.8662	4.8782	3.184	96606.	-1.14
IRIDIUM	0.8688	4.1239	2.192	72758.	-1.19
PLATINUM	0.8880	3.4992	1.429	50237.	-1.22
GOLD	0.9232	2.2706	0.771	16910.	-0.94
MERCURY	1.0205	0.3800	0.353	6668.	-0.82
THALLIUM	1.0986	1.1208	-0.049	283.	-0.90
LEAD	1.1204	1.2131	-0.044	229.	-0.97
BISMUTH	1.0813	1.2947	-0.030	627.	-0.90
POLONIUM	1.1357	0.8942	0.206	4163.	-0.79
FRANCIUM	1.7926	0.4692	121.779	64377.	0.15
RADIUM	1.4686	1.0886	1350.056	13645.	0.02
ACTINIUM	1.2023	2.6957	6.118	3224.	-0.12
THORIUM	1.1511	3.5407	3.498	13462.	-0.39
PROTACTINIUM	1.0410	3.4215	1.918	21639.	-0.68
URANIUM	0.9878	3.2400	1.131	24232.	-0.94
NEPTUNIUM	0.9782	2.9290	0.926	19271.	-0.92
PLUTONIUM+4.76	1.0499	2.3795	0.732	7889.	-0.63
PLUTONIUM+5	1.0192	2.3795	0.814	13501.	-0.81
AMERICIUM	1.1076	1.7107	-0.111	695.	-0.44

TABLE-III- 5

SOLVENT-BERYLLIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.530	1.1280	4.891	77900.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.6906	0.6687	0.788	9345.	-0.67
LITHIUM	1.3848	0.4953	5.998	46127.	0.57
BORON	0.8156	1.7009	1.681	10497.	-0.49
CARBON	0.7766	2.1938	1.612	39875.	-1.02
NITROGEN	0.7314	1.4493	0.870	46357.	-1.50
OXYGEN	0.7952	0.7643	0.023	3177.	-1.93
SODIUM	1.6941	0.3327	15.902	124552.	0.58
MAGNESIUM	1.4202	0.4570	25.559	54237.	0.30
ALUMINUM	1.2695	0.9949	4186.870	10847.	0.01
SILICON	1.1720	1.3915	3.463	8380.	-0.30
PHOSPHOROUS	1.1002	0.9666	0.106	1986.	-0.57
SULFUR	1.1082	0.8524	0.127	3995.	-0.98
POTASSIUM	2.1064	0.2757	25.008	275751.	0.69
CALCIUM	1.7500	0.5417	18.992	115103.	0.51
SCANDIUM	1.4548	1.1682	15.382	23362.	0.25
TITANIUM	1.2961	1.4467	164.753	7271.	0.04
VANADIUM	1.1933	1.5764	-3.669	168.	-0.11
CHROMIUM	1.1365	1.2195	-0.043	813.	-0.62
MANGANESE+5	1.1587	0.8626	1.298	5746.	-0.39
MANGANESE+7	1.1117	0.8626	0.240	3981.	-0.71
IRON	1.1294	1.2837	-0.322	335.	-0.34
COBALT	1.1099	1.3107	-0.328	41.	-0.39
NICKEL	1.1046	1.3196	-0.320	10.	-0.40
COPPER	1.1330	1.0411	0.554	2267.	-0.29
ZINC	1.2358	0.3992	80.208	32450.	-0.13
GALLIUM	1.1995	0.8370	12.672	22494.	-0.27
GERMANIUM	1.2216	1.1489	5.619	18929.	-0.37
ARSENIC	1.2110	0.3723	7.794	55562.	-0.55
SELENIUM	1.2518	0.6341	2.663	54301.	-0.93
RUBIDIUM	2.2571	0.2555	31.894	351349.	0.69
STRONTIUM	1.9069	0.4634	24.199	169999.	0.55
YTTRIUM	1.5718	1.2786	11.604	34537.	0.35
ZIRCONIUM	1.4202	1.8742	5.195	5517.	0.19
NIOBIUM	1.3014	2.2465	-57.128	7.	0.03
MOLYBDENUM	1.2411	2.0218	-0.149	79.	-0.57
TECHNETIUM	1.2101	2.0295	-0.081	561.	-0.58
RUTHENIUM	1.1871	1.9872	-0.043	846.	-0.59
RHODIUM	1.1924	1.7099	-0.115	2.	-0.67
PALLADIUM	1.2199	1.1605	0.302	4407.	-0.68
SILVER	1.2810	0.8780	26.755	15074.	-0.15
CADMIUM	1.3901	0.3440	992.336	58400.	-0.05
INDIUM	1.4770	0.7407	22.290	44421.	-0.29
TIN+2	1.4459	0.9243	110.290	37815.	-0.12
TIN+4	1.4007	0.9243	27.039	57310.	-0.30
ANTIMONY	1.3927	0.8036	11.039	52738.	-0.45
TELLURIUM	1.4557	0.5982	21.918	78067.	-0.39
CESIUM	2.4211	0.2418	35.206	445763.	0.74

TABLE-III- 6

SOLVENT-BERYLLIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.9823	0.5456	22.143	185011.	0.60
LANTHANUM	1.6640	1.3222	11.662	47063.	0.41
CERIUM+3	1.6365	1.4326	9.749	38431.	0.41
CERIUM+4	1.4823	1.4326	76.246	18775.	0.10
PRASEODYMIUM	1.6206	1.1436	12.540	47461.	0.40
NEODYMIUM	1.6152	0.9923	14.537	53760.	0.40
PROMETHIUM	1.6037	0.8216	17.015	61178.	0.39
SAMARIUM	1.5975	0.6329	20.913	72673.	0.39
EUROPIUM+2	1.8094	0.5456	18.549	130582.	0.55
EUROPIUM+3	1.5940	0.5456	23.542	78761.	0.38
GADOLINIUM	1.5966	1.2291	12.320	40085.	0.37
TERBIUM	1.5807	1.2062	12.351	38515.	0.36
DYSPROSIUM	1.5736	0.9140	17.093	50588.	0.35
HOLMIUM	1.5665	0.9204	17.356	49107.	0.35
ERBIUM	1.5585	0.9564	17.008	45998.	0.34
THULIUM	1.5488	0.7484	21.682	55642.	0.33
YTTERBIUM+2	1.7190	0.4904	18.536	112369.	0.51
YTTERBIUM+3	1.5434	0.4904	30.196	73388.	0.32
LUTETIUM	1.5381	1.3114	12.157	28833.	0.31
HAFNIUM	1.4007	1.8678	4.989	4517.	0.17
TANTALUM	1.3005	2.3979	-105.247	221.	-0.02
TUNGSTEN	1.2482	2.5828	0.208	2590.	-0.54
RHENIUM	1.2190	2.3902	0.176	2421.	-0.55
OSMIUM	1.1995	2.4159	0.316	3562.	-0.57
IRIDIUM	1.2030	2.0424	-0.052	728.	-0.62
PLATINUM	1.2296	1.7330	-0.109	133.	-0.65
GOLD	1.2784	1.1245	2.328	8541.	-0.37
MERCURY	1.4131	0.1882	57.291	83764.	-0.25
THALLIUM	1.5213	0.5551	25.016	64013.	-0.33
LEAD	1.5514	0.6008	17.611	66171.	-0.40
BISMUTH	1.4973	0.6412	31.135	79379.	-0.33
POLONIUM	1.5727	0.4429	92.064	103945.	-0.22
FRANCIUM	2.4823	0.2323	39.649	475162.	0.72
RADIUM	2.0337	0.5392	25.276	204087.	0.59
ACTINIUM	1.6649	1.3350	9.737	46662.	0.45
THORIUM	1.5940	1.7535	29.117	22947.	0.18
PROTACTINIUM	1.4415	1.6945	33.406	10513.	-0.11
URANIUM	1.3679	1.6046	1.984	7456.	-0.37
NEPTUNIUM	1.3546	1.4506	3.124	10018.	-0.35
PLUTONIUM+4.76	1.4539	1.1784	262.664	22998.	-0.06
PLUTONIUM+5	1.4113	1.1784	8.786	12863.	-0.24
AMERICIUM	1.5337	0.8472	119.206	47648.	0.13

TABLE-III- 7

SOLVENT-BORON

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.020	0.9200	4.388	132500.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.8467	0.3931	-1.449	110.	-0.18
LITHIUM	1.6978	0.2912	4.738	123953.	1.06
BERYLLIUM	1.2261	0.5879	1.681	10497.	0.49
CARBON	0.9522	1.2898	1.350	9937.	-0.53
NITROGEN	0.8967	0.8521	0.590	15071.	-1.01
OXYGEN	0.9750	0.4494	-0.001	1130.	-1.44
SODIUM	2.0772	0.1956	10.528	279158.	1.07
MAGNESIUM	1.7413	0.2687	9.636	139873.	0.79
ALUMINUM	1.5565	0.5849	8.966	52880.	0.50
SILICON	1.4370	0.8181	60.264	51360.	0.19
PHOSPHOROUS	1.3489	0.5683	153.884	23903.	-0.08
SULFUR	1.3587	0.5011	5.227	30131.	-0.49
POTASSIUM	2.5826	0.1621	17.967	578098.	1.18
CALCIUM	2.1457	0.3185	11.787	273011.	1.00
SCANDIUM	1.7837	0.6868	6.993	89496.	0.74
TITANIUM	1.5891	0.8506	7.301	48485.	0.53
VANADIUM	1.4630	0.9268	4.942	17648.	0.38
CHROMIUM	1.3935	0.7170	49.095	20325.	-0.13
MANGANESE+5	1.4207	0.5072	150.550	35909.	0.10
MANGANESE+7	1.3630	0.5072	25.997	30207.	-0.22
IRON	1.3848	0.7547	31.224	17393.	0.15
COBALT	1.3609	0.7706	55.411	13970.	0.10
NICKEL	1.3543	0.7758	63.908	13129.	0.09
COPPER	1.3891	0.6121	26.695	25815.	0.20
ZINC	1.5152	0.2347	29.859	90428.	0.36
GALLIUM	1.4707	0.4921	70.727	80131.	0.22
GERMANIUM	1.4978	0.6755	230.012	77571.	0.12
ARSENIC	1.4848	0.2189	1656.751	138729.	-0.06
SELENIUM	1.5348	0.3728	32.715	147245.	-0.44
RUBIDIUM	2.7674	0.1502	22.561	725603.	1.18
STRONTIUM	2.3380	0.2725	15.257	381720.	1.04
YTTRIUM	1.9272	0.7517	7.254	120064.	0.84
ZIRCONIUM	1.7413	1.1019	4.328	47346.	0.68
NIOBIUM	1.5957	1.3208	2.465	16561.	0.52
MOLYBDENUM	1.5217	1.1887	83.252	13479.	-0.08
TECHNETIUM	1.4837	1.1932	45.178	9631.	-0.09
RUTHENIUM	1.4554	1.1683	30.511	8228.	-0.10
RHODIUM	1.4620	1.0053	17.171	14021.	-0.18
PALLADIUM	1.4957	0.6823	40.878	35222.	-0.19
SILVER	1.5707	0.5162	22.904	62249.	0.34
CADMIUM	1.7043	0.2023	31.822	143258.	0.44
INDIUM	1.8109	0.4355	138.461	128909.	0.20
TIN+2	1.7728	0.5434	37.353	119111.	0.37
TIN+4	1.7174	0.5434	195.720	164123.	0.19
ANTIMONY	1.7076	0.4725	4027.444	149789.	0.04
TELLURIUM	1.7848	0.3517	850.797	197386.	0.10
CESIUM	2.9685	0.1422	26.047	909918.	1.23

TABLE-III- 8

SOLVENT-BORON

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	2.4304	0.3208	15.226	418343.	1.09
LANTHANUM	2.0402	0.7774	8.003	151670.	0.90
CERIUM+3	2.0065	0.8423	7.118	133269.	0.90
CERIUM+4	1.8174	0.8423	10.108	82328.	0.59
PRASEODYMIUM	1.9870	0.6724	8.031	147881.	0.89
NEODYMIUM	1.9804	0.5834	8.671	158163.	0.89
PROMETHIUM	1.9663	0.4830	9.395	169355.	0.88
SAMARIUM	1.9587	0.3721	10.541	187289.	0.88
EUROPIUM+2	2.2185	0.3208	12.205	305600.	1.04
EUROPIUM+3	1.9543	0.3208	11.237	196418.	0.87
GADOLINIUM	1.9576	0.7226	7.697	132472.	0.86
TERBIUM	1.9380	0.7091	7.581	128095.	0.85
DYSPROSIUM	1.9293	0.5374	8.965	148462.	0.84
HOLMIUM	1.9207	0.5411	8.939	145260.	0.84
ERBIUM	1.9109	0.5623	8.726	139153.	0.83
THULIUM	1.8989	0.4400	9.881	154400.	0.82
YTTERBIUM+2	2.1076	0.2883	11.412	264342.	1.00
YTTERBIUM+3	1.8924	0.2883	11.912	182314.	0.81
LUTETIUM	1.8859	0.7710	7.063	106478.	0.80
HAFNIUM	1.7174	1.0981	4.202	43405.	0.66
TANTALUM	1.5946	1.4098	2.428	13559.	0.47
TUNGSTEN	1.5304	1.5185	78.407	5712.	-0.05
RHENIUM	1.4946	1.4053	51.829	5495.	-0.06
OSMIUM	1.4707	1.4204	17.908	3835.	-0.08
IRIDIUM	1.4750	1.2008	19.804	8910.	-0.13
PLATINUM	1.5076	1.0189	28.774	18179.	-0.16
GOLD	1.5674	0.6611	141.394	48144.	0.12
MERCURY	1.7326	0.1106	138.399	185022.	0.24
THALLIUM	1.8652	0.3263	277.841	165212.	0.16
LEAD	1.9022	0.3532	913.583	171837.	0.09
BISMUTH	1.8359	0.3770	340.394	202139.	0.16
POLONIUM	1.9283	0.2604	144.423	243977.	0.27
FRANCIUM	3.0435	0.1366	28.584	966246.	1.21
RADIUM	2.4935	0.3170	16.949	457086.	1.08
ACTINIUM	2.0413	0.7849	7.354	151033.	0.94
THORIUM	1.9543	1.0309	9.490	99425.	0.67
PROTACTINIUM	1.7674	0.9962	18.328	62224.	0.38
URANIUM	1.6772	0.9434	150.273	51093.	0.12
NEPTUNIUM	1.6609	0.8528	124.143	57302.	0.14
PLUTONIUM+4.76	1.7826	0.6928	20.539	88767.	0.43
PLUTONIUM+5	1.7304	0.6928	41.891	61567.	0.25
AMERICIUM	1.8004	0.4981	15.620	139649.	0.62

TABLE-III- 9

SOLVENT-CARBON

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.550	0.8760	3.397	170900.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.8893	0.3048	1.332	4954.	0.35
LITHIUM	1.7831	0.2257	4.042	236841.	1.59
BERYLLIUM	1.2877	0.4558	1.612	39875.	1.02
BORON	1.0502	0.7753	1.350	9937.	0.53
NITROGEN	0.9418	0.6606	-0.051	922.	-0.48
OXYGEN	1.0240	0.3484	0.661	13816.	-0.91
SODIUM	2.1815	0.1517	8.406	497405.	1.60
MAGNESIUM	1.8288	0.2083	6.515	262963.	1.32
ALUMINUM	1.6347	0.4535	5.035	124375.	1.03
SILICON	1.5091	0.6343	10.754	129751.	0.72
PHOSPHOROUS	1.4167	0.4406	14.207	67533.	0.45
SULFUR	1.4269	0.3885	2075.613	77774.	0.04
POTASSIUM	2.7123	0.1257	14.898	1005745.	1.71
CALCIUM	2.2534	0.2469	9.272	501698.	1.53
SCANDIUM	1.8733	0.5325	5.288	197881.	1.27
TITANIUM	1.6689	0.6594	4.782	125086.	1.06
VANADIUM	1.5365	0.7185	3.213	62555.	0.91
CHROMIUM	1.4635	0.5559	17.002	63922.	0.40
MANGANESE+5	1.4920	0.3932	9.604	89096.	0.63
MANGANESE+7	1.4315	0.3932	34.713	78118.	0.31
IRON	1.4543	0.5851	5.371	58460.	0.68
COBALT	1.4292	0.5974	5.463	51189.	0.63
NICKEL	1.4224	0.6015	5.436	49380.	0.62
COPPER	1.4589	0.4745	5.810	72591.	0.73
ZINC	1.5913	0.1820	9.415	173172.	0.89
GALLIUM	1.5445	0.3815	13.096	171068.	0.75
GERMANIUM	1.5731	0.5237	17.830	174910.	0.65
ARSENIC	1.5594	0.1697	50.062	256204.	0.47
SELENIUM	1.6119	0.2891	1517.794	284695.	0.09
RUBIDIUM	2.9064	0.1164	18.596	1255137.	1.71
STRONTIUM	2.4555	0.2112	12.043	685710.	1.57
YTTRIUM	2.0240	0.5828	5.912	258191.	1.37
ZIRCONIUM	1.8288	0.8543	3.820	130148.	1.21
NIOBIUM	1.6758	1.0240	2.595	67179.	1.05
MOLYBDENUM	1.5982	0.9216	12.037	57403.	0.45
TECHNETIUM	1.5582	0.9251	10.403	47637.	0.44
RUTHENIUM	1.5285	0.9058	9.927	43519.	0.43
RHODIUM	1.5354	0.7794	19.268	55621.	0.35
PALLADIUM	1.5708	0.5290	34.612	93458.	0.34
SILVER	1.6495	0.4002	7.903	139127.	0.87
CADMIUM	1.7900	0.1568	12.038	262373.	0.97
INDIUM	1.9018	0.3376	20.766	256379.	0.73
TIN+2	1.8619	0.4213	13.071	245345.	0.90
TIN+4	1.8037	0.4213	27.268	327168.	0.72
ANTIMONY	1.7934	0.3663	39.416	296502.	0.57
TELLURIUM	1.8744	0.2727	40.504	371905.	0.63
CESIUM	3.1176	0.1102	21.922	1567117.	1.76

TABLE-III- 10

SOLVENT-CARBON

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	2.5525	0.2487	12.467	755684.	1.62
LANTHANUM	2.1427	0.6027	6.695	318247.	1.43
CERIUM+3	2.1073	0.6530	6.093	287303.	1.43
CERIUM+4	1.9087	0.6530	6.557	190854.	1.12
PRASEODYMIUM	2.0868	0.5213	6.544	305476.	1.42
NEODYMIUM	2.0799	0.4523	6.872	318944.	1.42
PROMETHIUM	2.0651	0.3745	7.215	332448.	1.41
SAMARIUM	2.0571	0.2885	7.790	355811.	1.41
EUROPIUM+2	2.3299	0.2487	9.814	559003.	1.57
EUROPIUM+3	2.0525	0.2487	8.124	367350.	1.40
GADOLINIUM	2.0559	0.5603	6.253	279791.	1.39
TERBIUM	2.0354	0.5498	6.125	270972.	1.38
DYSPROSIUM	2.0263	0.4166	6.827	298405.	1.37
HOLMIUM	2.0171	0.4195	6.778	292834.	1.37
ERBIUM	2.0068	0.4359	6.627	283036.	1.36
THULIUM	1.9943	0.3411	7.170	302505.	1.35
YTTERBIUM+2	2.2135	0.2235	8.929	483207.	1.53
YTTERBIUM+3	1.9874	0.2235	8.144	339430.	1.34
LUTETIUM	1.9806	0.5978	5.665	233665.	1.33
HAFNIUM	1.8037	0.8514	3.696	121881.	1.19
TANTALUM	1.6747	1.0930	2.598	61107.	1.00
TUNGSTEN	1.6073	1.1773	7.410	40564.	0.48
RHENIUM	1.5696	1.0895	7.337	38567.	0.47
OSMIUM	1.5445	1.1012	6.871	33275.	0.45
IRIDIUM	1.5491	0.9310	12.096	45820.	0.40
PLATINUM	1.5833	0.7899	20.390	65562.	0.37
GOLD	1.6461	0.5126	12.001	118119.	0.65
MERCURY	1.8196	0.0858	23.498	322457.	0.77
THALLIUM	1.9589	0.2530	28.380	312770.	0.69
LEAD	1.9977	0.2738	36.734	326808.	0.62
BISMUTH	1.9281	0.2923	34.736	382559.	0.69
POLONIUM	2.0251	0.2019	30.036	444468.	0.80
FRANCIUM	3.1963	0.1059	23.779	1661381.	1.74
RADIUM	2.6187	0.2458	13.741	822552.	1.61
ACTINIUM	2.1438	0.6085	6.347	317468.	1.47
THORIUM	2.0525	0.7993	6.926	231196.	1.20
PROTACTINIUM	1.8562	0.7724	8.165	157106.	0.91
URANIUM	1.7614	0.7314	13.547	133181.	0.65
NEPTUNIUM	1.7443	0.6612	13.663	142627.	0.67
PLUTONIUM+4.76	1.8721	0.5372	9.203	196784.	0.96
PLUTONIUM+5	1.8174	0.5372	10.262	145163.	0.78
AMERICIUM	1.9749	0.3862	9.139	279909.	1.15

TABLE-III- 11

SOLVENT-NITROGEN

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
3.030	0.8250	1.913	112900.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.9442	0.4614	0.367	7020.	0.83
LITHIUM	1.8933	0.3417	2.673	265302.	2.07
BERYLLIUM	1.3673	0.6900	0.870	46357.	1.50
BORON	1.1152	1.1736	0.590	15071.	1.01
CARBON	1.0618	1.5137	-0.051	922.	0.48
OXYGEN	1.0873	0.5274	3.630	16671.	-0.43
SODIUM	2.3164	0.2296	5.665	566355.	2.08
MAGNESIUM	1.9418	0.3153	3.931	294862.	1.80
ALUMINUM	1.7358	0.6864	2.696	142921.	1.51
SILICON	1.6024	0.9601	4.586	153487.	1.20
PHOSPHOROUS	1.5042	0.6670	3.812	77212.	0.93
SULFUR	1.5152	0.5881	13.864	87642.	0.52
POTASSIUM	2.8800	0.1903	10.505	1162987.	2.19
CALCIUM	2.3927	0.3738	6.190	577872.	2.01
SCANDIUM	1.9891	0.8060	3.257	231191.	1.75
TITANIUM	1.7721	0.9982	2.694	148522.	1.54
VANADIUM	1.6315	1.0877	1.684	76204.	1.39
CHROMIUM	1.5539	0.8415	4.149	75276.	0.88
MANGANESE+5	1.5842	0.5952	3.501	100651.	1.11
MANGANESE+7	1.5200	0.5952	6.042	88149.	0.79
IRON	1.5442	0.8857	2.201	69476.	1.16
COBALT	1.5176	0.9043	2.116	61304.	1.11
NICKEL	1.5103	0.9105	2.082	59285.	1.10
COPPER	1.5491	0.7183	2.443	83683.	1.21
ZINC	1.6897	0.2755	4.337	188922.	1.37
GALLIUM	1.6400	0.5775	5.559	195121.	1.23
GERMANIUM	1.6703	0.7927	6.885	203913.	1.13
ARSENIC	1.6558	0.2569	13.618	284605.	0.95
SELENIUM	1.7115	0.4376	43.154	324507.	0.57
RUBIDIUM	3.0861	0.1763	13.153	1455918.	2.19
STRONTIUM	2.6073	0.3198	8.168	792721.	2.05
YTTRIUM	2.1491	0.8822	3.823	303875.	1.85
ZIRCONIUM	1.9418	1.2932	2.383	158129.	1.69
NIOBIUM	1.7794	1.5500	1.561	85465.	1.53
MOLYBDENUM	1.6970	1.3950	3.583	72660.	0.93
TECHNETIUM	1.6545	1.4004	3.069	61087.	0.92
RUTHENIUM	1.6230	1.3711	2.870	56001.	0.91
RHODIUM	1.6303	1.1798	4.261	68887.	0.83
PALLADIUM	1.6679	0.8007	6.943	108854.	0.82
SILVER	1.7515	0.6058	3.744	158535.	1.35
CADMIUM	1.9006	0.2374	5.976	290940.	1.45
INDIUM	2.0194	0.5111	8.655	293391.	1.21
TIN+2	1.9770	0.6377	6.431	283601.	1.38
TIN+4	1.9152	0.6377	11.411	380105.	1.20
ANTIMONY	1.9042	0.5545	13.396	341765.	1.05
TELLURIUM	1.9903	0.4128	14.962	426285.	1.11
CESIUM	3.3103	0.1669	15.743	1822798.	2.24

TABLE-III- 12

SOLVENT-NITROGEN

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	2.7103	0.3764	8.621	877878.	2.10
LANTHANUM	2.2752	0.9123	4.437	375655.	1.91
CERIUM+3	2.2376	0.9885	4.045	340371.	1.91
CERIUM+4	2.0267	0.9885	3.808	226010.	1.60
PRASEODYMIUM	2.2158	0.7891	4.286	357976.	1.90
NEODYMIUM	2.2085	0.6847	4.468	371540.	1.90
PROMETHIUM	2.1927	0.5669	4.648	384481.	1.89
SAMARIUM	2.1842	0.4367	4.966	408132.	1.89
EUROPIUM+2	2.4739	0.3764	6.650	645602.	2.05
EUROPIUM+3	2.1794	0.3764	5.145	419641.	1.88
GADOLINIUM	2.1830	0.8481	4.063	328789.	1.87
TERBIUM	2.1612	0.8322	3.963	318032.	1.86
DYSPROSIUM	2.1515	0.6306	4.350	345971.	1.85
HOLMIUM	2.1418	0.6351	4.305	339507.	1.85
ERBIUM	2.1309	0.6599	4.202	328543.	1.84
THULIUM	2.1176	0.5164	4.488	347785.	1.83
YTTERBIUM+2	2.3503	0.3384	5.941	554645.	2.01
YTTERBIUM+3	2.1103	0.3384	5.019	385393.	1.82
LUTETIUM	2.1030	0.9049	3.612	275259.	1.81
HAFNIUM	1.9152	1.2888	2.287	148256.	1.67
TANTALUM	1.7782	1.6546	1.539	78911.	1.48
TUNGSTEN	1.7067	1.7821	2.523	54819.	0.96
RHENIUM	1.6667	1.6492	2.427	51696.	0.95
OSMIUM	1.6400	1.6670	2.215	45371.	0.93
IRIDIUM	1.6448	1.4092	3.236	58984.	0.88
PLATINUM	1.6812	1.1957	4.772	80703.	0.85
GOLD	1.7479	0.7759	4.617	137139.	1.13
MERCURY	1.9321	0.1298	9.824	355150.	1.25
THALLIUM	2.0800	0.3830	11.230	355695.	1.17
LEAD	2.1212	0.4145	13.335	373264.	1.10
BISMUTH	2.0473	0.4424	13.896	439838.	1.17
POLONIUM	2.1503	0.3056	13.404	507628.	1.28
FRANCIUM	3.3939	0.1603	17.001	1933301.	2.22
RADIUM	2.7806	0.3720	9.486	956681.	2.09
ACTINIUM	2.2764	0.9212	4.262	374906.	1.95
THORIUM	2.1794	1.2099	4.242	277290.	1.68
PROTACTINIUM	1.9709	1.1692	4.207	188632.	1.39
URANIUM	1.8703	1.1072	5.376	159494.	1.13
NEPTUNIUM	1.8521	1.0009	5.510	169221.	1.15
PLUTONIUM+4.76	1.9879	0.8131	4.786	230029.	1.44
PLUTONIUM+5	1.9297	0.8131	4.593	169345.	1.26
AMERICIUM	2.0970	0.5846	5.253	323008.	1.63

TABLE-III- 13

SOLVENT-OXYGEN

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
3.460	0.8970	2.459	59540.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.8685	0.8749	0.000	1193.	1.26
LITHIUM	1.7414	0.6480	0.541	79218.	2.50
BERYLLIUM	1.2575	1.3084	0.023	3177.	1.93
BORON	1.0256	2.2254	-0.001	1130.	1.44
CARBON	0.9766	2.8703	0.661	13816.	0.91
NITROGEN	0.9197	1.8962	3.630	16671.	0.43
SODIUM	2.1304	0.4353	1.350	197263.	2.51
MAGNESIUM	1.7860	0.5979	0.783	91040.	2.23
ALUMINUM	1.5964	1.3016	0.314	28443.	1.94
SILICON	1.4738	1.8206	0.419	26888.	1.63
PHOSPHOROUS	1.3835	1.2647	0.215	10361.	1.36
SULFUR	1.3935	1.1152	0.622	14142.	0.95
POTASSIUM	2.6488	0.3608	2.715	430947.	2.62
CALCIUM	2.2007	0.7088	1.382	190975.	2.44
SCANDIUM	1.8294	1.5284	0.473	52987.	2.18
TITANIUM	1.6299	1.8928	0.266	24958.	1.97
VANADIUM	1.5006	2.0625	0.068	6421.	1.82
CHROMIUM	1.4292	1.5956	0.176	8138.	1.31
MANGANESE+5	1.4571	1.1287	0.302	17688.	1.54
MANGANESE+7	1.3980	1.1287	0.378	14180.	1.22
IRON	1.4203	1.6795	0.091	6496.	1.59
COBALT	1.3958	1.7148	0.064	4701.	1.54
NICKEL	1.3891	1.7266	0.057	4276.	1.53
COPPER	1.4247	1.3621	0.165	11415.	1.64
ZINC	1.5541	0.5223	0.721	55084.	1.80
GALLIUM	1.5084	1.0951	0.723	47161.	1.66
GERMANIUM	1.5362	1.5032	0.777	44799.	1.56
ARSENIC	1.5229	0.4871	2.032	90427.	1.38
SELENIUM	1.5741	0.8297	4.107	95909.	1.00
RUBIDIUM	2.8384	0.3342	3.451	547394.	2.62
STRONTIUM	2.3980	0.6063	1.932	275208.	2.48
YTTRIUM	1.9766	1.6728	0.608	74209.	2.28
ZIRCONIUM	1.7860	2.4521	0.217	23635.	2.12
NIOBIUM	1.6366	2.9392	0.047	5393.	1.96
MOLYBDENUM	1.5608	2.6453	0.066	4027.	1.36
TECHNETIUM	1.5217	2.6554	0.026	2285.	1.35
RUTHENIUM	1.4928	2.5999	0.013	1728.	1.34
RHODIUM	1.4994	2.2372	0.090	4478.	1.26
PALLADIUM	1.5340	1.5183	0.438	16964.	1.25
SILVER	1.6109	1.1488	0.461	34848.	1.78
CADMIUM	1.7480	0.4501	1.137	93870.	1.88
INDIUM	1.8573	0.9691	1.305	82148.	1.64
TIN+2	1.8183	1.2093	0.971	74535.	1.81
TIN+4	1.7614	1.2093	1.731	107256.	1.63
ANTIMONY	1.7514	1.0514	1.900	97185.	1.48
TELLURIUM	1.8305	0.7827	2.417	133370.	1.54
CESIUM	3.0446	0.3164	4.210	693204.	2.67

TABLE-III- 14

SOLVENT-OXYGEN

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	2.4928	0.7138	2.042	302671.	2.53
LANTHANUM	2.0925	1.7299	0.755	96738.	2.34
CERIUM+3	2.0580	1.8744	0.651	83163.	2.34
CERIUM+4	1.8640	1.8744	0.487	47479.	2.03
PRASEODYMIUM	2.0379	1.4963	0.746	94607.	2.33
NEODYMIUM	2.0312	1.2983	0.813	102631.	2.33
PROMETHIUM	2.0167	1.0749	0.888	111512.	2.32
SAMARIUM	2.0089	0.8280	1.007	125644.	2.31
EUROPIUM+2	2.2754	0.7138	1.514	215861.	2.48
EUROPIUM+3	2.0045	0.7138	1.072	132899.	2.31
GADOLINIUM	2.0078	1.6082	0.672	83217.	2.30
TERBIUM	1.9877	1.5781	0.652	80150.	2.29
DYSPROSIUM	1.9788	1.1958	0.787	95825.	2.28
HOLMIUM	1.9699	1.2042	0.772	93468.	2.28
ERBIUM	1.9599	1.2513	0.739	88906.	2.27
THULIUM	1.9476	0.9792	0.845	100771.	2.26
YTTERBIUM+2	2.1616	0.6416	1.337	184720.	2.44
YTTERBIUM+3	1.9409	0.6416	1.038	122562.	2.25
LUTETIUM	1.9342	1.7158	0.545	64515.	2.24
HAFNIUM	1.7614	2.4437	0.197	21177.	2.10
TANTALUM	1.6355	3.1374	0.032	3847.	1.91
TUNGSTEN	1.5697	3.3792	-0.012	658.	1.39
RHENIUM	1.5329	3.1273	-0.013	640.	1.38
OSMIUM	1.5084	3.1609	-0.023	215.	1.36
IRIDIUM	1.5128	2.6722	0.020	1979.	1.31
PLATINUM	1.5463	2.2674	0.143	6586.	1.28
GOLD	1.6076	1.4713	0.427	25180.	1.56
MERCURY	1.7770	0.2462	1.916	125897.	1.68
THALLIUM	1.9130	0.7262	1.835	109506.	1.60
LEAD	1.9509	0.7860	2.094	114255.	1.53
BISMUTH	1.8829	0.8389	2.296	136725.	1.60
POLONIUM	1.9777	0.5794	2.496	169502.	1.71
FRANCIUM	3.1215	0.3040	4.550	738013.	2.65
RADIUM	2.5574	0.7054	2.264	332737.	2.52
ACTINIUM	2.0936	1.7467	0.728	96234.	2.38
THORIUM	2.0045	2.2943	0.558	58513.	2.11
PROTACTINIUM	1.8127	2.2170	0.423	33496.	1.82
URANIUM	1.7202	2.0994	0.449	26403.	1.56
NEPTUNIUM	1.7035	1.8979	0.512	30667.	1.58
PLUTONIUM+4.76	1.8283	1.5418	0.636	52458.	1.87
PLUTONIUM+5	1.7748	1.5418	0.497	33923.	1.69
AMERICIUM	1.9287	1.1085	0.904	89626.	2.06

TABLE-III- 15

SOLVENT-SODIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
0.950	1.9110	23.790	25920.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4076	2.0096	7.564	273730.	-1.25
LITHIUM	0.8174	1.4884	3147.232	8450.	-0.01
BERYLLIUM	0.5903	3.0054	15.902	124552.	-0.58
BORON	0.4814	5.1119	10.528	279158.	-1.07
CARBON	0.4584	6.5934	8.406	497405.	-1.60
NITROGEN	0.4317	4.3557	5.665	566355.	-2.08
OXYGEN	0.4694	2.2971	1.350	197263.	-2.51
MAGNESIUM	0.8383	1.3735	2.512	5733.	-0.28
ALUMINUM	0.7493	2.9900	6.669	51156.	-0.57
SILICON	0.6918	4.1821	3.763	68390.	-0.88
PHOSPHOROUS	0.6494	2.9051	2.721	84163.	-1.15
SULFUR	0.6541	2.5617	1.192	68101.	-1.56
POTASSIUM	1.2433	0.8287	11.626	4436.	0.11
CALCIUM	1.0330	1.6281	0.701	1271.	-0.07
SCANDIUM	0.8587	3.5108	15.026	38927.	-0.33
TITANIUM	0.7650	4.3480	10.679	73003.	-0.54
VANADIUM	0.7043	4.7377	11.271	124940.	-0.69
CHROMIUM	0.6709	3.6651	3.075	103309.	-1.20
MANGANESE+5	0.6839	2.5926	2.755	60960.	-0.97
MANGANESE+7	0.6562	2.5926	1.754	68489.	-1.29
IRON	0.6667	3.8580	5.752	113467.	-0.92
COBALT	0.6552	3.9390	5.703	124923.	-0.97
NICKEL	0.6520	3.9660	5.734	128193.	-0.98
COPPER	0.6688	3.1289	4.749	84074.	-0.87
ZINC	0.7295	1.1998	0.801	10501.	-0.71
GALLIUM	0.7080	2.5154	1.750	30352.	-0.85
GERMANIUM	0.7211	3.4529	2.014	43111.	-0.95
ARSENIC	0.7148	1.1188	0.087	3755.	-1.13
SELENIUM	0.7389	1.9059	0.160	9579.	-1.51
RUBIDIUM	1.3323	0.7677	24.457	8016.	0.11
STRONTIUM	1.1256	1.3927	-57.233	4.	-0.03
YTTRIUM	0.9278	3.8426	26.960	33228.	-0.23
ZIRCONIUM	0.8383	5.6327	25.351	90110.	-0.39
NIOBIUM	0.7682	6.7515	21.807	153307.	-0.55
MOLYBDENUM	0.7326	6.0764	5.029	154553.	-1.15
TECHNETIUM	0.7143	6.0995	5.430	169680.	-1.16
RUTHENIUM	0.7007	5.9722	5.500	174797.	-1.17
RHODIUM	0.7038	5.1389	3.878	140939.	-1.25
PALLADIUM	0.7200	3.4877	2.024	75296.	-1.26
SILVER	0.7561	2.6389	3.177	40227.	-0.73
CADMIUM	0.8205	1.0340	0.179	2827.	-0.63
INDIUM	0.8718	2.2261	0.791	15006.	-0.87
TIN+2	0.8535	2.7778	1.880	22433.	-0.70
TIN+4	0.8268	2.7778	0.781	15146.	-0.88
ANTIMONY	0.8221	2.4151	0.515	13788.	-1.03
TELLURIUM	0.8592	1.7978	0.166	4792.	-0.97
CESIUM	1.4291	0.7269	19.438	12667.	0.16

TABLE-III- 16

SOLVENT-SODIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.1701	1.6397	-128.714	5.	0.02
LANTHANUM	0.9822	3.9738	41.274	27736.	-0.17
CERIUM+3	0.9660	4.3056	48.501	34665.	-0.17
CERIUM+4	0.8749	4.3056	9.388	51073.	-0.48
PRASEODYMIUM	0.9566	3.4371	29.779	23442.	-0.18
NEODYMIUM	0.9534	2.9823	21.159	17712.	-0.18
PROMETHIUM	0.9466	2.4691	13.066	11955.	-0.19
SAMARIUM	0.9430	1.9020	5.599	6101.	-0.19
EUROPIUM+2	1.0680	1.6397	-21.493	746.	-0.03
EUROPIUM+3	0.9409	1.6397	2.844	3868.	-0.20
GADOLINIUM	0.9424	3.6941	27.202	28855.	-0.21
TERBIUM	0.9330	3.6250	25.486	29123.	-0.22
DYSPROSIUM	0.9288	2.7469	13.402	16977.	-0.23
HOLMIUM	0.9246	2.7662	13.019	17631.	-0.23
ERBIUM	0.9199	2.8742	13.648	19624.	-0.24
THULIUM	0.9142	2.2492	7.332	11759.	-0.25
YTTERBIUM+2	1.0147	1.4738	-2.221	941.	-0.07
YTTERBIUM+3	0.9110	1.4738	1.553	3576.	-0.26
LUTETIUM	0.9079	3.9414	22.579	38033.	-0.27
HAFNIUM	0.8268	5.6134	23.907	93865.	-0.41
TANTALUM	0.7677	7.2068	20.072	167825.	-0.60
TUNGSTEN	0.7368	7.7623	7.205	209611.	-1.12
RHENIUM	0.7195	7.1836	6.909	204635.	-1.13
OSMIUM	0.7080	7.2608	7.110	218011.	-1.15
IRIDIUM	0.7101	6.1381	5.188	173451.	-1.20
PLATINUM	0.7258	5.2083	3.685	129745.	-1.23
GOLD	0.7546	3.3796	2.843	60352.	-0.95
MERCURY	0.8341	0.5656	-0.074	11.	-0.83
THALLIUM	0.8980	1.6682	0.252	5997.	-0.91
LEAD	0.9158	1.8056	0.240	6517.	-0.98
BISMUTH	0.8838	1.9271	0.217	5339.	-0.91
POLONIUM	0.9283	1.3310	-0.022	868.	-0.80
FRANCIUM	1.4652	0.6983	29.267	14420.	0.14
RADIUM	1.2004	1.6204	-501.985	35.	0.01
ACTINIUM	0.9827	4.0123	69.324	28209.	-0.13
THORIUM	0.9409	5.2701	14.485	54634.	-0.40
PROTACTINIUM	0.8509	5.0926	6.407	71531.	-0.69
URANIUM	0.8074	4.8225	3.630	76746.	-0.95
NEPTUNIUM	0.7996	4.3596	3.252	66050.	-0.93
PLUTONIUM+4.76	0.8582	3.5417	4.062	39558.	-0.64
PLUTONIUM+5	0.8331	3.5417	3.324	52732.	-0.82
AMERICIUM	0.9053	2.5463	3.262	16426.	-0.45

TABLE-III- 17

SOLVENT-MAGNESIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.230	1.6020	14.000	3560C.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4863	1.4632	5.968	130677.	-0.97
LITHIUM	0.9750	1.0837	-0.580	217.	0.27
BERYLLIUM	0.7041	2.1882	25.559	54237.	-0.30
BORON	0.5743	3.7219	9.636	139873.	-0.79
CARBON	0.5468	4.8006	6.515	262963.	-1.32
NITROGEN	0.5150	3.1713	3.931	294862.	-1.80
OXYGEN	0.5599	1.6725	0.783	91040.	-2.23
SODIUM	1.1929	0.7281	2.512	5733.	0.28
ALUMINUM	0.8939	2.1770	8.137	16972.	-0.29
SILICON	0.8252	3.0449	2.944	25629.	-0.60
PHOSPHOROUS	0.7747	2.1152	1.848	33454.	-0.87
SULFUR	0.7803	1.8652	0.637	25271.	-1.28
POTASSIUM	1.4831	0.6034	6.672	24594.	0.39
CALCIUM	1.2322	1.1854	0.918	2126.	0.21
SCANDIUM	1.0243	2.5562	167.836	10868.	-0.05
TITANIUM	0.9126	3.1657	17.230	28052.	-0.26
VANADIUM	0.8402	3.4494	14.126	55951.	-0.41
CHROMIUM	0.8002	2.6685	2.180	43745.	-0.92
MANGANESE+5	0.8159	1.8876	1.874	21765.	-0.69
MANGANESE+7	0.7828	1.8876	1.032	25473.	-1.01
IRON	0.7953	2.8090	5.083	49203.	-0.64
COBALT	0.7815	2.8680	4.929	55308.	-0.69
NICKEL	0.7778	2.8876	4.944	57060.	-0.70
COPPER	0.7978	2.2781	4.027	33515.	-0.59
ZINC	0.8702	0.8736	-0.113	709.	-0.43
GALLIUM	0.8446	1.8315	0.823	7356.	-0.57
GERMANIUM	0.8602	2.5140	1.133	12921.	-0.67
ARSENIC	0.8527	0.8146	-0.064	131.	-0.85
SELENIUM	0.8814	1.3876	-0.026	295.	-1.23
RUBIDIUM	1.5893	0.5590	9.627	34957.	0.39
STRONTIUM	1.3427	1.0140	4.446	7600.	0.25
YTTRIUM	1.1067	2.7978	104.785	7980.	0.05
ZIRCONIUM	1.0000	4.1011	129.523	37332.	-0.11
NIOBIUM	0.9164	4.9157	42.726	73018.	-0.27
MOLYBDENUM	0.8739	4.4242	4.124	73174.	-0.87
TECHNETIUM	0.8521	4.4410	4.500	81547.	-0.88
RUTHENIUM	0.8358	4.3483	4.546	84233.	-0.89
RHODIUM	0.8396	3.7416	2.937	64915.	-0.97
PALLADIUM	0.8589	2.5393	1.262	29146.	-0.98
SILVER	0.9020	1.9213	2.272	11800.	-0.45
CADMIUM	0.9788	0.7528	-0.301	341.	-0.35
INDIUM	1.0400	1.6208	0.042	1528.	-0.59
TIN+2	1.0181	2.0225	0.665	3895.	-0.42
TIN+4	0.9863	2.0225	0.014	1311.	-0.60
ANTIMONY	0.9806	1.7584	-0.008	1084.	-0.75
TELLURIUM	1.0250	1.3090	-0.097	126.	-0.69
CESIUM	1.7047	0.5292	10.456	47873.	0.44

TABLE-III- 18

SOLVENT-MAGNESIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.3958	1.1938	3.060	7542.	0.30
LANTHANUM	1.1717	2.8933	14.275	5396.	0.11
CERIUM+3	1.1523	3.1348	27.189	8371.	0.11
CERIUM+4	1.0437	3.1348	16.691	16588.	-0.20
PRASEODYMIUM	1.1411	2.5025	11.820	3918.	0.10
NEODYMIUM	1.1373	2.1713	3.938	2029.	0.10
PROMETHIUM	1.1292	1.7978	-3.126	595.	0.09
SAMARIUM	1.1248	1.3848	-7.103	9.	0.09
EUROPIUM+2	1.2740	1.1938	1.353	3142.	0.25
EUROPIUM+3	1.1223	1.1938	-6.476	284.	0.08
GADOLINIUM	1.1242	2.6896	43.170	6070.	0.07
TERBIUM	1.1130	2.6393	56.858	6232.	0.06
DYSPROSIUM	1.1080	2.0000	10.604	1905.	0.05
HOLMIUM	1.1030	2.0140	18.932	2116.	0.05
ERBIUM	1.0974	2.0927	47.271	2766.	0.04
THULIUM	1.0905	1.6376	-27.058	631.	0.03
YTTERBIUM+2	1.2104	1.0730	1.220	2433.	0.21
YTTERBIUM+3	1.0868	1.0730	-79.913	300.	0.02
LUTETIUM	1.0830	2.8697	1996.700	10217.	0.01
HAFNIUM	0.9863	4.0871	98.054	39405.	-0.13
TANTALUM	0.9157	5.2472	34.024	81535.	-0.32
TUNGSTEN	0.8789	5.6517	6.419	105635.	-0.84
RHENIUM	0.8583	5.2303	6.060	102162.	-0.85
OSMIUM	0.8446	5.2865	6.219	109731.	-0.87
IRIDIUM	0.8471	4.4691	4.226	83668.	-0.92
PLATINUM	0.8658	3.7921	2.772	58888.	-0.95
GOLD	0.9001	2.4607	1.964	21520.	-0.67
MERCURY	0.9950	0.4118	0.494	4637.	-0.55
THALLIUM	1.0712	1.2146	-0.130	2.	-0.63
LEAD	1.0924	1.3146	-0.105	1.	-0.70
BISMUTH	1.0543	1.4031	-0.122	73.	-0.63
POLONIUM	1.1074	0.9691	0.183	2330.	-0.52
FRANCIUM	1.7478	0.5084	12.569	52319.	0.42
RADIUM	1.4320	1.1798	4.220	9377.	0.29
ACTINIUM	1.1723	2.9213	8.455	5579.	0.15
THORIUM	1.1223	3.8371	50.662	18015.	-0.12
PROTACTINIUM	1.0150	3.7079	6.709	27199.	-0.41
URANIUM	0.9632	3.5112	2.787	30041.	-0.67
NEPTUNIUM	0.9538	3.1742	2.380	24385.	-0.65
PLUTONIUM+4.76	1.0237	2.5787	3.335	11158.	-0.36
PLUTONIUM+5	0.9938	2.5787	2.450	17665.	-0.54
AMERICIUM	1.0799	1.8539	0.950	1825.	-0.17

TABLE-III- 19

SOLVENT-ALUMINUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.520	1.4320	10.000	77500.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5440	0.6721	4.475	48906.	-0.68
LITHIUM	1.0908	0.4978	1.632	12994.	0.56
BERYLLIUM	0.7877	1.0052	4186.870	10847.	-0.01
BORON	0.6425	1.7097	8.966	52880.	-0.50
CARBON	0.6117	2.2052	5.035	124375.	-1.03
NITROGEN	0.5761	1.4568	2.696	142921.	-1.51
OXYGEN	0.6264	0.7683	0.314	28443.	-1.94
SODIUM	1.3345	0.3345	6.669	51156.	0.57
MAGNESIUM	1.1187	0.4594	8.137	16972.	0.29
SILICON	0.9232	1.3987	-0.312	500.	-0.31
PHOSPHOROUS	0.8666	0.9716	0.251	3141.	-0.58
SULFUR	0.8729	0.8568	-0.001	1171.	-0.99
POTASSIUM	1.6592	0.2772	11.362	122343.	0.68
CALCIUM	1.3785	0.5445	6.993	41505.	0.50
SCANDIUM	1.1459	1.1742	0.093	1315.	0.24
TITANIUM	1.0209	1.4542	-16.043	859.	0.03
VANADIUM	0.9399	1.5845	26.757	10077.	-0.12
CHROMIUM	0.8953	1.2258	0.535	6090.	-0.63
MANGANESE+5	0.9127	0.8671	-0.189	493.	-0.40
MANGANESE+7	0.8757	0.8671	0.001	1200.	-0.72
IRON	0.8897	1.2903	2.429	8052.	-0.35
COBALT	0.8743	1.3174	2.529	10524.	-0.40
NICKEL	0.8701	1.3265	2.596	11257.	-0.41
COPPER	0.8925	1.0465	0.873	3004.	-0.30
ZINC	0.9735	0.4013	16.167	8499.	-0.14
GALLIUM	0.9448	0.8413	0.478	2056.	-0.28
GERMANIUM	0.9623	1.1548	-0.183	584.	-0.38
ARSENIC	0.9539	0.3742	2.469	19045.	-0.56
SELENIUM	0.9860	0.6374	0.656	14567.	-0.94
RUBIDIUM	1.7779	0.2568	14.722	158170.	0.68
STRONTIUM	1.5021	0.4658	9.854	67452.	0.54
YTTRIUM	1.2381	1.2852	0.863	3533.	0.34
ZIRCONIUM	1.1187	1.8839	1.561	2358.	0.18
NIOBIUM	1.0251	2.2581	1595.482	15909.	0.02
MOLYBDENUM	0.9777	2.0323	1.998	16693.	-0.58
TECHNETIUM	0.9532	2.0400	2.446	20826.	-0.59
RUTHENIUM	0.9351	1.9974	2.544	22314.	-0.60
RHODIUM	0.9392	1.7187	1.173	13704.	-0.68
PALLADIUM	0.9609	1.1665	0.034	1563.	-0.69
SILVER	1.0091	0.8826	-1.311	418.	-0.16
CADMIUM	1.0950	0.3458	237.386	20899.	-0.06
INDIUM	1.1634	0.7445	4.103	9707.	-0.30
TIN+2	1.1390	0.9290	12.643	6119.	-0.13
TIN+4	1.1034	0.9290	5.227	12775.	-0.31
ANTIMONY	1.0971	0.8077	2.255	12194.	-0.46
TELLURIUM	1.1466	0.6013	6.384	24747.	-0.40
CESIUM	1.9071	0.2431	16.390	202605.	0.73

TABLE-III- 20

SOLVENT-ALUMINUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.5615	0.5484	8.788	71736.	0.59
LANTHANUM	1.3108	1.3290	1.493	6782.	0.40
CERIUM+3	1.2891	1.4400	0.761	3958.	0.40
CERIUM+4	1.1676	1.4400	-5.095	241.	0.09
PRASEODYMIUM	1.2765	1.1495	1.904	7871.	0.39
NEODYMIUM	1.2723	0.9974	2.846	10970.	0.39
PROMETHIUM	1.2633	0.8258	4.174	15163.	0.38
SAMARIUM	1.2584	0.6361	6.415	21993.	0.38
EUROPIUM+2	1.4253	0.5484	6.975	48091.	0.54
EUROPIUM+3	1.2556	0.5484	7.917	25915.	0.37
GADOLINIUM	1.2577	1.2355	1.348	5222.	0.36
TERBIUM	1.2451	1.2124	1.292	4885.	0.35
DYSPROSIUM	1.2395	0.9187	3.403	10477.	0.34
HOLMIUM	1.2339	0.9252	3.349	9912.	0.34
ERBIUM	1.2277	0.9613	2.982	8591.	0.33
THULIUM	1.2200	0.7523	5.349	13822.	0.32
YTTERBIUM+2	1.3541	0.4929	6.986	41466.	0.50
YTTERBIUM+3	1.2158	0.4929	10.432	24609.	0.31
LUTETIUM	1.2116	1.3182	0.420	2087.	0.30
HAFNIUM	1.1034	1.8774	3.049	2992.	0.16
TANTALUM	1.0244	2.4103	889.962	19662.	-0.03
TUNGSTEN	0.9832	2.5961	4.399	31880.	-0.55
RHENIUM	0.9602	2.4026	4.062	30567.	-0.56
OSMIUM	0.9448	2.4284	4.310	34630.	-0.58
IRIDIUM	0.9476	2.0529	2.259	21864.	-0.63
PLATINUM	0.9686	1.7419	0.967	10911.	-0.66
GOLD	1.0070	1.1303	-0.295	209.	-0.38
MERCURY	1.1131	0.1892	23.275	37474.	-0.26
THALLIUM	1.1983	0.5579	6.896	19574.	-0.34
LEAD	1.2221	0.6039	4.799	19795.	-0.41
BISMUTH	1.1795	0.6445	8.788	24618.	-0.34
POLONIUM	1.2388	0.4452	30.909	38897.	-0.23
FRANCIUM	1.9553	0.2335	18.553	216859.	0.71
RADIUM	1.6020	0.5419	10.193	80263.	0.58
ACTINIUM	1.3115	1.3419	1.212	6602.	0.44
THORIUM	1.2556	1.7626	-1.241	365.	0.17
PROTACTINIUM	1.1355	1.7032	-2.374	404.	-0.12
URANIUM	1.0775	1.6129	-0.049	1029.	-0.38
NEPTUNIUM	1.0670	1.4581	-0.310	267.	-0.36
PLUTONIUM+4.76	1.1453	1.1845	0.264	1222.	-0.07
PLUTONIUM+5	1.1117	1.1845	-0.822	7.	-0.25
AMERICIUM	1.2081	0.8516	26.450	9975.	0.12

TABLE-III- 21

SOLVENT-SILICON

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.830	1.3220	12.070	108400.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5893	0.4805	15.296	49479.	-0.37
LITHIUM	1.1815	0.3559	1.101	20408.	0.87
BERYLLIUM	0.8533	0.7186	3.463	8380.	0.30
BORON	0.6959	1.2223	60.264	51360.	-0.19
CARBON	0.6626	1.5766	10.754	129751.	-0.72
NITROGEN	0.6241	1.0415	4.586	153487.	-1.20
OXYGEN	0.6785	0.5493	0.419	26888.	-1.63
SODIUM	1.4455	0.2391	3.763	68390.	0.88
MAGNESIUM	1.2118	0.3284	2.944	25629.	0.60
ALUMINUM	1.0832	0.7149	-0.312	500.	0.31
PHOSPHOROUS	0.9387	0.6946	0.192	1516.	-0.27
SULFUR	0.9455	0.6125	-0.089	246.	-0.68
POTASSIUM	1.7973	0.1982	6.760	153968.	0.99
CALCIUM	1.4932	0.3893	3.694	57086.	0.81
SCANDIUM	1.2413	0.8395	0.390	3909.	0.55
TITANIUM	1.1059	1.0397	-0.427	53.	0.34
VANADIUM	1.0182	1.1328	7.118	7118.	0.19
CHROMIUM	0.9697	0.8764	1.106	3804.	-0.32
MANGANESE+5	0.9887	0.6199	-6.349	6.	-0.09
MANGANESE+7	0.9486	0.6199	-0.241	259.	-0.41
IRON	0.9637	0.9225	116.784	5501.	-0.04
COBALT	0.9470	0.9419	35.208	7768.	-0.09
NICKEL	0.9425	0.9483	31.496	8455.	-0.10
COPPER	0.9667	0.7482	82.300	1382.	0.01
ZINC	1.0545	0.2869	19.454	14157.	0.17
GALLIUM	1.0234	0.6015	183.532	5001.	0.03
GERMANIUM	1.0424	0.8256	11.003	2435.	-0.07
ARSENIC	1.0333	0.2675	18.735	28194.	-0.25
SELENIUM	1.0681	0.4557	2.353	22725.	-0.63
RUBIDIUM	1.9259	0.1836	8.638	196419.	0.99
STRONTIUM	1.6271	0.3330	5.261	88839.	0.85
YTTRIUM	1.3411	0.9188	0.667	7755.	0.65
ZIRCONIUM	1.2118	1.3469	-0.090	691.	0.49
NIOBIUM	1.1104	1.6144	4.297	11982.	0.33
MOLYBDENUM	1.0590	1.4530	7.004	12966.	-0.27
TECHNETIUM	1.0325	1.4585	8.753	17017.	-0.28
RUTHENIUM	1.0129	1.4280	8.954	18558.	-0.29
RHODIUM	1.0174	1.2288	2.920	10409.	-0.37
PALLADIUM	1.0408	0.8339	-0.240	394.	-0.38
SILVER	1.0930	0.6310	1.429	1934.	0.15
CADMIUM	1.1861	0.2472	20.366	30545.	0.25
INDIUM	1.2602	0.5323	6534.364	16260.	0.01
TIN+2	1.2337	0.6642	13.616	11365.	0.18
TIN+4	1.1952	0.6642	$+\infty$	20735.	0.
ANTIMONY	1.1884	0.5775	35.806	19770.	-0.15
TELLURIUM	1.2421	0.4299	186.329	35996.	-0.09
CESIUM	2.0658	0.1738	9.931	248885.	1.04

TABLE-III- 22

SOLVENT-SILICON

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.6914	0.3921	4.991	94409.	0.90
LANTHANUM	1.4198	0.9502	0.986	12756.	0.71
CERIUM+3	1.3964	1.0295	0.639	8558.	0.71
CERIUM+4	1.2648	1.0295	0.139	1706.	0.40
PRASEODYMIUM	1.3828	0.8219	1.147	14150.	0.70
NEODYMIUM	1.3782	0.7131	1.535	18344.	0.70
PROMETHIUM	1.3684	0.5904	2.055	23817.	0.69
SAMARIUM	1.3631	0.4548	2.894	32502.	0.69
EUROPIUM+2	1.5439	0.3921	3.848	65301.	0.85
EUROPIUM+3	1.3601	0.3921	3.415	37387.	0.68
GADOLINIUM	1.3623	0.8833	0.883	10332.	0.67
TERBIUM	1.3487	0.8668	0.852	9798.	0.66
DYSPROSIUM	1.3427	0.6568	1.659	17556.	0.65
HOLMIUM	1.3366	0.6614	1.619	16776.	0.65
ERBIUM	1.3298	0.6873	1.467	14962.	0.64
THULIUM	1.3215	0.5378	2.262	21900.	0.63
YTTERBIUM+2	1.4667	0.3524	3.681	56890.	0.81
YTTERBIUM+3	1.3169	0.3524	3.856	35598.	0.62
LUTETIUM	1.3124	0.9424	0.482	5383.	0.61
HAFNIUM	1.1952	1.3423	-0.020	1090.	0.47
TANTALUM	1.1097	1.7232	7.882	15442.	0.28
TUNGSTEN	1.0651	1.8561	19.754	27431.	-0.24
RHENIUM	1.0401	1.7177	17.471	26373.	-0.25
OSMIUM	1.0234	1.7362	17.445	30518.	-0.27
IRIDIUM	1.0265	1.4677	7.133	18036.	-0.32
PLATINUM	1.0492	1.2454	2.323	7755.	-0.35
GOLD	1.0908	0.8081	-10.080	53.	-0.07
MERCURY	1.2057	0.1352	865.929	51113.	0.05
THALLIUM	1.2980	0.3989	1349.830	29207.	-0.03
LEAD	1.3238	0.4317	123.093	29578.	-0.10
BISMUTH	1.2776	0.4608	1673.172	35917.	-0.03
POLONIUM	1.3419	0.3183	354.766	53550.	0.08
FRANCIUM	2.1180	0.1670	11.021	265606.	1.02
RADIUM	1.7352	0.3875	5.671	104784.	0.89
ACTINIUM	1.4206	0.9594	0.872	12503.	0.75
THORIUM	1.3601	1.2601	0.185	2176.	0.48
PROTACTINIUM	1.2300	1.2177	-1.414	15.	0.19
URANIUM	1.1672	1.1531	-9.742	91.	-0.07
NEPTUNIUM	1.1558	1.0424	-19.869	47.	-0.05
PLUTONIUM+4.76	1.2405	0.8469	1.919	3741.	0.24
PLUTONIUM+5	1.2042	0.8469	-6.139	683.	0.06
AMERICIUM	1.3086	0.6089	3.654	16771.	0.43

TABLE-III- 23

SOLVENT-PHOSPHOROUS

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.100	1.2410	6.511	75300.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.6277	0.6918	86.823	21214.	-0.10
LITHIUM	1.2587	0.5124	0.879	27541.	1.14
BERYLLIUM	0.9089	1.0345	0.106	1986.	0.57
BORON	0.7413	1.7596	153.884	23903.	0.08
CARBON	0.7059	2.2696	14.207	67533.	-0.45
NITROGEN	0.6648	1.4993	3.812	77212.	-0.93
OXYGEN	0.7228	0.7907	0.215	10361.	-1.36
SODIUM	1.5399	0.3442	2.721	84163.	1.15
MAGNESIUM	1.2909	0.4728	1.848	33454.	0.87
ALUMINUM	1.1539	1.0292	0.251	3141.	0.58
SILICON	1.0653	1.4396	0.192	1516.	0.27
SULFUR	1.0073	0.8818	-0.208	385.	-0.41
POTASSIUM	1.9146	0.2853	5.213	192025.	1.26
CALCIUM	1.5907	0.5604	2.717	74276.	1.08
SCANDIUM	1.3223	1.2085	0.538	9541.	0.82
TITANIUM	1.1781	1.4967	-0.016	1054.	0.61
VANADIUM	1.0846	1.6308	0.038	1380.	0.46
CHROMIUM	1.0330	1.2616	-14.706	344.	-0.05
MANGANESE+5	1.0532	0.8924	-0.266	993.	0.18
MANGANESE+7	1.0105	0.8924	-1.809	375.	-0.14
IRON	1.0266	1.3280	-0.279	851.	0.23
COBALT	1.0089	1.3559	0.667	1691.	0.18
NICKEL	1.0040	1.3652	1.163	1967.	0.17
COPPER	1.0298	1.0770	-0.657	4.	0.28
ZINC	1.1233	0.4130	3.998	19041.	0.44
GALLIUM	1.0902	0.8659	4.302	10121.	0.30
GERMANIUM	1.1104	1.1886	6.400	7095.	0.20
ARSENIC	1.1007	0.3851	3700.470	35325.	0.02
SELENIUM	1.1378	0.6560	10.264	31866.	-0.36
RUBIDIUM	2.0516	0.2643	6.692	246194.	1.26
STRONTIUM	1.7333	0.4794	3.883	113506.	1.12
YTTRIUM	1.4287	1.3227	0.740	15726.	0.92
ZIRCONIUM	1.2909	1.9389	-0.066	310.	0.76
NIOBIUM	1.1829	2.3240	0.257	3323.	0.60
MOLYBDENUM	1.1281	2.0916	- ∞	3844.	0.
TECHNETIUM	1.0999	2.0996	2015.670	5840.	-0.01
RUTHENIUM	1.0790	2.0558	589.334	6628.	-0.02
RHODIUM	1.0838	1.7689	6.664	2729.	-0.10
PALLADIUM	1.1088	1.2005	-3.057	339.	-0.11
SILVER	1.1644	0.9084	1.094	5642.	0.42
CADMIUM	1.2635	0.3559	5.849	37666.	0.52
INDIUM	1.3425	0.7663	12.914	24540.	0.28
TIN+2	1.3143	0.9562	3.866	19247.	0.45
TIN+4	1.2732	0.9562	18.179	31752.	0.27
ANTIMONY	1.2659	0.8313	85.452	29568.	0.12
TELLURIUM	1.3231	0.6189	62.985	48251.	0.18
CESIUM	2.2006	0.2502	7.897	313713.	1.31

TABLE-III- 24

SOLVENT-PHOSPHOROUS

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.8018	0.5644	3.844	122530.	1.17
LANTHANUM	1.5125	1.3679	0.985	23148.	0.98
CERIUM+3	1.4875	1.4821	0.740	17484.	0.98
CERIUM+4	1.3473	1.4821	0.499	6361.	0.67
PRASEODYMIUM	1.4730	1.1831	1.062	24224.	0.97
NEODYMIUM	1.4682	1.0266	1.294	29039.	0.97
PROMETHIUM	1.4577	0.8499	1.587	34987.	0.96
SAMARIUM	1.4521	0.6547	2.047	44247.	0.95
EUROPIUM+2	1.6446	0.5644	2.893	84888.	1.12
EUROPIUM+3	1.4488	0.5644	2.321	49291.	0.95
GADOLINIUM	1.4512	1.2716	0.887	19270.	0.94
TERBIUM	1.4367	1.2478	0.859	18408.	0.93
DYSPROSIUM	1.4303	0.9456	1.334	27463.	0.92
HOLMIUM	1.4230	0.9522	1.306	26470.	0.92
ERBIUM	1.4166	0.9894	1.214	24272.	0.91
THULIUM	1.4077	0.7742	1.642	31870.	0.90
YTTERBIUM+2	1.5624	0.5073	2.673	73099.	1.08
YTTERBIUM+3	1.4029	0.5073	2.455	46237.	0.89
LUTETIUM	1.3981	1.3567	0.614	12237.	0.88
HAFNIUM	1.2732	1.9323	-0.085	125.	0.74
TANTALUM	1.1821	2.4807	0.542	4975.	0.55
TUNGSTEN	1.1346	2.6720	489.624	11354.	0.03
RHENIUM	1.1080	2.4728	1037.916	10766.	0.02
OSMIUM	1.0902	2.4993	- ∞	13048.	0.
IRIDIUM	1.0935	2.1129	89.582	6357.	-0.05
PLATINUM	1.1176	1.7928	2.731	1595.	-0.08
GOLD	1.1620	1.1633	0.737	1872.	0.20
MERCURY	1.2844	0.1947	24.219	58381.	0.32
THALLIUM	1.3828	0.5742	28.566	39136.	0.24
LEAD	1.4102	0.6215	58.467	40156.	0.17
BISMUTH	1.3610	0.6633	35.769	48702.	0.24
POLONIUM	1.4295	0.4582	23.633	67953.	0.35
FRANCIUM	2.2562	0.2404	8.699	334990.	1.29
RADIUM	1.8485	0.3578	4.341	135877.	1.16
ACTINIUM	1.5133	1.3811	0.903	22845.	1.02
THORIUM	1.4488	1.8141	0.515	7868.	0.75
PROTACTINIUM	1.3102	1.7530	0.178	2059.	0.46
URANIUM	1.2434	1.6600	-0.209	999.	0.20
NEPTUNIUM	1.2313	1.5007	0.831	2120.	0.22
PLUTONIUM+4.76	1.3215	1.2191	1.352	9302.	0.51
PLUTONIUM+5	1.2828	1.2191	1.048	3824.	0.33
AMERICIUM	1.3940	0.8765	2.193	25968.	0.70

TABLE-III- 25

SOLVENT-SULFUR

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.510	1.2500	6.654	66400.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.6232	0.7845	11.373	26396.	0.31
LITHIUM	1.2496	0.5810	0.345	20329.	1.55
BERYLLIUM	0.9024	1.1732	0.127	3995.	0.98
BORON	0.7360	1.9955	5.227	30131.	0.49
CARBON	0.7008	2.5738	2075.613	77774.	-0.04
NITROGEN	0.6600	1.7003	13.864	87642.	-0.52
OXYGEN	0.7176	0.8967	0.622	14142.	-0.95
SODIUM	1.5288	0.3904	1.192	68101.	1.56
MAGNESIUM	1.2816	0.5361	0.637	25271.	1.28
ALUMINUM	1.1456	1.1672	-0.001	1171.	0.99
SILICON	1.0576	1.6325	-0.089	246.	0.68
PHOSPHOROUS	0.9928	1.1340	-0.208	385.	0.41
POTASSIUM	1.9008	0.3235	2.466	159776.	1.67
CALCIUM	1.5792	0.6355	1.122	58635.	1.49
SCANDIUM	1.3128	1.3705	0.118	5302.	1.23
TITANIUM	1.1696	1.6973	-0.046	85.	1.02
VANADIUM	1.0768	1.8494	0.126	3396.	0.87
CHROMIUM	1.0256	1.4307	0.105	1505.	0.36
MANGANESE+5	1.0456	1.0120	-0.132	131.	0.59
MANGANESE+7	1.0032	1.0120	-0.709	0.	0.27
IRON	1.0192	1.5060	0.132	2438.	0.64
COBALT	1.0016	1.5377	0.316	3732.	0.59
NICKEL	0.9968	1.5482	0.379	4131.	0.58
COPPER	1.0224	1.2214	-0.079	325.	0.69
ZINC	1.1152	0.4684	0.752	13716.	0.85
GALLIUM	1.0824	0.9819	0.418	6047.	0.71
GERMANIUM	1.1024	1.3479	0.283	3621.	0.61
ARSENIC	1.0928	0.4367	6.082	27124.	0.43
SELENIUM	1.1296	0.7440	385.849	23436.	0.05
RUBIDIUM	2.0368	0.2997	3.185	206049.	1.67
STRONTIUM	1.7208	0.5437	1.679	91844.	1.53
YTTRIUM	1.4184	1.5000	0.207	9678.	1.33
ZIRCONIUM	1.2816	2.1988	-0.036	48.	1.17
NIOBIUM	1.1744	2.6355	0.225	6478.	1.01
MOLYBDENUM	1.1200	2.3720	1.510	7045.	0.41
TECHNETIUM	1.0920	2.3810	2.276	9589.	0.40
RUTHENIUM	1.0712	2.3313	2.663	10533.	0.39
RHODIUM	1.0760	2.0060	1.893	5387.	0.31
PALLADIUM	1.1008	1.3614	-0.571	8.	0.30
SILVER	1.1560	1.0301	0.103	2829.	0.83
CADMIUM	1.2544	0.4036	1.403	29179.	0.93
INDIUM	1.3328	0.8690	1.468	17312.	0.69
TIN+2	1.3048	1.0843	0.682	12829.	0.86
TIN+4	1.2640	1.0843	2.011	22632.	0.68
ANTIMONY	1.2568	0.9428	3.084	21167.	0.53
TELLURIUM	1.3136	0.7018	4.448	36899.	0.59
CESIUM	2.1848	0.2837	3.848	263727.	1.72

TABLE-III- 26

SOLVENT-SULFUR

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.7888	0.6401	1.697	98874.	1.58
LANTHANUM	1.5016	1.5512	0.313	15205.	1.39
CERIUM+3	1.4768	1.6807	0.217	10798.	1.39
CERIUM+4	1.3376	1.6807	0.065	2951.	1.08
PRASEODYMIUM	1.4624	1.3417	0.344	16311.	1.38
NEODYMIUM	1.4576	1.1642	0.439	20343.	1.38
PROMETHIUM	1.4472	0.9639	0.560	25455.	1.37
SAMARIUM	1.4416	0.7425	0.752	33500.	1.36
EUROPIUM+2	1.6328	0.6401	1.227	67439.	1.53
EUROPIUM+3	1.4384	0.6401	0.864	37951.	1.36
GADOLINIUM	1.4408	1.4420	0.267	12394.	1.35
TERBIUM	1.4264	1.4151	0.255	11774.	1.34
DYSPROSIUM	1.4200	1.0723	0.440	19260.	1.33
HOLMIUM	1.4136	1.0798	0.426	18466.	1.33
ERBIUM	1.4064	1.1220	0.386	16675.	1.32
THULIUM	1.3976	0.8780	0.555	23140.	1.31
YTTERBIUM+2	1.5512	0.5753	1.108	57913.	1.49
YTTERBIUM+3	1.3928	0.5753	0.882	35653.	1.30
LUTETIUM	1.3880	1.5386	0.153	7108.	1.29
HAFNIUM	1.2640	2.1913	-0.034	170.	1.15
TANTALUM	1.1736	2.8133	0.354	8726.	0.96
TUNGSTEN	1.1264	3.0301	3.448	16587.	0.44
RHENIUM	1.1000	2.8042	3.416	15759.	0.43
OSMIUM	1.0824	2.8343	4.448	18436.	0.41
IRIDIUM	1.0856	2.3961	3.026	10235.	0.36
PLATINUM	1.1096	2.0331	1.035	3792.	0.33
GOLD	1.1536	1.3193	-0.086	451.	0.61
MERCURY	1.2752	0.2208	3.764	47452.	0.73
THALLIUM	1.3728	0.6512	2.914	29586.	0.65
LEAD	1.4000	0.7048	3.748	30268.	0.58
BISMUTH	1.3512	0.7523	3.687	37114.	0.65
POLONIUM	1.4192	0.5196	3.955	53876.	0.76
FRANCIUM	2.2400	0.2726	4.214	282014.	1.70
RADIUM	1.8352	0.6325	1.916	110101.	1.57
ACTINIUM	1.5024	1.5663	0.292	14956.	1.43
THORIUM	1.4384	2.0572	0.082	3738.	1.16
PROTACTINIUM	1.3008	1.9880	-0.045	414.	0.87
URANIUM	1.2344	1.8825	-0.132	59.	0.61
NEPTUNIUM	1.2224	1.7018	-0.077	492.	0.63
PLUTONIUM+4.76	1.3120	1.3825	0.202	5125.	0.92
PLUTONIUM+5	1.2736	1.3825	0.024	1497.	0.74
AMERICIUM	1.3840	0.9940	0.599	18218.	1.11

TABLE-III- 27

SOLVENT-POTASSIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
0.840	2.3760	45.610	21480.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.3279	2.4250	13.811	590271.	-1.36
LITHIUM	0.6574	1.7961	91.000	31410.	-0.12
BERYLLIUM	0.4747	3.6266	25.008	275751.	-0.69
BORON	0.3872	6.1685	17.967	578098.	-1.18
CARBON	0.3687	7.9562	14.898	1005745.	-1.71
NITROGEN	0.3472	5.2561	10.505	1162987.	-2.19
OXYGEN	0.3775	2.7719	2.715	430947.	-2.62
SODIUM	0.8043	1.2067	11.626	4436.	-0.11
MAGNESIUM	0.6742	1.6574	6.672	24594.	-0.39
ALUMINUM	0.6027	3.6080	11.362	122343.	-0.68
SILICON	0.5564	5.0466	6.760	153968.	-0.99
PHOSPHOROUS	0.5223	3.5056	5.213	192025.	-1.26
SULFUR	0.5261	3.0912	2.466	159776.	-1.67
CALCIUM	0.8308	1.9646	14.742	12207.	-0.18
SCANDIUM	0.6907	4.2365	21.098	95384.	-0.44
TITANIUM	0.6153	5.2467	16.586	162787.	-0.65
VANADIUM	0.5665	5.7169	18.009	266971.	-0.80
CHROMIUM	0.5396	4.4227	5.734	228114.	-1.31
MANGANESE+5	0.5501	3.1285	5.329	144520.	-1.08
MANGANESE+7	0.5278	3.1285	3.524	160464.	-1.40
IRON	0.5362	4.6555	10.092	248084.	-1.03
COBALT	0.5269	4.7533	10.040	271237.	-1.08
NICKEL	0.5244	4.7858	10.097	277813.	-1.09
COPPER	0.5379	3.7756	8.560	190778.	-0.98
ZINC	0.5867	1.4479	2.283	36589.	-0.82
GALLIUM	0.5694	3.0354	3.682	79435.	-0.96
GERMANIUM	0.5800	4.1667	3.975	104184.	-1.06
ARSENIC	0.5749	1.3501	0.508	19196.	-1.24
SELENIUM	0.5943	2.2998	0.543	34052.	-1.62
RUBIDIUM	1.0715	0.9264	$+\infty$	416.	0.
STRONTIUM	0.9053	1.6806	7.849	4740.	-0.14
YTTRIUM	0.7462	4.6369	31.273	83093.	-0.34
ZIRCONIUM	0.6742	6.7970	33.179	192471.	-0.50
NIOBIUM	0.6178	8.1471	31.101	313596.	-0.66
MOLYBDENUM	0.5892	7.3324	8.701	319737.	-1.26
TECHNETIUM	0.5745	7.3603	9.380	350077.	-1.27
RUTHENIUM	0.5636	7.2067	9.527	361142.	-1.28
RHODIUM	0.5661	6.2011	6.944	297368.	-1.36
PALLADIUM	0.5791	4.2086	3.921	170900.	-1.37
SILVER	0.6082	3.1844	6.090	100278.	-0.84
CADMIUM	0.6599	1.2477	1.209	16464.	-0.74
INDIUM	0.7012	2.6862	2.038	46324.	-0.98
TIN+2	0.6864	3.3520	4.020	62018.	-0.81
TIN+4	0.6650	3.3520	1.999	46380.	-0.99
ANTIMONY	0.6612	2.9143	1.412	43520.	-1.14
TELLURIUM	0.6911	2.1695	0.787	22371.	-1.08
CESIUM	1.1494	0.8771	6.243	1552.	0.05

