CHAPTER 8

THE THERMODYNAMIC PROPERTIES OF OXYGEN

The Correlation of the Experimental Data

The tabulated thermodynamic properties of oxygen have been obtained from a new correlation of the existing data via the equation $Z = PV/RT = 1 + B_1P + C_1P^2 + D_1P^3$. The virial coefficients, B_1 and C_1, were obtained through the Lennard-Jones 6-12 potential by a method devised for fitting several properties jointly [1]. The fourth virial coefficient, D_1, was fitted empirically. The coefficients are given in table 8-13. The tables of the compressibility factor and density were computed directly from the above equations of state, whereas the tables of specific heat, entropy, and enthalpy were obtained by combining the ideal-gas values of Woolley [2] with the gas imperfection corrections obtained from the derivatives of the virial coefficients. A fuller account of the method of fitting the experimental data is to be found in the report by Woolley [3].

The experimental PVT data for oxygen extending to elevated pressure are indicated in figure 8a. The direct experimental values of Z are represented in the form of $V[(PV/RT) - 1]$ plotted as a function of density, with temperatures in degrees Kelvin indicated adjacent to the plotted points. The data at the ice point and at room temperature seem quite dependable; they include measurements by Amagat [4], Holborn and Otto [5], Kuypers and Kammerlingh Onnes [6], Van Urk and Nijhoff [7], and Baxter and Starkweather [19]. The data of Amagat are mainly useful as an indication of the trend of the data toward higher pressures. The data of Holborn and Otto have been adjusted slightly for the effect of deformation of the container at elevated pressure and for individual pressures and temperatures occurring in their evaluation of the amount of substance present for individual measurements somewhat as suggested by Cragoe [8]. The points as plotted in figure 8a are thus corrected and differ slightly from the reported numbers of Holborn and Otto.

The correlation of the PVT data was aided in the case of the second virial by the use of other data, including that of Workman [9] at 26°C and 60°C for the effect of pressure on the specific heat and the data of Rossini and Frandsen [10] at 28°C on the dependence of internal energy on the pressure. Data on the effect of pressure on velocity of sound were available [11, 12] but differed too much from the indications of the other data to justify giving them any weight in the correlation.

Experimental data on various thermodynamic properties have been compared with the calculated quantities and represented in the figures below as deviations from the tabulated values. The experimental data include: specific-heat data by Henry [13], Workman [9], and Wacker, Cheney, and Scott [14]; data on isentropic cooling by expansion (Lummer and Pringsheim method) by Eucken and Von Lüde [15]; and sound velocity data by Shilling and Partington [16], Keesom, Van Itterbeek, and Van Lammeren [11], Van Lammeren [12], and King and Partington [17].

The dimensionless representation has been accomplished for certain properties by expressing them relative to the value at standard conditions (0°C and 1 atmosphere). Thus, for density,

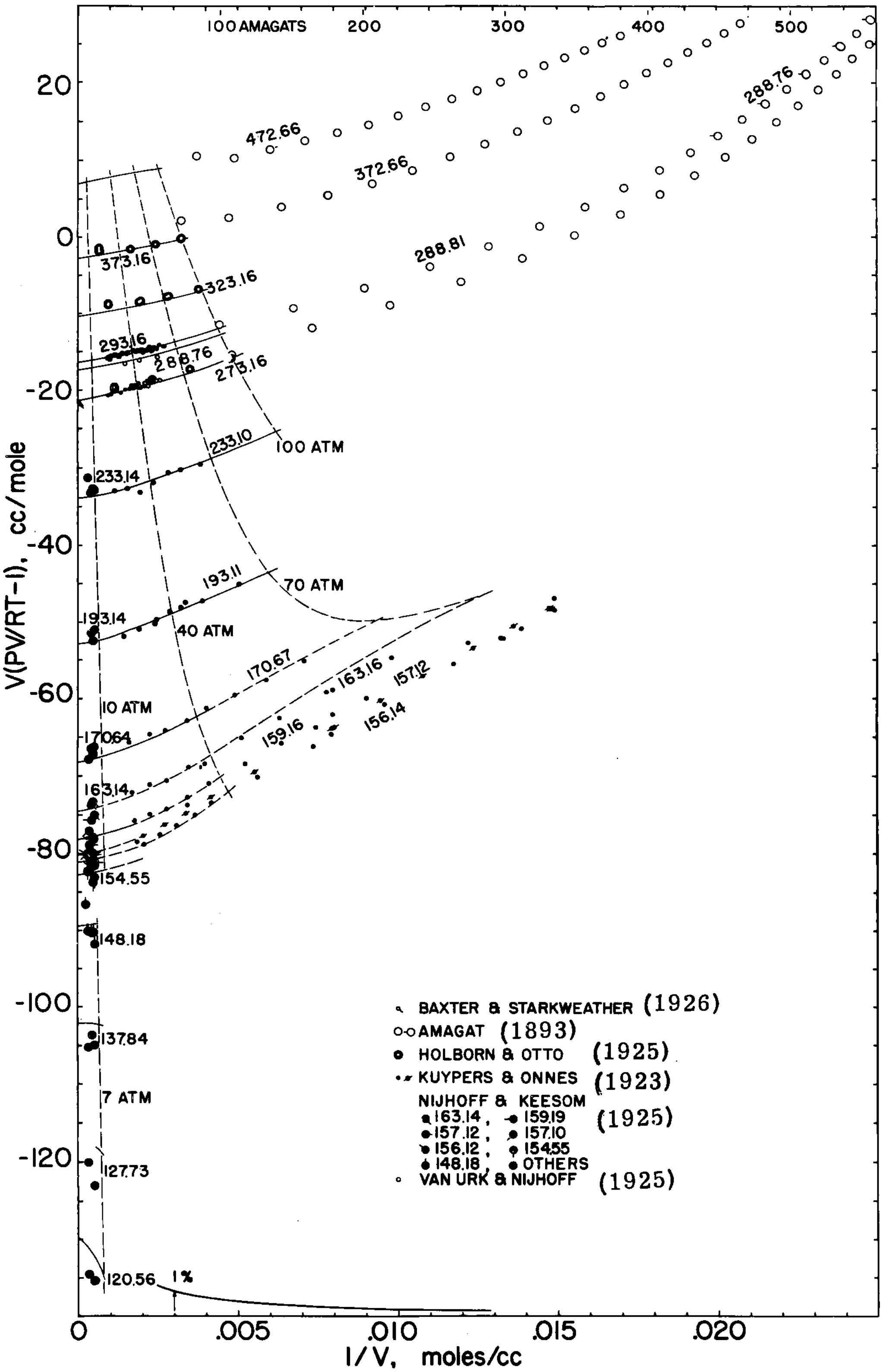


Figure 8a. Experimental PVT data for oxygen

the property is expressed as ρ/ρ_0, for sound velocity as a/a_0, for thermal conductivity as k/k_0, and for viscosity as η/η_0. The reference values, ρ_0, a_0, k_0, and η_0, result, in general, from the correlating equations which were fitted to represent the experimental data over as wide a range as possible. Values for these quantities are given in various units in table 8-b. The value of ρ_0 for oxygen as given, 1.42904 $g\ell^{-1}$, may be compared with 1.42898 $g\ell^{-1}$, the mean of the experimental determinations [19, 47 - 58], and 1.42895 $g\ell^{-1}$, the most recent determination included [58]. The value of η_0 for oxygen as given, 1.9192 x 10^{-4} poise, is well within the range of the experimental determinations [24, 28, 59 - 61], the mean of which is 1.9226 x 10^{-4} poise, and close to the latest of these, 1.9184 x 10^{-4} poise [24]. The value of k_0 for oxygen as given, 5.867 x 10^{-5} cal $cm^{-1} sec^{-1} {}^\circ K^{-1}$, is within the range of the experimental values [30 - 36, 62 - 66], whose mean is 5.788 x 10^{-5} cal $cm^{-1} sec^{-1} {}^\circ K^{-1}$, and fairly close to the latest determination included, 5.83 x 10^{-5} cal $cm^{-1} sec^{-1} {}^\circ K^{-1}$. The value of a_0 for oxygen as given, 314.82 m sec^{-1}, is appreciably below 315.8 m sec^{-1}, the mean of reported observations [11, 67 - 70]. A small part of this difference may be attributed to vibrational relaxation.

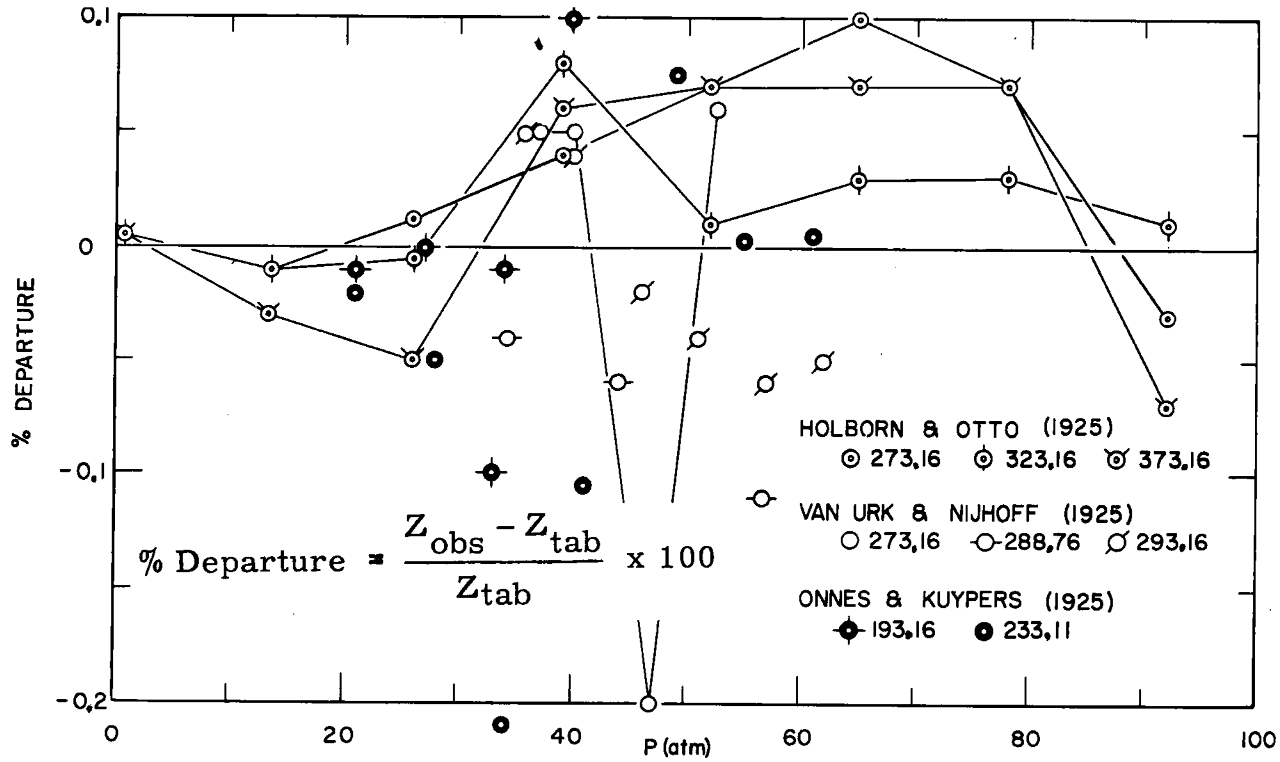
The tables of viscosity and thermal conductivity were computed from semi-empirical equations (see summary tables 1-B and 1-C), which were fitted to the existing experimental data of references 24 to 29. The values for the vapor pressure of liquid oxygen are based on the experimental work of H. J. Hoge [18], as are also the critical constants. Comparisons with earlier experimental data are given in reference 18.

The Reliability of the Tables

The tables of compressibility factors, densities, and the derived properties of gaseous oxygen are thought to be fairly reliable in the region 0° to 100°C. Low-pressure data are not available for higher temperatures. Experimental difficulties are greater at lower temperatures, and values there are presumed to be somewhat less reliable for this reason. The available experimental data - below 70 atmospheres - seem to be fitted rather closely down to -80°C and less closely at lower temperatures as may be seen in figures 8a and 8b. With the spread of a 1 percent error shown at the bottom of the figure 8a, it appears that compressibility values have been represented within a part in a thousand and considerably better in some regions. At low density, the errors result largely from imperfect fitting of the second virial coefficient and may amount to 3 percent of the deviation from ideality. The derived corrections to the thermodynamic properties are considerably more uncertain than the compressibility in the same region because of the natural increase in uncertainty in differentiation.

The tabulated values of the compressibility factors (table 8-1) are compared with the experimental data in figure 8b, where the departures are within 0.2 percent. In the experimental temperature range (see figure 8a) at 10 atmospheres and below, the tabulated values are probably reliable within 3 percent of the deviation from ideality. For these temperatures, the values of Z at 70 atmospheres are probably good to within 0.001. The extrapolated values, whether for higher temperature or pressure, are less reliable. The table of densities (table 8-2) has corresponding reliability.

The uncertainty in the values of $(Cp - C_p^o)/R$, the contribution due to nonideality, may approach 10 percent at the low pressures where the compressibility factor is uncertain by almost



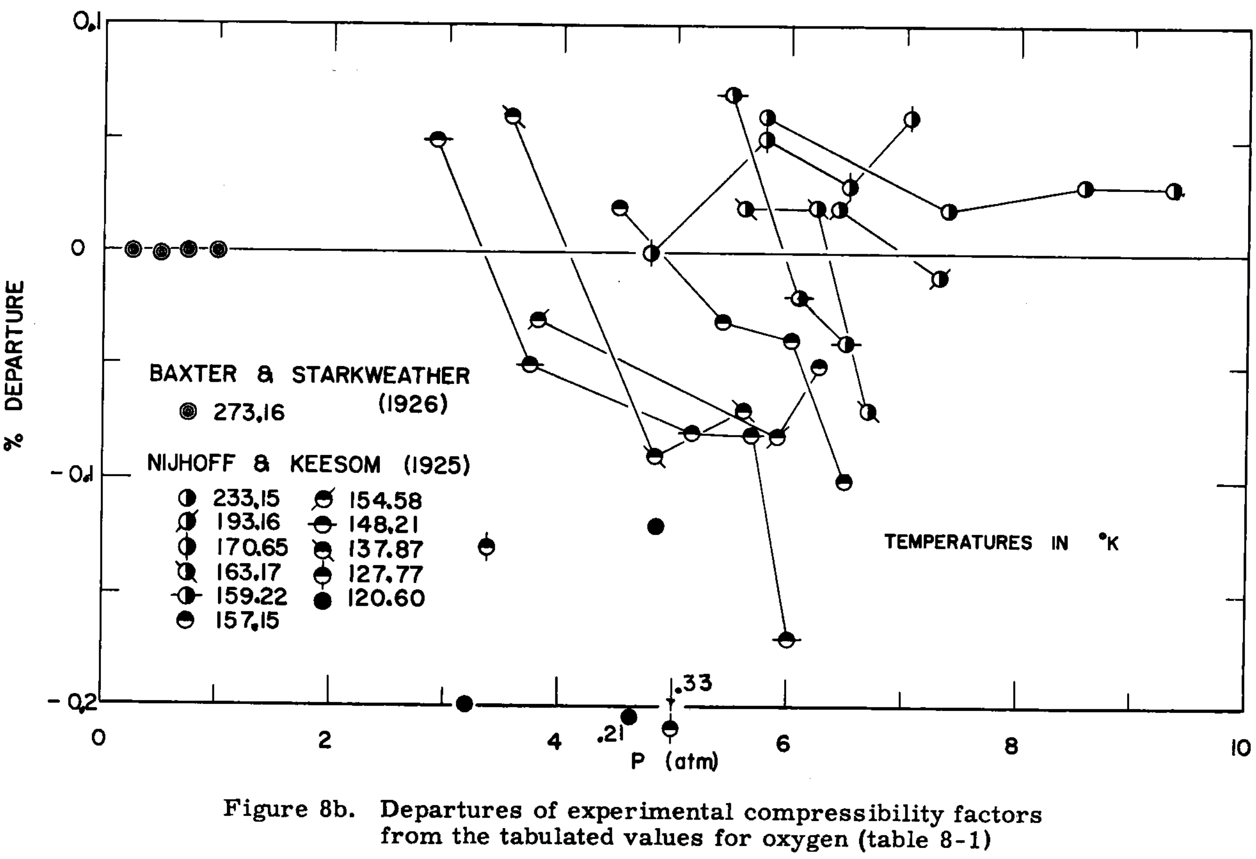


Figure 8b. Departures of experimental compressibility factors from the tabulated values for oxygen (table 8-1)

3 percent of its deviation. At higher pressures, where the compressibility factor is uncertain by an amount approaching 0.001, the error in $(C_p - C_p^o)/R$ may approach 0.01. The effect of dissociation is not included in this table (table 8-3), but its magnitude may be estimated by the procedure given by Damköhler [22]. Comparisons with experimental data at low and at elevated pressures are shown in figures 8c and 8d. The points designated as "Shilling and Partington" in figure 8c represent values derived from sound velocity measurements. These do not provide reliable values of specific heat at elevated temperatures, due to the effect of dispersion related to vibrational excitation. The departures shown in figure 8c are approximately as large as the entire vibrational contribution to the specific heat.