TABLE-III- 28

SOLVENT-POTASSIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	0.9411	1.9786	24.317	5734.	-0.09
LANTHANUM	0.7900	4.7952	39.916	71819.	-0.28
CERIUM+3	0.7769	5.1955	45.573	85358.	-0.28
CERIUM+4	0.7037	5.1955	14.596	118355.	-0.59
PRASEODYMIUM	0.7694	4.1476	32.131	63505.	-0.29
NEODYMIUM	0.7668	3.5987	25.389	51798.	-0.29
PROMETHIUM	0.7614	2.9795	18.552	39439.	-0.30
SAMARIUM	0.7584	2.2952	11.433	25717.	-0.30
EUROPIUM+2	0.8590	1.9786	20.159	10304.	-0.14
EUROPIUM+3	0.7567	1.9786	8.306	19838.	-0.31
GADOLINIUM	0.7580	4.4576	30.991	74372.	-0.32
TERBIUM	0.7504	4.3743	29.752	75002.	-0.33
DYSPROSIUM	0.7471	3.3147	18.879	50341.	-0.34
HOLMIUM	0.7437	3.3380	18.523	51738.	-0.34
ERBIUM	0.7399	3.4683	19.158	55931.	-0.35
THULIUM	0.7353	2.7142	12.659	39024.	-0.36
YTTERBIUM+2	0.8161	1.7784	12.888	10821.	-0.18
YTTERBIUM+3	0.7327	1.7784	5.676	18917.	-0.37
LUTETIUM	0.7302	4.7561	28.070	92705.	-0.38
HAFNIUM	0.6650	6.7737	31.892	200052.	-0.52
TANTALUM	0.6174	8.6965	29.157	340127.	-0.71
TUNGSTEN	0.5926	9.3669	12.012	420252.	-1.23
RHENIUM	0.5787	8.6685	11.638	413828.	-1.24
OSMIUM	0.5694	8.7616	11.990	440139.	-1.26
IRIDIUM	0.5711	7.4069	9.003	357453.	-1.31
PLATINUM	0.5838	6.2849	6.595	274278.	-1.34
GOLD	0.6069	4.0782	5.367	140247.	-1.06
MERCURY	0.6709	0.6825	0.105	3325.	-0.94
THALLIUM	0.7222	2.0130	1.007	25354.	-1.02
LEAD	0.7365	2.1788	0.931	26696.	-1.09
BISMUTH	0.7109	2.3254	0.944	23843.	-1.02
POLONIUM	0.7466	1.6061	0.480	10351.	-0.91
FRANCIUM	1.1785	0.8426	43.892	2103.	0.03
RADIUM	0.9655	1.9553	14.669	4575.	-0.10
ACTINIUM	0.7904	4.8417	53.864	72737.	-0.24
THORIUM	0.7567	6.3594	20.341	123196.	-0.51
PROTACTINIUM	0.6843	6.1453	10.573	157237.	-0.80
URANIUM	0.6494	5.8194	6.463	168652.	-1.06
NEPTUNIUM	0.6431	5.2607	5.909	148585.	-1.04
PLUTONIUM+4.76	0.6902	4.2737	7.357	96621.	-0.75
PLUTONIUM+5	0.6700	4.2737	6.151	123880.	-0.93
AMERICIUM	0.7281	3.0726	6.647	49259.	-0.56

TABLE-III- 29

SOLVENT-CALCIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.020	1.9740	26.190	4220C.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.3946	1.2344	8.409	271188.	-1.18
LITHIUM	0.7913	0.9142	33.888	4005.	0.06
BERYLLIUM	0.5714	1.8460	18.992	115103.	-0.51
BORON	0.4661	3.1398	11.787	273011.	-1.00
CARBON	0.4438	4.0498	9.272	501698.	-1.53
NITROGEN	0.4179	2.6754	6.190	577872.	-2.01
OXYGEN	0.4544	1.4109	1.382	190975.	-2.44
SODIUM	0.9681	0.6142	0.701	1271.	0.07
MAGNESIUM	0.8116	0.8436	0.918	2126.	-0.21
ALUMINUM	0.7254	1.8365	6.993	41505.	-0.50
SILICON	0.6697	2.5687	3.694	57086.	-0.81
PHOSPHOROUS	0.6287	1.7844	2.717	74276.	-1.08
SULFUR	0.6332	1.5735	1.122	58635.	-1.49
POTASSIUM	1.2036	0.5090	14.742	12207.	0.18
SCANDIUM	0.8313	2.1564	17.975	29213.	-0.26
TITANIUM	0.7406	2.6706	11.833	61468.	-0.47
VANADIUM	0.6819	2.9100	12.660	113416.	-0.62
CHROMIUM	0.6494	2.2512	3.108	92697.	-1.13
MANGANESE+5	0.6621	1.5924	2.695	51540.	-0.90
MANGANESE+7	0.6353	1.5924	1.684	58986.	-1.22
IRON	0.6454	2.3697	6.097	102780.	-0.85
COBALT	0.6342	2.4194	6.059	114362.	-0.90
NICKEL	0.6312	2.4360	6.100	117672.	-0.91
COPPER	0.6474	1.9218	4.928	73928.	-0.80
ZINC	0.7062	0.7370	0.488	5799.	-0.64
GALLIUM	0.6854	1.5450	1.495	22172.	-0.78
GERMANIUM	0.6981	2.1209	1.795	33253.	-0.88
ARSENIC	0.6920	0.6872	-0.007	1004.	-1.06
SELENIUM	0.7153	1.1706	0.071	4600.	-1.44
RUBIDIUM	1.2898	0.4716	23.384	18664.	0.18
STRONTIUM	1.0897	0.8555	13.794	1701.	0.04
YTTRIUM	0.8982	2.3602	39.315	23539.	-0.16
ZIRCONIUM	0.8116	3.4597	32.125	77051.	-0.32
NIOBIUM	0.7437	4.1469	26.131	140026.	-0.48
MOLYBDENUM	0.7092	3.7322	5.240	142143.	-1.08
TECHNETIUM	0.6915	3.7464	5.713	157712.	-1.09
RUTHENIUM	0.6783	3.6682	5.805	163158.	-1.10
RHODIUM	0.6814	3.1564	3.990	129304.	-1.18
PALLADIUM	0.6971	2.1422	1.946	64737.	-1.19
SILVER	0.7320	1.6209	3.002	31350.	-0.66
CADMIUM	0.7943	0.6351	-0.090	543.	-0.56
INDIUM	0.8440	1.3673	0.512	8743.	-0.80
TIN+2	0.8262	1.7062	1.478	14718.	-0.63
TIN+4	0.8004	1.7062	0.479	8438.	-0.81
ANTIMONY	0.7958	1.4834	0.301	7590.	-0.96
TELLURIUM	0.8318	1.1043	0.008	1341.	-0.90
CESIUM	1.3835	0.4484	20.870	26651.	0.23

TABLE-III- 30

SOLVENT-CALCIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.1327	1.0071	1.417	1457.	0.09
LANTHANUM	0.9509	2.4408	79.246	18386.	-0.10
CERIUM+3	0.9352	2.6445	94.931	24417.	-0.10
CERIUM+4	0.8470	2.6445	10.011	39997.	-0.41
PRASEODYMIUM	0.9260	2.1111	49.591	15029.	-0.11
NEODYMIUM	0.9230	1.8318	30.830	10432.	-0.11
PROMETHIUM	0.9164	1.5166	14.952	6075.	-0.12
SAMARIUM	0.9129	1.1682	2.555	2113.	-0.13
EUROPIUM+2	1.0339	1.0071	-29.858	91.	0.04
EUROPIUM+3	0.9108	1.0071	-0.775	881.	-0.13
GADOLINIUM	0.9124	2.2690	40.866	19663.	-0.14
TERBIUM	0.9032	2.2265	37.181	19973.	-0.15
DYSPROSIUM	0.8992	1.6872	15.688	9996.	-0.16
HOLMIUM	0.8951	1.6991	15.067	10537.	-0.16
ERBIUM	0.8906	1.7654	16.084	12165.	-0.17
THULIUM	0.8850	1.3815	6.530	6071.	-0.18
YTTERBIUM+2	0.9823	0.9052	+ ∞	21.	0.
YTTERBIUM+3	0.8820	0.9052	-0.503	782.	-0.19
LUTETIUM	0.8789	2.4209	30.182	27930.	-0.20
HAFNIUM	0.8004	3.4479	29.881	80848.	-0.34
TANTALUM	0.7432	4.4265	23.655	154420.	-0.53
TUNGSTEN	0.7133	4.7678	7.703	197021.	-1.05
RHENIUM	0.6966	4.4123	7.386	192578.	-1.06
OSMIUM	0.6854	4.4597	7.629	206395.	-1.08
IRIDIUM	0.6874	3.7701	5.446	161561.	-1.13
PLATINUM	0.7026	3.1991	3.757	117755.	-1.16
GOLD	0.7305	2.0758	2.737	50065.	-0.88
MERCURY	0.8075	0.3474	0.005	1252.	-0.76
THALLIUM	0.8693	1.0246	0.059	2157.	-0.84
LEAD	0.8865	1.1090	0.065	2437.	-0.91
BISMUTH	0.8556	1.1836	0.026	1617.	-0.84
POLONIUM	0.8987	0.8175	-0.095	25.	-0.73
FRANCIUM	1.4184	0.4289	27.850	29514.	0.21
RADIUM	1.1621	0.9953	7.120	2243.	0.08
ACTINIUM	0.9514	2.4645	211.832	18778.	-0.06
THORIUM	0.9108	3.2370	16.405	42390.	-0.33
PROTACTINIUM	0.8237	3.1280	6.539	59153.	-0.62
URANIUM	0.7817	2.9621	3.553	64642.	-0.88
NEPTUNIUM	0.7741	2.6777	3.130	54573.	-0.86
PLUTONIUM+4.76	0.8308	2.1754	3.815	29779.	-0.57
PLUTONIUM+5	0.8065	2.1754	3.180	42437.	-0.75
AMERICIUM	0.8764	1.5640	2.552	9689.	-0.38

TABLE-III- 31

SOLVENT-SCANDIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.280	1.6410	15.040	91000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4747	0.5724	4.380	86672.	-0.92
LITHIUM	0.9519	0.4240	2.735	7650.	0.32
BERYLLIUM	0.6874	0.8560	15.382	23362.	-0.25
BORON	0.5606	1.4560	6.993	89496.	-0.74
CARBON	0.5338	1.8780	5.288	197881.	-1.27
NITROGEN	0.5027	1.2407	3.257	231191.	-1.75
OXYGEN	0.5466	0.6543	0.473	52987.	-2.18
SODIUM	1.1645	0.2848	15.026	38927.	0.33
MAGNESIUM	0.9762	0.3912	167.836	10868.	0.05
ALUMINUM	0.8726	0.8516	0.093	1315.	-0.24
SILICON	0.8056	1.1912	0.390	3909.	-0.55
PHOSPHOROUS	0.7562	0.8275	0.538	9541.	-0.82
SULFUR	0.7617	0.7297	0.118	5302.	-1.23
POTASSIUM	1.4479	0.2360	21.098	95384.	0.44
CALCIUM	1.2029	0.4637	17.975	29213.	0.26
TITANIUM	0.8909	1.2385	3.672	4926.	-0.21
VANADIUM	0.8202	1.3495	6.969	22019.	-0.36
CHROMIUM	0.7812	1.0440	0.797	15109.	-0.87
MANGANESE+5	0.7965	0.7385	0.249	3543.	-0.64
MANGANESE+7	0.7642	0.7385	0.197	5376.	-0.96
IRON	0.7764	1.0989	2.163	18552.	-0.59
COBALT	0.7629	1.1220	2.283	22752.	-0.64
NICKEL	0.7593	1.1297	2.339	23979.	-0.65
COPPER	0.7788	0.8912	1.207	9307.	-0.54
ZINC	0.8495	0.3418	1.029	4617.	-0.38
GALLIUM	0.8245	0.7165	-0.165	163.	-0.52
GERMANIUM	0.8397	0.9835	-0.118	149.	-0.62
ARSENIC	0.8324	0.3187	0.801	13008.	-0.80
SELENIUM	0.8605	0.5429	0.221	8289.	-1.18
RUBIDIUM	1.5515	0.2187	27.405	123541.	0.44
STRONTIUM	1.3108	0.3967	23.493	49950.	0.30
YTTRIUM	1.0804	1.0945	-2.872	490.	0.10
ZIRCONIUM	0.9762	1.6044	88.670	8553.	-0.06
NIOBIUM	0.8946	1.9231	27.137	31479.	-0.22
MOLYBDENUM	0.8531	1.7308	2.032	32704.	-0.82
TECHNETIUM	0.8318	1.7374	2.391	39174.	-0.83
RUTHENIUM	0.8160	1.7011	2.478	41510.	-0.84
RHODIUM	0.8196	1.4637	1.372	27961.	-0.92
PALLADIUM	0.8385	0.9934	0.261	6391.	-0.93
SILVER	0.8806	0.7516	-0.273	185.	-0.40
CADMIUM	0.9555	0.2965	6.509	14700.	-0.30
INDIUM	1.0152	0.6341	0.501	4562.	-0.54
TIN+2	0.9939	0.7912	0.259	2009.	-0.37
TIN+4	0.9628	0.7912	0.717	6197.	-0.55
ANTIMONY	0.9573	0.6879	0.434	6099.	-0.70
TELLURIUM	1.0006	0.5121	1.572	16040.	-0.64
CESIUM	1.6642	0.2070	28.353	158172.	0.49

TABLE-III- 32

SOLVENT-SCANDIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.3626	0.4670	18.094	52306.	0.35
LANTHANUM	1.1438	1.1319	1.226	1943.	0.16
CERIUM+3	1.1249	1.2264	-1.084	576.	0.16
CERIUM+4	1.0189	1.2264	-1.245	546.	-0.15
PRASEODYMIUM	1.1140	0.9790	2.976	2736.	0.15
NEODYMIUM	1.1103	0.8495	7.478	4868.	0.15
PROMETHIUM	1.1024	0.7033	15.077	8104.	0.14
SAMARIUM	1.0981	0.5418	29.973	13789.	0.14
EUROPIUM+2	1.2438	0.4670	15.917	34227.	0.30
EUROPIUM+3	1.0957	0.4670	42.464	17236.	0.13
GADOLINIUM	1.0975	1.0522	0.156	1244.	0.12
TERBIUM	1.0865	1.0325	-0.312	1102.	0.11
DYSPROSIUM	1.0817	0.7824	14.081	4704.	0.10
HOLMIUM	1.0768	0.7879	14.750	4327.	0.10
ERBIUM	1.0713	0.8187	12.546	3433.	0.09
THULIUM	1.0646	0.6407	41.940	7382.	0.08
YTTERBIUM+2	1.1816	0.4198	18.239	29624.	0.26
YTTERBIUM+3	1.0609	0.4198	128.741	16582.	0.07
LUTETIUM	1.0573	1.1226	-11.923	66.	0.06
HAFNIUM	0.9628	1.5989	58.298	9796.	-0.08
TANTALUM	0.8940	2.0527	21.479	37299.	-0.27
TUNGSTEN	0.8580	2.2110	3.793	55782.	-0.79
RHENIUM	0.8379	2.0462	3.574	53937.	-0.80
OSMIUM	0.8245	2.0681	3.798	60076.	-0.82
IRIDIUM	0.8269	1.7484	2.268	40783.	-0.87
PLATINUM	0.8452	1.4835	1.190	23420.	-0.90
GOLD	0.8787	0.9626	0.177	2765.	-0.62
MERCURY	0.9714	0.1611	5.030	30192.	-0.50
THALLIUM	1.0457	0.4752	1.439	12354.	-0.58
LEAD	1.0664	0.5143	1.140	12298.	-0.65
BISMUTH	1.0293	0.5489	1.872	15711.	-0.58
POLONIUM	1.0810	0.3791	5.276	28066.	-0.47
FRANCIUM	1.7063	0.1989	33.026	169425.	0.47
RADIUM	1.3979	0.4615	21.643	58886.	0.34
ACTINIUM	1.1444	1.1429	0.701	1838.	0.20
THORIUM	1.0957	1.5011	-6.228	488.	-0.07
PROTACTINIUM	0.9909	1.4505	0.878	3815.	-0.36
URANIUM	0.9403	1.3736	0.481	5458.	-0.62
NEPTUNIUM	0.9311	1.2418	0.241	3190.	-0.60
PLUTONIUM+4.76	0.9994	1.0088	-0.537	2.	-0.31
PLUTONIUM+5	0.9701	1.0088	0.004	1213.	-0.49
AMERICIUM	1.0542	0.7253	9.998	4512.	-0.12

TABLE-III- 33

SOLVENT-TITANIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.490	1.4620	12.010	112700.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5328	0.4622	3.928	46857.	-0.71
LITHIUM	1.0684	0.3423	3.295	22537.	0.53
BERYLLIUM	0.7715	0.6912	164.753	7271.	-0.04
BORON	0.6293	1.1757	7.301	48485.	-0.53
CARBON	0.5992	1.5164	4.782	125086.	-1.06
NITROGEN	0.5643	1.0018	2.694	148522.	-1.54
OXYGEN	0.6135	0.5283	0.266	24958.	-1.97
SODIUM	1.3071	0.2300	10.679	73003.	0.54
MAGNESIUM	1.0958	0.3159	17.230	28052.	0.26
ALUMINUM	0.9795	0.6877	-16.043	859.	-0.03
SILICON	0.9042	0.9618	-0.427	53.	-0.34
PHOSPHOROUS	0.8488	0.6681	-0.016	1054.	-0.61
SULFUR	0.8550	0.5892	-0.046	85.	-1.02
POTASSIUM	1.6252	0.1906	16.586	162787.	0.65
CALCIUM	1.3502	0.3744	11.833	61468.	0.47
SCANDIUM	1.1224	0.8075	3.672	4926.	0.21
VANADIUM	0.9207	1.0896	9.288	6011.	-0.15
CHROMIUM	0.8769	0.8429	0.183	3031.	-0.66
MANGANESE+5	0.8940	0.5963	-0.276	16.	-0.43
MANGANESE+7	0.8577	0.5963	-0.085	93.	-0.75
IRON	0.8714	0.8873	1.013	4564.	-0.38
COBALT	0.8564	0.9059	1.281	6654.	-0.43
NICKEL	0.8523	0.9122	1.366	7292.	-0.44
COPPER	0.8741	0.7196	-0.101	937.	-0.33
ZINC	0.9535	0.2760	21.904	15790.	-0.17
GALLIUM	0.9254	0.5785	2.199	6066.	-0.31
GERMANIUM	0.9425	0.7941	0.525	3229.	-0.41
ARSENIC	0.9343	0.2573	3.673	30674.	-0.59
SELENIUM	0.9658	0.4383	1.103	25128.	-0.97
RUBIDIUM	1.7415	0.1766	21.151	207265.	0.65
STRONTIUM	1.4713	0.3203	15.611	94827.	0.51
YTTRIUM	1.2127	0.8838	3.573	9265.	0.31
ZIRCONIUM	1.0958	1.2955	-1.625	349.	0.15
NIOBIUM	1.0041	1.5528	4013.785	10448.	-0.01
MOLYBDENUM	0.9576	1.3975	1.191	11413.	-0.61
TECHNETIUM	0.9337	1.4028	1.586	15254.	-0.62
RUTHENIUM	0.9159	1.3736	1.698	16730.	-0.63
RHODIUM	0.9200	1.1819	0.677	9058.	-0.71
PALLADIUM	0.9412	0.8021	-0.086	170.	-0.72
SILVER	0.9884	0.6069	1.684	2594.	-0.19
CADMIUM	1.0725	0.2378	170.947	33123.	-0.09
INDIUM	1.1395	0.5120	6.805	18281.	-0.33
TIN+2	1.1156	0.6389	20.152	13089.	-0.16
TIN+4	1.0807	0.6389	8.260	23211.	-0.34
ANTIMONY	1.0746	0.5555	3.775	22094.	-0.49
TELLURIUM	1.1231	0.4135	8.917	39213.	-0.43
CESIUM	1.8680	0.1672	23.103	262242.	0.70

TABLE-III- 34

SOLVENT-TITANIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.5294	0.3771	13.783	100869.	0.56
LANTHANUM	1.2839	0.9139	4.236	14782.	0.37
CERIUM+3	1.2627	0.9902	2.902	10206.	0.37
CERIUM+4	1.1436	0.9902	14.702	2413.	0.06
PRASEODYMIUM	1.2503	0.7905	5.029	16221.	0.36
NEODYMIUM	1.2462	0.6859	6.668	20680.	0.36
PROMETHIUM	1.2373	0.5679	8.889	26445.	0.35
SAMARIUM	1.2326	0.4374	12.514	35540.	0.34
EUROPIUM+2	1.3960	0.3771	11.498	70154.	0.51
EUROPIUM+3	1.2298	0.3771	14.969	40626.	0.34
GADOLINIUM	1.2319	0.8496	4.339	12089.	0.33
TERBIUM	1.2196	0.8337	4.309	11494.	0.32
DYSPROSIUM	1.2141	0.6318	8.177	19783.	0.31
HOLMIUM	1.2086	0.6362	8.222	18946.	0.31
ERBIUM	1.2025	0.6610	7.722	17006.	0.30
THULIUM	1.1949	0.5173	11.934	24336.	0.29
YTTERBIUM+2	1.3263	0.3390	11.776	61180.	0.47
YTTERBIUM+3	1.1908	0.3390	20.432	38662.	0.28
LUTETIUM	1.1867	0.9065	3.140	6628.	0.27
HAFNIUM	1.0807	1.2910	-1.395	649.	0.13
TANTALUM	1.0034	1.6575	150.538	13689.	-0.06
TUNGSTEN	0.9631	1.7853	3.084	25119.	-0.58
RHENIUM	0.9405	1.6522	2.859	24141.	-0.59
OSMIUM	0.9254	1.6699	3.139	28128.	-0.61
IRIDIUM	0.9282	1.4117	1.496	16222.	-0.66
PLATINUM	0.9487	1.1979	0.491	6579.	-0.69
GOLD	0.9863	0.7773	-0.255	204.	-0.41
MERCURY	1.0903	0.1301	27.479	54484.	-0.29
THALLIUM	1.1737	0.3837	9.745	31956.	-0.37
LEAD	1.1970	0.4153	6.990	32397.	-0.44
BISMUTH	1.1553	0.4432	12.032	39177.	-0.37
POLONIUM	1.2134	0.3061	36.168	57574.	-0.26
FRANCIUM	1.9152	0.1606	26.122	279730.	0.68
RADIUM	1.5691	0.3727	15.855	111792.	0.55
ACTINIUM	1.2845	0.9228	3.436	14510.	0.41
THORIUM	1.2298	1.2121	4.051	3023.	0.14
PROTACTINIUM	1.1122	1.1713	-2.038	135.	-0.15
URANIUM	1.0554	1.1091	-0.306	4.	-0.41
NEPTUNIUM	1.0451	1.0027	-0.282	204.	-0.39
PLUTONIUM+4.76	1.1218	0.8146	15.372	4737.	-0.10
PLUTONIUM+5	1.0889	0.8146	-0.043	1115.	-0.28
AMERICIUM	1.1833	0.5856	94.786	18897.	0.09

TABLE-III- 35

SOLVENT-VANADIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.640	1.3460	8.365	122800.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5788	0.4242	2.208	17160.	-0.56
LITHIUM	1.1605	0.3142	4.353	47609.	0.68
BERYLLIUM	0.8380	0.6344	-3.669	168.	0.11
BORON	0.6835	1.0790	4.942	17648.	-0.38
CARBON	0.6508	1.3917	3.213	62555.	-0.91
NITROGEN	0.6129	0.9194	1.684	76204.	-1.39
OXYGEN	0.6664	0.4849	0.068	6421.	-1.82
SODIUM	1.4198	0.2111	11.271	124940.	0.69
MAGNESIUM	1.1902	0.2899	14.126	55951.	0.41
ALUMINUM	1.0639	0.6311	26.757	10077.	0.12
SILICON	0.9822	0.8827	7.118	7118.	-0.19
PHOSPHOROUS	0.9220	0.6132	0.038	1380.	-0.46
SULFUR	0.9287	0.5407	0.126	3396.	-0.87
POTASSIUM	1.7652	0.1749	18.009	266971.	0.80
CALCIUM	1.4666	0.3436	12.660	113416.	0.62
SCANDIUM	1.2192	0.7410	6.969	22019.	0.36
TITANIUM	1.0862	0.9178	9.288	6011.	0.15
CHROMIUM	0.9525	0.7736	-0.143	334.	-0.51
MANGANESE+5	0.9710	0.5472	2.188	5147.	-0.28
MANGANESE+7	0.9316	0.5472	0.263	3373.	-0.60
IRON	0.9465	0.8143	-0.940	46.	-0.23
COBALT	0.9302	0.8314	-0.636	43.	-0.28
NICKEL	0.9257	0.8371	-0.562	103.	-0.29
COPPER	0.9495	0.6604	0.550	1603.	-0.18
ZINC	1.0357	0.2533	3631.423	34688.	-0.02
GALLIUM	1.0052	0.5309	35.503	22151.	-0.16
GERMANIUM	1.0238	0.7288	10.618	17744.	-0.26
ARSENIC	1.0149	0.2362	12.761	58164.	-0.44
SELENIUM	1.0490	0.4023	3.441	54543.	-0.82
RUBIDIUM	1.8915	0.1621	22.775	337316.	0.80
STRONTIUM	1.5981	0.2940	16.387	165796.	0.66
YTTRIUM	1.3172	0.8111	6.332	32493.	0.46
ZIRCONIUM	1.1902	1.1889	1.396	4089.	0.30
NIOBIUM	1.0906	1.4251	-1.885	340.	0.14
MOLYBDENUM	1.0401	1.2826	-0.117	622.	-0.46
TECHNETIUM	1.0141	1.2875	0.100	1702.	-0.47
RUTHENIUM	0.9948	1.2606	0.195	2230.	-0.48
RHODIUM	0.9993	1.0847	-0.129	259.	-0.56
PALLADIUM	1.0223	0.7362	0.313	3539.	-0.57
SILVER	1.0736	0.5570	362.743	14576.	-0.04
CADMIUM	1.1649	0.2182	724.164	61309.	0.06
INDIUM	1.2377	0.4699	57.614	44238.	-0.18
TIN+2	1.2117	0.5863	15484.746	36900.	-0.01
TIN+4	1.1738	0.5863	65.479	55701.	-0.19
ANTIMONY	1.1672	0.5098	19.043	51955.	-0.34
TELLURIUM	1.2199	0.3795	42.334	77728.	-0.28
CESIUM	2.0290	0.1534	25.423	424763.	0.85

TABLE-III- 36

SOLVENT-VANADIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.6612	0.3461	15.281	178832.	0.71
LANTHANUM	1.3945	0.8388	6.833	44294.	0.52
CERIUM+3	1.3715	0.9088	5.609	35766.	0.52
CERIUM+4	1.2422	0.9088	15.561	17017.	0.21
PRASEODYMIUM	1.3581	0.7255	7.355	45309.	0.51
NEODYMIUM	1.3536	0.6295	8.601	51972.	0.51
PROMETHIUM	1.3440	0.5212	10.155	59970.	0.50
SAMARIUM	1.3388	0.4015	12.581	72277.	0.50
EUROPIUM+2	1.5163	0.3461	12.619	127948.	0.66
EUROPIUM+3	1.3358	0.3461	14.143	78860.	0.49
GADOLINIUM	1.3380	0.7797	6.919	37955.	0.48
TERBIUM	1.3247	0.7651	6.878	36528.	0.47
DYSPROSIUM	1.3187	0.5798	9.690	49302.	0.46
HOLMIUM	1.3128	0.5839	9.729	47845.	0.46
ERBIUM	1.3061	0.6067	9.397	44682.	0.45
THULIUM	1.2979	0.4748	12.071	55084.	0.44
YTTERBIUM+2	1.4406	0.3111	12.431	111380.	0.62
YTTERBIUM+3	1.2935	0.3111	16.972	74231.	0.43
LUTETIUM	1.2890	0.8319	6.209	26934.	0.42
HAFNIUM	1.1738	1.1849	1.116	3209.	0.28
TANTALUM	1.0899	1.5212	-0.883	1027.	0.09
TUNGSTEN	1.0461	1.6384	0.928	5151.	-0.43
RHENIUM	1.0215	1.5163	0.826	4881.	-0.44
OSMIUM	1.0052	1.5326	1.121	6662.	-0.46
IRIDIUM	1.0082	1.2956	0.138	2018.	-0.51
PLATINUM	1.0305	1.0993	-0.177	4.	-0.54
GOLD	1.0713	0.7134	4.104	7590.	-0.26
MERCURY	1.1842	0.1194	193.711	88745.	-0.14
THALLIUM	1.2749	0.3521	56.795	64581.	-0.22
LEAD	1.3001	0.3811	33.564	66285.	-0.29
BISMUTH	1.2548	0.4068	69.377	78625.	-0.22
POLONIUM	1.3180	0.2809	368.257	103946.	-0.11
FRANCIUM	2.0802	0.1474	28.383	452083.	0.83
RADIUM	1.7043	0.3420	17.298	196651.	0.70
ACTINIUM	1.3952	0.8469	5.902	43870.	0.56
THORIUM	1.3358	1.1124	9.912	20414.	0.29
PROTACTINIUM	1.2080	1.0749	$+\infty$	8812.	0.
URANIUM	1.1464	1.0179	3.114	6046.	-0.26
NEPTUNIUM	1.1352	0.9202	5.587	8613.	-0.24
PLUTONIUM+4.76	1.2184	0.7476	354.660	21638.	0.05
PLUTONIUM+5	1.1828	0.7476	27.084	11747.	-0.13
AMERICIUM	1.2853	0.5375	34.337	46800.	0.24

TABLE-III- 37

SOLVENT-CHROMIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.150	1.2820	7.231	95000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.6076	0.5483	305.278	18791.	-0.05
LITHIUM	1.2184	0.4061	1.087	36678.	1.19
BERYLLIUM	0.8799	0.8200	-0.043	813.	0.62
BORON	0.7176	1.3947	49.095	20325.	0.13
CARBON	0.6833	1.7989	17.002	63922.	-0.40
NITROGEN	0.6435	1.1884	4.149	75276.	-0.88
OXYGEN	0.6997	0.6267	0.176	8138.	-1.31
SODIUM	1.4906	0.2728	3.075	103309.	1.20
MAGNESIUM	1.2496	0.3747	2.180	43745.	0.92
ALUMINUM	1.1170	0.8158	0.535	6090.	0.63
SILICON	1.0312	1.1411	1.106	3804.	0.32
PHOSPHOROUS	0.9680	0.7926	-14.706	344.	0.05
SULFUR	0.9750	0.6989	0.105	1505.	-0.36
POTASSIUM	1.8534	0.2261	5.734	228114.	1.31
CALCIUM	1.5398	0.4442	3.108	92697.	1.13
SCANDIUM	1.2800	0.9579	0.797	15109.	0.87
TITANIUM	1.1404	1.1863	0.183	3031.	0.66
VANADIUM	1.0499	1.2926	-0.143	334.	0.51
MANGANESE+5	1.0195	0.7074	1.192	2646.	0.23
MANGANESE+7	0.9782	0.7074	1.583	1488.	-0.09
IRON	0.9938	1.0526	-0.593	121.	0.28
COBALT	0.9766	1.0747	-0.523	555.	0.23
NICKEL	0.9719	1.0821	-0.418	726.	0.22
COPPER	0.9969	0.8537	-0.299	442.	0.33
ZINC	1.0874	0.3274	4.489	26048.	0.49
GALLIUM	1.0554	0.6863	5.057	15477.	0.35
GERMANIUM	1.0749	0.9421	7.355	11793.	0.25
ARSENIC	1.0655	0.3053	394.322	45748.	0.07
SELENIUM	1.1014	0.5200	18.545	42288.	-0.31
RUBIDIUM	1.9860	0.2095	7.307	290364.	1.31
STRONTIUM	1.6778	0.3800	4.346	138391.	1.17
YTTRIUM	1.3830	1.0484	1.015	23347.	0.97
ZIRCONIUM	1.2496	1.5368	0.032	1680.	0.81
NIOBIUM	1.1451	1.8421	0.022	1410.	0.65
MOLYBDENUM	1.0920	1.6579	11.367	1847.	0.05
TECHNETIUM	1.0647	1.6642	59.736	3396.	0.04
RUTHENIUM	1.0445	1.6295	138.279	4062.	0.03
RHODIUM	1.0491	1.4021	-0.897	1140.	-0.05
PALLADIUM	1.0733	0.9516	3.898	1516.	-0.06
SILVER	1.1271	0.7200	1.638	9535.	0.47
CADMIUM	1.2231	0.2821	6.309	48462.	0.57
INDIUM	1.2995	0.6074	12.884	33546.	0.33
TIN+2	1.2722	0.7579	4.526	27287.	0.50
TIN+4	1.2324	0.7579	17.632	42827.	0.32
ANTIMONY	1.2254	0.6589	58.046	39876.	0.17
TELLURIUM	1.2808	0.4905	49.815	61960.	0.23
CESIUM	2.1303	0.1983	8.597	367867.	1.36

TABLE-III- 38

SOLVENT-CHROMIUM

SOLUTE ELEMENT	RACIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.7441	0.4474	4.319	149425.	1.22
LANTHANUM	1.4641	1.0842	1.288	32880.	1.03
CERIUM+3	1.4399	1.1747	1.013	25832.	1.03
CERIUM+4	1.3042	1.1747	0.824	11048.	0.72
PRASEODYMIUM	1.4259	0.9378	1.364	33925.	1.02
NEODYMIUM	1.4212	0.8137	1.615	39627.	1.02
PROMETHIUM	1.4111	0.6737	1.924	46552.	1.01
SAMARIUM	1.4056	0.5189	2.407	57260.	1.01
EUROPIUM+2	1.5920	0.4474	3.296	105238.	1.17
EUROPIUM+3	1.4025	0.4474	2.692	63031.	1.00
GADOLINIUM	1.4048	1.0079	1.178	27814.	0.99
TERBIUM	1.3908	0.9891	1.146	26680.	0.98
DYSPROSIUM	1.3846	0.7495	1.660	37517.	0.97
HOLMIUM	1.3783	0.7547	1.632	36301.	0.97
ERBIUM	1.3713	0.7842	1.533	33640.	0.96
THULIUM	1.3627	0.6137	1.988	42570.	0.95
YTTERBIUM+2	1.5125	0.4021	3.053	91082.	1.13
YTTERBIUM+3	1.3580	0.4021	2.835	59195.	0.94
LUTETIUM	1.3534	1.0754	0.879	18874.	0.93
HAFNIUM	1.2324	1.5316	-0.002	1164.	0.79
TANTALUM	1.1443	1.9663	0.166	2573.	0.60
TUNGSTEN	1.0983	2.1179	44.882	7816.	0.08
RHENIUM	1.0725	1.9600	55.026	7410.	0.07
OSMIUM	1.0554	1.9811	142.962	9434.	0.05
IRIDIUM	1.0585	1.6747	$-\infty$	3812.	0.
PLATINUM	1.0819	1.4211	-36.946	425.	-0.03
GOLD	1.1248	0.9221	2.113	4238.	0.25
MERCURY	1.2434	0.1543	22.531	72320.	0.37
THALLIUM	1.3385	0.4552	25.620	50877.	0.29
LEAD	1.3651	0.4926	45.738	52240.	0.22
BISMUTH	1.3175	0.5258	31.684	62638.	0.29
POLONIUM	1.3838	0.3632	22.660	84798.	0.40
FRANCIUM	2.1841	0.1905	9.443	392174.	1.34
RADIUM	1.7894	0.4421	4.852	164989.	1.21
ACTINIUM	1.4649	1.0947	1.187	32519.	1.07
THORIUM	1.4025	1.4379	0.830	13439.	0.80
PROTACTINIUM	1.2683	1.3895	0.612	4865.	0.51
URANIUM	1.2036	1.3158	1.256	3002.	0.25
NEPTUNIUM	1.1919	1.1895	2.161	4825.	0.27
PLUTONIUM+4.76	1.2793	0.9663	1.882	14803.	0.56
PLUTONIUM+5	1.2418	0.9663	1.813	7228.	0.38
AMERICIUM	1.3495	0.6947	2.647	35531.	0.75

TABLE-III- 39

SOLVENT-MANGANESE+5

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.920	1.3070	7.357	67200.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5960	0.7751	16.943	31823.	-0.28
LITHIUM	1.1951	0.5741	0.755	17242.	0.96
BERYLLIUM	0.8630	1.1592	1.298	5746.	0.39
BORON	0.7039	1.9717	150.550	35909.	-0.10
CARBON	0.6702	2.5432	9.604	89096.	-0.63
NITROGEN	0.6312	1.6801	3.501	100651.	-1.11
OXYGEN	0.6863	0.8860	0.302	17688.	-1.54
SODIUM	1.4621	0.3857	2.755	60960.	0.97
MAGNESIUM	1.2257	0.5298	1.874	21765.	0.69
ALUMINUM	1.0956	1.1533	-0.189	493.	0.40
SILICON	1.0115	1.6131	-6.349	6.	0.09
PHOSPHOROUS	0.9495	1.1205	-0.266	993.	-0.18
SULFUR	0.9564	0.9881	-0.132	131.	-0.59
POTASSIUM	1.8179	0.3196	5.329	144520.	1.08
CALCIUM	1.5103	0.6280	2.695	51540.	0.90
SCANDIUM	1.2555	1.3542	0.249	3543.	0.64
TITANIUM	1.1186	1.6771	-0.276	16.	0.43
VANADIUM	1.0298	1.8274	2.188	5147.	0.28
CHROMIUM	0.9809	1.4137	1.192	2646.	-0.23
IRON	0.9748	1.4881	46.522	3874.	0.05
COBALT	0.9579	1.5193	- ∞	5496.	0.
NICKEL	0.9533	1.5298	2079.037	5986.	-0.01
COPPER	0.9778	1.2068	-1.235	907.	0.10
ZINC	1.0666	0.4628	6.616	11506.	0.26
GALLIUM	1.0352	0.9702	9.468	4336.	0.12
GERMANIUM	1.0543	1.3318	112.340	2228.	0.02
ARSENIC	1.0451	0.4315	38.073	23668.	-0.16
SELENIUM	1.0803	0.7351	2.758	19740.	-0.54
RUBIDIUM	1.9480	0.2961	6.898	186731.	1.08
STRONTIUM	1.6458	0.5372	3.957	81816.	0.94
YTTRIUM	1.3565	1.4821	0.461	7061.	0.74
ZIRCONIUM	1.2257	2.1726	-0.096	448.	0.58
NIOBIUM	1.1232	2.6042	1.931	9049.	0.42
MOLYBDENUM	1.0712	2.3438	11.327	9655.	-0.18
TECHNETIUM	1.0444	2.3527	13.736	12627.	-0.19
RUTHENIUM	1.0245	2.3036	13.569	13708.	-0.20
RHODIUM	1.0291	1.9821	3.545	7602.	-0.28
PALLADIUM	1.0528	1.3452	-0.496	231.	-0.29
SILVER	1.1056	1.0179	0.396	1718.	0.24
CADMIUM	1.1997	0.3988	9.163	25618.	0.34
INDIUM	1.2747	0.8586	56.178	14147.	0.10
TIN+2	1.2479	1.0714	5.254	10024.	0.27
TIN+4	1.2089	1.0714	92.949	18554.	0.09
ANTIMONY	1.2020	0.9315	195.779	17445.	-0.06
TELLURIUM	1.2563	0.6935	+ ∞	31843.	0.
CESIUM	2.0895	0.2804	8.086	239297.	1.13
BARIUM	1.7108	0.6324	3.832	87796.	0.99

TABLE-III- 40

SOLVENT-MANGANESE+5

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
LANTHANUM	1.4361	1.5327	0.705	11681.	0.80
CERIUM+3	1.4124	1.6607	0.457	7887.	0.80
CERIUM+4	1.2793	1.6607	0.080	1633.	0.49
PRASEODYMIUM	1.3986	1.3257	0.806	12796.	0.79
NEODYMIUM	1.3940	1.1503	1.072	16461.	0.79
PROMETHIUM	1.3841	0.9524	1.422	21196.	0.78
SAMARIUM	1.3787	0.7336	1.987	28718.	0.78
EUROPIUM+2	1.5616	0.6324	2.859	59455.	0.94
EUROPIUM+3	1.3757	0.6324	2.333	32926.	0.77
GADOLINIUM	1.3780	1.4249	0.614	9376.	0.76
TERBIUM	1.3642	1.3982	0.589	8871.	0.75
DYSPROSIUM	1.3581	1.0595	1.130	15617.	0.74
HOLMIUM	1.3520	1.0670	1.099	14916.	0.74
ERBIUM	1.3451	1.1086	0.992	13314.	0.73
THULIUM	1.3366	0.8676	1.512	19273.	0.72
YTTERBIUM+2	1.4836	0.5685	2.670	51071.	0.90
YTTERBIUM+3	1.3321	0.5685	2.551	31015.	0.71
LUTETIUM	1.3275	1.5202	0.327	4926.	0.70
HAFNIUM	1.2089	2.1652	-0.062	740.	0.56
TANTALUM	1.1224	2.7798	3.337	11728.	0.37
TUNGSTEN	1.0773	2.9940	37.736	20771.	-0.15
RHENIUM	1.0520	2.7708	31.494	19784.	-0.16
OSMIUM	1.0352	2.8006	28.943	22817.	-0.18
IRIDIUM	1.0383	2.3676	9.990	13379.	-0.23
PLATINUM	1.0612	2.0089	2.876	5675.	-0.26
GOLD	1.1033	1.3036	-120.727	79.	0.02
MERCURY	1.2196	0.2182	92.479	42991.	0.14
THALLIUM	1.3129	0.6435	291.585	25398.	0.06
LEAD	1.3389	0.6964	10715.477	25902.	-0.01
BISMUTH	1.2923	0.7433	370.254	31929.	0.06
POLONIUM	1.3573	0.5134	69.642	47604.	0.17
FRANCIUM	2.1423	0.2693	8.969	256028.	1.11
RADIUM	1.7552	0.6250	4.369	97956.	0.98
ACTINIUM	1.4369	1.5476	0.631	11458.	0.84
THORIUM	1.3757	2.0327	0.124	2118.	0.57
PROTACTINIUM	1.2441	1.9643	-0.638	39.	0.28
URANIUM	1.1806	1.8601	-125.288	37.	0.02
NEPTUNIUM	1.1691	1.6815	-30.242	76.	0.04
PLUTONIUM+4.76	1.2548	1.3661	0.878	3397.	0.33
PLUTONIUM+5	1.2181	1.3661	-1.001	673.	0.15
AMERICIUM	1.3236	0.9821	2.181	14795.	0.52

TABLE-III- 41

SOLVENT-MANGANESE+7

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.240	1.2540	6.718	67200.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.6212	0.7751	686.484	26521.	0.04
LITHIUM	1.2456	0.5741	0.511	20503.	1.28
BERYLLIUM	0.8995	1.1592	0.240	3981.	0.71
BORON	0.7337	1.9717	25.997	30207.	0.22
CARBON	0.6986	2.5432	34.713	78118.	-0.31
NITROGEN	0.6579	1.6801	6.042	88149.	-0.79
OXYGEN	0.7153	0.8860	0.378	14180.	-1.22
SODIUM	1.5239	0.3857	1.754	68489.	1.29
MAGNESIUM	1.2775	0.5298	1.032	25473.	1.01
ALUMINUM	1.1419	1.1533	0.001	1200.	0.72
SILICON	1.0542	1.6131	-0.241	259.	0.41
PHOSPHOROUS	0.9896	1.1205	-1.809	375.	0.14
SULFUR	0.9968	0.9881	-0.709	0.	-0.27
POTASSIUM	1.8947	0.3196	3.524	160464.	1.40
CALCIUM	1.5742	0.6280	1.684	58986.	1.22
SCANDIUM	1.3086	1.3542	0.197	5376.	0.96
TITANIUM	1.1659	1.6771	-0.085	93.	0.75
VANADIUM	1.0734	1.8274	0.263	3373.	0.60
CHROMIUM	1.0223	1.4137	1.583	1488.	0.09
IRON	1.0159	1.4881	0.388	2418.	0.37
COBALT	0.9984	1.5193	1.067	3712.	0.32
NICKEL	0.9936	1.5298	1.317	4111.	0.31
COPPER	1.0191	1.2068	-0.215	316.	0.42
ZINC	1.1116	0.4628	1.632	13851.	0.58
GALLIUM	1.0789	0.9702	1.105	6125.	0.44
GERMANIUM	1.0989	1.3318	0.933	3679.	0.34
ARSENIC	1.0893	0.4315	44.288	27337.	0.16
SELENIUM	1.1260	0.7351	20.101	23627.	-0.22
RUBIDIUM	2.0303	0.2961	4.551	206871.	1.40
STRONTIUM	1.7153	0.5372	2.489	92318.	1.26
YTTRIUM	1.4139	1.4821	0.330	9787.	1.06
ZIRCONIUM	1.2775	2.1726	-0.062	43.	0.90
NIOBIUM	1.1707	2.6042	0.416	6445.	0.74
MOLYBDENUM	1.1164	2.3438	12.885	7016.	0.14
TECHNETIUM	1.0885	2.3527	21.481	9564.	0.13
RUTHENIUM	1.0678	2.3036	28.064	10511.	0.12
RHODIUM	1.0726	1.9821	112.997	5361.	0.04
PALLADIUM	1.0973	1.3452	-57.148	6.	0.03
SILVER	1.1523	1.0179	0.233	2877.	0.56
CADMIUM	1.2504	0.3988	2.808	29403.	0.66
INDIUM	1.3285	0.8586	4.001	17468.	0.42
TIN+2	1.3006	1.0714	1.466	12957.	0.59
TIN+4	1.2600	1.0714	5.579	22819.	0.41
ANTIMONY	1.2528	0.9315	12.928	21345.	0.26
TELLURIUM	1.3094	0.6935	15.230	37156.	0.32
CESIUM	2.1778	0.2804	5.435	264711.	1.45
BARIUM	1.7831	0.6324	2.481	99374.	1.31

TABLE-III- 42

SOLVENT-MANGANESE+7

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
LANTHANUM	1.4968	1.5327	0.487	15352.	1.12
CERIUM+3	1.4721	1.6607	0.338	10917.	1.12
CERIUM+4	1.3333	1.6607	0.120	3003.	0.81
PRASEODYMIUM	1.4577	1.3257	0.537	16463.	1.11
NEODYMIUM	1.4530	1.1503	0.685	20518.	1.11
PROMETHIUM	1.4426	0.9524	0.875	25657.	1.10
SAMARIUM	1.4370	0.7336	1.177	33742.	1.10
EUROPIUM+2	1.6276	0.6324	1.820	67824.	1.26
EUROPIUM+3	1.4338	0.6324	1.356	38213.	1.09
GADOLINIUM	1.4362	1.4249	0.421	12521.	1.08
TERBIUM	1.4219	1.3982	0.404	11897.	1.07
DYSPROSIUM	1.4155	1.0595	0.699	19428.	1.06
HOLMIUM	1.4091	1.0670	0.678	18629.	1.06
ERBIUM	1.4019	1.1086	0.617	16827.	1.05
THULIUM	1.3931	0.8676	0.888	23329.	1.04
YTTERBIUM+2	1.5463	0.5685	1.663	58261.	1.22
YTTERBIUM+3	1.3884	0.5685	1.413	35905.	1.03
LUTETIUM	1.3836	1.5202	0.248	7197.	1.02
HAFNIUM	1.2600	2.1652	-0.058	161.	0.88
TANTALUM	1.1699	2.7798	0.683	8691.	0.69
TUNGSTEN	1.1228	2.9940	23.067	16565.	0.17
RHENIUM	1.0965	2.7708	24.643	15740.	0.16
OSMIUM	1.0789	2.8006	38.126	18424.	0.14
IRIDIUM	1.0821	2.3676	48.287	10211.	0.09
PLATINUM	1.1061	2.0089	31.002	3766.	0.06
GOLD	1.1499	1.3036	-0.272	468.	0.34
MERCURY	1.2711	0.2182	9.545	47767.	0.46
THALLIUM	1.3684	0.6435	8.594	29809.	0.38
LEAD	1.3955	0.6964	13.222	30493.	0.31
BISMUTH	1.3469	0.7433	10.866	37373.	0.38
POLONIUM	1.4147	0.5134	9.575	54208.	0.49
FRANCIUM	2.2329	0.2693	5.977	283047.	1.43
RADIUM	1.8293	0.6250	2.808	110639.	1.30
ACTINIUM	1.4976	1.5476	0.448	15101.	1.16
THORIUM	1.4338	2.0327	0.143	3801.	0.89
PROTACTINIUM	1.2967	1.9643	-0.092	432.	0.60
URANIUM	1.2305	1.8601	-0.423	65.	0.34
NEPTUNIUM	1.2185	1.6815	-0.228	510.	0.36
PLUTONIUM+4.76	1.3078	1.3661	0.411	5197.	0.65
PLUTONIUM+5	1.2695	1.3661	0.066	1531.	0.47
AMERICIUM	1.3796	0.9821	1.056	18379.	0.84

TABLE-III- 43

SOLVENT-IRON

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.870	1.2740	7.094	100000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.6115	0.5209	5.993	16242.	-0.33
LITHIUM	1.2261	0.3858	2.115	41572.	0.91
BERYLLIUM	0.8854	0.7790	-0.322	335.	0.34
BORON	0.7221	1.3250	31.224	17393.	-0.15
CARBON	0.6876	1.7090	5.371	58460.	-0.68
NITROGEN	0.6476	1.1290	2.201	69476.	-1.16
OXYGEN	0.7041	0.5954	0.091	6496.	-1.59
SODIUM	1.5000	0.2592	5.752	113467.	0.92
MAGNESIUM	1.2575	0.3560	5.083	49203.	0.64
ALUMINUM	1.1240	0.7750	2.429	8052.	0.35
SILICON	1.0377	1.0840	116.784	5501.	0.04
PHOSPHOROUS	0.9741	0.7530	-0.279	851.	-0.23
SULFUR	0.9812	0.6640	0.132	2438.	-0.64
POTASSIUM	1.8650	0.2148	10.092	248084.	1.03
CALCIUM	1.5495	0.4220	6.097	102780.	0.85
SCANDIUM	1.2881	0.9100	2.163	18552.	0.59
TITANIUM	1.1476	1.1270	1.013	4564.	0.38
VANADIUM	1.0565	1.2280	-0.940	46.	0.23
CHROMIUM	1.0063	0.9500	-0.593	121.	-0.28
MANGANESE+5	1.0259	0.6720	46.522	3874.	-0.05
MANGANESE+7	0.9843	0.6720	0.388	2418.	-0.37
COBALT	0.9827	1.0210	-17.904	160.	-0.05
NICKEL	0.9780	1.0280	-11.253	258.	-0.06
COPPER	1.0031	0.8110	-3.061	1016.	0.05
ZINC	1.0942	0.3110	28.065	29732.	0.21
GALLIUM	1.0620	0.6520	154.552	18656.	0.07
GERMANIUM	1.0816	0.8950	653.448	14754.	-0.03
ARSENIC	1.0722	0.2900	49.128	51152.	-0.21
SELENIUM	1.1083	0.4940	5.834	48019.	-0.59
RUBIDIUM	1.9984	0.1990	12.832	315120.	1.03
STRONTIUM	1.6884	0.3610	8.261	152095.	0.89
YTTRIUM	1.3917	0.9960	2.418	27966.	0.69
ZIRCONIUM	1.2575	1.4600	0.269	2937.	0.53
NIOBIUM	1.1523	1.7500	-0.178	631.	0.37
MOLYBDENUM	1.0989	1.5750	-0.189	962.	-0.23
TECHNETIUM	1.0714	1.5810	0.731	2163.	-0.24
RUTHENIUM	1.0510	1.5480	1.056	2714.	-0.25
RHODIUM	1.0557	1.3320	-0.278	494.	-0.33
PALLADIUM	1.0801	0.9060	0.505	2538.	-0.34
SILVER	1.1342	0.6840	12.937	11962.	0.19
CADMIUM	1.2308	0.2680	27.238	54017.	0.29
INDIUM	1.3077	0.5770	648.984	38606.	0.05
TIN+2	1.2802	0.7200	27.562	31954.	0.22
TIN+4	1.2402	0.7200	1300.067	49159.	0.04
ANTIMONY	1.2331	0.6260	159.490	45694.	-0.11
TELLURIUM	1.2889	0.4660	1184.136	69458.	-0.05
CESIUM	2.1436	0.1884	14.775	398598.	1.08

TABLE-III- 44

SOLVENT-IRON

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.7551	0.4250	8.011	164425.	0.94
LANTHANUM	1.4733	1.0300	2.869	38699.	0.75
CERIUM+3	1.4490	1.1160	2.311	30923.	0.75
CERIUM+4	1.3124	1.1160	2.891	14098.	0.44
PRASEODYMIUM	1.4349	0.8909	3.044	39633.	0.74
NEODYMIUM	1.4301	0.7730	3.566	45736.	0.74
PROMETHIUM	1.4199	0.6400	4.211	53078.	0.73
SAMARIUM	1.4144	0.4930	5.216	64411.	0.73
EUROPIUM+2	1.6020	0.4250	6.309	116432.	0.89
EUROPIUM+3	1.4113	0.4250	5.829	70483.	0.72
GADOLINIUM	1.4137	0.9575	2.730	32924.	0.71
TERBIUM	1.3995	0.9396	2.678	31627.	0.70
DYSPROSIUM	1.3932	0.7120	3.789	43278.	0.69
HOLMIUM	1.3870	0.7170	3.755	41943.	0.69
ERBIUM	1.3799	0.7450	3.572	39052.	0.68
THULIUM	1.3713	0.5830	4.576	48558.	0.67
YTTERBIUM+2	1.5220	0.3820	5.981	100845.	0.85
YTTERBIUM+3	1.3666	0.3820	6.427	66144.	0.66
LUTETIUM	1.3619	1.0216	2.206	22950.	0.65
HAFNIUM	1.2402	1.4550	0.172	2226.	0.51
TANTALUM	1.1515	1.8680	0.115	1463.	0.32
TUNGSTEN	1.1052	2.0120	5.002	5806.	-0.20
RHENIUM	1.0793	1.8620	4.229	5492.	-0.21
OSMIUM	1.0620	1.8820	4.981	7268.	-0.23
IRIDIUM	1.0651	1.5910	0.723	2500.	-0.28
PLATINUM	1.0887	1.3500	-0.503	78.	-0.31
GOLD	1.1319	0.8760	227.715	5918.	-0.03
MERCURY	1.2512	0.1466	417.638	79201.	0.09
THALLIUM	1.3469	0.4324	24305.436	57241.	0.01
LEAD	1.3736	0.4680	694.446	58842.	-0.06
BISMUTH	1.3257	0.4995	29972.951	70310.	0.01
POLONIUM	1.3925	0.3450	279.016	93843.	0.12
FRANCIUM	2.1978	0.1810	16.346	424711.	1.06
RADIUM	1.8006	0.4200	9.030	181283.	0.93
ACTINIUM	1.4741	1.0400	2.579	38311.	0.79
THORIUM	1.4113	1.3660	2.548	17081.	0.52
PROTACTINIUM	1.2763	1.3200	4.696	6921.	0.23
URANIUM	1.2111	1.2500	163.275	4581.	-0.03
NEPTUNIUM	1.1994	1.1300	2418.876	6770.	-0.01
PLUTONIUM+4.76	1.2873	0.9180	9.414	18213.	0.28
PLUTONIUM+5	1.2496	0.9180	35.992	9492.	0.10
AMERICIUM	1.3579	0.6600	7.810	40975.	0.47

TABLE-III- 45

SOLVENT-COBALT

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.920	1.2520	6.689	102100.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.6222	0.5102	6.609	13140.	-0.28
LITHIUM	1.2476	0.3779	2.159	47070.	0.96
BERYLLIUM	0.9010	0.7630	-0.328	41.	0.39
BORON	0.7348	1.2977	55.411	13970.	-0.10
CARBON	0.6997	1.6738	5.463	51189.	-0.63
NITROGEN	0.6589	1.1058	2.116	61304.	-1.11
OXYGEN	0.7165	0.5832	0.064	4701.	-1.54
SODIUM	1.5264	0.2539	5.703	124923.	0.97
MAGNESIUM	1.2796	0.3487	4.929	55308.	0.69
ALUMINUM	1.1438	0.7591	2.529	10524.	0.40
SILICON	1.0559	1.0617	35.208	7768.	0.09
PHOSPHOROUS	0.9912	0.7375	0.667	1691.	-0.18
SULFUR	0.9984	0.6503	0.316	3732.	-0.59
POTASSIUM	1.8978	0.2104	10.040	271237.	1.08
CALCIUM	1.5767	0.4133	6.059	114362.	0.90
SCANDIUM	1.3107	0.8913	2.283	22752.	0.64
TITANIUM	1.1677	1.1038	1.281	6654.	0.43
VANADIUM	1.0751	1.2027	-0.636	43.	0.28
CHROMIUM	1.0240	0.9305	-0.523	555.	-0.23
MANGANESE+5	1.0439	0.6582	+ ∞	5496.	0.
MANGANESE+7	1.0016	0.6582	1.067	3712.	-0.32
IRON	1.0176	0.9794	-17.904	160.	0.05
NICKEL	0.9952	1.0069	-511.965	12.	-0.01
COPPER	1.0208	0.7943	3.253	1942.	0.10
ZINC	1.1134	0.3046	20.915	33796.	0.26
GALLIUM	1.0807	0.6386	63.960	22431.	0.12
GERMANIUM	1.1006	0.8766	1865.239	18397.	0.02
ARSENIC	1.0911	0.2840	94.722	57110.	-0.16
SELENIUM	1.1278	0.4838	7.939	54579.	-0.54
RUBIDIUM	2.0335	0.1949	12.746	344037.	1.08
STRONTIUM	1.7181	0.3536	8.183	167919.	0.94
YTTRIUM	1.4161	0.9755	2.543	33560.	0.74
ZIRCONIUM	1.2796	1.4300	0.463	4786.	0.58
NIOBIUM	1.1725	1.7140	-0.266	112.	0.42
MOLYBDENUM	1.1182	1.5426	-1.210	288.	-0.18
TECHNETIUM	1.0903	1.5485	-0.158	1060.	-0.19
RUTHENIUM	1.0695	1.5162	0.295	1464.	-0.20
RHODIUM	1.0743	1.3046	-0.617	76.	-0.28
PALLADIUM	1.0990	0.8854	1.443	3991.	-0.29
SILVER	1.1542	0.6699	10.330	14913.	0.24
CADMIUM	1.2524	0.2625	22.103	60114.	0.34
INDIUM	1.3307	0.5691	187.652	44465.	0.10
TIN+2	1.3027	0.7052	21.573	37457.	0.27
TIN+4	1.2620	0.7052	296.587	56591.	0.09
ANTIMONY	1.2548	0.6131	617.592	52462.	-0.06
TELLURIUM	1.3115	0.4564	+ ∞	78041.	0.
CESIUM	2.1813	0.1845	14.724	434740.	1.13

TABLE-III- 46

SOLVENT-COBALT

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.7859	0.4163	7.994	181876.	0.99
LANTHANUM	1.4992	1.0088	2.994	45706.	0.80
CERIUM+3	1.4744	1.0930	2.453	37120.	0.80
CERIUM+4	1.3355	1.0930	3.022	17926.	0.49
PRASEODYMIUM	1.4601	0.8726	3.144	46440.	0.79
NEODYMIUM	1.4553	0.7571	3.632	52941.	0.79
PROMETHIUM	1.4449	0.6268	4.229	60677.	0.78
SAMARIUM	1.4393	0.4829	5.157	72615.	0.78
EUROPIUM+2	1.6302	0.4163	6.289	129336.	0.94
EUROPIUM+3	1.4361	0.4163	5.718	78970.	0.77
GADOLINIUM	1.4385	0.9378	2.844	39068.	0.76
TERBIUM	1.4241	0.9203	2.790	37574.	0.75
DYSPROSIUM	1.4177	0.6974	3.827	50039.	0.74
HOLMIUM	1.4113	0.7023	3.793	48570.	0.74
ERBIUM	1.4042	0.7297	3.620	45430.	0.73
THULIUM	1.3954	0.5710	4.542	55489.	0.72
YTTERBIUM+2	1.5487	0.3741	5.932	112001.	0.90
YTTERBIUM+3	1.3906	0.3741	6.228	73996.	0.71
LUTETIUM	1.3858	1.0006	2.339	27927.	0.70
HAFNIUM	1.2620	1.4251	0.367	3844.	0.56
TANTALUM	1.1717	1.8296	-0.202	555.	0.37
TUNGSTEN	1.1246	1.9706	5.000	3786.	-0.15
RHENIUM	1.0982	1.8237	4.024	3567.	-0.16
OSMIUM	1.0807	1.8433	5.129	5024.	-0.18
IRIDIUM	1.0839	1.5583	0.088	1300.	-0.23
PLATINUM	1.1078	1.3222	-0.750	23.	-0.26
GOLD	1.1518	0.8580	749.593	8106.	0.02
MERCURY	1.2732	0.1436	188.935	86586.	0.14
THALLIUM	1.3706	0.4235	762.238	64470.	0.06
LEAD	1.3978	0.4584	28270.862	66385.	-0.01
BISMUTH	1.3490	0.4892	938.826	79130.	0.06
POLONIUM	1.4169	0.3379	154.425	104106.	0.17
FRANCIUM	2.2364	0.1773	16.255	463033.	1.11
RADIUM	1.8323	0.4114	8.990	200282.	0.98
ACTINIUM	1.5000	1.0186	2.710	45292.	0.84
THORIUM	1.4361	1.3379	2.734	21680.	0.57
PROTACTINIUM	1.2987	1.2929	4.686	9665.	0.28
URANIUM	1.2324	1.2243	602.957	6754.	0.02
NEPTUNIUM	1.2204	1.1068	220.671	9334.	0.04
PLUTONIUM+4.76	1.3099	0.8991	8.436	22378.	0.33
PLUTONIUM+5	1.2716	0.8991	21.511	12353.	0.15
AMERICIUM	1.3818	0.6464	7.400	47334.	0.52

TABLE-III- 47

SOLVENT-NICKEL

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.930	1.2460	6.593	102800.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.6252	0.5067	6.658	12385.	-0.27
LITHIUM	1.2536	0.3753	2.187	48650.	0.97
BERYLLIUM	0.9053	0.7578	-0.320	10.	0.40
BORON	0.7384	1.2889	63.908	13129.	-0.09
CARBON	0.7030	1.6625	5.436	49380.	-0.62
NITROGEN	0.6621	1.0982	2.082	59285.	-1.10
OXYGEN	0.7199	0.5792	0.057	4276.	-1.53
SODIUM	1.5337	0.2521	5.734	128193.	0.98
MAGNESIUM	1.2857	0.3463	4.944	57060.	0.70
ALUMINUM	1.1493	0.7539	2.596	11257.	0.41
SILICON	1.0610	1.0545	31.496	8455.	0.10
PHOSPHOROUS	0.9960	0.7325	1.163	1967.	-0.17
SULFUR	1.0032	0.6459	0.379	4131.	-0.58
POTASSIUM	1.9069	0.2089	10.097	277813.	1.09
CALCIUM	1.5843	0.4105	6.100	117672.	0.91
SCANDIUM	1.3170	0.8852	2.339	23979.	0.65
TITANIUM	1.1734	1.0963	1.366	7292.	0.44
VANADIUM	1.0803	1.1946	-0.562	103.	0.29
CHROMIUM	1.0289	0.9241	-0.418	726.	-0.22
MANGANESE+5	1.0490	0.6537	2079.037	5986.	0.01
MANGANESE+7	1.0064	0.6537	1.317	4111.	-0.31
IRON	1.0225	0.9728	-11.253	258.	0.06
COBALT	1.0048	0.9932	-511.965	12.	0.01
COPPER	1.0257	0.7889	3.772	2245.	0.11
ZINC	1.1188	0.3025	20.090	34965.	0.27
GALLIUM	1.0859	0.6342	57.315	23529.	0.13
GERMANIUM	1.1059	0.8706	880.495	19466.	0.03
ARSENIC	1.0963	0.2821	111.066	58819.	-0.15
SELENIUM	1.1332	0.4805	8.533	56464.	-0.53
RUBIDIUM	2.0433	0.1936	12.813	352240.	1.09
STRONTIUM	1.7263	0.3512	8.228	172430.	0.95
YTTRIUM	1.4230	0.9689	2.600	35186.	0.75
ZIRCONIUM	1.2857	1.4202	0.520	5368.	0.59
NIOBIUM	1.1782	1.7023	-0.269	44.	0.43
MOLYBDENUM	1.1236	1.5321	-1.528	174.	-0.17
TECHNETIUM	1.0955	1.5379	-0.484	830.	-0.18
RUTHENIUM	1.0746	1.5058	0.002	1194.	-0.19
RHODIUM	1.0795	1.2957	-0.694	26.	-0.27
PALLADIUM	1.1043	0.8794	1.798	4444.	-0.28
SILVER	1.1597	0.6654	10.120	15778.	0.25
CADMIUM	1.2584	0.2607	21.477	61862.	0.35
INDIUM	1.3371	0.5613	161.133	46153.	0.11
TIN+2	1.3090	0.7004	20.939	39049.	0.28
TIN+4	1.2681	0.7004	249.514	58730.	0.10
ANTIMONY	1.2608	0.6089	923.125	54410.	-0.05
TELLURIUM	1.3178	0.4533	34392.081	80500.	0.01
CESIUM	2.1918	0.1833	14.808	444982.	1.14

TABLE-III- 48

SOLVENT-NICKEL

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.7945	0.4134	8.051	186849.	1.00
LANTHANUM	1.5064	1.0019	3.054	47734.	0.81
CERIUM+3	1.4815	1.0856	2.512	38921.	0.81
CERIUM+4	1.3419	1.0856	3.098	19054.	0.50
PRASEODYMIUM	1.4671	0.8666	3.199	48407.	0.80
NEODYMIUM	1.4623	0.7519	3.684	55018.	0.80
PROMETHIUM	1.4518	0.6226	4.274	62862.	0.79
SAMARIUM	1.4462	0.4796	5.192	74967.	0.79
EUROPIUM+2	1.6380	0.4134	6.334	133021.	0.95
EUROPIUM+3	1.4430	0.4134	5.747	81401.	0.78
GADOLINIUM	1.4454	0.9314	2.901	40849.	0.77
TERBIUM	1.4310	0.9140	2.846	39299.	0.76
DYSPROSIUM	1.4246	0.6926	3.875	51988.	0.75
HOLMIUM	1.4181	0.6975	3.841	50481.	0.75
ERBIUM	1.4109	0.7247	3.669	47270.	0.74
THULIUM	1.4021	0.5671	4.581	57482.	0.73
YTTERBIUM+2	1.5562	0.3716	5.970	115189.	0.91
YTTERBIUM+3	1.3973	0.3716	6.244	76246.	0.72
LUTETIUM	1.3925	0.9938	2.398	29379.	0.71
HAFNIUM	1.2681	1.4154	0.423	4361.	0.57
TANTALUM	1.1774	1.8171	-0.243	384.	0.38
TUNGSTEN	1.1300	1.9572	4.701	3317.	-0.14
RHENIUM	1.1035	1.8113	3.718	3121.	-0.15
OSMIUM	1.0859	1.8307	4.953	4493.	-0.17
IRIDIUM	1.0891	1.5477	-0.133	1044.	-0.22
PLATINUM	1.1132	1.3132	-0.777	72.	-0.25
GOLD	1.1573	0.8521	364.807	8763.	0.03
MERCURY	1.2793	0.1426	168.659	88701.	0.15
THALLIUM	1.3772	0.4206	578.366	66544.	0.07
LEAD	1.4045	0.4553	+∞	68549.	0.
BISMUTH	1.3555	0.4859	712.121	81658.	0.07
POLONIUM	1.4238	0.3356	141.670	107040.	0.18
FRANCIUM	2.2472	0.1761	16.341	473888.	1.12
RADIUM	1.8411	0.4086	9.048	205693.	0.99
ACTINIUM	1.5072	1.0117	2.768	47314.	0.85
THORIUM	1.4430	1.3288	2.816	23035.	0.58
PROTACTINIUM	1.3050	1.2840	4.796	10494.	0.29
URANIUM	1.2384	1.2160	300.064	7420.	0.03
NEPTUNIUM	1.2263	1.0992	154.618	10106.	0.05
PLUTONIUM+4.76	1.3162	0.8930	8.404	23596.	0.34
PLUTONIUM+5	1.2777	0.8930	20.343	13201.	0.16
AMERICIUM	1.3804	0.6420	7.406	49167.	0.53

TABLE-III- 49

SOLVENT-COPPER

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.820	1.2780	7.114	81100.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.6095	0.6423	6.632	23277.	-0.38
LITHIUM	1.2222	0.4757	1.547	27574.	0.86
BERYLLIUM	0.8826	0.9605	0.554	2267.	0.29
BORON	0.7199	1.6338	26.695	25815.	-0.20
CARBON	0.6854	2.1073	5.810	72591.	-0.73
NITROGEN	0.6455	1.3921	2.443	83683.	-1.21
OXYGEN	0.7019	0.7342	0.165	11415.	-1.64
SODIUM	1.4953	0.3196	4.749	84074.	0.87
MAGNESIUM	1.2535	0.4390	4.027	33515.	0.59
ALUMINUM	1.1205	0.9556	0.873	3004.	0.30
SILICON	1.0344	1.3366	82.300	1382.	-0.01
PHOSPHOROUS	0.9710	0.9285	-0.657	4.	-0.28
SULFUR	0.9781	0.8187	-0.079	325.	-0.69
POTASSIUM	1.8592	0.2649	8.560	190778.	0.98
CALCIUM	1.5446	0.5203	4.928	73928.	0.80
SCANDIUM	1.2840	1.1221	1.207	9307.	0.54
TITANIUM	1.1440	1.3896	-0.101	937.	0.33
VANADIUM	1.0532	1.5142	0.550	1603.	0.18
CHROMIUM	1.0031	1.1714	-0.299	442.	-0.33
MANGANESE+5	1.0227	0.8286	-1.235	907.	-0.10
MANGANESE+7	0.9812	0.8286	-0.215	316.	-0.42
IRON	0.9969	1.2330	-3.061	1016.	-0.05
COBALT	0.9797	1.2589	3.253	1942.	-0.10
NICKEL	0.9750	1.2676	3.772	2245.	-0.11
ZINC	1.0908	0.3835	30.438	19161.	0.16
GALLIUM	1.0587	0.8039	952.210	9975.	0.02
GERMANIUM	1.0782	1.1036	38.607	6890.	-0.08
ARSENIC	1.0689	0.3576	22.005	35494.	-0.26
SELENIUM	1.1049	0.6091	3.236	31755.	-0.64
RUBIDIUM	1.9922	0.2454	10.976	244270.	0.98
STRONTIUM	1.6831	0.4451	6.862	112843.	0.84
YTTRIUM	1.3873	1.2281	1.490	15400.	0.64
ZIRCONIUM	1.2535	1.8002	-0.180	236.	0.48
NIOBIUM	1.1487	2.1578	1.068	3714.	0.32
MOLYBDENUM	1.0955	1.9420	1.705	4274.	-0.28
TECHNETIUM	1.0681	1.9494	2.693	6414.	-0.29
RUTHENIUM	1.0477	1.9088	2.923	7259.	-0.30
RHODIUM	1.0524	1.6424	0.565	3072.	-0.38
PALLADIUM	1.0767	1.1147	-0.261	275.	-0.39
SILVER	1.1307	0.8434	9.537	9503.	0.14
CADMIUM	1.2269	0.3305	27.616	37874.	0.24
INDIUM	1.3036	0.7115	$+\infty$	24386.	0.
TIN+2	1.2762	0.8878	26.754	19022.	0.17
TIN+4	1.2363	0.8878	13114.397	31434.	-0.01
ANTIMONY	1.2293	0.7719	47.686	29343.	-0.16
TELLURIUM	1.2848	0.5746	203.280	48069.	-0.10
CESIUM	2.1369	0.2323	12.659	310886.	1.03

TABLE-III- 50

SOLVENT-COPPER

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.7496	0.5240	6.593	121621.	0.89
LANTHANUM	1.4687	1.2700	1.890	22726.	0.70
CERIUM+3	1.4444	1.3761	1.419	17093.	0.70
CERIUM+4	1.3083	1.3761	1.404	6116.	0.39
PRASEODYMIUM	1.4304	1.0985	2.065	23862.	0.69
NEODYMIUM	1.4257	0.9531	2.535	28705.	0.69
PROMETHIUM	1.4155	0.7891	3.134	34710.	0.68
SAMARIUM	1.4100	0.6079	4.080	44058.	0.67
EUROPIUM+2	1.5970	0.5240	5.115	84422.	0.84
EUROPIUM+3	1.4069	0.5240	4.662	49160.	0.67
GADOLINIUM	1.4092	1.1806	1.765	18923.	0.66
TERBIUM	1.3951	1.1586	1.722	18078.	0.65
DYSPROSIUM	1.3889	0.8779	2.718	27186.	0.64
HOLMIUM	1.3826	0.8841	2.681	26197.	0.64
ERBIUM	1.3756	0.9186	2.508	23997.	0.63
THULIUM	1.3670	0.7189	3.438	31668.	0.62
YTTERBIUM+2	1.5172	0.4710	4.854	72836.	0.80
YTTERBIUM+3	1.3623	0.4710	5.211	46196.	0.61
LUTETIUM	1.3576	1.2597	1.280	11960.	0.60
HAFNIUM	1.2363	1.7941	-0.228	78.	0.46
TANTALUM	1.1479	2.3033	2.553	5484.	0.27
TUNGSTEN	1.1017	2.4809	7.684	12267.	-0.25
RHENIUM	1.0759	2.2959	6.711	11653.	-0.26
OSMIUM	1.0587	2.3206	7.128	14079.	-0.28
IRIDIUM	1.0618	1.9618	2.299	6966.	-0.33
PLATINUM	1.0853	1.6646	0.217	1840.	-0.36
GOLD	1.1283	1.0801	3.745	1745.	-0.08
MERCURY	1.2473	0.1808	1563.184	58867.	0.04
THALLIUM	1.3427	0.5332	1026.380	39062.	-0.04
LEAD	1.3693	0.5771	139.185	40028.	-0.11
BISMUTH	1.3216	0.6159	1281.391	48470.	-0.04
POLONIUM	1.3881	0.4254	589.585	67812.	0.07
FRANCIUM	2.1909	0.2232	14.058	331893.	1.01
RADIUM	1.7950	0.5179	7.482	134810.	0.88
ACTINIUM	1.4695	1.2824	1.681	22422.	0.74
THORIUM	1.4069	1.6843	1.248	7549.	0.47
PROTACTINIUM	1.2723	1.6276	0.931	1887.	0.18
URANIUM	1.2074	1.5413	-2.124	879.	-0.08
NEPTUNIUM	1.1956	1.3933	9.277	1962.	-0.06
PLUTONIUM+4.76	1.2833	1.1319	6.457	9068.	0.23
PLUTONIUM+5	1.2457	1.1319	42.714	3655.	0.05
AMERICIUM	1.3537	0.8138	6.035	25740.	0.42

TABLE-III- 51

SOLVENT-ZINC

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.660	1.3940	9.165	31100.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5588	1.6749	11.664	79623.	-0.54
LITHIUM	1.1205	1.2405	-0.091	162.	0.70
BERYLLIUM	0.8092	2.5048	80.208	32450.	0.13
BORON	0.6600	4.2605	29.859	90428.	-0.36
CARBON	0.6284	5.4952	9.415	173172.	-0.89
NITROGEN	0.5918	3.6302	4.337	188922.	-1.37
OXYGEN	0.6435	1.9145	0.721	55084.	-1.80
SODIUM	1.3709	0.8334	0.801	10501.	0.71
MAGNESIUM	1.1492	1.1447	-0.113	709.	0.43
ALUMINUM	1.0273	2.4920	16.167	8499.	0.14
SILICON	0.9484	3.4855	19.454	14157.	-0.17
PHOSPHOROUS	0.8902	2.4212	3.998	19041.	-0.44
SULFUR	0.8967	2.1350	0.752	13716.	-0.85
POTASSIUM	1.7044	0.6907	2.283	36589.	0.82
CALCIUM	1.4161	1.3569	0.488	5799.	0.64
SCANDIUM	1.1772	2.9260	1.029	4617.	0.38
TITANIUM	1.0488	3.6238	21.904	15790.	0.17
VANADIUM	0.9656	3.9486	3631.423	34688.	0.02
CHROMIUM	0.9197	3.0547	4.489	26048.	-0.49
MANGANESE+5	0.9376	2.1608	6.616	11506.	-0.26
MANGANESE+7	0.8996	2.1608	1.632	13851.	-0.58
IRON	0.9139	3.2154	28.065	29732.	-0.21
COBALT	0.8981	3.2830	20.915	33796.	-0.26
NICKEL	0.8938	3.3055	20.090	34965.	-0.27
COPPER	0.9168	2.6077	30.438	19161.	-0.16
GALLIUM	0.9706	2.0965	3.339	2701.	-0.14
GERMANIUM	0.9885	2.8778	3.546	5902.	-0.24
ARSENIC	0.9799	0.9325	0.033	1326.	-0.42
SELENIUM	1.0129	1.5884	-0.071	150.	-0.80
RUBIDIUM	1.8264	0.6399	3.191	50668.	0.82
STRONTIUM	1.5430	1.1608	1.216	14159.	0.68
YTTRIUM	1.2719	3.2026	0.304	2826.	0.48
ZIRCONIUM	1.1492	4.6945	8.911	22235.	0.32
NIOBIUM	1.0531	5.6270	78.294	47412.	0.16
MOLYBDENUM	1.0043	5.0643	10.290	47129.	-0.44
TECHNETIUM	0.9792	5.0836	11.062	52849.	-0.45
RUTHENIUM	0.9605	4.9775	10.940	54571.	-0.46
RHODIUM	0.9648	4.2830	5.912	40945.	-0.54
PALLADIUM	0.9871	2.9068	2.182	16411.	-0.55
SILVER	1.0366	2.1994	445.511	5302.	-0.02
CADMIUM	1.1248	0.8617	4.318	1829.	0.08
INDIUM	1.1951	1.8553	-1.907	67.	-0.16
TIN+2	1.1700	2.3151	-144.881	858.	0.01
TIN+4	1.1334	2.3151	-1.772	12.	-0.17
ANTIMONY	1.1270	2.0129	-0.504	2.	-0.32
TELLURIUM	1.1779	1.4984	0.288	1642.	-0.26
CESIUM	1.9591	0.6058	3.844	68292.	0.87

TABLE-III- 52

SOLVENT-ZINC

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.6040	1.3666	1.090	14581.	0.73
LANTHANUM	1.3465	3.3119	0.029	1389.	0.54
CERIUM+3	1.3242	3.5884	0.266	2961.	0.54
CERIUM+4	1.1994	3.5884	5.695	8139.	0.23
PRASEODYMIUM	1.3113	2.8646	-0.065	772.	0.53
NEODYMIUM	1.3070	2.4855	-0.166	134.	0.53
PROMETHIUM	1.2977	2.0579	-0.182	54.	0.52
SAMARIUM	1.2927	1.5852	-0.021	1062.	0.52
EUROPIUM+2	1.4641	1.3666	0.597	7561.	0.68
EUROPIUM+3	1.2898	1.3666	0.146	2059.	0.51
GADOLINIUM	1.2920	3.0788	0.104	1790.	0.50
TERBIUM	1.2791	3.0212	0.125	1889.	0.49
DYSPROSIUM	1.2733	2.2894	-0.199	120.	0.48
HOLMIUM	1.2676	2.3055	-0.195	175.	0.48
ERBIUM	1.2611	2.3955	-0.161	377.	0.47
THULIUM	1.2532	1.8746	-0.238	33.	0.46
YTTERBIUM+2	1.3910	1.2283	0.525	6148.	0.64
YTTERBIUM+3	1.2489	1.2283	0.173	2007.	0.45
LUTETIUM	1.2446	3.2849	0.649	4140.	0.44
HAFNIUM	1.1334	4.6785	10.833	23674.	0.30
TANTALUM	1.0524	6.0064	187.755	53581.	0.11
TUNGSTEN	1.0100	6.4695	17.918	70649.	-0.41
RHENIUM	0.9864	5.9871	16.367	67771.	-0.42
OSMIUM	0.9706	6.0514	16.085	73003.	-0.44
IRIDIUM	0.9735	5.1158	9.595	54318.	-0.49
PLATINUM	0.9950	4.3408	5.729	36914.	-0.52
GOLD	1.0344	2.8167	7.702	11423.	-0.24
MERCURY	1.1435	0.4714	20.074	7858.	-0.12
THALLIUM	1.2310	1.3904	-0.344	875.	-0.20
LEAD	1.2554	1.5048	-0.233	801.	-0.27
BISMUTH	1.2116	1.6061	0.315	1483.	-0.20
POLONIUM	1.2726	1.1093	24.636	5794.	-0.09
FRANCIUM	2.0086	0.5820	4.384	74227.	0.85
RADIUM	1.6456	1.3505	1.351	17347.	0.72
ACTINIUM	1.3472	3.3441	0.036	1475.	0.58
THORIUM	1.2898	4.3923	3.489	8925.	0.31
PROTACTINIUM	1.1664	4.2444	1520.084	15213.	0.02
URANIUM	1.1069	4.0193	12.021	17160.	-0.24
NEPTUNIUM	1.0961	3.6334	10.870	13324.	-0.22
PLUTONIUM+4.76	1.1765	2.9518	31.847	4791.	0.07
PLUTONIUM+5	1.1420	2.9518	27.701	8921.	-0.11
AMERICIUM	1.2410	2.1222	-0.692	114.	0.26

TABLE-III- 53

SOLVENT-GALLIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.800	1.3530	11.810	6520C.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5758	0.7989	19.926	74710.	-0.40
LITHIUM	1.1545	0.5917	0.228	4900.	0.84
BERYLLIUM	0.8337	1.1948	12.672	22494.	0.27
BORON	0.6800	2.0322	70.727	80131.	-0.22
CARBON	0.6475	2.6212	13.096	171068.	-0.75
NITROGEN	0.6098	1.7316	5.559	195121.	-1.23
OXYGEN	0.6630	0.9132	0.723	47161.	-1.66
SODIUM	1.4124	0.3975	1.750	30352.	0.85
MAGNESIUM	1.1840	0.5460	0.823	7356.	0.57
ALUMINUM	1.0584	1.1887	0.478	2056.	0.28
SILICON	0.9771	1.6626	183.532	5001.	-0.03
PHOSPHORUS	0.9172	1.1549	4.302	10121.	-0.30
SULFUR	0.9239	1.0184	0.418	6047.	-0.71
POTASSIUM	1.7561	0.3294	3.682	79435.	0.96
CALCIUM	1.4590	0.6472	1.495	22172.	0.78
SCANDIUM	1.2129	1.3957	-0.165	163.	0.52
TITANIUM	1.0806	1.7285	2.199	6066.	0.31
VANADIUM	0.9948	1.8834	35.503	22151.	0.16
CHROMIUM	0.9475	1.4571	5.057	15477.	-0.35
MANGANESE+5	0.9660	1.0307	9.468	4336.	-0.12
MANGANESE+7	0.9268	1.0307	1.105	6125.	-0.44
IRON	0.9416	1.5337	154.552	18656.	-0.07
COBALT	0.9254	1.5660	63.960	22431.	-0.12
NICKEL	0.9209	1.5767	57.315	23529.	-0.13
COPPER	0.9446	1.2439	952.210	9975.	-0.02
ZINC	1.0303	0.4770	3.339	2701.	0.14
GERMANIUM	1.0185	1.3727	-2.691	572.	-0.10
ARSENIC	1.0096	0.4448	4.334	9027.	-0.28
SELENIUM	1.0436	0.7577	0.414	5352.	-0.66
RUBIDIUM	1.8817	0.3052	4.856	104403.	0.96
STRONTIUM	1.5898	0.5537	2.486	39737.	0.82
YTTRIUM	1.3104	1.5276	-0.127	54.	0.62
ZIRCONIUM	1.1840	2.2393	1.793	9942.	0.46
NIOBIUM	1.0850	2.6840	14.640	31577.	0.30
MOLYBDENUM	1.0347	2.4156	15.003	32329.	-0.30
TECHNETIUM	1.0089	2.4248	16.632	38050.	-0.31
RUTHENIUM	0.9897	2.3742	16.443	40020.	-0.32
RHODIUM	0.9941	2.0429	7.168	27641.	-0.40
PALLADIUM	1.0170	1.3865	1.581	7320.	-0.41
SILVER	1.0680	1.0491	-1.815	590.	0.12
CADMIUM	1.1589	0.4110	8.213	10359.	0.22
INDIUM	1.2313	0.8850	152.436	2598.	-0.02
TIN+2	1.2055	1.1043	-0.633	864.	0.15
TIN+4	1.1678	1.1043	122.131	3727.	-0.03
ANTIMONY	1.1611	0.9601	3.337	3686.	-0.18
TELLURIUM	1.2136	0.7147	30.732	11397.	-0.12
CESIUM	2.0185	0.2890	5.701	135306.	1.01

TABLE-III- 54

SOLVENT-GALLIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.6526	0.6518	2.322	41716.	0.87
LANTHANUM	1.3873	1.5798	-0.039	768.	0.68
CERIUM+3	1.3644	1.7117	-0.106	76.	0.68
CERIUM+4	1.2358	1.7117	0.012	1231.	0.37
PRASEODYMIUM	1.3511	1.3664	0.009	1284.	0.67
NEODYMIUM	1.3466	1.1856	0.153	2757.	0.67
PROMETHIUM	1.3370	0.9816	0.394	5165.	0.66
SAMARIUM	1.3319	0.7561	0.850	9603.	0.66
EUROPIUM+2	1.5085	0.6518	1.623	26360.	0.82
EUROPIUM+3	1.3289	0.6518	1.154	12366.	0.65
GADOLINIUM	1.3311	1.4686	-0.085	389.	0.64
TERBIUM	1.3178	1.4411	-0.095	319.	0.63
DYSPROSIUM	1.3119	1.0920	0.163	2660.	0.62
HOLMIUM	1.3060	1.0997	0.137	2395.	0.62
ERBIUM	1.2993	1.1426	0.068	1776.	0.61
THULIUM	1.2912	0.8942	0.416	4644.	0.60
YTTERBIUM+2	1.4331	0.5859	1.521	22526.	0.78
YTTERBIUM+3	1.2868	0.5859	1.319	11852.	0.59
LUTETIUM	1.2823	1.5669	-0.147	32.	0.58
HAFNIUM	1.1678	2.2316	2.230	11146.	0.44
TANTALUM	1.0843	2.8650	24.849	37006.	0.25
TUNGSTEN	1.0407	3.0859	31.173	53597.	-0.27
RHENIUM	1.0163	2.8558	27.888	51611.	-0.28
OSMIUM	1.0000	2.8865	26.881	56981.	-0.30
IRIDIUM	1.0030	2.4402	13.555	39484.	-0.35
PLATINUM	1.0251	2.0706	6.735	23620.	-0.38
GOLD	1.0658	1.3436	10.792	3681.	-0.10
MERCURY	1.1781	0.2248	2352.698	22893.	0.02
THALLIUM	1.2683	0.6632	87.964	8495.	-0.06
LEAD	1.2934	0.7178	18.599	8440.	-0.13
BISMUTH	1.2483	0.7661	119.635	11124.	-0.06
POLONIUM	1.3112	0.5291	347.717	21238.	0.05
FRANCIUM	2.0695	0.2776	6.380	145396.	0.99
RADIUM	1.6955	0.6442	2.708	47378.	0.86
ACTINIUM	1.3880	1.5951	-0.041	705.	0.72
THORIUM	1.3289	2.0951	0.005	1218.	0.45
PROTACTINIUM	1.2018	2.0245	6.548	5057.	0.16
URANIUM	1.1404	1.9172	23.867	6696.	-0.10
NEPTUNIUM	1.1293	1.7331	20.938	4282.	-0.08
PLUTONIUM+4.76	1.2121	1.4080	-0.977	199.	0.21
PLUTONIUM+5	1.1766	1.4080	38.918	2000.	0.03
AMERICIUM	1.2786	1.0123	0.365	2540.	0.40

TABLE-III- 55

SOLVENT-GERMANIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.900	1.3780	13.640	8950C.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5653	0.5820	35.301	74455.	-0.30
LITHIUM	1.1335	0.4311	0.403	9410.	0.94
BERYLLIUM	0.8186	0.8704	5.619	18929.	0.37
BORON	0.6676	1.4804	230.012	77571.	-0.12
CARBON	0.6357	1.9095	17.830	174910.	-0.65
NITROGEN	0.5987	1.2615	6.885	203913.	-1.13
OXYGEN	0.6509	0.6653	0.777	44799.	-1.56
SODIUM	1.3868	0.2896	2.014	43111.	0.95
MAGNESIUM	1.1626	0.3978	1.133	12921.	0.67
ALUMINUM	1.0392	0.8659	-0.183	584.	0.38
SILICON	0.9594	1.2112	11.003	2435.	0.07
PHOSPHOROUS	0.9006	0.8413	6.400	7095.	-0.20
SULFUR	0.9071	0.7419	0.283	3621.	-0.61
POTASSIUM	1.7242	0.2400	3.975	104184.	1.06
CALCIUM	1.4325	0.4715	1.795	33253.	0.88
SCANDIUM	1.1909	1.0168	-0.118	149.	0.62
TITANIUM	1.0610	1.2592	0.525	3229.	0.41
VANADIUM	0.9768	1.3721	10.618	17744.	0.26
CHROMIUM	0.9303	1.0615	7.355	11793.	-0.25
MANGANESE+5	0.9485	0.7508	112.340	2228.	-0.02
MANGANESE+7	0.9100	0.7508	0.933	3679.	-0.34
IRON	0.9245	1.1173	653.448	14754.	0.03
COBALT	0.9086	1.1408	1865.239	18397.	-0.02
NICKEL	0.9042	1.1486	880.495	19466.	-0.03
COPPER	0.9274	0.9061	38.607	6890.	0.08
ZINC	1.0116	0.3475	3.546	5902.	0.24
GALLIUM	0.9819	0.7285	-2.691	572.	0.10
ARSENIC	0.9913	0.3240	18.621	15104.	-0.18
SELENIUM	1.0247	0.5520	1.259	10297.	-0.56
RUBIDIUM	1.8476	0.2223	5.152	134694.	1.06
STRONTIUM	1.5610	0.4034	2.792	55684.	0.92
YTTRIUM	1.2866	1.1128	0.001	1202.	0.72
ZIRCONIUM	1.1626	1.6313	0.682	6125.	0.56
NIOBIUM	1.0653	1.9553	6.728	26017.	0.40
MOLYBDENUM	1.0160	1.7598	28.103	27114.	-0.20
TECHNETIUM	0.9906	1.7665	31.129	32848.	-0.21
RUTHENIUM	0.9717	1.7296	30.220	34921.	-0.22
RHODIUM	0.9761	1.4883	10.480	22941.	-0.30
PALLADIUM	0.9985	1.0101	1.474	4458.	-0.31
SILVER	1.0486	0.7642	-1.064	4.	0.22
CADMIUM	1.1379	0.2994	6.644	16881.	0.32
INDIUM	1.2090	0.6447	33.487	6134.	0.08
TIN+2	1.1836	0.8045	1.369	3166.	0.25
TIN+4	1.1466	0.8045	61.892	8186.	0.07
ANTIMONY	1.1401	0.6994	45.929	7971.	-0.08
TELLURIUM	1.1916	0.5207	1917.911	18883.	-0.02
CESIUM	1.9819	0.2105	6.023	172309.	1.11

TABLE-III- 56

SOLVENT-GERMANIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.6226	0.4749	2.645	58583.	0.97
LANTHANUM	1.3621	1.1508	0.145	3242.	0.78
CERIUM+3	1.3396	1.2469	0.013	1370.	0.78
CERIUM+4	1.2134	1.2469	-0.213	110.	0.47
PRASEODYMIUM	1.3266	0.9954	0.218	4178.	0.77
NEODYMIUM	1.3222	0.8637	0.405	6676.	0.77
PROMETHIUM	1.3128	0.7151	0.681	10292.	0.76
SAMARIUM	1.3077	0.5508	1.160	16446.	0.76
EUROPIUM+2	1.4811	0.4749	1.925	38764.	0.92
EUROPIUM+3	1.3048	0.4749	1.466	20102.	0.75
GADOLINIUM	1.3070	1.0698	0.086	2279.	0.74
TERBIUM	1.2939	1.0498	0.072	2077.	0.73
DYSPROSIUM	1.2881	0.7955	0.433	6427.	0.72
HOLMIUM	1.2823	0.8011	0.405	5985.	0.72
ERBIUM	1.2758	0.8324	0.324	4935.	0.71
THULIUM	1.2678	0.6514	0.726	9392.	0.70
YTTERBIUM+2	1.4071	0.4268	1.812	33555.	0.88
YTTERBIUM+3	1.2634	0.4268	1.637	19268.	0.69
LUTETIUM	1.2591	1.1415	-0.071	429.	0.68
HAFNIUM	1.1466	1.6257	0.889	7169.	0.54
TANTALUM	1.0646	2.0872	10.615	31179.	0.35
TUNGSTEN	1.0218	2.2480	69.785	47699.	-0.17
RHENIUM	0.9978	2.0804	60.011	46029.	-0.18
OSMIUM	0.9819	2.1028	54.567	51525.	-0.20
IRIDIUM	0.9848	1.7777	22.957	34278.	-0.25
PLATINUM	1.0065	1.5084	9.825	18956.	-0.28
GOLD	1.0464	0.9788	- ∞	1599.	0.
MERCURY	1.1567	0.1638	95.631	32948.	0.12
THALLIUM	1.2453	0.4831	366.820	14726.	0.04
LEAD	1.2700	0.5229	652.626	14737.	-0.03
BISMUTH	1.2257	0.5581	471.692	18596.	0.04
POLONIUM	1.2874	0.3855	58.814	31708.	0.15
FRANCIUM	2.0319	0.2022	6.690	184479.	1.09
RADIUM	1.6647	0.4693	3.039	65768.	0.96
ACTINIUM	1.3628	1.1620	0.124	3110.	0.82
THORIUM	1.3048	1.5263	-0.161	72.	0.55
PROTACTINIUM	1.1800	1.4749	0.721	2316.	0.26
URANIUM	1.1197	1.3966	- ∞	3629.	0.
NEPTUNIUM	1.1089	1.2626	73.919	1874.	0.02
PLUTONIUM+4.76	1.1901	1.0257	-0.485	117.	0.31
PLUTONIUM+5	1.1553	1.0257	-1.774	501.	0.13
AMERICIUM	1.2554	0.7374	0.861	6154.	0.50

TABLE-III- 57

SOLVENT-ARSENIC

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.080	1.3660	12.960	29000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5703	1.7962	381.668	127930.	-0.12
LITHIUM	1.1435	1.3303	-0.018	661.	1.12
BERYLLIUM	0.8258	2.6862	7.794	55562.	0.55
BORON	0.6735	4.5690	1656.751	138729.	0.06
CARBON	0.6413	5.8931	50.062	256204.	-0.47
NITROGEN	0.6040	3.8931	13.618	284605.	-0.95
OXYGEN	0.6567	2.0531	2.032	90427.	-1.38
SODIUM	1.3990	0.8938	0.087	3755.	1.13
MAGNESIUM	1.1728	1.2276	-0.064	131.	0.85
ALUMINUM	1.0483	2.6724	2.469	19045.	0.56
SILICON	0.9678	3.7379	18.735	28194.	0.25
PHOSPHOROUS	0.9085	2.5966	3700.470	35325.	-0.02
SULFUR	0.9151	2.2897	6.082	27124.	-0.43
POTASSIUM	1.7394	0.7407	0.508	19196.	1.24
CALCIUM	1.4451	1.4552	-0.007	1004.	1.06
SCANDIUM	1.2013	3.1379	0.801	13008.	0.80
TITANIUM	1.0703	3.8862	3.673	30674.	0.59
VANADIUM	0.9854	4.2345	12.761	58164.	0.44
CHROMIUM	0.9385	3.2759	394.322	45748.	-0.07
MANGANESE+5	0.9568	2.3172	38.073	23668.	0.16
MANGANESE+7	0.9180	2.3172	44.288	27337.	-0.16
IRON	0.9327	3.4483	49.128	51152.	0.21
COBALT	0.9165	3.5207	94.722	57110.	0.16
NICKEL	0.9122	3.5448	111.066	58819.	0.15
COPPER	0.9356	2.7966	22.005	35494.	0.26
ZINC	1.0205	1.0724	0.033	1326.	0.42
GALLIUM	0.9905	2.2483	4.334	9027.	0.28
GERMANIUM	1.0088	3.0862	18.621	15104.	0.18
SELENIUM	1.0337	1.7034	-0.108	833.	-0.38
RUBIDIUM	1.8638	0.6862	0.755	27965.	1.24
STRONTIUM	1.5747	1.2448	0.138	5056.	1.10
YTTRIUM	1.2980	3.4345	0.473	10079.	0.90
ZIRCONIUM	1.1728	5.0345	3.107	40428.	0.74
NIOBIUM	1.0747	6.0345	9.614	75773.	0.58
MOLYBDENUM	1.0249	5.4310	8061.264	75549.	-0.02
TECHNETIUM	0.9993	5.4517	3972.160	83630.	-0.03
RUTHENIUM	0.9802	5.3379	2302.333	86139.	-0.04
RHODIUM	0.9846	4.5931	198.345	67055.	-0.12
PALLADIUM	1.0073	3.1172	77.435	31370.	-0.13
SILVER	1.0578	2.3586	3.382	13670.	0.40
CADMIUM	1.1479	0.9241	-0.199	47.	0.50
INDIUM	1.2196	1.9897	0.854	2523.	0.26
TIN+2	1.1940	2.4828	0.980	3370.	0.43
TIN+4	1.1567	2.4828	0.802	2348.	0.25
ANTIMONY	1.1501	2.1586	3.502	2000.	0.10
TELLURIUM	1.2020	1.6069	-2.015	3.	0.16
CESIUM	1.9993	0.6497	0.985	38972.	1.29

TABLE-III- 58

SOLVENT-ARSENIC

SOLUTE ELEMENT	RACIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.6369	1.4655	0.122	4928.	1.15
LANTHANUM	1.3741	3.5517	0.287	7320.	0.96
CERIUM+3	1.3514	3.8483	0.447	10627.	0.96
CERIUM+4	1.2240	3.8483	1.844	19156.	0.65
PRASEODYMIUM	1.3382	3.0721	0.209	5548.	0.95
NEODYMIUM	1.3338	2.6655	0.101	3267.	0.95
PROMETHIUM	1.3243	2.2069	0.008	1349.	0.94
SAMARIUM	1.3192	1.7000	-0.054	95.	0.94
EUROPIUM+2	1.4941	1.4655	0.018	1687.	1.10
EUROPIUM+3	1.3163	1.4655	-0.059	16.	0.93
GADOLINIUM	1.3184	3.3017	0.348	7986.	0.92
TERBIUM	1.3053	3.2400	0.362	8144.	0.91
DYSPROSIUM	1.2994	2.4552	0.100	3074.	0.90
HOLMIUM	1.2936	2.4724	0.115	3330.	0.90
ERBIUM	1.2870	2.5690	0.161	4113.	0.89
THULIUM	1.2789	2.0103	0.010	1370.	0.88
YTTERBIUM+2	1.4195	1.3172	0.001	1231.	1.06
YTTERBIUM+3	1.2745	1.3172	-0.067	23.	0.87
LUTETIUM	1.2701	3.5228	0.655	12467.	0.86
HAFNIUM	1.1567	5.0172	3.452	42460.	0.72
TANTALUM	1.0739	6.4414	12.822	84248.	0.53
TUNGSTEN	1.0307	6.9379	46203.739	107738.	0.01
RHENIUM	1.0066	6.4207	- ∞	104063.	0.
OSMIUM	0.9905	6.4897	11943.563	111359.	-0.02
IRIDIUM	0.9934	5.4862	747.829	85692.	-0.07
PLATINUM	1.0154	4.6552	260.493	61262.	-0.10
GOLC	1.0556	3.0207	30.206	23761.	0.18
MERCURY	1.1669	0.5055	0.901	3063.	0.30
THALLIUM	1.2562	1.4910	-0.962	119.	0.22
LEAD	1.2811	1.6138	-1.968	171.	0.15
BISMUTH	1.2365	1.7224	-1.050	20.	0.22
POLONIUM	1.2987	1.1897	-0.003	1185.	0.33
FRANCIUM	2.0498	0.6241	1.119	42803.	1.27
RADIUM	1.6794	1.4483	0.172	6349.	1.14
ACTINIUM	1.3748	3.5862	0.275	7531.	1.00
THORIUM	1.3163	4.7103	1.609	20960.	0.73
PROTACTINIUM	1.1903	4.5517	6.485	30145.	0.44
URANIUM	1.1296	4.3103	42.378	32854.	0.18
NEPTUNIUM	1.1186	3.8966	28.011	27029.	0.20
PLUTONIUM+4.76	1.2006	3.1655	2.190	13318.	0.49
PLUTONIUM+5	1.1654	3.1655	8.468	19959.	0.31
AMERICIUM	1.2665	2.2759	0.164	2941.	0.68

TABLE-III- 59

SOLVENT-SELENIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.460	1.4120	16.430	49400.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5517	1.0545	89.627	140907.	0.26
LITHIUM	1.1062	0.7810	-0.023	2.	1.50
BERYLLIUM	0.7989	1.5769	2.663	54301.	0.93
BORON	0.6516	2.6822	32.715	147245.	0.44
CARBON	0.6204	3.4595	1517.794	284695.	-0.09
NITROGEN	0.5843	2.2854	43.154	324507.	-0.57
OXYGEN	0.6353	1.2053	4.107	95909.	-1.00
SODIUM	1.3534	0.5247	0.160	9579.	1.51
MAGNESIUM	1.1346	0.7206	-0.026	295.	1.23
ALUMINUM	1.0142	1.5688	0.656	14567.	0.94
SILICON	0.9363	2.1943	2.353	22725.	0.63
PHOSPHOROUS	0.8789	1.5243	10.264	31866.	0.36
SULFUR	0.8853	1.3441	385.849	23436.	-0.05
POTASSIUM	1.6827	0.4348	0.543	34052.	1.62
CALCIUM	1.3980	0.8543	0.071	4600.	1.44
SCANDIUM	1.1622	1.8421	0.221	8289.	1.18
TITANIUM	1.0354	2.2814	1.103	25128.	0.97
VANADIUM	0.9533	2.4858	3.441	54543.	0.82
CHROMIUM	0.9079	1.9231	18.545	42288.	0.31
MANGANESE+5	0.9256	1.3603	2.758	19740.	0.54
MANGANESE+7	0.8881	1.3603	20.101	23627.	0.22
IRON	0.9023	2.0243	5.834	48019.	0.59
COBALT	0.8867	2.0668	7.939	54579.	0.54
NICKEL	0.8824	2.0810	8.533	56464.	0.53
COPPER	0.9051	1.6417	3.236	31755.	0.64
ZINC	0.9873	0.6296	-0.071	190.	0.80
GALLIUM	0.9582	1.3198	0.414	5352.	0.66
GERMANIUM	0.9759	1.8117	1.259	10297.	0.56
ARSENIC	0.9674	0.5870	-0.108	833.	0.38
RUBIDIUM	1.8031	0.4028	0.756	46965.	1.62
STRONTIUM	1.5234	0.7308	0.222	12427.	1.48
YTTRIUM	1.2557	2.0162	0.113	5478.	1.28
ZIRCONIUM	1.1346	2.9555	1.132	33939.	1.12
NIOBIUM	1.0397	3.5425	3.295	71216.	0.96
MOLYBDENUM	0.9915	3.1883	23.702	72028.	0.36
TECHNETIUM	0.9667	3.2004	28.312	81170.	0.35
RUTHENIUM	0.9483	3.1336	31.158	84250.	0.34
RHODIUM	0.9525	2.6964	40.238	63918.	0.26
PALLADIUM	0.9745	1.8300	17.808	26858.	0.25
SILVER	1.0234	1.3846	0.597	9572.	0.78
CADMIUM	1.1105	0.5425	0.007	1308.	0.88
INDIUM	1.1799	1.1680	-0.070	528.	0.64
TIN+2	1.1551	1.4575	0.067	2213.	0.81
TIN+4	1.1190	1.4575	-0.093	342.	0.63
ANTIMONY	1.1126	1.2672	-0.177	250.	0.48
TELLURIUM	1.1629	0.9433	-0.039	932.	0.54
CESIUM	1.9341	0.3814	0.960	62903.	1.67

TABLE-III- 60

SOLVENT-SELENIUM

SOLUTE ELEMENT	RACIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.5836	0.8603	0.210	12512.	1.53
LANTHANUM	1.3293	2.0850	0.048	3182.	1.34
CERIUM+3	1.3074	2.2591	0.109	5686.	1.34
CERIUM+4	1.1841	2.2591	0.503	13503.	1.03
PRASEODYMIUM	1.2946	1.8034	0.022	2091.	1.33
NEODYMIUM	1.2904	1.5648	-0.011	764.	1.33
PROMETHIUM	1.2812	1.2955	-0.029	41.	1.32
SAMARIUM	1.2762	0.9980	-0.018	477.	1.32
EUROPIUM+2	1.4455	0.8603	0.099	6178.	1.48
EUROPIUM+3	1.2734	0.8603	0.003	1310.	1.31
GADOLINIUM	1.2755	1.9383	0.068	3828.	1.30
TERBIUM	1.2627	1.9020	0.073	3988.	1.29
DYSPROSIUM	1.2571	1.4413	-0.013	711.	1.28
HOLMIUM	1.2514	1.4514	-0.009	852.	1.28
ERBIUM	1.2450	1.5081	0.003	1304.	1.27
THULIUM	1.2373	1.1802	-0.031	60.	1.26
YTTERBIUM+2	1.3732	0.7733	0.080	5021.	1.44
YTTERBIUM+3	1.2330	0.7733	0.003	1314.	1.25
LUTETIUM	1.2288	2.0680	0.177	7507.	1.24
HAFNIUM	1.1190	2.9453	1.252	36128.	1.10
TANTALUM	1.0390	3.7814	4.130	80058.	0.91
TUNGSTEN	0.9972	4.0729	29.866	105943.	0.39
RHENIUM	0.9738	3.7692	30.494	102732.	0.38
OSMIUM	0.9582	3.8097	36.748	111017.	0.36
IRIDIUM	0.9610	3.2206	37.123	83459.	0.31
PLATINUM	0.9823	2.7328	31.035	57300.	0.28
GOLD	1.0212	1.7733	2.461	18988.	0.56
MERCURY	1.1289	0.2968	0.618	7779.	0.68
THALLIUM	1.2153	0.8753	-0.098	375.	0.60
LEAD	1.2394	0.9474	-0.136	309.	0.53
BISMUTH	1.1962	1.0111	-0.049	783.	0.60
POLONIUM	1.2564	0.6984	0.311	4803.	0.71
FRANCIUM	1.9830	0.3664	1.069	68316.	1.65
RADIUM	1.6246	0.8502	0.260	15025.	1.52
ACTINIUM	1.3300	2.1053	0.049	3327.	1.38
THORIUM	1.2734	2.7652	0.467	14451.	1.11
PROTACTINIUM	1.1516	2.6721	1.457	23780.	0.82
URANIUM	1.0928	2.5304	3.553	26883.	0.56
NEPTUNIUM	1.0822	2.2874	2.597	21336.	0.58
PLUTONIUM+4.76	1.1615	1.8583	0.422	8554.	0.87
PLUTONIUM+5	1.1275	1.8583	1.255	14966.	0.69
AMERICIUM	1.2252	1.3360	-0.020	684.	1.06

TABLE-III- 61

SOLVENT-RUBIDIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
0.840	2.5460	56.070	19900.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.3060	2.6176	17.495	747364.	-1.36
LITHIUM	0.6135	1.9387	128.222	43770.	-0.12
BERYLLIUM	0.4430	3.9146	31.894	351349.	-0.69
BORON	0.3614	6.6583	22.561	725603.	-1.18
CARBON	0.3441	8.5879	18.596	1255137.	-1.71
NITROGEN	0.3240	5.6734	13.153	1455918.	-2.19
OXYGEN	0.3523	2.9920	3.451	547394.	-2.62
SODIUM	0.7506	1.3025	24.457	8016.	-0.11
MAGNESIUM	0.6292	1.7889	9.627	34957.	-0.39
ALUMINUM	0.5625	3.8945	14.722	158170.	-0.68
SILICON	0.5192	5.4472	8.638	196419.	-0.99
PHOSPHOROUS	0.4874	3.7839	6.692	246194.	-1.26
SULFUR	0.4910	3.3367	3.185	206049.	-1.67
POTASSIUM	0.9332	1.0794	- ∞	416.	0.
CALCIUM	0.7753	2.1206	23.384	18664.	-0.18
SCANDIUM	0.6445	4.5729	27.405	123541.	-0.44
TITANIUM	0.5742	5.6633	21.151	207265.	-0.65
VANADIUM	0.5287	6.1709	22.775	337316.	-0.80
CHROMIUM	0.5035	4.7739	7.307	290364.	-1.31
MANGANESE+5	0.5134	3.3769	6.898	186731.	-1.08
MANGANESE+7	0.4925	3.3769	4.551	206871.	-1.40
IRON	0.5004	5.0251	12.832	315120.	-1.03
COBALT	0.4918	5.1307	12.746	344037.	-1.08
NICKEL	0.4894	5.1658	12.813	352240.	-1.09
COPPER	0.5020	4.0754	10.976	244270.	-0.98
ZINC	0.5475	1.5628	3.191	50668.	-0.82
GALLIUM	0.5314	3.2764	4.856	104403.	-0.96
GERMANIUM	0.5412	4.4975	5.152	134694.	-1.06
ARSENIC	0.5365	1.4573	0.755	27965.	-1.24
SELENIUM	0.5546	2.4824	0.756	46965.	-1.62
STRONTIUM	0.8449	1.8141	16.266	8544.	-0.14
YTTRIUM	0.6964	5.0050	40.688	107751.	-0.34
ZIRCONIUM	0.6292	7.3367	41.881	242639.	-0.50
NIOBIUM	0.5766	8.7940	38.923	392173.	-0.66
MOLYBDENUM	0.5499	7.9146	10.921	401019.	-1.26
TECHNETIUM	0.5361	7.9447	11.768	438888.	-1.27
RUTHENIUM	0.5259	7.7789	11.957	452945.	-1.28
RHODIUM	0.5283	6.6935	8.757	374688.	-1.36
PALLADIUM	0.5405	4.5427	5.025	218696.	-1.37
SILVER	0.5676	3.4372	7.959	130695.	-0.84
CADMIUM	0.6159	1.3467	1.836	24371.	-0.74
INDIUM	0.6544	2.8995	2.768	62504.	-0.98
TIN+2	0.6406	3.6181	5.345	82065.	-0.81
TIN+4	0.6206	3.6181	2.701	62236.	-0.99
ANTIMONY	0.6170	3.1457	1.923	58809.	-1.14
TELLURIUM	0.6449	2.3417	1.143	31927.	-1.08
CESIUM	1.0727	0.9467	-14.742	342.	0.05

TABLE-III- 62

SOLVENT-RUBIDIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	0.8782	2.1357	47.108	9991.	-0.09
LANTHANUM	0.7372	5.1759	52.167	93495.	-0.28
CERIUM+3	0.7251	5.6080	59.017	110187.	-0.28
CERIUM+4	0.6567	5.6080	18.731	151550.	-0.59
PRASEODYMIUM	0.7180	4.4769	42.412	83443.	-0.29
NEODYMIUM	0.7156	3.8844	34.007	68975.	-0.29
PROMETHIUM	0.7105	3.2161	25.411	53579.	-0.30
SAMARIUM	0.7078	2.4774	16.332	36226.	-0.30
EUROPIUM+2	0.8016	2.1357	33.078	16143.	-0.14
EUROPIUM+3	0.7062	2.1357	12.241	28669.	-0.31
GADOLINIUM	0.7074	4.8116	40.539	96918.	-0.32
TERBIUM	0.7003	4.7216	38.928	97768.	-0.33
DYSPROSIUM	0.6972	3.5779	25.385	67278.	-0.34
HOLMIUM	0.6940	3.6030	24.863	69038.	-0.34
ERBIUM	0.6905	3.7437	25.579	74279.	-0.35
THULIUM	0.6862	2.9296	17.390	53163.	-0.36
YTTERBIUM+2	0.7616	1.9196	20.915	16818.	-0.18
YTTERBIUM+3	0.6838	1.9196	8.425	27502.	-0.37
LUTETIUM	0.6815	5.1337	36.361	119735.	-0.38
HAFNIUM	0.6206	7.3116	40.246	252145.	-0.52
TANTALUM	0.5762	9.3869	36.414	424489.	-0.71
TUNGSTEN	0.5530	10.1106	14.968	523397.	-1.23
RHENIUM	0.5401	9.3568	14.532	516471.	-1.24
OSMIUM	0.5314	9.4573	14.967	549143.	-1.26
IRIDIUM	0.5330	7.9950	11.291	448032.	-1.31
PLATINUM	0.5448	6.7839	8.319	345667.	-1.34
GOLD	0.5664	4.4020	6.910	180243.	-1.06
MERCURY	0.6261	0.7367	0.251	6315.	-0.94
THALLIUM	0.6740	2.1729	1.444	35834.	-1.02
LEAD	0.6874	2.3518	1.326	37524.	-1.09
BISMUTH	0.6634	2.5101	1.359	33799.	-1.02
POLONIUM	0.6968	1.7337	0.785	16183.	-0.91
FRANCIUM	1.0998	0.9095	-27.699	617.	0.03
RADIUM	0.9010	2.1106	31.177	8382.	-0.10
ACTINIUM	0.7376	5.2261	70.336	94616.	-0.24
THORIUM	0.7062	6.8643	25.900	156538.	-0.51
PROTACTINIUM	0.6386	6.6332	13.424	199305.	-0.80
URANIUM	0.6060	6.2814	8.212	213964.	-1.06
NEPTUNIUM	0.6002	5.6784	7.547	189422.	-1.04
PLUTONIUM+4.76	0.6441	4.6131	9.550	125067.	-0.75
PLUTONIUM+5	0.6253	4.6131	7.933	159409.	-0.93
AMERICIUM	0.6795	3.3166	8.966	66034.	-0.56

TABLE-III-63

SOLVENT-STRONTIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
0.980	2.1510	33.930	36100.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.3622	1.4429	11.184	385038.	-1.22
LITHIUM	0.7262	1.0687	1082.047	11173.	0.02
BERYLLIUM	0.5244	2.1579	24.199	169999.	-0.55
BORON	0.4277	3.6704	15.257	381720.	-1.04
CARBON	0.4073	4.7341	12.043	685710.	-1.57
NITROGEN	0.3835	3.1274	8.168	792721.	-2.05
OXYGEN	0.4170	1.6493	1.932	275208.	-2.48
SODIUM	0.8884	0.7180	-57.233	4.	0.03
MAGNESIUM	0.7448	0.9861	4.446	7600.	-0.25
ALUMINUM	0.6657	2.1468	9.854	67452.	-0.54
SILICON	0.6146	3.0028	5.261	88839.	-0.85
PHOSPHOROUS	0.5769	2.0859	3.883	113506.	-1.12
SULFUR	0.5811	1.8393	1.679	91844.	-1.53
POTASSIUM	1.1046	0.5950	7.849	4740.	0.14
CALCIUM	0.9177	1.1690	13.794	1701.	-0.04
SCANDIUM	0.7629	2.5208	23.493	49950.	-0.30
TITANIUM	0.6797	3.1219	15.611	94827.	-0.51
VANADIUM	0.6258	3.4017	16.387	165796.	-0.66
CHROMIUM	0.5960	2.6316	4.346	138391.	-1.17
MANGANESE+5	0.6076	1.8615	3.957	81816.	-0.94
MANGANESE+7	0.5830	1.8615	2.489	92318.	-1.26
IRON	0.5923	2.7701	8.261	152095.	-0.89
COBALT	0.5821	2.8283	8.183	167919.	-0.94
NICKEL	0.5793	2.8476	8.228	172430.	-0.95
COPPER	0.5941	2.2465	6.862	112843.	-0.84
ZINC	0.6481	0.8615	1.216	14159.	-0.68
GALLIUM	0.6290	1.8061	2.486	35737.	-0.82
GERMANIUM	0.6406	2.4792	2.792	55684.	-0.92
ARSENIC	0.6351	0.8033	0.138	5056.	-1.10
SELENIUM	0.6564	1.3684	0.222	12427.	-1.48
RUBIDIUM	1.1836	0.5512	16.266	8544.	0.14
YTTRIUM	0.8243	2.7590	45.509	41920.	-0.20
ZIRCONIUM	0.7448	4.0443	38.271	115569.	-0.36
NIOBIUM	0.6825	4.8476	31.860	195855.	-0.52
MOLYBDENUM	0.6509	4.3629	6.991	203422.	-1.12
TECHNETIUM	0.6346	4.3795	7.582	224443.	-1.13
RUTHENIUM	0.6225	4.2881	7.700	231960.	-1.14
RHODIUM	0.6253	3.6898	5.414	187030.	-1.22
PALLADIUM	0.6397	2.5042	2.827	99804.	-1.23
SILVER	0.6718	1.8947	4.589	53044.	-0.70
CADMIUM	0.7290	0.7424	0.318	3836.	-0.60
INDIUM	0.7745	1.5983	1.119	19393.	-0.84
TIN+2	0.7583	1.9945	2.664	28766.	-0.67
TIN+4	0.7345	1.9945	1.079	19166.	-0.85
ANTIMONY	0.7304	1.7341	0.713	17641.	-1.00
TELLURIUM	0.7634	1.2909	0.246	6206.	-0.94
CESIUM	1.2696	0.5219	14.656	13393.	0.19

TABLE-III- 64

SOLVENT-STRONTIUM

SOLUTE ELEMENT	RACIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.0395	1.1773	-20.291	22.	0.05
LANTHANUM	0.8726	2.8532	77.127	34574.	-0.14
CERIUM+3	0.8582	3.0914	89.270	43288.	-0.14
CERIUM+4	0.7773	3.0914	13.687	65104.	-0.45
PRASEODYMIUM	0.8498	2.4679	54.495	29467.	-0.15
NEODYMIUM	0.8470	2.1413	38.710	22362.	-0.15
PROMETHIUM	0.8410	1.7729	24.042	15208.	-0.16
SAMARIUM	0.8377	1.3657	10.638	7871.	-0.16
EUROPIUM+2	0.9489	1.1773	- ∞	1025.	0.
EUROPIUM+3	0.8359	1.1773	5.656	5051.	-0.17
GADOLINIUM	0.8373	2.6524	47.012	36317.	-0.18
TERBIUM	0.8289	2.6028	43.619	36743.	-0.19
DYSPROSIUM	0.8252	1.9723	23.017	21583.	-0.20
HOLMIUM	0.8215	1.9861	22.127	22426.	-0.20
ERBIUM	0.8173	2.0637	22.930	24957.	-0.21
THULIUM	0.8122	1.6150	12.450	15087.	-0.22
YTTERBIUM+2	0.9014	1.0582	2.503	1285.	-0.04
YTTERBIUM+3	0.8094	1.0582	2.937	4713.	-0.23
LUTETIUM	0.8066	2.8299	36.581	48175.	-0.24
HAFNIUM	0.7345	4.0305	35.901	120739.	-0.38
TANTALUM	0.6820	5.1745	29.037	218744.	-0.57
TUNGSTEN	0.6546	5.5734	10.003	275263.	-1.09
RHENIUM	0.6392	5.1579	9.636	270059.	-1.10
OSMIUM	0.6290	5.2133	9.933	288523.	-1.12
IRIDIUM	0.6309	4.4072	7.236	229597.	-1.17
PLATINUM	0.6448	3.7396	5.121	171246.	-1.20
GOLD	0.6704	2.4266	4.006	79374.	-0.92
MERCURY	0.7411	0.4061	-0.081	3.	-0.80
THALLIUM	0.7978	1.1978	0.371	7825.	-0.88
LEAD	0.8136	1.2964	0.349	8450.	-0.95
BISMUTH	0.7852	1.3837	0.318	6874.	-0.88
POLONIUM	0.8247	0.9557	0.000	1198.	-0.77
FRANCIUM	1.3017	0.5014	21.049	15220.	0.17
RADIUM	1.0665	1.1634	-31.892	16.	0.04
ACTINIUM	0.8731	2.8809	147.268	35152.	-0.10
THORIUM	0.8359	3.7839	21.289	68399.	-0.37
PROTACTINIUM	0.7559	3.6565	8.978	91378.	-0.66
URANIUM	0.7173	3.4626	5.011	98994.	-0.92
NEPTUNIUM	0.7104	3.1302	4.503	85300.	-0.90
PLUTONIUM+4.76	0.7624	2.5429	5.776	50755.	-0.61
PLUTONIUM+5	0.7401	2.5429	4.685	68622.	-0.79
AMERICIUM	0.8043	1.8283	4.874	21017.	-0.42

TABLE-III- 65

SOLVENT-YTTRIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.177	1.7730	18.590	9960C.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4394	0.5230	4.873	118803.	-1.02
LITHIUM	0.8810	0.3873	3.671	5178.	0.22
BERYLLIUM	0.6362	0.7821	11.604	34537.	-0.35
BORON	0.5189	1.3303	7.254	120064.	-0.84
CARBON	0.4941	1.7159	5.912	258191.	-1.37
NITROGEN	0.4653	1.1335	3.823	303875.	-1.85
OXYGEN	0.5059	0.5978	0.608	74209.	-2.28
SODIUM	1.0778	0.2602	26.960	33228.	0.23
MAGNESIUM	0.9036	0.3574	104.785	7980.	-0.05
ALUMINUM	0.8077	0.7781	0.863	3533.	-0.34
SILICON	0.7456	1.0884	0.667	7755.	-0.65
PHOSPHOROUS	0.6999	0.7560	0.740	15726.	-0.92
SULFUR	0.7050	0.6667	0.207	9678.	-1.33
POTASSIUM	1.3401	0.2157	31.273	83093.	0.34
CALCIUM	1.1134	0.4237	39.315	23539.	0.16
SCANDIUM	0.9255	0.9137	-2.872	490.	-0.10
TITANIUM	0.8246	1.1315	3.573	9265.	-0.31
VANADIUM	0.7592	1.2329	6.332	32493.	-0.46
CHROMIUM	0.7231	0.9538	1.015	23347.	-0.97
MANGANESE+5	0.7372	0.6747	0.461	7061.	-0.74
MANGANESE+7	0.7073	0.6747	0.330	9787.	-1.06
IRON	0.7186	1.0040	2.418	27966.	-0.69
COBALT	0.7061	1.0251	2.543	33560.	-0.74
NICKEL	0.7028	1.0321	2.600	35186.	-0.75
COPPER	0.7208	0.8143	1.490	15400.	-0.64
ZINC	0.7862	0.3122	0.304	2826.	-0.48
GALLIUM	0.7631	0.6546	-0.127	54.	-0.62
GERMANIUM	0.7772	0.8986	0.001	1202.	-0.72
ARSENIC	0.7704	0.2912	0.473	10079.	-0.90
SELENIUM	0.7964	0.4960	0.113	5478.	-1.28
RUBIDIUM	1.4360	0.1998	40.688	107751.	0.34
STRONTIUM	1.2132	0.3624	45.509	41920.	0.20
ZIRCONIUM	0.9036	1.4659	21.699	14487.	-0.16
NIOBIUM	0.8280	1.7570	18.045	44605.	-0.32
MOLYBDENUM	0.7896	1.5813	2.295	46277.	-0.92
TECHNETIUM	0.7699	1.5873	2.662	54631.	-0.93
RUTHENIUM	0.7552	1.5542	2.755	57676.	-0.94
RHODIUM	0.7586	1.3373	1.619	40252.	-1.02
PALLADIUM	0.7761	0.9076	0.411	11303.	-1.03
SILVER	0.8150	0.6867	0.007	1235.	-0.50
CADMIUM	0.8844	0.2691	2.799	11675.	-0.40
INDIUM	0.9397	0.5793	0.131	2440.	-0.64
TIN+2	0.9199	0.7229	-0.110	627.	-0.47
TIN+4	0.8911	0.7229	0.234	3494.	-0.65
ANTIMONY	0.8861	0.6285	0.158	3537.	-0.80
TELLURIUM	0.9261	0.4679	0.851	12031.	-0.74
CESIUM	1.5403	0.1892	39.575	137872.	0.39

TABLE-III- 66

SOLVENT-YTTRIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.2611	0.4267	30.024	43432.	0.25
LANTHANUM	1.0587	1.0341	-8.582	480.	0.06
CERIUM+3	1.0412	1.1205	-17.710	1.	0.05
CERIUM+4	0.9430	1.1205	0.704	2231.	-0.25
PRASEODYMIUM	1.0310	0.8945	-4.310	973.	0.05
NEODYMIUM	1.0276	0.7761	29.906	2467.	0.04
PROMETHIUM	1.0203	0.6426	116.460	5070.	0.04
SAMARIUM	1.0164	0.4950	374.777	10042.	0.03
EUROPIUM+2	1.1512	0.4267	29.787	27850.	0.20
EUROPIUM+3	1.0141	0.4267	833.391	13203.	0.03
GADOLINIUM	1.0158	0.9613	-151.323	184.	0.02
TERBIUM	1.0056	0.9434	-566.424	134.	0.01
DYSPROSIUM	1.0011	0.7149	52707.873	2408.	0.00
HOLMIUM	0.9966	0.7199	834.286	2135.	-0.01
ERBIUM	0.9915	0.7480	59.244	1500.	-0.02
THULIUM	0.9853	0.5853	278.843	4594.	-0.02
YTTERBIUM+2	1.0936	0.3835	40.355	24130.	0.16
YTTERBIUM+3	0.9820	0.3835	524.405	12813.	-0.03
LUTETIUM	0.9786	1.0257	-28.078	207.	-0.04
HAFNIUM	0.8911	1.4608	19.413	16184.	-0.18
TANTALUM	0.8274	1.8755	15.841	52015.	-0.37
TUNGSTEN	0.7941	2.0201	4.039	75464.	-0.89
RHENIUM	0.7755	1.8695	3.834	73288.	-0.90
OSMIUM	0.7631	1.8896	4.068	81101.	-0.92
IRIDIUM	0.7654	1.5974	2.542	56698.	-0.97
PLATINUM	0.7823	1.3554	1.427	34293.	-1.00
GOLD	0.8133	0.8795	0.394	5936.	-0.72
MERCURY	0.8990	0.1472	3.040	26683.	-0.60
THALLIUM	0.9679	0.4341	0.727	9013.	-0.68
LEAD	0.9870	0.4699	0.587	8861.	-0.75
BISMUTH	0.9526	0.5015	0.971	11641.	-0.68
POLONIUM	1.0006	0.3464	2.881	23006.	-0.57
FRANCIUM	1.5792	0.1817	47.183	147739.	0.37
RADIUM	1.2939	0.4217	37.014	49135.	0.24
ACTINIUM	1.0592	1.0442	-3.534	425.	0.10
THORIUM	1.0141	1.3715	1.465	2203.	-0.17
PROTACTINIUM	0.9171	1.3253	1.319	7712.	-0.46
URANIUM	0.8703	1.2550	0.737	10078.	-0.72
NEPTUNIUM	0.8618	1.1345	0.483	6692.	-0.70
PLUTONIUM+4.76	0.9250	0.9217	-0.161	559.	-0.41
PLUTONIUM+5	0.8979	0.9217	0.274	3412.	-0.59
AMERICIUM	0.9757	0.6627	0.983	2320.	-0.22

TABLE-III-67

SOLVENT-ZIRCONIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.340	1.6020	14.020	146000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4863	0.3568	2.702	47268.	-0.86
LITHIUM	0.9750	0.2642	8.846	30650.	0.38
BERYLLIUM	0.7041	0.5336	5.195	5517.	-0.19
BORON	0.5743	0.9075	4.328	47346.	-0.68
CARBON	0.5468	1.1705	3.820	130148.	-1.21
NITROGEN	0.5150	0.7733	2.383	158129.	-1.69
OXYGEN	0.5599	0.4078	0.217	23635.	-2.12
SODIUM	1.1929	0.1775	25.351	90110.	0.39
MAGNESIUM	1.0000	0.2438	129.523	37332.	0.11
ALUMINUM	0.8939	0.5308	1.561	2358.	-0.18
SILICON	0.8252	0.7425	-0.090	691.	-0.49
PHOSPHOROUS	0.7747	0.5158	-0.066	310.	-0.76
SULFUR	0.7803	0.4548	-0.036	48.	-1.17
POTASSIUM	1.4831	0.1471	33.179	192471.	0.50
CALCIUM	1.2322	0.2890	32.125	77051.	0.32
SCANDIUM	1.0243	0.6233	88.670	8553.	0.06
TITANIUM	0.9126	0.7719	-1.625	349.	-0.15
VANADIUM	0.8402	0.8411	1.396	4089.	-0.30
CHROMIUM	0.8002	0.6507	0.032	1680.	-0.81
MANGANESE+5	0.8159	0.4603	-0.096	448.	-0.58
MANGANESE+7	0.7828	0.4603	-0.062	43.	-0.90
IRON	0.7953	0.6849	0.269	2937.	-0.53
COBALT	0.7815	0.6993	0.463	4786.	-0.58
NICKEL	0.7778	0.7041	0.520	5368.	-0.59
COPPER	0.7978	0.5555	-0.180	236.	-0.48
ZINC	0.8702	0.2130	8.911	22235.	-0.32
GALLIUM	0.8446	0.4466	1.793	9942.	-0.46
GERMANIUM	0.8602	0.6130	0.682	6125.	-0.56
ARSENIC	0.8527	0.1986	3.107	40428.	-0.74
SELENIUM	0.8814	0.3384	1.132	33939.	-1.12
RUBIDIUM	1.5893	0.1363	41.881	242639.	0.50
STRONTIUM	1.3427	0.2473	38.271	115569.	0.36
YTTRIUM	1.1067	0.6822	21.699	14487.	0.16
NIOBIUM	0.9164	1.1986	11.209	7809.	-0.16
MOLYBDENUM	0.8739	1.0788	0.574	8841.	-0.76
TECHNETIUM	0.8521	1.0829	0.830	12534.	-0.77
RUTHENIUM	0.8358	1.0603	0.914	14015.	-0.78
RHODIUM	0.8396	0.9123	0.329	6803.	-0.86
PALLADIUM	0.8589	0.6192	-0.067	15.	-0.87
SILVER	0.9020	0.4685	1.456	5073.	-0.34
CADMIUM	0.9788	0.1836	31.737	43346.	-0.24
INDIUM	1.0400	0.3952	4.593	25597.	-0.48
TIN+2	1.0181	0.4932	8.125	19198.	-0.31
TIN+4	0.9863	0.4932	5.540	31868.	-0.49
ANTIMONY	0.9806	0.4288	3.090	30376.	-0.64
TELLURIUM	1.0250	0.3192	6.405	50875.	-0.58
CESIUM	1.7047	0.1290	43.477	304472.	0.55

TABLE-III- 68

SOLVENT-ZIRCONIUM

SOLUTE ELEMENT	RACIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.3958	0.2911	31.354	122733.	0.41
LANTHANUM	1.1717	0.7055	17.855	21668.	0.22
CERIUM+3	1.1523	0.7644	13.479	15829.	0.22
CERIUM+4	1.0437	0.7644	20.520	5025.	-0.09
PRASEODYMIUM	1.1411	0.6102	21.789	23350.	0.21
NEODYMIUM	1.1373	0.5295	28.214	28801.	0.21
PROMETHIUM	1.1292	0.4384	37.072	35731.	0.20
SAMARIUM	1.1248	0.3377	51.698	46524.	0.20
EUROPIUM+2	1.2740	0.2911	28.776	87191.	0.36
EUROPIUM+3	1.1223	0.2911	62.947	52496.	0.19
GADOLINIUM	1.1242	0.6558	22.683	18140.	0.18
TERBIUM	1.1130	0.6436	23.689	17353.	0.17
DYSPROSIUM	1.1080	0.4877	42.604	27616.	0.16
HOLMIUM	1.1030	0.4911	45.240	26580.	0.16
ERBIUM	1.0974	0.5103	45.518	24184.	0.15
THULIUM	1.0905	0.3993	70.551	33080.	0.14
YTTERBIUM+2	1.2104	0.2616	31.947	76629.	0.32
YTTERBIUM+3	1.0868	0.2616	121.708	50094.	0.13
LUTETIUM	1.0830	0.6997	27.589	10974.	0.12
HAFNIUM	0.9863	0.9966	-123.522	53.	-0.02
TANTALUM	0.9157	1.2795	9.424	10776.	-0.21
TUNGSTEN	0.8789	1.3781	1.684	21886.	-0.73
RHENIUM	0.8583	1.2753	1.575	21075.	-0.74
OSMIUM	0.8446	1.2890	1.795	25095.	-0.76
IRIDIUM	0.8471	1.0897	0.812	13473.	-0.81
PLATINUM	0.8658	0.9247	0.205	4527.	-0.84
GOLD	0.9001	0.6000	-0.015	1086.	-0.56
MERCURY	0.9950	0.1004	15.067	68460.	-0.44
THALLIUM	1.0712	0.2962	6.566	42135.	-0.52
LEAD	1.0924	0.3205	5.173	42713.	-0.59
BISMUTH	1.0543	0.3421	7.969	50885.	-0.52
POLONIUM	1.1074	0.2363	18.354	72340.	-0.41
FRANCIUM	1.7478	0.1240	49.844	324058.	0.53
RADIUM	1.4320	0.2877	36.341	135275.	0.40
ACTINIUM	1.1723	0.7123	12.919	21332.	0.26
THORIUM	1.1223	0.9356	2120.091	6081.	-0.01
PROTACTINIUM	1.0150	0.9041	-0.088	1009.	-0.30
URANIUM	0.9632	0.8562	-0.125	286.	-0.56
NEPTUNIUM	0.9538	0.7740	-0.006	1150.	-0.54
PLUTONIUM+4.76	1.0237	0.6288	4.927	8293.	-0.25
PLUTONIUM+5	0.9938	0.6288	0.390	2857.	-0.43
AMERICIUM	1.0799	0.4521	304.305	26454.	-0.06

TABLE-III-69

SOLVENT-NIOBIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.500	1.4680	10.830	175000.

SOLUTE ELEMENT	RACIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5307	0.2977	1.423	17276.	-0.70
LITHIUM	1.0640	0.2205	9.191	62997.	0.54
BERYLLIUM	0.7684	0.4451	-57.128	7.	-0.03
BORON	0.6267	0.7571	2.465	16561.	-0.52
CARBON	0.5967	0.9766	2.595	67179.	-1.05
NITROGEN	0.5620	0.6451	1.561	85465.	-1.53
OXYGEN	0.6110	0.3402	0.047	5393.	-1.96
SODIUM	1.3018	0.1481	21.807	153307.	0.55
MAGNESIUM	1.0913	0.2034	42.726	73018.	0.27
ALUMINUM	0.9755	0.4429	1595.482	15909.	-0.02
SILICON	0.9005	0.6194	4.297	11982.	-0.33
PHOSPHOROUS	0.8454	0.4303	0.257	3323.	-0.60
SULFUR	0.8515	0.3794	0.225	6478.	-1.01
POTASSIUM	1.6185	0.1227	31.101	313596.	0.66
CALCIUM	1.3447	0.2411	26.131	140026.	0.48
SCANDIUM	1.1178	0.5200	27.137	31479.	0.22
TITANIUM	0.9959	0.6440	4013.785	10448.	0.01
VANADIUM	0.9169	0.7017	-1.885	340.	-0.14
CHROMIUM	0.8733	0.5429	0.022	1410.	-0.65
MANGANESE+5	0.8903	0.3840	1.931	9049.	-0.42
MANGANESE+7	0.8542	0.3840	0.416	6445.	-0.74
IRON	0.8678	0.5714	-0.178	631.	-0.37
COBALT	0.8529	0.5834	-0.266	112.	-0.42
NICKEL	0.8488	0.5874	-0.269	44.	-0.43
COPPER	0.8706	0.4634	1.068	3714.	-0.32
ZINC	0.9496	0.1777	78.294	47412.	-0.16
GALLIUM	0.9217	0.3726	14.640	31577.	-0.30
GERMANIUM	0.9387	0.5114	6.728	26017.	-0.40
ARSENIC	0.9305	0.1657	9.614	75773.	-0.58
SELENIUM	0.9619	0.2823	3.295	71216.	-0.96
RUBIDIUM	1.7343	0.1137	38.923	392173.	0.66
STRONTIUM	1.4653	0.2063	31.860	199855.	0.52
YTTRIUM	1.2078	0.5691	18.045	44605.	0.32
ZIRCONIUM	1.0913	0.8343	11.209	7809.	0.16
MOLYBDENUM	0.9537	0.9000	-0.137	59.	-0.60
TECHNETIUM	0.9298	0.9034	-0.063	653.	-0.61
RUTHENIUM	0.9121	0.8846	-0.017	1041.	-0.62
RHODIUM	0.9162	0.7611	-0.105	1.	-0.70
PALLADIUM	0.9373	0.5166	0.480	6772.	-0.71
SILVER	0.9843	0.3909	27.647	21848.	-0.18
CADMIUM	1.0681	0.1531	530.984	79557.	-0.08
INDIUM	1.1349	0.3297	24.404	58820.	-0.32
TIN+2	1.1110	0.4114	93.890	49907.	-0.15
TIN+4	1.0763	0.4114	28.438	72607.	-0.33
ANTIMONY	1.0702	0.3577	12.594	68103.	-0.48
TELLURIUM	1.1185	0.2663	23.950	98614.	-0.42
CESIUM	1.8604	0.1077	42.012	489558.	0.71

TABLE-III- 70

SOLVENT-NIOBIUM

SOLUTE ELEMENT	RACIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.5232	0.2429	28.504	214752.	0.57
LANTHANUM	1.2786	0.5886	17.107	59058.	0.38
CERIUM+3	1.2575	0.6377	14.498	48710.	0.38
CERIUM+4	1.1390	0.6377	212.315	25183.	0.07
PRASEODYMIUM	1.2452	0.5091	18.692	60200.	0.37
NEODYMIUM	1.2411	0.4417	21.681	68165.	0.37
PROMETHIUM	1.2323	0.3657	25.448	77669.	0.36
SAMARIUM	1.2275	0.2817	31.320	92213.	0.36
EUROPIUM+2	1.3903	0.2429	24.943	156724.	0.52
EUROPIUM+3	1.2248	0.2429	35.365	99955.	0.35
GADOLINIUM	1.2268	0.5471	18.795	51294.	0.34
TERBIUM	1.2146	0.5369	19.020	49538.	0.33
DYSPROSIUM	1.2091	0.4069	26.332	64936.	0.32
HOLMIUM	1.2037	0.4097	26.922	63184.	0.32
ERBIUM	1.1975	0.4257	26.598	59376.	0.31
THULIUM	1.1901	0.3331	34.042	71843.	0.30
YTTERBIUM+2	1.3208	0.2183	25.689	137680.	0.48
YTTERBIUM+3	1.1860	0.2183	47.491	94568.	0.29
LUTETIUM	1.1819	0.5838	19.637	37715.	0.28
HAFNIUM	1.0763	0.8314	11.705	6483.	0.14
TANTALUM	0.9993	1.0674	-17.051	209.	-0.05
TUNGSTEN	0.9591	1.1497	0.283	3310.	-0.57
RHENIUM	0.9366	1.0640	0.251	3137.	-0.58
OSMIUM	0.9217	1.0754	0.428	4749.	-0.60
IRIDIUM	0.9244	0.9091	-0.033	874.	-0.65
PLATINUM	0.9448	0.7714	-0.086	277.	-0.68
GOLD	0.9823	0.5006	3.079	12553.	-0.40
MERCURY	1.0858	0.0838	61.359	112123.	-0.28
THALLIUM	1.1689	0.2471	27.430	83170.	-0.36
LEAD	1.1921	0.2674	19.694	85162.	-0.43
BISMUTH	1.1505	0.2854	32.948	99659.	-0.36
POLONIUM	1.2084	0.1971	88.767	129128.	-0.25
FRANCIUM	1.9074	0.1034	47.245	519893.	0.69
RADIUM	1.5627	0.2400	32.324	234947.	0.56
ACTINIUM	1.2793	0.5943	14.101	58551.	0.42
THORIUM	1.2248	0.7806	54.923	29689.	0.15
PROTACTINIUM	1.1076	0.7543	29.281	14427.	-0.14
URANIUM	1.0511	0.7143	2.536	10550.	-0.40
NEPTUNIUM	1.0409	0.6457	3.865	14064.	-0.38
PLUTONIUM+4.76	1.1172	0.5246	159.586	31001.	-0.09
PLUTONIUM+5	1.0845	0.5246	10.114	18194.	-0.27
AMERICIUM	1.1785	0.3771	263.316	61913.	0.10

TABLE-III- 71

SOLVENT-MOLYBDIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.100	1.4000	9.387	157500.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5564	0.3307	55.127	13904.	-0.10
LITHIUM	1.1157	0.2450	2.069	63183.	1.14
BERYLLIUM	0.8057	0.4946	-0.149	79.	0.57
BORON	0.6571	0.8413	83.252	13479.	0.08
CARBON	0.6257	1.0851	12.037	57403.	-0.45
NITROGEN	0.5893	0.7168	3.583	72660.	-0.93
OXYGEN	0.6407	0.3780	0.066	4027.	-1.36
SODIUM	1.3650	0.1646	5.029	154553.	1.15
MAGNESIUM	1.1443	0.2260	4.124	73174.	0.87
ALUMINUM	1.0229	0.4921	1.998	16693.	0.58
SILICON	0.9443	0.6883	7.004	12966.	0.27
PHOSPHOROUS	0.8864	0.4781	+ ∞	3844.	0.
SULFUR	0.8929	0.4216	1.510	7045.	-0.41
POTASSIUM	1.6971	0.1364	8.701	319737.	1.26
CALCIUM	1.4100	0.2679	5.240	142143.	1.08
SCANDIUM	1.1721	0.5778	2.032	32704.	0.82
TITANIUM	1.0443	0.7156	1.191	11413.	0.61
VANADIUM	0.9614	0.7797	-0.117	622.	0.46
CHROMIUM	0.9157	0.6032	11.367	1847.	-0.05
MANGANESE+5	0.9336	0.4267	11.327	9655.	0.18
MANGANESE+7	0.8957	0.4267	12.885	7016.	-0.14
IRON	0.9100	0.6349	-0.189	962.	0.23
COBALT	0.8943	0.6483	-1.210	288.	0.18
NICKEL	0.8900	0.6527	-1.528	174.	0.17
COPPER	0.9129	0.5149	1.705	4274.	0.28
ZINC	0.9957	0.1975	10.290	47129.	0.44
GALLIUM	0.9664	0.4140	15.003	32329.	0.30
GERMANIUM	0.9843	0.5683	28.103	27114.	0.20
ARSENIC	0.9757	0.1841	8061.264	75549.	0.02
SELENIUM	1.0086	0.3137	23.702	72028.	-0.36
RUBIDIUM	1.8186	0.1263	10.921	401019.	1.26
STRONTIUM	1.5364	0.2292	6.991	203422.	1.12
YTTRIUM	1.2664	0.6324	2.295	46277.	0.92
ZIRCONIUM	1.1443	0.9270	0.574	8841.	0.76
NIOBIUM	1.0486	1.1111	-0.137	59.	0.60
TECHNETIUM	0.9750	1.0038	-386.469	301.	-0.01
RUTHENIUM	0.9564	0.9829	-67.547	569.	-0.02
RHODIUM	0.9607	0.8457	-4.872	69.	-0.10
PALLADIUM	0.9829	0.5740	22.556	7486.	-0.11
SILVER	1.0321	0.4343	5.256	22571.	0.42
CADMIUM	1.1200	0.1702	12.514	79222.	0.52
INDIUM	1.1900	0.3663	32.381	59733.	0.28
TIN+2	1.1650	0.4571	10.685	51089.	0.45
TIN+4	1.1286	0.4571	43.477	74281.	0.27
ANTIMONY	1.1221	0.3975	205.294	69363.	0.12
TELLURIUM	1.1729	0.2959	132.080	99875.	0.18
CESIUM	1.9507	0.1196	12.654	501947.	1.31

TABLE-III- 72

SOLVENT-MOLYBDIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.5971	0.2698	6.909	219295.	1.17
LANTHANUM	1.3407	0.6540	2.692	61182.	0.98
CERIUM+3	1.3186	0.7086	2.250	50710.	0.98
CERIUM+4	1.1943	0.7086	2.450	26549.	0.67
PRASEODYMIUM	1.3057	0.5657	2.804	62040.	0.97
NEODYMIUM	1.3014	0.4908	3.193	69892.	0.97
PROMETHIUM	1.2921	0.4063	3.663	79192.	0.96
SAMARIUM	1.2871	0.3130	4.387	93459.	0.95
EUROPIUM+2	1.4579	0.2698	5.468	159362.	1.12
EUROPIUM+3	1.2843	0.2698	4.817	101025.	0.95
GADOLINIUM	1.2864	0.6079	2.545	53058.	0.94
TERBIUM	1.2736	0.5966	2.498	51221.	0.93
DYSPROSIUM	1.2679	0.4521	3.312	66406.	0.92
HOLMIUM	1.2621	0.4552	3.279	64631.	0.92
ERBIUM	1.2557	0.4730	3.136	60819.	0.91
THULIUM	1.2479	0.3702	3.846	73026.	0.90
YTTERBIUM+2	1.3850	0.2425	5.141	139466.	1.08
YTTERBIUM+3	1.2436	0.2425	5.127	95265.	0.89
LUTETIUM	1.2393	0.6486	2.113	39261.	0.88
HAFNIUM	1.1286	0.9238	0.495	7438.	0.74
TANTALUM	1.0479	1.1860	-0.165	40.	0.55
TUNGSTEN	1.0057	1.2775	53.715	2307.	0.03
RHENIUM	0.9821	1.1822	106.435	2174.	0.02
OSMIUM	0.9664	1.1949	- ∞	3490.	0.
IRIDIUM	0.9693	1.0102	-12.876	450.	-0.05
PLATINUM	0.9907	0.8571	-4.373	547.	-0.08
GOLD	1.0300	0.5562	13.218	13385.	0.20
MERCURY	1.1386	0.0931	46.535	111077.	0.32
THALLIUM	1.2257	0.2745	62.280	83916.	0.24
LEAD	1.2500	0.2971	127.449	86129.	0.17
BISMUTH	1.2064	0.3171	75.229	101116.	0.24
POLONIUM	1.2671	0.2190	45.745	130416.	0.35
FRANCIUM	2.0000	0.1149	13.867	533340.	1.29
RADIUM	1.6386	0.2667	7.701	240157.	1.16
ACTINIUM	1.3414	0.6603	2.480	60682.	1.02
THORIUM	1.2843	0.8673	2.335	31477.	0.75
PROTACTINIUM	1.1614	0.8381	2.965	15662.	0.46
URANIUM	1.1021	0.7937	11.279	11596.	0.20
NEPTUNIUM	1.0914	0.7175	12.500	15143.	0.22
PLUTONIUM+4.76	1.1714	0.5829	5.175	32229.	0.51
PLUTONIUM+5	1.1371	0.5829	7.161	19174.	0.33
AMERICIUM	1.2357	0.4190	5.484	63157.	0.70

TABLE-III- 73

SOLVENT-TECHNETIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.110	1.3650	8.635	158100.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5707	0.3295	47.942	10147.	-0.09
LITHIUM	1.1443	0.2440	2.283	70823.	1.15
BERYLLIUM	0.8264	0.4927	-0.081	561.	0.58
BORON	0.6740	0.8381	45.178	9631.	0.09
CARBON	0.6418	1.0810	10.403	47637.	-0.44
NITROGEN	0.6044	0.7141	3.069	61087.	-0.92
OXYGEN	0.6571	0.3766	0.026	2285.	-1.35
SODIUM	1.4000	0.1639	5.430	169680.	1.16
MAGNESIUM	1.1736	0.2252	4.500	81547.	0.88
ALUMINUM	1.0491	0.4902	2.446	20826.	0.59
SILICON	0.9685	0.6856	8.753	17017.	0.28
PHOSPHOROUS	0.9092	0.4763	2015.670	5840.	0.01
SULFUR	0.9158	0.4200	2.276	9589.	-0.40
POTASSIUM	1.7407	0.1359	9.380	350077.	1.27
CALCIUM	1.4462	0.2669	5.713	157712.	1.09
SCANDIUM	1.2022	0.5756	2.391	39174.	0.83
TITANIUM	1.0711	0.7128	1.586	15254.	0.62
VANADIUM	0.9861	0.7767	0.100	1702.	0.47
CHROMIUM	0.9392	0.6009	59.736	3396.	-0.04
MANGANESE+5	0.9575	0.4250	13.736	12627.	0.19
MANGANESE+7	0.9187	0.4250	21.481	9564.	-0.13
IRON	0.9333	0.6325	0.731	2163.	0.24
COBALT	0.9172	0.6458	-0.158	1060.	0.19
NICKEL	0.9128	0.6502	-0.484	830.	0.18
COPPER	0.9363	0.5130	2.693	6414.	0.29
ZINC	1.0212	0.1967	11.062	52849.	0.45
GALLIUM	0.9912	0.4124	16.632	38050.	0.31
GERMANIUM	1.0095	0.5661	31.129	32848.	0.21
ARSENIC	1.0007	0.1834	3972.160	83630.	0.03
SELENIUM	1.0344	0.3125	28.312	81170.	-0.35
RUBIDIUM	1.8652	0.1259	11.768	438888.	1.27
STRONTIUM	1.5758	0.2283	7.582	224443.	1.13
YTTRIUM	1.2989	0.6300	2.662	54631.	0.93
ZIRCONIUM	1.1736	0.9235	0.830	12534.	0.77
NIOBIUM	1.0755	1.1069	-0.063	653.	0.61
MOLYBDENUM	1.0256	0.9962	-386.469	301.	0.01
RUTHENIUM	0.9810	0.9791	-498.206	43.	-0.01
RHODIUM	0.9853	0.8425	-3.056	621.	-0.09
PALLADIUM	1.0081	0.5718	39.791	10368.	-0.10
SILVER	1.0586	0.4326	6.114	27260.	0.43
CADMIUM	1.1487	0.1695	13.315	87441.	0.53
INDIUM	1.2205	0.3650	34.481	68064.	0.29
TIN+2	1.1949	0.4554	11.867	59099.	0.46
TIN+4	1.1575	0.4554	46.244	84796.	0.28
ANTIMONY	1.1509	0.3960	199.452	78922.	0.13
TELLURIUM	1.2029	0.2948	132.629	111601.	0.19
CESIUM	2.0007	0.1192	13.641	549283.	1.32

TABLE-III- 74

SOLVENT-TECHNETIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.6381	0.2688	7.517	242554.	1.18
LANTHANUM	1.3751	0.6515	3.088	71413.	0.99
CERIUM+3	1.3524	0.7059	2.615	59944.	0.99
CERIUM+4	1.2249	0.7059	2.952	32671.	0.68
PRASEODYMIUM	1.3392	0.5635	3.192	71896.	0.98
NEODYMIUM	1.3348	0.4889	3.595	80163.	0.98
PROMETHIUM	1.3253	0.4048	4.077	89845.	0.97
SAMARIUM	1.3201	0.3118	4.821	104728.	0.97
EUROPIUM+2	1.4952	0.2688	5.959	176663.	1.13
EUROPIUM+3	1.3172	0.2688	5.263	112570.	0.96
GADOLINIUM	1.3194	0.6056	2.927	62102.	0.95
TERBIUM	1.3062	0.5943	2.874	59993.	0.94
DYSPROSIUM	1.3004	0.4503	3.721	76042.	0.93
HOLMIUM	1.2945	0.4535	3.687	74097.	0.93
ERBIUM	1.2879	0.4712	3.540	69987.	0.92
THULIUM	1.2799	0.3688	4.271	82750.	0.91
YTTERBIUM+2	1.4205	0.2416	5.593	154419.	1.09
YTTERBIUM+3	1.2755	0.2416	5.582	105926.	0.90
LUTETIUM	1.2711	0.6462	2.476	46826.	0.89
HAFNIUM	1.1575	0.9203	0.742	10820.	0.75
TANTALUM	1.0747	1.1815	-0.145	140.	0.56
TUNGSTEN	1.0315	1.2726	-8.502	879.	0.04
RHENIUM	1.0073	1.1777	-18.140	816.	0.03
OSMIUM	0.9912	1.1904	209.390	1675.	0.01
IRIDIUM	0.9941	1.0063	-31.915	15.	-0.04
PLATINUM	1.0161	0.8539	3.687	1609.	-0.07
GOLD	1.0564	0.5541	15.754	17213.	0.21
MERCURY	1.1678	0.0927	47.579	120675.	0.33
THALLIUM	1.2571	0.2735	64.286	93844.	0.25
LEAD	1.2821	0.2960	127.574	96508.	0.18
BISMUTH	1.2374	0.3159	77.711	113193.	0.25
POLONIUM	1.2996	0.2182	47.834	144147.	0.36
FRANCIUM	2.0513	0.1145	14.942	583521.	1.30
RADIUM	1.6806	0.2657	8.371	265440.	1.17
ACTINIUM	1.3758	0.6578	2.849	70887.	1.03
THORIUM	1.3172	0.8640	2.821	38772.	0.76
PROTACTINIUM	1.1912	0.8349	3.785	20474.	0.47
URANIUM	1.1304	0.7906	14.181	15613.	0.21
NEPTUNIUM	1.1194	0.7147	15.099	19612.	0.23
PLUTONIUM+4.76	1.2015	0.5806	6.009	38659.	0.52
PLUTONIUM+5	1.1663	0.5806	8.520	23905.	0.34
AMERICIUM	1.2674	0.4175	6.110	72221.	0.71