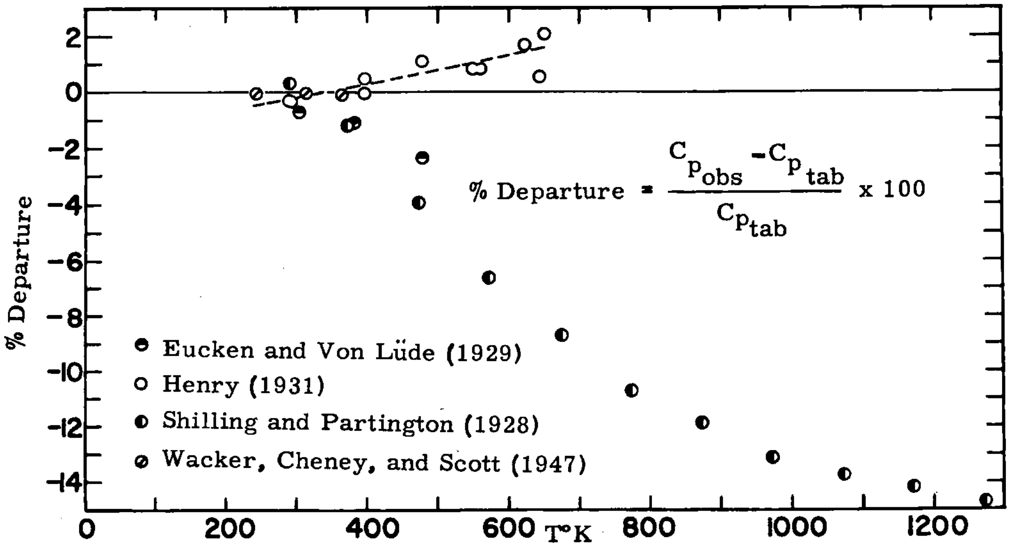


Figure 8c. Departures of experimental specific heats from the tabulated values for oxygen (table 8-3)

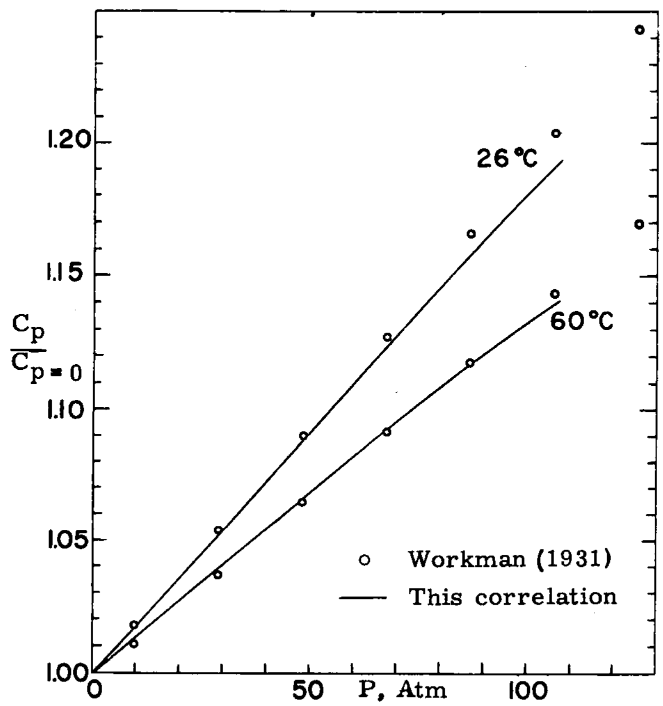


Figure 8d. Dependence of specific heat upon pressure

The values of the enthalpy (table 8-4) and entropy (table 8-5) of molecular oxygen tabulated here do not include the effect of dissociation. Its magnitude may be estimated and found to be negligible at moderate temperatures and pressure. Above about 2000°K, allowance needs to be made in many cases for dissociation effects [23]. These can be estimated from figures 8e and 8f.

If one neglects dissociation, the tables of entropy and enthalpy should be uncertain by less than about 7 percent of the difference between the real and the ideal values of the properties at low pressures where the values of the compressibility factor are good to within 3 percent of the departure from ideality. At higher pressures, where the values of the compressibility factor are good to 0. 001, the derived corrections at best might be uncertain by about 0. 003 at the higher temperatures and by about two or three times this amount at the lower temperatures. At the lowest temperatures of the table, the values are very uncertain and are accordingly given to fewer digits.

On the basis of the reliabilities estimated for specific heats and compressibility factors, the uncertainties in the values of γ (table 8-6) may approach 10 percent of the real-gas correction, except for the least accurate values at the lowest temperatures.

The tabulated values of sound velocity at low frequency (table 8-7) are thought to be quite reliable except at the lowest temperatures and at elevated pressures. Except for the very lowest temperatures, the values seem likely to be reliable to within 0. 001, i. e., for all digits given to a pressure of 10 atmospheres and up to 40 atmospheres above 400°K. For 100 atmospheres, the uncertainty may be less than 0.015 from 200°K to 300°K, running from 0. 010 down to 0. 005 at higher temperatures. Figure 8g shows the departure of the experimental data from the tabular values. The large deviations of sound velocity data at elevated temperatures are due to dispersion effects. The experimental sound frequencies were not sufficiently low to allow the molecules to adjust their vibrational excitations appreciably for the temperature change during the sound vibration.

The values of viscosity (table 8-8) and thermal conductivity (table 8-9) of oxygen at atmospheric pressure were computed from the formulas given in summary tables 1-B and 1-C. The values of viscosity are considered to be reliable to within 1 percent below 1000°K and to within 2 percent as extrapolated to 2000°K. Figure 8h compares the experimental results of six authors [24 - 29] with the values of the table. The table of thermal conductivity (table 8-9) is considered reliable to about 2 percent in the experimental range, which is from 86°K to 376°K. In the region of extrapolation to higher temperature, the values are more uncertain. Figure 8i shows the departure of the results of seven experimental determinations [30 - 36] from the tabular values. The Prandtl numbers (table 8-10) are correspondingly reliable to within 2 percent.

The vapor pressures (table 8-11) are based on an experimental investigation by Hoge [18] of the vapor pressure of liquid oxygen. Figure 8j shows the experimental data plotted as deviations from the tabular values. A comparison of these results with the results of other observers [37 - 44] is given in figure 8k.

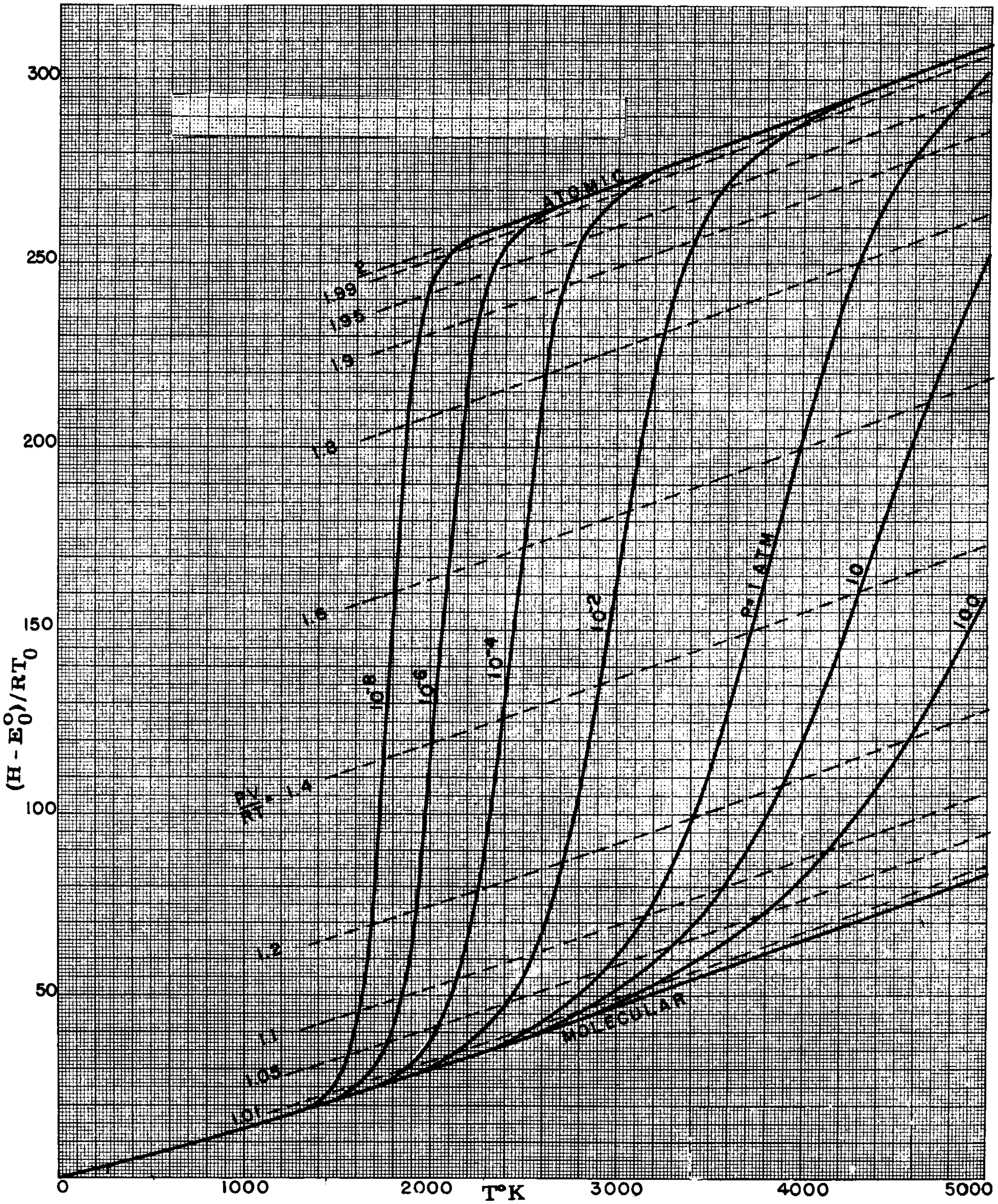


Figure 8e. The effect of dissociation on the enthalpy of oxygen

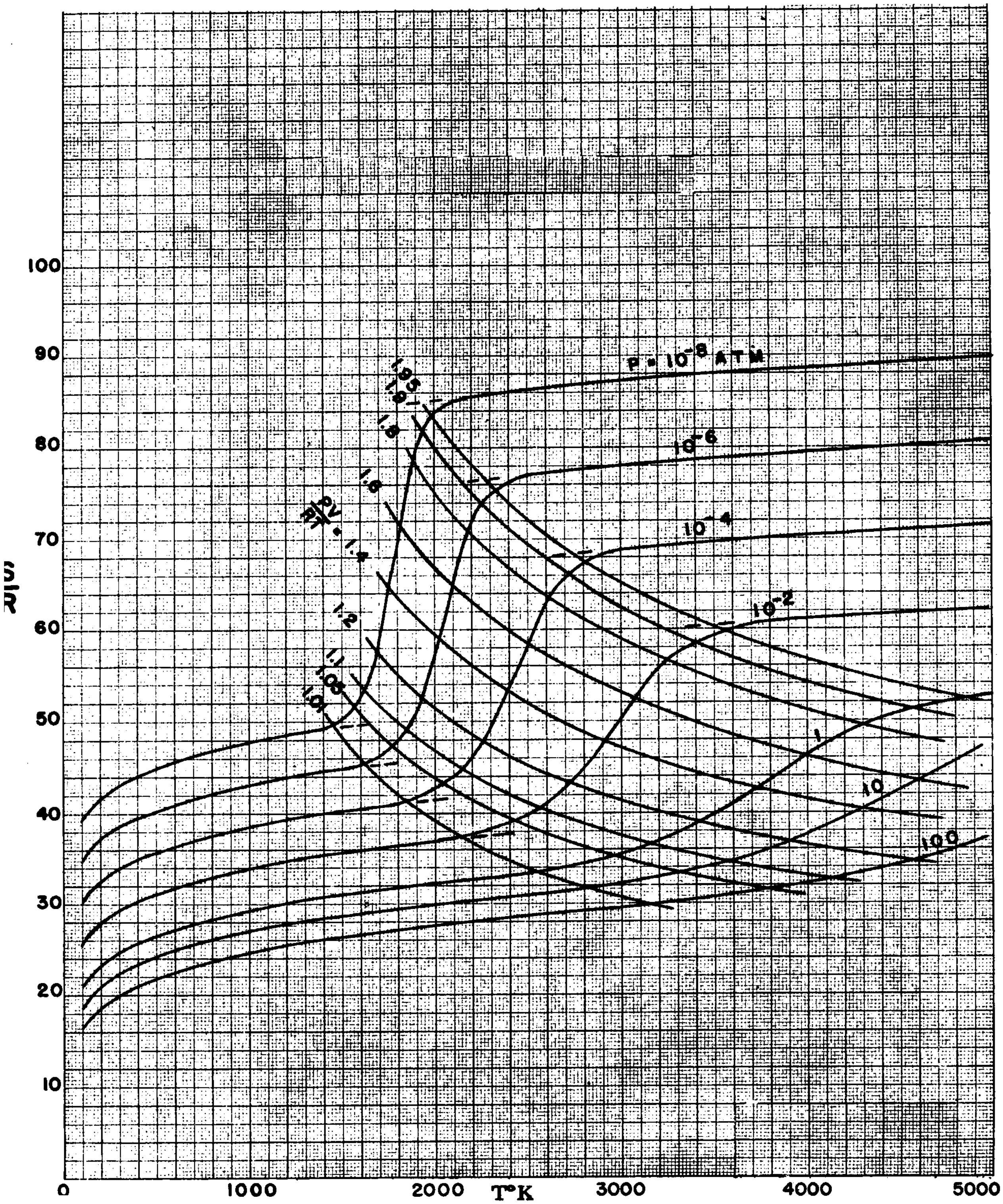


Figure 8f. The effect of dissociation on the entropy of oxygen

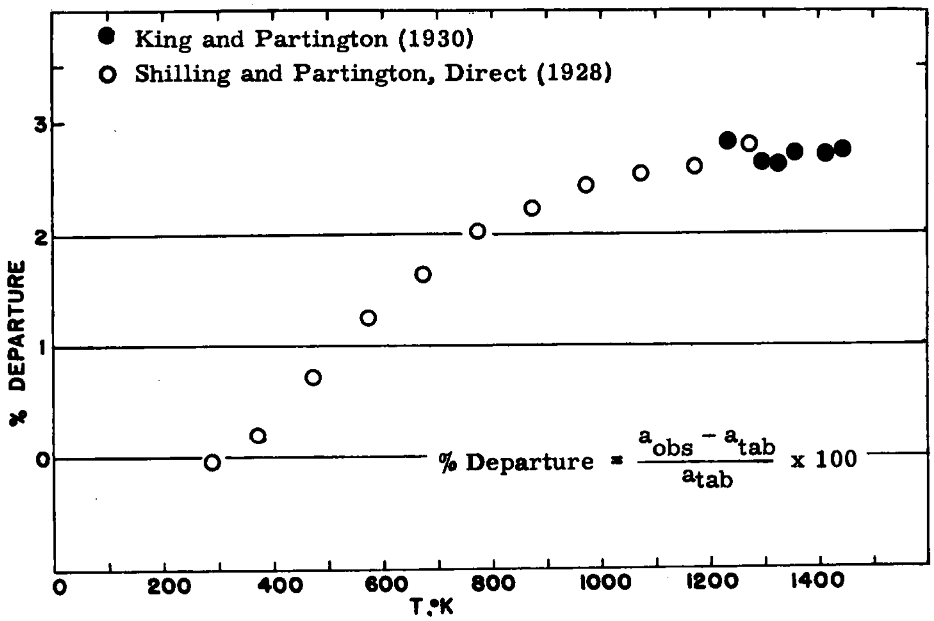


Figure 8g. Departures of experimental sound velocities from the tabulated values for oxygen (table 8-7)

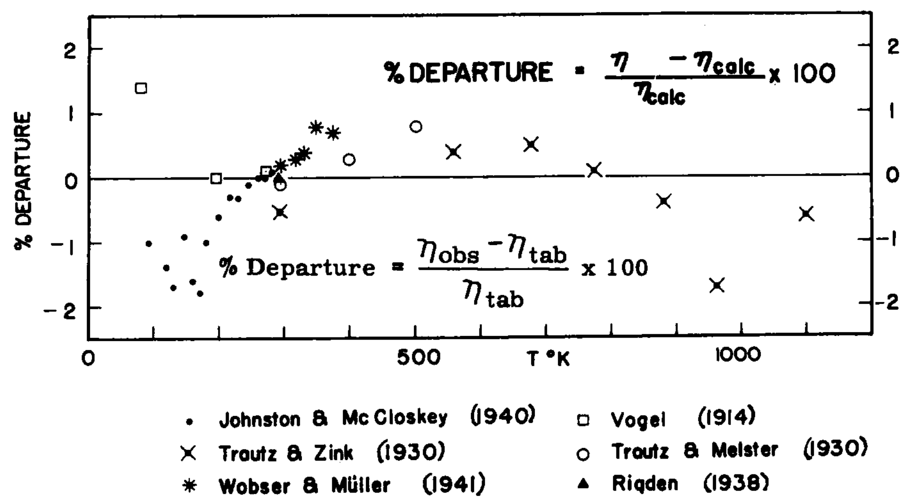


Figure 8h. Departures of experimental viscosities from the tabulated values for oxygen (table 8-8)

Below a pressure of about 1.4 m Hg, the tables are based on mercury manometry and are accurate to about ±0.22 mm Hg. Above about 1.4 m Hg, the uncertainty increases to ±1 or 2 mm Hg and then gradually increases further at higher pressures, reaching a value of perhaps ±10 mm Hg at the critical point. In these estimates, no allowance has been made for possible disagreement between the temperature scales used and the thermodynamic scale. The International Temperature Scale was used down to 90.19°K and the NBS provisional scale was used at lower temperatures.