TABLE-III-75

SOLVENT-RUTHENIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.120	1.3390	8.178	154800.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5818	0.3365	51.078	8731.	-0.08
LITHIUM	1.1665	0.2492	2.323	73276.	1.16
BERYLLIUM	0.8424	0.5032	-0.043	846.	0.59
BORON	0.6871	0.8559	30.511	8228.	0.10
CARBON	0.6542	1.1040	9.927	43519.	-0.43
NITROGEN	0.6161	0.7293	2.870	56001.	-0.91
OXYGEN	0.6699	0.3846	0.013	1728.	-1.34
SODIUM	1.4272	0.1674	5.500	174797.	1.17
MAGNESIUM	1.1964	0.2300	4.546	84233.	0.89
ALUMINUM	1.0695	0.5006	2.544	22314.	0.60
SILICON	0.9873	0.7003	8.954	18558.	0.29
PHOSPHOROUS	0.9268	0.4864	589.334	6628.	0.02
SULFUR	0.9335	0.4289	2.663	10533.	-0.39
POTASSIUM	1.7745	0.1388	9.527	361142.	1.28
CALCIUM	1.4742	0.2726	5.805	163158.	1.10
SCANDIUM	1.2255	0.5879	2.478	41510.	0.84
TITANIUM	1.0919	0.7280	1.698	16730.	0.63
VANADIUM	1.0052	0.7933	0.195	2230.	0.48
CHROMIUM	0.9574	0.6137	138.279	4062.	-0.03
MANGANESE+5	0.9761	0.4341	13.569	13708.	0.20
MANGANESE+7	0.9365	0.4341	28.064	10511.	-0.12
IRON	0.9515	0.6460	1.056	2714.	0.25
COBALT	0.9350	0.6596	0.295	1464.	0.20
NICKEL	0.9305	0.6641	0.002	1194.	0.19
COPPER	0.9544	0.5239	2.923	7259.	0.30
ZINC	1.0411	0.2009	10.940	54571.	0.46
GALLIUM	1.0105	0.4212	16.443	40020.	0.32
GERMANIUM	1.0291	0.5782	30.220	34921.	0.22
ARSENIC	1.0202	0.1873	2302.333	86139.	0.04
SELENIUM	1.0545	0.3191	31.158	84250.	-0.34
RUBIDIUM	1.9014	0.1286	11.957	452945.	1.28
STRONTIUM	1.6064	0.2332	7.700	231960.	1.14
YTTRIUM	1.3241	0.6434	2.755	57676.	0.94
ZIRCONIUM	1.1964	0.9432	0.914	14015.	0.78
NIOBIUM	1.0963	1.1305	-0.017	1041.	0.62
MOLYBDENUM	1.0456	1.0174	-67.547	569.	0.02
TECHNETIUM	1.0194	1.0213	-498.206	43.	0.01
RHODIUM	1.0045	0.8605	-1.522	968.	-0.08
PALLADIUM	1.0276	0.5840	55.047	11474.	-0.09
SILVER	1.0792	0.4419	6.206	28898.	0.44
CADMIUM	1.1710	0.1731	13.203	89972.	0.54
INDIUM	1.2442	0.3727	33.591	70906.	0.30
TIN+2	1.2181	0.4651	11.919	61906.	0.47
TIN+4	1.1800	0.4651	45.030	88520.	0.29
ANTIMONY	1.1733	0.4044	179.320	82240.	0.14
TELLURIUM	1.2263	0.3010	124.052	115618.	0.20
CESIUM	2.0396	0.1217	13.874	567129.	1.33

TABLE-III- 76

SOLVENT-RUTHENIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.6699	0.2745	7.650	251003.	1.19
LANTHANUM	1.4018	0.6654	3.189	75166.	1.00
CERIUM+3	1.3786	0.7209	2.712	63354.	1.00
CERIUM+4	1.2487	0.7209	3.075	34948.	0.69
PRASEODYMIUM	1.3652	0.5755	3.286	75454.	0.99
NEODYMIUM	1.3607	0.4994	3.686	83823.	0.99
PROMETHIUM	1.3510	0.4134	4.163	93576.	0.98
SAMARIUM	1.3458	0.3185	4.899	108593.	0.98
EUROPIUM+2	1.5243	0.2745	6.059	182781.	1.14
EUROPIUM+3	1.3428	0.2745	5.336	116486.	0.97
GADOLINIUM	1.3450	0.6185	3.021	65387.	0.96
TERBIUM	1.3316	0.6070	2.966	63171.	0.95
DYSPROSIUM	1.3256	0.4599	3.808	79436.	0.94
HOLMIUM	1.3196	0.4632	3.774	77431.	0.94
ERBIUM	1.3129	0.4813	3.627	73226.	0.93
THULIUM	1.3047	0.3766	4.350	86104.	0.92
YTTERBIUM+2	1.4481	0.2468	5.677	159593.	1.10
YTTERBIUM+3	1.3002	0.2468	5.646	109474.	0.91
LUTETIUM	1.2957	0.6599	2.568	49593.	0.90
HAFNIUM	1.1800	0.9399	0.826	12189.	0.76
TANTALUM	1.0956	1.2067	-0.113	349.	0.57
TUNGSTEN	1.0515	1.2997	-11.895	506.	0.05
RHENIUM	1.0269	1.2028	-19.716	465.	0.04
OSMIUM	1.0105	1.2158	-5.169	1145.	0.02
IRIDIUM	1.0134	1.0278	-57.072	8.	-0.03
PLATINUM	1.0358	0.8721	11.419	2140.	-0.06
GOLD	1.0769	0.5659	15.622	18628.	0.22
MERCURY	1.1904	0.0947	45.887	123516.	0.34
THALLIUM	1.2816	0.2793	61.566	97164.	0.26
LEAD	1.3069	0.3023	118.721	100024.	0.19
BISMUTH	1.2614	0.3227	74.525	117367.	0.26
POLONIUM	1.3249	0.2229	46.763	148818.	0.37
FRANCIUM	2.0911	0.1169	15.195	602502.	1.31
RADIUM	1.7132	0.2713	8.518	274684.	1.18
ACTINIUM	1.4025	0.6718	2.945	74633.	1.04
THORIUM	1.3428	0.8824	2.951	41537.	0.77
PROTACTINIUM	1.2143	0.8527	3.979	22330.	0.48
URANIUM	1.1524	0.8075	14.320	17175.	0.22
NEPTUNIUM	1.1412	0.7300	15.144	21307.	0.24
PLUTONIUM+4.76	1.2248	0.5930	6.143	40984.	0.53
PLUTONIUM+5	1.1889	0.5930	8.654	25638.	0.35
AMERICIUM	1.2920	0.4264	6.206	75378.	0.72

TABLE-III- 77

SOLVENT-RHODIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.200	1.345C	8.292	133200.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5792	0.3911	-∞	13948.	0.
LITHIUM	1.1613	0.2896	1.538	55714.	1.24
BERYLLIUM	0.8387	0.5848	-0.115	2.	0.67
BORON	0.6840	0.9947	17.171	14021.	0.18
CARBON	0.6513	1.2830	19.268	55621.	-0.35
NITROGEN	0.6134	0.8476	4.261	68887.	-0.83
OXYGEN	0.6669	0.4470	0.090	4478.	-1.26
SODIUM	1.4208	0.1946	3.878	140939.	1.25
MAGNESIUM	1.1911	0.2673	2.937	64915.	0.97
ALUMINUM	1.0647	0.5818	1.173	13704.	0.68
SILICON	0.9829	0.8138	2.920	10409.	0.37
PHOSPHOROUS	0.9227	0.5653	6.664	2729.	0.10
SULFUR	0.9294	0.4985	1.893	5387.	-0.31
POTASSIUM	1.7665	0.1613	6.944	297368.	1.36
CALCIUM	1.4677	0.3168	3.990	129304.	1.18
SCANDIUM	1.2201	0.6832	1.372	27961.	0.92
TITANIUM	1.0870	0.8461	0.677	9058.	0.71
VANADIUM	1.0007	0.9219	-0.129	259.	0.56
CHROMIUM	0.9532	0.7132	-0.897	1140.	0.05
MANGANESE+5	0.9717	0.5045	3.545	7602.	0.28
MANGANESE+7	0.9323	0.5045	112.997	5361.	-0.04
IRON	0.9472	0.7508	-0.278	494.	0.33
COBALT	0.9309	0.7665	-0.617	76.	0.28
NICKEL	0.9264	0.7718	-0.694	26.	0.27
COPPER	0.9502	0.6089	0.565	3072.	0.38
ZINC	1.0364	0.2335	5.912	40945.	0.54
GALLIUM	1.0059	0.4895	7.168	27641.	0.40
GERMANIUM	1.0245	0.6719	10.480	22941.	0.30
ARSENIC	1.0156	0.2177	198.345	67055.	0.12
SELENIUM	1.0498	0.3709	40.238	63918.	-0.26
RUBIDIUM	1.8929	0.1494	8.757	374688.	1.36
STRONTIUM	1.5993	0.2710	5.414	187030.	1.22
YTTRIUM	1.3182	0.7477	1.619	40252.	1.02
ZIRCONIUM	1.1911	1.0961	0.329	6803.	0.86
NIOBIUM	1.0914	1.3138	-0.105	1.	0.70
MOLYBDENUM	1.0409	1.1824	-4.872	69.	0.10
TECHNETIUM	1.0149	1.1869	-3.056	621.	0.09
RUTHENIUM	0.9955	1.1622	-1.522	968.	0.08
PALLADIUM	1.0230	0.6787	1968.936	5733.	-0.01
SILVER	1.0743	0.5135	2.841	18905.	0.52
CADMIUM	1.1658	0.2012	7.811	70433.	0.62
INDIUM	1.2387	0.4332	15.439	52601.	0.38
TIN+2	1.2126	0.5405	6.234	44681.	0.55
TIN+4	1.1747	0.5405	20.532	66008.	0.37
ANTIMONY	1.1680	0.4700	54.010	61473.	0.22
TELLURIUM	1.2208	0.3498	48.990	89762.	0.28
CESIUM	2.0305	0.1414	10.244	470824.	1.41

TABLE-III- 78

SOLVENT-RHODIUM

SOLUTE ELEMENT	RACIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.6625	0.3191	5.399	201983.	1.27
LANTHANUM	1.3955	0.7733	1.948	53879.	1.08
CERIUM+3	1.3725	0.8378	1.610	44268.	1.08
CERIUM+4	1.2431	0.8378	1.551	22401.	0.77
PRASEODYMIUM	1.3591	0.6688	2.027	54700.	1.07
NEODYMIUM	1.3546	0.5803	2.319	61950.	1.07
PROMETHIUM	1.3450	0.4805	2.672	70557.	1.06
SAMARIUM	1.3398	0.3701	3.218	83792.	1.05
EUROPIUM+2	1.5175	0.3191	4.204	145483.	1.22
EUROPIUM+3	1.3368	0.3191	3.539	90824.	1.05
GADOLINIUM	1.3390	0.7188	1.815	46451.	1.04
TERBIUM	1.3257	0.7054	1.775	44774.	1.03
DYSPROSIUM	1.3197	0.5345	2.380	58744.	1.02
HOLMIUM	1.3138	0.5383	2.349	57108.	1.02
ERBIUM	1.3071	0.5593	2.237	53600.	1.01
THULIUM	1.2989	0.4377	2.761	64853.	1.00
YTTERBIUM+2	1.4416	0.2868	3.912	126790.	1.18
YTTERBIUM+3	1.2944	0.2868	3.713	85441.	0.99
LUTETIUM	1.2900	0.7670	1.464	33870.	0.98
HAFNIUM	1.1747	1.0923	0.272	5618.	0.84
TANTALUM	1.0907	1.4024	-0.100	217.	0.65
TUNGSTEN	1.0468	1.5105	4.690	3020.	0.13
RHENIUM	1.0223	1.3979	4.989	2849.	0.12
OSMIUM	1.0059	1.4129	13.321	4264.	0.10
IRIDIUM	1.0089	1.1944	-6.452	820.	0.05
PLATINUM	1.0312	1.0135	-106.597	209.	0.02
GOLD	1.0721	0.6577	4.630	10801.	0.30
MERCURY	1.1851	0.1101	24.268	99910.	0.42
THALLIUM	1.2758	0.3246	27.654	74910.	0.34
LEAD	1.3011	0.3514	45.080	76975.	0.27
BISMUTH	1.2558	0.3750	33.661	90922.	0.34
POLONIUM	1.3190	0.2590	25.076	118290.	0.45
FRANCIUM	2.0818	0.1359	11.213	500766.	1.39
RADIUM	1.7056	0.3153	6.023	221703.	1.26
ACTINIUM	1.3963	0.7808	1.805	53418.	1.12
THORIUM	1.3368	1.0255	1.535	26767.	0.85
PROTACTINIUM	1.2089	0.9910	1.594	12720.	0.56
URANIUM	1.1472	0.9384	3.857	9197.	0.30
NEPTUNIUM	1.1361	0.8483	4.704	12299.	0.32
PLUTONIUM+4.76	1.2193	0.6892	3.070	27532.	0.61
PLUTONIUM+5	1.1836	0.6892	3.443	15874.	0.43
AMERICIUM	1.2862	0.4955	3.697	55754.	0.80

TABLE-III- 79

SOLVENT-PALLADIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.210	1.3760	8.879	90400.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5661	0.5762	13647.177	32663.	0.01
LITHIUM	1.1352	0.4268	0.623	23643.	1.25
BERYLLIUM	0.8198	0.8617	0.302	4407.	0.68
BORON	0.6686	1.4657	40.878	35222.	0.19
CARBON	0.6366	1.8905	34.612	93458.	-0.34
NITROGEN	0.5996	1.2489	6.943	108854.	-0.82
OXYGEN	0.6519	0.6586	0.438	16964.	-1.25
SODIUM	1.3888	0.2867	2.024	75296.	1.26
MAGNESIUM	1.1642	0.3938	1.262	29146.	0.98
ALUMINUM	1.0407	0.8573	0.034	1563.	0.69
SILICON	0.9608	1.1991	-0.240	394.	0.38
PHOSPHOROUS	0.9019	0.8330	-3.057	339.	0.11
SULFUR	0.9084	0.7345	-0.571	8.	-0.30
POTASSIUM	1.7267	0.2376	3.921	170900.	1.37
CALCIUM	1.4346	0.4668	1.946	64737.	1.19
SCANDIUM	1.1926	1.0066	0.261	6391.	0.93
TITANIUM	1.0625	1.2467	-0.086	170.	0.72
VANADIUM	0.9782	1.3584	0.313	3539.	0.57
CHROMIUM	0.9317	1.0509	3.898	1516.	0.06
MANGANESE+5	0.9499	0.7434	-0.496	231.	0.29
MANGANESE+7	0.9113	0.7434	-57.148	6.	-0.03
IRON	0.9259	1.1062	0.505	2538.	0.34
COBALT	0.9099	1.1294	1.443	3991.	0.29
NICKEL	0.9055	1.1372	1.798	4444.	0.28
COPPER	0.9288	0.8971	-0.261	275.	0.39
ZINC	1.0131	0.3440	2.182	16411.	0.55
GALLIUM	0.9833	0.7212	1.581	7320.	0.41
GERMANIUM	1.0015	0.9900	1.474	4458.	0.31
ARSENIC	0.9927	0.3208	77.435	31370.	0.13
SELENIUM	1.0262	0.5465	17.808	26858.	-0.25
RUBIDIUM	1.8503	0.2201	5.025	218696.	1.37
STRONTIUM	1.5632	0.3993	2.827	99804.	1.23
YTTRIUM	1.2885	1.1018	0.411	11303.	1.03
ZIRCONIUM	1.1642	1.6150	-0.067	15.	0.87
NIOBIUM	1.0669	1.9358	0.480	6772.	0.71
MOLYBDENUM	1.0174	1.7423	22.556	7486.	0.11
TECHNETIUM	0.9920	1.7489	39.791	10368.	0.10
RUTHENIUM	0.9731	1.7124	55.047	11474.	0.09
RHODIUM	0.9775	1.4735	1968.936	5733.	0.01
SILVER	1.0501	0.7566	0.366	3564.	0.53
CADMIUM	1.1395	0.2965	3.551	33694.	0.63
INDIUM	1.2108	0.6383	5.368	20021.	0.39
TIN+2	1.1853	0.7965	1.900	14933.	0.56
TIN+4	1.1483	0.7965	7.362	25706.	0.38
ANTIMONY	1.1417	0.6925	18.862	24202.	0.23
TELLURIUM	1.1933	0.5155	20.776	41484.	0.29
CESIUM	1.9847	0.2084	5.954	278065.	1.42

TABLE-III- 80

SOLVENT-PALLADIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.6250	0.4701	2.800	106962.	1.28
LANTHANUM	1.3641	1.1394	0.588	17402.	1.09
CERIUM+3	1.3416	1.2345	0.416	12516.	1.09
CERIUM+4	1.2151	1.2345	0.176	3658.	0.78
PRASEODYMIUM	1.3285	0.9855	0.650	18679.	1.08
NEODYMIUM	1.3241	0.8551	0.823	23167.	1.08
PROMETHIUM	1.3147	0.7080	1.046	28856.	1.07
SAMARIUM	1.3096	0.5454	1.399	37774.	1.07
EUROPIUM+2	1.4833	0.4701	2.088	74021.	1.23
EUROPIUM+3	1.3067	0.4701	1.608	42705.	1.06
GADOLINIUM	1.3089	1.0592	0.517	14332.	1.05
TERBIUM	1.2958	1.0394	0.498	13653.	1.04
DYSPROSIUM	1.2900	0.7876	0.845	22032.	1.03
HOLMIUM	1.2842	0.7931	0.822	21157.	1.03
ERBIUM	1.2776	0.8241	0.752	19169.	1.02
THULIUM	1.2696	0.6449	1.072	26406.	1.01
YTTERBIUM+2	1.4092	0.4226	1.926	64085.	1.19
YTTERBIUM+3	1.2653	0.4226	1.691	40343.	1.00
LUTETIUM	1.2609	1.1301	0.317	8416.	0.99
HAFNIUM	1.1483	1.6095	-0.065	108.	0.85
TANTALUM	1.0661	2.0664	0.799	9221.	0.66
TUNGSTEN	1.0233	2.2257	37.263	18034.	0.14
RHENIUM	0.9993	2.0597	41.134	17223.	0.13
OSMIUM	0.9833	2.0819	68.479	20300.	0.11
IRIDIUM	0.9862	1.7600	119.356	11101.	0.06
PLATINUM	1.0080	1.4934	132.371	3939.	0.03
GOLD	1.0480	0.9690	-0.240	661.	0.31
MERCURY	1.1584	0.1622	12.413	54119.	0.43
THALLIUM	1.2471	0.4783	11.496	33666.	0.35
LEAD	1.2718	0.5177	18.330	34332.	0.28
BISMUTH	1.2275	0.5525	14.322	41649.	0.35
POLONIUM	1.2892	0.3816	12.036	59923.	0.46
FRANCIUM	2.0349	0.2002	6.542	296877.	1.40
RADIUM	1.6672	0.4646	3.159	118678.	1.27
ACTINIUM	1.3648	1.1504	0.541	17125.	1.13
THORIUM	1.3067	1.5111	0.197	4553.	0.86
PROTACTINIUM	1.1817	1.4602	-0.077	618.	0.57
URANIUM	1.1214	1.3827	-0.479	131.	0.31
NEPTUNIUM	1.1105	1.2500	-0.190	715.	0.33
PLUTONIUM+4.76	1.1919	1.0155	0.564	6187.	0.62
PLUTONIUM+5	1.1570	1.0155	0.170	1952.	0.44
AMERICIUM	1.2573	0.7301	1.305	20935.	0.81

TABLE-III- 81

SOLVENT-SILVER

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.680	1.445C	10.270	6840C.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5391	0.7615	8.997	57293.	-0.52
LITHIUM	1.0810	0.5640	0.620	8600.	0.72
BERYLLIUM	0.7806	1.1389	26.755	15074.	0.15
BORON	0.6367	1.9371	22.904	62249.	-0.34
CARBON	0.6062	2.4985	7.903	139127.	-0.87
NITROGEN	0.5709	1.6506	3.744	158535.	-1.35
OXYGEN	0.6208	0.8705	0.461	34848.	-1.78
SODIUM	1.3225	0.3789	3.177	40227.	0.73
MAGNESIUM	1.1087	0.5205	2.272	11800.	0.45
ALUMINUM	0.9910	1.1330	-1.311	418.	0.16
SILICON	0.9149	1.5848	1.429	1934.	-0.15
PHOSPHOROUS	0.8588	1.1009	1.094	5642.	-0.42
SULFUR	0.8651	0.9708	0.103	2829.	-0.83
POTASSIUM	1.6443	0.3140	6.090	100278.	0.84
CALCIUM	1.3661	0.6170	3.002	31350.	0.66
SCANDIUM	1.1356	1.3304	-0.273	185.	0.40
TITANIUM	1.0118	1.6477	1.684	2594.	0.19
VANADIUM	0.9315	1.7953	362.743	14576.	0.04
CHROMIUM	0.8872	1.3889	1.638	9535.	-0.47
MANGANESE+5	0.9045	0.9825	0.396	1718.	-0.24
MANGANESE+7	0.8678	0.9825	0.233	2877.	-0.56
IRON	0.8817	1.4620	12.937	11962.	-0.19
COBALT	0.8664	1.4927	10.330	14913.	-0.24
NICKEL	0.8623	1.5029	10.120	15778.	-0.25
COPPER	0.8844	1.1857	9.537	5503.	-0.14
ZINC	0.9647	0.4547	445.511	5302.	0.02
GALLIUM	0.9363	0.9532	-1.815	590.	-0.12
GERMANIUM	0.9536	1.3085	-1.064	4.	-0.22
ARSENIC	0.9453	0.4240	3.382	13670.	-0.40
SELENIUM	0.9772	0.7222	0.597	9572.	-0.78
RUBIDIUM	1.7619	0.2909	7.959	130695.	0.84
STRONTIUM	1.4886	0.5278	4.589	53044.	0.70
YTTRIUM	1.2270	1.4561	0.007	1235.	0.50
ZIRCONIUM	1.1087	2.1345	1.456	5073.	0.34
NIOBIUM	1.0159	2.5585	27.647	21848.	0.18
MOLYBDENUM	0.9689	2.3026	5.256	22571.	-0.42
TECHNETIUM	0.9446	2.3114	6.114	27260.	-0.43
RUTHENIUM	0.9266	2.2632	6.206	28898.	-0.44
RHODIUM	0.9308	1.9474	2.841	18905.	-0.52
PALLADIUM	0.9522	1.3216	0.366	3564.	-0.53
CADMIUM	1.0851	0.3918	60.970	15252.	0.10
INDIUM	1.1529	0.8436	10.101	5757.	-0.14
TIN+2	1.1287	1.0526	89.439	3048.	0.03
TIN+4	1.0934	1.0526	12.725	7795.	-0.15
ANTIMONY	1.0872	0.9152	3.048	7519.	-0.30
TELLURIUM	1.1363	0.6813	12.385	17643.	-0.24
CESIUM	1.8900	0.2754	9.155	168420.	0.89

TABLE-III- 82

SOLVENT-SILVER

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.5474	0.6213	4.238	56170.	0.75
LANTHANUM	1.2990	1.5058	0.276	3212.	0.56
CERIUM+3	1.2775	1.6316	0.031	1414.	0.56
CERIUM+4	1.1571	1.6316	-0.787	59.	0.25
PRASEODYMIUM	1.2651	1.3025	0.412	4068.	0.55
NEODYMIUM	1.2609	1.1301	0.757	6394.	0.55
PROMETHIUM	1.2519	0.9357	1.265	9727.	0.54
SAMARIUM	1.2471	0.7208	2.149	15375.	0.54
EUROPIUM+2	1.4125	0.6213	3.144	36717.	0.70
EUROPIUM+3	1.2443	0.6213	2.725	18714.	0.53
GADOLINIUM	1.2464	1.3999	0.173	2269.	0.52
TERBIUM	1.2339	1.3737	0.145	2071.	0.51
DYSPROSIUM	1.2284	1.0409	0.842	6122.	0.50
HOLMIUM	1.2228	1.0482	0.796	5706.	0.50
ERBIUM	1.2166	1.0892	0.644	4729.	0.49
THULIUM	1.2090	0.8523	1.436	8820.	0.48
YTTERBIUM+2	1.3419	0.5585	3.018	31510.	0.66
YTTERBIUM+3	1.2048	0.5585	3.236	17818.	0.47
LUTETIUM	1.2007	1.4936	-0.144	477.	0.46
HAFNIUM	1.0934	2.1272	2.015	5950.	0.32
TANTALUM	1.0152	2.7310	64.267	26238.	0.13
TUNGSTEN	0.9744	2.9415	11.065	46001.	-0.39
RHENIUM	0.9516	2.7222	10.084	38397.	-0.40
OSMIUM	0.9363	2.7515	10.251	42890.	-0.42
IRIDIUM	0.9391	2.3260	5.348	28436.	-0.47
PLATINUM	0.9599	1.9737	2.511	15670.	-0.50
GOLD	0.9979	1.2807	0.037	1233.	-0.22
MERCURY	1.1031	0.2143	123.486	29668.	-0.10
THALLIUM	1.1875	0.6322	16.658	13638.	-0.18
LEAD	1.2111	0.6842	8.686	13712.	-0.25
BISMUTH	1.1689	0.7303	21.739	17434.	-0.18
POLONIUM	1.2277	0.5044	251.340	29592.	-0.07
FRANCIUM	1.9377	0.2646	10.280	180613.	0.87
RADIUM	1.5875	0.6140	4.915	63254.	0.74
ACTINIUM	1.2997	1.5205	0.228	3087.	0.60
THORIUM	1.2443	1.9971	-0.462	33.	0.33
PROTACTINIUM	1.1253	1.9298	17.924	1854.	0.04
URANIUM	1.0678	1.8275	1.569	2943.	-0.22
NEPTUNIUM	1.0574	1.6520	0.306	1474.	-0.20
PLUTONIUM+4.76	1.1349	1.3421	-5.573	151.	0.09
PLUTONIUM+5	1.1017	1.3421	-4.484	355.	-0.09
AMERICIUM	1.1972	0.9649	2.566	5832.	0.28

TABLE-III- 83

SOLVENT-CADMIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.580	1.5680	13.000	26800.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4968	1.9437	14.755	131986.	-0.62
LITHIUM	0.9962	1.4396	-0.015	1061.	0.62
BERYLLIUM	0.7194	2.9067	992.336	58400.	0.05
BORON	0.5867	4.9440	31.822	143258.	-0.44
CARBON	0.5587	6.3769	12.038	262373.	-0.97
NITROGEN	0.5261	4.2127	5.976	290940.	-1.45
OXYGEN	0.5721	2.2216	1.137	93870.	-1.88
SODIUM	1.2187	0.9672	0.179	2827.	0.63
MAGNESIUM	1.0217	1.3284	-0.301	341.	0.35
ALUMINUM	0.9133	2.8918	237.386	20899.	0.06
SILICON	0.8431	4.0448	20.366	30545.	-0.25
PHOSPHOROUS	0.7915	2.8097	5.849	37666.	-0.52
SULFUR	0.7972	2.4776	1.403	29179.	-0.93
POTASSIUM	1.5153	0.8015	1.209	16464.	0.74
CALCIUM	1.2589	1.5746	-0.090	543.	0.56
SCANDIUM	1.0466	3.3955	6.509	14700.	0.30
TITANIUM	0.9324	4.2052	170.947	33123.	0.09
VANADIUM	0.8584	4.5821	724.164	61309.	-0.06
CHROMIUM	0.8176	3.5448	6.309	48462.	-0.57
MANGANESE+5	0.8335	2.5075	9.163	25618.	-0.34
MANGANESE+7	0.7997	2.5075	2.808	29403.	-0.66
IRON	0.8125	3.7313	27.238	54017.	-0.29
COBALT	0.7985	3.8097	22.103	60114.	-0.34
NICKEL	0.7946	3.8358	21.477	61862.	-0.35
COPPER	0.8151	3.0261	27.616	37874.	-0.24
ZINC	0.8890	1.1604	4.318	1829.	-0.08
GALLIUM	0.8629	2.4328	8.213	10359.	-0.22
GERMANIUM	0.8788	3.3396	6.644	16881.	-0.32
ARSENIC	0.8712	1.0821	-0.199	47.	-0.50
SELENIUM	0.9005	1.8433	0.007	1308.	-0.88
RUBIDIUM	1.6237	0.7425	1.836	24371.	0.74
STRONTIUM	1.3718	1.3470	0.318	3836.	0.60
YTTRIUM	1.1307	3.7164	2.799	11675.	0.40
ZIRCONIUM	1.0217	5.4478	31.737	43346.	0.24
NIOBIUM	0.9362	6.5299	530.984	79557.	0.08
MOLYBDENUM	0.8929	5.8769	12.514	79222.	-0.52
TECHNETIUM	0.8705	5.8993	13.315	87441.	-0.53
RUTHENIUM	0.8540	5.7761	13.203	89972.	-0.54
RHODIUM	0.8578	4.9701	7.811	70433.	-0.62
PALLADIUM	0.8776	3.3731	3.551	33694.	-0.63
SILVER	0.9216	2.5522	60.970	15252.	-0.10
INDIUM	1.0625	2.1530	1.588	3302.	-0.24
TIN+2	1.0402	2.6866	46.940	6496.	-0.07
TIN+4	1.0077	2.6866	1.370	3166.	-0.25
ANTIMONY	1.0019	2.3358	0.417	2730.	-0.40
TELLURIUM	1.0472	1.7388	-0.413	90.	-0.34
CESIUM	1.7417	0.7030	2.303	34330.	0.79

TABLE-III- 84

SOLVENT-CADMIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.4260	1.5858	0.255	3676.	0.65
LANTHANUM	1.1971	3.8433	1.532	8763.	0.46
CERIUM+3	1.1773	4.1642	2.312	12328.	0.46
CERIUM+4	1.0663	4.1642	38.630	21235.	0.15
PRASEODYMIUM	1.1658	3.3243	1.197	6780.	0.45
NEODYMIUM	1.1620	2.8843	0.661	4222.	0.45
PROMETHIUM	1.1537	2.3881	0.176	1980.	0.44
SAMARIUM	1.1492	1.8396	-0.203	306.	0.44
EUROPIUM+2	1.3017	1.5858	-0.017	1050.	0.60
EUROPIUM+3	1.1467	1.5858	-0.279	14.	0.43
GADOLINIUM	1.1486	3.5728	2.026	9434.	0.42
TERBIUM	1.1371	3.5063	2.146	9591.	0.41
DYSPROSIUM	1.1320	2.6567	0.741	3979.	0.40
HOLMIUM	1.1269	2.6754	0.850	4266.	0.40
ERBIUM	1.1212	2.7799	1.138	5142.	0.39
THULIUM	1.1142	2.1754	0.238	1984.	0.38
YTTERBIUM+2	1.2366	1.4254	-0.065	721.	0.56
YTTERBIUM+3	1.1103	1.4254	-0.371	7.	0.37
LUTETIUM	1.1065	3.8119	4.259	14204.	0.36
HAFNIUM	1.0077	5.4291	39.628	45421.	0.22
TANTALUM	0.9356	6.9701	4194.274	88240.	0.03
TUNGSTEN	0.8980	7.5075	20.043	112162.	-0.49
RHENIUM	0.8769	6.9478	18.588	108349.	-0.50
OSMIUM	0.8629	7.0224	18.374	115761.	-0.52
IRIDIUM	0.8654	5.9366	11.792	89543.	-0.57
PLATINUM	0.8846	5.0373	7.631	64541.	-0.60
GOLD	0.9196	3.2687	10.438	25841.	-0.32
MERCURY	1.0166	0.5470	1.246	2342.	-0.20
THALLIUM	1.0944	1.6134	-0.474	335.	-0.28
LEAD	1.1161	1.7463	-0.272	424.	-0.35
BISMUTH	1.0772	1.8638	-0.575	153.	-0.28
POLONIUM	1.1314	1.2873	-0.740	699.	-0.17
FRANCIUM	1.7857	0.6754	2.679	37822.	0.77
RADIUM	1.4630	1.5672	0.390	4877.	0.64
ACTINIUM	1.1977	3.8806	1.353	8995.	0.50
THORIUM	1.1467	5.0970	18.101	23274.	0.23
PROTACTINIUM	1.0370	4.9254	379.655	32710.	-0.06
URANIUM	0.9841	4.6642	14.505	35445.	-0.32
NEPTUNIUM	0.9745	4.2164	13.580	29377.	-0.30
PLUTONIUM+4.76	1.0459	3.4254	6000.888	15030.	-0.01
PLUTONIUM+5	1.0153	3.4254	24.920	21937.	-0.19
AMERICIUM	1.1033	2.4627	3.500	3807.	0.18

TABLE-III- 85

SOLVENT-INDIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.820	1.6660	15.730	5770C.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4676	0.9028	36.671	123302.	-0.38
LITHIUM	0.9376	0.6686	-0.038	540.	0.86
BERYLLIUM	0.6771	1.3501	22.290	44421.	0.29
BORON	0.5522	2.2964	138.461	128909.	-0.20
CARBON	0.5258	2.9619	20.766	256379.	-0.73
NITROGEN	0.4952	1.9567	8.655	293391.	-1.21
OXYGEN	0.5384	1.0319	1.305	82148.	-1.64
SODIUM	1.1471	0.4492	0.791	15006.	0.87
MAGNESIUM	0.9616	0.6170	0.042	1528.	0.59
ALUMINUM	0.8595	1.3432	4.103	9707.	0.30
SILICON	0.7935	1.8787	6534.364	16260.	-0.01
PHOSPHOROUS	0.7449	1.3050	12.914	24540.	-0.28
SULFUR	0.7503	1.1508	1.468	17312.	-0.69
POTASSIUM	1.4262	0.3723	2.038	46324.	0.98
CALCIUM	1.1849	0.7314	0.512	8743.	0.80
SCANDIUM	0.9850	1.5771	0.501	4562.	0.54
TITANIUM	0.8776	1.9532	6.805	18281.	0.33
VANADIUM	0.8079	2.1282	57.614	44238.	0.18
CHROMIUM	0.7695	1.6464	12.884	33546.	-0.33
MANGANESE+5	0.7845	1.1646	56.178	14147.	-0.10
MANGANESE+7	0.7527	1.1646	4.001	17468.	-0.42
IRON	0.7647	1.7331	648.984	38806.	-0.05
COBALT	0.7515	1.7695	187.652	44465.	-0.10
NICKEL	0.7479	1.7816	161.133	46153.	-0.11
COPPER	0.7671	1.4055	- ∞	24386.	0.
ZINC	0.8367	0.5390	-1.907	67.	0.16
GALLIUM	0.8121	1.1300	152.436	2598.	0.02
GERMANIUM	0.8271	1.5511	33.487	6134.	-0.08
ARSENIC	0.8199	0.5026	0.854	2523.	-0.26
SELENIUM	0.8475	0.8562	-0.070	528.	-0.64
RUBIDIUM	1.5282	0.3449	2.768	62504.	0.98
STRONTIUM	1.2911	0.6256	1.119	19393.	0.84
YTTRIUM	1.0642	1.7262	0.131	2440.	0.64
ZIRCONIUM	0.9616	2.5303	4.593	25597.	0.48
NIOBIUM	0.8812	3.0329	24.404	58820.	0.32
MOLYBDENUM	0.8403	2.7296	32.381	59733.	-0.28
TECHNETIUM	0.8193	2.7400	34.481	68064.	-0.29
RUTHENIUM	0.8037	2.6828	33.591	70906.	-0.30
RHODIUM	0.8073	2.3085	15.439	52601.	-0.38
PALLADIUM	0.8259	1.5667	5.368	20021.	-0.39
SILVER	0.8673	1.1854	10.101	5757.	0.14
CADMIUM	0.9412	0.4645	1.588	3302.	0.24
TIN+2	0.9790	1.2478	-0.953	557.	0.17
TIN+4	0.9484	1.2478	-500.869	37.	-0.01
ANTIMONY	0.9430	1.0849	-1.912	63.	-0.16
TELLURIUM	0.9856	0.8076	7.769	2984.	-0.10
CESIUM	1.6393	0.3265	3.321	82442.	1.03

TABLE-III- 86

SOLVENT-INDIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.3421	0.7366	1.021	19843.	0.89
LANTHANUM	1.1267	1.7851	-0.021	951.	0.70
CERIUM+3	1.1080	1.9341	0.117	2500.	0.70
CERIUM+4	1.0036	1.9341	2.080	8489.	0.39
PRASEODYMIUM	1.0972	1.5440	-0.069	432.	0.69
NEODYMIUM	1.0936	1.3397	-0.109	9.	0.69
PROMETHIUM	1.0858	1.1092	-0.081	322.	0.68
SAMARIUM	1.0816	0.8544	0.087	2102.	0.67
EUROPIUM+2	1.2251	0.7366	0.605	11042.	0.84
EUROPIUM+3	1.0792	0.7366	0.234	3600.	0.67
GADOLINIUM	1.0810	1.6594	0.018	1375.	0.66
TERBIUM	1.0702	1.6284	0.030	1485.	0.65
DYSPROSIUM	1.0654	1.2340	-0.124	6.	0.64
HOLMIUM	1.0606	1.2426	-0.125	26.	0.64
ERBIUM	1.0552	1.2912	-0.115	145.	0.63
THULIUM	1.0486	1.0104	-0.106	254.	0.62
YTTERBIUM+2	1.1639	0.6620	0.544	9228.	0.80
YTTERBIUM+3	1.0450	0.6620	0.271	3530.	0.61
LUTETIUM	1.0414	1.7705	0.319	3880.	0.60
HAFNIUM	0.9484	2.5217	5.399	27536.	0.46
TANTALUM	0.8806	3.2374	39.012	66775.	0.27
TUNGSTEN	0.8451	3.4870	61.908	90418.	-0.25
RHENIUM	0.8253	3.2270	55.423	87588.	-0.26
OSMIUM	0.8121	3.2617	51.997	95199.	-0.28
IRIDIUM	0.8145	2.7574	27.458	70146.	-0.33
PLATINUM	0.8325	2.3397	15.194	46602.	-0.36
GOLD	0.8655	1.5182	82.042	13300.	-0.08
MERCURY	0.9568	0.2541	291.544	11949.	0.04
THALLIUM	1.0300	0.7494	16.496	1801.	-0.04
LEAD	1.0504	0.8111	1.763	1684.	-0.11
BISMUTH	1.0138	0.8657	42.113	2746.	-0.04
POLONIUM	1.0648	0.5979	67.225	8788.	0.07
FRANCIUM	1.6807	0.3137	3.738	89118.	1.01
RADIUM	1.3770	0.7279	1.233	23218.	0.88
ACTINIUM	1.1273	1.8024	-0.013	1029.	0.74
THORIUM	1.0792	2.3674	1.533	9004.	0.47
PROTACTINIUM	0.9760	2.2877	21.025	16901.	0.18
URANIUM	0.9262	2.1664	125.155	19663.	-0.08
NEPTUNIUM	0.9172	1.9584	166.583	15021.	-0.06
PLUTONIUM+4.76	0.9844	1.5910	2.922	4757.	0.23
PLUTONIUM+5	0.9556	1.5910	150.901	9892.	0.05
AMERICIUM	1.0384	1.1438	-0.292	6.	0.42

TABLE-III- 87

SOLVENT-TIN+2

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.650	1.6310	16.300	72000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4776	0.7235	16.325	115072.	-0.55
LITHIUM	0.9577	0.5358	0.085	2121.	0.69
BERYLLIUM	0.6916	1.0819	110.290	37815.	0.12
BORON	0.5641	1.8403	37.353	119111.	-0.37
CARBON	0.5371	2.3736	13.071	245345.	-0.90
NITROGEN	0.5058	1.5681	6.431	283601.	-1.38
OXYGEN	0.5500	0.8269	0.971	74535.	-1.81
SODIUM	1.1717	0.3600	1.880	22433.	0.70
MAGNESIUM	0.9822	0.4944	0.665	3895.	0.42
ALUMINUM	0.8780	1.0764	12.643	6119.	0.13
SILICON	0.8105	1.5056	13.616	11365.	-0.18
PHOSPHOROUS	0.7609	1.0458	3.866	19247.	-0.45
SULFUR	0.7664	0.9222	0.682	12829.	-0.86
POTASSIUM	1.4568	0.2983	4.020	62018.	0.81
CALCIUM	1.2103	0.5861	1.478	14718.	0.63
SCANDIUM	1.0061	1.2639	0.259	2009.	0.37
TITANIUM	0.8964	1.5653	20.152	13089.	0.16
VANADIUM	0.8253	1.7056	15484.746	36900.	0.01
CHROMIUM	0.7860	1.3194	4.526	27287.	-0.50
MANGANESE+5	0.8013	0.9333	5.254	10024.	-0.27
MANGANESE+7	0.7689	0.9333	1.466	12957.	-0.59
IRON	0.7811	1.3889	27.562	31954.	-0.22
COBALT	0.7676	1.4181	21.573	37457.	-0.27
NICKEL	0.7639	1.4278	20.939	39049.	-0.28
COPPER	0.7836	1.1264	26.754	19022.	-0.17
ZINC	0.8547	0.4319	-144.881	858.	-0.01
GALLIUM	0.8296	0.9056	-0.633	864.	-0.15
GERMANIUM	0.8449	1.2431	1.369	3166.	-0.25
ARSENIC	0.8375	0.4028	0.980	5370.	-0.43
SELENIUM	0.8657	0.6861	0.067	2213.	-0.81
RUBIDIUM	1.5610	0.2764	5.345	82065.	0.81
STRONTIUM	1.3188	0.5014	2.664	28766.	0.67
YTTRIUM	1.0871	1.3833	-0.110	627.	0.47
ZIRCONIUM	0.9822	2.0278	8.125	19198.	0.31
NIOBIUM	0.9001	2.4306	93.890	49907.	0.15
MOLYBDENUM	0.8584	2.1875	10.685	51089.	-0.45
TECHNETIUM	0.8369	2.1958	11.867	59099.	-0.46
RUTHENIUM	0.8210	2.1500	11.919	61906.	-0.47
RHODIUM	0.8246	1.8500	6.234	44681.	-0.55
PALLADIUM	0.8437	1.2556	1.900	14933.	-0.56
SILVER	0.8860	0.9500	89.439	3048.	-0.03
CADMIUM	0.9614	0.3722	46.940	6496.	0.07
INDIUM	1.0215	0.8014	-0.953	557.	-0.17
ANTIMONY	0.9632	0.8694	-0.053	1058.	-0.33
TELLURIUM	1.0067	0.6472	3.129	6453.	-0.27
CESIUM	1.6744	0.2617	6.186	106694.	0.86
BARIUM	1.3709	0.5903	2.385	29707.	0.72

TABLE-III- 88

SOLVENT-TIN+2

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
LANTHANUM	1.1508	1.4306	-0.178	26.	0.53
CERIUM+3	1.1318	1.5500	-0.090	613.	0.53
CERIUM+4	1.0251	1.5500	3.234	4802.	0.22
PRASEODYMIUM	1.1208	1.2374	-0.188	20.	0.52
NEODYMIUM	1.1171	1.0736	-0.113	500.	0.52
PROMETHIUM	1.1091	0.8889	0.113	1872.	0.51
SAMARIUM	1.1048	0.6847	0.662	5086.	0.51
EUROPIUM+2	1.2514	0.5903	1.614	17900.	0.67
EUROPIUM+3	1.1024	0.5903	1.071	7316.	0.50
GADOLINIUM	1.1042	1.3299	-0.188	151.	0.49
TERBIUM	1.0932	1.3050	-0.186	195.	0.48
DYSPROSIUM	1.0883	0.9889	-0.135	495.	0.47
HOLMIUM	1.0834	0.9958	-0.162	383.	0.47
ERBIUM	1.0779	1.0347	-0.214	155.	0.46
THULIUM	1.0711	0.8097	0.097	1644.	0.45
YTTERBIUM+2	1.1888	0.5306	1.535	15245.	0.63
YTTERBIUM+3	1.0674	0.5306	1.314	7111.	0.44
LUTETIUM	1.0638	1.4189	0.066	1480.	0.43
HAFNIUM	0.9687	2.0208	10.198	20970.	0.29
TANTALUM	0.8994	2.5944	243.499	57343.	0.10
TUNGSTEN	0.8633	2.7944	19.377	80014.	-0.42
RHENIUM	0.8430	2.5861	17.905	77534.	-0.43
OSMIUM	0.8296	2.6139	17.931	84926.	-0.45
IRIDIUM	0.8320	2.2097	10.390	61093.	-0.50
PLATINUM	0.8504	1.8750	5.827	38938.	-0.53
GOLD	0.8841	1.2167	5.450	9047.	-0.25
MERCURY	0.9773	0.2036	42.561	17779.	-0.13
THALLIUM	1.0521	0.6006	3.234	4481.	-0.21
LEAD	1.0730	0.6500	1.742	4342.	-0.28
BISMUTH	1.0356	0.6937	4.869	6144.	-0.21
POLONIUM	1.0877	0.4792	57.717	14502.	-0.10
FRANCIUM	1.7167	0.2514	6.985	114843.	0.84
RADIUM	1.4065	0.5833	2.833	34122.	0.71
ACTINIUM	1.1514	1.4444	-0.154	40.	0.57
THORIUM	1.1024	1.8972	1.827	4984.	0.30
PROTACTINIUM	0.9969	1.8333	4528.368	11635.	0.01
URANIUM	0.9460	1.7361	8.993	14154.	-0.25
NEPTUNIUM	0.9368	1.5694	7.411	10232.	-0.23
PLUTONIUM+4.76	1.0055	1.2750	11.428	2141.	0.06
PLUTONIUM+5	0.9761	1.2750	14.857	6126.	-0.12
AMERICIUM	1.0607	0.9167	-0.497	476.	0.25

TABLE-III- 89

SOLVENT-TIN+4

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.830	1.5800	20.590	72000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4930	0.7235	50.834	161670.	-0.37
LITHIUM	0.9886	0.5358	-0.047	371.	0.87
BERYLLIUM	0.7139	1.0819	27.039	57310.	0.30
BORON	0.5823	1.8403	195.720	164123.	-0.19
CARBON	0.5544	2.3736	27.268	327168.	-0.72
NITROGEN	0.5222	1.5681	11.411	380105.	-1.20
OXYGEN	0.5677	0.8269	1.731	107256.	-1.63
SODIUM	1.2095	0.3600	0.781	15146.	0.88
MAGNESIUM	1.0139	0.4944	0.014	1311.	0.60
ALUMINUM	0.9063	1.0764	5.227	12775.	0.31
SILICON	0.8367	1.5056	- ∞	20735.	0.
PHOSPHOROUS	0.7854	1.0458	18.179	31752.	-0.27
SULFUR	0.7911	0.9222	2.011	22632.	-0.68
POTASSIUM	1.5038	0.2983	1.999	46380.	0.99
CALCIUM	1.2494	0.5861	0.479	8438.	0.81
SCANDIUM	1.0386	1.2639	0.717	6197.	0.55
TITANIUM	0.9253	1.5653	8.260	23211.	0.34
VANADIUM	0.8519	1.7056	65.479	55701.	0.19
CHROMIUM	0.8114	1.3194	17.632	42827.	-0.32
MANGANESE+5	0.8272	0.9333	92.949	18554.	-0.09
MANGANESE+7	0.7937	0.9333	5.579	22819.	-0.41
IRON	0.8063	1.3889	1300.067	49159.	-0.04
COBALT	0.7924	1.4181	296.587	56591.	-0.09
NICKEL	0.7886	1.4278	249.514	58730.	-0.10
COPPER	0.8089	1.1264	13114.397	31434.	0.01
ZINC	0.8823	0.4319	-1.772	12.	0.17
GALLIUM	0.8563	0.9056	122.131	3727.	0.03
GERMANIUM	0.8722	1.2431	61.892	8186.	-0.07
ARSENIC	0.8646	0.4028	0.802	2348.	-0.25
SELENIUM	0.8937	0.6861	-0.093	342.	-0.63
RUBIDIUM	1.6114	0.2764	2.701	62236.	0.99
STRONTIUM	1.3614	0.5014	1.079	19166.	0.85
YTTRIUM	1.1222	1.3833	0.234	3494.	0.65
ZIRCONIUM	1.0139	2.0278	5.540	31868.	0.49
NIOBIUM	0.9291	2.4306	28.438	72607.	0.33
MOLYBDENUM	0.8861	2.1875	43.477	74281.	-0.27
TECHNETIUM	0.8639	2.1958	46.244	84796.	-0.28
RUTHENIUM	0.8475	2.1500	45.030	88520.	-0.29
RHODIUM	0.8513	1.8500	20.532	66068.	-0.37
PALLADIUM	0.8709	1.2556	7.362	25706.	-0.38
SILVER	0.9146	0.9500	12.725	7795.	0.15
CADMIUM	0.9924	0.3722	1.370	3166.	0.25
INDIUM	1.0546	0.8014	-500.869	37.	0.01
ANTIMONY	0.9943	0.8694	-2.288	5.	-0.15
TELLURIUM	1.0392	0.6472	7.922	2672.	-0.09
CESIUM	1.7285	0.2617	3.223	81590.	1.04
BARIUM	1.4152	0.5903	0.976	19415.	0.90

TABLE-III- 90

SOLVENT-TIN+4

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
LANTHANUM	1.1880	1.4306	0.031	1550.	0.71
CERIUM+3	1.1684	1.5500	0.206	3567.	0.71
CERIUM+4	1.0582	1.5500	2.669	11040.	0.40
PRASEODYMIUM	1.1570	1.2374	-0.033	821.	0.70
NEODYMIUM	1.1532	1.0736	-0.098	93.	0.70
PROMETHIUM	1.1449	0.8889	-0.094	160.	0.69
SAMARIUM	1.1405	0.6847	0.056	1800.	0.69
EUROPIUM+2	1.2918	0.5903	0.572	10718.	0.85
EUROPIUM+3	1.1380	0.5903	0.200	3311.	0.68
GADOLINIUM	1.1399	1.3299	0.089	2113.	0.67
TERBIUM	1.1285	1.3050	0.105	2258.	0.66
DYSPROSIUM	1.1234	0.9889	-0.113	82.	0.65
HOLMIUM	1.1184	0.9958	-0.109	139.	0.65
ERBIUM	1.1127	1.0347	-0.088	368.	0.64
THULIUM	1.1057	0.8097	-0.118	116.	0.63
YTTERBIUM+2	1.2272	0.5306	0.516	8994.	0.81
YTTERBIUM+3	1.1019	0.5306	0.234	3280.	0.62
LUTETIUM	1.0981	1.4189	0.474	5317.	0.61
HAFNIUM	1.0000	2.0208	6.494	34274.	0.47
TANTALUM	0.9285	2.5944	44.822	82227.	0.28
TUNGSTEN	0.8911	2.7944	83.031	111479.	-0.24
RHENIUM	0.8703	2.5861	74.445	108486.	-0.25
OSMIUM	0.8563	2.6139	69.518	118057.	-0.27
IRIDIUM	0.8589	2.2097	36.508	87400.	-0.32
PLATINUM	0.8778	1.8750	20.237	58359.	-0.35
GOLD	0.9127	1.2167	141.975	17235.	-0.07
MERCURY	1.0089	0.2036	196.613	12527.	0.05
THALLIUM	1.0861	0.6006	16.732	1539.	-0.03
LEAD	1.1076	0.6500	0.949	1411.	-0.10
BISMUTH	1.0690	0.6937	59.097	2419.	-0.03
POLONIUM	1.1228	0.4792	50.370	8626.	0.08
FRANCIUM	1.7722	0.2514	3.622	88092.	1.02
RADIUM	1.4519	0.5833	1.180	22745.	0.89
ACTINIUM	1.1886	1.4444	0.036	1657.	0.75
THORIUM	1.1380	1.8972	1.955	11578.	0.48
PROTACTINIUM	1.0291	1.8333	24.151	21297.	0.19
URANIUM	0.9766	1.7361	208.818	24787.	-0.07
NEPTUNIUM	0.9671	1.5694	311.388	19144.	-0.05
PLUTONIUM+4.76	1.0380	1.2750	3.952	6442.	0.24
PLUTONIUM+5	1.0076	1.2750	141.051	12902.	0.06
AMERICIUM	1.0949	0.9167	-0.261	79.	0.43

TABLE-III- 91

SOLVENT-ANTIMONY

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.980	1.5710	18.210	62600.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4959	0.8321	129.335	145543.	-0.22
LITHIUM	0.9943	0.6163	-0.038	275.	1.02
BERYLLIUM	0.7180	1.2444	11.039	52738.	0.45
BORON	0.5856	2.1166	4027.444	149789.	-0.04
CARBON	0.5576	2.7300	39.416	296502.	-0.57
NITROGEN	0.5251	1.8035	13.396	341765.	-1.05
OXYGEN	0.5710	0.9511	1.900	97185.	-1.48
SODIUM	1.2164	0.4141	0.515	13788.	1.03
MAGNESIUM	1.0197	0.5687	-0.008	1084.	0.75
ALUMINUM	0.9115	1.2380	2.255	12194.	0.46
SILICON	0.8415	1.7316	35.806	19770.	0.15
PHOSPHOROUS	0.7899	1.2029	85.452	29568.	-0.12
SULFUR	0.7957	1.0607	3.084	21167.	-0.53
POTASSIUM	1.5124	0.3431	1.412	43520.	1.14
CALCIUM	1.2565	0.6741	0.301	7590.	0.96
SCANDIUM	1.0446	1.4537	0.434	6099.	0.70
TITANIUM	0.9306	1.8003	3.775	22094.	0.49
VANADIUM	0.8568	1.9617	19.043	51955.	0.34
CHROMIUM	0.8160	1.5176	58.046	39876.	-0.17
MANGANESE+5	0.8320	1.0735	195.779	17445.	0.06
MANGANESE+7	0.7982	1.0735	12.928	21345.	-0.26
IRON	0.8109	1.5974	159.490	45694.	0.11
COBALT	0.7969	1.6310	617.592	52462.	0.06
NICKEL	0.7931	1.6422	923.125	54410.	0.05
COPPER	0.8135	1.2955	47.686	29343.	0.16
ZINC	0.8873	0.4968	-0.504	2.	0.32
GALLIUM	0.8612	1.0415	3.337	3686.	0.18
GERMANIUM	0.8771	1.4297	45.929	7971.	0.08
ARSENIC	0.8695	0.4633	3.502	2000.	-0.10
SELENIUM	0.8988	0.7891	-0.177	250.	-0.48
RUBIDIUM	1.6206	0.3179	1.923	58809.	1.14
STRONTIUM	1.3692	0.5767	0.713	17641.	1.00
YTTRIUM	1.1286	1.5911	0.158	3537.	0.80
ZIRCONIUM	1.0197	2.3323	3.090	30376.	0.64
NIOBIUM	0.9344	2.7955	12.594	68103.	0.48
MOLYBDENUM	0.8912	2.5160	205.294	69363.	-0.12
TECHNETIUM	0.8689	2.5256	199.452	78922.	-0.13
RUTHENIUM	0.8523	2.4728	179.320	82240.	-0.14
RHODIUM	0.8561	2.1278	54.010	61473.	-0.22
PALLADIUM	0.8759	1.4441	18.862	24202.	-0.23
SILVER	0.9198	1.0927	3.048	7519.	0.30
CADMIUM	0.9981	0.4281	0.417	2730.	0.40
INDIUM	1.0605	0.9217	-1.912	63.	0.16
TIN+2	1.0382	1.1502	-0.053	1058.	0.33
TIN+4	1.0057	1.1502	-2.288	5.	0.15
TELLURIUM	1.0452	0.7444	13.348	2300.	0.06
CESIUM	1.7384	0.3010	2.339	77566.	1.19

TABLE-III- 92

SOLVENT-ANTIMONY

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.4233	0.6789	0.657	17907.	1.05
LANTHANUM	1.1948	1.6454	0.026	1644.	0.86
CERIUM+3	1.1750	1.7827	0.144	3630.	0.86
CERIUM+4	1.0643	1.7827	1.370	10746.	0.55
PRASEODYMIUM	1.1636	1.4232	-0.017	902.	0.85
NEODYMIUM	1.1598	1.2348	-0.064	134.	0.85
PROMETHIUM	1.1515	1.0224	-0.067	102.	0.84
SAMARIUM	1.1470	0.7875	0.020	1518.	0.84
EUROPIUM+2	1.2992	0.6789	0.370	9716.	1.00
EUROPIUM+3	1.1445	0.6789	0.107	2876.	0.83
GADOLINIUM	1.1464	1.5296	0.064	2189.	0.82
TERBIUM	1.1349	1.5010	0.075	2328.	0.81
DYSPROSIUM	1.1299	1.1374	-0.072	120.	0.80
HOLMIUM	1.1248	1.1454	-0.069	184.	0.80
ERBIUM	1.1190	1.1901	-0.053	431.	0.79
THULIUM	1.1120	0.9313	-0.080	68.	0.78
YTTERBIUM+2	1.2342	0.6102	0.325	8098.	0.96
YTTERBIUM+3	1.1082	0.6102	0.120	2845.	0.77
LUTETIUM	1.1044	1.6319	0.305	5293.	0.76
HAFNIUM	1.0057	2.3243	3.543	32595.	0.62
TANTALUM	0.9338	2.9840	17.791	77051.	0.43
TUNGSTEN	0.8962	3.2141	549.758	103879.	-0.09
RHENIUM	0.8752	2.9744	432.341	100890.	-0.10
OSMIUM	0.8612	3.0064	326.435	105590.	-0.12
IRIDIUM	0.8638	2.5415	120.204	81300.	-0.17
PLATINUM	0.8829	2.1565	57.840	54544.	-0.20
GOLD	0.9179	1.3994	102.941	16385.	0.08
MERCURY	1.0146	0.2342	10.888	11235.	0.20
THALLIUM	1.0923	0.6907	0.284	1286.	0.12
LEAD	1.1139	0.7476	-0.331	1173.	0.05
BISMUTH	1.0751	0.7979	2.652	2073.	0.12
POLONIUM	1.1292	0.5511	5.372	7746.	0.23
FRANCIUM	1.7823	0.2891	2.619	83875.	1.17
RADIUM	1.4602	0.6709	0.797	21065.	1.04
ACTINIUM	1.1954	1.6613	0.030	1750.	0.90
THORIUM	1.1445	2.1821	1.111	11358.	0.63
PROTACTINIUM	1.0350	2.1086	7.227	20456.	0.34
URANIUM	0.9822	1.9968	152.153	23648.	0.08
NEPTUNIUM	0.9726	1.8051	74.301	18326.	0.10
PLUTONIUM+4.76	1.0439	1.4665	1.466	6333.	0.39
PLUTONIUM+5	1.0134	1.4665	11.014	12393.	0.21
AMERICIUM	1.1012	1.0543	-0.139	115.	0.58

TABLE-III- 93

SOLVENT-TELLURIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.920	1.642C	20.460	4660C.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4744	1.1178	105.846	192551.	-0.28
LITHIUM	0.9513	0.8279	-0.021	754.	0.96
BERYLLIUM	0.6870	1.6717	21.918	78067.	0.39
BORON	0.5603	2.8433	850.797	197386.	-0.10
CARBON	0.5335	3.6674	40.504	371905.	-0.63
NITROGEN	0.5024	2.4227	14.962	426285.	-1.11
OXYGEN	0.5463	1.2777	2.417	133370.	-1.54
SODIUM	1.1638	0.5562	0.166	4792.	0.97
MAGNESIUM	0.9756	0.7639	-0.097	126.	0.69
ALUMINUM	0.8721	1.6631	6.384	24747.	0.40
SILICON	0.8051	2.3262	186.329	35996.	0.09
PHOSPHOROUS	0.7558	1.6159	62.985	48251.	-0.18
SULFUR	0.7613	1.4249	4.448	36899.	-0.59
POTASSIUM	1.4470	0.4609	0.787	22371.	1.08
CALCIUM	1.2022	0.9056	0.008	1341.	0.90
SCANDIUM	0.9994	1.9528	1.572	16040.	0.64
TITANIUM	0.8904	2.4185	8.917	39213.	0.43
VANADIUM	0.8197	2.6352	42.334	77728.	0.28
CHROMIUM	0.7808	2.0386	49.815	61960.	-0.23
MANGANESE+5	0.7960	1.4421	- ∞	31843.	0.
MANGANESE+7	0.7637	1.4421	15.230	37156.	-0.32
IRON	0.7759	2.1459	1184.136	69458.	0.05
COBALT	0.7625	2.1910	- ∞	78041.	0.
NICKEL	0.7588	2.2060	34392.081	80500.	-0.01
COPPER	0.7783	1.7403	203.280	48069.	0.10
ZINC	0.8490	0.6674	0.288	1642.	0.26
GALLIUM	0.8240	1.3991	30.732	11397.	0.12
GERMANIUM	0.8392	1.9206	1917.911	18883.	0.02
ARSENIC	0.8319	0.6223	-2.015	3.	-0.16
SELENIUM	0.8599	1.0601	-0.039	932.	-0.54
RUBIDIUM	1.5505	0.4270	1.143	31927.	1.08
STRONTIUM	1.3100	0.7747	0.246	6206.	0.94
YTTRIUM	1.0798	2.1373	0.851	12031.	0.74
ZIRCONIUM	0.9756	3.1330	6.405	50875.	0.58
NIOBIUM	0.8940	3.7554	23.950	98614.	0.42
MOLYBDENUM	0.8526	3.3798	132.080	99875.	-0.18
TECHNETIUM	0.8313	3.3927	132.629	111601.	-0.19
RUTHENIUM	0.8155	3.3219	124.052	115618.	-0.20
RHODIUM	0.8191	2.8584	48.990	85762.	-0.28
PALLADIUM	0.8380	1.9399	20.776	41484.	-0.29
SILVER	0.8800	1.4678	12.385	17643.	0.24
CADMIUM	0.9549	0.5751	-0.413	90.	0.34
INDIUM	1.0146	1.2382	7.769	2984.	0.10
TIN+2	0.9933	1.5451	3.129	6453.	0.27
TIN+4	0.9622	1.5451	7.922	2672.	0.09
ANTIMONY	0.9568	1.3433	13.348	2300.	-0.06
CESIUM	1.6632	0.4043	1.444	43699.	1.13

TABLE-III- 94

SOLVENT-TELLURIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	1.3618	0.9120	0.213	5999.	0.99
LANTHANUM	1.1431	2.2103	0.492	8504.	0.80
CERIUM+3	1.1242	2.3948	0.773	12510.	0.80
CERIUM+4	1.0183	2.3948	4.043	23576.	0.49
PRASEODYMIUM	1.1133	1.9118	0.367	6469.	0.79
NEODYMIUM	1.1096	1.6588	0.180	3760.	0.79
PROMETHIUM	1.1017	1.3734	0.022	1504.	0.78
SAMARIUM	1.0974	1.0579	-0.080	80.	0.78
EUROPIUM+2	1.2430	0.9120	0.048	2180.	0.94
EUROPIUM+3	1.0950	0.9120	-0.085	39.	0.77
GADOLINIUM	1.0968	2.0547	0.619	9438.	0.76
TERBIUM	1.0859	2.0163	0.650	9665.	0.75
DYSPROSIUM	1.0810	1.5279	0.186	3568.	0.74
HOLMIUM	1.0761	1.5386	0.215	3881.	0.74
ERBIUM	1.0706	1.5987	0.298	4832.	0.73
THULIUM	1.0639	1.2511	0.030	1552.	0.72
YTTERBIUM+2	1.1809	0.8197	0.024	1633.	0.90
YTTERBIUM+3	1.0603	0.8197	-0.098	51.	0.71
LUTETIUM	1.0566	2.1923	1.213	15053.	0.70
HAFNIUM	0.9622	3.1223	7.263	53713.	0.56
TANTALUM	0.8934	4.0086	34.383	105737.	0.37
TUNGSTEN	0.8575	4.3176	272.159	142402.	-0.15
RHENIUM	0.8374	3.9957	232.814	138631.	-0.16
OSMIUM	0.8240	4.0386	198.029	149148.	-0.18
IRIDIUM	0.8264	3.4142	92.902	114521.	-0.23
PLATINUM	0.8447	2.8970	51.307	81172.	-0.26
GOLD	0.8782	1.8798	3217.161	30867.	0.02
MERCURY	0.9708	0.3146	6.507	4133.	0.14
THALLIUM	1.0451	0.9279	-13.069	107.	0.06
LEAD	1.0658	1.0043	-446.974	161.	-0.01
BISMUTH	1.0286	1.0719	-14.249	9.	0.06
POLONIUM	1.0804	0.7403	0.592	1587.	0.17
FRANCIUM	1.7052	0.3884	1.640	47786.	1.11
RADIUM	1.3971	0.9013	0.291	7632.	0.98
ACTINIUM	1.1437	2.2318	0.465	8753.	0.84
THORIUM	1.0950	2.9313	3.199	25158.	0.57
PROTACTINIUM	0.9903	2.8326	20.101	37533.	0.28
URANIUM	0.9397	2.6824	4378.777	41582.	0.02
NEPTUNIUM	0.9306	2.4249	893.680	34165.	0.04
PLUTONIUM+4.76	0.9988	1.9700	6.068	16429.	0.33
PLUTONIUM+5	0.9695	1.9700	46.653	25398.	0.15
AMERICIUM	1.0536	1.4163	0.361	3443.	0.52

TABLE-III- 95

SOLVENT-CESIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
0.790	2.731C	69.190	1884C.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.2852	2.7649	20.569	944196.	-1.41
LITHIUM	0.5720	2.0478	86.963	59148.	-0.17
BERYLLIUM	0.4130	4.1348	35.206	445763.	-0.74
BORON	0.3369	7.0329	26.047	909918.	-1.23
CARBON	0.3208	9.0711	21.922	1567117.	-1.76
NITROGEN	0.3021	5.9926	15.743	1822798.	-2.24
OXYGEN	0.3285	3.1603	4.210	693204.	-2.67
SODIUM	0.6997	1.3758	19.438	12667.	-0.16
MAGNESIUM	0.5866	1.8896	10.456	47873.	-0.44
ALUMINUM	0.5244	4.1136	16.390	202605.	-0.73
SILICON	0.4841	5.7537	9.931	248885.	-1.04
PHOSPHOROUS	0.4544	3.9968	7.897	313713.	-1.31
SULFUR	0.4577	3.5244	3.848	263727.	-1.72
POTASSIUM	0.8700	1.1401	6.243	1552.	-0.05
CALCIUM	0.7228	2.2399	20.870	26651.	-0.23
SCANDIUM	0.6009	4.8301	28.353	158172.	-0.49
TITANIUM	0.5353	5.9820	23.103	262242.	-0.70
VANADIUM	0.4929	6.5180	25.423	424763.	-0.85
CHROMIUM	0.4694	5.0425	8.597	367867.	-1.36
MANGANESE+5	0.4786	3.5669	8.086	239297.	-1.13
MANGANESE+7	0.4592	3.5669	5.435	264711.	-1.45
IRON	0.4665	5.3079	14.775	398598.	-1.08
COBALT	0.4584	5.4193	14.724	434740.	-1.13
NICKEL	0.4562	5.4565	14.808	444982.	-1.14
COPPER	0.4680	4.3047	12.659	310886.	-1.03
ZINC	0.5104	1.6507	3.844	68292.	-0.87
GALLIUM	0.4954	3.4607	5.701	135306.	-1.01
GERMANIUM	0.5046	4.7505	6.023	172309.	-1.11
ARSENIC	0.5002	1.5393	0.985	38972.	-1.29
SELENIUM	0.5170	2.6221	0.960	62903.	-1.67
RUBIDIUM	0.9323	1.0563	-14.742	342.	-0.05
STRONTIUM	0.7876	1.9161	14.656	13393.	-0.19
YTTRIUM	0.6492	5.2866	39.575	137872.	-0.39
ZIRCONIUM	0.5866	7.7495	43.477	304472.	-0.55
NIOBIUM	0.5375	9.2887	42.012	489558.	-0.71
MOLYBDENUM	0.5126	8.3599	12.654	501947.	-1.31
TECHNETIUM	0.4998	8.3917	13.641	549283.	-1.32
RUTHENIUM	0.4903	8.2166	13.874	567129.	-1.33
RHODIUM	0.4925	7.0701	10.244	470824.	-1.41
PALLADIUM	0.5038	4.7983	5.954	278065.	-1.42
SILVER	0.5291	3.6306	9.155	168420.	-0.89
CADMIUM	0.5741	1.4225	2.303	34330.	-0.79
INDIUM	0.6100	3.0626	3.321	82442.	-1.03
TIN+2	0.5972	3.8217	6.186	106694.	-0.86
TIN+4	0.5785	3.8217	3.223	81590.	-1.04
ANTIMONY	0.5752	3.3227	2.339	77566.	-1.19
TELLURIUM	0.6012	2.4735	1.444	43699.	-1.13

TABLE-III- 96

SOLVENT-CESIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
BARIUM	0.8187	2.2558	31.280	15330.	-0.14
LANTHANUM	0.6873	5.4671	48.106	119811.	-0.33
CERIUM+3	0.6759	5.9236	54.434	140386.	-0.33
CERIUM+4	0.6122	5.9236	20.234	192313.	-0.64
PRASEODYMIUM	0.6694	4.7288	39.966	107732.	-0.34
NEODYMIUM	0.6672	4.1030	32.518	89928.	-0.34
PROMETHIUM	0.6624	3.3970	24.810	70876.	-0.35
SAMARIUM	0.6598	2.6168	16.504	49155.	-0.35
EUROPIUM+2	0.7473	2.2558	26.645	23373.	-0.19
EUROPIUM+3	0.6584	2.2558	12.706	39589.	-0.36
GADOLINIUM	0.6595	5.0823	39.034	124418.	-0.37
TERBIUM	0.6529	4.9873	37.747	125566.	-0.38
DYSPROSIUM	0.6499	3.7792	25.266	88002.	-0.39
HOLMIUM	0.6470	3.8057	24.868	90212.	-0.39
ERBIUM	0.6437	3.9544	25.639	96738.	-0.40
THULIUM	0.6397	3.0945	17.887	70529.	-0.41
YTTERBIUM+2	0.7100	2.0276	18.930	24285.	-0.23
YTTERBIUM+3	0.6375	2.0276	9.177	38166.	-0.42
LUTETIUM	0.6353	5.4225	36.233	152820.	-0.43
HAFNIUM	0.5785	7.7229	42.073	316411.	-0.57
TANTALUM	0.5372	9.9151	39.632	529063.	-0.76
TUNGSTEN	0.5156	10.6794	17.213	651508.	-1.28
RHENIUM	0.5035	9.8832	16.753	644059.	-1.29
OSMIUM	0.4954	9.9894	17.272	684718.	-1.31
IRIDIUM	0.4969	8.4448	13.117	560645.	-1.36
PLATINUM	0.5079	7.1656	9.722	434328.	-1.39
GOLD	0.5280	4.6497	8.047	229823.	-1.11
MERCURY	0.5837	0.7781	0.405	10336.	-0.99
THALLIUM	0.6283	2.2951	1.803	48803.	-1.07
LEAD	0.6408	2.4841	1.658	50882.	-1.14
BISMUTH	0.6185	2.6513	1.698	46030.	-1.07
POLONIUM	0.6496	1.8312	1.049	23487.	-0.96
FRANCIUM	1.0253	0.9607	-124.856	41.	-0.02
RADIUM	0.8400	2.2293	23.145	132C1.	-0.15
ACTINIUM	0.6877	5.5202	61.869	121177.	-0.29
THORIUM	0.6584	7.2505	27.107	197218.	-0.56
PROTACTINIUM	0.5954	7.0064	14.997	251055.	-0.85
URANIUM	0.5650	6.6348	9.457	269875.	-1.11
NEPTUNIUM	0.5595	5.9979	8.709	239809.	-1.09
PLUTONIUM+4.76	0.6005	4.8726	10.764	160054.	-0.80
PLUTONIUM+5	0.5829	4.8726	9.127	203323.	-0.98
AMERICIUM	0.6335	3.5032	9.956	86617.	-0.61

TABLE-III- 97

SOLVENT-BARIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
0.930	2.2360	38.080	42500.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.3484	1.2256	11.405	425399.	-1.27
LITHIUM	0.6986	0.9078	486.863	11297.	-0.03
BERYLLIUM	0.5045	1.8329	22.143	185011.	-0.60
BORON	0.4114	3.1176	15.226	418343.	-1.09
CARBON	0.3918	4.0212	12.467	755684.	-1.62
NITROGEN	0.3690	2.6565	8.621	877878.	-2.10
OXYGEN	0.4012	1.4009	2.042	302671.	-2.53
SODIUM	0.8547	0.6099	-128.714	5.	-0.02
MAGNESIUM	0.7165	0.8376	3.060	7542.	-0.30
ALUMINUM	0.6404	1.8235	8.788	71736.	-0.59
SILICON	0.5912	2.5506	4.991	94409.	-0.90
PHOSPHOROUS	0.5550	1.7718	3.844	122530.	-1.17
SULFUR	0.5590	1.5624	1.697	98874.	-1.58
POTASSIUM	1.0626	0.5054	24.317	5734.	0.09
CALCIUM	0.8828	0.9929	1.417	1457.	-0.09
SCANDIUM	0.7339	2.1412	18.094	52306.	-0.35
TITANIUM	0.6538	2.6518	13.783	100869.	-0.56
VANADIUM	0.6020	2.8894	15.281	178832.	-0.71
CHROMIUM	0.5733	2.2353	4.319	149425.	-1.22
MANGANESE+5	0.5845	1.5812	3.832	87796.	-0.99
MANGANESE+7	0.5608	1.5812	2.481	99374.	-1.31
IRON	0.5698	2.3529	8.011	164425.	-0.94
COBALT	0.5599	2.4024	7.994	181876.	-0.99
NICKEL	0.5572	2.4188	8.051	186849.	-1.00
COPPER	0.5716	1.9082	6.593	121621.	-0.89
ZINC	0.6234	0.7318	1.090	14581.	-0.73
GALLIUM	0.6051	1.5341	2.322	41716.	-0.87
GERMANIUM	0.6163	2.1059	2.645	58583.	-0.97
ARSENIC	0.6109	0.6824	0.122	4928.	-1.15
SELENIUM	0.6315	1.1624	0.210	12512.	-1.53
RUBIDIUM	1.1386	0.4682	47.108	5991.	0.09
STRONTIUM	0.9620	0.8494	-20.291	22.	-0.05
YTTRIUM	0.7929	2.3435	30.024	43432.	-0.25
ZIRCONIUM	0.7165	3.4353	31.354	122733.	-0.41
NIOBIUM	0.6565	4.1176	28.504	214752.	-0.57
MOLYBDENUM	0.6261	3.7059	6.909	219295.	-1.17
TECHNETIUM	0.6105	3.7200	7.517	242554.	-1.18
RUTHENIUM	0.5988	3.6424	7.650	251003.	-1.19
RHODIUM	0.6015	3.1341	5.399	201983.	-1.27
PALLADIUM	0.6154	2.1271	2.800	106962.	-1.28
SILVER	0.6462	1.6094	4.238	56170.	-0.75
CADMIUM	0.7013	0.6306	0.255	3676.	-0.65
INDIUM	0.7451	1.3576	1.021	15843.	-0.89
TIN+2	0.7294	1.6941	2.385	29707.	-0.72
TIN+4	0.7066	1.6941	0.976	15415.	-0.90
ANTIMONY	0.7026	1.4729	0.657	17907.	-1.05
TELLURIUM	0.7343	1.0965	0.213	5999.	-0.99

TABLE-III- 98

SOLVENT-BARIUM

SOLUTE ELEMENT	RACIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.2214	0.4433	31.280	15330.	0.14
LANTHANUM	0.8394	2.4235	42.495	35460.	-0.19
CERIUM+3	0.8256	2.6259	50.644	44694.	-0.19
CERIUM+4	0.7478	2.6259	11.651	68362.	-0.50
PRASEODYMIUM	0.8175	2.0962	31.442	30194.	-0.20
NEODYMIUM	0.8148	1.8188	22.470	22756.	-0.20
PROMETHIUM	0.8090	1.5059	14.009	15303.	-0.21
SAMARIUM	0.8059	1.1600	6.117	7712.	-0.21
EUROPIUM+2	0.9128	1.0000	-6.608	811.	-0.05
EUROPIUM+3	0.8041	1.0000	3.203	4833.	-0.22
GADOLINIUM	0.8055	2.2529	29.725	37453.	-0.23
TERBIUM	0.7974	2.2108	28.135	37943.	-0.24
DYSPROSIUM	0.7938	1.6753	14.914	22005.	-0.25
HOLMIUM	0.7903	1.6871	14.591	22901.	-0.25
ERBIUM	0.7862	1.7529	15.402	25573.	-0.26
THULIUM	0.7813	1.3718	8.356	15239.	-0.27
YTTERBIUM+2	0.8672	0.8988	-0.673	1067.	-0.09
YTTERBIUM+3	0.7786	0.8988	1.862	4511.	-0.28
LUTETIUM	0.7759	2.4038	25.958	50154.	-0.29
HAFNIUM	0.7066	3.4235	29.841	128426.	-0.43
TANTALUM	0.6561	4.3953	26.403	235238.	-0.62
TUNGSTEN	0.6297	4.7341	9.881	297320.	-1.14
RHENIUM	0.6149	4.3812	9.539	292102.	-1.15
OSMIUM	0.6051	4.4282	9.862	312511.	-1.17
IRIDIUM	0.6069	3.7435	7.198	248230.	-1.22
PLATINUM	0.6203	3.1765	5.086	184456.	-1.25
GOLD	0.6449	2.0612	3.843	84564.	-0.97
MERCURY	0.7129	0.3449	-0.069	35.	-0.85
THALLIUM	0.7674	1.0174	0.327	7714.	-0.93
LEAD	0.7826	1.1012	0.310	8340.	-1.00
BISMUTH	0.7554	1.1753	0.275	6670.	-0.93
POLONIUM	0.7934	0.8118	-0.013	993.	-0.82
FRANCIUM	1.2522	0.4259	48.581	17324.	0.12
RADIUM	1.0259	0.9882	-481.766	81.	-0.01
ACTINIUM	0.8399	2.4471	67.212	36065.	-0.15
THORIUM	0.8041	3.2141	17.258	71396.	-0.42
PROTACTINIUM	0.7272	3.1059	8.206	96579.	-0.71
URANIUM	0.6901	2.9412	4.790	105112.	-0.97
NEPTUNIUM	0.6834	2.6588	4.287	90409.	-0.95
PLUTONIUM+4.76	0.7335	2.1600	5.174	53165.	-0.66
PLUTONIUM+5	0.7120	2.1600	4.393	72668.	-0.84
AMERICIUM	0.7737	1.5529	3.981	21470.	-0.47

TABLE-III- 99

SOLVENT-LANTHANUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.117	1.8770	22.530	103000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4150	0.5057	5.574	151960.	-1.08
LITHIUM	0.8322	0.3746	3.334	3088.	0.16
BERYLLIUM	0.6010	0.7563	11.662	47063.	-0.41
BORON	0.4901	1.2864	8.003	151670.	-0.90
CARBON	0.4667	1.6592	6.695	318247.	-1.43
NITROGEN	0.4395	1.0961	4.437	375655.	-1.91
OXYGEN	0.4779	0.5781	0.755	96738.	-2.34
SODIUM	1.0181	0.2517	41.274	27736.	0.17
MAGNESIUM	0.8535	0.3456	14.275	5396.	-0.11
ALUMINUM	0.7629	0.7524	1.493	6782.	-0.40
SILICON	0.7043	1.0524	0.986	12756.	-0.71
PHOSPHOROUS	0.6612	0.7311	0.985	23148.	-0.98
SULFUR	0.6660	0.6447	0.313	15205.	-1.39
POTASSIUM	1.2658	0.2085	39.916	71819.	0.28
CALCIUM	1.0517	0.4097	79.246	18386.	0.10
SCANDIUM	0.8743	0.8835	1.226	1943.	-0.16
TITANIUM	0.7789	1.0942	4.236	14782.	-0.37
VANADIUM	0.7171	1.1922	6.833	44294.	-0.52
CHROMIUM	0.6830	0.9223	1.288	32880.	-1.03
MANGANESE+5	0.6963	0.6524	0.705	11681.	-0.80
MANGANESE+7	0.6681	0.6524	0.487	15352.	-1.12
IRON	0.6787	0.9709	2.869	38699.	-0.75
COBALT	0.6670	0.9913	2.994	45706.	-0.80
NICKEL	0.6638	0.9981	3.054	47734.	-0.81
COPPER	0.6809	0.7874	1.890	22726.	-0.70
ZINC	0.7427	0.3019	0.029	1389.	-0.54
GALLIUM	0.7208	0.6330	-0.039	768.	-0.68
GERMANIUM	0.7342	0.8689	0.145	3242.	-0.78
ARSENIC	0.7278	0.2816	0.287	7320.	-0.96
SELENIUM	0.7523	0.4796	0.048	3182.	-1.34
RUBIDIUM	1.3564	0.1932	52.167	93495.	0.28
STRONTIUM	1.1460	0.3505	77.127	34574.	0.14
YTTRIUM	0.9446	0.9670	-8.582	480.	-0.06
ZIRCONIUM	0.8535	1.4175	17.855	21668.	-0.22
NIOBIUM	0.7821	1.6990	17.107	59058.	-0.38
MOLYBDENUM	0.7459	1.5291	2.692	61182.	-0.98
TECHNETIUM	0.7272	1.5350	3.088	71413.	-0.99
RUTHENIUM	0.7134	1.5029	3.189	75166.	-1.00
RHODIUM	0.7166	1.2932	1.948	53879.	-1.08
PALLADIUM	0.7331	0.8777	0.588	17402.	-1.09
SILVER	0.7698	0.6641	0.276	3212.	-0.56
CADMIUM	0.8354	0.2602	1.532	8763.	-0.46
INDIUM	0.8876	0.5602	-0.021	951.	-0.70
TIN+2	0.8689	0.6990	-0.178	26.	-0.53
TIN+4	0.8418	0.6990	0.031	1550.	-0.71
ANTIMONY	0.8370	0.6078	0.026	1644.	-0.86
TELLURIUM	0.8748	0.4524	0.492	8504.	-0.80

TABLE-III-100

SOLVENT-LANTHANUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.4550	0.1829	48.106	119811.	0.33
BARIUM	1.1913	0.4126	42.495	35460.	0.19
CERIUM+3	0.9835	1.0835	-888.009	455.	-0.01
CERIUM+4	0.8908	1.0835	1.681	4991.	-0.31
PRASEODYMIUM	0.9739	0.8650	-279.394	103.	-0.01
NEODYMIUM	0.9707	0.7505	-48.119	872.	-0.02
PROMETHIUM	0.9638	0.6214	136.774	2719.	-0.02
SAMARIUM	0.9600	0.4786	310.625	6808.	-0.03
EUROPIUM+2	1.0874	0.4126	48.232	22068.	0.14
EUROPIUM+3	0.9579	0.4126	297.218	9588.	-0.03
GADOLINIUM	0.9595	0.9296	-26.465	64.	-0.04
TERBIUM	0.9499	0.9122	-18.251	98.	-0.05
DYSPROSIUM	0.9457	0.6913	-4.093	864.	-0.06
HOLMIUM	0.9414	0.6961	-4.746	701.	-0.07
ERBIUM	0.9366	0.7233	-6.483	351.	-0.08
THULIUM	0.9307	0.5660	7.768	2426.	-0.08
YTTERBIUM+2	1.0330	0.3709	82.409	19073.	0.10
YTTERBIUM+3	0.9275	0.3709	42.883	9381.	-0.09
LUTETIUM	0.9243	0.9918	0.672	1344.	-0.10
HAFNIUM	0.8418	1.4126	16.624	23829.	-0.24
TANTALUM	0.7816	1.8136	15.464	68049.	-0.43
TUNGSTEN	0.7501	1.9534	4.546	96409.	-0.95
RHENIUM	0.7326	1.8078	4.336	93913.	-0.96
OSMIUM	0.7208	1.8272	4.586	103374.	-0.98
IRIDIUM	0.7230	1.5447	2.956	73936.	-1.03
PLATINUM	0.7389	1.3107	1.739	46494.	-1.06
GOLD	0.7682	0.8505	0.638	10208.	-0.78
MERCURY	0.8492	0.1423	2.141	22891.	-0.66
THALLIUM	0.9142	0.4198	0.385	6090.	-0.74
LEAD	0.9323	0.4544	0.309	5897.	-0.81
BISMUTH	0.8998	0.4850	0.543	8103.	-0.74
POLONIUM	0.9451	0.3350	1.849	18278.	-0.63
FRANCIUM	1.4917	0.1757	58.577	128501.	0.31
RADIUM	1.2222	0.4078	54.267	40397.	0.18
ACTINIUM	1.0005	1.0097	-37.708	2.	0.04
THORIUM	0.9579	1.3262	3.091	5062.	-0.23
PROTACTINIUM	0.8663	1.2816	1.839	12794.	-0.52
URANIUM	0.8221	1.2136	1.040	15896.	-0.78
NEPTUNIUM	0.8141	1.0971	0.756	11340.	-0.76
PLUTONIUM+4.76	0.8737	0.8913	0.173	2086.	-0.47
PLUTONIUM+5	0.8482	0.8913	0.557	6666.	-0.65
AMERICIUM	0.9217	0.6408	-0.194	835.	-0.28

TABLE-III-101

SOLVENT-CERIUM+3

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.123	1.8460	21.430	111600.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4220	0.4668	4.947	133511.	-1.08
LITHIUM	0.8462	0.3457	6.891	5414.	0.16
BERYLLIUM	0.6111	0.6980	9.749	38431.	-0.41
BORON	0.4984	1.1873	7.118	133269.	-0.90
CARBON	0.4745	1.5314	6.093	287303.	-1.43
NITROGEN	0.4469	1.0116	4.045	340371.	-1.91
OXYGEN	0.4859	0.5335	0.651	83163.	-2.34
SODIUM	1.0352	0.2323	48.501	34665.	0.17
MAGNESIUM	0.8678	0.3190	27.189	8371.	-0.11
ALUMINUM	0.7757	0.6944	0.761	3958.	-0.40
SILICON	0.7161	0.9713	0.639	8558.	-0.71
PHOSPHOROUS	0.6723	0.6747	0.740	17484.	-0.98
SULFUR	0.6771	0.5950	0.217	107798.	-1.39
POTASSIUM	1.2871	0.1925	45.573	85358.	0.28
CALCIUM	1.0693	0.3781	94.931	24417.	0.10
SCANDIUM	0.8889	0.8154	-1.084	576.	-0.16
TITANIUM	0.7920	1.0099	2.902	102206.	-0.37
VANADIUM	0.7291	1.1004	5.609	35766.	-0.52
CHROMIUM	0.6945	0.8513	1.013	25832.	-1.03
MANGANESE+5	0.7080	0.6022	0.457	7887.	-0.80
MANGANESE+7	0.6793	0.6022	0.338	10917.	-1.12
IRON	0.6901	0.8961	2.311	30923.	-0.75
COBALT	0.6782	0.9149	2.453	37120.	-0.80
NICKEL	0.6750	0.9211	2.512	38921.	-0.81
COPPER	0.6923	0.7267	1.419	17093.	-0.70
ZINC	0.7551	0.2787	0.266	2961.	-0.54
GALLIUM	0.7329	0.5842	-0.106	76.	-0.68
GERMANIUM	0.7465	0.8020	0.013	1370.	-0.78
ARSENIC	0.7400	0.2599	0.447	106627.	-0.96
SELENIUM	0.7649	0.4427	0.109	5686.	-1.34
RUBIDIUM	1.3792	0.1783	59.017	110187.	0.28
STRONTIUM	1.1652	0.3235	89.270	43288.	0.14
YTTRIUM	0.9605	0.8925	-17.710	1.	-0.05
ZIRCONIUM	0.8678	1.3082	13.479	15829.	-0.22
NIOBIUM	0.7952	1.5681	14.498	48710.	-0.38
MOLYBDENUM	0.7584	1.4113	2.250	50710.	-0.98
TECHNETIUM	0.7394	1.4167	2.615	59944.	-0.99
RUTHENIUM	0.7254	1.3871	2.712	63354.	-1.00
RHODIUM	0.7286	1.1935	1.610	44268.	-1.08
PALLADIUM	0.7454	0.8100	0.416	12516.	-1.09
SILVER	0.7828	0.6129	0.031	1414.	-0.56
CADMIUM	0.8494	0.2401	2.312	12328.	-0.46
INDIUM	0.9025	0.5170	0.117	2500.	-0.70
TIN+2	0.8835	0.6452	-0.090	613.	-0.53
TIN+4	0.8559	0.6452	0.206	3567.	-0.71
ANTIMONY	0.8510	0.5609	0.144	3630.	-0.86
TELLURIUM	0.8895	0.4176	0.773	12510.	-0.80

TABLE-III-102

SOLVENT-CERIUM+3

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.4794	0.1688	54.434	140386.	0.33
BARIUM	1.2113	0.3808	50.644	44694.	0.19
LANTHANUM	1.0168	0.9229	-888.009	455.	0.01
PRASEODYMIUM	0.9902	0.7983	-207.553	958.	-0.01
NEODYMIUM	0.9870	0.6927	468.703	2500.	-0.01
PROMETHIUM	0.9800	0.5735	681.469	5215.	-0.02
SAMARIUM	0.9762	0.4418	827.747	10431.	-0.02
EUROPIUM+2	1.1056	0.3808	58.605	28827.	0.14
EUROPIUM+3	0.9740	0.3808	647.965	13758.	-0.03
GADOLINIUM	0.9756	0.8580	-32.572	164.	-0.04
TERBIUM	0.9659	0.8419	-23.039	116.	-0.05
DYSPROSIUM	0.9615	0.6380	19.361	2446.	-0.05
HOLMIUM	0.9572	0.6425	11.327	2164.	-0.06
ERBIUM	0.9523	0.6676	2.864	1507.	-0.07
THULIUM	0.9464	0.5224	25.925	4737.	-0.08
YTTERBIUM+2	1.0504	0.3423	97.647	25081.	0.10
YTTERBIUM+3	0.9431	0.3423	73.232	13393.	-0.09
LUTETIUM	0.9399	0.9154	-4.692	256.	-0.09
HAFNIUM	0.8559	1.3038	12.734	17686.	-0.24
TANTALUM	0.7947	1.6738	13.218	56766.	-0.43
TUNGSTEN	0.7627	1.8029	3.931	82496.	-0.95
RHENIUM	0.7449	1.6685	3.745	80275.	-0.96
OSMIUM	0.7329	1.6864	3.985	88908.	-0.98
IRIDIUM	0.7351	1.4256	2.509	62222.	-1.03
PLATINUM	0.7514	1.2097	1.416	37662.	-1.06
GOLD	0.7811	0.7849	0.388	6597.	-0.78
MERCURY	0.8635	0.1314	2.722	28285.	-0.66
THALLIUM	0.9296	0.3875	0.655	9399.	-0.74
LEAD	0.9480	0.4194	0.535	9220.	-0.81
BISMUTH	0.9150	0.4476	0.869	12082.	-0.74
POLONIUM	0.9610	0.3091	2.514	23983.	-0.63
FRANCIUM	1.5168	0.1622	65.994	150284.	0.31
RADIUM	1.2427	0.3763	63.826	50482.	0.18
ACTINIUM	1.0173	0.9319	-18.566	401.	0.04
THORIUM	0.9740	1.2240	1.064	2456.	-0.23
PROTACTINIUM	0.8808	1.1828	1.180	8467.	-0.52
URANIUM	0.8359	1.1201	0.709	11067.	-0.78
NEPTUNIUM	0.8277	1.0125	0.469	7383.	-0.76
PLUTONIUM+4.76	0.8884	0.8226	-0.107	654.	-0.47
PLUTONIUM+5	0.8624	0.8226	0.271	3809.	-0.65
AMERICIUM	0.9372	0.5914	0.661	2362.	-0.28

TABLE-III-103

SOLVENT-CERIUM+4

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.430	1.6720	15.920	111600.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4659	0.4668	5.832	80935.	-0.77
LITHIUM	0.9342	0.3457	2.203	12415.	0.47
BERYLLIUM	0.6746	0.6980	76.246	18775.	-0.10
BORON	0.5502	1.1873	10.108	82328.	-0.59
CARBON	0.5239	1.5314	6.557	190854.	-1.12
NITROGEN	0.4934	1.0116	3.808	226010.	-1.60
OXYGEN	0.5365	0.5335	0.487	47479.	-2.03
SODIUM	1.1429	0.2323	9.388	51073.	0.48
MAGNESIUM	0.9581	0.3190	16.691	16588.	0.20
ALUMINUM	0.8565	0.6944	-5.095	241.	-0.09
SILICON	0.7907	0.9713	0.139	1706.	-0.40
PHOSPHOROUS	0.7422	0.6747	0.499	6361.	-0.67
SULFUR	0.7476	0.5950	0.065	2951.	-1.08
POTASSIUM	1.4211	0.1925	14.596	118355.	0.59
CALCIUM	1.1806	0.3781	10.011	39997.	0.41
SCANDIUM	0.9815	0.8154	-1.245	546.	0.15
TITANIUM	0.8744	1.0099	14.702	2413.	-0.06
VANADIUM	0.8050	1.1004	15.561	17017.	-0.21
CHROMIUM	0.7667	0.8513	0.824	11048.	-0.72
MANGANESE+5	0.7817	0.6022	0.080	1633.	-0.49
MANGANESE+7	0.7500	0.6022	0.120	3003.	-0.81
IRON	0.7620	0.8961	2.891	14098.	-0.44
COBALT	0.7488	0.9149	3.022	17926.	-0.49
NICKEL	0.7452	0.9211	3.098	19054.	-0.50
COPPER	0.7644	0.7267	1.404	6116.	-0.39
ZINC	0.8337	0.2787	5.695	8139.	-0.23
GALLIUM	0.8092	0.5842	0.012	1231.	-0.37
GERMANIUM	0.8242	0.8020	-0.213	110.	-0.47
ARSENIC	0.8170	0.2599	1.844	19156.	-0.65
SELENIUM	0.8445	0.4427	0.503	13503.	-1.03
RUBIDIUM	1.5227	0.1783	18.731	151550.	0.59
STRONTIUM	1.2865	0.3235	13.687	65104.	0.45
YTTRIUM	1.0604	0.8925	0.704	2231.	0.25
ZIRCONIUM	0.9581	1.3082	20.520	5025.	0.09
NIOBIUM	0.8780	1.5681	212.315	25183.	-0.07
MOLYBDENUM	0.8373	1.4113	2.450	26549.	-0.67
TECHNETIUM	0.8164	1.4167	2.952	32671.	-0.68
RUTHENIUM	0.8008	1.3871	3.075	34948.	-0.69
RHODIUM	0.8044	1.1935	1.551	22401.	-0.77
PALLADIUM	0.8230	0.8100	0.176	3658.	-0.78
SILVER	0.8642	0.6129	-0.787	59.	-0.25
CADMIUM	0.9378	0.2401	38.630	21235.	-0.15
INDIUM	0.9964	0.5170	2.080	8489.	-0.39
TIN+2	0.9755	0.6452	3.234	4802.	-0.22
TIN+4	0.9450	0.6452	2.669	11040.	-0.40
ANTIMONY	0.9396	0.5609	1.370	10746.	-0.55
TELLURIUM	0.9821	0.4176	4.043	23576.	-0.49

TABLE-III-104

SOLVENT-CERIUM+4

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MUTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.6334	0.1688	20.234	192313.	0.64
BARIUM	1.3373	0.3808	11.651	68362.	0.50
LANTHANUM	1.1226	0.9229	1.681	4991.	0.31
PRASEODYMIUM	1.0933	0.7983	2.388	6147.	0.30
NEODYMIUM	1.0897	0.6927	3.973	9219.	0.30
PROMETHIUM	1.0819	0.5735	6.325	13544.	0.29
SAMARIUM	1.0778	0.4418	10.442	20751.	0.29
EUROPIUM+2	1.2207	0.3808	9.642	46217.	0.45
EUROPIUM+3	1.0754	0.3808	13.346	24977.	0.28
GADOLINIUM	1.0772	0.8580	1.494	3704.	0.27
TERBIUM	1.0664	0.8419	1.412	3428.	0.26
DYSPROSIUM	1.0616	0.6380	5.176	8893.	0.25
HOLMIUM	1.0568	0.6425	5.129	8349.	0.25
ERBIUM	1.0514	0.6676	4.489	7055.	0.24
THULIUM	1.0449	0.5224	9.226	12447.	0.23
YTTERBIUM+2	1.1597	0.3423	10.096	40328.	0.41
YTTERBIUM+3	1.0413	0.3423	20.073	24005.	0.22
LUTETIUM	1.0377	0.9154	-0.121	1064.	0.21
HAFNIUM	0.9450	1.3038	42.915	6041.	0.07
TANTALUM	0.8774	1.6738	88.295	30512.	-0.12
TUNGSTEN	0.8421	1.8029	4.959	48035.	-0.64
RHENIUM	0.8224	1.6685	4.647	46470.	-0.65
OSMIUM	0.8092	1.6864	4.947	52405.	-0.67
IRIDIUM	0.8116	1.4256	2.761	34194.	-0.72
PLATINUM	0.8295	1.2097	1.309	18168.	-0.75
GOLD	0.8624	0.7849	-0.033	1025.	-0.47
MERCURY	0.9533	0.1314	13.650	39751.	-0.35
THALLIUM	1.0263	0.3875	4.112	18724.	-0.43
LEAD	1.0467	0.4194	3.045	18745.	-0.50
BISMUTH	1.0102	0.4476	5.174	23253.	-0.43
POLONIUM	1.0610	0.3091	15.686	38232.	-0.32
FRANCIUM	1.6746	0.1622	23.044	205461.	0.62
RADIUM	1.3720	0.3763	13.571	76328.	0.49
ACTINIUM	1.1232	0.9319	1.285	4821.	0.35
THORIUM	1.0754	1.2240	-8.028	7.	0.08
PROTACTINIUM	0.9725	1.1828	0.346	1544.	-0.21
URANIUM	0.9228	1.1201	0.304	2743.	-0.47
NEPTUNIUM	0.9139	1.0125	0.003	1206.	-0.45
PLUTONIUM-D	0.9809	0.8226	-1.205	481.	-0.16
PLUTONIUM-A	0.9522	0.8226	-0.382	173.	-0.34
AMERICIUM	1.0347	0.5914	352.991	8530.	0.03

TABLE-III-105

SOLVENT-PRASEODYMIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.130	1.8280	20.810	89090.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4261	0.5847	5.511	146680.	-1.07
LITHIUM	0.8545	0.4330	1.280	2045.	0.17
BERYLLIUM	0.6171	0.8744	12.540	47461.	-0.40
BORON	0.5033	1.4873	8.031	147881.	-0.89
CARBON	0.4792	1.9183	6.544	305476.	-1.42
NITROGEN	0.4513	1.2673	4.286	357976.	-1.90
OXYGEN	0.4907	0.6683	0.746	94607.	-2.33
SODIUM	1.0454	0.2909	29.779	23442.	0.18
MAGNESIUM	0.8764	0.3996	11.820	3918.	-0.10
ALUMINUM	0.7834	0.8699	1.904	7871.	-0.39
SILICON	0.7232	1.2167	1.147	14150.	-0.70
PHOSPHOROUS	0.6789	0.8452	1.062	24224.	-0.97
SULFUR	0.6838	0.7453	0.344	16311.	-1.38
POTASSIUM	1.2998	0.2411	32.131	63505.	0.29
CALCIUM	1.0799	0.4737	49.591	15029.	0.11
SCANDIUM	0.8977	1.0214	2.976	2736.	-0.15
TITANIUM	0.7998	1.2650	5.029	16221.	-0.36
VANADIUM	0.7363	1.3784	7.355	45309.	-0.51
CHROMIUM	0.7013	1.0663	1.364	33925.	-1.02
MANGANESE+5	0.7150	0.7543	0.806	12796.	-0.79
MANGANESE+7	0.6860	0.7543	0.537	16463.	-1.11
IRON	0.6969	1.1225	3.044	39633.	-0.74
COBALT	0.6849	1.1460	3.144	46440.	-0.79
NICKEL	0.6816	1.1539	3.199	48407.	-0.80
COPPER	0.6991	0.9103	2.065	23862.	-0.69
ZINC	0.7626	0.3491	-0.065	772.	-0.53
GALLIUM	0.7402	0.7318	0.009	1284.	-0.67
GERMANIUM	0.7538	1.0046	0.218	4178.	-0.77
ARSENIC	0.7473	0.3255	0.209	5548.	-0.95
SELENIUM	0.7724	0.5545	0.022	2091.	-1.33
RUBIDIUM	1.3928	0.2234	42.412	83443.	0.29
STRONTIUM	1.1767	0.4052	54.495	29467.	0.15
YTTRIUM	0.9699	1.1180	-4.310	973.	-0.05
ZIRCONIUM	0.8764	1.6388	21.789	23350.	-0.21
NIOBIUM	0.8031	1.9643	18.692	60200.	-0.37
MOLYBDENUM	0.7659	1.7679	2.804	62040.	-0.97
TECHNETIUM	0.7467	1.7746	3.192	71896.	-0.98
RUTHENIUM	0.7325	1.7376	3.286	75454.	-0.99
RHODIUM	0.7358	1.4951	2.027	54700.	-1.07
PALLADIUM	0.7527	1.0147	0.650	18679.	-1.08
SILVER	0.7905	0.7678	0.412	4068.	-0.55
CADMIUM	0.8578	0.3008	1.197	6780.	-0.45
INDIUM	0.9114	0.6477	-0.069	432.	-0.69
TIN+2	0.8922	0.8082	-0.188	20.	-0.52
TIN+4	0.8643	0.8082	-0.033	821.	-0.70
ANTIMONY	0.8594	0.7027	-0.017	902.	-0.85
TELLURIUM	0.8982	0.5231	0.367	6469.	-0.79

TABLE-III-106

SOLVENT-PRASEODYMIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.4940	0.2115	39.966	107732.	0.34
BARIUM	1.2232	0.4770	31.442	30194.	0.20
LANTHANUM	1.0268	1.1561	-279.394	103.	0.01
CERIUM+3	1.0098	1.2527	-207.553	958.	0.01
CERIUM+4	0.9147	1.2527	2.388	6147.	-0.30
NEODYMIUM	0.9967	0.8677	-2253.935	361.	-0.00
PROMETHIUM	0.9896	0.7184	270.252	1697.	-0.01
SAMARIUM	0.9858	0.5534	740.795	5036.	-0.02
EUROPIUM+2	1.1165	0.4770	32.909	18267.	0.15
EUROPIUM+3	0.9836	0.4770	556.891	7408.	-0.02
GADOLINIUM	0.9852	1.0748	-42.387	312.	-0.03
TERBIUM	0.9754	1.0547	-24.440	378.	-0.04
DYSPROSIUM	0.9710	0.7992	-17.015	362.	-0.05
HOLMIUM	0.9666	0.8048	-13.827	262.	-0.05
ERBIUM	0.9617	0.8362	-12.603	75.	-0.06
THULIUM	0.9557	0.6544	2.612	1487.	-0.07
YTTERBIUM+2	1.0607	0.4288	51.851	15660.	0.11
YTTERBIUM+3	0.9524	0.4288	43.194	7252.	-0.08
LUTETIUM	0.9491	1.1467	5.131	2067.	-0.09
HAFNIUM	0.8643	1.6332	19.922	25495.	-0.23
TANTALUM	0.8025	2.0968	16.675	69024.	-0.42
TUNGSTEN	0.7702	2.2584	4.675	96454.	-0.94
RHENIUM	0.7522	2.0900	4.452	93851.	-0.95
OSMIUM	0.7402	2.1125	4.689	102923.	-0.97
IRIDIUM	0.7423	1.7858	3.049	74332.	-1.02
PLATINUM	0.7588	1.5153	1.825	47578.	-1.05
GOLD	0.7888	0.9833	0.749	11438.	-0.77
MERCURY	0.8720	0.1646	1.849	19204.	-0.65
THALLIUM	0.9387	0.4854	0.266	4463.	-0.73
LEAD	0.9573	0.5253	0.210	4291.	-0.80
BISMUTH	0.9240	0.5607	0.401	6117.	-0.73
POLONIUM	0.9705	0.3872	1.556	14987.	-0.62
FRANCIUM	1.5317	0.2032	48.529	115785.	0.32
RADIUM	1.2549	0.4714	40.174	34635.	0.19
ACTINIUM	1.0274	1.1674	-18.392	132.	0.05
THORIUM	0.9836	1.5333	4.598	6325.	-0.22
PROTACTINIUM	0.8895	1.4816	2.191	14336.	-0.51
URANIUM	0.8441	1.4031	1.187	17425.	-0.77
NEPTUNIUM	0.8359	1.2684	0.890	12743.	-0.75
PLUTONIUM+4.76	0.8972	1.0304	0.350	2900.	-0.46
PLUTONIUM+5	0.8709	1.0304	0.702	7822.	-0.64
AMERICIUM	0.9464	0.7408	-0.501	349.	-0.27

TABLE-III-107

SOLVENT-NEODYMIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.134	1.8220	20.600	77300.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4276	0.6739	5.912	156103.	-1.07
LITHIUM	0.8573	0.4991	-0.587	782.	0.17
BERYLLIUM	0.6191	1.0078	14.537	53760.	-0.40
BORON	0.5049	1.7141	8.671	158163.	-0.89
CARBON	0.4808	2.2109	6.872	318944.	-1.42
NITROGEN	0.4528	1.4605	4.468	371540.	-1.90
OXYGEN	0.4923	0.7702	0.813	102631.	-2.33
SODIUM	1.0488	0.3353	21.159	17712.	0.18
MAGNESIUM	0.8793	0.4605	3.938	2029.	-0.10
ALUMINUM	0.7859	1.0026	2.846	10970.	-0.39
SILICON	0.7256	1.4023	1.535	18344.	-0.70
PHOSPHOROUS	0.6811	0.9741	1.294	29039.	-0.97
SULFUR	0.6861	0.8590	0.439	20343.	-1.38
POTASSIUM	1.3041	0.2779	25.389	51798.	0.29
CALCIUM	1.0834	0.5459	30.830	10432.	0.11
SCANDIUM	0.9007	1.1772	7.478	4868.	-0.15
TITANIUM	0.8024	1.4580	6.668	20680.	-0.36
VANADIUM	0.7387	1.5886	8.601	51972.	-0.51
CHROMIUM	0.7036	1.2290	1.615	35627.	-1.02
MANGANESE+5	0.7173	0.8693	1.072	16461.	-0.79
MANGANESE+7	0.6883	0.8693	0.685	20518.	-1.11
IRON	0.6992	1.2937	3.566	45736.	-0.74
COBALT	0.6872	1.3208	3.632	52941.	-0.79
NICKEL	0.6839	1.3299	3.684	55018.	-0.80
COPPER	0.7014	1.0492	2.535	28705.	-0.69
ZINC	0.7651	0.4023	-0.166	134.	-0.53
GALLIUM	0.7426	0.8435	0.153	2757.	-0.67
GERMANIUM	0.7563	1.1578	0.405	6676.	-0.77
ARSENIC	0.7497	0.3752	0.101	3267.	-0.95
SELENIUM	0.7750	0.6391	-0.011	764.	-1.33
RUBIDIUM	1.3974	0.2574	34.007	68975.	0.29
STRONTIUM	1.1806	0.4670	38.710	22362.	0.15
YTTRIUM	0.9731	1.2885	29.906	2467.	-0.04
ZIRCONIUM	0.8793	1.8887	28.214	28801.	-0.21
NIOBIUM	0.8057	2.2639	21.681	68165.	-0.37
MOLYBDENUM	0.7684	2.0375	3.193	69892.	-0.97
TECHNETIUM	0.7492	2.0453	3.595	80163.	-0.98
RUTHENIUM	0.7349	2.0026	3.686	83823.	-0.99
RHODIUM	0.7382	1.7232	2.319	61950.	-1.07
PALLADIUM	0.7552	1.1695	0.823	23167.	-1.08
SILVER	0.7931	0.8849	0.757	6394.	-0.55
CADMIUM	0.8606	0.3467	0.661	4222.	-0.45
INDIUM	0.9144	0.7464	-0.109	9.	-0.69
TIN+2	0.8952	0.9314	-0.113	500.	-0.52
TIN+4	0.8672	0.9314	-0.098	93.	-0.70
ANTIMONY	0.8622	0.8098	-0.064	134.	-0.85
TELLURIUM	0.9012	0.6028	0.180	3760.	-0.79

TABLE-III-108

SOLVENT-NEODYMIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.4989	0.2437	32.518	89928.	0.34
BARIUM	1.2272	0.5498	22.470	22756.	0.20
LANTHANUM	1.0302	1.3325	-48.119	872.	0.02
CERIUM+3	1.0132	1.4437	468.703	2500.	0.01
CERIUM+4	0.9177	1.4437	3.973	9219.	-0.30
PRASEODYMIUM	1.0033	1.1525	-2253.935	361.	0.00
PROMETHIUM	0.9929	0.8279	-1209.482	495.	-0.00
SAMARIUM	0.9890	0.6378	541.426	2703.	-0.01
EUROPIUM+2	1.1202	0.5498	21.627	13020.	0.15
EUROPIUM+3	0.9868	0.5498	442.851	4501.	-0.02
GADOLINIUM	0.9885	1.2387	8.580	1326.	-0.03
TERBIUM	0.9786	1.2155	9.562	1447.	-0.03
DYSPROSIUM	0.9742	0.9211	-29.304	0.	-0.04
HOLMIUM	0.9698	0.9276	-20.583	6.	-0.05
ERBIUM	0.9649	0.9638	-14.128	96.	-0.06
THULIUM	0.9588	0.7542	-7.849	404.	-0.07
YTTERBIUM+2	1.0642	0.4942	32.785	11018.	0.11
YTTERBIUM+3	0.9555	0.4942	25.685	4436.	-0.07
LUTETIUM	0.9523	1.3216	18.420	4048.	-0.08
HAFNIUM	0.8672	1.8823	25.407	31117.	-0.23
TANTALUM	0.8052	2.4166	19.121	77499.	-0.42
TUNGSTEN	0.7728	2.6028	5.192	106079.	-0.94
RHENIUM	0.7547	2.4088	4.944	103221.	-0.95
OSMIUM	0.7426	2.4347	5.177	112603.	-0.97
IRIDIUM	0.7448	2.0582	3.424	82705.	-1.02
PLATINUM	0.7613	1.7464	2.113	54493.	-1.05
GOLD	0.7914	1.1332	1.029	15121.	-0.77
MERCURY	0.8749	0.1897	1.392	14588.	-0.65
THALLIUM	0.9418	0.5594	0.095	2350.	-0.73
LEAD	0.9605	0.6054	0.069	2202.	-0.80
BISMUTH	0.9270	0.6462	0.187	3470.	-0.73
POLONIUM	0.9737	0.4463	1.070	10557.	-0.62
FRANCIUM	1.5368	0.2342	39.550	96934.	0.32
RADIUM	1.2591	0.5433	29.095	26444.	0.19
ACTINIUM	1.0307	1.3454	-3.583	951.	0.05
THORIUM	0.9868	1.7671	7.832	9619.	-0.22
PROTACTINIUM	0.8924	1.7076	2.977	18768.	-0.51
URANIUM	0.8469	1.6171	1.547	22124.	-0.77
NEPTUNIUM	0.8386	1.4618	1.217	16813.	-0.75
PLUTONIUM+4.76	0.9001	1.1876	0.812	5085.	-0.46
PLUTONIUM+5	0.8738	1.1876	1.055	11030.	-0.64
AMERICIUM	0.9495	0.8538	-0.731	0.	-0.27

TABLE-III-109

SOLVENT-PROMETHIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.139	1.8090	20.170	64000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4306	0.8139	6.351	166069.	-1.06
LITHIUM	0.8635	0.6028	-1.533	60.	0.18
BERYLLIUM	0.6235	1.2172	17.015	61178.	-0.39
BORON	0.5086	2.0703	9.395	169355.	-0.88
CARBON	0.4842	2.6703	7.215	332448.	-1.41
NITROGEN	0.4561	1.7641	4.648	384481.	-1.89
OXYGEN	0.4959	0.9303	0.888	111512.	-2.32
SODIUM	1.0564	0.4050	13.066	11955.	0.19
MAGNESIUM	0.8856	0.5562	-3.126	595.	-0.09
ALUMINUM	0.7916	1.2109	4.174	15163.	-0.38
SILICON	0.7308	1.6937	2.055	23817.	-0.69
PHOSPHOROUS	0.6860	1.1766	1.587	34987.	-0.96
SULFUR	0.6910	1.0375	0.560	25455.	-1.37
POTASSIUM	1.3134	0.3356	18.552	39439.	0.30
CALCIUM	1.0912	0.6594	14.952	6075.	0.12
SCANDIUM	0.9071	1.4219	15.077	8104.	-0.14
TITANIUM	0.8082	1.7609	8.889	26445.	-0.35
VANADIUM	0.7441	1.9187	10.155	59970.	-0.50
CHROMIUM	0.7087	1.4844	1.924	46552.	-1.01
MANGANESE+5	0.7225	1.0500	1.422	21196.	-0.78
MANGANESE+7	0.6932	1.0500	0.875	25657.	-1.10
IRON	0.7043	1.5625	4.211	53078.	-0.73
COBALT	0.6921	1.5953	4.229	60677.	-0.78
NICKEL	0.6888	1.6062	4.274	62862.	-0.79
COPPER	0.7065	1.2672	3.134	34710.	-0.68
ZINC	0.7706	0.4859	-0.182	54.	-0.52
GALLIUM	0.7479	1.0187	0.394	5165.	-0.66
GERMANIUM	0.7617	1.3984	0.681	10292.	-0.76
ARSENIC	0.7551	0.4531	0.008	1349.	-0.94
SELENIUM	0.7805	0.7719	-0.029	41.	-1.32
RUBIDIUM	1.4074	0.3109	25.411	53579.	0.30
STRONTIUM	1.1891	0.5641	24.042	15208.	0.16
YTTRIUM	0.9801	1.5562	116.460	5070.	-0.04
ZIRCONIUM	0.8856	2.2813	37.072	35731.	-0.20
NIOBIUM	0.8115	2.7344	25.448	77669.	-0.36
MOLYBDENUM	0.7739	2.4609	3.663	79192.	-0.96
TECHNETIUM	0.7546	2.4703	4.077	89845.	-0.97
RUTHENIUM	0.7402	2.4187	4.163	93576.	-0.98
RHODIUM	0.7435	2.0812	2.672	70557.	-1.06
PALLADIUM	0.7606	1.4125	1.046	28856.	-1.07
SILVER	0.7988	1.0687	1.265	9727.	-0.54
CADMIUM	0.8668	0.4187	0.176	1980.	-0.44
INDIUM	0.9210	0.9016	-0.081	322.	-0.68
TIN+2	0.9016	1.1250	0.113	1872.	-0.51
TIN+4	0.8734	1.1250	-0.094	160.	-0.69
ANTIMONY	0.8684	0.9781	-0.067	102.	-0.84
TELLURIUM	0.9077	0.7281	0.022	1504.	-0.78

TABLE-III-110

SOLVENT-PROMETHIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5097	0.2944	24.810	70876.	0.35
BARIUM	1.2360	0.6641	14.009	15303.	0.21
LANTHANUM	1.0376	1.6094	136.774	2719.	0.02
CERIUM+3	1.0205	1.7437	681.469	5215.	0.02
CERIUM+4	0.9243	1.7437	6.325	13544.	-0.29
PRASEODYMIUM	1.0105	1.3920	270.252	1697.	0.01
NEODYMIUM	1.0072	1.2078	-1209.482	495.	0.00
SAMARIUM	0.9961	0.7703	-377.550	879.	-0.01
EUROPIUM+2	1.1282	0.6641	11.601	7955.	0.16
EUROPIUM+3	0.9939	0.6641	206.864	1998.	-0.01
GADOLINIUM	0.9956	1.4961	216.739	3396.	-0.02
TERBIUM	0.9856	1.4681	122.456	3567.	-0.03
DYSPROSIUM	0.9812	1.1125	-23.234	459.	-0.04
HOLMIUM	0.9768	1.1203	-13.100	580.	-0.05
ERBIUM	0.9718	1.1641	-3.165	987.	-0.05
THULIUM	0.9657	0.9109	-13.865	3.	-0.06
YTTERBIUM+2	1.0719	0.5969	16.489	6577.	0.12
YTTERBIUM+3	0.9624	0.5969	7.347	1999.	-0.07
LUTETIUM	0.9591	1.5962	43.796	7180.	-0.08
HAFNIUM	0.8734	2.2734	32.871	38214.	-0.22
TANTALUM	0.8109	2.9187	22.166	87535.	-0.41
TUNGSTEN	0.7783	3.1437	5.805	117211.	-0.93
RHENIUM	0.7601	2.9094	5.527	114042.	-0.94
OSMIUM	0.7479	2.9406	5.752	123698.	-0.96
IRIDIUM	0.7501	2.4859	3.873	92488.	-1.01
PLATINUM	0.7667	2.1094	2.465	62795.	-1.04
GOLD	0.7971	1.3687	1.406	19970.	-0.76
MERCURY	0.8811	0.2291	0.922	9927.	-0.64
THALLIUM	0.9486	0.6756	-0.039	723.	-0.72
LEAD	0.9674	0.7312	-0.039	628.	-0.79
BISMUTH	0.9337	0.7805	0.010	1307.	-0.72
POLONIUM	0.9807	0.5391	0.595	6315.	-0.61
FRANCIUM	1.5478	0.2828	30.261	76726.	0.33
RADIUM	1.2681	0.6563	18.586	18165.	0.20
ACTINIUM	1.0381	1.6250	20.758	2858.	0.06
THORIUM	0.9939	2.1344	12.766	14299.	-0.21
PROTACTINIUM	0.8988	2.0625	4.044	24598.	-0.50
URANIUM	0.8530	1.9531	2.022	28192.	-0.76
NEPTUNIUM	0.8447	1.7656	1.658	22182.	-0.74
PLUTONIUM+4.76	0.9066	1.4344	1.533	8382.	-0.45
PLUTONIUM+5	0.8800	1.4344	1.548	15403.	-0.63
AMERICIUM	0.9563	1.0313	-0.477	443.	-0.26

TABLE-III-111

SOLVENT-SAMARIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.145	1.8020	19.950	49300.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4323	1.0566	7.063	182486.	-1.05
LITHIUM	0.8668	0.7826	-1.045	368.	0.18
BERYLLIUM	0.6260	1.5801	20.913	72673.	-0.39
BORON	0.5105	2.6876	10.541	187289.	-0.88
CARBON	0.4861	3.4665	7.790	355811.	-1.41
NITROGEN	0.4578	2.2901	4.966	408132.	-1.89
OXYGEN	0.4978	1.2077	1.007	125644.	-2.31
SODIUM	1.0605	0.5258	5.599	6161.	0.19
MAGNESIUM	0.8890	0.7221	-7.103	9.	-0.09
ALUMINUM	0.7947	1.5720	6.415	21993.	-0.38
SILICON	0.7336	2.1988	2.894	32502.	-0.69
PHOSPHOROUS	0.6887	1.5274	2.047	44247.	-0.95
SULFUR	0.6937	1.3469	0.752	33500.	-1.36
POTASSIUM	1.3185	0.4357	11.433	25717.	0.30
CALCIUM	1.0954	0.8560	2.555	2113.	0.13
SCANDIUM	0.9107	1.8458	29.973	13789.	-0.14
TITANIUM	0.8113	2.2860	12.514	35540.	-0.34
VANADIUM	0.7469	2.4909	12.581	72277.	-0.50
CHROMIUM	0.7114	1.9270	2.407	57260.	-1.01
MANGANESE+5	0.7253	1.3631	1.987	28718.	-0.78
MANGANESE+7	0.6959	1.3631	1.177	33742.	-1.10
IRON	0.7070	2.0284	5.216	64411.	-0.73
COBALT	0.6948	2.0710	5.157	72615.	-0.78
NICKEL	0.6915	2.0852	5.192	74967.	-0.79
COPPER	0.7092	1.6450	4.080	44058.	-0.67
ZINC	0.7736	0.6308	-0.021	1062.	-0.52
GALLIUM	0.7508	1.3225	0.850	9603.	-0.66
GERMANIUM	0.7647	1.8154	1.160	16446.	-0.76
ARSENIC	0.7580	0.5882	-0.054	95.	-0.94
SELENIUM	0.7836	1.0020	-0.018	477.	-1.32
RUBIDIUM	1.4129	0.4037	16.332	36226.	0.30
STRONTIUM	1.1937	0.7323	10.638	7871.	0.16
YTTRIUM	0.9839	2.0203	374.777	10042.	-0.03
ZIRCONIUM	0.8890	2.9615	51.698	46524.	-0.20
NIOBIUM	0.8147	3.5497	31.320	92213.	-0.36
MOLYBDENUM	0.7769	3.1947	4.387	93459.	-0.95
TECHNETIUM	0.7575	3.2069	4.821	104728.	-0.97
RUTHENIUM	0.7431	3.1400	4.899	108593.	-0.98
RHODIUM	0.7464	2.7018	3.218	83792.	-1.05
PALLADIUM	0.7636	1.8337	1.399	37774.	-1.07
SILVER	0.8019	1.3874	2.149	15375.	-0.54
CADMIUM	0.8701	0.5436	-0.203	306.	-0.44
INDIUM	0.9245	1.1704	0.087	2102.	-0.67
TIN+2	0.9051	1.4604	0.662	5086.	-0.51
TIN+4	0.8768	1.4604	0.056	1800.	-0.69
ANTIMONY	0.8718	1.2698	0.020	1518.	-0.84
TELLURIUM	0.9112	0.9452	-0.080	80.	-0.78

TABLE-III-112

SOLVENT-SAMARIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5155	0.3822	16.504	49155.	0.35
BARIUM	1.2408	0.8621	6.117	7712.	0.21
LANTHANUM	1.0416	2.0892	310.625	6808.	0.03
CERIUM+3	1.0244	2.2637	827.747	10431.	0.02
CERIUM+4	0.9279	2.2637	10.442	20751.	-0.29
PRASEODYMIUM	1.0144	1.8071	740.795	5036.	0.02
NEODYMIUM	1.0111	1.5680	541.426	2703.	0.01
PROMETHIUM	1.0039	1.2982	-377.550	879.	0.01
EUROPIUM+2	1.1326	0.8621	3.145	3167.	0.16
EUROPIUM+3	0.9978	0.8621	-854.034	227.	-0.01
GADOLINIUM	0.9994	1.9422	1251.434	7685.	-0.02
TERBIUM	0.9895	1.9059	549.834	7899.	-0.02
DYSPROSIUM	0.9850	1.4442	61.637	2558.	-0.03
HOLMIUM	0.9806	1.4544	46.553	2825.	-0.04
ERBIUM	0.9756	1.5112	48.087	3642.	-0.05
THULIUM	0.9695	1.1826	-3.788	928.	-0.06
YTTERBIUM+2	1.0760	0.7748	3.514	2458.	0.13
YTTERBIUM+3	0.9661	0.7748	-10.314	248.	-0.06
LUTETIUM	0.9628	2.0722	100.059	12824.	-0.07
HAFNIUM	0.8768	2.9513	45.071	49236.	-0.22
TANTALUM	0.8141	3.7890	26.887	102889.	-0.41
TUNGSTEN	0.7814	4.0811	6.748	134331.	-0.92
RHENIUM	0.7630	3.7769	6.425	130710.	-0.94
OSMIUM	0.7508	3.8174	6.640	140842.	-0.95
IRIDIUM	0.7531	3.2272	4.566	107534.	-1.01
PLATINUM	0.7697	2.7383	3.010	75552.	-1.04
GOLD	0.8002	1.7769	2.019	27725.	-0.76
MERCURY	0.8846	0.2974	0.429	5186.	-0.64
THALLIUM	0.9523	0.8771	-0.101	3.	-0.72
LEAD	0.9711	0.9493	-0.083	16.	-0.79
BISMUTH	0.9373	1.0132	-0.098	36.	-0.72
POLONIUM	0.9845	0.6998	0.140	2377.	-0.61
FRANCIUM	1.5538	0.3671	20.256	53613.	0.33
RADIUM	1.2730	0.8519	8.675	9599.	0.20
ACTINIUM	1.0422	2.1095	59.912	7029.	0.06
THORIUM	0.9978	2.7708	21.602	22127.	-0.20
PROTACTINIUM	0.9023	2.6775	5.783	33866.	-0.50
URANIUM	0.8563	2.5355	2.781	37745.	-0.76
NEPTUNIUM	0.8479	2.2921	2.373	30749.	-0.73
PLUTONIUM+4.76	0.9101	1.8621	2.837	14148.	-0.45
PLUTONIUM+5	0.8835	1.8621	2.371	22550.	-0.63
AMERICIUM	0.9600	1.3387	0.850	2467.	-0.26

TABLE-III-113

SOLVENT-EUROPIUM+2

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
0.980	2.0410	28.930	42500.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.3817	1.2256	8.872	305698.	-1.22
LITHIUM	0.7653	0.9078	460.646	5441.	0.02
BERYLLIUM	0.5527	1.8329	18.549	130582.	-0.55
BORON	0.4508	3.1176	12.205	305600.	-1.04
CARBON	0.4292	4.0212	9.814	559003.	-1.57
NITROGEN	0.4042	2.6565	6.650	645602.	-2.05
OXYGEN	0.4395	1.4009	1.514	215861.	-2.48
SODIUM	0.9363	0.6099	-21.493	746.	0.03
MAGNESIUM	0.7849	0.8376	1.353	3142.	-0.25
ALUMINUM	0.7016	1.8235	6.975	48091.	-0.54
SILICON	0.6477	2.5506	3.848	65301.	-0.85
PHOSPHOROUS	0.6080	1.7718	2.893	84888.	-1.12
SULFUR	0.6124	1.5624	1.227	67439.	-1.53
POTASSIUM	1.1641	0.5054	20.159	10304.	0.14
CALCIUM	0.9672	0.9929	-29.858	91.	-0.04
SCANDIUM	0.8040	2.1412	15.917	34227.	-0.30
TITANIUM	0.7163	2.6518	11.498	70154.	-0.51
VANADIUM	0.6595	2.8894	12.619	127948.	-0.66
CHROMIUM	0.6281	2.2353	3.296	105238.	-1.17
MANGANESE+5	0.6404	1.5812	2.859	59455.	-0.94
MANGANESE+7	0.6144	1.5812	1.820	67824.	-1.26
IRON	0.6242	2.3529	6.309	116432.	-0.89
COBALT	0.6134	2.4024	6.289	129336.	-0.94
NICKEL	0.6105	2.4188	6.334	133021.	-0.95
COPPER	0.6262	1.9082	5.115	84422.	-0.84
ZINC	0.6830	0.7318	0.597	7561.	-0.68
GALLIUM	0.6629	1.5341	1.623	26360.	-0.82
GERMANIUM	0.6752	2.1059	1.925	38764.	-0.92
ARSENIC	0.6693	0.6824	0.018	1687.	-1.10
SELENIUM	0.6918	1.1624	0.099	6178.	-1.48
RUBIDIUM	1.2474	0.4682	33.078	16143.	0.14
STRONTIUM	1.0539	0.8494	+∞	1025.	0.
YTTRIUM	0.8687	2.3435	29.787	27850.	-0.20
ZIRCONIUM	0.7849	3.4353	28.776	87191.	-0.36
NIOBIUM	0.7193	4.1176	24.943	156724.	-0.52
MOLYBDENUM	0.6859	3.7059	5.468	159362.	-1.12
TECHNETIUM	0.6688	3.7200	5.959	176663.	-1.13
RUTHENIUM	0.6561	3.6424	6.059	182781.	-1.14
RHODIUM	0.6590	3.1341	4.204	145483.	-1.22
PALLADIUM	0.6742	2.1271	2.088	74021.	-1.23
SILVER	0.7080	1.6094	3.144	36717.	-0.70
CADMIUM	0.7683	0.6306	-0.017	1050.	-0.60
INDIUM	0.8163	1.3576	0.605	11042.	-0.84
TIN+2	0.7991	1.6941	1.614	17900.	-0.67
TIN+4	0.7741	1.6941	0.572	10718.	-0.85
ANTIMONY	0.7697	1.4729	0.370	5716.	-1.00
TELLURIUM	0.8045	1.0965	0.048	2180.	-0.94

TABLE-III-114

SOLVENT-EUROPIUM+2

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.3381	0.4433	26.645	23373.	0.19
BARIUM	1.0955	1.0000	-6.608	811.	0.05
LANTHANUM	0.9196	2.4235	48.232	22068.	-0.14
CERIUM+3	0.9045	2.6259	58.605	28827.	-0.14
CERIUM+4	0.8192	2.6259	9.642	46217.	-0.45
PRASEODYMIUM	0.8956	2.0962	32.909	18267.	-0.15
NEODYMIUM	0.8927	1.8188	21.627	13020.	-0.15
PROMETHIUM	0.8863	1.5059	11.601	7955.	-0.16
SAMARIUM	0.8829	1.1600	3.145	3167.	-0.16
GADOLINIUM	0.8824	2.2529	29.854	23497.	-0.18
TERBIUM	0.8736	2.2108	27.794	23845.	-0.19
DYSPROSIUM	0.8697	1.6753	12.774	12509.	-0.20
HOLMIUM	0.8658	1.6871	12.439	13130.	-0.20
ERBIUM	0.8613	1.7529	13.317	14994.	-0.21
THULIUM	0.8560	1.3718	6.042	7936.	-0.22
YTTERBIUM+2	0.9500	0.8988	-31.719	22.	-0.04
YTTERBIUM+3	0.8530	0.8988	0.185	1414.	-0.23
LUTETIUM	0.8501	2.4038	24.582	32765.	-0.24
HAFNIUM	0.7741	3.4235	27.094	91412.	-0.38
TANTALUM	0.7188	4.3953	22.865	172504.	-0.57
TUNGSTEN	0.6899	4.7341	7.969	219513.	-1.09
RHENIUM	0.6737	4.3812	7.658	214875.	-1.10
OSMIUM	0.6629	4.4282	7.916	230182.	-1.12
IRIDIUM	0.6649	3.7435	5.694	180925.	-1.17
PLATINUM	0.6796	3.1765	3.957	132593.	-1.20
GOLD	0.7065	2.0612	2.891	57618.	-0.92
MERCURY	0.7810	0.3449	-0.027	793.	-0.80
THALLIUM	0.8408	1.0174	0.113	3203.	-0.88
LEAD	0.8574	1.1012	0.114	3561.	-0.95
BISMUTH	0.8275	1.1753	0.076	2545.	-0.88
POLONIUM	0.8692	0.8118	-0.086	17.	-0.77
FRANCIUM	1.3719	0.4259	37.209	25990.	0.17
RADIUM	1.1240	0.9882	5.985	1413.	0.04
ACTINIUM	0.9201	2.4471	92.437	22508.	-0.10
THORIUM	0.8809	3.2141	15.077	48788.	-0.37
PROTACTINIUM	0.7967	3.1059	6.594	67427.	-0.66
URANIUM	0.7560	2.9412	3.709	73585.	-0.92
NEPTUNIUM	0.7487	2.6588	3.280	62463.	-0.90
PLUTONIUM+4.76	0.8035	2.1600	3.924	34859.	-0.61
PLUTONIUM+5	0.7800	2.1600	3.325	49044.	-0.79
AMERICIUM	0.8476	1.5529	2.693	12146.	-0.42

TABLE-III-115

SOLVENT-EUROPIUM+3

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.152	1.7980	19.800	42500.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4333	1.2256	7.485	190757.	-1.05
LITHIUM	0.8687	0.9078	-0.134	1078.	0.19
BERYLLIUM	0.6274	1.8329	23.542	78761.	-0.38
BORON	0.5117	3.1176	11.237	196418.	-0.87
CARBON	0.4872	4.0212	8.124	367350.	-1.40
NITROGEN	0.4588	2.6565	5.145	419641.	-1.88
OXYGEN	0.4989	1.4009	1.072	132899.	-2.31
SODIUM	1.0628	0.6099	2.844	3868.	0.20
MAGNESIUM	0.8910	0.8376	-6.476	284.	-0.08
ALUMINUM	0.7964	1.8235	7.917	25915.	-0.37
SILICON	0.7353	2.5506	3.415	37387.	-0.68
PHOSPHOROUS	0.6902	1.7718	2.321	49291.	-0.95
SULFUR	0.6952	1.5624	0.864	37951.	-1.36
POTASSIUM	1.3215	0.5054	8.306	19838.	0.31
CALCIUM	1.0979	0.9929	-0.775	881.	0.13
SCANDIUM	0.9127	2.1412	42.464	17236.	-0.13
TITANIUM	0.8131	2.6518	14.969	40626.	-0.34
VANADIUM	0.7486	2.8894	14.143	78860.	-0.49
CHROMIUM	0.7130	2.2353	2.692	63031.	-1.00
MANGANESE+5	0.7269	1.5812	2.333	32926.	-0.77
MANGANESE+7	0.6974	1.5812	1.356	38213.	-1.09
IRON	0.7086	2.3529	5.829	70483.	-0.72
COBALT	0.6963	2.4024	5.718	78970.	-0.77
NICKEL	0.6930	2.4188	5.747	81401.	-0.78
COPPER	0.7108	1.9082	4.662	49160.	-0.67
ZINC	0.7753	0.7318	0.146	2059.	-0.51
GALLIUM	0.7525	1.5341	1.154	12366.	-0.65
GERMANIUM	0.7664	2.1059	1.466	20102.	-0.75
ARSENIC	0.7597	0.6824	-0.059	16.	-0.93
SELENIUM	0.7853	1.1624	0.003	1310.	-1.31
RUBIDIUM	1.4160	0.4682	12.241	28669.	0.31
STRONTIUM	1.1963	0.8494	5.656	5051.	0.17
YTTRIUM	0.9861	2.3435	833.391	13203.	-0.03
ZIRCONIUM	0.8910	3.4353	62.947	52496.	-0.19
NIOBIUM	0.8165	4.1176	35.365	99955.	-0.35
MOLYBDENUM	0.7786	3.7059	4.817	101025.	-0.95
TECHNETIUM	0.7592	3.7200	5.263	112570.	-0.96
RUTHENIUM	0.7447	3.6424	5.336	116486.	-0.97
RHODIUM	0.7481	3.1341	3.539	90824.	-1.05
PALLADIUM	0.7653	2.1271	1.608	42705.	-1.06
SILVER	0.8037	1.6094	2.725	18714.	-0.53
CADMIUM	0.8721	0.6306	-0.279	14.	-0.43
INDIUM	0.9266	1.3576	0.236	3600.	-0.67
TIN+2	0.9071	1.6941	1.071	7316.	-0.50
TIN+4	0.8788	1.6941	0.200	3311.	-0.68
ANTIMONY	0.8737	1.4729	0.107	2876.	-0.83
TELLURIUM	0.9132	1.0965	-0.085	39.	-0.77

TABLE-III-116

SOLVENT-EUROPIUM+3

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5189	0.4433	12.706	39589.	0.36
BARIUM	1.2436	1.0000	3.203	4833.	0.22
LANTHANUM	1.0439	2.4235	297.218	9588.	0.03
CERIUM+3	1.0267	2.6259	647.965	13758.	0.03
CERIUM+4	0.9299	2.6259	13.346	24977.	-0.28
PRASEODYMIUM	1.0167	2.0962	556.891	7408.	0.02
NEODYMIUM	1.0133	1.8188	442.851	4501.	0.02
PROMETHIUM	1.0061	1.5059	206.864	1998.	0.01
SAMARIUM	1.0022	1.1600	-854.034	227.	0.01
GADOLINIUM	1.0017	2.2529	6320.166	10520.	-0.01
TERBIUM	0.9917	2.2108	1618.200	10745.	-0.02
DYSPROSIUM	0.9872	1.6753	232.038	4274.	-0.02
HOLMIUM	0.9828	1.6871	144.740	4610.	-0.03
ERBIUM	0.9778	1.7529	120.235	5628.	-0.04
THULIUM	0.9716	1.3718	15.892	2037.	-0.05
YTTERBIUM+2	1.0784	0.8988	-0.169	1124.	0.13
YTTERBIUM+3	0.9683	0.8988	-16.471	1.	-0.06
LUTETIUM	0.9650	2.4038	159.955	16301.	-0.06
HAFNIUM	0.8788	3.4235	54.243	55309.	-0.21
TANTALUM	0.8159	4.3953	30.068	111025.	-0.40
TUNGSTEN	0.7831	4.7341	7.312	143286.	-0.92
RHENIUM	0.7647	4.3812	6.961	139424.	-0.93
OSMIUM	0.7525	4.4282	7.169	149770.	-0.95
IRIDIUM	0.7547	3.7435	4.975	115452.	-1.00
PLATINUM	0.7714	3.1765	3.331	82373.	-1.03
GOLD	0.8020	2.0612	2.396	32110.	-0.75
MERCURY	0.8865	0.3449	0.238	3356.	-0.63
THALLIUM	0.9544	1.0174	-0.080	265.	-0.71
LEAD	0.9733	1.1012	-0.060	349.	-0.78
BISMUTH	0.9394	1.1753	-0.096	87.	-0.71
POLONIUM	0.9867	0.8118	-0.012	1097.	-0.60
FRANCIUM	1.5573	0.4259	15.649	43401.	0.34
RADIUM	1.2759	0.9882	4.902	6273.	0.21
ACTINIUM	1.0445	2.4471	72.433	9851.	0.07
THORIUM	1.0000	3.2141	28.255	26736.	-0.20
PROTACTINIUM	0.9043	3.1059	6.903	39102.	-0.49
URANIUM	0.8582	2.9412	3.247	43084.	-0.75
NEPTUNIUM	0.8498	2.6588	2.815	35596.	-0.73
PLUTONIUM+4.76	0.9121	2.1600	3.717	17636.	-0.44
PLUTONIUM+5	0.8854	2.1600	2.893	26669.	-0.62
AMERICIUM	0.9622	1.5529	2.065	4121.	-0.25

TABLE-III-117

SOLVENT-GADOLINIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.160	1.8010	19.910	95750.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4325	0.5440	5.217	131313.	-1.04
LITHIUM	0.8673	0.4029	2.677	3662.	0.20
BERYLLIUM	0.6263	0.8136	12.320	40085.	-0.37
BORON	0.5108	1.3838	7.697	132472.	-0.86
CARBON	0.4864	1.7849	6.253	279791.	-1.39
NITROGEN	0.4581	1.1791	4.063	328789.	-1.87
OXYGEN	0.4981	0.6218	0.672	83217.	-2.30
SODIUM	1.0611	0.2707	27.202	28855.	0.21
MAGNESIUM	0.8895	0.3718	43.170	6070.	-0.07
ALUMINUM	0.7951	0.8094	1.348	5222.	-0.36
SILICON	0.7340	1.1321	0.883	10332.	-0.67
PHOSPHOROUS	0.6891	0.7864	0.887	19270.	-0.94
SULFUR	0.6941	0.6935	0.267	12394.	-1.35
POTASSIUM	1.3193	0.2243	30.991	74372.	0.32
CALCIUM	1.0961	0.4407	40.866	19663.	0.14
SCANDIUM	0.9112	0.9504	0.156	1244.	-0.12
TITANIUM	0.8118	1.1770	4.339	12089.	-0.33
VANADIUM	0.7474	1.2825	6.919	37955.	-0.48
CHROMIUM	0.7118	0.9922	1.178	27814.	-0.99
MANGANESE+5	0.7257	0.7018	0.614	9376.	-0.76
MANGANESE+7	0.6963	0.7018	0.421	12521.	-1.08
IRON	0.7074	1.0444	2.730	32924.	-0.71
COBALT	0.6952	1.0663	2.844	39068.	-0.76
NICKEL	0.6918	1.0736	2.901	40849.	-0.77
COPPER	0.7096	0.8470	1.765	18923.	-0.66
ZINC	0.7740	0.3248	0.104	1790.	-0.50
GALLIUM	0.7512	0.6809	-0.085	389.	-0.64
GERMANIUM	0.7651	0.9347	0.086	2279.	-0.74
ARSENIC	0.7585	0.3029	0.348	7986.	-0.92
SELENIUM	0.7840	0.5159	0.068	3828.	-1.30
RUBIDIUM	1.4137	0.2078	40.539	96918.	0.32
STRONTIUM	1.1943	0.3770	47.012	36317.	0.18
YTTRIUM	0.9845	1.0402	-151.323	184.	-0.02
ZIRCONIUM	0.8895	1.5248	22.683	18140.	-0.18
NIOBIUM	0.8151	1.8277	18.795	51294.	-0.34
MOLYBDENUM	0.7773	1.6449	2.545	53058.	-0.94
TECHNETIUM	0.7579	1.6512	2.927	62102.	-0.95
RUTHENIUM	0.7435	1.6167	3.021	65387.	-0.96
RHODIUM	0.7468	1.3911	1.815	46451.	-1.04
PALLADIUM	0.7640	0.9441	0.517	14332.	-1.05
SILVER	0.8023	0.7144	0.173	2269.	-0.52
CADMIUM	0.8706	0.2799	2.026	9434.	-0.42
INDIUM	0.9250	0.6026	0.018	1375.	-0.66
TIN+2	0.9056	0.7520	-0.188	151.	-0.49
TIN+4	0.8773	0.7520	0.089	2113.	-0.67
ANTIMONY	0.8723	0.6538	0.064	2189.	-0.82
TELLURIUM	0.9117	0.4867	0.619	9438.	-0.76

TABLE-III-118

SOLVENT-GADOLINIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5164	0.1968	39.034	124418.	0.37
BARIUM	1.2415	0.4439	29.725	37453.	0.23
LANTHANUM	1.0422	1.0757	-26.465	64.	0.04
CERIUM+3	1.0250	1.1655	-32.572	164.	0.04
CERIUM+4	0.9284	1.1655	1.494	3704.	-0.27
PRASEODYMIUM	1.0150	0.9304	-42.387	312.	0.03
NEODYMIUM	1.0117	0.8073	8.580	1326.	0.03
PROMETHIUM	1.0044	0.6684	216.739	3396.	0.02
SAMARIUM	1.0006	0.5149	1251.434	7685.	0.02
EUROPIUM+2	1.1333	0.4439	29.854	23497.	0.18
EUROPIUM+3	0.9983	0.4439	6320.166	10520.	0.01
TERBIUM	0.9900	0.9813	-805.401	4.	-0.01
DYSPROSIUM	0.9856	0.7436	18.759	1303.	-0.02
HOLMIUM	0.9811	0.7488	-6.542	1105.	-0.02
ERBIUM	0.9761	0.7781	-22.453	662.	-0.03
THULIUM	0.9700	0.6089	50.290	3048.	-0.04
YTTERBIUM+2	1.0766	0.3990	42.244	20286.	0.14
YTTERBIUM+3	0.9667	0.3990	170.392	10245.	-0.05
LUTETIUM	0.9634	1.0669	-5.703	780.	-0.06
HAFNIUM	0.8773	1.5196	20.432	20039.	-0.20
TANTALUM	0.8145	1.9509	16.580	59344.	-0.39
TUNGSTEN	0.7818	2.1013	4.369	84620.	-0.91
RHENIUM	0.7635	1.9446	4.153	82260.	-0.92
OSMIUM	0.7512	1.9655	4.391	90656.	-0.94
IRIDIUM	0.7535	1.6616	2.794	64339.	-0.99
PLATINUM	0.7701	1.4099	1.616	39959.	-1.02
GOLD	0.8007	0.9149	0.550	8132.	-0.74
MERCURY	0.8851	0.1531	2.504	23389.	-0.62
THALLIUM	0.9528	0.4516	0.503	6871.	-0.70
LEAD	0.9717	0.4888	0.403	6701.	-0.77
BISMUTH	0.9378	0.5217	0.696	9055.	-0.70
POLONIUM	0.9850	0.3603	2.265	19374.	-0.59
FRANCIUM	1.5547	0.1890	46.827	133472.	0.35
RADIUM	1.2737	0.4386	37.095	42594.	0.22
ACTINIUM	1.0428	1.0862	-7.775	45.	0.08
THORIUM	0.9983	1.4266	3.065	3744.	-0.19
PROTACTINIUM	0.9028	1.3786	1.728	10373.	-0.48
URANIUM	0.8567	1.3055	0.940	13068.	-0.74
NEPTUNIUM	0.8484	1.1802	0.662	9112.	-0.72
PLUTONIUM+4.76	0.9106	0.9587	0.038	1354.	-0.43
PLUTONIUM+5	0.8840	0.9587	0.458	5121.	-0.61
AMERICIUM	0.9606	0.6893	0.048	1256.	-0.24

TABLE-III-119

SOLVENT-TERBIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.168	1.7830	19.300	93960.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4369	0.5544	5.107	126609.	-1.03
LITHIUM	0.8761	0.4106	2.616	3802.	0.21
BERYLLIUM	0.6326	0.8291	12.351	38515.	-0.36
BORON	0.5160	1.4102	7.581	128095.	-0.85
CARBON	0.4913	1.8189	6.125	270972.	-1.38
NITROGEN	0.4627	1.2016	3.963	318032.	-1.86
OXYGEN	0.5031	0.6337	0.652	80150.	-2.29
SODIUM	1.0718	0.2759	25.486	29123.	0.22
MAGNESIUM	0.8985	0.3789	56.858	6232.	-0.06
ALUMINUM	0.8031	0.8248	1.292	4885.	-0.35
SILICON	0.7414	1.1537	0.852	9798.	-0.66
PHOSPHOROUS	0.6960	0.8014	0.859	18408.	-0.93
SULFUR	0.7011	0.7067	0.255	11774.	-1.34
POTASSIUM	1.3326	0.2286	29.752	75002.	0.33
CALCIUM	1.1071	0.4491	37.181	19973.	0.15
SCANDIUM	0.9204	0.9685	-0.312	1102.	-0.11
TITANIUM	0.8200	1.1994	4.309	11494.	-0.32
VANADIUM	0.7549	1.3069	6.878	36528.	-0.47
CHROMIUM	0.7190	1.0111	1.146	26680.	-0.98
MANGANESE+5	0.7330	0.7152	0.589	8871.	-0.75
MANGANESE+7	0.7033	0.7152	0.404	11897.	-1.07
IRON	0.7145	1.0643	2.678	31627.	-0.70
COBALT	0.7022	1.0866	2.790	37574.	-0.75
NICKEL	0.6988	1.0941	2.846	39299.	-0.76
COPPER	0.7168	0.8631	1.722	18078.	-0.65
ZINC	0.7818	0.3310	0.125	1889.	-0.49
GALLIUM	0.7588	0.6939	-0.095	319.	-0.63
GERMANIUM	0.7729	0.9525	0.072	2077.	-0.73
ARSENIC	0.7661	0.3086	0.362	8144.	-0.91
SELENIUM	0.7919	0.5258	0.073	3988.	-1.29
RUBIDIUM	1.4279	0.2118	38.928	97768.	0.33
STRONTIUM	1.2064	0.3842	43.619	36743.	0.19
YTTRIUM	0.9944	1.0600	-566.424	134.	-0.01
ZIRCONIUM	0.8985	1.5539	23.689	17353.	-0.17
NIOBIUM	0.8233	1.8625	19.020	49538.	-0.33
MOLYBDENUM	0.7852	1.6762	2.498	51221.	-0.93
TECHNETIUM	0.7656	1.6826	2.874	59993.	-0.94
RUTHENIUM	0.7510	1.6475	2.966	63171.	-0.95
RHODIUM	0.7543	1.4176	1.775	44774.	-1.03
PALLADIUM	0.7717	0.9621	0.498	13653.	-1.04
SILVER	0.8104	0.7280	0.145	2071.	-0.51
CADMIUM	0.8794	0.2852	2.146	9591.	-0.41
INDIUM	0.9344	0.6141	0.030	1485.	-0.65
TIN+2	0.9148	0.7663	-0.186	195.	-0.48
TIN+4	0.8861	0.7663	0.105	2258.	-0.66
ANTIMONY	0.8811	0.6662	0.075	2328.	-0.81
TELLURIUM	0.9209	0.4960	0.650	9665.	-0.75

TABLE-III-120

SOLVENT-TERBIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5317	0.2005	37.747	125566.	0.38
BARIUM	1.2541	0.4523	28.135	37943.	0.24
LANTHANUM	1.0527	1.0962	-18.251	98.	0.05
CERIUM+3	1.0353	1.1877	-23.039	116.	0.05
CERIUM+4	0.9377	1.1877	1.412	3428.	-0.26
PRASEODYMIUM	1.0252	0.9482	-24.440	378.	0.04
NEODYMIUM	1.0219	0.8227	9.562	1447.	0.03
PROMETHIUM	1.0146	0.6811	122.456	3567.	0.03
SAMARIUM	1.0107	0.5247	549.834	7899.	0.02
EUROPIUM+2	1.1447	0.4523	27.794	23845.	0.19
EUROPIUM+3	1.0084	0.4523	1618.200	10745.	0.02
GADOLINIUM	1.0101	1.0191	-805.401	4.	0.01
DYSPROSIUM	0.9958	0.7578	154.049	1420.	-0.01
HOLMIUM	0.9910	0.7631	3.681	1214.	-0.02
ERBIUM	0.9860	0.7929	-33.335	749.	-0.02
THULIUM	0.9798	0.6205	85.199	3204.	-0.03
YTTERBIUM+2	1.0875	0.4066	38.381	20579.	0.15
YTTERBIUM+3	0.9764	0.4066	250.993	10453.	-0.04
LUTETIUM	0.9731	1.0873	-9.849	669.	-0.05
HAFNIUM	0.8861	1.5485	21.174	19192.	-0.19
TANTALUM	0.8228	1.9881	16.695	57371.	-0.38
TUNGSTEN	0.7897	2.1413	4.304	81939.	-0.90
RHENIUM	0.7712	1.9817	4.089	79611.	-0.91
OSMIUM	0.7588	2.0030	4.322	87763.	-0.93
IRIDIUM	0.7611	1.6933	2.742	62164.	-0.98
PLATINUM	0.7779	1.4368	1.579	38486.	-1.01
GOLD	0.8087	0.9323	0.525	7678.	-0.73
MERCURY	0.8940	0.1560	2.583	23500.	-0.61
THALLIUM	0.9624	0.4602	0.531	7060.	-0.69
LEAD	0.9815	0.4981	0.426	6897.	-0.76
BISMUTH	0.9473	0.5316	0.733	9288.	-0.69
POLONIUM	0.9950	0.3672	2.362	19638.	-0.58
FRANCIUM	1.5704	0.1926	45.177	134711.	0.36
RADIUM	1.2866	0.4470	34.988	43134.	0.23
ACTINIUM	1.0533	1.1069	-6.263	74.	0.09
THORIUM	1.0084	1.4538	2.970	3461.	-0.18
PROTACTINIUM	0.9119	1.4049	1.683	9838.	-0.47
URANIUM	0.8654	1.3304	0.910	12441.	-0.73
NEPTUNIUM	0.8570	1.2026	0.636	8622.	-0.71
PLUTONIUM+4.76	0.9198	0.9770	0.003	1205.	-0.42
PLUTONIUM+5	0.8929	0.9770	0.430	4787.	-0.60
AMERICIUM	0.9703	0.7024	0.142	1368.	-0.23

TABLE-III-121

SOLVENT-DYSPROSIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.176	1.7750	19.030	71200.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4389	0.7316	5.959	145288.	-1.02
LITHIUM	0.8800	0.5419	-0.433	726.	0.22
BERYLLIUM	0.6355	1.0941	17.093	50588.	-0.35
BORON	0.5183	1.8610	8.965	148462.	-0.84
CARBON	0.4935	2.4003	6.827	298405.	-1.37
NITROGEN	0.4648	1.5857	4.350	345971.	-1.85
OXYGEN	0.5054	0.8362	0.787	95825.	-2.28
SODIUM	1.0766	0.3640	13.402	16977.	0.23
MAGNESIUM	0.9025	0.5000	10.604	1905.	-0.05
ALUMINUM	0.8068	1.0885	3.403	10477.	-0.34
SILICON	0.7448	1.5225	1.659	17556.	-0.65
PHOSPHOROUS	0.6992	1.0576	1.334	27463.	-0.92
SULFUR	0.7042	0.9326	0.440	19260.	-1.33
POTASSIUM	1.3386	0.3017	18.879	50341.	0.34
CALCIUM	1.1121	0.5927	15.688	9996.	0.16
SCANDIUM	0.9245	1.2781	14.081	4704.	-0.10
TITANIUM	0.8237	1.5829	8.177	19783.	-0.31
VANADIUM	0.7583	1.7247	9.690	49302.	-0.46
CHROMIUM	0.7223	1.3343	1.660	37517.	-0.97
MANGANESE+5	0.7363	0.9438	1.130	15617.	-0.74
MANGANESE+7	0.7065	0.9438	0.699	19428.	-1.06
IRON	0.7177	1.4045	3.789	43278.	-0.69
COBALT	0.7054	1.4340	3.827	50039.	-0.74
NICKEL	0.7020	1.4438	3.875	51988.	-0.75
COPPER	0.7200	1.1390	2.718	27186.	-0.64
ZINC	0.7854	0.4368	-0.199	120.	-0.48
GALLIUM	0.7623	0.9157	0.163	2660.	-0.62
GERMANIUM	0.7763	1.2570	0.433	6427.	-0.72
ARSENIC	0.7696	0.4073	0.100	3074.	-0.90
SELENIUM	0.7955	0.6938	-0.013	711.	-1.28
RUBIDIUM	1.4344	0.2795	25.385	67278.	0.34
STRONTIUM	1.2118	0.5070	23.017	21583.	0.20
YTTRIUM	0.9989	1.3989	52707.873	2408.	-0.00
ZIRCONIUM	0.9025	2.0506	42.604	27616.	-0.16
NIOBIUM	0.8270	2.4579	26.332	64936.	-0.32
MOLYBDENUM	0.7887	2.2121	3.312	66406.	-0.92
TECHNETIUM	0.7690	2.2205	3.721	76042.	-0.93
RUTHENIUM	0.7544	2.1742	3.808	79436.	-0.94
RHODIUM	0.7577	1.8708	2.380	58744.	-1.02
PALLADIUM	0.7752	1.2697	0.845	22032.	-1.03
SILVER	0.8141	0.9607	0.842	6122.	-0.50
CADMIUM	0.8834	0.3764	0.741	3979.	-0.40
INDIUM	0.9386	0.8104	-0.124	6.	-0.64
TIN+2	0.9189	1.0112	-0.135	495.	-0.47
TIN+4	0.8901	1.0112	-0.113	82.	-0.65
ANTIMONY	0.8851	0.8792	-0.072	120.	-0.80
TELLURIUM	0.9251	0.6545	0.186	3568.	-0.74