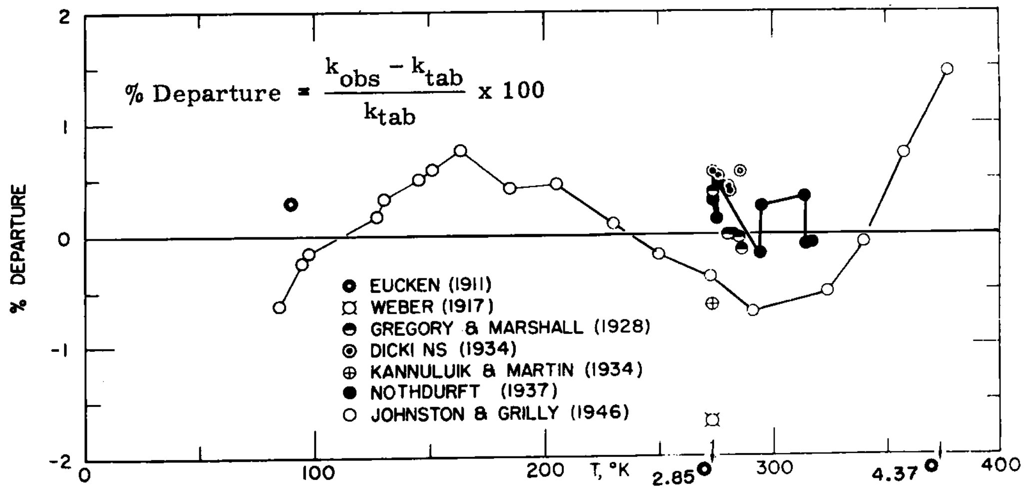


Figure 8i. Departures of experimental thermal conductivities from the tabulated values for oxygen (table 8-9)

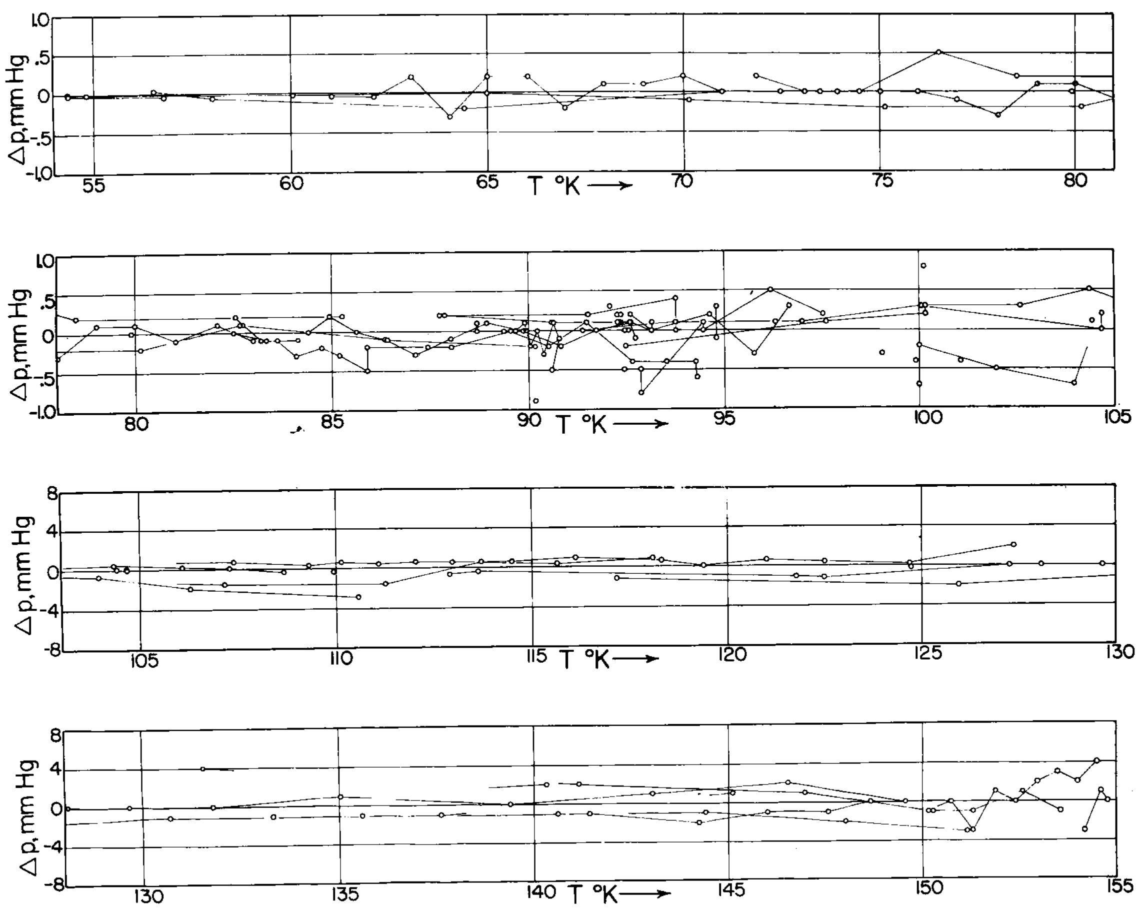


Figure 8j. Departures of experimental vapor pressures from the tabulated values for oxygen (table 8-11)

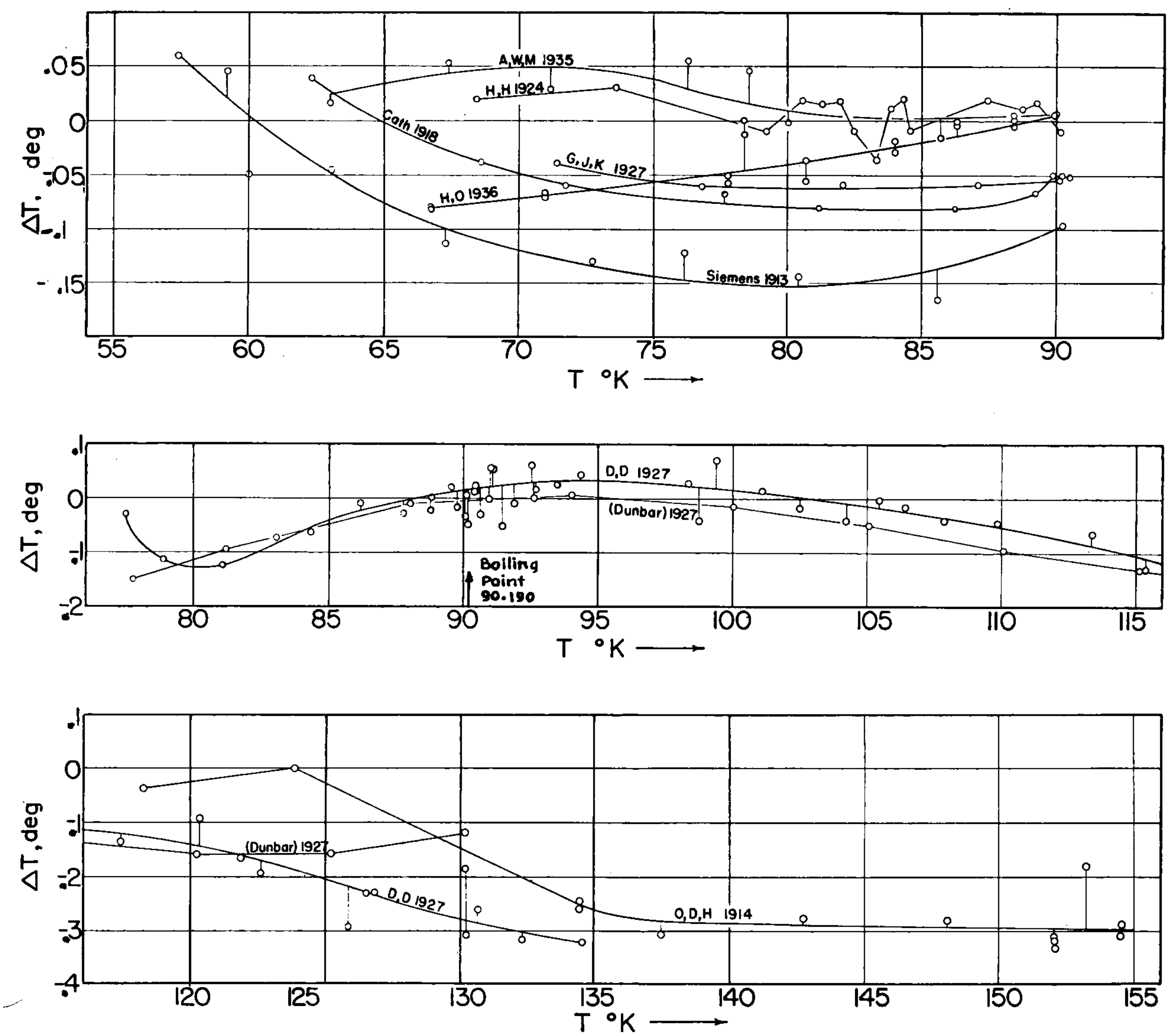


Figure 8k. Comparison of the vapor-pressure data of various observers

A, W, M	Aston, Willihnganz, and Messerby	(1935)
H, H	Henning and Heuse	(1924)
G, J, K	Giauque, Johnston, and Kelley	(1927)
Cath		(1918)
H, O	Henning and Otto	(1936)
Siemens		(1913)
D, D	Dodge and Davis	(1927)
Dunbar	(See reference 43)	(1927)
O, D, H	Onnes, Dorsman, and Holst	(1914)

The only available data [45] for the vapor pressure of solid oxygen do not appear to be very reliable, and hence the tabulation has not been extended below the triple point. At 43.8°K which is the temperature of the higher of the two solid-solid transitions of oxygen, Aoyama and Kanda [45] reported the vapor pressure to be 0.0111 mm Hg.

The ideal-gas thermodynamic functions for molecular oxygen are for the normal isotopic mixture and are based on the tables by Woolley [2]. The calculations for oxygen are based in general on rather precise spectroscopic data, except for some of the high-energy states, so that the tabulated values should be quite reliable in summary table 1-D. The tabulation for the atomic species is based on the values reported by Rossini and co-workers [46].

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Table 8-a. VALUES OF THE GAS CONSTANT, R, FOR MOLECULAR OXYGEN

Values of R for Molecular Oxygen for Temperatures in Degrees Kelvin

Density \ Pressure	atm	kg/cm^2	mm Hg	lb/in^2
g/cm^3	2.56427	2.64947	1948.84	37.6845
$mole/cm^3$	82.0567	84.7832	62363.1	1205.91
mole/liter	0.0820544	0.0847809	62.3613	1.20587
lb/ft^3	0.0410753	0.0424401	31.2172	0.603643
lb $mole/ft^3$	1.31441	1.35808	998.952	19.3166

Values of R for Molecular Oxygen for Temperatures in Degrees Rankine

Density \ Pressure	atm	kg/cm^2	mm Hg	lb/in^2
g/cm^3	1.42459	1.47193	1082.69	20.9358
$mole/cm^3$	45.5871	47.1018	34646.2	669.950
mole/liter	0.0455858	0.0471005	34.6452	0.669928
lb/ft^3	0.0228196	0.0235778	17.3429	0.335357
lb $mole/ft^3$	0.730228	0.754489	554.973	10.7314

Table 8-b. CONVERSION FACTORS FOR THE MOLECULAR OXYGEN TABLES

Conversion Factors for Table 8-2

To Convert Tabulated Value of	To	Having the Dimensions Indicated Below	Multiply by
ρ/ρ_0	ρ	g cm^{-3}	1.42900×10^{-3}
		mole cm^{-3}	4.46562×10^{-5}
		g liter^{-1}	1.42904
		lb in^{-3}	5.16262×10^{-5}
		lb ft^{-3}	8.92101×10^{-2}

Conversion Factors for Tables 8-4 and 8-12

To Convert Tabulated Value of	To	Having the Dimensions Indicated Below	Multiply by
$(H^o - E_0^o)/RT_0$,	$(H^o - E_0^o)$,	cal mole^{-1}	542.821
$(H - E_0^o)/RT_0$	$(H - E_0^o)$	cal g^{-1}	16.9632
		joules g^{-1}	70.9742
		Btu (lb mole)$^{-1}$	976.437
		Btu lb^{-1}	30.5137

Conversion Factors for Tables 8-3, 8-5, and 8-12

To Convert Tabulated Value of	To	Having the Dimensions Indicated Below	Multiply by
C_p^o/R, S^o/R,	C_p^o, S^o,	cal mole^{-1} $^oK^{-1}$ (or $^oC^{-1}$)	1.98719
C_p/R, S/R,	C_p, S,	cal g^{-1} $^oK^{-1}$ (or $^oC^{-1}$)	0.0620997
$-(F^o - E_0^o)/RT$	$-(F^o - E_0^o)/T$	joules g^{-1} $^oK^{-1}$ (or $^oC^{-1}$)	0.259826
		Btu (lb mole)$^{-1}$ $^oR^{-1}$ (or $^oF^{-1}$)	1.98588
		Btu lb^{-1} $^oR^{-1}$ (or $^oF^{-1}$)	0.0620588

The molecular weight of oxygen is 32 g mole^{-1}. Unless otherwise specified, the mole is the gram-mole; the calorie is the thermochemical calorie; and the joule is the absolute joule.

Conversion Factors for Table 8-7

To Convert Tabulated Value of	To	Having the Dimensions Indicated Below	Multiply by
a_0	a	$m\ sec^{-1}$	314.82
		$ft\ sec^{-1}$	1032.9

Conversion Factors for Table 8-8

To Convert Tabulated Value of	To	Having the Dimensions Indicated Below	Multiply by
η/η_0	η	poise or $g\ sec^{-1}\ cm^{-1}$	1.9192×10^{-4}
		$kg\ hr^{-1}\ m^{-1}$	6.9091×10^{-2}
		$slug\ hr^{-1}\ ft^{-1}$	1.4430×10^{-3}
		$lb\ sec^{-1}\ ft^{-1}$	1.2896×10^{-5}
		$lb\ hr^{-1}\ ft^{-1}$	4.6427×10^{-2}

Conversion Factors for Table 8-9

To Convert Tabulated Value of	To	Having the Dimensions Indicated Below	Multiply by
k/k_0	k	$cal\ cm^{-1}\ sec^{-1}\ {}^oK^{-1}$	5.867×10^{-5}
		$Btu\ ft^{-1}\ hr^{-1}\ {}^oR^{-1}$	1.419×10^{-2}
		$watts\ cm^{-1}\ {}^oK^{-1}$	2.455×10^{-4}

Table 8-c. CONVERSION FACTORS FOR THE ATOMIC OXYGEN TABLES

Conversion Factors for Table 8-12/a

To Convert Tabulated Value of	To	Having the Dimensions Indicated Below	Multiply by
$(H^o - E_0^o)/RT_0$	$(H^o - E_0^o)$	cal mole^{-1}	542.821
		cal g^{-1}	33.9264
		joules g^{-1}	141.948
		Btu (lb mole)$^{-1}$	976.437
		Btu lb^{-1}	61.0274

Conversion Factors for Table 8-12/a

To Convert Tabulated Value of	To	Having the Dimensions Indicated Below	Multiply by
C_p^o/R, S^o/R,	C_p^o, S^o,	cal mole^{-1} $^oK^{-1}$ (or $^oC^{-1}$)	1.98719
		cal g^{-1} $^oK^{-1}$ (or $^oC^{-1}$)	0.124199
$-(F^o - E_0^o)/RT$	$-(F^o - E_0^o)/T$	joules g^{-1} $^oK^{-1}$ (or $^oC^{-1}$)	0.519652
		Btu (lb mole)$^{-1}$ $^oR^{-1}$ (or $^oF^{-1}$)	1.98588
		Btu lb^{-1} $^oR^{-1}$ (or $^oF^{-1}$)	0.124118