TABLE-III-122

SOLVENT-DYSPROSIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5386	0.2646	25.266	88002.	0.39
BARIUM	1.2597	0.5969	14.914	22005.	0.25
LANTHANUM	1.0575	1.4466	-4.093	864.	0.06
CERIUM+3	1.0400	1.5674	19.361	2446.	0.05
CERIUM+4	0.9420	1.5674	5.176	8893.	-0.25
PRASEODYMIUM	1.0299	1.2513	-17.015	362.	0.05
NEODYMIUM	1.0265	1.0857	-29.304	0.	0.04
PROMETHIUM	1.0192	0.8989	-23.234	459.	0.04
SAMARIUM	1.0152	0.6924	61.637	2558.	0.03
EUROPIUM+2	1.1499	0.5969	12.774	12509.	0.20
EUROPIUM+3	1.0130	0.5969	232.038	4274.	0.02
GADOLINIUM	1.0146	1.3448	18.759	1303.	0.02
TERBIUM	1.0045	1.3197	154.049	1420.	0.01
HOLMIUM	0.9955	1.0070	-802.861	7.	-0.01
ERBIUM	0.9904	1.0463	-185.017	100.	-0.02
THULIUM	0.9842	0.8188	-61.721	372.	-0.02
YTTERBIUM+2	1.0924	0.5365	16.676	10550.	0.16
YTTERBIUM+3	0.9808	0.5365	127.587	4205.	-0.03
LUTETIUM	0.9775	1.4348	74.225	3931.	-0.04
HAFNIUM	0.8901	2.0435	36.651	29807.	-0.18
TANTALUM	0.8265	2.6236	22.514	73812.	-0.37
TUNGSTEN	0.7932	2.8258	5.403	100770.	-0.89
RHENIUM	0.7746	2.6152	5.133	97930.	-0.90
OSMIUM	0.7623	2.6433	5.361	106732.	-0.92
IRIDIUM	0.7645	2.2346	3.531	78433.	-0.97
PLATINUM	0.7814	1.8961	2.176	51764.	-1.00
GOLD	0.8124	1.2303	1.095	14433.	-0.72
MERCURY	0.8980	0.2059	1.504	13842.	-0.60
THALLIUM	0.9668	0.6073	0.095	2216.	-0.68
LEAD	0.9859	0.6573	0.068	2078.	-0.75
BISMUTH	0.9515	0.7015	0.195	3294.	-0.68
POLONIUM	0.9994	0.4846	1.171	10090.	-0.57
FRANCIUM	1.5775	0.2542	30.346	94933.	0.37
RADIUM	1.2924	0.5899	19.014	25613.	0.24
ACTINIUM	1.0580	1.4607	-1.179	942.	0.10
THORIUM	1.0130	1.9185	11.643	9321.	-0.17
PROTACTINIUM	0.9161	1.8539	3.394	18040.	-0.46
URANIUM	0.8693	1.7556	1.655	21200.	-0.72
NEPTUNIUM	0.8608	1.5871	1.306	16121.	-0.70
PLUTONIUM+4.76	0.9239	1.2893	0.941	4913.	-0.41
PLUTONIUM+5	0.8969	1.2893	1.153	10572.	-0.59
AMERICIUM	0.9746	0.9270	-1.030	0.	-0.22

TABLE-III-123

SOLVENT-HOLMIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.184	1.7670	18.780	71700.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4409	0.7265	5.917	142028.	-1.02
LITHIUM	0.8840	0.5381	-0.287	860.	0.22
BERYLLIUM	0.6384	1.0865	17.356	49107.	-0.35
BORON	0.5207	1.8480	8.939	145260.	-0.84
CARBON	0.4958	2.3835	6.778	292834.	-1.37
NITROGEN	0.4669	1.5746	4.305	339507.	-1.85
OXYGEN	0.5076	0.8304	0.772	93468.	-2.28
SODIUM	1.0815	0.3615	13.019	17631.	0.23
MAGNESIUM	0.9066	0.4965	18.932	2116.	-0.05
ALUMINUM	0.8104	1.0809	3.349	9912.	-0.34
SILICON	0.7482	1.5119	1.619	16776.	-0.65
PHOSPHOROUS	0.7023	1.0502	1.306	26470.	-0.92
SULFUR	0.7074	0.9261	0.426	18466.	-1.33
POTASSIUM	1.3447	0.2996	18.523	51738.	0.34
CALCIUM	1.1171	0.5886	15.067	10537.	0.16
SCANDIUM	0.9287	1.2692	14.750	4327.	-0.10
TITANIUM	0.8274	1.5718	8.222	18946.	-0.31
VANADIUM	0.7617	1.7127	9.729	47845.	-0.46
CHROMIUM	0.7255	1.3250	1.632	36301.	-0.97
MANGANESE+5	0.7397	0.9372	1.099	14916.	-0.74
MANGANESE+7	0.7097	0.9372	0.678	18629.	-1.06
IRON	0.7210	1.3947	3.755	41943.	-0.69
COBALT	0.7085	1.4240	3.793	48570.	-0.74
NICKEL	0.7051	1.4338	3.841	50481.	-0.75
COPPER	0.7233	1.1311	2.681	26197.	-0.64
ZINC	0.7889	0.4338	-0.195	175.	-0.48
GALLIUM	0.7657	0.9093	0.137	2395.	-0.62
GERMANIUM	0.7799	1.2483	0.405	8985.	-0.72
ARSENIC	0.7731	0.4045	0.115	3330.	-0.90
SELENIUM	0.7991	0.6890	-0.009	852.	-1.28
RUBIDIUM	1.4409	0.2775	24.863	69038.	0.34
STRONTIUM	1.2173	0.5035	22.127	22426.	0.20
YTTRIUM	1.0034	1.3891	834.286	2135.	0.01
ZIRCONIUM	0.9066	2.0363	45.240	26580.	-0.16
NIOBIUM	0.8308	2.4407	26.922	63184.	-0.32
MOLYBDENUM	0.7923	2.1967	3.279	64631.	-0.92
TECHNETIUM	0.7725	2.2050	3.687	74097.	-0.93
RUTHENIUM	0.7578	2.1590	3.774	77431.	-0.94
RHODIUM	0.7612	1.8577	2.349	57108.	-1.02
PALLADIUM	0.7787	1.2608	0.822	21157.	-1.03
SILVER	0.8178	0.9540	0.796	5706.	-0.50
CADMIUM	0.8874	0.3738	0.850	4266.	-0.40
INDIUM	0.9428	0.8047	-0.125	26.	-0.64
TIN+2	0.9230	1.0042	-0.162	383.	-0.47
TIN+4	0.8942	1.0042	-0.109	139.	-0.65
ANTIMONY	0.8891	0.8731	-0.069	184.	-0.80
TELLURIUM	0.9293	0.6499	0.215	3881.	-0.74

TABLE-III-124

SOLVENT-HOLMIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5456	0.2628	24.868	90212.	0.39
BARIUM	1.2654	0.5927	14.591	22901.	0.25
LANTHANUM	1.0623	1.4365	-4.746	701.	0.07
CERIUM+3	1.0447	1.5565	11.327	2164.	0.06
CERIUM+4	0.9462	1.5565	5.129	8349.	-0.25
PRASEODYMIUM	1.0345	1.2425	-13.827	262.	0.05
NEODYMIUM	1.0311	1.0781	-20.583	6.	0.05
PROMETHIUM	1.0238	0.8926	-13.100	580.	0.05
SAMARIUM	1.0198	0.6876	46.553	2825.	0.04
EUROPIUM+2	1.1551	0.5927	12.439	13130.	0.20
EUROPIUM+3	1.0175	0.5927	144.740	4610.	0.03
GADOLINIUM	1.0192	1.3354	-6.542	1105.	0.02
TERBIUM	1.0091	1.3105	3.681	1214.	0.02
DYSPROSIUM	1.0045	0.9930	-802.861	7.	0.01
ERBIUM	0.9949	1.0391	-771.879	53.	-0.01
THULIUM	0.9887	0.8131	-120.686	480.	-0.02
YTTERBIUM+2	1.0973	0.5328	15.964	11093.	0.16
YTTERBIUM+3	0.9853	0.5328	251.150	4528.	-0.02
LUTETIUM	0.9819	1.4248	101.079	3579.	-0.03
HAFNIUM	0.8942	2.0293	38.545	28725.	-0.18
TANTALUM	0.8302	2.6053	22.892	71905.	-0.37
TUNGSTEN	0.7968	2.8061	5.371	98415.	-0.89
RHENIUM	0.7782	2.5969	5.101	95618.	-0.90
OSMIUM	0.7657	2.6248	5.328	104275.	-0.92
IRIDIUM	0.7680	2.2190	3.497	76446.	-0.97
PLATINUM	0.7849	1.8828	2.145	50258.	-1.00
GOLD	0.8161	1.2218	1.062	13749.	-0.72
MERCURY	0.9021	0.2045	1.604	14335.	-0.60
THALLIUM	0.9711	0.6031	0.120	2455.	-0.68
LEAD	0.9904	0.6527	0.087	2314.	-0.75
BISMUTH	0.9559	0.6967	0.228	3600.	-0.68
POLONIUM	1.0040	0.4812	1.274	10603.	-0.57
FRANCIUM	1.5846	0.2524	29.791	97284.	0.37
RADIUM	1.2982	0.5858	18.510	26604.	0.24
ACTINIUM	1.0628	1.4505	-1.689	771.	0.10
THORIUM	1.0175	1.9052	11.883	8743.	-0.17
PROTACTINIUM	0.9202	1.8410	3.345	17230.	-0.46
URANIUM	0.8732	1.7434	1.618	20321.	-0.72
NEPTUNIUM	0.8647	1.5760	1.270	15374.	-0.70
PLUTONIUM+4.76	0.9281	1.2803	0.877	4526.	-0.41
PLUTONIUM+5	0.9010	1.2803	1.111	9993.	-0.59
AMERICIUM	0.9791	0.9205	-1.102	7.	-0.22

TABLE-III-125

SOLVENT-ERBIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.192	1.7580	18.490	7450C.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4431	0.6992	5.755	136034.	-1.01
LITHIUM	0.8885	0.5179	0.077	1288.	0.23
BERYLLIUM	0.6416	1.0456	17.008	45998.	-0.34
BORON	0.5233	1.7785	8.726	139153.	-0.83
CARBON	0.4983	2.2940	6.627	283036.	-1.36
NITROGEN	0.4693	1.5154	4.202	328543.	-1.84
OXYGEN	0.5102	0.7992	0.739	88906.	-2.27
SODIUM	1.0870	0.3479	13.648	19624.	0.24
MAGNESIUM	0.9113	0.4779	47.271	2766.	-0.04
ALUMINUM	0.8146	1.0403	2.982	8591.	-0.33
SILICON	0.7520	1.4550	1.467	14962.	-0.64
PHOSPHOROUS	0.7059	1.0107	1.214	24272.	-0.91
SULFUR	0.7110	0.8913	0.386	16675.	-1.32
POTASSIUM	1.3515	0.2883	19.158	55931.	0.35
CALCIUM	1.1229	0.5664	16.084	12165.	0.17
SCANDIUM	0.9334	1.2215	12.546	3433.	-0.09
TITANIUM	0.8316	1.5128	7.722	17006.	-0.30
VANADIUM	0.7656	1.6483	9.397	44682.	-0.45
CHROMIUM	0.7292	1.2752	1.533	33640.	-0.96
MANGANESE+5	0.7435	0.9020	0.992	13314.	-0.73
MANGANESE+7	0.7133	0.9020	0.617	16827.	-1.05
IRON	0.7247	1.3423	3.572	39052.	-0.68
COBALT	0.7122	1.3705	3.620	45430.	-0.73
NICKEL	0.7088	1.3799	3.669	47270.	-0.74
COPPER	0.7270	1.0886	2.508	23997.	-0.63
ZINC	0.7929	0.4174	-0.161	377.	-0.47
GALLIUM	0.7696	0.8752	0.068	1776.	-0.61
GERMANIUM	0.7838	1.2013	0.324	4935.	-0.71
ARSENIC	0.7770	0.3893	0.161	4113.	-0.89
SELENIUM	0.8032	0.6631	0.003	1304.	-1.27
RUBIDIUM	1.4482	0.2671	25.579	74279.	0.35
STRONTIUM	1.2235	0.4846	22.930	24957.	0.21
YTTRIUM	1.0085	1.3369	59.244	1500.	0.02
ZIRCONIUM	0.9113	1.9597	45.518	24184.	-0.15
NIOBIUM	0.8350	2.3490	26.598	59376.	-0.31
MOLYBDENUM	0.7964	2.1141	3.136	60819.	-0.91
TECHNETIUM	0.7765	2.1221	3.540	69987.	-0.92
RUTHENIUM	0.7617	2.0779	3.627	73226.	-0.93
RHODIUM	0.7651	1.7879	2.237	53600.	-1.01
PALLADIUM	0.7827	1.2134	0.752	19169.	-1.02
SILVER	0.8220	0.9181	0.644	4729.	-0.49
CADMIUM	0.8919	0.3597	1.138	5142.	-0.39
INDIUM	0.9477	0.7745	-0.115	145.	-0.63
TIN+2	0.9278	0.9664	-0.214	155.	-0.46
TIN+4	0.8987	0.9664	-0.088	368.	-0.64
ANTIMONY	0.8936	0.8403	-0.053	431.	-0.79
TELLURIUM	0.9340	0.6255	0.298	4832.	-0.73

TABLE-III-126

SOLVENT-ERBIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5535	0.2529	25.639	96738.	0.40
BARIUM	1.2719	0.5705	15.402	25573.	0.26
LANTHANUM	1.0677	1.3826	-6.483	351.	0.08
CERIUM+3	1.0501	1.4980	2.864	1507.	0.07
CERIUM+4	0.9511	1.4980	4.489	7055.	-0.24
PRASEODYMIUM	1.0398	1.1958	-12.603	75.	0.06
NEODYMIUM	1.0364	1.0376	-14.128	96.	0.06
PROMETHIUM	1.0290	0.8591	-3.165	987.	0.05
SAMARIUM	1.0250	0.6617	48.087	3642.	0.05
EUROPIUM+2	1.1610	0.5705	13.317	14994.	0.21
EUROPIUM+3	1.0228	0.5705	120.235	5628.	0.04
GADOLINIUM	1.0245	1.2852	-22.453	662.	0.03
TERBIUM	1.0142	1.2612	-33.335	749.	0.02
DYSPROSIUM	1.0097	0.9557	-185.017	100.	0.02
HOLMIUM	1.0051	0.9624	-771.879	53.	0.01
THULIUM	0.9937	0.7826	-236.537	843.	-0.01
YTTERBIUM+2	1.1030	0.5128	16.911	12729.	0.17
YTTERBIUM+3	0.9903	0.5128	731.402	5510.	-0.02
LUTETIUM	0.9869	1.3713	116.981	2746.	-0.02
HAFNIUM	0.8987	1.9530	38.481	26237.	-0.17
TANTALUM	0.8345	2.5074	22.536	67797.	-0.36
TUNGSTEN	0.8009	2.7007	5.193	93505.	-0.88
RHENIUM	0.7821	2.4993	4.929	90816.	-0.89
OSMIUM	0.7696	2.5262	5.156	99226.	-0.91
IRIDIUM	0.7719	2.1356	3.358	72262.	-0.96
PLATINUM	0.7890	1.8121	2.034	46980.	-0.99
GOLD	0.8203	1.1758	0.949	12161.	-0.71
MERCURY	0.9067	0.1968	1.842	15878.	-0.59
THALLIUM	0.9761	0.5804	0.194	3190.	-0.67
LEAD	0.9954	0.6282	0.147	3042.	-0.74
BISMUTH	0.9608	0.6705	0.324	4530.	-0.67
POLONIUM	1.0091	0.4631	1.527	12155.	-0.56
FRANCIUM	1.5927	0.2430	30.615	104213.	0.38
RADIUM	1.3049	0.5638	19.369	29556.	0.25
ACTINIUM	1.0683	1.3960	-2.735	401.	0.11
THORIUM	1.0228	1.8336	10.708	7357.	-0.16
PROTACTINIUM	0.9249	1.7718	3.054	15325.	-0.45
URANIUM	0.8777	1.6779	1.478	18277.	-0.71
NEPTUNIUM	0.8692	1.5168	1.139	13624.	-0.69
PLUTONIUM+4.76	0.9329	1.2322	0.662	3610.	-0.40
PLUTONIUM+5	0.9056	1.2322	0.966	8631.	-0.58
AMERICIUM	0.9841	0.8859	-1.099	96.	-0.21

TABLE-III-127

SOLVENT-THULIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.200	1.7470	18.140	58300.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4459	0.8935	6.441	149711.	-1.00
LITHIUM	0.8941	0.6617	-0.838	79.	0.24
BERYLLIUM	0.6457	1.3362	21.682	55642.	-0.33
BORON	0.5266	2.2727	9.881	154400.	-0.82
CARBON	0.5014	2.9314	7.170	302505.	-1.35
NITROGEN	0.4722	1.9365	4.488	347785.	-1.83
OXYGEN	0.5135	1.0213	0.845	100771.	-2.26
SODIUM	1.0939	0.4446	7.332	11759.	0.25
MAGNESIUM	0.9170	0.6106	-27.058	631.	-0.03
ALUMINUM	0.8197	1.3293	5.349	13822.	-0.32
SILICON	0.7567	1.8593	2.262	21900.	-0.63
PHOSPHOROUS	0.7104	1.2916	1.642	31870.	-0.90
SULFUR	0.7155	1.1389	0.555	23140.	-1.31
POTASSIUM	1.3600	0.3684	12.659	39024.	0.36
CALCIUM	1.1299	0.7238	6.530	6071.	0.18
SCANDIUM	0.9393	1.5609	41.940	7382.	-0.08
TITANIUM	0.8369	1.9331	11.934	24336.	-0.29
VANADIUM	0.7705	2.1063	12.071	55084.	-0.44
CHROMIUM	0.7338	1.6295	1.988	42570.	-0.95
MANGANESE+5	0.7481	1.1527	1.512	19273.	-0.72
MANGANESE+7	0.7178	1.1527	0.888	23329.	-1.04
IRON	0.7293	1.7153	4.576	48558.	-0.67
COBALT	0.7167	1.7513	4.542	55489.	-0.72
NICKEL	0.7132	1.7633	4.581	57482.	-0.73
COPPER	0.7315	1.3911	3.438	31668.	-0.62
ZINC	0.7979	0.5334	-0.238	33.	-0.46
GALLIUM	0.7745	1.1184	0.416	4644.	-0.60
GERMANIUM	0.7888	1.5352	0.726	9392.	-0.70
ARSENIC	0.7819	0.4974	0.010	1370.	-0.88
SELENIUM	0.8082	0.8473	-0.031	60.	-1.26
RUBIDIUM	1.4574	0.3413	17.390	53163.	0.36
STRONTIUM	1.2313	0.6192	12.450	15087.	0.22
YTTRIUM	1.0149	1.7084	278.843	4594.	0.02
ZIRCONIUM	0.9170	2.5043	70.551	33080.	-0.14
NIOBIUM	0.8403	3.0017	34.042	71843.	-0.30
MOLYBDENUM	0.8014	2.7015	3.846	73026.	-0.90
TECHNETIUM	0.7813	2.7118	4.271	82750.	-0.91
RUTHENIUM	0.7665	2.6552	4.350	86104.	-0.92
RHODIUM	0.7699	2.2847	2.761	64853.	-1.00
PALLADIUM	0.7876	1.5506	1.072	26406.	-1.01
SILVER	0.8271	1.1732	1.436	8820.	-0.48
CADMIUM	0.8975	0.4597	0.238	1984.	-0.38
INDIUM	0.9536	0.9897	-0.106	254.	-0.62
TIN+2	0.9336	1.2350	0.097	1644.	-0.45
TIN+4	0.9044	1.2350	-0.118	116.	-0.63
ANTIMONY	0.8993	1.0738	-0.080	68.	-0.78
TELLURIUM	0.9399	0.7993	0.030	1552.	-0.72

TABLE-III-128

SOLVENT-THULIUM

SOLUTE ELEMENT	RACIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5633	0.3232	17.887	70529.	0.41
BARIUM	1.2799	0.7290	8.356	15239.	0.27
LANTHANUM	1.0744	1.7667	7.768	2426.	0.08
CERIUM+3	1.0567	1.9142	25.925	4737.	0.08
CERIUM+4	0.9571	1.9142	9.226	12447.	-0.23
PRASEODYMIUM	1.0464	1.5281	2.612	1487.	0.07
NEODYMIUM	1.0429	1.3259	-7.849	404.	0.07
PROMETHIUM	1.0355	1.0978	-13.865	3.	0.06
SAMARIUM	1.0315	0.8456	-3.788	928.	0.06
EUROPIUM+2	1.1683	0.7290	6.042	7936.	0.22
EUROPIUM+3	1.0292	0.7290	15.892	2037.	0.05
GADOLINIUM	1.0309	1.6424	50.290	3048.	0.04
TERBIUM	1.0206	1.6117	85.199	3204.	0.03
DYSPROSIUM	1.0160	1.2213	-61.721	372.	0.02
HOLMIUM	1.0114	1.2298	-120.686	480.	0.02
ERBIUM	1.0063	1.2779	-236.537	843.	0.01
YTTERBIUM+2	1.1099	0.6552	7.169	6548.	0.18
YTTERBIUM+3	0.9966	0.6552	566.630	2028.	-0.01
LUTETIUM	0.9931	1.7523	906.886	6546.	-0.02
HAFNIUM	0.9044	2.4957	57.886	35364.	-0.16
TANTALUM	0.8397	3.2041	28.257	81013.	-0.35
TUNGSTEN	0.8060	3.4511	6.138	108318.	-0.87
RHENIUM	0.7871	3.1938	5.824	105203.	-0.88
OSMIUM	0.7745	3.2281	6.041	114029.	-0.90
IRIDIUM	0.7768	2.7290	4.035	85172.	-0.95
PLATINUM	0.7939	2.3156	2.556	57795.	-0.98
GOLD	0.8254	1.5026	1.511	18266.	-0.70
MERCURY	0.9124	0.2515	1.087	9622.	-0.58
THALLIUM	0.9823	0.7417	-0.042	766.	-0.66
LEAD	1.0017	0.8027	-0.042	673.	-0.73
BISMUTH	0.9668	0.8568	0.017	1359.	-0.66
POLONIUM	1.0155	0.5918	0.728	6270.	-0.55
FRANCIUM	1.6027	0.3105	21.442	76397.	0.39
RADIUM	1.3131	0.7204	10.839	18089.	0.26
ACTINIUM	1.0750	1.7839	4.104	2555.	0.12
THORIUM	1.0292	2.3431	23.158	13208.	-0.15
PROTACTINIUM	0.9307	2.2642	4.825	22734.	-0.44
URANIUM	0.8832	2.1441	2.197	26012.	-0.70
NEPTUNIUM	0.8746	1.9383	1.803	20418.	-0.68
PLUTONIUM+4.76	0.9388	1.5746	1.838	7639.	-0.39
PLUTONIUM+5	0.9113	1.5746	1.723	14090.	-0.57
AMERICIUM	0.9903	1.1321	-0.904	359.	-0.20

TABLE-III-129

SOLVENT-YTTERBIUM+2

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.020	1.9390	24.820	38200.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4018	1.3636	8.098	261194.	-1.18
LITHIUM	0.8056	1.0099	38.319	4373.	0.06
BERYLLIUM	0.5817	2.0393	18.536	112369.	-0.51
BORON	0.4745	3.4686	11.412	264342.	-1.00
CARBON	0.4518	4.4738	8.929	483207.	-1.53
NITROGEN	0.4255	2.9555	5.941	554645.	-2.01
OXYGEN	0.4626	1.5586	1.337	184720.	-2.44
SODIUM	0.9856	0.6785	-2.221	941.	0.07
MAGNESIUM	0.8262	0.9319	1.220	2433.	-0.21
ALUMINUM	0.7385	2.0288	6.986	41466.	-0.50
SILICON	0.6818	2.8377	3.681	56890.	-0.81
PHOSPHOROUS	0.6400	1.9712	2.673	73099.	-1.08
SULFUR	0.6447	1.7382	1.108	57913.	-1.49
POTASSIUM	1.2254	0.5623	12.888	10821.	0.18
CALCIUM	1.0181	1.1047	- ∞	21.	0.
SCANDIUM	0.8463	2.3822	18.239	29624.	-0.26
TITANIUM	0.7540	2.9503	11.776	61180.	-0.47
VANADIUM	0.6942	3.2147	12.431	111380.	-0.62
CHROMIUM	0.6612	2.4869	3.053	91082.	-1.13
MANGANESE+5	0.6741	1.7592	2.670	51071.	-0.90
MANGANESE+7	0.6467	1.7592	1.663	58261.	-1.22
IRON	0.6570	2.6178	5.981	100845.	-0.85
COBALT	0.6457	2.6728	5.932	112001.	-0.90
NICKEL	0.6426	2.6911	5.970	115189.	-0.91
COPPER	0.6591	2.1230	4.854	72836.	-0.80
ZINC	0.7189	0.8141	0.525	6148.	-0.64
GALLIUM	0.6978	1.7068	1.521	22526.	-0.78
GERMANIUM	0.7107	2.3429	1.812	33555.	-0.88
ARSENIC	0.7045	0.7592	0.001	1231.	-1.06
SELENIUM	0.7282	1.2932	0.080	5021.	-1.44
RUBIDIUM	1.3130	0.5209	20.915	16818.	0.18
STRONTIUM	1.1093	0.9450	2.503	1285.	0.04
YTTRIUM	0.9144	2.6073	40.355	24130.	-0.16
ZIRCONIUM	0.8262	3.8220	31.947	76629.	-0.32
NIOBIUM	0.7571	4.5812	25.689	137680.	-0.48
MOLYBDENUM	0.7220	4.1230	5.141	139466.	-1.08
TECHNETIUM	0.7040	4.1387	5.593	154419.	-1.09
RUTHENIUM	0.6906	4.0524	5.677	159593.	-1.10
RHODIUM	0.6937	3.4869	3.912	126790.	-1.18
PALLADIUM	0.7096	2.3665	1.926	64085.	-1.19
SILVER	0.7452	1.7906	3.018	31510.	-0.66
CADMIUM	0.8087	0.7016	-0.065	721.	-0.56
INDIUM	0.8592	1.5105	0.544	9228.	-0.80
TIN+2	0.8412	1.8848	1.535	15245.	-0.63
TIN+4	0.8149	1.8848	0.516	8994.	-0.81
ANTIMONY	0.8102	1.6387	0.325	8098.	-0.96
TELLURIUM	0.8468	1.2199	0.024	1633.	-0.90

TABLE F-III-130

SOLVENT-YTTERBIUM+2

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.4085	0.4932	18.930	24285.	0.23
BARIUM	1.1532	1.1126	-0.673	1067.	0.09
LANTHANUM	0.9680	2.6963	82.409	19073.	-0.10
CERIUM+3	0.9520	2.9215	97.647	25081.	-0.10
CERIUM+4	0.8623	2.9215	10.096	40328.	-0.41
PRASEODYMIUM	0.9428	2.3322	51.851	15660.	-0.11
NEODYMIUM	0.9397	2.0236	32.785	11018.	-0.11
PROMETHIUM	0.9330	1.6754	16.489	6577.	-0.12
SAMARIUM	0.9293	1.2906	3.514	2458.	-0.13
EUROPIUM+2	1.0526	1.1126	-31.719	22.	0.04
EUROPIUM+3	0.9273	1.1126	-0.169	1124.	-0.13
GADOLINIUM	0.9288	2.5065	42.244	20286.	-0.14
TERBIUM	0.9195	2.4597	38.381	20579.	-0.15
DYSPROSIUM	0.9154	1.8639	16.676	10550.	-0.16
HOLMIUM	0.9113	1.8770	15.964	11093.	-0.16
ERBIUM	0.9067	1.9503	16.911	12729.	-0.17
THULIUM	0.9010	1.5262	7.169	6548.	-0.18
LUTETIUM	0.8948	2.6743	30.780	28459.	-0.20
HAFNIUM	0.8149	3.8089	29.673	80293.	-0.34
TANTALUM	0.7566	4.8901	23.232	151677.	-0.53
TUNGSTEN	0.7261	5.2670	7.535	192767.	-1.05
RHENIUM	0.7091	4.8743	7.221	188277.	-1.06
OSMIUM	0.6978	4.9267	7.449	201548.	-1.08
IRIDIUM	0.6998	4.1649	5.330	158126.	-1.13
PLATINUM	0.7153	3.5340	3.691	115718.	-1.16
GOLD	0.7437	2.2932	2.726	49867.	-0.88
MERCURY	0.8221	0.3838	-0.018	947.	-0.76
THALLIUM	0.8850	1.1319	0.080	2488.	-0.84
LEAD	0.9025	1.2251	0.084	2791.	-0.91
BISMUTH	0.8711	1.3076	0.046	1936.	-0.84
POLONIUM	0.9149	0.9031	-0.097	0.	-0.73
FRANCIUM	1.4440	0.4738	25.354	26976.	0.21
RADIUM	1.1831	1.0995	3.677	1735.	0.08
ACTINIUM	0.9685	2.7225	220.125	19466.	-0.06
THORIUM	0.9273	3.5759	16.604	42889.	-0.33
PROTACTINIUM	0.8386	3.4555	6.538	59146.	-0.62
URANIUM	0.7958	3.2723	3.539	64388.	-0.88
NEPTUNIUM	0.7880	2.9581	3.126	54505.	-0.86
PLUTONIUM+4.76	0.8458	2.4031	3.870	30184.	-0.57
PLUTONIUM+5	0.8210	2.4031	3.186	42513.	-0.75
AMERICIUM	0.8922	1.7277	2.710	10216.	-0.38

TABLE-III-131

SOLVENT-YTTERBIUM+3

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.208	1.7410	17.980	38200.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4474	1.3636	7.666	175162.	-0.99
LITHIUM	0.8972	1.0099	-0.080	1078.	0.25
BERYLLIUM	0.6479	2.0393	30.196	73388.	-0.32
BORON	0.5284	3.4686	11.912	182314.	-0.81
CARBON	0.5032	4.4738	8.144	339430.	-1.34
NITROGEN	0.4739	2.9555	5.019	385393.	-1.82
OXYGEN	0.5152	1.5586	1.038	122562.	-2.25
SODIUM	1.0976	0.6785	1.553	3576.	0.26
MAGNESIUM	0.9202	0.9319	-79.913	300.	-0.02
ALUMINUM	0.8225	2.0288	10.432	24609.	-0.31
SILICON	0.7593	2.8377	3.856	35598.	-0.62
PHOSPHOROUS	0.7128	1.9712	2.455	46237.	-0.89
SULFUR	0.7180	1.7382	0.882	35653.	-1.30
POTASSIUM	1.3647	0.5623	5.676	18917.	0.37
CALCIUM	1.1338	1.1047	-0.503	782.	0.19
SCANDIUM	0.9426	2.3822	128.741	16582.	-0.07
TITANIUM	0.8397	2.9503	20.432	38662.	-0.28
VANADIUM	0.7731	3.2147	16.972	74231.	-0.43
CHROMIUM	0.7364	2.4869	2.835	59195.	-0.94
MANGANESE+5	0.7507	1.7592	2.551	31015.	-0.71
MANGANESE+7	0.7203	1.7592	1.413	35905.	-1.03
IRON	0.7318	2.6178	6.427	66144.	-0.66
COBALT	0.7191	2.6728	6.228	73996.	-0.71
NICKEL	0.7157	2.6911	6.244	76246.	-0.72
COPPER	0.7341	2.1230	5.211	46196.	-0.61
ZINC	0.8007	0.8141	0.173	2007.	-0.45
GALLIUM	0.7771	1.7068	1.319	11852.	-0.59
GERMANIUM	0.7915	2.3429	1.637	19268.	-0.69
ARSENIC	0.7846	0.7592	-0.067	23.	-0.87
SELENIUM	0.8110	1.2932	0.003	1314.	-1.25
RUBIDIUM	1.4624	0.5209	8.425	27502.	0.37
STRONTIUM	1.2355	0.9450	2.937	4713.	0.23
YTTRIUM	1.0184	2.6073	524.405	12813.	0.03
ZIRCONIUM	0.9202	3.8220	121.708	50094.	-0.13
NIOBIUM	0.8432	4.5812	47.491	94568.	-0.29
MOLYBDENUM	0.8041	4.1230	5.127	95265.	-0.89
TECHNETIUM	0.7840	4.1387	5.582	105926.	-0.90
RUTHENIUM	0.7691	4.0524	5.646	109474.	-0.91
RHODIUM	0.7725	3.4869	3.713	85441.	-0.99
PALLADIUM	0.7904	2.3665	1.691	40343.	-1.00
SILVER	0.8300	1.7906	3.236	17818.	-0.47
CADMIUM	0.9006	0.7016	-0.371	7.	-0.37
INDIUM	0.9569	1.5105	0.271	3530.	-0.61
TIN+2	0.9368	1.8848	1.314	7111.	-0.44
TIN+4	0.9075	1.8848	0.234	3280.	-0.62
ANTIMONY	0.9024	1.6387	0.120	2845.	-0.77
TELLURIUM	0.9431	1.2199	-0.098	51.	-0.71

TABLE-III-132

SOLVENT-YTTERBIUM+3

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5686	0.4932	9.177	38166.	0.42
BARIUM	1.2843	1.1126	1.862	4511.	0.28
LANTHANUM	1.0781	2.6963	42.883	9381.	0.09
CERIUM+3	1.0603	2.9215	73.232	13393.	0.09
CERIUM+4	0.9604	2.9215	20.073	24005.	-0.22
PRASEODYMIUM	1.0500	2.3322	43.194	7252.	0.08
NEODYMIUM	1.0465	2.0236	25.685	4436.	0.07
PROMETHIUM	1.0391	1.6754	7.347	1999.	0.07
SAMARIUM	1.0350	1.2906	-10.314	248.	0.06
EUROPIUM+2	1.1723	1.1126	0.185	1414.	0.23
EUROPIUM+3	1.0327	1.1126	-16.471	1.	0.06
GADOLINIUM	1.0345	2.5065	170.392	10245.	0.05
TERBIUM	1.0241	2.4597	250.993	10453.	0.04
DYSPROSIUM	1.0195	1.8639	127.587	4205.	0.03
HOLMIUM	1.0149	1.8770	251.150	4528.	0.02
ERBIUM	1.0098	1.9503	731.402	5510.	0.02
THULIUM	1.0034	1.5262	566.630	2028.	0.01
LUTETIUM	0.9966	2.6743	9872.047	15762.	-0.01
HAFNIUM	0.9075	3.8089	96.700	52712.	-0.15
TANTALUM	0.8426	4.8901	38.489	105003.	-0.34
TUNGSTEN	0.8087	5.2670	7.812	135045.	-0.86
RHENIUM	0.7898	4.8743	7.414	131198.	-0.87
OSMIUM	0.7771	4.9267	7.607	140763.	-0.89
IRIDIUM	0.7794	4.1649	5.249	108601.	-0.94
PLATINUM	0.7967	3.5340	3.510	77669.	-0.97
GOLD	0.8283	2.2932	2.652	30473.	-0.69
MERCURY	0.9156	0.3838	0.249	3070.	-0.57
THALLIUM	0.9856	1.1319	-0.093	284.	-0.65
LEAD	1.0052	1.2251	-0.068	370.	-0.72
BISMUTH	0.9701	1.3076	-0.111	104.	-0.65
POLONIUM	1.0190	0.9031	-0.031	982.	-0.54
FRANCIUM	1.6083	0.4738	11.142	41893.	0.40
RADIUM	1.3176	1.0995	2.834	5886.	0.27
ACTINIUM	1.0787	2.7225	22.349	9636.	0.13
THORIUM	1.0327	3.3759	53.001	25837.	-0.14
PROTACTINIUM	0.9339	3.4555	8.420	37430.	-0.43
URANIUM	0.8863	3.2723	3.612	41082.	-0.69
NEPTUNIUM	0.8777	2.9581	3.148	33971.	-0.67
PLUTONIUM+4.76	0.9420	2.4031	4.687	16964.	-0.38
PLUTONIUM+5	0.9144	2.4031	3.329	25438.	-0.56
AMERICIUM	0.9937	1.7277	3.358	4047.	-0.19

TABLE-III-133

SOLVENT-LUTETIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.216	1.7350	17.790	102160.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4490	0.5099	4.649	104995.	-0.98
LITHIUM	0.9003	0.3776	3.855	7019.	0.26
BERYLLIUM	0.6501	0.7625	12.157	28833.	-0.31
BORON	0.5303	1.2970	7.063	106478.	-0.80
CARBON	0.5049	1.6729	5.665	233665.	-1.33
NITROGEN	0.4755	1.1051	3.612	275259.	-1.81
OXYGEN	0.5170	0.5828	0.545	64515.	-2.24
SODIUM	1.1014	0.2537	22.579	38033.	0.27
MAGNESIUM	0.9233	0.3485	1996.700	10217.	-0.01
ALUMINUM	0.8254	0.7586	0.420	2087.	-0.30
SILICON	0.7620	1.0611	0.482	5383.	-0.61
PHOSPHOROUS	0.7153	0.7371	0.614	12257.	-0.88
SULFUR	0.7205	0.6500	0.153	7108.	-1.29
POTASSIUM	1.3695	0.2103	28.070	92705.	0.38
CALCIUM	1.1378	0.4131	30.182	27930.	0.20
SCANDIUM	0.9458	0.8908	-11.923	66.	-0.06
TITANIUM	0.8427	1.1032	3.140	6628.	-0.27
VANADIUM	0.7758	1.2020	6.209	26934.	-0.42
CHROMIUM	0.7389	0.9299	0.879	18874.	-0.93
MANGANESE+5	0.7533	0.6578	0.327	4926.	-0.70
MANGANESE+7	0.7228	0.6578	0.248	7197.	-1.02
IRON	0.7343	0.9789	2.206	22950.	-0.65
COBALT	0.7216	0.9994	2.339	27927.	-0.70
NICKEL	0.7182	1.0063	2.398	29379.	-0.71
COPPER	0.7366	0.7939	1.280	11960.	-0.60
ZINC	0.8035	0.3044	0.649	4140.	-0.44
GALLIUM	0.7798	0.6382	-0.147	32.	-0.58
GERMANIUM	0.7942	0.8761	-0.071	429.	-0.68
ARSENIC	0.7873	0.2839	0.655	12467.	-0.86
SELENIUM	0.8138	0.4836	0.177	7507.	-1.24
RUBIDIUM	1.4674	0.1948	36.361	119735.	0.38
STRONTIUM	1.2398	0.3534	36.581	48175.	0.24
YTTRIUM	1.0219	0.9749	-28.078	207.	0.04
ZIRCONIUM	0.9233	1.4291	27.589	10974.	-0.12
NIOBIUM	0.8461	1.7130	19.637	37715.	-0.28
MOLYBDENUM	0.8069	1.5417	2.113	39261.	-0.88
TECHNETIUM	0.7867	1.5476	2.476	46826.	-0.89
RUTHENIUM	0.7718	1.5153	2.568	49593.	-0.90
RHODIUM	0.7752	1.3038	1.464	33870.	-0.98
PALLADIUM	0.7931	0.8849	0.317	8416.	-0.99
SILVER	0.8329	0.6695	-0.144	477.	-0.46
CADMIUM	0.9037	0.2623	4.259	14204.	-0.36
INDIUM	0.9602	0.5648	0.319	3880.	-0.60
TIN+2	0.9401	0.7048	0.066	1480.	-0.43
TIN+4	0.9107	0.7048	0.474	5317.	-0.61
ANTIMONY	0.9055	0.6128	0.305	5293.	-0.76
TELLURIUM	0.9464	0.4561	1.213	15053.	-0.70

TABLE-III-134

SOLVENT-LUTETIUM

SOLUTE ELEMENT	RACIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5741	0.1844	36.233	152820.	0.43
BARIUM	1.2888	0.4160	25.958	50154.	0.29
LANTHANUM	1.0818	1.0082	0.672	1344.	0.10
CERIUM+3	1.0640	1.0924	-4.692	256.	0.09
CERIUM+4	0.9637	1.0924	-0.121	1064.	-0.21
PRASEODYMIUM	1.0536	0.8721	5.131	2067.	0.09
NEODYMIUM	1.0501	0.7567	18.420	4048.	0.08
PROMETHIUM	1.0427	0.6265	43.796	7180.	0.08
SAMARIUM	1.0386	0.4826	100.059	12824.	0.07
EUROPIUM+2	1.1764	0.4160	24.582	32765.	0.24
EUROPIUM+3	1.0363	0.4160	159.955	16301.	0.06
GADOLINIUM	1.0380	0.9373	-5.703	780.	0.06
TERBIUM	1.0277	0.9197	-9.849	669.	0.05
DYSPROSIUM	1.0231	0.6969	74.225	3931.	0.04
HOLMIUM	1.0184	0.7018	101.079	3579.	0.03
ERBIUM	1.0133	0.7292	116.981	2746.	0.02
THULIUM	1.0069	0.5707	906.886	6546.	0.02
YTTERBIUM+2	1.1176	0.3739	30.780	28459.	0.20
YTTERBIUM+3	1.0035	0.3739	9872.047	15762.	0.01
HAFNIUM	0.9107	1.4242	23.538	12447.	-0.14
TANTALUM	0.8455	1.8285	16.799	44407.	-0.33
TUNGSTEN	0.8115	1.9695	3.840	65768.	-0.85
RHENIUM	0.7925	1.8226	3.636	63788.	-0.86
OSMIUM	0.7798	1.8422	3.870	70928.	-0.88
IRIDIUM	0.7821	1.5574	2.362	48701.	-0.93
PLATINUM	0.7994	1.3215	1.275	28518.	-0.96
GOLD	0.8311	0.8575	0.256	3954.	-0.68
MERCURY	0.9187	0.1435	3.954	30195.	-0.56
THALLIUM	0.9890	0.4233	1.081	11534.	-0.64
LEAD	1.0086	0.4581	0.870	11420.	-0.71
BISMUTH	0.9735	0.4889	1.409	14672.	-0.64
POLONIUM	1.0225	0.3377	3.936	27076.	-0.53
FRANCIUM	1.6138	0.1772	42.727	163604.	0.41
RADIUM	1.3222	0.4111	31.475	56481.	0.28
ACTINIUM	1.0824	1.0180	0.144	1254.	0.14
THORIUM	1.0363	1.3371	-0.460	1002.	-0.13
PROTACTINIUM	0.9372	1.2921	0.986	5279.	-0.42
URANIUM	0.8893	1.2236	0.564	7274.	-0.68
NEPTUNIUM	0.8807	1.1061	0.325	4497.	-0.66
PLUTONIUM+4.76	0.9452	0.8986	-0.341	92.	-0.37
PLUTONIUM+5	0.9176	0.8986	0.109	1962.	-0.55
AMERICIUM	0.9971	0.6460	3.318	3782.	-0.18

TABLE-III-135

SOLVENT-HAFNIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.360	1.5800	13.450	145500.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4930	0.3580	2.586	43276.	-0.84
LITHIUM	0.9886	0.2652	8.493	32526.	0.40
BERYLLIUM	0.7139	0.5354	4.989	4517.	-0.17
BORON	0.5823	0.9107	4.202	43405.	-0.66
CARBON	0.5544	1.1746	3.696	121881.	-1.19
NITROGEN	0.5222	0.7759	2.287	148256.	-1.67
OXYGEN	0.5677	0.4092	0.197	21177.	-2.10
SODIUM	1.2095	0.1781	23.907	93865.	0.41
MAGNESIUM	1.0139	0.2447	98.054	39405.	0.13
ALUMINUM	0.9063	0.5326	3.049	2992.	-0.16
SILICON	0.8367	0.7450	-0.020	1090.	-0.47
PHOSPHOROUS	0.7854	0.5175	-0.085	125.	-0.74
SULFUR	0.7911	0.4564	-0.034	170.	-1.15
POTASSIUM	1.5038	0.1476	31.892	200052.	0.52
CALCIUM	1.2494	0.2900	29.881	80848.	0.34
SCANDIUM	1.0386	0.6254	58.298	9796.	0.08
TITANIUM	0.9253	0.7746	-1.395	649.	-0.13
VANADIUM	0.8519	0.8440	1.116	3209.	-0.28
CHROMIUM	0.8114	0.6529	-0.002	1164.	-0.79
MANGANESE+5	0.8272	0.4619	-0.062	740.	-0.56
MANGANESE+7	0.7937	0.4619	-0.058	161.	-0.88
IRON	0.8063	0.6873	0.172	2226.	-0.51
COBALT	0.7924	0.7017	0.367	3844.	-0.56
NICKEL	0.7886	0.7065	0.423	4361.	-0.57
COPPER	0.8089	0.5574	-0.228	78.	-0.46
ZINC	0.8823	0.2137	10.833	23674.	-0.30
GALLIUM	0.8563	0.4481	2.230	11146.	-0.44
GERMANIUM	0.8722	0.6151	0.889	7169.	-0.54
ARSENIC	0.8646	0.1993	3.452	42460.	-0.72
SELENIUM	0.8937	0.3395	1.252	36128.	-1.10
RUBIDIUM	1.6114	0.1368	40.246	252145.	0.52
STRONTIUM	1.3614	0.2481	35.901	120739.	0.38
YTTRIUM	1.1222	0.6845	19.413	16184.	0.18
ZIRCONIUM	1.0139	1.0034	-123.522	53.	0.02
NIOBIUM	0.9291	1.2027	11.705	6483.	-0.14
MOLYBDENUM	0.8861	1.0825	0.495	7438.	-0.74
TECHNETIUM	0.8639	1.0866	0.742	10820.	-0.75
RUTHENIUM	0.8475	1.0639	0.826	12189.	-0.76
RHODIUM	0.8513	0.9155	0.272	5618.	-0.84
PALLADIUM	0.8709	0.6213	-0.065	108.	-0.85
SILVER	0.9146	0.4701	2.015	5950.	-0.32
CADMIUM	0.9924	0.1842	39.628	45421.	-0.22
INDIUM	1.0544	0.3966	5.399	27536.	-0.46
TIN+2	1.0323	0.4948	10.198	20970.	-0.29
TIN+4	1.0000	0.4948	6.494	34274.	-0.47
ANTIMONY	0.9943	0.4302	3.543	32595.	-0.62
TELLURIUM	1.0392	0.3203	7.263	53713.	-0.56

TABLE-III-136

SOLVENT-HAFNIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.7285	0.1295	42.073	316411.	0.57
BARIUM	1.4152	0.2921	29.841	128426.	0.43
LANTHANUM	1.1880	0.7079	16.624	23829.	0.24
CERIUM+3	1.1684	0.7670	12.734	17686.	0.24
CERIUM+4	1.0582	0.7670	42.915	6041.	-0.07
PRASEODYMIUM	1.1570	0.6123	19.922	25495.	0.23
NEODYMIUM	1.1532	0.5313	25.407	31117.	0.23
PROMETHIUM	1.1449	0.4399	32.871	38214.	0.22
SAMARIUM	1.1405	0.3388	45.071	49236.	0.22
EUROPIUM+2	1.2918	0.2921	27.094	91412.	0.38
EUROPIUM+3	1.1380	0.2921	54.243	55309.	0.21
GADOLINIUM	1.1399	0.6581	20.432	20039.	0.20
TERBIUM	1.1285	0.6458	21.174	19192.	0.19
DYSPROSIUM	1.1234	0.4893	36.651	29807.	0.18
HOLMIUM	1.1184	0.4928	38.545	28725.	0.18
ERBIUM	1.1127	0.5120	38.481	26237.	0.17
THULIUM	1.1057	0.4007	57.886	35364.	0.16
YTTERBIUM+2	1.2272	0.2625	29.673	80293.	0.34
YTTERBIUM+3	1.1019	0.2625	96.700	52712.	0.15
LUTETIUM	1.0981	0.7021	23.538	12447.	0.14
TANTALUM	0.9285	1.2838	9.588	9174.	-0.19
TUNGSTEN	0.8911	1.3828	1.571	19457.	-0.71
RHENIUM	0.8703	1.2797	1.466	18714.	-0.72
OSMIUM	0.8563	1.2935	1.685	22470.	-0.74
IRIDIUM	0.8589	1.0935	0.729	11684.	-0.79
PLATINUM	0.8778	0.9278	0.154	3584.	-0.82
GOLD	0.9127	0.6021	0.053	1545.	-0.54
MERCURY	1.0089	0.1008	17.135	70894.	-0.42
THALLIUM	1.0861	0.2972	7.521	44549.	-0.50
LEAD	1.1076	0.3216	5.877	45220.	-0.57
BISMUTH	1.0690	0.3433	9.124	53792.	-0.50
POLONIUM	1.1228	0.2371	21.249	75721.	-0.39
FRANCIUM	1.7722	0.1244	48.102	336735.	0.55
RADIUM	1.4519	0.2887	34.486	141475.	0.42
ACTINIUM	1.1886	0.7148	12.328	23480.	0.28
THORIUM	1.1380	0.9388	2639.570	7279.	0.01
PROTACTINIUM	1.0291	0.9072	0.175	1509.	-0.28
URANIUM	0.9766	0.8591	-0.092	571.	-0.54
NEPTUNIUM	0.9671	0.7766	0.074	1656.	-0.52
PLUTONIUM+4.76	1.0380	0.6309	6.827	9520.	-0.23
PLUTONIUM+5	1.0076	0.6309	0.617	3584.	-0.41
AMERICIUM	1.0949	0.4536	740.960	28531.	-0.04

TABLE-III-137

SOLVENT-TANTALUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.550	1.4670	10.800	186800.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5310	0.2789	1.364	14477.	-0.65
LITHIUM	1.0648	0.2065	8.667	70762.	0.59
BERYLLIUM	0.7689	0.4170	-105.247	221.	0.02
BORON	0.6271	0.7093	2.428	13559.	-0.47
CARBON	0.5971	0.9149	2.598	61107.	-1.00
NITROGEN	0.5624	0.6044	1.539	78911.	-1.48
OXYGEN	0.6115	0.3187	0.032	3847.	-1.91
SODIUM	1.3027	0.1388	20.072	167825.	0.60
MAGNESIUM	1.0920	0.1906	34.024	81535.	0.32
ALUMINUM	0.9761	0.4149	889.962	19662.	0.03
SILICON	0.9012	0.5803	7.882	15442.	-0.28
PHOSPHOROUS	0.8459	0.4031	0.542	4975.	-0.55
SULFUR	0.8521	0.3555	0.354	8726.	-0.96
POTASSIUM	1.6196	0.1150	29.157	340127.	0.71
CALCIUM	1.3456	0.2259	23.655	154420.	0.53
SCANDIUM	1.1186	0.4872	21.479	37299.	0.27
TITANIUM	0.9966	0.6033	150.538	13689.	0.06
VANADIUM	0.9175	0.6574	-0.883	1027.	-0.09
CHROMIUM	0.8739	0.5086	0.166	2573.	-0.60
MANGANESE+5	0.8909	0.3597	3.337	11728.	-0.37
MANGANESE+7	0.8548	0.3597	0.683	8691.	-0.69
IRON	0.8684	0.5353	0.115	1463.	-0.32
COBALT	0.8534	0.5466	-0.202	555.	-0.37
NICKEL	0.8494	0.5503	-0.243	384.	-0.38
COPPER	0.8712	0.4342	2.553	5484.	-0.27
ZINC	0.9502	0.1665	187.755	53581.	-0.11
GALLIUM	0.9223	0.3490	24.849	37006.	-0.25
GERMANIUM	0.9393	0.4791	10.615	31179.	-0.35
ARSENIC	0.9312	0.1552	12.822	84248.	-0.53
SELENIUM	0.9625	0.2645	4.130	80058.	-0.91
RUBIDIUM	1.7355	0.1065	36.414	424489.	0.71
STRONTIUM	1.4663	0.1933	29.037	218744.	0.57
YTTRIUM	1.2086	0.5332	15.841	52015.	0.37
ZIRCONIUM	1.0920	0.7816	9.424	10776.	0.21
NIOBIUM	1.0007	0.9368	-17.051	209.	0.05
MOLYBDENUM	0.9543	0.8431	-0.165	40.	-0.55
TECHNETIUM	0.9305	0.8464	-0.145	140.	-0.56
RUTHENIUM	0.9127	0.8287	-0.113	349.	-0.57
RHODIUM	0.9168	0.7131	-0.100	217.	-0.65
PALLADIUM	0.9380	0.4839	0.799	9221.	-0.66
SILVER	0.9850	0.3662	64.267	26238.	-0.13
CADMIUM	1.0688	0.1435	4194.274	88240.	-0.03
INDIUM	1.1357	0.3089	39.012	66775.	-0.27
TIN+2	1.1118	0.3854	243.499	57343.	-0.10
TIN+4	1.0770	0.3854	44.822	82227.	-0.28
ANTIMONY	1.0709	0.3351	17.791	77051.	-0.43
TELLURIUM	1.1193	0.2495	34.383	109737.	-0.37

TABLE-III-138

SOLVENT-TANTALUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.8616	0.1009	39.632	529063.	0.76
BARIUM	1.5242	0.2275	26.403	235238.	0.62
LANTHANUM	1.2795	0.3514	15.464	68049.	0.43
CERIUM+3	1.2584	0.5974	13.218	56766.	0.43
CERIUM+4	1.1397	0.5974	88.295	30512.	0.12
PRASEODYMIUM	1.2461	0.4769	16.675	69024.	0.42
NEODYMIUM	1.2420	0.4138	19.121	77499.	0.42
PROMETHIUM	1.2331	0.3426	22.166	87535.	0.41
SAMARIUM	1.2284	0.2639	26.887	102889.	0.41
EUROPIUM+2	1.3913	0.2275	22.865	172504.	0.57
EUROPIUM+3	1.2256	0.2275	30.068	111025.	0.40
GADOLINIUM	1.2277	0.5126	16.580	59344.	0.39
TERBIUM	1.2154	0.5030	16.695	57371.	0.38
DYSPROSIUM	1.2100	0.3812	22.514	73812.	0.37
HOLMIUM	1.2045	0.3838	22.892	71905.	0.37
ERBIUM	1.1984	0.3988	22.536	67797.	0.36
THULIUM	1.1909	0.3121	28.257	81013.	0.35
YTTERBIUM+2	1.3217	0.2045	23.232	151677.	0.53
YTTERBIUM+3	1.1868	0.2045	38.489	105003.	0.34
LUTETIUM	1.1827	0.5469	16.799	44407.	0.33
HAFNIUM	1.0770	0.7789	9.588	9174.	0.19
TUNGSTEN	0.9598	1.0771	0.112	1889.	-0.52
RHENIUM	0.9373	0.9968	0.091	1779.	-0.53
OSMIUM	0.9223	1.0075	0.266	3049.	-0.55
IRIDIUM	0.9250	0.8517	-0.113	252.	-0.60
PLATINUM	0.9455	0.7227	-0.029	931.	-0.63
GOLD	0.9830	0.4690	5.218	15931.	-0.35
MERCURY	1.0866	0.0785	99.536	122613.	-0.23
THALLIUM	1.1697	0.2315	41.357	92841.	-0.31
LEAD	1.1929	0.2505	28.213	95137.	-0.38
BISMUTH	1.1513	0.2674	49.551	111001.	-0.31
POLONIUM	1.2093	0.1847	152.905	142231.	-0.20
FRANCIUM	1.9087	0.0969	44.377	561564.	0.74
RADIUM	1.5637	0.2248	29.815	257021.	0.61
ACTINIUM	1.2802	0.5567	13.019	67510.	0.47
THORIUM	1.2256	0.7313	37.606	35880.	0.20
PROTACTINIUM	1.1084	0.7066	92.416	18454.	-0.09
URANIUM	1.0518	0.6692	4.496	13894.	-0.35
NEPTUNIUM	1.0416	0.6049	6.646	17882.	-0.33
PLUTONIUM+4.76	1.1179	0.4914	964.461	36777.	-0.04
PLUTONIUM+5	1.0852	0.4914	19.001	22400.	-0.22
AMERICIUM	1.1793	0.3533	133.332	70372.	0.15

TABLE-III-139

SOLVENT-TUNGSTEN

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.070	1.4080	9.551	201200.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5533	0.2589	14.160	6711.	-0.13
LITHIUM	1.1094	0.1917	3.226	92853.	1.11
BERYLLIUM	0.8011	0.3872	0.208	2590.	0.54
BORON	0.6534	0.6585	78.407	5712.	0.05
CARBON	0.6222	0.8494	7.410	40564.	-0.48
NITROGEN	0.5859	0.5611	2.523	54819.	-0.96
OXYGEN	0.6371	0.2959	-0.012	658.	-1.39
SODIUM	1.3572	0.1288	7.205	209611.	1.12
MAGNESIUM	1.1378	0.1769	6.419	105635.	0.84
ALUMINUM	1.0170	0.3852	4.399	31880.	0.55
SILICON	0.9389	0.5388	19.754	27431.	0.24
PHOSPHOROUS	0.8814	0.3743	489.624	11354.	-0.03
SULFUR	0.8878	0.3300	3.448	16587.	-0.44
POTASSIUM	1.6875	0.1068	12.012	420252.	1.23
CALCIUM	1.4020	0.2097	7.703	197021.	1.05
SCANDIUM	1.1655	0.4523	3.793	55782.	0.79
TITANIUM	1.0384	0.5601	3.084	25119.	0.58
VANADIUM	0.9560	0.6103	0.928	5151.	0.43
CHROMIUM	0.9105	0.4722	44.882	7816.	-0.08
MANGANESE+5	0.9283	0.3340	37.736	20771.	0.15
MANGANESE+7	0.8906	0.3340	23.067	16565.	-0.17
IRON	0.9048	0.4970	5.002	5806.	0.20
COBALT	0.8892	0.5075	5.000	3786.	0.15
NICKEL	0.8849	0.5109	4.701	3317.	0.14
COPPER	0.9077	0.4031	7.684	12267.	0.25
ZINC	0.9901	0.1546	17.918	70649.	0.41
GALLIUM	0.9609	0.3241	31.173	53597.	0.27
GERMANIUM	0.9787	0.4448	69.785	47699.	0.17
ARSENIC	0.9702	0.1441	46203.739	107738.	-0.01
SELENIUM	1.0028	0.2455	29.866	105943.	-0.39
RUBIDIUM	1.8082	0.0989	14.968	523397.	1.23
STRONTIUM	1.5277	0.1794	10.003	275263.	1.09
YTTRIUM	1.2592	0.4950	4.039	75464.	0.89
ZIRCONIUM	1.1378	0.7256	1.684	21886.	0.73
NIOBIUM	1.0426	0.8698	0.283	3310.	0.57
MOLYBDENUM	0.9943	0.7828	53.715	2307.	-0.03
TECHNETIUM	0.9695	0.7858	-8.502	879.	-0.04
RUTHENIUM	0.9510	0.7694	-11.895	506.	-0.05
RHODIUM	0.9553	0.6620	4.690	3020.	-0.13
PALLADIUM	0.9773	0.4493	37.263	18034.	-0.14
SILVER	1.0263	0.3400	11.065	40001.	0.39
CADMIUM	1.1136	0.1332	20.043	112162.	0.49
INDIUM	1.1832	0.2868	61.908	90418.	0.25
TIN+2	1.1584	0.3579	19.377	80014.	0.42
TIN+4	1.1222	0.3579	83.031	111479.	0.24
ANTIMONY	1.1158	0.3111	549.758	103879.	0.09
TELLURIUM	1.1662	0.2316	272.159	142402.	0.15

TABLE-III-140

SOLVENT-TUNGSTEN

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.9396	0.0936	17.213	651508.	1.28
BARIUM	1.5881	0.2112	9.881	297320.	1.14
LANTHANUM	1.3331	0.5119	4.546	96409.	0.95
CERIUM+3	1.3111	0.5547	3.931	82496.	0.95
CERIUM+4	1.1875	0.5547	4.959	48035.	0.64
PRASEODYMIUM	1.2983	0.4428	4.675	96454.	0.94
NEODYMIUM	1.2940	0.3842	5.192	106079.	0.94
PROMETHIUM	1.2848	0.3181	5.805	117211.	0.93
SAMARIUM	1.2798	0.2450	6.748	134331.	0.92
EUROPIUM+2	1.4496	0.2112	7.969	219513.	1.09
EUROPIUM+3	1.2770	0.2112	7.312	143286.	0.92
GADOLINIUM	1.2791	0.4759	4.369	84620.	0.91
TERBIUM	1.2663	0.4670	4.304	81939.	0.90
DYSPROSIUM	1.2607	0.3539	5.403	100770.	0.89
HOLMIUM	1.2550	0.3564	5.371	98415.	0.89
ERBIUM	1.2486	0.3703	5.193	93505.	0.88
THULIUM	1.2408	0.2898	6.138	108318.	0.87
YTTERBIUM+2	1.3771	0.1899	7.535	192767.	1.05
YTTERBIUM+3	1.2365	0.1899	7.812	135045.	0.86
LUTETIUM	1.2322	0.5078	3.840	65768.	0.85
HAFNIUM	1.1222	0.7232	1.571	19457.	0.71
TANTALUM	1.0419	0.9284	0.112	1889.	0.52
RHENIUM	0.9766	0.9254	-516.878	0.	-0.01
OSMIUM	0.9609	0.9354	-49.880	157.	-0.03
IRIDIUM	0.9638	0.7908	-3.632	656.	-0.08
PLATINUM	0.9851	0.6710	13.867	5062.	-0.11
GOLD	1.0241	0.4354	39.187	27308.	0.17
MERCURY	1.1321	0.0729	77.055	150628.	0.29
THALLIUM	1.2187	0.2149	117.695	120882.	0.21
LEAD	1.2429	0.2326	272.377	124300.	0.14
BISMUTH	1.1996	0.2483	140.948	144529.	0.21
POLONIUM	1.2599	0.1715	75.834	180262.	0.32
FRANCIUM	1.9886	0.0900	18.844	691074.	1.26
RADIUM	1.6293	0.2087	10.970	324203.	1.13
ACTINIUM	1.3338	0.5169	4.186	95798.	0.99
THORIUM	1.2770	0.6789	4.627	56502.	0.72
PROTACTINIUM	1.1548	0.6561	7.344	32504.	0.43
URANIUM	1.0959	0.6213	36.949	25816.	0.17
NEPTUNIUM	1.0852	0.5616	35.798	30992.	0.19
PLUTONIUM+4.76	1.1648	0.4563	10.156	55153.	0.48
PLUTONIUM+5	1.1307	0.4563	16.876	36217.	0.30
AMERICIUM	1.2287	0.3280	9.146	95868.	0.67

TABLE-III-141

SOLVENT-RHENIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.080	1.3750	8.860	18620C.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5665	0.2798	15.557	6358.	-0.12
LITHIUM	1.1360	0.2072	3.059	89668.	1.12
BERYLLIUM	0.8204	0.4184	0.176	2421.	0.55
BORON	0.6691	0.7116	51.829	5495.	0.06
CARBON	0.6371	0.9178	7.337	38567.	-0.47
NITROGEN	0.6000	0.6063	2.427	51696.	-0.95
OXYGEN	0.6524	0.3198	-0.013	640.	-1.38
SODIUM	1.3898	0.1392	6.909	204635.	1.13
MAGNESIUM	1.1651	0.1912	6.060	102162.	0.85
ALUMINUM	1.0415	0.4162	4.062	30567.	0.56
SILICON	0.9615	0.5822	17.471	26373.	0.25
PHOSPHOROUS	0.9025	0.4044	1037.916	10766.	-0.02
SULFUR	0.9091	0.3566	3.416	15759.	-0.43
POTASSIUM	1.7280	0.1154	11.638	413828.	1.24
CALCIUM	1.4356	0.2266	7.386	192578.	1.06
SCANDIUM	1.1935	0.4887	3.574	53937.	0.80
TITANIUM	1.0633	0.6053	2.859	24141.	0.59
VANADIUM	0.9789	0.6595	0.826	4881.	0.44
CHROMIUM	0.9324	0.5102	55.026	7410.	-0.07
MANGANESE+5	0.9505	0.3609	31.494	19784.	0.16
MANGANESE+7	0.9120	0.3609	24.643	15740.	-0.16
IRON	0.9265	0.5371	4.229	5492.	0.21
COBALT	0.9105	0.5483	4.024	3567.	0.16
NICKEL	0.9062	0.5521	3.718	3121.	0.15
COPPER	0.9295	0.4356	6.711	11653.	0.26
ZINC	1.0138	0.1670	16.367	67771.	0.42
GALLIUM	0.9840	0.3502	27.888	51611.	0.28
GERMANIUM	1.0022	0.4807	60.011	46029.	0.18
ARSENIC	0.9935	0.1557	+∞	104063.	0.
SELENIUM	1.0269	0.2653	30.494	102732.	-0.38
RUBIDIUM	1.8516	0.1069	14.532	516471.	1.24
STRONTIUM	1.5644	0.1939	9.636	270059.	1.10
YTTRIUM	1.2895	0.5349	3.834	73288.	0.90
ZIRCONIUM	1.1651	0.7841	1.575	21075.	0.74
NIOBIUM	1.0676	0.9398	0.251	3137.	0.58
MOLYBDENUM	1.0182	0.8459	106.435	2174.	-0.02
TECHNETIUM	0.9927	0.8491	-18.140	816.	-0.03
RUTHENIUM	0.9738	0.8314	-19.716	465.	-0.04
RHODIUM	0.9782	0.7154	4.989	2849.	-0.12
PALLADIUM	1.0007	0.4855	41.134	17223.	-0.13
SILVER	1.0509	0.3673	10.084	38397.	0.40
CADMIUM	1.1404	0.1439	18.588	108349.	0.50
INDIUM	1.2116	0.3099	55.423	87588.	0.26
TIN+2	1.1862	0.3867	17.905	77534.	0.43
TIN+4	1.1491	0.3867	74.445	108486.	0.25
ANTIMONY	1.1425	0.3362	432.341	100890.	0.10
TELLURIUM	1.1942	0.2503	232.814	138631.	0.16

TABLE-III-142

SOLVENT-RHENIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.9862	0.1012	16.753	644059.	1.29
BARIUM	1.6262	0.2282	9.539	292102.	1.15
LANTHANUM	1.3651	0.5532	4.336	93913.	0.96
CERIUM+3	1.3425	0.5994	3.745	80275.	0.96
CERIUM+4	1.2160	0.5994	4.647	46470.	0.65
PRASEODYMIUM	1.3295	0.4785	4.452	93851.	0.95
NEODYMIUM	1.3251	0.4151	4.944	103221.	0.95
PROMETHIUM	1.3156	0.3437	5.527	114042.	0.94
SAMARIUM	1.3105	0.2648	6.425	130710.	0.94
EUROPIUM+2	1.4844	0.2282	7.658	214875.	1.10
EUROPIUM+3	1.3076	0.2282	6.961	139424.	0.93
GADOLINIUM	1.3098	0.5142	4.153	82260.	0.92
TERBIUM	1.2967	0.5046	4.089	79611.	0.91
DYSPROSIUM	1.2909	0.3824	5.133	97930.	0.90
HOLMIUM	1.2851	0.3851	5.101	95618.	0.90
ERBIUM	1.2785	0.4001	4.929	90816.	0.89
THULIUM	1.2705	0.3131	5.824	105203.	0.88
YTTERBIUM+2	1.4102	0.2052	7.221	188277.	1.06
YTTERBIUM+3	1.2662	0.2052	7.414	131198.	0.87
LUTETIUM	1.2618	0.5487	3.636	63788.	0.86
HAFNIUM	1.1491	0.7814	1.466	18714.	0.72
TANTALUM	1.0669	1.0032	0.091	1779.	0.53
TUNGSTEN	1.0240	1.0806	-516.878	0.	0.01
OSMIUM	0.9840	1.0107	-111.504	164.	-0.02
IRIDIUM	0.9869	0.8545	-5.189	606.	-0.07
PLATINUM	1.0087	0.7250	15.654	4802.	-0.10
GOLD	1.0487	0.4705	33.446	26181.	0.18
MERCURY	1.1593	0.0787	69.667	145779.	0.30
THALLIUM	1.2480	0.2322	104.061	117335.	0.22
LEAD	1.2727	0.2513	230.468	120771.	0.15
BISMUTH	1.2284	0.2683	125.077	140791.	0.22
POLONIUM	1.2902	0.1853	69.533	175806.	0.33
FRANCIUM	2.0364	0.0972	18.344	683462.	1.27
RADIUM	1.6684	0.2256	10.598	318804.	1.14
ACTINIUM	1.3658	0.5585	3.995	93318.	1.00
THORIUM	1.3076	0.7336	4.368	54865.	0.73
PROTACTINIUM	1.1825	0.7089	6.762	31379.	0.44
URANIUM	1.1222	0.6713	31.664	24850.	0.18
NEPTUNIUM	1.1113	0.6069	31.068	29849.	0.20
PLUTONIUM+4.76	1.1927	0.4930	9.416	53327.	0.49
PLUTONIUM+5	1.1578	0.4930	15.188	34851.	0.31
AMERICIUM	1.2582	0.3545	8.615	93048.	0.68

TABLE-III-143

SOLVENT-OSMIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.100	1.353C	8.441	188200.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5758	0.2768	15.103	4675.	-0.10
LITHIUM	1.1545	0.2050	3.184	96606.	1.14
BERYLLIUM	0.8337	0.4139	C.316	3562.	0.57
BORCN	0.6800	0.7040	17.908	3835.	0.08
CARBCN	0.6475	0.9081	6.871	33275.	-0.45
NITROGEN	0.6098	0.5999	2.215	45371.	-0.93
OXYGEN	0.6630	0.3164	-0.023	215.	-1.36
SODIUM	1.4124	0.1377	7.110	218011.	1.15
MAGNESIUM	1.1840	0.1892	6.219	109731.	0.87
ALUMINUM	1.0584	0.4118	4.310	34630.	0.58
SILICCN	0.9771	0.5760	17.445	3C518.	0.27
PHOSPHOROUS	0.9172	0.4001	+∞	13048.	0.
SULFUR	0.9239	0.3528	4.448	18436.	-0.41
POTASSIUM	1.7561	0.1141	11.990	440139.	1.26
CALCIUM	1.4590	0.2242	7.629	206395.	1.08
SCANDIUM	1.2129	0.4835	3.798	60076.	0.82
TITANIUM	1.0806	0.5988	3.139	28128.	0.61
VANADIUM	0.9948	0.6525	1.121	6662.	0.46
CHROMIUM	0.9475	0.5048	142.962	9434.	-0.05
MANGANESE+5	0.9660	0.3571	28.943	22817.	0.18
MANGANESE+7	0.9268	0.3571	38.126	18424.	-0.14
IRON	0.9416	0.5313	4.981	7268.	0.23
COBALT	0.9254	0.5425	5.129	5024.	0.18
NICKEL	0.9209	0.5462	4.953	4493.	0.17
COPPER	0.9446	0.4309	7.128	14079.	0.28
ZINC	1.0303	0.1652	16.085	73003.	0.44
GALLIUM	1.0000	0.3464	26.881	56981.	0.30
GERMANIUM	1.0185	0.4756	54.567	51525.	0.20
ARSENIC	1.0096	0.1541	11943.563	111359.	0.02
SELENIUM	1.0436	0.2625	36.748	111017.	-0.36
RUBIDIUM	1.8817	0.1057	14.967	549143.	1.26
STRONTIUM	1.5898	0.1918	9.933	288523.	1.12
YTTRIUM	1.3104	0.5292	4.068	81101.	0.92
ZIRCONIUM	1.1840	0.7758	1.795	25095.	0.76
NIOBIUM	1.0850	0.9299	0.428	4749.	0.60
MOLYBDENUM	1.0347	0.8369	+∞	3490.	0.
TECHNETIUM	1.0089	0.8401	209.390	1675.	-0.01
RUTHENIUM	0.9897	0.8225	-5.169	1145.	-0.02
RHODIUM	0.9941	0.7078	13.321	4264.	-0.10
PALLADIUM	1.0170	0.4803	68.479	20300.	-0.11
SILVER	1.0680	0.3634	10.251	42890.	0.42
CADMIUM	1.1589	0.1424	18.374	115761.	0.52
INDIUM	1.2313	0.3066	51.997	95199.	0.28
TIN+2	1.2055	0.3826	17.931	84926.	0.45
TIN+4	1.1678	0.3826	69.518	118057.	0.27
ANTIMONY	1.1611	0.3326	326.435	109590.	0.12
TELLURIUM	1.2136	0.2476	198.029	149148.	0.18

TABLE-III-144

SOLVENT-OSMIUM

SOLUTE ELEMENT	RACIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	2.0185	0.1001	17.272	684718.	1.31
BARIUM	1.6526	0.2258	9.862	312511.	1.17
LANTHANUM	1.3873	0.5473	4.586	103374.	0.98
CERIUM+3	1.3644	0.5930	3.985	88908.	0.98
CERIUM+4	1.2358	0.5930	4.947	52405.	0.67
PRASEODYMIUM	1.3511	0.4734	4.689	102923.	0.97
NEODYMIUM	1.3466	0.4107	5.177	112603.	0.97
PROMETHIUM	1.3370	0.3401	5.752	123698.	0.96
SAMARIUM	1.3319	0.2620	6.640	140842.	0.95
EUROPIUM+2	1.5085	0.2258	7.916	230182.	1.12
EUROPIUM+3	1.3289	0.2258	7.169	149770.	0.95
GADOLINIUM	1.3311	0.5088	4.391	90656.	0.94
TERBIUM	1.3178	0.4993	4.322	87763.	0.93
DYSPROSIUM	1.3119	0.3783	5.361	106732.	0.92
HOLMIUM	1.3060	0.3810	5.328	104275.	0.92
ERBIUM	1.2993	0.3959	5.156	99226.	0.91
THULIUM	1.2912	0.3098	6.041	114029.	0.90
YTTERBIUM+2	1.4331	0.2030	7.449	201548.	1.08
YTTERBIUM+3	1.2868	0.2030	7.607	140763.	0.89
LUTETIUM	1.2823	0.5428	3.870	70928.	0.88
HAFNIUM	1.1678	0.7731	1.685	22470.	0.74
TANTALUM	1.0843	0.9926	0.266	3049.	0.55
TUNGSTEN	1.0407	1.0691	-49.880	157.	0.03
RHENIUM	1.0163	0.9894	-111.504	164.	0.02
IRIDIUM	1.0030	0.8454	3.046	1368.	-0.05
PLATINUM	1.0251	0.7173	36.778	6620.	-0.08
GOLD	1.0658	0.4655	31.269	30035.	0.20
MERCURY	1.1781	0.0779	64.872	154377.	0.32
THALLIUM	1.2683	0.2298	94.175	126281.	0.24
LEAD	1.2934	0.2487	193.462	130122.	0.17
BISMUTH	1.2483	0.2654	113.256	151626.	0.24
POLONIUM	1.3112	0.1833	66.134	188011.	0.35
FRANCIUM	2.0695	0.0962	18.901	726514.	1.29
RADIUM	1.6955	0.2232	10.949	340939.	1.16
ACTINIUM	1.3880	0.5526	4.233	102761.	1.02
THORIUM	1.3289	0.7258	4.682	61930.	0.75
PROTACTINIUM	1.2018	0.7014	7.192	36283.	0.46
URANIUM	1.1404	0.6642	30.196	29045.	0.20
NEPTUNIUM	1.1293	0.6004	29.727	34371.	0.22
PLUTONIUM+4.76	1.2121	0.4878	9.711	55435.	0.51
PLUTONIUM+5	1.1766	0.4878	15.252	39494.	0.33
AMERICIUM	1.2786	0.3507	8.862	101331.	0.70

TABLE-III-145

SOLVENT-IRIDIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.150	1.3570	8.524	159100.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5741	0.3274	143.340	9456.	-0.05
LITHIUM	1.1511	0.2425	2.192	72758.	1.19
BERYLLIUM	0.8312	0.4896	-0.052	728.	0.62
BORON	0.6780	0.8328	19.804	8910.	0.13
CARBON	0.6455	1.0742	12.096	45820.	-0.40
NITROGEN	0.6080	0.7096	3.236	58984.	-0.88
OXYGEN	0.6610	0.3742	0.020	1979.	-1.31
SODIUM	1.4083	0.1629	5.188	173451.	1.20
MAGNESIUM	1.1805	0.2238	4.226	83668.	0.92
ALUMINUM	1.0553	0.4871	2.259	21864.	0.63
SILICON	0.9742	0.6813	7.133	18036.	0.32
PHOSPHOROUS	0.9145	0.4733	89.582	6357.	0.05
SULFUR	0.9211	0.4173	3.026	10235.	-0.36
POTASSIUM	1.7509	0.1350	9.003	357453.	1.31
CALCIUM	1.4547	0.2652	5.446	161561.	1.13
SCANDIUM	1.2093	0.5720	2.268	40783.	0.87
TITANIUM	1.0774	0.7084	1.496	16222.	0.66
VANADIUM	0.9919	0.7718	0.138	2018.	0.51
CHROMIUM	0.9447	0.5971	$+\infty$	3812.	0.
MANGANESE+5	0.9632	0.4224	9.990	13379.	0.23
MANGANESE+7	0.9241	0.4224	48.287	10211.	-0.09
IRON	0.9388	0.6285	0.723	2500.	0.28
COBALT	0.9226	0.6417	0.088	1300.	0.23
NICKEL	0.9182	0.6461	-0.133	1044.	0.22
COPPER	0.9418	0.5097	2.299	6966.	0.33
ZINC	1.0273	0.1955	9.595	54318.	0.69
GALLIUM	0.9971	0.4098	13.555	39484.	0.35
GERMANIUM	1.0155	0.5625	22.957	34278.	0.25
ARSENIC	1.0066	0.1823	747.829	85692.	0.07
SELENIUM	1.0405	0.3105	37.123	83459.	-0.31
RUBIDIUM	1.8762	0.1251	11.291	448032.	1.31
STRONTIUM	1.5851	0.2269	7.236	229597.	1.17
YTTRIUM	1.3066	0.6260	2.542	56698.	0.97
ZIRCONIUM	1.1805	0.9177	0.812	13473.	0.81
NIOBIUM	1.0818	1.0999	-0.033	874.	0.65
MOLYBDENUM	1.0317	0.9899	-12.876	450.	0.05
TECHNETIUM	1.0059	0.9937	-31.915	15.	0.04
RUTHENIUM	0.9867	0.9730	-57.072	8.	0.03
RHODIUM	0.9912	0.8372	-6.452	820.	-0.05
PALLADIUM	1.0140	0.5682	119.356	11101.	-0.06
SILVER	1.0648	0.4299	5.348	28436.	0.47
CADMIUM	1.1555	0.1684	11.792	89543.	0.57
INDIUM	1.2277	0.3627	27.458	70146.	0.33
TIN+2	1.2019	0.4525	10.390	61093.	0.50
TIN+4	1.1643	0.4525	36.508	87400.	0.32
ANTIMONY	1.1577	0.3935	120.204	81300.	0.17
TELLURIUM	1.2100	0.2929	92.902	114521.	0.23

TABLE-III-146

SOLVENT-IRIDIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	2.0125	0.1184	13.117	560645.	1.36
BARIUM	1.6478	0.2671	7.198	248230.	1.22
LANTHANUM	1.3832	0.6474	2.956	73936.	1.03
CERIUM+3	1.3604	0.7014	2.509	62222.	1.03
CERIUM+4	1.2321	0.7014	2.761	34194.	0.72
PRASEODYMIUM	1.3471	0.5600	3.049	74332.	1.02
NEODYMIUM	1.3427	0.4859	3.424	82705.	1.02
PROMETHIUM	1.3331	0.4023	3.873	92488.	1.01
SAMARIUM	1.3279	0.3099	4.566	107534.	1.01
EUROPIUM+2	1.5041	0.2671	5.694	180925.	1.17
EUROPIUM+3	1.3250	0.2671	4.975	115452.	1.00
GADOLINIUM	1.3272	0.6018	2.794	64339.	0.99
TERBIUM	1.3139	0.5906	2.742	62164.	0.98
DYSPROSIUM	1.3080	0.4475	3.531	78433.	0.97
HOLMIUM	1.3021	0.4507	3.497	76446.	0.97
ERBIUM	1.2955	0.4683	3.358	72262.	0.96
THULIUM	1.2874	0.3664	4.035	85172.	0.95
YTTERBIUM+2	1.4289	0.2401	5.330	158126.	1.13
YTTERBIUM+3	1.2830	0.2401	5.249	108601.	0.94
LUTETIUM	1.2786	0.6421	2.362	48701.	0.93
HAFNIUM	1.1643	0.9145	0.729	11684.	0.79
TANTALUM	1.0811	1.1741	-0.113	252.	0.60
TUNGSTEN	1.0376	1.2646	-3.632	656.	0.08
RHENIUM	1.0133	1.1703	-5.189	606.	0.07
OSMIUM	0.9971	1.1829	3.046	1368.	0.05
PLATINUM	1.0221	0.8485	35.274	1924.	-0.03
GOLD	1.0626	0.5506	11.784	18175.	0.25
MERCURY	1.1746	0.0921	38.633	123153.	0.37
THALLIUM	1.2646	0.2718	49.058	96333.	0.29
LEAD	1.2896	0.2942	87.725	99102.	0.22
BISMUTH	1.2447	0.3140	59.299	116194.	0.29
POLONIUM	1.3073	0.2168	39.672	147567.	0.40
FRANCIUM	2.0634	0.1138	14.354	595549.	1.34
RADIUM	1.6905	0.2640	8.009	271595.	1.21
ACTINIUM	1.3839	0.6537	2.735	73403.	1.07
THORIUM	1.3250	0.8586	2.669	40579.	0.80
PROTACTINIUM	1.1982	0.8297	3.416	21680.	0.51
URANIUM	1.1371	0.7857	10.709	16626.	0.25
NEPTUNIUM	1.1260	0.7102	11.623	20732.	0.27
PLUTONIUM+4.76	1.2085	0.5770	5.402	40259.	0.56
PLUTONIUM+5	1.1732	0.5770	7.177	25089.	0.38
AMERICIUM	1.2749	0.4148	5.650	74476.	0.75

TABLE-III-147

SOLVENT-PLATINUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.180	1.3870	9.094	135000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5616	0.3859	1821.238	17991.	-0.02
LITHIUM	1.1262	0.2858	1.429	50237.	1.22
BERYLLIUM	0.8133	0.5770	-0.109	133.	0.65
BORON	0.6633	0.9815	28.774	18179.	0.16
CARBON	0.6316	1.2659	20.390	65562.	-0.37
NITROGEN	0.5948	0.8363	4.772	80703.	-0.85
OXYGEN	0.6467	0.4410	0.143	6586.	-1.28
SODIUM	1.3778	0.1920	3.685	129745.	1.23
MAGNESIUM	1.1550	0.2637	2.772	58888.	0.95
ALUMINUM	1.0324	0.5741	0.967	10911.	0.66
SILICON	0.9531	0.8030	2.323	7755.	0.35
PHOSPHOROUS	0.8947	0.5578	2.731	1595.	0.08
SULFUR	0.9012	0.4919	1.035	3792.	-0.33
POTASSIUM	1.7130	0.1591	6.595	274278.	1.34
CALCIUM	1.4232	0.3126	3.757	117755.	1.16
SCANDIUM	1.1831	0.6741	1.190	23420.	0.90
TITANIUM	1.0541	0.8348	0.491	6579.	0.69
VANADIUM	0.9704	0.9096	-0.177	4.	0.54
CHROMIUM	0.9243	0.7037	-36.946	425.	0.03
MANGANESE+5	0.9423	0.4978	2.876	5675.	0.26
MANGANESE+7	0.9041	0.4978	31.002	3766.	-0.06
IRON	0.9185	0.7407	-0.503	78.	0.31
COBALT	0.9027	0.7563	-0.750	23.	0.26
NICKEL	0.8983	0.7615	-0.777	72.	0.25
COPPER	0.9214	0.6007	0.217	1840.	0.36
ZINC	1.0050	0.2304	5.729	36914.	0.52
GALLIUM	0.9755	0.4830	6.735	23620.	0.38
GERMANIUM	0.9935	0.6630	9.825	18956.	0.28
ARSENIC	0.9849	0.2148	260.493	61262.	0.10
SELENIUM	1.0180	0.3659	31.035	57300.	-0.28
RUBIDIUM	1.8356	0.1474	8.319	345667.	1.34
STRONTIUM	1.5508	0.2674	5.121	171246.	1.20
YTTRIUM	1.2783	0.7378	1.427	34293.	1.00
ZIRCONIUM	1.1550	1.0815	0.205	4527.	0.84
NIOBIUM	1.0584	1.2963	-0.086	277.	0.68
MOLYBDENUM	1.0094	1.1667	-4.373	547.	0.08
TECHNETIUM	0.9841	1.1711	3.687	1609.	0.07
RUTHENIUM	0.9654	1.1467	11.419	2140.	0.06
RHODIUM	0.9697	0.9867	-106.597	209.	-0.02
PALLADIUM	0.9921	0.6696	132.371	3939.	-0.03
SILVER	1.0418	0.5067	2.511	15670.	0.50
CADMIUM	1.1305	0.1985	7.631	64541.	0.60
INDIUM	1.2012	0.4274	15.194	46602.	0.36
TIN+2	1.1759	0.5333	5.827	38938.	0.53
TIN+4	1.1391	0.5333	20.237	58359.	0.35
ANTIMONY	1.1327	0.4637	57.840	54544.	0.20
TELLURIUM	1.1839	0.3452	51.307	81172.	0.26

TABLE-III-148

SOLVENT-PLATINUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.9690	0.1396	9.722	434328.	1.39
BARIUM	1.6121	0.3148	5.086	184456.	1.25
LANTHANUM	1.3533	0.7630	1.739	46494.	1.06
CERIUM+3	1.3309	0.8267	1.416	37662.	1.06
CERIUM+4	1.2055	0.8267	1.309	18168.	0.75
PRASEODYMIUM	1.3180	0.6599	1.825	47578.	1.05
NEODYMIUM	1.3136	0.5726	2.113	54493.	1.05
PROMETHIUM	1.3043	0.4741	2.465	62795.	1.04
SAMARIUM	1.2992	0.3652	3.010	75552.	1.04
EUROPIUM+2	1.4715	0.3148	3.957	132593.	1.20
EUROPIUM+3	1.2963	0.3148	3.331	82373.	1.03
GADOLINIUM	1.2985	0.7093	1.616	39959.	1.02
TERBIUM	1.2855	0.6960	1.579	38486.	1.01
DYSPROSIUM	1.2797	0.5274	2.176	51764.	1.00
HOLMIUM	1.2740	0.5311	2.145	50258.	1.00
ERBIUM	1.2675	0.5519	2.034	46980.	0.99
THULIUM	1.2596	0.4319	2.556	57795.	0.98
YTTERBIUM+2	1.3980	0.2830	3.691	115718.	1.16
YTTERBIUM+3	1.2552	0.2830	3.510	77669.	0.97
LUTETIUM	1.2509	0.7567	1.275	28518.	0.96
HAFNIUM	1.1391	1.0778	0.154	3584.	0.82
TANTALUM	1.0577	1.3837	-0.029	931.	0.63
TUNGSTEN	1.0151	1.4904	13.867	5062.	0.11
RHENIUM	0.9913	1.3793	15.654	4802.	0.10
OSMIUM	0.9755	1.3941	36.778	6620.	0.08
IRIDIUM	0.9784	1.1785	35.274	1924.	0.03
GOLD	1.0397	0.6489	3.913	8267.	0.28
MERCURY	1.1492	0.1086	24.891	93029.	0.40
THALLIUM	1.2372	0.3203	28.163	67695.	0.32
LEAD	1.2617	0.3467	47.335	69414.	0.25
BISMUTH	1.2177	0.3700	34.248	82063.	0.32
POLONIUM	1.2790	0.2556	25.088	108164.	0.43
FRANCIUM	2.0187	0.1341	10.647	462019.	1.37
RADIUM	1.6539	0.3111	5.680	202595.	1.24
ACTINIUM	1.3540	0.7704	1.608	46055.	1.10
THORIUM	1.2963	1.0119	1.291	21695.	0.83
PROTACTINIUM	1.1723	0.9778	1.242	9541.	0.54
URANIUM	1.1125	0.9259	2.999	6614.	0.28
NEPTUNIUM	1.1017	0.8370	3.924	9336.	0.30
PLUTONIUM+4.76	1.1824	0.6800	2.719	23022.	0.59
PLUTONIUM+5	1.1478	0.6800	2.958	12658.	0.41
AMERICIUM	1.2473	0.4889	3.422	49205.	0.78

TABLE-III-149

SOLVENT-GOLD

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.900	1.4420	10.220	87600.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5402	0.5946	21.116	45016.	-0.30
LITHIUM	1.0832	0.4404	0.771	16910.	0.94
BERYLLIUM	0.7822	0.8893	2.328	8541.	0.37
BORON	0.6380	1.5126	141.394	48144.	-0.12
CARBON	0.6075	1.9509	12.001	118119.	-0.65
NITROGEN	0.5721	1.2888	4.617	137139.	-1.13
OXYGEN	0.6221	0.6797	0.427	25180.	-1.56
SODIUM	1.3252	0.2959	2.843	60352.	0.95
MAGNESIUM	1.1110	0.4064	1.964	21520.	0.67
ALUMINUM	0.9931	0.8847	-0.295	209.	0.38
SILICON	0.9168	1.2374	-10.080	53.	0.07
PHOSPHOROUS	0.8606	0.8596	0.737	1872.	-0.20
SULFUR	0.8669	0.7580	-0.086	451.	-0.61
POTASSIUM	1.6477	0.2452	5.367	140247.	1.06
CALCIUM	1.3689	0.4817	2.737	50065.	0.88
SCANDIUM	1.1380	1.0388	0.177	2765.	0.62
TITANIUM	1.0139	1.2865	-0.255	204.	0.41
VANADIUM	0.9334	1.4018	4.104	7590.	0.26
CHROMIUM	0.8890	1.0845	2.113	4238.	-0.25
MANGANESE+5	0.9064	0.7671	-120.727	79.	-0.02
MANGANESE+7	0.8696	0.7671	-0.272	468.	-0.34
IRON	0.8835	1.1416	227.715	5918.	0.03
COBALT	0.8682	1.1655	749.593	8106.	-0.02
NICKEL	0.8641	1.1735	364.807	8763.	-0.03
COPPER	0.8863	0.9258	3.745	1745.	0.08
ZINC	0.9667	0.3550	7.702	11423.	0.24
GALLIUM	0.9383	0.7443	10.792	3681.	0.10
GERMANIUM	0.9556	1.0217	+ ∞	1599.	0.
ARSENIC	0.9473	0.3311	30.206	23761.	-0.18
SELENIUM	0.9792	0.5639	2.461	18988.	-0.56
RUBIDIUM	1.7656	0.2272	6.910	180243.	1.06
STRONTIUM	1.4917	0.4121	4.006	79374.	0.92
YTTRIUM	1.2295	1.1370	0.394	5936.	0.72
ZIRCONIUM	1.1110	1.6667	-0.015	1086.	0.56
NIOBIUM	1.0180	1.9977	3.079	12553.	0.40
MOLYBDENUM	0.9709	1.7979	13.218	13385.	-0.20
TECHNETIUM	0.9466	1.8048	15.754	17213.	-0.21
RUTHENIUM	0.9286	1.7671	15.622	18628.	-0.22
RHODIUM	0.9327	1.5205	4.630	10801.	-0.30
PALLADIUM	0.9542	1.0320	-0.240	661.	-0.31
SILVER	1.0021	0.7808	0.037	1233.	0.22
CADMIUM	1.0874	0.3059	10.438	25841.	0.32
INDIUM	1.1553	0.6587	82.042	13300.	0.08
TIN+2	1.1311	0.8219	5.450	9047.	0.25
TIN+4	1.0957	0.8219	141.975	17235.	0.07
ANTIMONY	1.0895	0.7146	102.941	16385.	-0.08
TELLURIUM	1.1387	0.5320	3217.161	30867.	-0.02

TABLE-III-150

SOLVENT-GOLD

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.8939	0.2151	8.047	229823.	1.11
BARIUM	1.5506	0.4852	3.843	84564.	0.97
LANTHANUM	1.3017	1.1758	0.638	10208.	0.78
CERIUM+3	1.2802	1.2740	0.388	6597.	0.78
CERIUM+4	1.1595	1.2740	-0.033	1025.	0.47
PRASEODYMIUM	1.2677	1.0170	0.749	11438.	0.77
NEODYMIUM	1.2635	0.8824	1.029	15121.	0.77
PROMETHIUM	1.2545	0.7306	1.406	19970.	0.76
SAMARIUM	1.2497	0.5628	2.019	27725.	0.76
EUROPIUM+2	1.4154	0.4852	2.891	57618.	0.92
EUROPIUM+3	1.2469	0.4852	2.396	32110.	0.75
GADOLINIUM	1.2490	1.0930	0.550	8132.	0.74
TERBIUM	1.2365	1.0726	0.525	7678.	0.73
DYSPROSIUM	1.2309	0.8128	1.095	14433.	0.72
HOLMIUM	1.2254	0.8185	1.062	13749.	0.72
ERBIUM	1.2191	0.8505	0.949	12161.	0.71
THULIUM	1.2115	0.6655	1.511	18266.	0.70
YTTERBIUM+2	1.3447	0.4361	2.726	49867.	0.88
YTTERBIUM+3	1.2074	0.4361	2.652	30473.	0.69
LUTETIUM	1.2032	1.1662	0.256	3954.	0.68
HAFNIUM	1.0957	1.6610	0.053	1545.	0.54
TANTALUM	1.0173	2.1324	5.218	15931.	0.35
TUNGSTEN	0.9764	2.2968	39.187	27308.	-0.17
RHENIUM	0.9535	2.1256	33.446	26181.	-0.18
OSMIUM	0.9383	2.1484	31.269	30035.	-0.20
IRIDIUM	0.9411	1.8162	11.784	18175.	-0.25
PLATINUM	0.9619	1.5411	3.913	8267.	-0.28
MERCURY	1.1054	0.1674	129.621	44235.	0.12
THALLIUM	1.1900	0.4936	638.461	24749.	0.04
LEAD	1.2136	0.5342	1151.589	25092.	-0.03
BISMUTH	1.1713	0.5702	802.600	30805.	0.04
POLONIUM	1.2302	0.3938	87.868	46782.	0.15
FRANCIUM	1.9417	0.2066	8.923	245654.	1.09
RADIUM	1.5908	0.4795	4.377	94218.	0.96
ACTINIUM	1.3024	1.1872	0.567	9988.	0.82
THORIUM	1.2469	1.5594	0.023	1354.	0.55
PROTACTINIUM	1.1276	1.5068	-0.754	16.	0.26
URANIUM	1.0700	1.4269	- ∞	278.	0.
NEPTUNIUM	1.0596	1.2900	-129.165	1.	0.02
PLUTONIUM+4.76	1.1373	1.0479	0.648	2629.	0.31
PLUTONIUM+5	1.1040	1.0479	-2.245	317.	0.13
AMERICIUM	1.1997	0.7534	2.178	13747.	0.50

TABLE-III-151

SOLVENT-MERCURY

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.780	1.594C	14.C90	1466C.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4887	3.5532	41.729	17C937.	-0.42
LITHIUM	0.9799	2.6317	0.353	6668.	0.82
BERYLLIUM	0.7077	5.3138	57.291	83764.	0.25
BORON	0.5772	9.0382	138.399	185022.	-0.24
CARBON	0.5496	11.6576	23.498	322457.	-0.77
NITROGEN	0.5176	7.7012	9.824	355150.	-1.25
OXYGEN	0.5627	4.0614	1.916	125897.	-1.68
SODIUM	1.1989	1.7681	-C.074	11.	0.83
MAGNESIUM	1.0050	2.4284	0.494	4637.	0.55
ALUMINUM	0.8984	5.2865	23.275	37474.	0.26
SILICON	0.8294	7.3943	865.929	51113.	-0.05
PHOSPHOROUS	0.7785	5.1364	24.219	58381.	-0.32
SULFUR	0.7842	4.5293	3.764	47452.	-0.73
POTASSIUM	1.4906	1.4652	C.105	3325.	0.94
CALCIUM	1.2384	2.8786	C.005	1252.	0.76
SCANDIUM	1.0295	6.2074	5.030	3C192.	0.50
TITANIUM	0.9172	7.6876	27.479	54484.	0.29
VANADIUM	0.8444	8.3765	193.711	88745.	0.14
CHROMIUM	0.8043	6.4802	22.531	72320.	-0.37
MANGANESE+5	0.8199	4.5839	92.479	42991.	-0.14
MANGANESE+7	0.7867	4.5839	9.545	47767.	-0.46
IRON	0.7992	6.8213	417.638	79201.	-0.09
COBALT	0.7854	6.9645	188.935	86586.	-0.14
NICKEL	0.7817	7.0123	168.659	88701.	-0.15
COPPER	0.8018	5.5321	1563.184	56867.	-0.04
ZINC	0.8745	2.1214	2C.074	7858.	0.12
GALLIUM	0.8488	4.4475	2352.698	22893.	-0.02
GERMANIUM	0.8645	6.1050	95.631	32948.	-0.12
ARSENIC	0.8570	1.9782	C.901	3062.	-0.30
SELENIUM	0.8858	3.3697	C.618	7779.	-0.68
RUBIDIUM	1.5972	1.3574	0.251	6315.	0.94
STRONTIUM	1.3494	2.4625	-0.081	3.	0.80
YTTRIUM	1.1123	6.7940	3.040	26683.	0.60
ZIRCONIUM	1.0050	9.9591	15.067	68460.	0.44
NIOBIUM	0.9210	11.9372	61.359	112123.	0.28
MOLYBDENUM	0.8783	10.7435	46.535	111077.	-0.32
TECHNETIUM	0.8563	10.7844	47.579	12C675.	-0.33
RUTHENIUM	0.8400	10.5593	45.887	123516.	-0.34
RHODIUM	0.8438	9.0859	24.268	95910.	-0.42
PALLADIUM	0.8632	6.1664	12.413	54119.	-0.43
SILVER	0.9065	4.6658	123.486	29668.	0.10
CADMIUM	0.9837	1.8281	1.246	2342.	0.20
INDIUM	1.0452	3.9359	291.544	11949.	-0.04
TIN+2	1.0232	4.9113	42.561	17779.	0.13
TIN+4	0.9912	4.9113	196.613	12527.	-0.05
ANTIMONY	0.9856	4.2701	10.888	11235.	-0.20
TELLURIUM	1.0301	3.1787	6.507	4133.	-0.14

TABLE-III-152

SOLVENT-MERCURY

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.7133	1.2851	0.405	10336.	0.99
BARIUM	1.4028	2.8990	-0.069	35.	0.85
LANTHANUM	1.1775	7.0259	2.141	22891.	0.66
CERIUM+3	1.1581	7.6126	2.722	28285.	0.66
CERIUM+4	1.0489	7.6126	13.650	39751.	0.35
PRASEODYMIUM	1.1468	6.0771	1.849	19204.	0.65
NEODYMIUM	1.1430	5.2729	1.392	14588.	0.65
PROMETHIUM	1.1349	4.3656	0.922	9927.	0.64
SAMARIUM	1.1305	3.3629	0.429	5186.	0.64
EUROPIUM+2	1.2804	2.8990	-0.027	793.	0.80
EUROPIUM+3	1.1280	2.8990	0.238	3356.	0.63
GADOLINIUM	1.1299	6.5314	2.504	23389.	0.62
TERBIUM	1.1186	6.4093	2.583	23500.	0.61
DYSPROSIUM	1.1136	4.8568	1.504	13842.	0.60
HOLMIUM	1.1085	4.8909	1.604	14335.	0.60
ERBIUM	1.1029	5.0819	1.842	15878.	0.59
THULIUM	1.0960	3.9768	1.087	9622.	0.58
YTTERBIUM+2	1.2164	2.6057	-0.018	947.	0.76
YTTERBIUM+3	1.0922	2.6057	0.249	3070.	0.57
LUTETIUM	1.0885	6.9686	3.954	30195.	0.56
HAFNIUM	0.9912	9.9250	17.135	70894.	0.42
TANTALUM	0.9203	12.7422	99.536	122613.	0.23
TUNGSTEN	0.8833	13.7244	77.055	150628.	-0.29
RHENIUM	0.8626	12.7012	69.667	145779.	-0.30
OSMIUM	0.8488	12.8377	64.872	154377.	-0.32
IRIDIUM	0.8513	10.8527	38.633	123153.	-0.37
PLATINUM	0.8701	9.2087	24.891	93029.	-0.40
GOLD	0.9046	5.9754	129.621	44235.	-0.12
THALLIUM	1.0765	2.9495	25.736	4990.	-0.08
LEAD	1.0979	3.1924	8.210	5452.	-0.15
BISMUTH	1.0596	3.4072	23.165	4611.	-0.08
POLONIUM	1.1129	2.3533	-15.737	866.	0.03
FRANCIUM	1.7566	1.2347	0.492	11869.	0.97
RADIUM	1.4391	2.8649	-0.073	2.	0.84
ACTINIUM	1.1782	7.0941	1.955	23277.	0.70
THORIUM	1.1280	9.3179	9.983	43759.	0.43
PROTACTINIUM	1.0201	9.0041	119.040	54995.	0.14
URANIUM	0.9680	8.5266	170.857	57928.	-0.12
NEPTUNIUM	0.9586	7.7080	211.303	49919.	-0.10
PLUTONIUM+4.76	1.0289	6.2619	35.410	30670.	0.19
PLUTONIUM+5	0.9987	6.2619	16628.696	39538.	0.01
AMERICIUM	1.0853	4.5020	3.625	13261.	0.38

TABLE-III-153

SOLVENT-THALLIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.860	1.7160	17.220	43240.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4540	1.2047	58.975	158404.	-0.34
LITHIUM	0.9103	0.8922	-0.049	283.	0.90
BERYLLIUM	0.6573	1.8016	25.016	64013.	0.33
BORON	0.5361	3.0643	277.841	165212.	-0.16
CARBON	0.5105	3.9524	28.380	312770.	-0.69
NITROGEN	0.4808	2.6110	11.230	355695.	-1.17
OXYGEN	0.5227	1.3770	1.835	109506.	-1.60
SODIUM	1.1136	0.5994	0.252	5997.	0.91
MAGNESIUM	0.9336	0.8233	-0.130	2.	0.63
ALUMINUM	0.8345	1.7923	6.896	19574.	0.34
SILICON	0.7704	2.5069	1349.830	29207.	0.03
PHOSPHOROUS	0.7232	1.7414	28.566	39136.	-0.24
SULFUR	0.7284	1.5356	2.914	29586.	-0.65
POTASSIUM	1.3846	0.4968	1.007	25354.	1.02
CALCIUM	1.1503	0.9759	0.059	2157.	0.84
SCANDIUM	0.9563	2.1045	1.439	12354.	0.58
TITANIUM	0.8520	2.6064	9.745	31956.	0.37
VANADIUM	0.7844	2.8400	56.795	64581.	0.22
CHROMIUM	0.7471	2.1970	25.620	50877.	-0.29
MANGANESE+5	0.7617	1.5541	291.585	25398.	-0.06
MANGANESE+7	0.7308	1.5541	8.594	29809.	-0.38
IRON	0.7424	2.3127	24305.436	57241.	-0.01
COBALT	0.7296	2.3612	762.238	64470.	-0.06
NICKEL	0.7261	2.3774	578.366	66544.	-0.07
COPPER	0.7448	1.8756	1026.380	39062.	0.04
ZINC	0.8124	0.7192	-0.344	875.	0.20
GALLIUM	0.7885	1.5079	87.964	8495.	0.06
GERMANIUM	0.8030	2.0698	366.820	14726.	-0.04
ARSENIC	0.7960	0.6707	-0.962	119.	-0.22
SELENIUM	0.8228	1.1425	-0.098	375.	-0.60
RUBIDIUM	1.4837	0.4602	1.444	35834.	1.02
STRONTIUM	1.2535	0.8349	0.371	7825.	0.88
YTTRIUM	1.0332	2.3034	0.727	9013.	0.68
ZIRCONIUM	0.9336	3.3765	6.566	42135.	0.52
NIOBIUM	0.8555	4.0472	27.430	83170.	0.36
MOLYBDENUM	0.8159	3.6425	62.280	83916.	-0.24
TECHNETIUM	0.7955	3.6563	64.286	93844.	-0.25
RUTHENIUM	0.7803	3.5800	61.566	97164.	-0.26
RHODIUM	0.7838	3.0805	27.654	74910.	-0.34
PALLADIUM	0.8019	2.0907	11.496	33666.	-0.35
SILVER	0.8421	1.5819	16.658	13638.	0.18
CADMIUM	0.9138	0.6198	-0.474	335.	0.28
INDIUM	0.9709	1.3344	16.496	1801.	0.04
TIN+2	0.9505	1.6651	3.234	4481.	0.21
TIN+4	0.9207	1.6651	16.732	1539.	0.03
ANTIMONY	0.9155	1.4477	0.284	1286.	-0.12
TELLURIUM	0.9569	1.0777	-13.069	107.	-0.06

TABLE-III-154

SOLVENT-THALLIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5915	0.4357	1.803	48803.	1.07
BARIUM	1.3030	0.9829	0.327	7714.	0.93
LANTHANUM	1.0938	2.3821	0.385	6090.	0.74
CERIUM+3	1.0758	2.5809	0.655	9399.	0.74
CERIUM+4	0.9744	2.5809	4.112	18724.	0.43
PRASEODYMIUM	1.0653	2.0604	0.266	4463.	0.73
NEODYMIUM	1.0618	1.7877	0.095	2350.	0.73
PROMETHIUM	1.0542	1.4801	-0.039	723.	0.72
SAMARIUM	1.0501	1.1401	-0.101	3.	0.72
EUROPIUM+2	1.1894	0.9829	0.113	3203.	0.88
EUROPIUM+3	1.0478	0.9829	-0.080	265.	0.71
GADOLINIUM	1.0495	2.2144	0.503	6871.	0.70
TERBIUM	1.0390	2.1730	0.531	7060.	0.69
DYSPROSIUM	1.0344	1.6466	0.095	2216.	0.68
HOLMIUM	1.0297	1.6582	0.120	2455.	0.68
ERBIUM	1.0245	1.7229	0.194	3190.	0.67
THULIUM	1.0181	1.3483	-0.042	766.	0.66
YTTERBIUM+2	1.1300	0.8834	0.080	2488.	0.84
YTTERBIUM+3	1.0146	0.8834	-0.093	284.	0.65
LUTETIUM	1.0111	2.3626	1.081	11534.	0.64
HAFNIUM	0.9207	3.3649	7.521	44549.	0.50
TANTALUM	0.8549	4.3201	41.357	92841.	0.31
TUNGSTEN	0.8205	4.6531	117.695	120882.	-0.21
RHENIUM	0.8013	4.3062	104.061	117335.	-0.22
OSMIUM	0.7885	4.3525	94.175	126281.	-0.24
IRIDIUM	0.7908	3.6795	49.058	96333.	-0.29
PLATINUM	0.8083	3.1221	28.163	67695.	-0.32
GOLD	0.8403	2.0259	638.461	24749.	-0.04
MERCURY	0.9289	0.3390	25.736	4990.	0.08
LEAD	1.0198	1.0823	-10.511	4.	-0.07
BISMUTH	0.9843	1.1552	$+\infty$	57.	0.
POLONIUM	1.0338	0.7979	4.312	2395.	0.11
FRANCIUM	1.6317	0.4186	2.048	53270.	1.05
RADIUM	1.3368	0.9713	0.430	9587.	0.92
ACTINIUM	1.0944	2.4052	0.364	6292.	0.78
THORIUM	1.0478	3.1591	3.155	20116.	0.51
PROTACTINIUM	0.9476	3.0527	26.402	30659.	0.22
URANIUM	0.8992	2.8908	890.720	34056.	-0.04
NEPTUNIUM	0.8904	2.6133	2872.653	27690.	-0.02
PLUTONIUM+4.76	0.9557	2.1230	6.834	12680.	0.27
PLUTONIUM+5	0.9277	2.1230	101.709	20190.	0.09
AMERICIUM	1.0082	1.5264	0.192	2131.	0.46

TABLE-III-155

SOLVENT-LEAD

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.930	1.7500	18.270	46800.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4451	1.1130	98.004	165945.	-0.27
LITHIUM	0.8926	0.8244	-0.044	229.	0.97
BERYLLIUM	0.6446	1.6645	17.611	66171.	0.40
BORON	0.5257	2.8312	913.583	171837.	-0.09
CARBON	0.5006	3.6517	36.734	326808.	-0.62
NITROGEN	0.4714	2.4124	13.335	373264.	-1.10
OXYGEN	0.5126	1.2722	2.094	114255.	-1.53
SODIUM	1.0920	0.5538	0.240	6517.	0.98
MAGNESIUM	0.9154	0.7607	-0.105	1.	0.70
ALUMINUM	0.8183	1.6560	4.799	19795.	0.41
SILICON	0.7554	2.3162	123.093	29578.	0.10
PHOSPHOROUS	0.7091	1.6090	58.467	40156.	-0.17
SULFUR	0.7143	1.4188	3.748	30268.	-0.58
POTASSIUM	1.3577	0.4590	0.931	26696.	1.09
CALCIUM	1.1280	0.9017	0.065	2437.	0.91
SCANDIUM	0.9377	1.9444	1.140	12298.	0.65
TITANIUM	0.8354	2.4081	6.990	32397.	0.44
VANADIUM	0.7691	2.6239	33.564	66285.	0.29
CHROMIUM	0.7326	2.0299	45.738	52240.	-0.22
MANGANESE+5	0.7469	1.4359	10715.477	25902.	0.01
MANGANESE+7	0.7166	1.4359	13.222	30493.	-0.31
IRON	0.7280	2.1368	694.446	58842.	0.06
COBALT	0.7154	2.1816	28270.862	66385.	0.01
NICKEL	0.7120	2.1966	- ∞	68549.	0.
COPPER	0.7303	1.7329	139.185	40028.	0.11
ZINC	0.7966	0.6645	-0.233	801.	0.27
GALLIUM	0.7731	1.3932	18.599	8440.	0.13
GERMANIUM	0.7874	1.9124	652.626	14737.	0.03
ARSENIC	0.7806	0.6197	-1.968	171.	-0.15
SELENIUM	0.8069	1.0556	-0.136	309.	-0.53
RUBIDIUM	1.4549	0.4252	1.326	37524.	1.09
STRONTIUM	1.2291	0.7714	0.349	8450.	0.95
YTTRIUM	1.0131	2.1282	0.587	8861.	0.75
ZIRCONIUM	0.9154	3.1197	5.173	42713.	0.59
NIOBIUM	0.8389	3.7393	19.694	85162.	0.43
MOLYBDENUM	0.8000	3.3654	127.449	86129.	-0.17
TECHNETIUM	0.7800	3.3782	127.574	96508.	-0.18
RUTHENIUM	0.7651	3.3077	118.721	100024.	-0.19
RHODIUM	0.7686	2.8462	45.080	76975.	-0.27
PALLADIUM	0.7863	1.9316	18.330	34332.	-0.28
SILVER	0.8257	1.4615	8.686	13712.	0.25
CADMIUM	0.8960	0.5726	-0.272	424.	0.35
INDIUM	0.9520	1.2329	1.763	1684.	0.11
TIN+2	0.9320	1.5385	1.742	4342.	0.28
TIN+4	0.9029	1.5385	0.949	1411.	0.10
ANTIMONY	0.8977	1.3376	-0.331	1173.	-0.05
TELLURIUM	0.9383	0.9957	-446.974	161.	0.01

TABLE-III-156

SOLVENT-LEAD

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5606	0.4026	1.658	50882.	1.14
BARIUM	1.2777	0.9081	0.310	8340.	1.00
LANTHANUM	1.0726	2.2009	0.309	5897.	0.81
CERIUM+3	1.0549	2.3846	0.535	9220.	0.81
CERIUM+4	0.9554	2.3846	3.045	18745.	0.50
PRASEODYMIUM	1.0446	1.9036	0.210	4291.	0.80
NEODYMIUM	1.0411	1.6517	0.069	2202.	0.80
PROMETHIUM	1.0337	1.3675	-0.039	628.	0.79
SAMARIUM	1.0297	1.0534	-0.083	16.	0.79
EUROPIUM+2	1.1663	0.9081	0.114	3561.	0.95
EUROPIUM+3	1.0274	0.9081	-0.060	349.	0.78
GADOLINIUM	1.0291	2.0459	0.403	6701.	0.77
TERBIUM	1.0189	2.0077	0.426	6897.	0.76
DYSPROSIUM	1.0143	1.5214	0.068	2078.	0.75
HOLMIUM	1.0097	1.5321	0.087	2314.	0.75
ERBIUM	1.0046	1.5919	0.147	3042.	0.74
THULIUM	0.9983	1.2457	-0.042	673.	0.73
YTTERBIUM+2	1.1080	0.8162	0.084	2791.	0.91
YTTERBIUM+3	0.9949	0.8162	-0.068	370.	0.72
LUTETIUM	0.9914	2.1829	0.870	11420.	0.71
HAFNIUM	0.9029	3.1090	5.877	45220.	0.57
TANTALUM	0.8383	3.9915	28.213	95137.	0.38
TUNGSTEN	0.8046	4.2991	272.377	124300.	-0.14
RHENIUM	0.7857	3.9786	230.468	120771.	-0.15
OSMIUM	0.7731	4.0214	193.462	130122.	-0.17
IRIDIUM	0.7754	3.3996	87.725	99102.	-0.22
PLATINUM	0.7926	2.8846	47.335	69414.	-0.25
GOLD	0.8240	1.8718	1151.589	25092.	0.03
MERCURY	0.9109	0.3132	8.210	5452.	0.15
THALLIUM	0.9806	0.9239	-10.511	4.	0.07
BISMUTH	0.9651	1.0673	-9.687	98.	0.07
POLONIUM	1.0137	0.7372	2.003	2689.	0.18
FRANCIUM	1.6000	0.3868	1.877	55475.	1.12
RADIUM	1.3109	0.8974	0.403	10307.	0.99
ACTINIUM	1.0731	2.2222	0.295	6099.	0.85
THORIUM	1.0274	2.9188	2.433	20062.	0.58
PROTACTINIUM	0.9291	2.8205	15.335	30933.	0.29
URANIUM	0.8817	2.6709	1604.426	34490.	0.03
NEPTUNIUM	0.8731	2.4145	464.649	27979.	0.05
PLUTONIUM+4.76	0.9371	1.9615	4.290	12628.	0.34
PLUTONIUM+5	0.9097	1.9615	32.457	20353.	0.16
AMERICIUM	0.9886	1.4103	0.125	2001.	0.53

TABLE-III-157

SOLVENT-BISMUTH

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.860	1.6890	21.330	49950.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4612	1.0428	73.875	198123.	-0.34
LITHIUM	0.9248	0.7724	-0.030	627.	0.90
BERYLLIUM	0.6679	1.5596	31.135	79379.	0.33
BORON	0.5447	2.6527	340.394	202139.	-0.16
CARBON	0.5187	3.4214	34.736	382559.	-0.69
NITROGEN	0.4885	2.2603	13.896	439838.	-1.17
OXYGEN	0.5311	1.1920	2.296	136725.	-1.60
SODIUM	1.1314	0.5189	0.217	5339.	0.91
MAGNESIUM	0.9485	0.7127	-0.122	73.	0.63
ALUMINUM	0.8478	1.5516	8.788	24618.	0.34
SILICON	0.7827	2.1702	1673.172	35917.	0.03
PHOSPHOROUS	0.7348	1.5075	35.769	48702.	-0.24
SULFUR	0.7401	1.3293	3.687	37114.	-0.65
POTASSIUM	1.4067	0.4300	0.944	23843.	1.02
CALCIUM	1.1687	0.8448	0.026	1617.	0.84
SCANDIUM	0.9716	1.8218	1.872	15711.	0.58
TITANIUM	0.8656	2.2563	12.032	39177.	0.37
VANADIUM	0.7969	2.4585	69.377	78625.	0.22
CHROMIUM	0.7590	1.9019	31.684	62638.	-0.29
MANGANESE+5	0.7738	1.3453	370.254	31929.	-0.06
MANGANESE+7	0.7425	1.3453	10.866	37373.	-0.38
IRON	0.7543	2.0020	29972.951	70310.	-0.01
COBALT	0.7413	2.0440	938.826	79130.	-0.06
NICKEL	0.7377	2.0581	712.121	81658.	-0.07
COPPER	0.7567	1.6236	1281.391	48470.	0.04
ZINC	0.8253	0.6226	0.315	1483.	0.20
GALLIUM	0.8011	1.3053	119.635	11124.	0.06
GERMANIUM	0.8159	1.7918	471.692	18596.	-0.04
ARSENIC	0.8088	0.5806	-1.050	20.	-0.22
SELENIUM	0.8360	0.9890	-0.049	783.	-0.60
RUBIDIUM	1.5074	0.3984	1.359	33799.	1.02
STRONTIUM	1.2735	0.7227	0.318	6874.	0.88
YTTRIUM	1.0497	1.9940	0.971	11641.	0.68
ZIRCONIUM	0.9485	2.9229	7.969	50885.	0.52
NIOBIUM	0.8692	3.5035	32.948	99659.	0.36
MOLYBDENUM	0.8289	3.1532	75.229	101116.	-0.24
TECHNETIUM	0.8082	3.1652	77.711	113193.	-0.25
RUTHENIUM	0.7928	3.0991	74.525	117367.	-0.26
RHODIUM	0.7963	2.6667	33.661	90922.	-0.34
PALLADIUM	0.8147	1.8098	14.322	41649.	-0.35
SILVER	0.8555	1.3694	21.739	17434.	0.18
CADMIUM	0.9284	0.5365	-0.575	153.	0.28
INDIUM	0.9864	1.1552	42.113	2746.	0.04
TIN+2	0.9657	1.4414	4.869	6144.	0.21
TIN+4	0.9355	1.4414	59.097	2419.	0.03
ANTIMONY	0.9301	1.2533	2.652	2073.	-0.12
TELLURIUM	0.9722	0.9329	-14.249	9.	-0.06

TABLE-III-158

SOLVENT-BISMUTH

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.6169	0.3772	1.698	46030.	1.07
BARIUM	1.3239	0.8509	0.275	6670.	0.93
LANTHANUM	1.1113	2.0621	0.543	8103.	0.74
CERIUM+3	1.0930	2.2342	0.869	12082.	0.74
CERIUM+4	0.9899	2.2342	5.174	23253.	0.43
PRASEODYMIUM	1.0823	1.7836	0.401	6117.	0.73
NEODYMIUM	1.0787	1.5475	0.187	3470.	0.73
PROMETHIUM	1.0710	1.2813	0.010	1307.	0.72
SAMARIUM	1.0669	0.9870	-0.098	36.	0.72
EUROPIUM+2	1.2084	0.8509	0.076	2545.	0.88
EUROPIUM+3	1.0645	0.8509	-0.096	87.	0.71
GADOLINIUM	1.0663	1.9169	0.696	9055.	0.70
TERBIUM	1.0557	1.8811	0.733	9288.	0.69
DYSPROSIUM	1.0509	1.4254	0.195	3294.	0.68
HOLMIUM	1.0462	1.4354	0.228	3600.	0.68
ERBIUM	1.0409	1.4915	0.324	4530.	0.67
THULIUM	1.0343	1.1672	0.017	1359.	0.66
YTTERBIUM+2	1.1480	0.7648	0.046	1936.	0.84
YTTERBIUM+3	1.0308	0.7648	-0.111	104.	0.65
LUTETIUM	1.0272	2.0452	1.409	14672.	0.64
HAFNIUM	0.9355	2.9129	9.124	53792.	0.50
TANTALUM	0.8686	3.7397	49.551	111001.	0.31
TUNGSTEN	0.8336	4.0280	140.948	144529.	-0.21
RHENIUM	0.8141	3.7277	125.077	140791.	-0.22
OSMIUM	0.8011	3.7678	113.256	151626.	-0.24
IRIDIUM	0.8034	3.1852	59.299	116194.	-0.29
PLATINUM	0.8212	2.7027	34.248	82063.	-0.32
GOLD	0.8538	1.7538	802.600	308C5.	-0.04
MERCURY	0.9438	0.2935	23.165	4611.	0.08
THALLIUM	1.0160	0.8657	- ∞	57.	0.
LEAD	1.0361	0.9369	-9.687	98.	-0.07
POLONIUM	1.0503	0.6907	2.467	1881.	0.11
FRANCIUM	1.6578	0.3624	1.930	50265.	1.05
RADIUM	1.3582	0.8408	0.370	8410.	0.92
ACTINIUM	1.1119	2.0821	0.510	8349.	0.78
THORIUM	1.0645	2.7347	3.926	24741.	0.51
PROTACTINIUM	0.9627	2.6426	32.392	37345.	0.22
URANIUM	0.9136	2.5025	1093.032	41521.	-0.04
NEPTUNIUM	0.9047	2.2623	3559.105	34021.	-0.02
PLUTONIUM+4.76	0.9710	1.8378	8.869	16102.	0.27
PLUTONIUM+5	0.9426	1.8378	128.553	25204.	0.09
AMERICIUM	1.0243	1.3213	0.407	3180.	0.46

TABLE-III-159

SOLVENT-POLONIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.750	1.7740	22.530	34500.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4391	1.5099	50.905	238902.	-0.45
LITHIUM	0.8805	1.1183	0.206	4163.	0.79
BERYLLIUM	0.6359	2.2580	92.064	103945.	0.22
BORON	0.5186	3.8406	144.423	243977.	-0.27
CARBON	0.4938	4.9536	30.036	444468.	-0.80
NITROGEN	0.4651	3.2725	13.404	507628.	-1.28
OXYGEN	0.5056	1.7258	2.496	169502.	-1.71
SODIUM	1.0772	0.7513	-0.022	868.	0.80
MAGNESIUM	0.9030	1.0319	0.183	2330.	0.52
ALUMINUM	0.8072	2.2464	30.909	38897.	0.23
SILICON	0.7452	3.1420	354.766	53550.	-0.08
PHOSPHOROUS	0.6995	2.1826	23.633	67953.	-0.35
SULFUR	0.7046	1.9246	3.955	53876.	-0.76
POTASSIUM	1.3393	0.6226	0.480	10351.	0.91
CALCIUM	1.1127	1.2232	-0.095	25.	0.73
SCANDIUM	0.9250	2.6377	5.276	28066.	0.47
TITANIUM	0.8241	3.2667	36.168	57574.	0.26
VANADIUM	0.7587	3.5594	368.257	103946.	0.11
CHROMIUM	0.7227	2.7536	22.660	84798.	-0.40
MANGANESE+5	0.7368	1.9478	69.642	47604.	-0.17
MANGANESE+7	0.7069	1.9478	9.575	54208.	-0.49
IRON	0.7182	2.8986	279.016	93843.	-0.12
COBALT	0.7057	2.9594	154.425	104106.	-0.17
NICKEL	0.7024	2.9797	141.670	107040.	-0.18
COPPER	0.7204	2.3507	589.585	67812.	-0.07
ZINC	0.7858	0.9014	24.636	5794.	0.09
GALLIUM	0.7627	1.8899	347.717	21238.	-0.05
GERMANIUM	0.7768	2.5942	58.814	31708.	-0.15
ARSENIC	0.7700	0.8406	-0.003	1185.	-0.33
SELENIUM	0.7959	1.4319	0.311	4803.	-0.71
RUBIDIUM	1.4352	0.5768	0.785	16183.	0.91
STRONTIUM	1.2125	1.0464	0.000	1198.	0.77
YTTRIUM	0.9994	2.8870	2.881	23006.	0.57
ZIRCONIUM	0.9030	4.2319	18.354	72340.	0.41
NIOBIUM	0.8275	5.0725	88.767	129128.	0.25
MOLYBDENUM	0.7892	4.5652	45.745	130416.	-0.35
TECHNETIUM	0.7694	4.5826	47.834	144147.	-0.36
RUTHENIUM	0.7548	4.4870	46.763	148818.	-0.37
RHODIUM	0.7582	3.8609	25.076	118290.	-0.45
PALLADIUM	0.7756	2.6203	12.036	59923.	-0.46
SILVER	0.8145	1.9826	251.340	29592.	0.07
CADMIUM	0.8839	0.7768	-0.740	699.	0.17
INDIUM	0.9391	1.6725	67.225	8788.	-0.07
TIN+2	0.9194	2.0870	97.717	14502.	0.10
TIN+4	0.8906	2.0870	50.370	8626.	-0.08
ANTIMONY	0.8856	1.8145	5.372	7746.	-0.23
TELLURIUM	0.9256	1.3507	0.592	1587.	-0.17

TABLE-III-160

SOLVENT-POLONIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5395	0.5461	1.049	23487.	0.96
BARIUM	1.2604	1.2319	-0.013	993.	0.82
LANTHANUM	1.0581	2.9855	1.849	18278.	0.63
CERIUM+3	1.0406	3.2348	2.514	23983.	0.63
CERIUM+4	0.9425	3.2348	15.686	38232.	0.32
PRASEODYMIUM	1.0304	2.5823	1.556	14987.	0.62
NEODYMIUM	1.0271	2.2406	1.070	10557.	0.62
PROMETHIUM	1.0197	1.8551	0.595	6315.	0.61
SAMARIUM	1.0158	1.4290	0.140	2377.	0.61
EUROPIUM+2	1.1505	1.2319	-0.086	17.	0.77
EUROPIUM+3	1.0135	1.2319	-0.012	1097.	0.60
GADOLINIUM	1.0152	2.7754	2.265	19374.	0.59
TERBIUM	1.0051	2.7235	2.362	19638.	0.58
DYSPROSIUM	1.0006	2.0638	1.171	10090.	0.57
HOLMIUM	0.9961	2.0783	1.274	10603.	0.57
ERBIUM	0.9910	2.1594	1.527	12155.	0.56
THULIUM	0.9848	1.6899	0.728	6270.	0.55
YTTERBIUM+2	1.0930	1.1072	-0.097	0.	0.73
YTTERBIUM+3	0.9814	1.1072	-0.031	982.	0.54
LUTETIUM	0.9780	2.9612	3.936	27076.	0.53
HAFNIUM	0.8906	4.2174	21.249	75721.	0.39
TANTALUM	0.8269	5.4145	152.905	142231.	0.20
TUNGSTEN	0.7937	5.8319	75.834	180262.	-0.32
RHENIUM	0.7751	5.3971	69.533	175806.	-0.33
OSMIUM	0.7627	5.4551	66.134	188011.	-0.35
IRIDIUM	0.7649	4.6116	39.672	147567.	-0.40
PLATINUM	0.7818	3.9130	25.088	108164.	-0.43
GOLD	0.8129	2.5391	87.868	46782.	-0.15
MERCURY	0.8985	0.4249	-15.737	866.	-0.03
THALLIUM	0.9673	1.2533	4.312	2395.	-0.11
LEAD	0.9865	1.3565	2.003	2689.	-0.18
BISMUTH	0.9521	1.4478	2.467	1881.	-0.11
FRANCIUM	1.5784	0.5246	1.223	26122.	0.94
RADIUM	1.2931	1.2174	0.029	1629.	0.81
ACTINIUM	1.0586	3.0145	1.687	18654.	0.67
THORIUM	1.0135	3.9594	10.754	40872.	0.40
PROTACTINIUM	0.9166	3.8261	196.250	55951.	0.11
URANIUM	0.8698	3.6232	114.716	60712.	-0.15
NEPTUNIUM	0.8613	3.2754	128.844	51404.	-0.13
PLUTONIUM+4.76	0.9245	2.6609	46.418	28595.	0.16
PLUTONIUM+5	0.8974	2.6609	4211.425	40038.	-0.02
AMERICIUM	0.9752	1.9130	3.031	9753.	0.35

TABLE-III-161

SOLVENT-FRANCIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
0.810	2.8000	73.000	18100.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.2782	2.8779	22.513	1004227.	-1.39
LITHIUM	0.5579	2.1315	121.779	64377.	-0.15
BERYLLIUM	0.4029	4.3039	39.649	475162.	-0.72
BORON	0.3286	7.3204	28.584	966246.	-1.21
CARBON	0.3129	9.4420	23.779	1661381.	-1.74
NITROGEN	0.2946	6.2376	17.001	1933301.	-2.22
OXYGEN	0.3204	3.2895	4.550	738013.	-2.65
SODIUM	0.6825	1.4320	29.267	14420.	-0.14
MAGNESIUM	0.5721	1.9669	12.569	52319.	-0.42
ALUMINUM	0.5114	4.2818	18.553	216859.	-0.71
SILICON	0.4721	5.9890	11.021	265606.	-1.02
PHOSPHOROUS	0.4432	4.1602	8.699	334990.	-1.29
SULFUR	0.4464	3.6685	4.214	282014.	-1.70
POTASSIUM	0.8486	1.1867	43.892	2103.	-0.03
CALCIUM	0.7050	2.3315	27.850	29514.	-0.21
SCANDIUM	0.5861	5.0276	33.026	169425.	-0.47
TITANIUM	0.5221	6.2265	26.122	279730.	-0.68
VANADIUM	0.4807	6.7845	28.383	452083.	-0.83
CHROMIUM	0.4579	5.2486	9.443	392174.	-1.34
MANGANESE+5	0.4668	3.7127	8.969	256028.	-1.11
MANGANESE+7	0.4479	3.7127	5.977	283047.	-1.43
IRON	0.4550	5.5249	16.346	424711.	-1.06
COBALT	0.4471	5.6409	16.255	463033.	-1.11
NICKEL	0.4450	5.6796	16.341	473888.	-1.12
COPPER	0.4564	4.4807	14.058	331893.	-1.01
ZINC	0.4979	1.7182	4.384	74227.	-0.85
GALLIUM	0.4832	3.6022	6.380	145396.	-0.99
GERMANIUM	0.4921	4.9448	6.690	184479.	-1.09
ARSENIC	0.4879	1.6022	1.119	42803.	-1.27
SELENIUM	0.5043	2.7293	1.069	68316.	-1.65
RUBIDIUM	0.9093	1.0994	-27.699	617.	-0.03
STRONTIUM	0.7682	1.9945	21.049	15220.	-0.17
YTTRIUM	0.6332	5.5028	47.183	147739.	-0.37
ZIRCONIUM	0.5721	8.0663	49.844	324058.	-0.53
NIOBIUM	0.5243	9.6685	47.245	519893.	-0.69
MOLYBDENUM	0.5000	8.7017	13.867	533340.	-1.29
TECHNETIUM	0.4875	8.7348	14.942	583521.	-1.30
RUTHENIUM	0.4782	8.5525	15.195	602502.	-1.31
RHODIUM	0.4804	7.3591	11.213	500766.	-1.39
PALLADIUM	0.4914	4.9945	6.542	296877.	-1.40
SILVER	0.5161	3.7790	10.280	180613.	-0.87
CADMIUM	0.5600	1.4807	2.679	37822.	-0.77
INDIUM	0.5950	3.1878	3.738	89118.	-1.01
TIN+2	0.5825	3.9779	6.985	114843.	-0.84
TIN+4	0.5643	3.9779	3.622	88092.	-1.02
ANTIMONY	0.5611	3.4586	2.619	83875.	-1.17
TELLURIUM	0.5864	2.5746	1.640	47786.	-1.11

TABLE-III-162

SOLVENT-FRANCIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	0.9754	1.0409	-124.856	41.	0.02
BARIUM	0.7986	2.3481	48.581	17324.	-0.12
LANTHANUM	0.6704	5.6906	58.577	128501.	-0.31
CERIUM+3	0.6593	6.1657	65.994	150284.	-0.31
CERIUM+4	0.5971	6.1657	23.044	205461.	-0.62
PRASEODYMIUM	0.6529	4.9221	48.529	115785.	-0.32
NEODYMIUM	0.6507	4.2707	39.550	96934.	-0.32
PROMETHIUM	0.6461	3.5359	30.261	76726.	-0.33
SAMARIUM	0.6436	2.7238	20.256	53613.	-0.33
EUROPIUM+2	0.7289	2.3481	37.209	25990.	-0.17
EUROPIUM+3	0.6421	2.3481	15.649	43401.	-0.34
GADOLINIUM	0.6432	5.2901	46.827	133472.	-0.35
TERBIUM	0.6368	5.1912	45.177	134711.	-0.36
DYSPROSIUM	0.6339	3.9337	30.346	94933.	-0.37
HOLMIUM	0.6311	3.9613	29.791	97284.	-0.37
ERBIUM	0.6279	4.1160	30.615	104213.	-0.38
THULIUM	0.6239	3.2210	21.442	76397.	-0.39
YTTERBIUM+2	0.6925	2.1105	25.354	26976.	-0.21
YTTERBIUM+3	0.6218	2.1105	11.142	41893.	-0.40
LUTETIUM	0.6196	5.6442	42.727	163604.	-0.41
HAFNIUM	0.5643	8.0387	48.102	336735.	-0.55
TANTALUM	0.5239	10.3204	44.377	561564.	-0.74
TUNGSTEN	0.5029	11.1160	18.844	691074.	-1.26
RHENIUM	0.4911	10.2873	18.344	683462.	-1.27
OSMIUM	0.4832	10.3978	18.901	726514.	-1.29
IRIDIUM	0.4846	8.7901	14.354	595549.	-1.34
PLATINUM	0.4954	7.4586	10.647	462019.	-1.37
GOLD	0.5150	4.8398	8.923	245654.	-1.09
MERCURY	0.5693	0.8099	0.492	11869.	-0.97
THALLIUM	0.6129	2.3890	2.048	53270.	-1.05
LEAD	0.6250	2.5856	1.877	55475.	-1.12
BISMUTH	0.6032	2.7597	1.930	50265.	-1.05
POLONIUM	0.6336	1.9061	1.223	26122.	-0.94
RADIUM	0.8193	2.3204	35.488	15023.	-0.13
ACTINIUM	0.6707	5.7459	76.589	129944.	-0.27
THORIUM	0.6421	7.5470	31.105	210354.	-0.54
PROTACTINIUM	0.5807	7.2928	16.768	267570.	-0.83
URANIUM	0.5511	6.9061	10.456	287652.	-1.09
NEPTUNIUM	0.5457	6.2431	9.647	255899.	-1.07
PLUTONIUM+4.76	0.5857	5.0718	12.133	171417.	-0.78
PLUTONIUM+5	0.5686	5.0718	10.175	217425.	-0.96
AMERICIUM	0.6179	3.6464	11.499	93500.	-0.59

TABLE-III-163

SOLVENT-RADIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
0.940	2.2940	41.080	42000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.3396	1.2402	12.711	466551.	-1.26
LITHIUM	0.6809	0.9186	1350.056	13645.	-0.02
BERYLLIUM	0.4917	1.8548	25.276	204087.	-0.59
BORON	0.4010	3.1548	16.949	457086.	-1.08
CARBON	0.3819	4.0690	13.741	822552.	-1.61
NITROGEN	0.3596	2.6881	9.486	956681.	-2.09
OXYGEN	0.3910	1.4176	2.264	332737.	-2.52
SODIUM	0.8330	0.6171	-501.985	35.	-0.01
MAGNESIUM	0.6983	0.8476	4.220	9377.	-0.29
ALUMINUM	0.6242	1.8452	10.193	80263.	-0.58
SILICON	0.5763	2.5810	5.671	104784.	-0.89
PHOSPHOROUS	0.5410	1.7929	4.341	135877.	-1.16
SULFUR	0.5449	1.5810	1.916	110101.	-1.57
POTASSIUM	1.0357	0.5114	14.669	4575.	0.10
CALCIUM	0.8605	1.0048	7.120	2243.	-0.08
SCANDIUM	0.7153	2.1667	21.643	58886.	-0.34
TITANIUM	0.6373	2.6833	15.855	111792.	-0.55
VANADIUM	0.5867	2.9238	17.298	196651.	-0.70
CHROMIUM	0.5588	2.2619	4.852	164989.	-1.21
MANGANESE+5	0.5697	1.6000	4.369	97956.	-0.98
MANGANESE+7	0.5466	1.6000	2.808	110639.	-1.30
IRON	0.5554	2.3810	9.030	181283.	-0.93
COBALT	0.5458	2.4310	8.990	200282.	-0.98
NICKEL	0.5432	2.4476	9.048	205693.	-0.99
COPPER	0.5571	1.9310	7.482	134810.	-0.88
ZINC	0.6077	0.7405	1.351	17347.	-0.72
GALLIUM	0.5898	1.5524	2.708	47378.	-0.86
GERMANIUM	0.6007	2.1310	3.039	65768.	-0.96
ARSENIC	0.5955	0.6905	0.172	6349.	-1.14
SELENIUM	0.6155	1.1762	0.260	15025.	-1.52
RUBIDIUM	1.1099	0.4738	31.177	8382.	0.10
STRONTIUM	0.9377	0.8595	-31.892	16.	-0.04
YTTRIUM	0.7729	2.3714	37.014	49135.	-0.24
ZIRCONIUM	0.6983	3.4762	36.341	135275.	-0.40
NIOBIUM	0.6399	4.1667	32.324	234947.	-0.56
MOLYBDENUM	0.6103	3.7500	7.701	240157.	-1.16
TECHNETIUM	0.5950	3.7643	8.371	265440.	-1.17
RUTHENIUM	0.5837	3.6857	8.518	274684.	-1.18
RHODIUM	0.5863	3.1714	6.023	221703.	-1.26
PALLADIUM	0.5998	2.1524	3.159	118678.	-1.27
SILVER	0.6299	1.6286	4.915	63254.	-0.74
CADMIUM	0.6835	0.6381	0.390	4877.	-0.64
INDIUM	0.7262	1.3738	1.233	23218.	-0.88
TIN+2	0.7110	1.7143	2.833	34122.	-0.71
TIN+4	0.6888	1.7143	1.180	22745.	-0.89
ANTIMONY	0.6848	1.4905	0.797	21065.	-1.04
TELLURIUM	0.7158	1.1095	0.291	7632.	-0.98

TABLE-III-164

SOLVENT-RADIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.1905	0.4486	23.145	13201.	0.15
BARIUM	0.9747	1.0119	-481.766	81.	0.01
LANTHANUM	0.8182	2.4524	54.267	40397.	-0.18
CERIUM+3	0.8047	2.6571	63.826	50482.	-0.18
CERIUM+4	0.7289	2.6571	13.571	76328.	-0.49
PRASEODYMIUM	0.7969	2.1212	40.174	34635.	-0.19
NEODYMIUM	0.7942	1.8405	29.095	26444.	-0.19
PROMETHIUM	0.7886	1.5238	18.586	18165.	-0.20
SAMARIUM	0.7855	1.1738	8.675	9599.	-0.20
EUROPIUM+2	0.8897	1.0119	5.985	1413.	-0.04
EUROPIUM+3	0.7838	1.0119	4.902	6273.	-0.21
GADOLINIUM	0.7851	2.2798	37.095	42594.	-0.22
TERBIUM	0.7772	2.2371	34.988	43134.	-0.23
DYSPROSIUM	0.7738	1.6952	19.014	25613.	-0.24
HOLMIUM	0.7703	1.7071	18.510	26604.	-0.24
ERBIUM	0.7663	1.7738	19.369	29556.	-0.25
THULIUM	0.7616	1.3881	10.839	18089.	-0.26
YTTERBIUM+2	0.8452	0.9095	3.677	1735.	-0.08
YTTERBIUM+3	0.7589	0.9095	2.834	5886.	-0.27
LUTETIUM	0.7563	2.4324	31.475	56481.	-0.28
HAFNIUM	0.6888	3.4643	34.486	141475.	-0.42
TANTALUM	0.6395	4.4476	29.815	257021.	-0.61
TUNGSTEN	0.6138	4.7905	10.970	324203.	-1.13
RHENIUM	0.5994	4.4333	10.598	318804.	-1.14
OSMIUM	0.5898	4.4810	10.949	340939.	-1.16
IRIDIUM	0.5915	3.7881	8.009	271595.	-1.21
PLATINUM	0.6046	3.2143	5.680	202595.	-1.24
GOLD	0.6286	2.0857	4.377	94218.	-0.96
MERCURY	0.6949	0.3490	-0.073	2.	-0.84
THALLIUM	0.7480	1.0295	0.430	9587.	-0.92
LEAD	0.7629	1.1143	0.403	10307.	-0.99
BISMUTH	0.7363	1.1893	0.370	8410.	-0.92
POLONIUM	0.7733	0.8214	0.029	1629.	-0.81
FRANCIUM	1.2206	0.4310	35.488	15023.	0.13
ACTINIUM	0.8187	2.4762	88.206	41059.	-0.14
THORIUM	0.7838	3.2524	20.199	79492.	-0.41
PROTACTINIUM	0.7088	3.1429	9.359	106940.	-0.70
URANIUM	0.6726	2.9762	5.416	116299.	-0.96
NEPTUNIUM	0.6661	2.6905	4.868	100377.	-0.94
PLUTONIUM+4.76	0.7149	2.1857	6.018	59823.	-0.65
PLUTONIUM+5	0.6940	2.1857	5.034	81170.	-0.83
AMERICIUM	0.7541	1.5714	4.884	25021.	-0.46

TABLE-III-165

SOLVENT-ACTINIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.080	1.8780	22.560	104000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4148	0.5009	5.192	151384.	-1.12
LITHIUM	0.8317	0.3710	6.118	3224.	0.12
BERYLLIUM	0.6006	0.7490	9.737	46662.	-0.45
BORON	0.4899	1.2740	7.354	151033.	-0.94
CARBON	0.4665	1.6433	6.347	317468.	-1.47
NITROGEN	0.4393	1.0856	4.262	374906.	-1.95
OXYGEN	0.4776	0.5725	0.728	96234.	-2.38
SODIUM	1.0176	0.2492	69.324	28209.	0.13
MAGNESIUM	0.8530	0.3423	8.455	5579.	-0.15
ALUMINUM	0.7625	0.7452	1.212	6602.	-0.44
SILICON	0.7039	1.0423	0.872	12503.	-0.75
PHOSPHOROUS	0.6608	0.7240	0.903	22845.	-1.02
SULFUR	0.6656	0.6385	0.292	14956.	-1.43
POTASSIUM	1.2652	0.2065	53.864	72737.	0.24
CALCIUM	1.0511	0.4058	211.832	18778.	0.06
SCANDIUM	0.8738	0.8750	0.701	1838.	-0.20
TITANIUM	0.7785	1.0837	3.436	14510.	-0.41
VANADIUM	0.7167	1.1808	5.902	43870.	-0.56
CHROMIUM	0.6826	0.9135	1.187	32519.	-1.07
MANGANESE+5	0.6960	0.6462	0.631	11458.	-0.84
MANGANESE+7	0.6677	0.6462	0.448	15101.	-1.16
IRON	0.6784	0.9615	2.579	38311.	-0.79
COBALT	0.6667	0.9817	2.710	45292.	-0.84
NICKEL	0.6635	0.9885	2.768	47314.	-0.85
COPPER	0.6805	0.7798	1.681	22422.	-0.74
ZINC	0.7423	0.2990	0.036	1475.	-0.58
GALLIUM	0.7204	0.6269	-0.041	705.	-0.72
GERMANIUM	0.7338	0.8606	0.124	3110.	-0.82
ARSENIC	0.7274	0.2788	0.275	7531.	-1.00
SELENIUM	0.7519	0.4750	0.049	3327.	-1.38
RUBIDIUM	1.3557	0.1919	70.336	94616.	0.24
STRONTIUM	1.1454	0.3471	147.268	35152.	0.10
YTTRIUM	0.9441	0.9577	-3.534	425.	-0.10
ZIRCONIUM	0.8530	1.4038	12.919	21332.	-0.26
NIOBIUM	0.7817	1.6827	14.101	58551.	-0.42
MOLYBDENUM	0.7455	1.5144	2.480	60682.	-1.02
TECHNETIUM	0.7268	1.5202	2.849	70887.	-1.03
RUTHENIUM	0.7130	1.4885	2.945	74633.	-1.04
RHODIUM	0.7162	1.2808	1.805	53418.	-1.12
PALLADIUM	0.7327	0.8692	0.541	17125.	-1.13
SILVER	0.7694	0.6577	0.228	3087.	-0.60
CADMIUM	0.8349	0.2577	1.353	8995.	-0.50
INDIUM	0.8871	0.5548	-0.013	1029.	-0.74
TIN+2	0.8685	0.6923	-0.154	40.	-0.57
TIN+4	0.8413	0.6923	0.036	1657.	-0.75
ANTIMONY	0.8365	0.6019	0.030	1750.	-0.90
TELLURIUM	0.8743	0.4481	0.465	8753.	-0.84

TABLE-III-166

SOLVENT-ACTINIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.4542	0.1812	61.869	121177.	0.29
BARIUM	1.1906	0.4087	67.212	36065.	0.15
LANTHANUM	0.9995	0.9904	-37.708	2.	-0.04
CERIUM+3	0.9830	1.0731	-18.566	401.	-0.04
CERIUM+4	0.8903	1.0731	1.285	4821.	-0.35
PRASEODYMIUM	0.9734	0.8566	-18.392	132.	-0.05
NEODYMIUM	0.9702	0.7433	-3.583	951.	-0.05
PROMETHIUM	0.9633	0.6154	20.758	2858.	-0.06
SAMARIUM	0.9595	0.4740	59.912	7029.	-0.06
EUROPIUM+2	1.0868	0.4087	92.437	22508.	0.10
EUROPIUM+3	0.9574	0.4087	72.433	9851.	-0.07
GADOLINIUM	0.9590	0.9207	-7.775	45.	-0.08
TERBIUM	0.9494	0.9035	-6.263	74.	-0.09
DYSPROSIUM	0.9452	0.6846	-1.179	942.	-0.10
HOLMIUM	0.9409	0.6894	-1.689	771.	-0.10
ERBIUM	0.9361	0.7163	-2.735	401.	-0.11
THULIUM	0.9302	0.5606	4.104	2555.	-0.12
YTTERBIUM+2	1.0325	0.3673	220.125	19466.	0.06
YTTERBIUM+3	0.9271	0.3673	22.349	9636.	-0.13
LUTETIUM	0.9239	0.9823	0.144	1254.	-0.14
HAFNIUM	0.8413	1.3990	12.328	23480.	-0.28
TANTALUM	0.7812	1.7962	13.019	67510.	-0.47
TUNGSTEN	0.7497	1.9346	4.186	95798.	-0.99
RHENIUM	0.7322	1.7904	3.995	93318.	-1.00
OSMIUM	0.7204	1.8096	4.233	102761.	-1.02
IRIDIUM	0.7226	1.5298	2.735	73403.	-1.07
PLATINUM	0.7386	1.2981	1.608	46055.	-1.10
GOLD	0.7678	0.8423	0.567	9988.	-0.82
MERCURY	0.8488	0.1410	1.955	23277.	-0.70
THALLIUM	0.9137	0.4158	0.364	6292.	-0.78
LEAD	0.9318	0.4500	0.295	6099.	-0.85
BISMUTH	0.8994	0.4803	0.510	8349.	-0.78
POLONIUM	0.9446	0.3317	1.687	18654.	-0.67
FRANCIUM	1.4909	0.1740	76.589	129944.	0.27
RADIUM	1.2215	0.4038	88.206	41059.	0.14
THORIUM	0.9574	1.3135	2.195	4882.	-0.27
PROTACTINIUM	0.8658	1.2692	1.568	12528.	-0.56
URANIUM	0.8216	1.2019	0.930	15610.	-0.82
NEPTUNIUM	0.8136	1.0865	0.671	11097.	-0.80
PLUTONIUM+4.76	0.8733	0.8827	0.131	1977.	-0.51
PLUTONIUM+5	0.8477	0.8827	0.482	6481.	-0.69
AMERICIUM	0.9212	0.6346	-0.119	910.	-0.32

TABLE-III-167

SOLVENT-THORIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.350	1.7980	19.790	136600.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4333	0.3813	5.938	100132.	-0.85
LITHIUM	0.8687	0.2824	3.498	13462.	0.39
BERYLLIUM	0.6274	0.5703	29.117	22947.	-0.18
BORON	0.5117	0.9700	9.490	99425.	-0.67
CARBON	0.4872	1.2511	6.926	231196.	-1.20
NITROGEN	0.4588	0.8265	4.242	277290.	-1.68
OXYGEN	0.4989	0.4359	0.558	58513.	-2.11
SODIUM	1.0628	0.1898	14.485	54634.	0.40
MAGNESIUM	0.8910	0.2606	50.662	18015.	0.12
ALUMINUM	0.7964	0.5673	-1.241	365.	-0.17
SILICON	0.7353	0.7936	0.185	2176.	-0.48
PHOSPHOROUS	0.6902	0.5512	0.515	7868.	-0.75
SULFUR	0.6952	0.4861	0.082	3738.	-1.16
POTASSIUM	1.3215	0.1572	20.341	123196.	0.51
CALCIUM	1.0979	0.3089	16.405	42390.	0.33
SCANDIUM	0.9127	0.6662	-6.228	488.	0.07
TITANIUM	0.8131	0.8250	4.051	3023.	-0.14
VANADIUM	0.7486	0.8990	9.912	20414.	-0.29
CHROMIUM	0.7130	0.6955	0.830	13439.	-0.80
MANGANESE+5	0.7269	0.4919	0.124	2118.	-0.57
MANGANESE+7	0.6974	0.4919	0.143	3801.	-0.89
IRON	0.7086	0.7321	2.548	17081.	-0.52
COBALT	0.6963	0.7474	2.734	21680.	-0.57
NICKEL	0.6930	0.7526	2.816	23035.	-0.58
COPPER	0.7108	0.5937	1.248	7549.	-0.47
ZINC	0.7753	0.2277	3.489	8925.	-0.31
GALLIUM	0.7525	0.4773	0.005	1218.	-0.45
GERMANIUM	0.7664	0.6552	-0.161	72.	-0.55
ARSENIC	0.7597	0.2123	1.609	20960.	-0.73
SELENIUM	0.7853	0.3616	0.467	14451.	-1.11
RUBIDIUM	1.4160	0.1457	25.900	156538.	0.51
STRONTIUM	1.1963	0.2643	21.289	68399.	0.37
YTTRIUM	0.9861	0.7291	1.465	2203.	0.17
ZIRCONIUM	0.8910	1.0688	2120.091	6081.	0.01
NIOBIUM	0.8165	1.2811	54.923	29689.	-0.15
MOLYBDENUM	0.7786	1.1530	2.335	31477.	-0.75
TECHNETIUM	0.7592	1.1574	2.821	38772.	-0.76
RUTHENIUM	0.7447	1.1332	2.951	41537.	-0.77
RHODIUM	0.7481	0.9751	1.535	26767.	-0.85
PALLADIUM	0.7653	0.6618	0.197	4553.	-0.86
SILVER	0.8037	0.5007	-0.462	33.	-0.33
CADMIUM	0.8721	0.1962	18.101	23274.	-0.23
INDIUM	0.9266	0.4224	1.533	9004.	-0.47
TIN+2	0.9071	0.5271	1.827	4984.	-0.30
TIN+4	0.8788	0.5271	1.955	11578.	-0.48
ANTIMONY	0.8737	0.4583	1.111	11358.	-0.63
TELLURIUM	0.9132	0.3411	3.199	25158.	-0.57

TABLE-III-168

SOLVENT-THORIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5189	0.1379	27.107	197218.	0.56
BARIUM	1.2436	0.3111	17.258	71396.	0.42
LANTHANUM	1.0439	0.7540	3.091	5062.	0.23
CERIUM+3	1.0267	0.8170	1.064	2456.	0.23
CERIUM+4	0.9299	0.8170	-8.028	7.	-0.08
PRASEODYMIUM	1.0167	0.6522	4.598	6325.	0.22
NEODYMIUM	1.0133	0.5659	7.832	9619.	0.22
PROMETHIUM	1.0061	0.4685	12.766	14299.	0.21
SAMARIUM	1.0022	0.3609	21.602	22127.	0.20
EUROPIUM+2	1.1352	0.3111	15.077	48788.	0.37
EUROPIUM+3	1.0000	0.3111	28.255	26736.	0.20
GADOLINIUM	1.0017	0.7010	3.065	3744.	0.19
TERBIUM	0.9917	0.6878	2.970	3461.	0.18
DYSPROSIUM	0.9872	0.5212	11.643	9321.	0.17
HOLMIUM	0.9828	0.5249	11.883	8743.	0.17
ERBIUM	0.9778	0.5454	10.708	7357.	0.16
THULIUM	0.9716	0.4268	23.158	13208.	0.15
YTTERBIUM+2	1.0784	0.2796	16.604	42889.	0.33
YTTERBIUM+3	0.9683	0.2796	53.001	25837.	0.14
LUTETIUM	0.9650	0.7479	-0.460	1002.	0.13
HAFNIUM	0.8788	1.0652	2639.570	7279.	-0.01
TANTALUM	0.8159	1.3675	37.606	35880.	-0.20
TUNGSTEN	0.7831	1.4729	4.627	56502.	-0.72
RHENIUM	0.7647	1.3631	4.368	54865.	-0.73
OSMIUM	0.7525	1.3777	4.682	61930.	-0.75
IRIDIUM	0.7547	1.1647	2.669	40579.	-0.80
PLATINUM	0.7714	0.9883	1.291	21695.	-0.83
GOLD	0.8020	0.6413	0.023	1354.	-0.55
MERCURY	0.8865	0.1073	9.983	43759.	-0.43
THALLIUM	0.9544	0.3165	3.155	20116.	-0.51
LEAD	0.9733	0.3426	2.433	20062.	-0.58
BISMUTH	0.9394	0.3657	3.926	24741.	-0.51
POLONIUM	0.9867	0.2526	10.754	40872.	-0.40
FRANCIUM	1.5573	0.1325	31.105	210354.	0.54
RADIUM	1.2759	0.3075	20.199	79492.	0.41
ACTINIUM	1.0445	0.7613	2.195	4882.	0.27
PROTACTINIUM	0.9043	0.9663	0.400	1969.	-0.29
URANIUM	0.8582	0.9151	0.317	3406.	-0.55
NEPTUNIUM	0.8498	0.8272	0.058	1567.	-0.53
PLUTONIUM+4.76	0.9121	0.6720	-0.579	423.	-0.24
PLUTONIUM+5	0.8854	0.6720	-0.225	276.	-0.42
AMERICIUM	0.9622	0.4832	135.207	8987.	-0.05

TABLE-III-169

SOLVENT-PROTACTINIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.640	1.6260	15.030	132000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4791	0.3946	8.365	61684.	-0.56
LITHIUM	0.9606	0.2923	1.918	21639.	0.68
BERYLLIUM	0.6937	0.5902	33.406	10513.	0.11
BORON	0.5658	1.0038	18.328	62224.	-0.38
CARBON	0.5387	1.2947	8.165	157106.	-0.91
NITROGEN	0.5074	0.8553	4.207	188632.	-1.39
OXYGEN	0.5517	0.4511	0.423	33496.	-1.82
SODIUM	1.1753	0.1964	6.407	71531.	0.69
MAGNESIUM	0.9852	0.2697	6.709	27199.	0.41
ALUMINUM	0.8807	0.5871	-2.374	404.	0.12
SILICON	0.8130	0.8212	-1.414	15.	-0.19
PHOSPHOROUS	0.7632	0.5705	0.178	2059.	-0.46
SULFUR	0.7688	0.5030	-0.045	414.	-0.87
POTASSIUM	1.4613	0.1627	10.573	157237.	0.80
CALCIUM	1.2140	0.3197	6.539	59153.	0.62
SCANDIUM	1.0092	0.6894	0.878	3815.	0.36
TITANIUM	0.8991	0.8538	-2.038	135.	0.15
VANADIUM	0.8278	0.9303	- ∞	8812.	0.
CHROMIUM	0.7884	0.7197	0.612	4865.	-0.51
MANGANESE+5	0.8038	0.5091	-0.638	39.	-0.28
MANGANESE+7	0.7712	0.5091	-0.092	432.	-0.60
IRON	0.7835	0.7576	4.696	6921.	-0.23
COBALT	0.7700	0.7735	4.686	9665.	-0.28
NICKEL	0.7663	0.7788	4.796	10494.	-0.29
COPPER	0.7860	0.6144	0.931	1887.	-0.18
ZINC	0.8573	0.2356	1520.084	15213.	-0.02
GALLIUM	0.8321	0.4939	6.548	5057.	-0.16
GERMANIUM	0.8475	0.6780	0.721	2316.	-0.26
ARSENIC	0.8401	0.2197	6.485	30145.	-0.44
SELENIUM	0.8684	0.3742	1.457	23780.	-0.82
RUBIDIUM	1.5658	0.1508	13.424	199305.	0.80
STRONTIUM	1.3229	0.2735	8.978	91378.	0.66
YTTRIUM	1.0904	0.7545	1.319	7712.	0.46
ZIRCONIUM	0.9852	1.1061	-0.088	1009.	0.30
NIOBIUM	0.9028	1.3258	29.281	14427.	0.14
MOLYBDENUM	0.8610	1.1932	2.965	15662.	-0.46
TECHNETIUM	0.8395	1.1977	3.785	20474.	-0.47
RUTHENIUM	0.8235	1.1727	3.979	22330.	-0.48
RHODIUM	0.8272	1.0091	1.594	12720.	-0.56
PALLADIUM	0.8462	0.6848	-0.077	618.	-0.57
SILVER	0.8887	0.5182	17.924	1854.	-0.04
CADMIUM	0.9643	0.2030	379.655	32710.	0.06
INDIUM	1.0246	0.4371	21.025	16901.	-0.18
TIN+2	1.0031	0.5455	4528.368	11635.	-0.01
TIN+4	0.9717	0.5455	24.151	21297.	-0.19
ANTIMONY	0.9662	0.4742	7.227	20456.	-0.34
TELLURIUM	1.0098	0.3530	20.101	37533.	-0.28