Table 8-1. COMPRESSIBILITY FACTOR FOR OXYGEN Z = PV/RT

°K	.01 atm		.1 atm		.4 atm		.7 atm		°R
100	.99978	5	.99781	50	.99114	206	.98431	371	180
110	.99983	4	.99831	36	.99320	146	.98802	259	198
120	.99987	2	.99867	26	.99466	107	.99061	188	216
130	.99989	2	.99893	20	.99573	80	.99249	142	234
140	.99991	2	.99913	16	.99653	62	.99391	109	252
150	.99993	1	.99929	12	.99715	49	.99500	86	270
160	.99994	1	.99941	10	.99764	39	.99586	68	288
170	.99995	1	.99951	8	.99803	31	.99654	55	306
180	.99996		.99959	6	.99834	25	.99709	45	324
190	.99996	1	.99965	5	.99859	21	.99754	37	342
200	.99997		.99970	5	.99880	18	.99791	31	360
210	.99997	1	.99975	3	.99898	15	.99822	26	378
220	.99998		.99978	3	.99913	13	.99848	22	396
230	.99998		.99981	3	.99926	10	.99870	18	414
240	.99998	1	.99984	2	.99936	9	.99888	16	432
250	.99999		.99986	2	.99945	8	.99904	14	450
260	.99999		.99988	2	.99953	7	.99918	12	468
270	.99999		.99990	2	.99960	6	.99930	11	486
280	.99999		.99992	1	.99966	5	.99941	9	504
290	.99999		.99993	1	.99971	5	.99950	8	522
300	.99999		.99994	1	.99976	4	.99958	7	540
310	.99999	1	.99995	1	.99980	3	.99965	6	558
320	1.00000		.99996	1	.99983	3	.99971	5	576
330	1.00000		.99997		.99986	3	.99976	5	594
340	1.00000		.99997	1	.99989	3	.99981	4	612
350	1.00000		.99998		.99992	2	.99985	4	630
360	1.00000		.99998	1	.99994	2	.99989	4	648
370	1.00000		.99999		.99996	2	.99993	3	666
380	1.00000		.99999	1	.99998	1	.99996	2	684
390	1.00000		1.00000		.99999	1	.99998	3	702
400	1.00000		1.00000		1.00000	2	1.00001	2	720
410	1.00000		1.00000	1	1.00002	1	1.00003	2	738
420	1.00000		1.00001		1.00003	1	1.00005	2	756
430	1.00000		1.00001		1.00004	1	1.00007	1	774
440	1.00000		1.00001	1	1.00005	1	1.00008	2	792
450	1.00000		1.00002		1.00006		1.00010	1	810
460	1.00000		1.00002		1.00006	1	1.00011	1	828
470	1.00000		1.00002		1.00007	1	1.00012	1	846
480	1.00000		1.00002		1.00008		1.00013	1	864
490	1.00000		1.00002		1.00008	1	1.00014	1	882
500	1.00000		1.00002		1.00009		1.00015	1	900
510	1.00000		1.00002		1.00009	1	1.00016	1	918
520	1.00000		1.00002		1.00010		1.00017		936
530	1.00000		1.00002	1	1.00010		1.00017	1	954
540	1.00000		1.00003		1.00010		1.00018		972
550	1.00000		1.00003		1.00010		1.00018	1	990
560	1.00000		1.00003		1.00010	1	1.00019		1008
570	1.00000		1.00003		1.00011		1.00019	1	1026
580	1.00000		1.00003		1.00011		1.00020		1044
590	1.00000		1.00003		1.00011	1	1.00020		1062
600	1.00000		1.00003		1.00012		1.00020		1080
610	1.00000		1.00003		1.00012		1.00020	1	1098
620	1.00000		1.00003		1.00012		1.00021		1116
630	1.00000		1.00003		1.00012		1.00021		1134
640	1.00000		1.00003		1.00012		1.00021		1152
650	1.00000		1.00003		1.00012		1.00021		1170
660	1.00000		1.00003		1.00012		1.00021		1188
670	1.00000		1.00003		1.00012		1.00021		1206
680	1.00000		1.00003		1.00012		1.00021	1	1224
690	1.00000		1.00003		1.00012		1.00022		1242
700	1.00000		1.00003		1.00012		1.00022		1260

°K	.01 atm	.1 atm		.4 atm		.7 atm		°R
700	1.00000	1.00003		1.00012		1.00022		1260
710	1.00000	1.00003		1.00012		1.00022		1278
720	1.00000	1.00003		1.00012		1.00022		1296
730	1.00000	1.00003		1.00012		1.00022		1314
740	1.00000	1.00003		1.00012		1.00022		1332
750	1.00000	1.00003		1.00012		1.00022		1350
760	1.00000	1.00003		1.00012		1.00022		1368
770	1.00000	1.00003		1.00012		1.00022		1386
780	1.00000	1.00003		1.00012		1.00022		1404
790	1.00000	1.00003		1.00012		1.00022		1422
800	1.00000	1.00003		1.00012		1.00022	- 1	1440
850	1.00000	1.00003		1.00012		1.00021		1530
900	1.00000	1.00003		1.00012		1.00021		1620
950	1.00000	1.00003		1.00012		1.00021	- 1	1710
1000	1.00000	1.00003		1.00012	- 1	1.00020		1800
1050	1.00000	1.00003		1.00011		1.00020	- 1	1890
1100	1.00000	1.00003		1.00011		1.00019		1980
1150	1.00000	1.00003		1.00011	- 1	1.00019	- 1	2070
1200	1.00000	1.00003		1.00010		1.00018		2160
1250	1.00000	1.00003	- 1	1.00010		1.00018	- 1	2250
1300	1.00000	1.00002		1.00010		1.00017		2340
1350	1.00000	1.00002		1.00010	- 1	1.00017	- 1	2430
1400	1.00000	1.00002		1.00009		1.00016		2520
1450	1.00000	1.00002		1.00009		1.00016	- 1	2610
1500	1.00000	1.00002		1.00009		1.00015		2700
1550	1.00000	1.00002		1.00009	- 1	1.00015		2790
1600	1.00000	1.00002		1.00008		1.00015	- 1	2880
1650	1.00000	1.00002		1.00008		1.00014		2970
1700	1.00000	1.00002		1.00008		1.00014		3060
1750	1.00000	1.00002		1.00008		1.00014	- 1	3150
1800	1.00000	1.00002		1.00008	- 1	1.00013		3240
1850	1.00000	1.00002		1.00007		1.00013		3330
1900	1.00000	1.00002		1.00007		1.00013	- 1	3420
1950	1.00000	1.00002		1.00007		1.00012		3510
2000	1.00000	1.00002		1.00007		1.00012		3600
2050	1.00000	1.00002		1.00007		1.00012		3690
2100	1.00000	1.00002		1.00007	- 1	1.00012	- 1	3780
2150	1.00000	1.00002		1.00006		1.00011		3870
2200	1.00000	1.00002		1.00006		1.00011		3960
2250	1.00000	1.00002		1.00006		1.00011		4050
2300	1.00000	1.00002	- 1	1.00006		1.00011	- 1	4140
2350	1.00000	1.00001		1.00006		1.00010		4230
2400	1.00000	1.00001		1.00006		1.00010		4320
2450	1.00000	1.00001		1.00006		1.00010		4410
2500	1.00000	1.00001		1.00006	- 1	1.00010		4500
2550	1.00000	1.00001		1.00005		1.00010	- 1	4590
2600	1.00000	1.00001		1.00005		1.00009		4680
2650	1.00000	1.00001		1.00005		1.00009		4770
2700	1.00000	1.00001		1.00005		1.00009		4860
2750	1.00000	1.00001		1.00005		1.00009		4950
2800	1.00000	1.00001		1.00005		1.00009		5040
2850	1.00000	1.00001		1.00005		1.00009		5130
2900	1.00000	1.00001		1.00005		1.00009	- 1	5220
2950	1.00000	1.00001		1.00005		1.00008		5310
3000	1.00000	1.00001		1.00005		1.00008		5400

°K	1 atm		4 atm		7 atm		10 atm		°R
100	.97724	553							180
110	.98277	375	.9227	200					198
120	.98652	272	.9427	126	.891	27			216
130	.98924	204	.9553	89	.9179	174			234
140	.99128	156	.9642	66	.9353	124			252
150	.99284	123	.9708	51	.9477	94	.9236	141	270
160	.99407	98	.9759	40	.9571	73	.9377	109	288
170	.99505	78	.9799	33	.9644	58	.9486	85	306
180	.99583	65	.9832	26	.9702	47	.9571	69	324
190	.99648	53	.9858	22	.9749	39	.9640	56	342
200	.99701	44	.98796	180	.97880	319	.96956	461	360
210	.99745	37	.98976	150	.98199	266	.97417	384	378
220	.99782	32	.99126	127	.98465	225	.97801	324	396
230	.99814	27	.99253	108	.98690	190	.98125	274	414
240	.99841	23	.99361	92	.98880	163	.98399	234	432
250	.99864	19	.99453	80	.99043	140	.98633	200	450
260	.99883	17	.99533	69	.99183	121	.98833	173	468
270	.99900	15	.99602	59	.99304	104	.99006	151	486
280	.99915	13	.99661	52	.99408	92	.99157	131	504
290	.99928	11	.99713	46	.99500	80	.99288	114	522
300	.99939	10	.99759	40	.99580	70	.99402	100	540
310	.99949	9	.99799	35	.99650	62	.99502	88	558
320	.99958	8	.99834	31	.99712	54	.99590	78	576
330	.99966	7	.99865	28	.99766	49	.99668	70	594
340	.99973	6	.99893	25	.99815	43	.99738	61	612
350	.99979	5	.99918	22	.99858	38	.99799	54	630
360	.99984	5	.99940	19	.99896	34	.99853	49	648
370	.99989	5	.99959	17	.99930	30	.99902	43	666
380	.99994	4	.99976	16	.99960	27	.99945	39	684
390	.99998	3	.99992	14	.99987	25	.99984	35	702
400	1.00001	3	1.00006	12	1.00012	22	1.00019	31	720
410	1.00004	3	1.00018	12	1.00034	19	1.00050	28	738
420	1.00007	3	1.00030	10	1.00053	18	1.00078	25	756
430	1.00010	2	1.00040	9	1.00071	16	1.00103	23	774
440	1.00012	2	1.00049	8	1.00087	14	1.00126	20	792
450	1.00014	2	1.00057	8	1.00101	13	1.00146	19	810
460	1.00016	2	1.00065	6	1.00114	12	1.00165	16	828
470	1.00018	1	1.00071	6	1.00126	10	1.00181	15	846
480	1.00019	1	1.00077	6	1.00136	10	1.00196	14	864
490	1.00020	2	1.00083	5	1.00146	8	1.00210	12	882
500	1.00022	1	1.00088	4	1.00154	8	1.00222	11	900
510	1.00023	1	1.00092	4	1.00162	7	1.00233	9	918
520	1.00024	1	1.00096	3	1.00169	6	1.00242	9	936
530	1.00025		1.00099	4	1.00175	6	1.00251	8	954
540	1.00025	1	1.00103	3	1.00181	5	1.00259	7	972
550	1.00026	1	1.00106	2	1.00186	4	1.00266	7	990
560	1.00027		1.00108	2	1.00190	4	1.00273	6	1008
570	1.00027	1	1.00110	2	1.00194	4	1.00279	5	1026
580	1.00028		1.00112	2	1.00198	3	1.00284	4	1044
590	1.00028	1	1.00114	2	1.00201	3	1.00288	4	1062
600	1.00029		1.00116	1	1.00204	2	1.00292	4	1080
610	1.00029	1	1.00117	2	1.00206	2	1.00296	3	1098
620	1.00030		1.00119	1	1.00208	2	1.00299	3	1116
630	1.00030		1.00120	1	1.00210	2	1.00302	2	1134
640	1.00030		1.00121	1	1.00212	2	1.00304	2	1152
650	1.00030		1.00122		1.00214	1	1.00306	2	1170
660	1.00030	1	1.00122	1	1.00215	1	1.00308	1	1188
670	1.00031		1.00123		1.00216	1	1.00309	1	1206
680	1.00031		1.00123	1	1.00217		1.00310	1	1224
690	1.00031		1.00124		1.00217	1	1.00311	1	1242
700	1.00031		1.00124		1.00218		1.00312		1260

°K	1 atm		4 atm		7 atm		10 atm		°R
700	1.00031		1.00124		1.00218		1.00312	1	1260
710	1.00031		1.00124	1	1.00218	1	1.00313		1278
720	1.00031		1.00125		1.00219		1.00313		1296
730	1.00031		1.00125		1.00219		1.00313		1314
740	1.00031		1.00125		1.00219		1.00313		1332
750	1.00031		1.00125		1.00219		1.00313		1350
760	1.00031		1.00125		1.00219		1.00313		1368
770	1.00031		1.00125		1.00219	- 1	1.00313		1386
780	1.00031		1.00125		1.00218		1.00313	- 1	1404
790	1.00031		1.00125	- 1	1.00218		1.00312	- 1	1422
800	1.00031		1.00124	- 1	1.00218	- 3	1.00311	- 4	1440
850	1.00031	- 1	1.00123	- 2	1.00215	- 4	1.00307	- 5	1530
900	1.00030	- 1	1.00121	- 3	1.00211	- 4	1.00302	- 7	1620
950	1.00029		1.00118	- 3	1.00207	- 5	1.00295	- 7	1710
1000	1.00029	- 1	1.00115	- 3	1.00202	- 5	1.00288	- 7	1800
1050	1.00028	- 1	1.00112	- 3	1.00197	- 5	1.00281	- 7	1890
1100	1.00027		1.00109	- 2	1.00192	- 5	1.00274	- 7	1980
1150	1.00027	- 1	1.00107	- 3	1.00187	- 5	1.00267	- 7	2070
1200	1.00026	- 1	1.00104	- 3	1.00182	- 5	1.00260	- 7	2160
1250	1.00025		1.00101	- 3	1.00177	- 5	1.00253	- 7	2250
1300	1.00025	- 1	1.00098	- 2	1.00172	- 5	1.00246	- 7	2340
1350	1.00024	- 1	1.00096	- 3	1.00167	- 4	1.00239	- 6	2430
1400	1.00023		1.00093	- 2	1.00163	- 4	1.00233	- 6	2520
1450	1.00023	- 1	1.00091	- 3	1.00159	- 4	1.00227	- 6	2610
1500	1.00022		1.00088	- 2	1.00155	- 4	1.00221	- 5	2700
1550	1.00022	- 1	1.00086	- 2	1.00151	- 4	1.00216	- 6	2790
1600	1.00021	- 1	1.00084	- 2	1.00147	- 4	1.00210	- 5	2880
1650	1.00020		1.00082	- 2	1.00143	- 3	1.00205	- 5	2970
1700	1.00020		1.00080	- 2	1.00140	- 4	1.00200	- 5	3060
1750	1.00020	- 1	1.00078	- 2	1.00136	- 3	1.00195	- 5	3150
1800	1.00019		1.00076	- 2	1.00133	- 3	1.00190	- 4	3240
1850	1.00019	- 1	1.00074	- 2	1.00130	- 3	1.00186	- 5	3330
1900	1.00018		1.00072	- 1	1.00127	- 3	1.00181	- 4	3420
1950	1.00018	- 1	1.00071	- 2	1.00124	- 3	1.00177	- 4	3510
2000	1.00017		1.00069	- 1	1.00121	- 2	1.00173	- 3	3600
2050	1.00017		1.00068	- 2	1.00119	- 3	1.00170	- 4	3690
2100	1.00017	- 1	1.00066	- 1	1.00116	- 2	1.00166	- 4	3780
2150	1.00016		1.00065	- 2	1.00114	- 3	1.00162	- 3	3870
2200	1.00016		1.00063	- 1	1.00111	- 2	1.00159	- 3	3960
2250	1.00016	- 1	1.00062	- 1	1.00109	- 2	1.00156	- 4	4050
2300	1.00015		1.00061	- 1	1.00107	- 3	1.00152	- 3	4140
2350	1.00015		1.00060	- 2	1.00104	- 2	1.00149	- 3	4230
2400	1.00015	- 1	1.00058	- 1	1.00102	- 2	1.00146	- 3	4320
2450	1.00014		1.00057	- 1	1.00100	- 2	1.00143	- 2	4410
2500	1.00014		1.00056	- 1	1.00098	- 1	1.00141	- 3	4500
2550	1.00014		1.00055	- 1	1.00097	- 2	1.00138	- 3	4590
2600	1.00014	- 1	1.00054	- 1	1.00095	- 2	1.00135	- 2	4680
2650	1.00013		1.00053	- 1	1.00093	- 2	1.00133	- 3	4770
2700	1.00013		1.00052	- 1	1.00091	- 1	1.00130	- 2	4860
2750	1.00013		1.00051	- 1	1.00090	- 2	1.00128	- 2	4950
2800	1.00013	- 1	1.00050	- 1	1.00088	- 1	1.00126	- 2	5040
2850	1.00012		1.00049		1.00087	- 2	1.00124	- 2	5130
2900	1.00012		1.00049	- 1	1.00085	- 1	1.00122	- 3	5220
2950	1.00012		1.00048	- 1	1.00084	- 2	1.00119	- 2	5310
3000	1.00012		1.00047		1.00082		1.00117		5400

°K	10 atm		40 atm		70 atm		100 atm		°R
150	.9236	141							270
160	.9377	109	.696	69					288
170	.9486	85	.765	47	.525	118			306
180	.9571	69	.812	35	.643	78			324
190	.9640	56	.847	26	.721	55			342
200	.96956	461	.8734	209	.7764	408	.6871	641	360
210	.97417	384	.8943	169	.8172	315	.7512	468	378
220	.97801	324	.9112	138	.8487	250	.7980	357	396
230	.98125	274	.9250	115	.8737	203	.8337	280	414
240	.98399	234	.9365	97	.8940	168	.8617	228	432
250	.98633	200	.9462	82	.9108	141	.8845	188	450
260	.98833	173	.95442	703	.9249	119	.9033	158	468
270	.99006	151	.96145	606	.9368	103	.9191	135	486
280	.99157	131	.96751	524	.9471	88	.9326	115	504
290	.99288	114	.97275	456	.9559	77	.9441	100	522
300	.99402	100	.97731	398	.9636	66	.9541	87	540
310	.99502	88	.98129	350	.9702	59	.9628	77	558
320	.99590	78	.98479	308	.9761	51	.9705	68	576
330	.99668	70	.98787	272	.9812	46	.9773	61	594
340	.99738	61	.99059	241	.9858	40	.9834	53	612
350	.99799	54	.99300	213	.9898	36	.9887	47	630
360	.99853	49	.99513	189	.9934	31	.9934	42	648
370	.99902	43	.99702	171	.9965	29	.9976	38	666
380	.99945	39	.99873	153	.9994	25	1.0014	35	684
390	.99984	35	1.00026	135	1.0019	23	1.0049	30	702
400	1.00019	31	1.00161	119	1.0042	20	1.0079	27	720
410	1.00050	28	1.00280	109	1.0062	18	1.0106	24	738
420	1.00078	25	1.00389	98	1.0080	17	1.0130	23	756
430	1.00103	23	1.00487	87	1.0097	14	1.0153	19	774
440	1.00126	20	1.00574	78	1.0111	13	1.0172	18	792
450	1.00146	19	1.00652	71	1.0124	12	1.0190	15	810
460	1.00165	16	1.00723	63	1.0136	11	1.0205	16	828
470	1.00181	15	1.00786	57	1.0147	9	1.0221	12	846
480	1.00196	14	1.00843	51	1.0156	9	1.0233	11	864
490	1.00210	12	1.00894	48	1.0165	8	1.0244	12	882
500	1.00222	11	1.00942	41	1.0173	6	1.0256	9	900
510	1.00233	9	1.00983	36	1.0179	7	1.0265	8	918
520	1.00242	9	1.01019	33	1.0186	5	1.0273	7	936
530	1.00251	8	1.01052	31	1.0191	5	1.0280	8	954
540	1.00259	7	1.01083	27	1.0196	4	1.0288	5	972
550	1.00266	7	1.01110	24	1.0200	5	1.0293	6	990
560	1.00273	6	1.01134	21	1.0205	3	1.0299	4	1008
570	1.00279	5	1.01155	19	1.0208	3	1.0303	5	1026
580	1.00284	4	1.01174	16	1.0211	2	1.0308	3	1044
590	1.00288	4	1.01190	15	1.0213	3	1.0311	3	1062
600	1.00292	4	1.01205	13	1.0216	2	1.0314	4	1080
610	1.00296	3	1.01218	12	1.0218	2	1.0318	4	1098
620	1.00299	3	1.01230	10	1.0220	2	1.0322	2	1116
630	1.00302	2	1.01240	8	1.0222	2	1.0324		1134
640	1.00304	2	1.01248	6	1.0224		1.0324		1152
650	1.00306	2	1.01254	6	1.0224	1	1.0324	1	1170
660	1.00308	1	1.01260	6	1.0225	1	1.0325	2	1188
670	1.00309	1	1.01266	4	1.0226		1.0327	1	1206
680	1.00310	1	1.01270	3	1.0226	1	1.0328		1224
690	1.00311	1	1.01273	2	1.0227		1.0328		1242
700	1.00312	1	1.01275	1	1.0227		1.0328		1260
710	1.00313		1.01276	1	1.0227		1.0328		1278
720	1.00313		1.01277	1	1.0227		1.0328		1296
730	1.00313		1.01278		1.0227		1.0328		1314
740	1.00313		1.01278	-1	1.0227	-1	1.0328	-1	1332
750	1.00313		1.01277		1.0226		1.0327		1350

Table 8-1 COMPRESSIBILITY FACTOR FOR OXYGEN - Cont. $Z = PV/RT$

°K	10 atm		40 atm		70 atm		100 atm		°R
750	1.00313		1.01277	-1	1.0226		1.0327		1350
760	1.00313		1.01276	-3	1.0226	-1	1.0327	-2	1368
770	1.00313		1.01273	-3	1.0225		1.0325		1386
780	1.00313	-1	1.01270	-1	1.0225		1.0325		1404
790	1.00312	-1	1.01269	-4	1.0225	-1	1.0325	-2	1422
800	1.00311	-4	1.01265	-18	1.0224	-3	1.0323	-5	1440
850	1.00307	-5	1.01247	-24	1.0221	-5	1.0318	-6	1530
900	1.00302	-7	1.01223	-27	1.0216	-5	1.0312	-8	1620
950	1.00295	-7	1.01196	-29	1.0211	-5	1.0304	-8	1710
1000	1.00288	-7	1.01167	-30	1.0206	-6	1.0296	-8	1800
1050	1.00281	-7	1.01137	-30	1.0200	-5	1.0288	-7	1890
1100	1.00274	-7	1.01107	-31	1.0195	-5	1.0281	-8	1980
1150	1.00267	-7	1.01076	-29	1.0190	-6	1.0273	-8	2070
1200	1.00260	-7	1.01047	-29	1.0184	-4	1.0265	-7	2160
1250	1.00253	-7	1.01018	-27	1.0180	-6	1.0258	-8	2250
1300	1.00246	-7	1.00991	-27	1.0174	-5	1.0250	-7	2340
1350	1.00239	-6	1.00964	-26	1.0169	-4	1.0243	-6	2430
1400	1.00233	-6	1.00938	-24	1.0165	-4	1.0237	-6	2520
1450	1.00227	-6	1.00914	-24	1.0161	-5	1.0231	-7	2610
1500	1.00221	-5	1.00890	-23	1.0156	-4	1.0224	-5	2700
1550	1.00216	-6	1.00867	-22	1.0152	-3	1.0219	-6	2790
1600	1.00210	-5	1.00845	-22	1.0149	-4	1.0213	-6	2880
1650	1.00205	-5	1.00823	-20	1.0145	-4	1.0207	-5	2970
1700	1.00200	-5	1.00803	-20	1.0141	-3	1.0202	-5	3060
1750	1.00195	-5	1.00783	-18	1.0138	-4	1.0197	-4	3150
1800	1.00190	-4	1.00765	-18	1.0134	-3	1.0193	-5	3240
1850	1.00186	-5	1.00747	-19	1.0131	-3	1.0188	-5	3330
1900	1.00181	-4	1.00728	-17	1.0128	-3	1.0183	-4	3420
1950	1.00177	-4	1.00711	-15	1.0125	-3	1.0179	-4	3510
2000	1.00173	-3	1.00696	-15	1.0122	-3	1.0175	-4	3600
2050	1.00170	-4	1.00681	-15	1.0119	-2	1.0171	-4	3690
2100	1.00166	-4	1.00666	-14	1.0117	-3	1.0167	-3	3780
2150	1.00162	-3	1.00652	-14	1.0114	-2	1.0164	-3	3870
2200	1.00159	-3	1.00638	-14	1.0112	-2	1.0161	-4	3960
2250	1.00156	-4	1.00624	-14	1.0110	-3	1.0157	-4	4050
2300	1.00152	-3	1.00610	-12	1.0107	-2	1.0153	-3	4140
2350	1.00149	-3	1.00598	-12	1.0105	-2	1.0150	-3	4230
2400	1.00146	-3	1.00586	-11	1.0103	-2	1.0147	-3	4320
2450	1.00143	-2	1.00575	-11	1.0101	-2	1.0144	-2	4410
2500	1.00141	-3	1.00564	-11	1.0099	-2	1.0142	-3	4500
2550	1.00138	-3	1.00553	-10	1.0097	-2	1.0139	-3	4590
2600	1.00135	-2	1.00543	-10	1.0095	-2	1.0136	-2	4680
2650	1.00133	-3	1.00533	-10	1.0093	-1	1.0134	-3	4770
2700	1.00130	-2	1.00523	-9	1.0092	-2	1.0131	-2	4860
2750	1.00128	-2	1.00514	-9	1.0090	-1	1.0129	-2	4950
2800	1.00126	-2	1.00505	-9	1.0089	-2	1.0127	-2	5040
2850	1.00124	-2	1.00496	-8	1.0087	-1	1.0125	-3	5130
2900	1.00122	-3	1.00488	-9	1.0086	-2	1.0122	-2	5220
2950	1.00119	-2	1.00479	-8	1.0084	-1	1.0120	-2	5310
3000	1.00117		1.00471		1.0083		1.0118		5400

Table 8-2. DENSITY OF OXYGEN ρ/ρ_0

°K	.01 atm		.1 atm		.4 atm		.7 atm		°R
100	.02730	-249	.27350	-2499	1.10136	-10220	1.94076	-18306	180
110	.02481	-207	.24851	-2079	.99916	- 8461	1.75770	-15069	198
120	.02274	-175	.22772	-1757	.91455	- 7125	1.60701	-12642	216
130	.02099	-150	.21015	-1505	.84330	- 6087	1.48059	-10772	234
140	.01949	-130	.19510	-1304	.78243	- 5261	1.37287	- 9293	252
150	.01819	-113	.18206	-1140	.72982	- 4595	1.27994	- 8103	270
160	.01706	-101	.17066	-1005	.68387	- 4048	1.19891	- 7130	288
170	.01605	- 89	.16061	- 894	.64339	- 3594	1.12761	- 6323	306
180	.01516	- 80	.15167	- 799	.60745	- 3211	1.06438	- 5648	324
190	.01436	- 71	.14368	- 719	.57534	- 2888	1.00790	- 5075	342
200	.01365	- 65	.13649	- 650	.54646	- 2612	.95715	- 4586	360
210	.01300	- 60	.12999	- 592	.52034	- 2372	.91129	- 4165	378
220	.01240	- 53	.12407	- 540	.49662	- 2166	.86964	- 3799	396
230	.01187	- 50	.11867	- 494	.47496	- 1983	.83165	- 3480	414
240	.01137	- 45	.11373	- 455	.45513	- 1825	.79685	- 3199	432
250	.01092	- 42	.10918	- 421	.43688	- 1684	.76486	- 2952	450
260	.01050	- 39	.10497	- 389	.42004	- 1558	.73534	- 2732	468
270	.01011	- 36	.10108	- 361	.40446	- 1447	.70802	- 2536	486
280	.00975	- 34	.09747	- 336	.38999	- 1347	.68266	- 2360	504
290	.00941	- 31	.09411	- 314	.37652	- 1256	.65906	- 2202	522
300	.00910	- 30	.09097	- 293	.36396	- 1176	.63704	- 2060	540
310	.00880	- 27	.08804	- 276	.35220	- 1102	.61644	- 1930	558
320	.00853	- 26	.08528	- 258	.34118	- 1034	.59714	- 1812	576
330	.00827	- 24	.08270	- 243	.33084	- 974	.57902	- 1706	594
340	.00803	- 23	.08027	- 230	.32110	- 919	.56196	- 1608	612
350	.00780	- 22	.07797	- 216	.31191	- 867	.54588	- 1518	630
360	.00758	- 20	.07581	- 205	.30324	- 820	.53070	- 1436	648
370	.00738	- 20	.07376	- 194	.29504	- 777	.51634	- 1361	666
380	.00718	- 18	.07182	- 185	.28727	- 737	.50273	- 1290	684
390	.00700	- 18	.06997	- 174	.27990	- 700	.48983	- 1226	702
400	.00682	- 16	.06823	- 167	.27290	- 666	.47757	- 1166	720
410	.00666	- 16	.06656	- 158	.26624	- 634	.46591	- 1110	738
420	.00650	- 15	.06498	- 152	.25990	- 605	.45481	- 1058	756
430	.00635	- 15	.06346	- 144	.25385	- 577	.44423	- 1010	774
440	.00620	- 14	.06202	- 138	.24808	- 552	.43413	- 966	792
450	.00606	- 13	.06064	- 131	.24256	- 527	.42447	- 923	810
460	.00593	- 12	.05933	- 127	.23729	- 505	.41524	- 884	828
470	.00581	- 12	.05806	- 121	.23224	- 484	.40640	- 847	846
480	.00569	- 12	.05685	- 116	.22740	- 464	.39793	- 813	864
490	.00557	- 11	.05569	- 111	.22276	- 446	.38980	- 780	882
500	.00546	- 11	.05458	- 107	.21830	- 428	.38200	- 749	900
510	.00535	- 10	.05351	- 103	.21402	- 412	.37451	- 721	918
520	.00525	- 10	.05248	- 99	.20990	- 396	.36730	- 693	936
530	.00515	- 10	.05149	- 95	.20594	- 381	.36037	- 667	954
540	.00505	- 9	.05054	- 92	.20213	- 368	.35370	- 643	972
550	.00496	- 9	.04962	- 89	.19845	- 354	.34727	- 621	990
560	.00487	- 8	.04873	- 85	.19491	- 342	.34106	- 598	1008
570	.00479	- 8	.04788	- 83	.19149	- 330	.33508	- 578	1026
580	.00471	- 8	.04705	- 80	.18819	- 319	.32930	- 558	1044
590	.00463	- 8	.04625	- 77	.18500	- 309	.32372	- 540	1062
600	.00455	- 8	.04548	- 74	.18191	- 298	.31832	- 522	1080
610	.00447	- 7	.04474	- 73	.17893	- 289	.31310	- 505	1098
620	.00440	- 7	.04401	- 69	.17604	- 279	.30805	- 489	1116
630	.00433	- 7	.04332	- 68	.17325	- 271	.30316	- 474	1134
640	.00426	- 6	.04264	- 66	.17054	- 262	.29842	- 459	1152
650	.00420	- 7	.04198	- 63	.16792	- 255	.29383	- 445	1170
660	.00413	- 6	.04135	- 62	.16537	- 246	.28938	- 432	1188
670	.00407	- 6	.04073	- 60	.16291	- 240	.28506	- 419	1206
680	.00401	- 6	.04013	- 58	.16051	- 233	.28087	- 408	1224
690	.00395	- 5	.03955	- 57	.15818	- 226	.27679	- 395	1242
700	.00390		.03898		.15592		.27284		1260

°K	.01 atm		.1 atm		.4 atm		.7 atm		°R
700	.00390	- 6	.03898	- 54	.15592	- 219	.27284	- 384	1260
710	.00384	- 5	.03844	- 54	.15373	- 214	.26900	- 374	1278
720	.00379	- 5	.03790	- 52	.15159	- 207	.26526	- 363	1296
730	.00374	- 5	.03738	- 50	.14952	- 202	.26163	- 354	1314
740	.00369	- 5	.03688	- 49	.14750	- 197	.25809	- 344	1332
750	.00364	- 5	.03639	- 48	.14553	- 192	.25465	- 335	1350
760	.00359	- 5	.03591	- 47	.14361	- 186	.25130	- 326	1368
770	.00354	- 4	.03544	- 45	.14175	- 182	.24804	- 318	1386
780	.00350	- 5	.03499	- 45	.13993	- 177	.24486	- 310	1404
790	.00345	- 4	.03454	- 43	.13816	- 173	.24176	- 302	1422
800	.00341	- 20	.03411	- 200	.13643	- 802	.23874	- 1405	1440
850	.00321	- 18	.03211	- 179	.12841	- 714	.22469	- 1248	1530
900	.00303	- 16	.03032	- 159	.12127	- 638	.21221	- 1117	1620
950	.00287	- 14	.02873	- 144	.11489	- 574	.20104	- 1005	1710
1000	.00273	- 13	.02729	- 130	.10915	- 520	.19099	- 909	1800
1050	.00260	- 12	.02599	- 118	.10395	- 472	.18190	- 827	1890
1100	.00248	- 11	.02481	- 108	.09923	- 432	.17363	- 755	1980
1150	.00237	- 10	.02373	- 99	.09491	- 395	.16608	- 692	2070
1200	.00227	- 9	.02274	- 91	.09096	- 364	.15916	- 636	2160
1250	.00218	- 8	.02183	- 84	.08732	- 336	.15280	- 588	2250
1300	.00210	- 8	.02099	- 78	.08396	- 311	.14692	- 544	2340
1350	.00202	- 7	.02021	- 72	.08085	- 289	.14148	- 505	2430
1400	.00195	- 7	.01949	- 67	.07796	- 268	.13643	- 471	2520
1450	.00188	- 6	.01882	- 63	.07528	- 251	.13172	- 439	2610
1500	.00182	- 6	.01819	- 58	.07277	- 235	.12733	- 410	2700
1550	.00176	- 5	.01761	- 55	.07042	- 220	.12323	- 385	2790
1600	.00171	- 6	.01706	- 52	.06822	- 207	.11938	- 362	2880
1650	.00165	- 4	.01654	- 49	.06615	- 194	.11576	- 340	2970
1700	.00161	- 5	.01605	- 46	.06421	- 184	.11236	- 321	3060
1750	.00156	- 4	.01559	- 43	.06237	- 173	.10915	- 304	3150
1800	.00152	- 4	.01516	- 41	.06064	- 164	.10611	- 286	3240
1850	.00148	- 4	.01475	- 39	.05900	- 155	.10325	- 272	3330
1900	.00144	- 4	.01436	- 37	.05745	- 147	.10053	- 258	3420
1950	.00140	- 4	.01399	- 35	.05598	- 140	.09795	- 245	3510
2000	.00136	- 3	.01364	- 33	.05458	- 134	.09550	- 233	3600
2050	.00133	- 3	.01331	- 31	.05324	- 126	.09317	- 221	3690
2100	.00130	- 3	.01300	- 31	.05198	- 121	.09096	- 212	3780
2150	.00127	- 3	.01269	- 29	.05077	- 115	.08884	- 202	3870
2200	.00124	- 3	.01240	- 27	.04962	- 111	.08682	- 193	3960
2250	.00121	- 2	.01213	- 27	.04851	- 105	.08489	- 184	4050
2300	.00119	- 3	.01186	- 25	.04746	- 101	.08305	- 177	4140
2350	.00116	- 2	.01161	- 24	.04645	- 97	.08128	- 169	4230
2400	.00114	- 3	.01137	- 23	.04548	- 93	.07959	- 163	4320
2450	.00111	- 2	.01114	- 22	.04455	- 89	.07796	- 156	4410
2500	.00109	- 2	.01092	- 22	.04366	- 85	.07640	- 149	4500
2550	.00107	- 2	.01070	- 20	.04281	- 83	.07491	- 144	4590
2600	.00105	- 2	.01050	- 20	.04198	- 79	.07347	- 139	4680
2650	.00103	- 2	.01030	- 19	.04119	- 76	.07208	- 133	4770
2700	.00101	- 2	.01011	- 19	.04043	- 74	.07075	- 129	4860
2750	.00099	- 2	.00992	- 17	.03969	- 71	.06946	- 124	4950
2800	.00097	- 1	.00975	- 17	.03898	- 68	.06822	- 120	5040
2850	.00096	- 2	.00958	- 17	.03830	- 66	.06702	- 115	5130
2900	.00094	- 2	.00941	- 16	.03764	- 64	.06587	- 112	5220
2950	.00092	- 1	.00925	- 15	.03700	- 62	.06475	- 108	5310
3000	.00091		.00910		.03638		.06367		5400