TABLE-III-170

SOLVENT-PROTACTINIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.6796	0.1427	14.997	251055.	0.85
BARIUM	1.3752	0.3220	8.206	96579.	0.71
LANTHANUM	1.1544	0.7803	1.839	12794.	0.52
CERIUM+3	1.1353	0.8455	1.180	8467.	0.52
CERIUM+4	1.0283	0.8455	0.346	1544.	0.21
PRASEODYMIUM	1.1242	0.6749	2.191	14336.	0.51
NEODYMIUM	1.1205	0.5856	2.977	18768.	0.51
PROMETHIUM	1.1125	0.4848	4.044	24598.	0.50
SAMARIUM	1.1082	0.3735	5.783	33866.	0.50
EUROPIUM+2	1.2552	0.3220	6.594	67427.	0.66
EUROPIUM+3	1.1058	0.3220	6.903	39102.	0.49
GADOLINIUM	1.1076	0.7254	1.728	10373.	0.48
TERBIUM	1.0966	0.7118	1.683	9838.	0.47
DYSPROSIUM	1.0916	0.5394	3.394	18040.	0.46
HOLMIUM	1.0867	0.5432	3.345	17230.	0.46
ERBIUM	1.0812	0.5644	3.054	15325.	0.45
THULIUM	1.0744	0.4417	4.825	22734.	0.44
YTTERBIUM+2	1.1925	0.2894	6.538	59146.	0.62
YTTERBIUM+3	1.0707	0.2894	8.420	37430.	0.43
LUTETIUM	1.0670	0.7739	0.986	5279.	0.42
HAFNIUM	0.9717	1.1023	0.175	1509.	0.28
TANTALUM	0.9022	1.4152	92.416	18454.	0.09
TUNGSTEN	0.8659	1.5242	7.344	32504.	-0.43
RHENIUM	0.8456	1.4106	6.762	31379.	-0.44
OSMIUM	0.8321	1.4258	7.192	36283.	-0.46
IRIDIUM	0.8346	1.2053	3.416	21680.	-0.51
PLATINUM	0.8530	1.0227	1.242	9541.	-0.54
GOLD	0.8868	0.6636	-0.754	16.	-0.26
MERCURY	0.9803	0.1111	119.040	54995.	-0.14
THALLIUM	1.0554	0.3276	26.402	30659.	-0.22
LEAD	1.0763	0.3545	15.335	30933.	-0.29
BISMUTH	1.0387	0.3784	32.392	37345.	-0.22
POLONIUM	1.0910	0.2614	196.250	55951.	-0.11
FRANCIUM	1.7220	0.1371	16.768	267570.	0.83
RADIUM	1.4108	0.3182	9.359	106940.	0.70
ACTINIUM	1.1550	0.7879	1.568	12528.	0.56
THORIUM	1.1058	1.0348	0.400	1969.	0.29
URANIUM	0.9490	0.9470	-0.638	198.	-0.26
NEPTUNIUM	0.9397	0.8561	-0.889	11.	-0.24
PLUTONIUM+4.76	1.0086	0.6955	42.461	3640.	0.05
PLUTONIUM+5	0.9791	0.6955	-1.605	567.	-0.13
AMERICIUM	1.0640	0.5000	12.130	17304.	0.24

TABLE-III-171

SOLVENT-URANIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.900	1.5430	13.160	125000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5049	0.4167	23.562	50093.	-0.30
LITHIUM	1.0123	0.3086	1.131	24232.	0.94
BERYLLIUM	0.7310	0.6232	1.984	7456.	0.37
BORON	0.5962	1.0600	150.273	51093.	-0.12
CARBON	0.5677	1.3672	13.547	133181.	-0.65
NITROGEN	0.5347	0.9032	5.376	159494.	-1.13
OXYGEN	0.5813	0.4763	0.449	26403.	-1.56
SODIUM	1.2385	0.2074	3.630	76746.	0.95
MAGNESIUM	1.0382	0.2848	2.787	30041.	0.67
ALUMINUM	0.9281	0.6200	-0.049	1029.	0.38
SILICON	0.8568	0.8672	-9.742	91.	0.07
PHOSPHOROUS	0.8043	0.6024	-0.209	999.	-0.20
SULFUR	0.8101	0.5312	-0.132	59.	-0.61
POTASSIUM	1.5399	0.1718	6.463	168652.	1.06
CALCIUM	1.2793	0.3376	3.553	64642.	0.88
SCANDIUM	1.0635	0.7280	0.481	5458.	0.62
TITANIUM	0.9475	0.9016	-0.306	4.	0.41
VANADIUM	0.8723	0.9824	3.114	6046.	0.26
CHROMIUM	0.8308	0.7600	1.256	3002.	-0.25
MANGANESE+5	0.8471	0.5376	-125.288	37.	-0.02
MANGANESE+7	0.8127	0.5376	-0.423	65.	-0.34
IRON	0.8257	0.8000	163.275	4581.	0.03
COBALT	0.8114	0.8168	602.957	6754.	-0.02
NICKEL	0.8075	0.8224	300.064	7420.	-0.03
COPPER	0.8283	0.6488	-2.124	879.	0.08
ZINC	0.9034	0.2488	12.021	17160.	0.24
GALLIUM	0.8769	0.5216	23.867	6696.	0.10
GERMANIUM	0.8931	0.7160	$+\infty$	3629.	0.
ARSENIC	0.8853	0.2320	42.378	32854.	-0.18
SELENIUM	0.9151	0.3952	3.553	26883.	-0.56
RUBIDIUM	1.6500	0.1592	8.212	213964.	1.06
STRONTIUM	1.3940	0.2888	5.011	98994.	0.92
YTTRIUM	1.1491	0.7968	0.737	10078.	0.72
ZIRCONIUM	1.0382	1.1680	-0.125	286.	0.56
NIOBIUM	0.9514	1.4000	2.536	10550.	0.40
MOLYBDENUM	0.9073	1.2600	11.279	11596.	-0.20
TECHNETIUM	0.8846	1.2648	14.181	15613.	-0.21
RUTHENIUM	0.8678	1.2384	14.320	17175.	-0.22
RHODIUM	0.8717	1.0656	3.857	9197.	-0.30
PALLADIUM	0.8918	0.7232	-0.479	131.	-0.31
SILVER	0.9365	0.5472	1.569	2943.	0.22
CADMIUM	1.0162	0.2144	14.505	35445.	0.32
INDIUM	1.0797	0.4616	125.155	19663.	0.08
TIN+2	1.0570	0.5760	8.993	14154.	0.25
TIN+4	1.0240	0.5760	208.818	24787.	0.07
ANTIMONY	1.0181	0.5008	152.153	23648.	-0.08
TELLURIUM	1.0642	0.3728	4378.777	41582.	-0.02

TABLE-III-172

SOLVENT-URANIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.7699	0.1507	9.457	269875.	1.11
BARIUM	1.4491	0.3400	4.790	105112.	0.97
LANTHANUM	1.2165	0.8240	1.040	15896.	0.78
CERIUM+3	1.1964	0.8928	0.709	11067.	0.78
CERIUM+4	1.0836	0.8928	0.304	2743.	0.47
PRASEODYMIUM	1.1847	0.7127	1.187	17425.	0.77
NEODYMIUM	1.1808	0.6184	1.547	22124.	0.77
PROMETHIUM	1.1724	0.5120	2.022	28192.	0.76
SAMARIUM	1.1679	0.3944	2.781	37745.	0.76
EUROPIUM+2	1.3227	0.3400	3.709	73585.	0.92
EUROPIUM+3	1.1653	0.3400	3.247	43084.	0.75
GADOLINIUM	1.1672	0.7660	0.940	13068.	0.74
TERBIUM	1.1555	0.7517	0.910	12441.	0.73
DYSPROSIUM	1.1504	0.5696	1.655	21200.	0.72
HOLMIUM	1.1452	0.5736	1.618	20321.	0.72
ERBIUM	1.1393	0.5960	1.478	18277.	0.71
THULIUM	1.1322	0.4664	2.197	26012.	0.70
YTTERBIUM+2	1.2566	0.3056	3.539	64388.	0.88
YTTERBIUM+3	1.1283	0.3056	3.612	41082.	0.69
LUTETIUM	1.1244	0.8173	0.564	7274.	0.68
HAFNIUM	1.0240	1.1640	-0.092	571.	0.54
TANTALUM	0.9507	1.4944	4.496	13894.	0.35
TUNGSTEN	0.9125	1.6096	36.949	25816.	-0.17
RHENIUM	0.8911	1.4896	31.664	24850.	-0.18
OSMIUM	0.8769	1.5056	30.196	25045.	-0.20
IRIDIUM	0.8795	1.2728	10.709	16626.	-0.25
PLATINUM	0.8989	1.0800	2.999	6614.	-0.28
GOLD	0.9345	0.7008	$+\infty$	278.	0.
MERCURY	1.0331	0.1173	170.857	57928.	0.12
THALLIUM	1.1121	0.3459	890.720	34056.	0.04
LEAD	1.1342	0.3744	1604.426	34490.	-0.03
BISMUTH	1.0946	0.3996	1093.032	41521.	0.04
POLONIUM	1.1497	0.2760	114.716	60712.	0.15
FRANCIUM	1.8146	0.1448	10.456	287652.	1.09
RADIUM	1.4867	0.3360	5.416	116299.	0.96
ACTINIUM	1.2171	0.8320	0.930	15610.	0.82
THORIUM	1.1653	1.0928	0.317	3406.	0.55
PROTACTINIUM	1.0538	1.0560	-0.638	198.	0.26
NEPTUNIUM	0.9903	0.9040	-98.861	280.	0.02
PLUTONIUM+4.76	1.0629	0.7344	1.833	5255.	0.31
PLUTONIUM+5	1.0318	0.7344	0.316	1315.	0.13
AMERICIUM	1.1212	0.5280	3.312	20284.	0.50

TABLE-III-173

SOLVENT-NEPTUNIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.880	1.5280	13.110	113000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.5098	0.4610	23.075	55681.	-0.32
LITHIUM	1.0223	0.3414	0.926	19271.	0.92
BERYLLIUM	0.7382	0.6894	3.124	10018.	0.35
BORON	0.6021	1.1726	124.143	57302.	-0.14
CARBON	0.5733	1.5124	13.663	142627.	-0.67
NITROGEN	0.5399	0.9991	5.510	169221.	-1.15
OXYGEN	0.5870	0.5269	0.512	30667.	-1.58
SODIUM	1.2507	0.2294	3.252	66050.	0.93
MAGNESIUM	1.0484	0.3150	2.380	24385.	0.65
ALUMINUM	0.9372	0.6858	-0.310	267.	0.36
SILICON	0.8652	0.9593	-19.869	47.	0.05
PHOSPHOROUS	0.8122	0.6664	0.831	2120.	-0.22
SULFUR	0.8181	0.5876	-0.077	492.	-0.63
POTASSIUM	1.5550	0.1901	5.909	148585.	1.04
CALCIUM	1.2919	0.3735	3.130	54573.	0.86
SCANDIUM	1.0740	0.8053	0.241	3190.	0.60
TITANIUM	0.9568	0.9973	-0.282	204.	0.39
VANADIUM	0.8809	1.0867	5.587	8613.	0.24
CHROMIUM	0.8390	0.8407	2.161	4825.	-0.27
MANGANESE+5	0.8554	0.5947	-30.242	76.	-0.04
MANGANESE+7	0.8207	0.5947	-0.228	510.	-0.36
IRON	0.8338	0.8850	2418.876	6770.	0.01
COBALT	0.8194	0.9035	220.671	9334.	-0.04
NICKEL	0.8154	0.9097	154.618	10106.	-0.05
COPPER	0.8364	0.7177	9.277	1962.	0.06
ZINC	0.9123	0.2752	10.870	13324.	0.22
GALLIUM	0.8855	0.5770	20.938	4282.	0.08
GERMANIUM	0.9018	0.7920	73.919	1874.	-0.02
ARSENIC	0.8940	0.2566	28.011	27029.	-0.20
SELENIUM	0.9241	0.4372	2.597	21336.	-0.58
RUBIDIUM	1.6662	0.1761	7.547	189422.	1.04
STRONTIUM	1.4077	0.3195	4.503	85300.	0.90
YTTRIUM	1.1603	0.8814	0.483	6692.	0.70
ZIRCONIUM	1.0484	1.2920	-0.006	1150.	0.54
NIOBIUM	0.9607	1.5487	3.865	14064.	0.38
MOLYBDENUM	0.9162	1.3938	12.500	15143.	-0.22
TECHNETIUM	0.8933	1.3991	15.099	19612.	-0.23
RUTHENIUM	0.8763	1.3699	15.144	21307.	-0.24
RHODIUM	0.8802	1.1788	4.704	12299.	-0.32
PALLADIUM	0.9005	0.8000	-0.190	715.	-0.33
SILVER	0.9457	0.6053	0.306	1474.	0.20
CADMIUM	1.0262	0.2372	13.580	29377.	0.30
INDIUM	1.0903	0.5106	166.583	15021.	0.06
TIN+2	1.0674	0.6372	7.411	10232.	0.23
TIN+4	1.0340	0.6372	311.388	19144.	0.05
ANTIMONY	1.0281	0.5540	74.301	18326.	-0.10
TELLURIUM	1.0746	0.4124	893.680	34165.	-0.04

TABLE-III-174

SOLVENT-NEPTUNIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.7873	0.1667	8.709	239809.	1.09
BARIUM	1.4634	0.3761	4.287	90409.	0.95
LANTHANUM	1.2284	0.9115	0.756	11340.	0.76
CERIUM+3	1.2081	0.9876	0.469	7383.	0.76
CERIUM+4	1.0942	0.9876	0.003	1206.	0.45
PRASEODYMIUM	1.1963	0.7884	0.890	12743.	0.75
NEODYMIUM	1.1924	0.6841	1.217	16813.	0.75
PROMETHIUM	1.1839	0.5664	1.658	22182.	0.74
SAMARIUM	1.1793	0.4363	2.373	30749.	0.73
EUROPIUM+2	1.3357	0.3761	3.280	62463.	0.90
EUROPIUM+3	1.1767	0.3761	2.815	35596.	0.73
GADOLINIUM	1.1787	0.8473	0.662	9112.	0.72
TERBIUM	1.1669	0.8315	0.636	8622.	0.71
DYSPROSIUM	1.1616	0.6301	1.306	16121.	0.70
HOLMIUM	1.1564	0.6345	1.270	15374.	0.70
ERBIUM	1.1505	0.6593	1.139	13624.	0.69
THULIUM	1.1433	0.5159	1.803	20418.	0.68
YTTERBIUM+2	1.2690	0.3381	3.126	54505.	0.86
YTTERBIUM+3	1.1394	0.3381	3.148	33971.	0.67
LUTETIUM	1.1355	0.9041	0.325	4497.	0.66
HAFNIUM	1.0340	1.2876	0.074	1656.	0.52
TANTALUM	0.9601	1.6531	6.646	17882.	0.33
TUNGSTEN	0.9215	1.7805	35.798	30992.	-0.19
RHENIUM	0.8999	1.6478	31.068	29849.	-0.20
OSMIUM	0.8855	1.6655	29.727	34371.	-0.22
IRIDIUM	0.8881	1.4080	11.623	20732.	-0.27
PLATINUM	0.9077	1.1947	3.924	9336.	-0.30
GOLD	0.9437	0.7752	-129.165	1.	-0.02
MERCURY	1.0432	0.1297	211.303	49919.	0.10
THALLIUM	1.1230	0.3827	2872.653	27690.	0.02
LEAD	1.1453	0.4142	464.649	27979.	-0.05
BISMUTH	1.1054	0.4420	3559.105	34021.	0.02
POLONIUM	1.1610	0.3053	128.844	51404.	0.13
FRANCIUM	1.8325	0.1602	9.647	255899.	1.07
RADIUM	1.5013	0.3717	4.868	100377.	0.94
ACTINIUM	1.2291	0.9204	0.671	11097.	0.80
THORIUM	1.1767	1.2088	0.058	1567.	0.53
PROTACTINIUM	1.0641	1.1681	-0.889	11.	0.24
URANIUM	1.0098	1.1062	-98.861	280.	-0.02
PLUTONIUM+4.76	1.0733	0.8124	0.950	3036.	0.29
PLUTONIUM+5	1.0419	0.8124	-2.861	394.	0.11
AMERICIUM	1.1322	0.5841	2.679	15424.	0.48

TABLE-III-175

SOLVENT-PLUTONIUM+4.76

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.590	1.6400	15.030	91800.

SOLUTE ELEMENT	RACIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4750	0.5674	9.883	85997.	-0.61
LITHIUM	0.9524	0.4203	0.732	7889.	0.63
BERYLLIUM	0.6878	0.8486	262.664	22998.	0.06
BORON	0.5610	1.4434	20.539	88767.	-0.43
CARBON	0.5341	1.8617	9.203	196784.	-0.96
NITROGEN	0.5030	1.2298	4.786	230029.	-1.44
OXYGEN	0.5470	0.6486	0.636	52458.	-1.87
SODIUM	1.1652	0.2824	4.062	39558.	0.64
MAGNESIUM	0.9768	0.3878	3.335	11158.	0.36
ALUMINUM	0.8732	0.8442	0.264	1222.	0.07
SILICON	0.8061	1.1808	1.919	3741.	-0.24
PHOSPHOROUS	0.7567	0.8203	1.352	9302.	-0.51
SULFUR	0.7622	0.7233	0.202	5125.	-0.92
POTASSIUM	1.4488	0.2340	7.357	96621.	0.75
CALCIUM	1.2037	0.4597	3.815	29779.	0.57
SCANDIUM	1.0006	0.9913	-0.537	2.	0.31
TITANIUM	0.8915	1.2277	15.372	4737.	0.10
VANADIUM	0.8207	1.3377	354.660	21638.	-0.05
CHROMIUM	0.7817	1.0349	1.882	14803.	-0.56
MANGANESE+5	0.7970	0.7320	0.878	3397.	-0.33
MANGANESE+7	0.7646	0.7320	0.411	5197.	-0.65
IRON	0.7768	1.0893	9.414	18213.	-0.28
COBALT	0.7634	1.1122	8.436	22378.	-0.33
NICKEL	0.7598	1.1198	8.404	23596.	-0.34
COPPER	0.7793	0.8834	6.457	9068.	-0.23
ZINC	0.8500	0.3388	31.847	4791.	-0.07
GALLIUM	0.8250	0.7102	-0.977	199.	-0.21
GERMANIUM	0.8402	0.9749	-0.485	117.	-0.31
ARSENIC	0.8329	0.3159	2.190	13318.	-0.49
SELENIUM	0.8610	0.5381	0.422	8554.	-0.87
RUBIDIUM	1.5524	0.2168	9.550	125067.	0.75
STRONTIUM	1.3116	0.3932	5.776	50755.	0.61
YTTRIUM	1.0811	1.0850	-0.161	559.	0.41
ZIRCONIUM	0.9768	1.5904	4.927	8293.	0.25
NIOBIUM	0.8951	1.9063	159.586	31001.	0.09
MOLYBDENUM	0.8537	1.7157	5.175	32229.	-0.51
TECHNETIUM	0.8323	1.7222	6.009	38659.	-0.52
RUTHENIUM	0.8165	1.6863	6.143	40984.	-0.53
RHODIUM	0.8201	1.4510	3.070	27532.	-0.61
PALLADIUM	0.8390	0.9847	0.564	6187.	-0.62
SILVER	0.8811	0.7451	-5.573	151.	-0.09
CADMIUM	0.9561	0.2919	6000.888	15030.	0.01
INDIUM	1.0159	0.6285	2.922	4757.	-0.23
TIN+2	0.9945	0.7843	11.428	2141.	-0.06
TIN+4	0.9634	0.7843	3.952	6442.	-0.24
ANTIMONY	0.9579	0.6819	1.466	6333.	-0.39
TELLURIUM	1.0012	0.5076	6.068	16429.	-0.33

TABLE-III-176

SOLVENT-PLUTONIUM+4.76

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.6652	0.2052	10.764	160054.	0.80
BARIUM	1.3634	0.4630	5.174	53165.	0.66
LANTHANUM	1.1445	1.1220	0.173	2086.	0.47
CERIUM+3	1.1256	1.2157	-0.107	654.	0.47
CERIUM+4	1.0195	1.2157	-1.205	481.	0.16
PRASEODYMIUM	1.1146	0.9705	0.350	2900.	0.46
NEODYMIUM	1.1110	0.8420	0.812	5085.	0.46
PROMETHIUM	1.1030	0.6972	1.533	8382.	0.45
SAMARIUM	1.0988	0.5370	2.837	14148.	0.45
EUROPIUM+2	1.2445	0.4630	3.924	34859.	0.61
EUROPIUM+3	1.0963	0.4630	3.717	17636.	0.44
GADOLINIUM	1.0982	1.0430	0.038	1354.	0.43
TERBIUM	1.0872	1.0235	0.003	1205.	0.42
DYSPROSIUM	1.0823	0.7756	0.941	4913.	0.41
HOLMIUM	1.0774	0.7810	0.877	4526.	0.41
ERBIUM	1.0720	0.8115	0.662	3610.	0.40
THULIUM	1.0652	0.6351	1.838	7639.	0.39
YTTERBIUM+2	1.1823	0.4161	3.870	30184.	0.57
YTTERBIUM+3	1.0616	0.4161	4.687	16964.	0.38
LUTETIUM	1.0579	1.1129	-0.341	92.	0.37
HAFNIUM	0.9634	1.5850	6.827	9520.	0.23
TANTALUM	0.8945	2.0349	964.461	36777.	0.04
TUNGSTEN	0.8585	2.1917	10.156	55153.	-0.48
RHENIUM	0.8384	2.0283	9.416	53327.	-0.49
OSMIUM	0.8250	2.0501	9.711	59435.	-0.51
IRIDIUM	0.8274	1.7331	5.402	40259.	-0.56
PLATINUM	0.8457	1.4706	2.719	23022.	-0.59
GOLD	0.8793	0.9542	0.648	2629.	-0.31
MERCURY	0.9720	0.1597	35.410	30670.	-0.19
THALLIUM	1.0463	0.4710	6.834	12680.	-0.27
LEAD	1.0671	0.5098	4.290	12628.	-0.34
BISMUTH	1.0299	0.5441	8.869	16102.	-0.27
POLONIUM	1.0817	0.3758	46.418	28595.	-0.16
FRANCIUM	1.7073	0.1972	12.133	171417.	0.78
RADIUM	1.3988	0.4575	6.018	59823.	0.65
ACTINIUM	1.1451	1.1329	0.131	1977.	0.51
THORIUM	1.0963	1.4880	-0.579	423.	0.24
PROTACTINIUM	0.9915	1.4379	42.461	3640.	-0.05
URANIUM	0.9409	1.3617	1.833	5255.	-0.31
NEPTUNIUM	0.9317	1.2309	0.950	3036.	-0.29
AMERICIUM	1.0549	0.7190	4.228	4712.	0.19

TABLE-III-177

SOLVENT-PLUTONIUM+5

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.770	1.5920	12.060	91800.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4893	0.5674	13.458	58575.	-0.43
LITHIUM	0.9812	0.4203	0.814	13501.	0.81
BERYLLIUM	0.7085	0.8486	8.786	12863.	0.24
BORON	0.5779	1.4434	41.891	61567.	-0.25
CARBON	0.5503	1.8617	10.262	145163.	-0.78
NITROGEN	0.5182	1.2298	4.593	169345.	-1.26
OXYGEN	0.5634	0.6486	0.497	33923.	-1.69
SODIUM	1.2004	0.2824	3.324	52732.	0.82
MAGNESIUM	1.0063	0.3878	2.450	17665.	0.54
ALUMINUM	0.8995	0.8442	-0.822	7.	0.25
SILICON	0.8304	1.1808	-6.139	683.	-0.06
PHOSPHOROUS	0.7795	0.8203	1.048	3824.	-0.33
SULFUR	0.7852	0.7233	0.024	1497.	-0.74
POTASSIUM	1.4925	0.2340	6.151	123880.	0.93
CALCIUM	1.2399	0.4597	3.180	42437.	0.75
SCANDIUM	1.0308	0.9913	0.004	1213.	0.49
TITANIUM	0.9183	1.2277	-0.043	1115.	0.28
VANADIUM	0.8455	1.3377	27.084	11747.	0.13
CHROMIUM	0.8053	1.0349	1.813	7228.	-0.38
MANGANESE+5	0.8210	0.7320	-1.001	673.	-0.15
MANGANESE+7	0.7877	0.7320	0.066	1531.	-0.47
IRON	0.8003	1.0893	35.992	9492.	-0.10
COBALT	0.7864	1.1122	21.511	12353.	-0.15
NICKEL	0.7827	1.1198	20.343	13201.	-0.16
COPPER	0.8028	0.8834	42.714	3655.	-0.05
ZINC	0.8756	0.3388	27.701	8921.	0.11
GALLIUM	0.8499	0.7102	38.918	2000.	-0.03
GERMANIUM	0.8656	0.9749	-1.774	501.	-0.13
ARSENIC	0.8580	0.3159	8.468	19959.	-0.31
SELENIUM	0.8869	0.5381	1.255	14966.	-0.69
RUBIDIUM	1.5992	0.2168	7.933	159409.	0.93
STRONTIUM	1.3511	0.3932	4.685	68622.	0.79
YTTRIUM	1.1137	1.0850	0.274	3412.	0.59
ZIRCONIUM	1.0063	1.5904	0.390	2857.	0.43
NIOBIUM	0.9221	1.9063	10.114	18194.	0.27
MOLYBDENUM	0.8794	1.7157	7.161	19174.	-0.33
TECHNETIUM	0.8574	1.7222	8.520	23905.	-0.34
RUTHENIUM	0.8411	1.6863	8.654	25638.	-0.35
RHODIUM	0.8448	1.4510	3.443	15874.	-0.43
PALLADIUM	0.8643	0.9847	0.170	1952.	-0.44
SILVER	0.9077	0.7451	-4.484	355.	0.09
CADMIUM	0.9849	0.2919	24.920	21937.	0.19
INDIUM	1.0465	0.6285	150.901	9892.	-0.05
TIN+2	1.0245	0.7843	14.857	6126.	0.12
TIN+4	0.9925	0.7843	141.051	12902.	-0.06
ANTIMONY	0.9868	0.6819	11.014	12393.	-0.21
TELLURIUM	1.0314	0.5076	46.653	25398.	-0.15

TABLE-III-178

SOLVENT-PLUTONIUM+5

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.7155	0.2052	9.127	203323.	0.98
BARIUM	1.4045	0.4630	4.393	72668.	0.84
LANTHANUM	1.1790	1.1220	0.557	6666.	0.65
CERIUM+3	1.1595	1.2157	0.271	3809.	0.65
CERIUM+4	1.0503	1.2157	-0.382	173.	0.34
PRASEODYMIUM	1.1482	0.9705	0.702	7822.	0.64
NEODYMIUM	1.1445	0.8420	1.055	11030.	0.64
PROMETHIUM	1.1363	0.6972	1.548	15403.	0.63
SAMARIUM	1.1319	0.5370	2.371	22550.	0.63
EUROPIUM+2	1.2820	0.4630	3.325	49044.	0.79
EUROPIUM+3	1.1294	0.4630	2.893	26669.	0.62
GADOLINIUM	1.1313	1.0430	0.458	5121.	0.61
TERBIUM	1.1200	1.0235	0.430	4787.	0.60
DYSPROSIUM	1.1149	0.7756	1.153	10572.	0.59
HOLMIUM	1.1099	0.7810	1.111	9993.	0.59
ERBIUM	1.1043	0.8115	0.966	8631.	0.58
THULIUM	1.0974	0.6351	1.723	14098.	0.57
YTTERBIUM+2	1.2180	0.4161	3.186	42513.	0.75
YTTERBIUM+3	1.0936	0.4161	3.329	25438.	0.56
LUTETIUM	1.0898	1.1129	0.109	1962.	0.55
HAFNIUM	0.9925	1.5850	0.617	3584.	0.41
TANTALUM	0.9215	2.0349	19.001	22400.	0.22
TUNGSTEN	0.8844	2.1917	16.876	36217.	-0.30
RHENIUM	0.8637	2.0283	15.188	34851.	-0.31
OSMIUM	0.8499	2.0501	15.252	39494.	-0.33
IRIDIUM	0.8524	1.7331	7.177	25089.	-0.38
PLATINUM	0.8712	1.4706	2.958	12658.	-0.41
GOLD	0.9058	0.9542	-2.245	317.	-0.13
MERCURY	1.0013	0.1597	16628.696	39538.	-0.01
THALLIUM	1.0779	0.4710	101.709	20190.	-0.09
LEAD	1.0992	0.5098	32.457	20353.	-0.16
BISMUTH	1.0609	0.5441	128.553	25204.	-0.09
POLONIUM	1.1143	0.3758	4211.425	40038.	0.02
FRANCIUM	1.7588	0.1972	10.175	217425.	0.96
RADIUM	1.4410	0.4575	5.034	81170.	0.83
ACTINIUM	1.1796	1.1329	0.482	6481.	0.69
THORIUM	1.1294	1.4880	-0.225	276.	0.42
PROTACTINIUM	1.0214	1.4379	-1.605	567.	0.13
URANIUM	0.9692	1.3617	0.316	1315.	-0.13
NEPTUNIUM	0.9598	1.2309	-2.861	394.	-0.11
AMERICIUM	1.0867	0.7190	2.822	10099.	0.37

TABLE-III-179

SOLVENT-AMERICIUM

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.400	1.730C	17.640	6600C.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4503	0.7892	9.101	135503.	-0.80
LITHIUM	0.9029	0.5845	-0.111	695.	0.44
BERYLLIUM	0.6520	1.1803	119.206	47648.	-0.13
BORON	0.5318	2.0076	15.620	139649.	-0.62
CARBON	0.5064	2.5894	9.139	279909.	-1.15
NITROGEN	0.4769	1.7106	5.253	323008.	-1.63
OXYGEN	0.5185	0.9021	0.904	89626.	-2.06
SODIUM	1.1046	0.3927	3.262	16426.	0.45
MAGNESIUM	0.9260	0.5394	0.950	1825.	0.17
ALUMINUM	0.8277	1.1742	26.450	9975.	-0.12
SILICON	0.7642	1.6424	3.654	16771.	-0.43
PHOSPHOROUS	0.7173	1.1409	2.193	25968.	-0.70
SULFUR	0.7225	1.0061	0.599	18218.	-1.11
POTASSIUM	1.3734	0.3255	6.647	49259.	0.56
CALCIUM	1.1410	0.6394	2.552	9689.	0.38
SCANDIUM	0.9486	1.3788	9.998	4512.	0.12
TITANIUM	0.8451	1.7076	94.786	18897.	-0.09
VANADIUM	0.7780	1.8606	34.337	46800.	-0.24
CHROMIUM	0.7410	1.4394	2.647	35531.	-0.75
MANGANESE+5	0.7555	1.0182	2.181	14795.	-0.52
MANGANESE+7	0.7249	1.0182	1.056	18379.	-0.84
IRON	0.7364	1.5152	7.810	40975.	-0.47
COBALT	0.7237	1.5470	7.400	47334.	-0.52
NICKEL	0.7202	1.5576	7.406	49167.	-0.53
COPPER	0.7387	1.2288	6.035	25740.	-0.42
ZINC	0.8058	0.4712	-0.692	114.	-0.26
GALLIUM	0.7821	0.9879	0.365	2540.	-0.40
GERMANIUM	0.7965	1.3561	0.861	6154.	-0.50
ARSENIC	0.7896	0.4394	0.164	2941.	-0.68
SELENIUM	0.8162	0.7485	-0.020	684.	-1.06
RUBIDIUM	1.4717	0.3015	8.966	66034.	0.56
STRONTIUM	1.2434	0.5470	4.874	21017.	0.42
YTTRIUM	1.0249	1.5091	0.983	2320.	0.22
ZIRCONIUM	0.9260	2.2121	304.305	26454.	0.06
NIOBIUM	0.8486	2.6515	263.316	61913.	-0.10
MOLYBDENUM	0.8092	2.3864	5.484	63157.	-0.70
TECHNETIUM	0.7890	2.3955	6.110	72221.	-0.71
RUTHENIUM	0.7740	2.3455	6.206	75378.	-0.72
RHODIUM	0.7775	2.0182	3.697	55754.	-0.80
PALLADIUM	0.7954	1.3697	1.305	20935.	-0.81
SILVER	0.8353	1.0364	2.566	5832.	-0.28
CADMIUM	0.9064	0.4061	3.500	3807.	-0.18
INDIUM	0.9630	0.8742	-0.292	6.	-0.42
TIN+2	0.9428	1.0909	-0.497	476.	-0.25
TIN+4	0.9133	1.0909	-0.261	79.	-0.43
ANTIMONY	0.9081	0.9485	-0.139	115.	-0.58
TELLURIUM	0.9491	0.7061	0.361	3443.	-0.52

TABLE-III-180

SOLVENT-AMERICIUM

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5786	0.2855	9.956	86617.	0.61
BARIUM	1.2925	0.6439	3.981	21470.	0.47
LANTHANUM	1.0850	1.5606	-0.194	835.	0.28
CERIUM+3	1.0671	1.6909	0.661	2362.	0.28
CERIUM+4	0.9665	1.6909	353.991	8539.	-0.03
PRASEODYMIUM	1.0566	1.3498	-0.501	349.	0.27
NEODYMIUM	1.0532	1.1712	-0.731	0.	0.27
PROMETHIUM	1.0457	0.9697	-0.477	443.	0.26
SAMARIUM	1.0416	0.7470	0.850	2467.	0.26
EUROPIUM+2	1.1798	0.6439	2.693	12146.	0.42
EUROPIUM+3	1.0393	0.6439	2.065	4121.	0.25
GADOLINIUM	1.0410	1.4508	0.048	1256.	0.24
TERBIUM	1.0306	1.4236	0.142	1368.	0.23
DYSPROSIUM	1.0260	1.0788	-1.030	0.	0.22
HOLMIUM	1.0214	1.0864	-1.102	7.	0.22
ERBIUM	1.0162	1.1288	-1.099	96.	0.21
THULIUM	1.0098	0.8833	-0.904	359.	0.20
YTTERBIUM+2	1.1208	0.5788	2.710	10216.	0.38
YTTERBIUM+3	1.0064	0.5788	3.358	4047.	0.19
LUTETIUM	1.0029	1.5479	3.318	3782.	0.18
HAFNIUM	0.9133	2.2045	740.960	28531.	0.04
TANTALUM	0.8480	2.8303	133.332	70372.	-0.15
TUNGSTEN	0.8139	3.0485	9.146	95868.	-0.67
RHENIUM	0.7948	2.8212	8.615	93048.	-0.68
OSMIUM	0.7821	2.8515	8.862	101331.	-0.70
IRIDIUM	0.7844	2.4106	5.650	74476.	-0.75
PLATINUM	0.8017	2.0455	3.422	49205.	-0.78
GOLD	0.8335	1.3273	2.178	13747.	-0.50
MERCURY	0.9214	0.2221	3.625	13261.	-0.38
THALLIUM	0.9919	0.6552	0.192	2131.	-0.46
LEAD	1.0116	0.7091	0.125	2001.	-0.53
BISMUTH	0.9763	0.7568	0.407	3180.	-0.46
POLONIUM	1.0254	0.5227	3.031	5753.	-0.35
FRANCIUM	1.6185	0.2742	11.499	93500.	0.59
RADIUM	1.3260	0.6364	4.884	25021.	0.46
ACTINIUM	1.0855	1.5758	-0.119	910.	0.32
THORIUM	1.0393	2.0697	135.207	8987.	0.05
PROTACTINIUM	0.9399	2.0000	12.130	17304.	-0.24
URANIUM	0.8919	1.8939	3.312	20284.	-0.50
NEPTUNIUM	0.8832	1.7121	2.679	15424.	-0.48
PLUTONIUM+4.76	0.9480	1.3909	4.228	4712.	-0.19
PLUTONIUM+5	0.9202	1.3909	2.822	10099.	-0.37

TABLE IV. ESTIMATED EFFECT OF VALENCE ON THE HEAT OF SUBLIMATION AND MELTING POINT

Element	Valence Used	Heat of Sublimation (kcal/mole)	Melting Point (°K)
Mn	5	67.2	1517
	7	97.5	1980
Sn	2	72.0	505.1
	4	85.0	920
Ce	3	111.6	1071
	4	145.0	1760
Eu	2	42.5	1095
	3	102.5	1470
Yb	2	38.2	1089
	3	102.5	1875
Pu	4.76	86.0	980
	5	91.8	913

TABLE-V- 1

SOLVENT-MANGANESE+7

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
2.240	1.2540	6.718	97500.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.6212	0.5343	365.207	14667.	0.04
LITHIUM	1.2456	0.3957	1.108	43037.	1.28
BERYLLIUM	0.8995	0.7990	-0.086	191.	0.71
BORON	0.7337	1.3590	13.066	15775.	0.22
CARBON	0.6986	1.7528	24.064	54519.	-0.31
NITROGEN	0.6579	1.1579	4.414	64721.	-0.79
OXYGEN	0.7153	0.6107	0.130	5664.	-1.22
SODIUM	1.5239	0.2658	3.010	116689.	1.29
MAGNESIUM	1.2775	0.3651	2.110	50823.	1.01
ALUMINUM	1.1419	0.7949	0.636	8795.	0.72
SILICON	1.0542	1.1118	1.293	6206.	0.41
PHOSPHORUS	0.9896	0.7723	-0.191	1106.	0.14
SULFUR	0.9968	0.6810	0.975	2831.	-0.27
POTASSIUM	1.8947	0.2203	5.621	255241.	1.40
CALCIUM	1.5742	0.4328	3.059	106176.	1.22
SCANDIUM	1.3086	0.9333	0.877	19822.	0.96
TITANIUM	1.1659	1.1559	0.310	5216.	0.75
VANADIUM	1.0734	1.2595	-0.143	4.	0.60
CHROMIUM	1.0223	0.9744	-5.105	239.	0.09
IRON	1.0159	1.0256	-0.371	21.	0.37
COBALT	0.9984	1.0472	-0.478	63.	0.32
NICKEL	0.9936	1.0544	-0.480	129.	0.31
COPPER	1.0191	0.8318	0.026	1298.	0.42
ZINC	1.1116	0.3190	3.809	30743.	0.58
GALLIUM	1.0789	0.6687	4.156	19747.	0.44
GERMANIUM	1.0989	0.9179	5.501	15856.	0.34
ARSENIC	1.0893	0.2974	87.205	52672.	0.16
SELENIUM	1.1260	0.5067	43.609	49864.	-0.22
RUBIDIUM	2.0303	0.2041	7.148	324269.	1.40
STRONTIUM	1.7153	0.3703	4.252	156862.	1.26
YTTRIUM	1.4139	1.0215	1.093	29677.	1.06
ZIRCONIUM	1.2775	1.4974	0.125	3519.	0.90
NIOBIUM	1.1707	1.7949	-0.064	388.	0.74
MOLYBDENUM	1.1164	1.6154	-1.175	661.	0.14
TECHNETIUM	1.0885	1.6215	1.279	1691.	0.13
RUTHENIUM	1.0678	1.5877	2.977	2181.	0.12
RHODIUM	1.0726	1.3662	-24.312	295.	0.04
PALLADIUM	1.0973	0.9272	86.442	2986.	0.03
SILVER	1.1523	0.7015	1.609	12827.	0.56
CADMIUM	1.2504	0.2749	5.412	55556.	0.66
INDIUM	1.3285	0.5918	9.609	40279.	0.42
TIN+2	1.3006	0.7385	4.034	33572.	0.59
TIN+4	1.2600	0.8718	10.825	43156.	0.41
ANTIMONY	1.2528	0.6421	29.811	47664.	0.26
TELLURIUM	1.3094	0.4779	29.950	71914.	0.32
CESIUM	2.1778	0.1932	8.437	410271.	1.45
BARIUM	1.7831	0.4359	4.260	169785.	1.31

TABLE-V- 2

SOLVENT-MANGANESE+7

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
LANTHANUM	1.4968	1.0564	1.364	40857.	1.12
CERIUM+3	1.4721	1.1446	1.10C	32842.	1.12
CERIUM+4	1.3333	1.4872	C.39C	7094.	0.81
PRASEODYMIUM	1.4577	0.9137	1.42E	41698.	1.11
NEODYMIUM	1.4530	0.7928	1.65E	47892.	1.11
PROMETHIUM	1.4426	0.6564	1.93E	55310.	1.10
SAMARIUM	1.4370	0.5056	2.372	66763.	1.10
EUROPIUM+2	1.6276	0.4359	3.252	120266.	1.26
EUROPIUM+3	1.4338	1.0513	1.10C	31216.	1.09
GADOLINIUM	1.4362	0.9821	1.249	34797.	1.08
TERBIUM	1.4219	0.9637	1.217	33436.	1.07
DYSPROSIUM	1.4155	0.7303	1.68S	45277.	1.06
HOLMIUM	1.4091	0.7354	1.661	43902.	1.06
ERBIUM	1.4019	0.7641	1.57C	40943.	1.05
THULIUM	1.3931	0.5979	1.97S	50559.	1.04
YTTERBIUM+2	1.5463	0.3918	2.99E	104074.	1.22
YTTERBIUM+3	1.3884	1.0513	C.96E	24971.	1.03
LUTETIUM	1.3836	1.0478	C.963	24475.	1.02
HAFNIUM	1.2600	1.4923	C.08E	2733.	0.88
TANTALUM	1.1699	1.9159	-0.011	1068.	0.69
TUNGSTEN	1.1228	2.0636	5.64C	4951.	0.17
RHENIUM	1.0965	1.9097	5.89S	4674.	0.16
OSMIUM	1.0789	1.9303	11.317	6307.	0.14
IRIDIUM	1.0821	1.6318	4.257	1987.	0.09
PLATINUM	1.1061	1.3846	-14.183	15.	0.06
GOLD	1.1499	0.8985	2.024	6587.	0.34
MERCURY	1.2711	0.1504	16.348	80963.	0.46
THALLIUM	1.3684	0.4435	17.437	59254.	0.38
LEAD	1.3955	0.4800	26.977	60974.	0.31
BISMUTH	1.3469	0.5123	21.523	72860.	0.38
POLONIUM	1.4147	0.3538	17.26C	96753.	0.49
FRANCIUM	2.2329	0.1856	9.245	437144.	1.43
RADIUM	1.8293	0.4308	4.772	187166.	1.30
ACTINIUM	1.4976	1.0667	1.26E	40463.	1.16
THORIUM	1.4338	1.4010	C.949	18529.	0.89
PROTACTINIUM	1.2967	1.3538	0.794	7785.	0.60
URANIUM	1.2305	1.2821	1.527	5263.	0.34
NEPTUNIUM	1.2185	1.1590	2.134	7569.	0.36
PLUTONIUM+4.76	1.3078	0.8821	2.12C	21852.	0.65
PLUTONIUM+5	1.2695	0.9415	1.801	10364.	0.47
AMERICIUM	1.3796	0.6769	2.559	42832.	0.84

4

TABLE-V- 3

SOLVENT-TIN+4

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.830	1.580C	20.590	85000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4930	0.6128	46.583	148251.	-0.37
LITHIUM	0.9886	0.4539	0.024	1619.	0.87
BERYLLIUM	0.7139	0.9165	22.987	48898.	0.30
BORON	0.5823	1.5588	178.512	149797.	-0.19
CARBON	0.5544	2.0106	25.599	307209.	-0.72
NITROGEN	0.5222	1.3282	10.782	359235.	-1.20
OXYGEN	0.5677	0.7005	1.55C	96179.	-1.63
SODIUM	1.2095	0.3049	1.14E	21660.	0.88
MAGNESIUM	1.0139	0.4188	C.255	3305.	0.60
ALUMINUM	0.9063	0.9118	3.36E	8651.	0.31
SILICON	0.8367	1.2753	0.	15208.	0.
PHOSPHOROUS	0.7854	C.8859	14.39E	25394.	-0.27
SULFUR	0.7911	0.7812	1.511	17306.	-0.68
POTASSIUM	1.5038	0.2527	2.59S	59927.	0.99
CALCIUM	1.2494	0.4965	C.82C	13597.	0.81
SCANDIUM	1.0386	1.0706	0.297	3263.	0.55
TITANIUM	0.9253	1.3259	6.05S	17343.	0.34
VANADIUM	0.8519	1.4447	54.895	46890.	0.19
CHROMIUM	0.8114	1.1176	14.441	35292.	-0.32
MANGANESE+5	0.8272	0.7906	67.00S	13709.	-0.09
MANGANESE+7	0.7937	1.1471	10.825	43156.	-0.41
IRON	0.8063	1.1765	1C81.07S	41080.	-0.04
COBALT	0.7924	1.2012	290.362	47956.	-0.09
NICKEL	0.7886	1.2094	211.40E	49942.	-0.10
COPPER	0.8089	0.9541	1C343.154	25044.	0.01
ZINC	0.8823	0.3659	-C.98E	535.	0.17
GALLIUM	0.8563	0.7671	21.403	1636.	0.03
GERMANIUM	0.8722	1.0529	31.957	4803.	-0.07
ARSENIC	0.8646	0.3412	2.51E	4818.	-0.25
SELENIUM	0.8937	0.5812	C.04S	1642.	-0.63
RUBIDIUM	1.6114	0.2341	3.445	79046.	0.99
STRONTIUM	1.3614	0.4247	1.56E	27277.	0.85
YTTRIUM	1.1222	1.1718	C.013	1321.	0.65
ZIRCONIUM	1.0139	1.7176	4.25C	24721.	0.49
NIOBIUM	0.9291	2.0588	24.24S	62088.	0.33
MOLYBDENUM	0.8861	1.8529	37.287	63875.	-0.27
TECHNETIUM	0.8639	1.8600	4C.154	73787.	-0.28
RUTHENIUM	0.8475	1.8212	39.26S	77349.	-0.29
RHODIUM	0.8513	1.5671	17.48E	56395.	-0.37
PALLADIUM	0.8709	1.0635	5.58E	19793.	-0.38
SILVER	0.9146	0.8047	6.663	4649.	0.15
CADMIUM	0.9924	0.3153	3.312	5966.	0.25
INDIUM	1.0544	0.6788	-410.00E	247.	0.01
ANTIMONY	0.9943	0.7365	-1.117	613.	-0.15
TELLURIUM	1.0392	0.5482	23.631	5606.	-0.09
CESIUM	1.7285	0.2216	4.05E	102352.	1.04
BARIUM	1.4152	0.5000	1.43C	27907.	0.90

TABLE-V- 4

SOLVENT-TIN+4

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
LANTHANUM	1.1880	1.2118	-0.081	244.	0.71
CERIUM+3	1.1684	1.3129	0.011	1316.	0.71
CERIUM+4	1.0582	1.7059	4.488	17753.	0.40
PRASEODYMIUM	1.1570	1.0481	-0.103	29.	0.70
NEODYMIUM	1.1532	0.9094	-0.090	185.	0.70
PROMETHIUM	1.1449	0.7529	0.008	1279.	0.69
SAMARIUM	1.1405	0.5800	0.286	4285.	0.69
EUROPIUM+2	1.2918	0.5000	0.927	16639.	0.85
EUROPIUM+3	1.1380	1.2059	0.000	1197.	0.68
GADOLINIUM	1.1399	1.1265	-0.064	526.	0.67
TERBIUM	1.1285	1.1054	-0.058	608.	0.66
DYSPROSIUM	1.1234	0.8376	-0.102	188.	0.65
HOLMIUM	1.1184	0.8435	-0.111	119.	0.65
ERBIUM	1.1127	0.8765	-0.126	12.	0.64
THULIUM	1.1057	0.6859	-0.009	1107.	0.63
YTTERBIUM+2	1.2272	0.4494	0.861	14213.	0.81
YTTERBIUM+3	1.1019	1.2059	0.140	2442.	0.62
LUTETIUM	1.0981	1.2019	0.156	2550.	0.61
HAFNIUM	1.0000	1.7118	5.047	26903.	0.47
TANTALUM	0.9285	2.1976	38.619	71012.	0.28
TUNGSTEN	0.8911	2.3671	73.341	98608.	-0.24
RHENIUM	0.8703	2.1906	65.738	95937.	-0.25
OSMIUM	0.8563	2.2141	61.775	105040.	-0.27
IRIDIUM	0.8589	1.8718	31.781	76238.	-0.32
PLATINUM	0.8778	1.5882	17.003	49223.	-0.35
GOLD	0.9127	1.0306	98.876	12365.	-0.07
MERCURY	1.0089	0.1725	287.226	17751.	0.05
THALLIUM	1.0861	0.5087	124.708	3780.	-0.03
LEAD	1.1076	0.5506	10.504	3615.	-0.10
BISMUTH	1.0690	0.5876	196.571	5272.	-0.03
POLONIUM	1.1228	0.4059	84.101	13604.	0.08
FRANCIUM	1.7722	0.2129	4.539	110096.	1.02
RADIUM	1.4519	0.4941	1.693	32123.	0.89
ACTINIUM	1.1886	1.2235	-0.070	287.	0.75
THORIUM	1.1380	1.6071	1.123	7159.	0.48
PROTACTINIUM	1.0291	1.5529	17.140	15461.	0.19
URANIUM	0.9766	1.4706	154.151	18610.	-0.07
NEPTUNIUM	0.9671	1.3294	218.217	13772.	-0.05
PLUTONIUM+4.76	1.0380	1.0118	0.843	2311.	0.24
PLUTONIUM+5	1.0076	1.0800	89.623	8632.	0.06
AMERICIUM	1.0949	0.7765	-0.237	182.	0.43

TABLE-V- 5

SOLVENT-CERIUM+4

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.430	1.672C	15.920	145000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4659	0.3592	4.47E	62411.	-0.77
LITHIUM	0.9342	0.2661	4.541	24326.	0.47
BERYLLIUM	0.6746	0.5372	37.544	9850.	-0.10
BORON	0.5502	0.9138	7.613	62307.	-0.59
CARBON	0.5239	1.1786	5.503	160381.	-1.12
NITROGEN	0.4934	0.7786	3.26E	193986.	-1.60
OXYGEN	0.5365	0.4106	0.338	33269.	-2.03
SODIUM	1.1429	0.1788	14.34C	77380.	0.48
MAGNESIUM	0.9581	0.2455	31.564	30307.	0.20
ALUMINUM	0.8565	0.5345	-2.581	710.	-0.09
SILICON	0.7907	0.7476	-C.321	6.	-0.40
PHOSPHORUS	0.7422	0.5193	0.044	1643.	-0.67
SULFUR	0.7476	0.4579	-C.03E	224.	-1.08
POTASSIUM	1.4211	0.1481	2C.68S	167263.	0.59
CALCIUM	1.1806	0.2910	16.30C	64377.	0.41
SCANDIUM	0.9815	0.6276	6.99E	4823.	0.15
TITANIUM	0.8744	0.7772	-14.015	29.	-0.06
VANADIUM	0.8050	0.8469	6.73C	8036.	-0.21
CHROMIUM	0.7667	0.6552	0.257	4260.	-0.72
MANGANESE+5	0.7817	0.4634	-C.215	0.	-0.49
MANGANESE+7	0.7500	0.6724	C.39C	7094.	-0.81
IRON	0.7620	0.6897	1.131	6243.	-0.44
COBALT	0.7488	0.7041	1.39E	8933.	-0.49
NICKEL	0.7452	0.7090	1.48S	9752.	-0.50
COPPER	0.7644	0.5593	C.082	1480.	-0.39
ZINC	0.8337	0.2145	13.23S	17342.	-0.23
GALLIUM	0.8092	0.4497	1.584	6193.	-0.37
GERMANIUM	0.8242	0.6172	0.37C	3079.	-0.47
ARSENIC	0.8170	0.2000	3.311	33453.	-0.65
SELENIUM	0.8445	0.3407	1.041	26666.	-1.03
RUBIDIUM	1.5227	0.1372	26.16C	211186.	0.59
STRONTIUM	1.2865	0.2490	2C.807	98356.	0.45
YTTRIUM	1.0604	0.6869	5.45E	9245.	0.25
ZIRCONIUM	0.9581	1.0069	-2.87S	654.	0.09
NIOBIUM	0.8780	1.2069	108.257	13425.	-0.07
MOLYBDENUM	0.8373	1.C862	1.30E	14710.	-0.67
TECHNETIUM	0.8164	1.0903	1.71S	19522.	-0.68
RUTHENIUM	0.8008	1.0676	1.841	21403.	-0.69
RHODIUM	0.8044	0.9186	0.781	11865.	-0.77
PALLADIUM	0.8230	0.8234	-C.05S	371.	-0.78
SILVER	0.8642	0.4717	C.91C	2503.	-0.25
CADMIUM	0.9378	0.1848	67.464	36196.	-0.15
INDIUM	0.9964	0.3979	5.14E	19243.	-0.39
TIN+2	0.9755	0.4966	11.04S	13524.	-0.22
TIN+4	0.9450	0.5862	4.48E	17753.	-0.40
ANTIMONY	0.9396	0.4317	3.14E	23116.	-0.55
TELLURIUM	0.9821	0.3214	7.263	41408.	-0.49

TABLE-V- 6

SOLVENT-CERIUM+4

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.6334	0.1299	27.945	265147.	0.64
BARIUM	1.3373	0.2931	17.813	103883.	0.50
LANTHANUM	1.1226	0.7103	6.059	14881.	0.31
PRASEODYMIUM	1.0933	0.6144	7.393	16535.	0.30
NEODYMIUM	1.0897	0.5331	9.96E	21331.	0.30
PROMETHIUM	1.0819	0.4414	13.522	27596.	0.29
SAMARIUM	1.0778	0.3400	19.383	37498.	0.29
EUROPIUM+2	1.2207	0.2931	15.40E	73134.	0.45
EUROPIUM+3	1.0754	0.7069	4.859	9852.	0.28
GADOLINIUM	1.0772	0.6603	6.544	12193.	0.27
TERBIUM	1.0664	0.6480	6.573	11597.	0.26
DYSPROSIUM	1.0616	0.4910	12.992	20522.	0.25
HOLMIUM	1.0568	0.4945	13.221	19642.	0.25
ERBIUM	1.0514	0.5138	12.541	17574.	0.24
THULIUM	1.0449	0.4021	19.98C	25565.	0.23
YTTERBIUM+2	1.1597	0.2634	16.293	64349.	0.41
YTTERBIUM+3	1.0413	0.7069	4.877	6734.	0.22
LUTETIUM	1.0377	0.7046	5.03E	6512.	0.21
HAFNIUM	0.9450	1.0034	-1.00C	1079.	0.07
TANTALUM	0.8774	1.2883	48.782	17391.	-0.12
TUNGSTEN	0.8421	1.3876	3.205	31464.	-0.64
RHENIUM	0.8224	1.2841	2.998	30398.	-0.65
OSMIUM	0.8092	1.2979	3.301	35364.	-0.67
IRIDIUM	0.8116	1.0972	1.634	20730.	-0.72
PLATINUM	0.8295	0.9310	0.58C	8719.	-0.75
GOLD	0.8624	0.6041	-C.213	106.	-0.47
MERCURY	0.9533	0.1011	20.781	59896.	-0.35
THALLIUM	1.0263	0.2982	7.704	34042.	-0.43
LEAD	1.0467	0.3228	5.751	34347.	-0.50
BISMUTH	1.0102	0.3445	9.388	41220.	-0.43
POLONIUM	1.0610	0.2379	25.305	60947.	-0.32
FRANCIUM	1.6746	0.1248	31.717	282341.	0.62
RADIUM	1.3720	0.2897	20.515	114778.	0.49
ACTINIUM	1.1232	0.7172	4.744	14592.	0.35
THORIUM	1.0754	0.9421	10.389	2725.	0.08
PROTACTINIUM	0.9725	0.9103	-1.127	46.	-0.21
URANIUM	0.9228	0.8621	-0.222	60.	-0.47
NEPTUNIUM	0.9139	0.7793	-C.234	98.	-0.45
PLUTONIUM+4.76	0.9809	0.5931	8.25C	6062.	-0.16
PLUTONIUM+5	0.9522	0.6331	-0.095	938.	-0.34
AMERICIUM	1.0347	0.4552	892.011	19705.	0.03

TABLE-V- 7

SOLVENT-EUROPIUM+3

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.152	1.798C	19.800	102500.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4333	0.5082	4.871	124561.	-1.05
LITHIUM	0.8687	0.3764	4.52C	5034.	0.19
BERYLLIUM	0.6274	0.7600	1C.667	36338.	-0.38
BORON	0.5117	1.2927	7.14E	125383.	-0.87
CARBON	0.4872	1.6673	5.947	269197.	-1.40
NITROGEN	0.4588	1.1015	3.88E	317399.	-1.88
OXYGEN	0.4989	0.5809	C.624	77888.	-2.31
SODIUM	1.0628	0.2529	33.85S	33C51.	0.20
MAGNESIUM	0.8910	0.3473	47.3C4	7829.	-0.08
ALUMINUM	0.7964	0.7561	C.853	3855.	-0.37
SILICON	0.7353	1.0576	C.67C	8297.	-0.68
PHOSPHOROUS	0.6902	0.7346	C.747	16664.	-0.95
SULFUR	0.6952	0.6478	C.215	10329.	-1.36
POTASSIUM	1.3215	0.2096	36.25E	82577.	0.31
CALCIUM	1.0979	C.4117	54.93E	23266.	0.13
SCANDIUM	0.9127	0.8878	-1.585	593.	-0.13
TITANIUM	0.8131	1.C995	3.297	9878.	-0.34
VANADIUM	0.7486	1.1980	5.993	34106.	-0.49
CHROMIUM	0.7130	0.9268	1.02C	24609.	-1.00
MANGANESE+5	0.7269	0.6556	0.46S	7577.	-0.77
MANGANESE+7	0.6974	0.9512	1.10C	31216.	-1.09
IRON	0.7086	0.9756	2.37S	29425.	-0.72
COBALT	0.6963	0.9961	2.50S	35261.	-0.77
NICKEL	0.6930	1.0029	2.562	36956.	-0.78
COPPER	0.7108	0.7912	1.47C	16317.	-0.67
ZINC	0.7753	0.3034	C.25E	2717.	-0.51
GALLIUM	0.7525	0.6361	-0.114	87.	-0.65
GERMANIUM	0.7664	0.8732	C.C14	1371.	-0.75
ARSENIC	0.7597	0.2829	C.441	9950.	-0.93
SELENIUM	0.7853	C.4820	C.104	5307.	-1.31
RUBIDIUM	1.4160	C.1941	47.13E	107C05.	0.31
STRONTIUM	1.1963	0.3522	59.171	41559.	0.17
YTTRIUM	0.9861	0.9717	-82.42C	4.	-0.03
ZIRCONIUM	0.8910	1.4244	17.332	15318.	-0.19
NIOBIUM	0.8165	1.7073	16.264	46611.	-0.35
MOLYBDENUM	0.7786	1.5366	2.277	48388.	-0.95
TECHNETIUM	0.7592	1.5424	2.641	57079.	-0.96
RUTHENIUM	0.7447	1.5102	2.734	60259.	-0.97
RHODIUM	0.7481	1.2995	1.61E	42170.	-1.05
PALLADIUM	0.7653	0.8820	C.41S	12020.	-1.06
SILVER	0.8037	0.6673	C.033	1403.	-0.53
CADMIUM	0.8721	C.2615	2.454	11557.	-0.43
INDIUM	0.9266	0.5629	C.10E	2302.	-0.67
TIN+2	0.9071	0.7024	-C.11?	544.	-0.50
TIN+4	0.8788	0.8293	C.COC	1197.	-0.68
ANTIMONY	0.8737	0.6107	C.13E	3371.	-0.83
TELLURIUM	0.9132	0.4546	C.781	11814.	-0.77

TABLE-V- 8

SOLVENT-EUROPIUM+3

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5189	0.1838	44.876	136801.	0.36
BARIUM	1.2436	0.4146	36.778	42990.	0.22
LANTHANUM	1.0439	1.0049	-28.121	398.	0.03
CERIUM+3	1.0267	1.0888	-61.426	1.	0.03
CERIUM+4	0.9299	1.4146	4.859	9852.	-0.28
PRASEODYMIUM	1.0167	0.8692	-29.491	863.	0.02
NEODYMIUM	1.0133	0.7541	149.549	2310.	0.02
PROMETHIUM	1.0061	0.6244	945.283	4876.	0.01
SAMARIUM	1.0022	0.4810	7644.015	9829.	0.01
GADOLINIUM	1.0017	0.9341	-716.741	134.	-0.01
TERBIUM	0.9917	0.9167	-186.274	93.	-0.02
DYSPROSIUM	0.9872	0.6946	80.176	2257.	-0.02
HOLMIUM	0.9828	0.6995	33.849	1991.	-0.03
ERBIUM	0.9778	0.7268	4.946	1375.	-0.04
THULIUM	0.9716	0.5688	60.690	4417.	-0.05
YTTERBIUM+2	1.0784	0.3727	56.473	23883.	0.13
YTTERBIUM+3	0.9683	1.0000	-13.187	239.	-0.06
LUTETIUM	0.9650	0.9967	-9.703	276.	-0.06
HAFNIUM	0.8788	1.4195	15.932	17087.	-0.21
TANTALUM	0.8159	1.8224	14.535	54285.	-0.40
TUNGSTEN	0.7831	1.9629	3.984	78616.	-0.92
RHENIUM	0.7647	1.8166	3.787	76403.	-0.93
OSMIUM	0.7525	1.8361	4.021	84524.	-0.95
IRIDIUM	0.7547	1.5522	2.527	59228.	-1.00
PLATINUM	0.7714	1.3171	1.427	35959.	-1.03
GOLD	0.8020	0.8546	0.403	6390.	-0.75
MERCURY	0.8865	0.1430	2.805	26698.	-0.63
THALLIUM	0.9544	0.4219	0.661	8829.	-0.71
LEAD	0.9733	0.4566	0.535	8667.	-0.78
BISMUTH	0.9394	0.4873	0.884	11413.	-0.71
POLONIUM	0.9867	0.3366	2.620	22795.	-0.60
FRANCIUM	1.5573	0.1766	53.900	146570.	0.34
RADIUM	1.2759	0.4098	45.784	48643.	0.21
ACTINIUM	1.0445	1.0146	-7.062	348.	0.07
THORIUM	1.0000	1.3327	1.394	2453.	-0.20
PROTACTINIUM	0.9043	1.2878	1.285	8250.	-0.49
URANIUM	0.8582	1.2195	0.735	10725.	-0.75
NEPTUNIUM	0.8498	1.1024	0.490	7181.	-0.73
PLUTONIUM+4.76	0.9121	0.8390	-0.216	238.	-0.44
PLUTONIUM+5	0.8854	0.8956	0.288	3727.	-0.62
AMERICIUM	0.9622	0.6439	0.694	2176.	-0.25

TABLE-V- 9

SOLVENT-YTTERBIUM+3

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.208	1.741C	17.980	102500.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4474	0.5082	4.644	106587.	-0.99
LITHIUM	0.8972	0.3764	4.011	6880.	0.25
BERYLLIUM	0.6479	0.7600	11.795	29394.	-0.32
BORON	0.5284	1.2927	7.024	107996.	-0.81
CARBON	0.5032	1.6673	5.669	236638.	-1.34
NITROGEN	0.4739	1.1015	3.627	278832.	-1.82
OXYGEN	0.5152	0.5809	0.55C	65572.	-2.25
SODIUM	1.0976	0.2529	23.794	37715.	0.26
MAGNESIUM	0.9202	0.3473	794.102	10055.	-0.02
ALUMINUM	0.8225	0.7561	0.447	2197.	-0.31
SILICON	0.7593	1.0576	0.491	5576.	-0.62
PHOSPHORUS	0.7128	0.7346	0.62C	12569.	-0.89
SULFUR	0.7180	0.6478	0.157	7328.	-1.30
POTASSIUM	1.3647	0.2096	29.09C	92036.	0.37
CALCIUM	1.1338	0.4117	32.422	27617.	0.19
SCANDIUM	0.9426	0.8878	-9.254	86.	-0.07
TITANIUM	0.8397	1.0995	3.083	6846.	-0.28
VANADIUM	0.7731	1.1980	6.104	27461.	-0.43
CHROMIUM	0.7364	0.9268	0.884	19288.	-0.94
MANGANESE+5	0.7507	0.6556	0.335	5103.	-0.71
MANGANESE+7	0.7203	0.9512	0.968	24971.	-1.03
IRON	0.7318	0.9756	2.20C	23424.	-0.66
COBALT	0.7191	0.9961	2.333	28470.	-0.71
NICKEL	0.7157	1.0029	2.392	29942.	-0.72
COPPER	0.7341	0.7912	1.282	12267.	-0.61
ZINC	0.8007	0.3034	0.604	4039.	-0.45
GALLIUM	0.7771	0.6361	-0.145	22.	-0.59
GERMANIUM	0.7915	0.8732	-0.065	478.	-0.69
ARSENIC	0.7846	0.2829	0.634	12302.	-0.87
SELENIUM	0.8110	0.4820	0.17C	7351.	-1.25
RUBIDIUM	1.4624	0.1941	37.68E	118882.	0.37
STRONTIUM	1.2355	0.3522	38.82E	47735.	0.23
YTTRIUM	1.0184	0.9717	-45.875	176.	0.03
ZIRCONIUM	0.9202	1.4244	25.09C	11273.	-0.13
NIOBIUM	0.8432	1.7073	18.911	38375.	-0.29
MOLYBDENUM	0.8041	1.5366	2.112	39943.	-0.89
TECHNETIUM	0.7840	1.5424	2.474	47601.	-0.90
RUTHENIUM	0.7691	1.5102	2.56E	50403.	-0.91
RHODIUM	0.7725	1.2995	1.467	34488.	-0.99
PALLADIUM	0.7904	0.8820	0.323	8664.	-1.00
SILVER	0.8300	0.6673	-0.13C	527.	-0.47
CADMIUM	0.9006	0.2615	4.024	14033.	-0.37
INDIUM	0.9569	0.5629	0.297	3761.	-0.61
TIN+2	0.9368	0.7024	0.04E	1401.	-0.44
TIN+4	0.9075	0.8293	0.14C	2442.	-0.62
ANTIMONY	0.9024	0.6107	0.28E	5151.	-0.77
TELLURIUM	0.9431	0.4546	1.167	14832.	-0.71

TABLE-V- 1C

SOLVENT-YTTERBIUM+3

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.5686	0.1838	37.362	151731.	0.42
BARIUM	1.2843	0.4146	27.202	49671.	0.28
LANTHANUM	1.0781	1.0049	0.359	1261.	0.09
CERIUM+3	1.0603	1.0888	-5.837	220.	0.09
CERIUM+4	0.9604	1.4146	4.877	6734.	-0.22
PRASEODYMIUM	1.0500	0.8692	5.530	1968.	0.08
NEODYMIUM	1.0465	0.7541	21.563	3915.	0.07
PROMETHIUM	1.0391	0.6244	53.015	7013.	0.07
SAMARIUM	1.0350	0.4810	124.822	12617.	0.06
EUROPIUM+2	1.1723	0.4146	26.046	32415.	0.23
EUROPIUM+3	1.0327	1.0000	-13.187	239.	0.06
GADOLINIUM	1.0345	0.9341	-8.928	718.	0.05
TERBIUM	1.0241	0.9167	-15.727	612.	0.04
DYSPROSIUM	1.0195	0.6946	110.571	3803.	0.03
HOLMIUM	1.0149	0.6995	170.510	3457.	0.02
ERBIUM	1.0098	0.7268	244.891	2638.	0.02
THULIUM	1.0034	0.5688	3522.931	6391.	0.01
LUTETIUM	0.9966	0.9967	-806.887	1.	-0.01
HAFNIUM	0.9075	1.4195	21.730	12769.	-0.15
TANTALUM	0.8426	1.8224	16.296	45146.	-0.34
TUNGSTEN	0.8087	1.9629	3.826	66754.	-0.86
RHENIUM	0.7898	1.8166	3.625	64756.	-0.87
OSMIUM	0.7771	1.8361	3.858	71979.	-0.89
IRIDIUM	0.7794	1.5522	2.361	49499.	-0.94
PLATINUM	0.7967	1.3171	1.275	29065.	-0.97
GOLD	0.8283	0.8546	0.264	4113.	-0.69
MERCURY	0.9156	0.1430	3.817	29991.	-0.57
THALLIUM	0.9856	0.4219	1.036	11349.	-0.65
LEAD	1.0052	0.4566	0.835	11230.	-0.72
BISMUTH	0.9701	0.4873	1.352	14447.	-0.65
POLONIUM	1.0190	0.3366	3.780	26795.	-0.54
FRANCIUM	1.6083	0.1766	44.144	162441.	0.40
RADIUM	1.3176	0.4098	33.062	55952.	0.27
ACTINIUM	1.0787	1.0146	-0.051	1173.	0.13
THORIUM	1.0327	1.3327	-0.232	1084.	-0.14
PROTACTINIUM	0.9339	1.2878	0.995	5474.	-0.43
URANIUM	0.8863	1.2195	0.572	7506.	-0.69
NEPTUNIUM	0.8777	1.1024	0.334	4672.	-0.67
PLUTONIUM+4.76	0.9420	0.8390	-0.354	0.	-0.38
PLUTONIUM+5	0.9144	0.8956	0.121	2071.	-0.56
AMERICIUM	0.9937	0.6439	2.903	3660.	-0.19

TABLE-V- 11

SOLVENT-PLUTONIUM+4.76

GORDY-THOMAS ELECTRONEGATIVITY	ATOMIC RADIUS	ATOMIC VOLUME	HEAT OF SUBLIMATION
1.590	1.6400	15.030	86000.

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
HYDROGEN	0.4750	0.6057	10.384	90295.	-0.61
LITHIUM	0.9524	0.4486	0.559	6308.	0.63
BERYLLIUM	0.6878	0.9058	292.351	25462.	0.06
BORON	0.5610	1.5407	21.646	93487.	-0.43
CARBON	0.5341	1.9872	9.524	203599.	-0.96
NITROGEN	0.5030	1.3128	4.933	237087.	-1.44
OXYGEN	0.5470	0.6923	0.679	55912.	-1.87
SODIUM	1.1652	0.3014	3.609	35283.	0.64
MAGNESIUM	0.9768	0.4140	2.685	9230.	0.36
ALUMINUM	0.8732	0.9012	6.454	1921.	0.07
SILICON	0.8061	1.2605	2.834	4956.	-0.24
PHOSPHOROUS	0.7567	0.8756	1.628	10959.	-0.51
SULFUR	0.7622	0.7721	0.266	6377.	-0.92
POTASSIUM	1.4488	0.2498	6.709	88223.	0.75
CALCIUM	1.2037	0.4907	3.308	25977.	0.57
SCANDIUM	1.0006	1.0581	-0.507	69.	0.31
TITANIUM	0.8915	1.3105	21.248	6092.	0.10
VANADIUM	0.8207	1.4279	399.732	24237.	-0.05
CHROMIUM	0.7817	1.1047	2.173	16910.	-0.56
MANGANESE+5	0.7970	0.7814	1.296	4446.	-0.33
MANGANESE+7	0.7646	1.1337	2.120	21852.	-0.65
IRON	0.7768	1.1628	10.695	20535.	-0.28
COBALT	0.7634	1.1872	9.449	24920.	-0.33
NICKEL	0.7598	1.1953	9.381	26198.	-0.34
COPPER	0.7793	0.9430	7.817	10728.	-0.23
ZINC	0.8500	0.3616	21.825	3659.	-0.07
GALLIUM	0.8250	0.7581	-1.149	24.	-0.21
GERMANIUM	0.8402	1.0407	-0.352	412.	-0.31
ARSENIC	0.8329	0.3372	1.815	11240.	-0.49
SELENIUM	0.8610	0.5744	0.322	6812.	-0.87
RUBIDIUM	1.5524	0.2314	8.751	114709.	0.75
STRONTIUM	1.3116	0.4198	5.142	45316.	0.61
YTTRIUM	1.0811	1.1581	-0.258	177.	0.41
ZIRCONIUM	0.9768	1.6977	6.199	10127.	0.25
NIOBIUM	0.8951	2.0349	177.031	34259.	0.09
MOLYBDENUM	0.8537	1.8314	5.712	35453.	-0.51
TECHNETIUM	0.8323	1.8384	6.565	42127.	-0.52
RUTHENIUM	0.8165	1.8000	6.685	44518.	-0.53
RHODIUM	0.8201	1.5488	3.410	30449.	-0.61
PALLADIUM	0.8390	1.0512	0.726	7627.	-0.62
SILVER	0.8811	0.7953	-3.972	450.	-0.09
CADMIUM	0.9561	0.3116	5040.359	12815.	0.01
INDIUM	1.0159	0.6709	1.885	3497.	-0.23
TIN+2	0.9945	0.8372	1.546	1321.	-0.06
TIN+4	0.9634	0.9884	0.843	2311.	-0.24
ANTIMONY	0.9579	0.7279	1.031	4810.	-0.39
TELLURIUM	1.0012	0.5419	5.033	13832.	-0.33

TABLE-V- 12

SOLVENT-PLUTONIUM+4.76

SOLUTE ELEMENT	RADIUS RATIO	ENERGY RATIO	MOTT NUMBER	HILDEBRAND FACTOR	ELECTRONEGATIVITY DIFFERENCE
CESIUM	1.6652	C.2191	9.895	147291.	0.80
BARIUM	1.3634	0.4942	4.597	47370.	0.66
LANTHANUM	1.1445	1.1977	C.004	1211.	0.47
CERIUM+3	1.1256	1.2977	-C.193	221.	0.47
CERIUM+4	1.0195	1.6860	8.25C	6062.	0.16
PRASEODYMIUM	1.1146	1.0359	C.135	1869.	0.46
NEODYMIUM	1.1110	0.8988	C.52C	3687.	0.46
PROMETHIUM	1.1030	0.7442	1.145	6565.	0.45
SAMARIUM	1.0988	0.5733	2.315	11762.	0.45
EUROPIUM+2	1.2445	C.4942	3.428	30605.	0.61
EUROPIUM+3	1.0963	1.1919	-C.216	238.	0.44
GADOLINIUM	1.0982	1.1134	-C.117	692.	0.43
TERBIUM	1.0872	1.0926	-0.146	591.	0.42
DYSPROSIUM	1.0823	0.8279	C.601	3569.	0.41
HOLMIUM	1.0774	0.8337	C.54C	3245.	0.41
ERBIUM	1.0720	0.8663	C.353	2481.	0.40
THULIUM	1.0652	0.6779	1.358	5957.	0.39
YTTERBIUM+2	1.1823	0.4442	3.367	26417.	0.57
YTTERBIUM+3	1.0616	1.1919	-C.354	0.	0.38
LUTETIUM	1.0579	1.1879	-0.37C	0.	0.37
HAFNIUM	0.9634	1.6919	8.415	11458.	0.23
TANTALUM	0.8945	2.1721	106C.402	40317.	0.04
TUNGSTEN	0.8585	2.3395	1C.949	59362.	-0.48
RHENIUM	0.8384	2.1651	1C.153	57407.	-0.49
OSMIUM	0.8250	2.1884	1C.422	63700.	-0.51
IRIDIUM	0.8274	1.8500	5.89C	43789.	-0.56
PLATINUM	0.8457	1.5698	3.058	25742.	-0.59
GOLD	0.8793	1.0186	1.097	3622.	-0.31
MERCURY	0.9720	0.1705	31.492	27408.	-0.19
THALLIUM	1.0463	0.5028	5.544	10512.	-0.27
LEAD	1.0671	0.5442	3.466	10432.	-0.34
BISMUTH	1.0299	0.5808	7.322	13501.	-0.27
POLONIUM	1.0817	0.4012	4C.385	25035.	-0.16
FRANCIUM	1.7073	0.2105	11.17C	157910.	0.78
RADIUM	1.3988	C.4884	5.365	53499.	0.65
ACTINIUM	1.1451	1.2093	-0.011	1128.	0.51
THORIUM	1.0963	1.5884	-C.172	963.	0.24
PROTACTINIUM	0.9915	1.5349	64.463	4908.	-0.05
URANIUM	0.9409	1.4535	2.489	6709.	-0.31
NEPTUNIUM	0.9317	1.3140	1.531	4161.	-0.29
AMERICIUM	1.0549	0.7674	2.675	3423.	0.19