Table 8-2. DENSITY OF OXYGEN - Cont. ρ/ρ_0

°K	1 atm		4 atm		7 atm		10 atm		°R
100	2.79257	-26816							180
110	2.52441	-21916	10.755	-1106					198
120	2.30525	-18318	9.649	- 860	17.86	-1851			216
130	2.12207	-15563	8.789	- 702	16.009	-1421			234
140	1.96644	-13398	8.087	- 591	14.588	-1150			252
150	1.83246	-11665	7.496	- 506	13.438	- 964	19.69	-151	270
160	1.71581	-10252	6.990	- 438	12.474	- 823	18.18	-126	288
170	1.61329	- 9082	6.552	- 384	11.651	- 713	16.92	-108	306
180	1.52247	- 8108	6.168	- 340	10.938	- 626	15.84	- 94	324
190	1.44139	- 7279	5.828	- 304	10.312	- 554	14.90	- 83	342
200	1.36860	- 6575	5.5245	- 2727	9.7584	- 4949	14.073	- 734	360
210	1.30285	- 5968	5.2518	- 2463	9.2635	- 4450	13.339	- 656	378
220	1.24317	- 5443	5.0055	- 2237	8.8185	- 4026	12.683	- 592	396
230	1.18874	- 4984	4.7818	- 2042	8.4159	- 3662	12.091	- 536	414
240	1.13890	- 4581	4.5776	- 1872	8.0497	- 3347	11.555	- 488	432
250	1.09309	- 4224	4.3904	- 1723	7.7150	- 3072	11.067	- 447	450
260	1.05085	- 3909	4.2181	- 1590	7.4078	- 2830	10.620	- 412	468
270	1.01176	- 3628	4.0591	- 1473	7.1248	- 2617	10.208	- 379	486
280	.97548	- 3376	3.9118	- 1369	6.8631	- 2428	9.829	- 352	504
290	.94172	- 3149	3.7749	- 1275	6.6203	- 2258	9.477	- 326	522
300	.91023	- 2946	3.6474	- 1190	6.39455	- 21063	9.151	- 304	540
310	.88077	- 2760	3.5284	- 1115	6.18392	- 19697	8.847	- 284	558
320	.85317	- 2592	3.4169	- 1046	5.98695	- 18456	8.563	- 266	576
330	.82725	- 2438	3.3123	- 983	5.80239	- 17343	8.297	- 250	594
340	.80287	- 2299	3.21404	- 9261	5.62896	- 16318	8.047	- 235	612
350	.77988	- 2170	3.12143	- 8738	5.46578	- 15385	7.812	- 221	630
360	.75818	- 2053	3.03405	- 8256	5.31193	- 14532	7.591	- 209	648
370	.73765	- 1945	2.95149	- 7816	5.16661	- 13747	7.382	- 197	666
380	.71820	- 1844	2.87333	- 7412	5.02914	- 13028	7.185	- 187	684
390	.69976	- 1751	2.79921	- 7036	4.89886	- 12367	6.998	- 177	702
400	.68225	- 1666	2.72885	- 6688	4.77519	- 11749	6.8212	- 1684	720
410	.66559	- 1587	2.66197	- 6369	4.65770	- 11176	6.6528	- 1603	738
420	.64972	- 1513	2.59828	- 6068	4.54594	- 10652	6.4925	- 1525	756
430	.63459	- 1443	2.53760	- 5790	4.43942	- 10159	6.3400	- 1456	774
440	.62016	- 1380	2.47970	- 5530	4.33783	- 9699	6.1944	- 1388	792
450	.60636	- 1319	2.42440	- 5289	4.24084	- 9273	6.0556	- 1328	810
460	.59317	- 1263	2.37151	- 5060	4.14811	- 8874	5.9228	- 1269	828
470	.58054	- 1210	2.32091	- 4848	4.05937	- 8497	5.7959	- 1216	846
480	.56844	- 1161	2.27243	- 4651	3.97440	- 8150	5.6743	- 1166	864
490	.55683	- 1115	2.22592	- 4463	3.89290	- 7816	5.5577	- 1118	882
500	.54568	- 1070	2.18129	- 4286	3.81474	- 7510	5.4459	- 1074	900
510	.53498	- 1030	2.13843	- 4121	3.73964	- 7217	5.3385	- 1031	918
520	.52468	- 990	2.09722	- 3963	3.66747	- 6941	5.2354	- 993	936
530	.51478	- 953	2.05759	- 3818	3.59806	- 6685	5.1361	- 955	954
540	.50525	- 920	2.01941	- 3678	3.53121	- 6437	5.0406	- 920	972
550	.49605	- 886	1.98263	- 3544	3.46684	- 6205	4.9486	- 887	990
560	.48719	- 855	1.94719	- 3420	3.40479	- 5986	4.8599	- 855	1008
570	.47864	- 825	1.91299	- 3302	3.34493	- 5781	4.7744	- 826	1026
580	.47039	- 798	1.87997	- 3190	3.28712	- 5581	4.6918	- 797	1044
590	.46241	- 771	1.84807	- 3084	3.23131	- 5395	4.6121	- 770	1062
600	.45470	- 745	1.81723	- 2981	3.17736	- 5215	4.5351	- 746	1080
610	.44725	- 722	1.78742	- 2886	3.12521	- 5047	4.4605	- 720	1098
620	.44003	- 698	1.75856	- 2793	3.07474	- 4886	4.3885	- 698	1116
630	.43305	- 677	1.73063	- 2706	3.02588	- 4734	4.3187	- 676	1134
640	.42628	- 656	1.70357	- 2623	2.97854	- 4588	4.2511	- 655	1152
650	.41972	- 636	1.67734	- 2541	2.93266	- 4447	4.1856	- 635	1170
660	.41336	- 617	1.65193	- 2467	2.88819	- 4313	4.1221	- 615	1188
670	.40719	- 599	1.62726	- 2393	2.84506	- 4187	4.0606	- 598	1206
680	.40120	- 581	1.60333	- 2325	2.80319	- 4062	4.0008	- 580	1224
690	.39539	- 565	1.58008	- 2258	2.76257	- 3950	3.9428	- 564	1242
700	.38974		1.55750		2.72307		3.8864		1260

°K	1 atm		4 atm		7 atm		10 atm		°R
700	.38974	- 549	1.55750	- 2193	2.72307	- 3835	3.8864	- 548	1260
710	.38425	- 534	1.53557	- 2135	2.68472	- 3731	3.8316	- 532	1278
720	.37891	- 519	1.51422	- 2074	2.64741	- 3627	3.7784	- 517	1296
730	.37372	- 505	1.49348	- 2018	2.61114	- 3529	3.7267	- 504	1314
740	.36867	- 491	1.47330	- 1965	2.57585	- 3434	3.6763	- 490	1332
750	.36376	- 479	1.45365	- 1912	2.54151	- 3344	3.6273	- 477	1350
760	.35897	- 466	1.43453	- 1863	2.50807	- 3257	3.5796	- 465	1368
770	.35431	- 455	1.41590	- 1815	2.47550	- 3172	3.5331	- 453	1386
780	.34976	- 442	1.39775	- 1770	2.44378	- 3093	3.4878	- 441	1404
790	.34534	- 432	1.38005	- 1723	2.41285	- 3016	3.4437	- 431	1422
800	.34102	- 2006	1.36282	- 8016	2.38269	- 14009	3.4006	- 1999	1440
850	.32096	- 1783	1.28266	- 7123	2.24260	- 12451	3.2007	- 1776	1530
900	.30313	- 1595	1.21143	- 6373	2.11809	- 11139	3.0231	- 1590	1620
950	.28718	- 1436	1.14770	- 5735	2.00670	- 10024	2.8641	- 1430	1710
1000	.27282	- 1299	1.09035	- 5189	1.90646	- 9070	2.7211	- 1294	1800
1050	.25983	- 1181	1.03846	- 4717	1.81576	- 8245	2.5917	- 1176	1890
1100	.24802	- 1078	.99129	- 4308	1.73331	- 7527	2.4741	- 1074	1980
1150	.23724	- 988	.94821	- 3949	1.65804	- 6901	2.3667	- 984	2070
1200	.22736	- 909	.90872	- 3632	1.58903	- 6348	2.2683	- 906	2160
1250	.21827	- 840	.87240	- 3353	1.52555	- 5861	2.1777	- 836	2250
1300	.20987	- 777	.83887	- 3105	1.46694	- 5426	2.0941	- 774	2340
1350	.20210	- 722	.80782	- 2883	1.41268	- 5040	2.0167	- 719	2430
1400	.19488	- 672	.77899	- 2684	1.36228	- 4692	1.9448	- 670	2520
1450	.18816	- 627	.75215	- 2505	1.31536	- 4379	1.8778	- 625	2610
1500	.18189	- 586	.72710	- 2344	1.27157	- 4097	1.8153	- 584	2700
1550	.17603	- 550	.70366	- 2198	1.23060	- 3841	1.7569	- 548	2790
1600	.17053	- 517	.68168	- 2064	1.19219	- 3608	1.7021	- 515	2880
1650	.16536	- 486	.66104	- 1943	1.15611	- 3397	1.6506	- 485	2970
1700	.16050	- 459	.64161	- 1832	1.12214	- 3202	1.6021	- 457	3060
1750	.15591	- 433	.62329	- 1730	1.09012	- 3025	1.5564	- 432	3150
1800	.15158	- 409	.60599	- 1637	1.05987	- 2861	1.5132	- 408	3240
1850	.14749	- 388	.58962	- 1550	1.03126	- 2711	1.4724	- 387	3330
1900	.14361	- 369	.57412	- 1472	1.00415	- 2572	1.4337	- 367	3420
1950	.13992	- 349	.55940	- 1397	.97843	- 2443	1.3970	- 348	3510
2000	.13643	- 333	.54543	- 1330	.95400	- 2325	1.3622	- 332	3600
2050	.13310	- 317	.53213	- 1266	.93075	- 2213	1.3290	- 316	3690
2100	.12993	- 302	.51947	- 1208	.90862	- 2112	1.2974	- 301	3780
2150	.12691	- 288	.50739	- 1152	.88750	- 2014	1.2673	- 288	3870
2200	.12403	- 276	.49587	- 1101	.86736	- 1926	1.2385	- 275	3960
2250	.12127	- 264	.48486	- 1054	.84810	- 1842	1.2110	- 263	4050
2300	.11863	- 252	.47432	- 1009	.82968	- 1763	1.1847	- 251	4140
2350	.11611	- 242	.46423	- 966	.81205	- 1690	1.1596	- 242	4230
2400	.11369	- 232	.45457	- 927	.79515	- 1621	1.1354	- 231	4320
2450	.11137	- 222	.44530	- 890	.77894	- 1557	1.1123	- 222	4410
2500	.10915	- 215	.43640	- 856	.76337	- 1496	1.0901	- 214	4500
2550	.10700	- 205	.42784	- 822	.74841	- 1437	1.0687	- 205	4590
2600	.10495	- 198	.41962	- 791	.73404	- 1384	1.0482	- 197	4680
2650	.10297	- 191	.41171	- 762	.72020	- 1332	1.0285	- 191	4770
2700	.10106	- 184	.40409	- 735	.70688	- 1285	1.0094	- 183	4860
2750	.09922	- 177	.39674	- 708	.69403	- 1238	.9911	- 177	4950
2800	.09745	- 171	.38966	- 683	.68165	- 1195	.9734	- 170	5040
2850	.09574	- 165	.38283	- 660	.66970	- 1153	.9564	- 165	5130
2900	.09409	- 159	.37623	- 637	.65817	- 1115	.9399	- 159	5220
2950	.09250	- 154	.36986	- 616	.64702	- 1077	.9240	- 154	5310
3000	.09096		.36370		.63625		.9086		5400

Table 8-2. DENSITY OF OXYGEN - Cont.

ρ/ρ_0

°K	10 atm		40 atm		70 atm		100 atm		°R
150	19.69	-151	124.2	-262					270
160	18.18	-126	98.0	-171					288
170	16.92	-108	80.9	- 63					306
180	15.84	- 94	74.6	- 68	164.9	-256			324
190	14.90	- 83	67.8	- 54	139.3	-163			342
200	14.073	- 734	62.4	- 43	123.0	-117	198.5	-256	360
210	13.339	- 656	58.1	- 37	111.3	- 90	172.9	-175	378
220	12.683	- 592	54.4	- 31	102.3	- 73	155.4	-131	396
230	12.091	- 536	51.30	- 274	95.0	- 60	142.3	-104	414
240	11.555	- 488	48.56	- 242	89.0	- 51	131.9	- 85	432
250	11.067	- 447	46.14	- 216	83.89	- 446	123.41	- 722	450
260	10.620	- 412	43.98	- 193	79.43	- 391	116.19	- 622	468
270	10.208	- 379	42.05	- 176	75.525	- 3490	109.97	- 547	486
280	9.829	- 352	40.29	- 160	72.035	- 3124	104.50	- 483	504
290	9.477	- 326	38.69	- 146	68.911	- 2829	99.67	- 433	522
300	9.151	- 304	37.231	- 1347	66.082	- 2567	95.34	- 391	540
310	8.847	- 284	35.884	- 1245	63.515	- 2357	91.43	- 356	558
320	8.563	- 266	34.639	- 1154	61.158	- 2161	87.87	- 325	576
330	8.297	- 250	33.485	- 1075	58.997	- 2003	84.618	- 2999	594
340	8.047	- 235	32.410	- 1002	56.994	- 1852	81.619	- 2757	612
350	7.812	- 221	31.408	- 938	55.142	- 1726	78.862	- 2553	630
360	7.591	- 209	30.470	- 880	53.416	- 1605	76.309	- 2375	648
370	7.382	- 197	29.590	- 828	51.811	- 1510	73.934	- 2219	666
380	7.185	- 187	28.762	- 780	50.301	- 1412	71.715	- 2082	684
390	6.998	- 177	27.982	- 736	48.889	- 1332	69.633	- 1943	702
400	6.8212	- 1684	27.246	- 696	47.557	- 1252	67.690	- 1827	720
410	6.6528	- 1603	26.550	- 661	46.305	- 1183	65.863	- 1721	738
420	6.4925	- 1525	25.889	- 626	45.122	- 1124	64.142	- 1634	756
430	6.3400	- 1456	25.263	- 596	43.998	- 1059	62.508	- 1534	774
440	6.1944	- 1388	24.667	- 567	42.939	- 1008	60.974	- 1461	792
450	6.0556	- 1328	24.100	- 540	41.931	- 960	59.513	- 1379	810
460	5.9228	- 1269	23.560	- 516	40.971	- 915	58.134	- 1326	828
470	5.7959	- 1216	23.044	- 493	40.056	- 870	56.808	- 1249	846
480	5.6743	- 1166	22.551	- 471	39.186	- 833	55.559	- 1192	864
490	5.5577	- 1118	22.080	- 452	38.353	- 797	54.367	- 1150	882
500	5.4459	- 1074	21.628	- 433	37.556	- 758	53.217	- 1089	900
510	5.3385	- 1031	21.195	- 415	36.798	- 733	52.128	- 1042	918
520	5.2354	- 993	20.780	- 399	36.065	- 697	51.086	- 998	936
530	5.1361	- 955	20.381	- 383	35.368	- 672	50.088	- 966	954
540	5.0406	- 920	19.998	- 369	34.696	- 645	49.122	- 917	972
550	4.9486	- 887	19.6294	- 3551	34.051	- 624	48.205	- 888	990
560	4.8599	- 855	19.2743	- 3421	33.427	- 596	47.317	- 848	1008
570	4.7744	- 826	18.9322	- 3299	32.831	- 576	46.469	- 823	1026
580	4.6918	- 797	18.6023	- 3182	32.255	- 553	45.646	- 787	1044
590	4.6121	- 770	18.2841	- 3074	31.702	- 537	44.859	- 761	1062
600	4.5351	- 746	17.9767	- 2969	31.165	- 517	44.098	- 739	1080
610	4.4605	- 720	17.6798	- 2873	30.648	- 500	43.359	- 716	1098
620	4.3885	- 698	17.3925	- 2777	30.148	- 485	42.643	- 685	1116
630	4.3187	- 676	17.1148	- 2688	29.663	- 469	41.958	- 656	1134
640	4.2511	- 655	16.8460	- 2601	29.194	- 449	41.302	- 635	1152
650	4.1856	- 635	16.5859	- 2523	28.745	- 438	40.667	- 620	1170
660	4.1221	- 615	16.3336	- 2447	28.307	- 426	40.047	- 606	1188
670	4.0606	- 598	16.0889	- 2373	27.881	- 410	39.441	- 584	1206
680	4.0008	- 580	15.8516	- 2302	27.471	- 400	38.857	- 563	1224
690	3.9428	- 564	15.6214	- 2234	27.071	- 387	38.294	- 547	1242
700	3.8864	- 548	15.3980	- 2171	26.684	- 376	37.747	- 531	1260
710	3.8316	- 532	15.1809	- 2109	26.308	- 365	37.216	- 517	1278
720	3.7784	- 517	14.9700	- 2053	25.943	- 356	36.699	- 503	1296
730	3.7267	- 504	14.7647	- 1995	25.587	- 346	36.196	- 489	1314
740	3.6763	- 490	14.5652	- 1940	25.241	- 334	35.707	- 473	1332
750	3.6273		14.3712		24.907		35.234		1350

ρ/ρ_0

°K	10 atm		40 atm		70 atm		100 atm		°R
750	3.6273	- 477	14.3712	- 1890	24.907	- 327	35.234	- 463	1350
760	3.5796	- 465	14.1822	- 1838	24.580	- 317	34.771	- 445	1368
770	3.5331	- 453	13.9984	- 1790	24.263	- 311	34.326	- 440	1386
780	3.4878	- 441	13.8194	- 1748	23.952	- 303	33.886	- 429	1404
790	3.4437	- 431	13.6446	- 1700	23.649	- 294	33.457	- 412	1422
800	3.4006	- 1999	13.4746	- 7904	23.355	- 1367	33.045	- 1929	1440
850	3.2007	- 1776	12.6842	- 7019	21.988	- 1212	31.116	- 1712	1530
900	3.0231	- 1590	11.9823	- 6276	20.776	- 1084	29.404	- 1526	1620
950	2.8641	- 1430	11.3547	- 5646	19.692	- 975	27.878	- 1373	1710
1000	2.7211	- 1294	10.7901	- 5108	18.717	- 881	26.505	- 1242	1800
1050	2.5917	- 1176	10.2793	- 4643	17.836	- 802	25.263	- 1132	1890
1100	2.4741	- 1074	9.8150	- 4239	17.034	- 733	24.131	- 1032	1980
1150	2.3667	- 984	9.3911	- 3887	16.301	- 670	23.099	- 945	2070
1200	2.2683	- 906	9.0024	- 3576	15.631	- 619	22.154	- 872	2160
1250	2.1777	- 836	8.6448	- 3303	15.012	- 569	21.282	- 802	2250
1300	2.0941	- 774	8.3145	- 3058	14.443	- 528	20.480	- 745	2340
1350	2.0167	- 719	8.0087	- 2840	13.915	- 492	19.735	- 694	2430
1400	1.9448	- 670	7.7247	- 2646	13.423	- 458	19.041	- 646	2520
1450	1.8778	- 625	7.4601	- 2470	12.965	- 426	18.395	- 601	2610
1500	1.8153	- 584	7.2131	- 2311	12.539	- 399	17.794	- 565	2700
1550	1.7569	- 548	6.9820	- 2167	12.140	- 376	17.229	- 529	2790
1600	1.7021	- 515	6.7653	- 2036	11.764	- 352	16.700	- 496	2880
1650	1.6506	- 485	6.5617	- 1917	11.412	- 332	16.204	- 469	2970
1700	1.6021	- 457	6.3700	- 1808	11.080	- 313	15.735	- 442	3060
1750	1.5564	- 432	6.1892	- 1708	10.767	- 295	15.293	- 419	3150
1800	1.5132	- 408	6.0184	- 1616	10.472	- 280	14.874	- 395	3240
1850	1.4724	- 387	5.8568	- 1531	10.192	- 265	14.479	- 374	3330
1900	1.4337	- 367	5.7037	- 1453	9.927	- 252	14.105	- 357	3420
1950	1.3970	- 348	5.5584	- 1382	9.675	- 239	13.748	- 338	3510
2000	1.3622	- 332	5.4202	- 1314	9.436	- 228	13.410	- 322	3600
2050	1.3290	- 316	5.2888	- 1251	9.208	- 217	13.088	- 307	3690
2100	1.2974	- 301	5.1637	- 1194	8.991	- 206	12.781	- 293	3780
2150	1.2673	- 288	5.0443	- 1140	8.785	- 198	12.488	- 280	3870
2200	1.2385	- 275	4.9303	- 1089	8.587	- 190	12.208	- 267	3960
2250	1.2110	- 263	4.8214	- 1041	8.397	- 180	11.941	- 255	4050
2300	1.1847	- 251	4.7173	- 998	8.217	- 173	11.686	- 245	4140
2350	1.1596	- 242	4.6175	- 957	8.044	- 166	11.441	- 235	4230
2400	1.1354	- 231	4.5218	- 918	7.878	- 159	11.206	- 226	4320
2450	1.1123	- 222	4.4300	- 881	7.719	- 153	10.980	- 217	4410
2500	1.0901	- 214	4.3419	- 847	7.566	- 147	10.763	- 208	4500
2550	1.0687	- 205	4.2572	- 814	7.419	- 141	10.555	- 200	4590
2600	1.0482	- 197	4.1758	- 784	7.278	- 136	10.355	- 194	4680
2650	1.0285	- 191	4.0974	- 755	7.142	- 132	10.161	- 185	4770
2700	1.0094	- 183	4.0219	- 728	7.010	- 126	9.976	- 179	4860
2750	.9911	- 177	3.9491	- 701	6.884	- 122	9.797	- 173	4950
2800	.9734	- 170	3.8790	- 678	6.762	- 117	9.624	- 167	5040
2850	.9564	- 165	3.8112	- 654	6.645	- 114	9.457	- 161	5130
2900	.9399	- 159	3.7458	- 631	6.531	- 110	9.296	- 155	5220
2950	.9240	- 154	3.6827	- 611	6.421	- 106	9.141	- 151	5310
3000	.9086		3.6216		6.315		8.990		5400

Table 8-3. SPECIFIC HEAT OF OXYGEN Cp/R

°K	.01 atm		.1 atm		.4 atm		.7 atm		°R
100	3.5024	-3	3.5117	-27	3.5459	-126			180
110	3.5021	-2	3.5090	-17	3.5333	-74	3.5597	-145	198
120	3.5019	-2	3.5073	-13	3.5259	-52	3.5452	-94	216
130	3.5017		3.5060	-8	3.5207	-34	3.5358	-63	234
140	3.5017	-1	3.5052	-6	3.5173	-28	3.5295	-50	252
150	3.5016	2	3.5046	-3	3.5145	-19	3.5245	-34	270
160	3.5018	1	3.5043	-2	3.5126	-14	3.5211	-27	288
170	3.5019	3	3.5041	-1	3.5112	-10	3.5184	-20	306
180	3.5022	5	3.5040	3	3.5102	-6	3.5164	-13	324
190	3.5027	7	3.5043	5	3.5096	-1	3.5151	-8	342
200	3.5034	9	3.5048	8	3.5095	3	3.5143	-4	360
210	3.5043	14	3.5056	12	3.5098	8	3.5139	4	378
220	3.5057	17	3.5068	16	3.5106	11	3.5143	8	396
230	3.5074	22	3.5084	21	3.5117	18	3.5151	15	414
240	3.5096	27	3.5105	26	3.5135	24	3.5166	20	432
250	3.5123	33	3.5131	32	3.5159	29	3.5186	27	450
260	3.5156	38	3.5163	38	3.5188	36	3.5213	33	468
270	3.5194	45	3.5201	44	3.5224	42	3.5246	40	486
280	3.5239	50	3.5245	49	3.5266	47	3.5286	47	504
290	3.5289	56	3.5294	56	3.5313	55	3.5333	52	522
300	3.5345	63	3.5350	63	3.5368	61	3.5385	61	540
310	3.5408	69	3.5413	68	3.5429	67	3.5446	66	558
320	3.5477	75	3.5481	75	3.5496	74	3.5512	73	576
330	3.5552	79	3.5556	79	3.5570	78	3.5585	77	594
340	3.5631	86	3.5635	86	3.5648	86	3.5662	84	612
350	3.5717	90	3.5721	90	3.5734	89	3.5746	88	630
360	3.5807	95	3.5811	95	3.5823	94	3.5834	94	648
370	3.5902	100	3.5906	99	3.5917	98	3.5928	98	666
380	3.6002	103	3.6005	103	3.6015	103	3.6026	101	684
390	3.6105	107	3.6108	107	3.6118	106	3.6127	107	702
400	3.6212	110	3.6215	110	3.6224	110	3.6234	108	720
410	3.6322	113	3.6325	113	3.6334	112	3.6342	112	738
420	3.6435	115	3.6438	115	3.6446	115	3.6454	114	756
430	3.6550	118	3.6553	117	3.6561	117	3.6568	117	774
440	3.6668	119	3.6670	119	3.6678	118	3.6685	119	792
450	3.6787	120	3.6789	120	3.6796	120	3.6804	118	810
460	3.6907	122	3.6909	122	3.6916	121	3.6922	122	828
470	3.7029	122	3.7031	122	3.7037	122	3.7044	121	846
480	3.7151	123	3.7153	123	3.7159	123	3.7165	122	864
490	3.7274	122	3.7276	122	3.7282	122	3.7287	122	882
500	3.7396	124	3.7398	124	3.7404	123	3.7409	124	900
510	3.7520	123	3.7522	123	3.7527	123	3.7533	122	918
520	3.7643	122	3.7645	122	3.7650	122	3.7655	121	936
530	3.7765	122	3.7767	122	3.7772	122	3.7776	122	954
540	3.7887	121	3.7889	121	3.7894	120	3.7898	121	972
550	3.8008	121	3.8010	120	3.8014	120	3.8019	120	990
560	3.8129	119	3.8130	119	3.8134	119	3.8139	119	1008
570	3.8248	118	3.8249	118	3.8253	118	3.8258	117	1026
580	3.8366	117	3.8367	117	3.8371	117	3.8375	117	1044
590	3.8483	116	3.8484	116	3.8488	116	3.8492	115	1062
600	3.8599	114	3.8600	114	3.8604	114	3.8607	114	1080
610	3.8713	113	3.8714	113	3.8718	112	3.8721	113	1098
620	3.8826	111	3.8827	111	3.8830	111	3.8834	111	1116
630	3.8937	110	3.8938	110	3.8941	110	3.8945	110	1134
640	3.9047	108	3.9048	108	3.9051	108	3.9055	107	1152
650	3.9155	107	3.9156	107	3.9159	107	3.9162	107	1170
660	3.9262	105	3.9263	105	3.9266	105	3.9269	105	1188
670	3.9367	103	3.9368	103	3.9371	103	3.9374	102	1206
680	3.9470	101	3.9471	101	3.9474	101	3.9476	101	1224
690	3.9571	101	3.9572	101	3.9575	101	3.9577	101	1242
700	3.9672		3.9673		3.9676		3.9678		1260

°K	.01 atm		.1 atm		.4 atm		.7 atm		°R
700	3.9672	98	3.9673	98	3.9676	97	3.9678	98	1260
710	3.9770	96	3.9771	95	3.9773	96	3.9776	95	1278
720	3.9866	95	3.9866	96	3.9869	95	3.9871	96	1296
730	3.9961	93	3.9962	93	3.9964	93	3.9967	93	1314
740	4.0054	91	4.0055	91	4.0057	91	4.0060	90	1332
750	4 0145	90	4.0146	90	4.0148	90	4.0150	90	1350
760	4.0235	88	4.0236	87	4.0238	87	4.0240	88	1368
770	4.0323	86	4.0323	87	4.0325	87	4.0328	86	1386
780	4.0409	85	4.0410	85	4.0412	85	4.0414	85	1404
790	4.0494	83	4.0495	83	4.0497	82	4.0499	82	1422
800	4.0577	393	4.0578	393	4.0580	392	4.0581	393	1440
850	4.0970	357	4.0971	356	4.0972	357	4.0974	356	1530
900	4.1327	325	4.1327	325	4.1329	324	4.1330	325	1620
950	4.1652	296	4.1652	296	4.1653	296	4.1655	296	1710
1000	4.1948	271	4.1948	271	4.1949	271	4.1951	270	1800
1050	4.2219	250	4.2219	250	4.2220	250	4.2221	250	1890
1100	4.2469	229	4.2469	229	4.2470	229	4.2471	229	1980
1150	4.2698	214	4.2698	214	4.2699	214	4.2700	214	2070
1200	4.2912	200	4.2912	200	4.2913	200	4.2914	199	2160
1250	4.3112	188	4.3112	188	4.3113	188	4.3113	188	2250
1300	4.3300	179	4.3300	179	4.3301	179	4.3301	179	2340
1350	4.3479	172	4.3479	172	4.3480	172	4.3480	172	2430
1400	4.3651	164	4.3651	164	4.3652	164	4.3652	164	2520
1450	4.3815	160	4.3815	160	4.3816	159	4.3816	160	2610
1500	4.3975	155	4.3975	155	4.3975	155	4.3976	155	2700
1550	4.4130	152	4.4130	152	4.4130	152	4.4131	152	2790
1600	4.4282	149	4.4282	149	4.4282	149	4.4283	149	2880
1650	4.4431	147	4.4431	147	4.4431	147	4.4432	147	2970
1700	4.4578	146	4.4578	146	4.4578	146	4.4579	146	3060
1750	4.4724	144	4.4724	144	4.4724	144	4.4725	144	3150
1800	4.4868	143	4.4868	143	4.4868	143	4.4869	143	3240
1850	4.5011	142	4.5011	142	4.5011	142	4.5012	142	3330
1900	4.5153	142	4.5153	142	4.5153	142	4.5154	142	3420
1950	4.5295	141	4.5295	141	4.5295	141	4.5296	141	3510
2000	4.5436	140	4.5436	140	4.5436	140	4.5437	140	3600
2050	4.5576	139	4.5576	139	4.5576	139	4.5577	139	3690
2100	4.5715	139	4.5715	139	4.5715	139	4.5716	139	3780
2150	4.5854	139	4.5854	139	4.5854	139	4.5855	138	3870
2200	4.5993	137	4.5993	137	4.5993	137	4.5993	137	3960
2250	4.6130	137	4.6130	137	4.6130	137	4.6130	138	4050
2300	4.6267	137	4.6267	137	4.6267	137	4.6268	136	4140
2350	4.6404	136	4.6404	136	4.6404	136	4.6404	136	4230
2400	4.6540	134	4.6540	134	4.6540	134	4.6540	134	4320
2450	4.6674	134	4.6674	134	4.6674	134	4.6674	134	4410
2500	4.6808	132	4.6808	132	4.6808	132	4.6808	132	4500
2550	4.6940	131	4.6940	131	4.6940	131	4.6940	131	4590
2600	4.7071	129	4.7071	129	4.7071	129	4.7071	129	4680
2650	4.7200	128	4.7200	128	4.7200	128	4.7200	128	4770
2700	4.7328	126	4.7328	126	4.7328	126	4.7328	126	4860
2750	4.7454	125	4.7454	125	4.7454	125	4.7454	125	4950
2800	4.7579	124	4.7579	124	4.7579	124	4.7579	124	5040
2850	4.7703	121	4.7703	121	4.7703	121	4.7703	121	5130
2900	4.7824	120	4.7824	120	4.7824	120	4.7824	120	5220
2950	4.7944	118	4.7944	118	4.7944	118	4.7944	118	5310
3000	4.8062		4.8062		4.8062		4.8062		5400

°K	1 atm		4 atm		7 atm		10 atm		°R
120	3.566	-15							216
130	3.5513	- 94							234
140	3.5419	- 72	3.684	-38					252
150	3.5347	- 52	3.6461	-255	3.781	-56	3.951	-104	270
160	3.5295	- 39	3.6206	-188	3.7252	-389	3.847	- 67	288
170	3.5256	- 30	3.6018	-143	3.6863	-284	3.780	- 46	306
180	3.5226	- 21	3.5875	-109	3.6579	-216	3.7343	- 342	324
190	3.5205	- 15	3.5766	- 85	3.6363	-167	3.7001	- 262	342
200	3.5190	- 8	3.5681	- 68	3.6196	-132	3.6739	- 205	360
210	3.6182	- 1	3.5613	- 48	3.6064	-102	3.6534	- 160	378
220	3.5181	4	3.5565	- 39	3.5962	- 80	3.6374	- 128	396
230	3.5185	11	3.5526	- 22	3.5882	- 61	3.6246	- 100	414
240	3.5196	18	3.5504	- 16	3.5821	- 43	3.6146	- 75	432
250	3.5214	24	3.5488	3	3.5778	- 27	3.6071	- 55	450
260	3.5238	31	3.5491	10	3.5751	- 15	3.6016	- 39	468
270	3.5269	38	3.5501	19	3.5736	- 1	3.5977	- 22	486
280	3.5307	45	3.5520	27	3.5735	10	3.5955	- 8	504
290	3.5352	51	3.5547	37	3.5745	21	3.5947	4	522
300	3.5403	59	3.5584	45	3.5766	31	3.5951	17	540
310	3.5462	65	3.5629	52	3.5797	41	3.5968	28	558
320	3.5527	72	3.5681	61	3.5838	49	3.5996	39	576
330	3.5599	76	3.5742	68	3.5887	58	3.6035	47	594
340	3.5675	84	3.5810	74	3.5945	65	3.6082	56	612
350	3.5759	87	3.5884	80	3.6010	72	3.6138	63	630
360	3.5846	93	3.5964	85	3.6082	78	3.6201	70	648
370	3.5939	97	3.6049	91	3.6160	84	3.6271	78	666
380	3.6036	101	3.6140	95	3.6244	89	3.6349	83	684
390	3.6137	106	3.6235	100	3.6333	94	3.6432	88	702
400	3.6243	108	3.6335	103	3.6427	99	3.6520	94	720
410	3.6351	111	3.6438	107	3.6526	102	3.6614	96	738
420	3.6462	114	3.6545	109	3.6628	104	3.6710	101	756
430	3.6576	117	3.6654	113	3.6732	109	3.6811	105	774
440	3.6693	118	3.6767	114	3.6841	110	3.6916	106	792
450	3.6811	118	3.6881	115	3.6951	112	3.7022	108	810
460	3.6929	121	3.6996	118	3.7063	115	3.7130	112	828
470	3.7050	121	3.7114	118	3.7178	115	3.7242	112	846
480	3.7171	122	3.7232	120	3.7293	117	3.7354	114	864
490	3.7293	122	3.7352	118	3.7410	116	3.7468	114	882
500	3.7415	123	3.7470	121	3.7526	118	3.7582	115	900
510	3.7538	122	3.7591	120	3.7644	118	3.7697	115	918
520	3.7660	121	3.7711	119	3.7762	117	3.7812	115	936
530	3.7781	122	3.7830	119	3.7879	117	3.7927	116	954
540	3.7903	120	3.7949	119	3.7996	117	3.8043	114	972
550	3.8023	120	3.8068	118	3.8113	116	3.8157	115	990
560	3.8143	119	3.8186	117	3.8229	115	3.8272	114	1008
570	3.8262	117	3.8303	116	3.8344	115	3.8386	113	1026
580	3.8379	117	3.8419	115	3.8459	113	3.8499	112	1044
590	3.8496	115	3.8534	114	3.8572	113	3.8611	111	1062
600	3.8611	114	3.8648	112	3.8685	111	3.8722	109	1080
610	3.8725	112	3.8760	112	3.8796	110	3.8831	109	1098
620	3.8837	111	3.8872	109	3.8906	108	3.8940	107	1116
630	3.8948	110	3.8981	108	3.9014	107	3.9047	106	1134
640	3.9058	107	3.9089	107	3.9121	106	3.9153	104	1152
650	3.9165	107	3.9196	106	3.9227	104	3.9257	104	1170
660	3.9272	105	3.9302	103	3.9331	103	3.9361	102	1188
670	3.9377	102	3.9405	102	3.9434	101	3.9463	100	1206
680	3.9479	101	3.9507	100	3.9535	99	3.9563	98	1224
690	3.9580	101	3.9607	100	3.9634	99	3.9661	98	1242
700	3.9681		3.9707		3.9733		3.9759		1260

°K	1 atm		4 atm		7 atm		10 atm		°R
700	3.9681	97	3.9707	97	3.9733	96	3.9759	95	1260
710	3.9778	96	3.9804	95	3.9829	94	3.9854	94	1278
720	3.9874	95	3.9899	94	3.9923	93	3.9948	92	1296
730	3.9969	93	3.9993	92	4.0016	92	4.0040	91	1314
740	4.0062	90	4.0085	90	4.0108	89	4.0131	88	1332
750	4.0152	90	4.0175	89	4.0197	89	4.0219	88	1350
760	4.0242	88	4.0264	87	4.0286	86	4.0307	86	1368
770	4.0330	86	4.0351	85	4.0372	85	4.0393	84	1386
780	4.0416	85	4.0436	84	4.0457	83	4.0477	83	1404
790	4.0501	82	4.0520	83	4.0540	82	4.0560	81	1422
800	4.0583	393	4.0603	389	4.0622	387	4.0641	385	1440
850	4.0976	356	4.0992	355	4.1009	352	4.1026	350	1530
900	4.1332	324	4.1347	322	4.1361	321	4.1376	320	1620
950	4.1656	296	4.1669	295	4.1682	293	4.1696	291	1710
1000	4.1952	270	4.1964	269	4.1975	268	4.1987	267	1800
1050	4.2222	250	4.2233	248	4.2243	248	4.2254	246	1890
1100	4.2472	229	4.2481	228	4.2491	227	4.2500	226	1980
1150	4.2701	214	4.2709	213	4.2718	212	4.2726	211	2070
1200	4.2915	199	4.2922	199	4.2930	198	4.2937	198	2160
1250	4.3114	188	4.3121	187	4.3128	187	4.3135	186	2250
1300	4.3302	179	4.3308	179	4.3315	177	4.3321	177	2340
1350	4.3481	172	4.3487	171	4.3492	171	4.3498	171	2430
1400	4.3653	164	4.3658	163	4.3663	163	4.3669	162	2520
1450	4.3817	159	4.3821	160	4.3826	159	4.3831	159	2610
1500	4.3976	155	4.3981	155	4.3985	155	4.3990	154	2700
1550	4.4131	152	4.4136	151	4.4140	151	4.4144	151	2790
1600	4.4283	149	4.4287	149	4.4291	148	4.4295	148	2880
1650	4.4432	147	4.4436	146	4.4439	147	4.4443	146	2970
1700	4.4579	146	4.4582	146	4.4586	145	4.4589	145	3060
1750	4.4725	144	4.4728	144	4.4731	144	4.4734	144	3150
1800	4.4869	143	4.4872	143	4.4875	142	4.4878	142	3240
1850	4.5012	142	4.5015	141	4.5017	142	4.5020	141	3330
1900	4.5154	142	4.5156	142	4.5159	141	4.5161	142	3420
1950	4.5296	141	4.5298	141	4.5300	141	4.5303	140	3510
2000	4.5437	140	4.5439	140	4.5441	140	4.5443	140	3600
2050	4.5577	139	4.5579	138	4.5581	138	4.5583	138	3690
2100	4.5716	139	4.5717	139	4.5719	139	4.5721	139	3780
2150	4.5855	138	4.5856	139	4.5858	139	4.5860	139	3870
2200	4.5993	137	4.5995	137	4.5997	137	4.5999	136	3960
2250	4.6130	138	4.6132	137	4.6134	137	4.6135	137	4050
2300	4.6268	136	4.6269	137	4.6271	136	4.6272	137	4140
2350	4.6404	136	4.6406	136	4.6407	136	4.6409	135	4230
2400	4.6540	134	4.6542	134	4.6543	134	4.6544	134	4320
2450	4.6674	134	4.6676	134	4.6677	134	4.6678	134	4410
2500	4.6808	132	4.6810	132	4.6811	132	4.6812	132	4500
2550	4.6940	131	4.6942	130	4.6943	130	4.6944	130	4590
2600	4.7071	129	4.7072	129	4.7073	129	4.7074	129	4680
2650	4.7200	128	4.7201	128	4.7202	128	4.7203	128	4770
2700	4.7328	126	4.7329	126	4.7330	126	4.7331	126	4860
2750	4.7454	125	4.7455	125	4.7456	125	4.7457	125	4950
2800	4.7579	124	4.7580	124	4.7581	124	4.7582	124	5040
2850	4.7703	121	4.7704	121	4.7705	121	4.7706	120	5130
2900	4.7824	120	4.7825	120	4.7826	120	4.7826	120	5220
2950	4.7944	118	4.7945	118	4.7946	118	4.7946	118	5310
3000	4.8062		4.8063		4.8064		4.8064		5400

°K	10 atm		40 atm		70 atm		100 atm		°R
150	3.951	-104							270
160	3.847	- 67							288
170	3.780	- 46	5.7	-7					306
180	3.7343	- 342	5.03	-38					324
190	3.7001	- 262	4.65	-23	6.5	-8			342
200	3.6739	- 205	4.415	-162	5.66	-50	7.6	-11	360
210	3.6534	- 160	4.253	-116	5.16	-33	6.48	- 72	378
220	3.6374	- 128	4.137	- 88	4.831	-237	5.76	- 49	396
230	3.6246	- 100	4.049	- 67	4.594	-168	5.27	- 32	414
240	3.6146	- 75	3.982	- 52	4.426	-125	4.95	- 24	432
250	3.6071	- 55	3.9296	- 422	4.301	- 97	4.710	- 173	450
260	3.6016	- 39	3.8874	- 339	4.204	- 75	4.537	- 130	468
270	3.5977	- 22	3.8535	- 272	4.129	- 60	4.407	- 100	486
280	3.5955	- 8	3.8263	- 222	4.069	- 49	4.307	- 78	504
290	3.5947	4	3.8041	- 179	4.020	- 39	4.229	- 64	522
300	3.5951	17	3.7862	- 141	3.981	- 32	4.165	- 52	540
310	3.5968	28	3.7721	- 111	3.949	- 26	4.113	- 41	558
320	3.5996	39	3.7610	- 84	3.923	- 22	4.072	- 34	576
330	3.6035	47	3.7526	- 60	3.901	- 17	4.038	- 29	594
340	3.6082	56	3.7466	- 41	3.884	- 15	4.009	- 23	612
350	3.6138	63	3.7425	- 22	3.869	- 11	3.986	- 19	630
360	3.6201	70	3.7403	- 7	3.858	- 8	3.967	- 15	648
370	3.6271	78	3.7396	8	3.850	- 6	3.952	- 13	666
380	3.6349	83	3.7404	18	3.844	- 5	3.939	- 10	684
390	3.6432	88	3.7422	31	3.839	- 3	3.929	- 8	702
400	3.6520	94	3.7453	40	3.836	- 1	3.921	- 5	720
410	3.6614	96	3.7493	47	3.835		3.916	- 5	738
420	3.6710	101	3.7540	56	3.835	2	3.911	- 2	756
430	3.6811	105	3.7596	64	3.837	2	3.909	- 1	774
440	3.6916	106	3.7660	69	3.839	3	3.908		792
450	3.7022	108	3.7729	73	3.842	4	3.908		810
460	3.7130	112	3.7802	79	3.8458	47	3.908	2	828
470	3.7242	112	3.7881	81	3.8505	53	3.910	3	846
480	3.7354	114	3.7962	86	3.8558	57	3.913	3	864
490	3.7468	114	3.8048	86	3.8615	62	3.916	4	882
500	3.7582	115	3.8134	91	3.8677	67	3.920	4	900
510	3.7697	115	3.8225	93	3.8744	70	3.924	5	918
520	3.7812	115	3.8318	93	3.8814	72	3.929	5	936
530	3.7927	116	3.8411	96	3.8886	76	3.934	6	954
540	3.8043	114	3.8507	95	3.8962	76	3.940	6	972
550	3.8157	115	3.8602	97	3.9038	80	3.946	6	990
560	3.8272	114	3.8699	97	3.9118	80	3.952	8	1008
570	3.8386	113	3.8796	96	3.9198	82	3.960	7	1026
580	3.8499	112	3.8892	97	3.9280	82	3.967	6	1044
590	3.8611	111	3.8989	98	3.9362	83	3.973	7	1062
600	3.8722	109	3.9087	96	3.9445	83	3.980	6	1080
610	3.8831	109	3.9183	95	3.9528	83	3.986	8	1098
620	3.8940	107	3.9278	96	3.9611	83	3.994	7	1116
630	3.9047	106	3.9374	94	3.9694	84	4.001	8	1134
640	3.9153	104	3.9468	94	3.9778	83	4.009	7	1152
650	3.9257	104	3.9562	93	3.9861	83	4.016	8	1170
660	3.9361	102	3.9655	92	3.9944	82	4.024	7	1188
670	3.9463	100	3.9747	90	4.0026	81	4.031	7	1206
680	3.9563	98	3.9837	89	4.0107	80	4.038	7	1224
690	3.9661	98	3.9926	90	4.0187	79	4.045	7	1242
700	3.9759	95	4.0016	87	4.0266	78	4.052	7	1260
710	3.9854	94	4.0103	85	4.0344	78	4.059	7	1278
720	3.9948	92	4.0188	85	4.0422	78	4.066	7	1296
730	4.0040	91	4.0273	84	4.0500	76	4.073	7	1314
740	4.0131	88	4.0357	82	4.0576	75	4.080	6	1332
750	4.0219		4.0439		4.0651		4.086		1350

°K	10 atm		40 atm		70 atm		100 atm		°R
750	4.0219	88	4.0439	81	4.0651	75	4.086	8	1350
760	4.0307	86	4.0520	80	4.0726	74	4.094	7	1368
770	4.0393	84	4.0600	77	4.0800	72	4.101	6	1386
780	4.0477	83	4.0677	78	4.0872	71	4.107	7	1404
790	4.0560	81	4.0755	75	4.0943	74	4.114	6	1422
800	4.0641	385	4.0830	360	4.1017	337	4.120	31	1440
850	4.1026	350	4.1190	331	4.1354	310	4.151	29	1530
900	4.1376	320	4.1521	302	4.1664	286	4.180	27	1620
950	4.1696	291	4.1823	278	4.1950	263	4.207	25	1710
1000	4.1987	267	4.2101	254	4.2213	242	4.232	23	1800
1050	4.2254	246	4.2355	236	4.2455	226	4.255	22	1890
1100	4.2500	226	4.2591	217	4.2681	208	4.277	20	1980
1150	4.2726	211	4.2808	204	4.2889	196	4.297	19	2070
1200	4.2937	198	4.3012	190	4.3085	185	4.316	18	2160
1250	4.3135	186	4.3202	180	4.3270	172	4.334	16	2250
1300	4.3321	177	4.3382	173	4.3442	166	4.350	16	2340
1350	4.3498	171	4.3555	166	4.3608	163	4.366	16	2430
1400	4.3669	162	4.3721	158	4.3771	154	4.382	15	2520
1450	4.3831	159	4.3879	155	4.3925	151	4.397	15	2610
1500	4.3990	154	4.4034	150	4.4076	148	4.412	14	2700
1550	4.4144	151	4.4184	148	4.4224	145	4.426	14	2790
1600	4.4295	148	4.4332	145	4.4369	142	4.440	14	2880
1650	4.4443	146	4.4477	144	4.4511	141	4.454	14	2970
1700	4.4589	145	4.4621	143	4.4652	142	4.468	14	3060
1750	4.4734	144	4.4764	141	4.4794	139	4.482	14	3150
1800	4.4878	142	4.4905	142	4.4933	138	4.496	14	3240
1850	4.5020	141	4.5047	138	4.5071	138	4.510	13	3330
1900	4.5161	142	4.5185	140	4.5209	138	4.523	14	3420
1950	4.5303	140	4.5325	139	4.5347	138	4.537	14	3510
2000	4.5443	140	4.5464	138	4.5485	137	4.551	13	3600
2050	4.5583	138	4.5602	137	4.5622	136	4.564	14	3690
2100	4.5721	139	4.5739	139	4.5758	138	4.578	13	3780
2150	4.5860	139	4.5878	138	4.5896	136	4.591	14	3870
2200	4.5999	136	4.6016	135	4.6032	134	4.605	13	3960
2250	4.6135	137	4.6151	136	4.6166	135	4.618	13	4050
2300	4.6272	137	4.6287	136	4.6301	135	4.631	14	4140
2350	4.6409	135	4.6423	135	4.6436	134	4.645	13	4230
2400	4.6544	134	4.6558	133	4.6570	132	4.658	13	4320
2450	4.6678	134	4.6691	133	4.6702	133	4.671	14	4410
2500	4.6812	132	4.6824	131	4.6835	130	4.685	13	4500
2550	4.6944	130	4.6955	130	4.6965	130	4.698	12	4590
2600	4.7074	129	4.7085	128	4.7095	127	4.710	13	4680
2650	4.7203	128	4.7213	128	4.7222	127	4.723	13	4770
2700	4.7331	126	4.7341	125	4.7349	125	4.736	12	4860
2750	4.7457	125	4.7466	124	4.7474	124	4.748	13	4950
2800	4.7582	124	4.7590	124	4.7598	123	4.761	12	5040
2850	4.7706	120	4.7714	120	4.7721	120	4.773	12	5130
2900	4.7826	120	4.7834	120	4.7841	119	4.785	12	5220
2950	4.7946	118	4.7954	118	4.7960	117	4.797	11	5310
3000	4.8064		4.8072		4.8077		4.808		5400

Table 8-4. ENTHALPY OF OXYGEN* $(H-E_0^0)/RT_0$

°K	.01 atm		.1 atm		.4 atm		.7 atm		°R
100	1.2772	1282	1.2752	1285	1.2687	1294	1.2625	1300	180
110	1.4054	1281	1.4037	1284	1.3981	1292	1.3925	1298	198
120	1.5335	1283	1.5321	1284	1.5273	1290	1.5223	1296	216
130	1.6618	1282	1.6605	1283	1.6563	1288	1.6519	1293	234
140	1.7900	1282	1.7888	1284	1.7851	1287	1.7812	1293	252
150	1.9182	1281	1.9172	1282	1.9138	1286	1.9105	1288	270
160	2.0463	1282	2.0454	1283	2.0424	1285	2.0393	1289	288
170	2.1745	1282	2.1737	1283	2.1709	1286	2.1682	1288	306
180	2.3027	1282	2.3020	1282	2.2995	1284	2.2970	1286	324
190	2.4309	1283	2.4302	1284	2.4279	1286	2.4256	1288	342
200	2.5592	1282	2.5586	1282	2.5565	1284	2.5544	1285	360
210	2.6874	1283	2.6868	1284	2.6849	1285	2.6829	1287	378
220	2.8157	1284	2.8152	1284	2.8134	1286	2.8116	1287	396
230	2.9441	1284	2.9436	1285	2.9420	1285	2.9403	1287	414
240	3.0725	1287	3.0721	1286	3.0705	1288	3.0690	1288	432
250	3.2012	1286	3.2007	1286	3.1993	1287	3.1978	1288	450
260	3.3298	1288	3.3293	1289	3.3280	1289	3.3266	1290	468
270	3.4586	1289	3.4582	1289	3.4569	1290	3.4556	1291	486
280	3.5875	1291	3.5871	1291	3.5859	1292	3.5847	1293	504
290	3.7166	1293	3.7162	1293	3.7151	1294	3.7140	1294	522
300	3.8459	1295	3.8455	1296	3.8445	1296	3.8434	1297	540
310	3.9754	1297	3.9751	1297	3.9741	1298	3.9731	1298	558
320	4.1051	1300	4.1048	1300	4.1039	1300	4.1029	1302	576
330	4.2351	1303	4.2348	1303	4.2339	1304	4.2331	1304	594
340	4.3654	1306	4.3651	1306	4.3643	1307	4.3635	1307	612
350	4.4960	1309	4.4957	1310	4.4950	1309	4.4942	1310	630
360	4.6269	1313	4.6267	1313	4.6259	1314	4.6252	1314	648
370	4.7582	1316	4.7580	1316	4.7573	1316	4.7566	1317	666
380	4.8898	1320	4.8896	1320	4.8889	1321	4.8883	1321	684
390	5.0218	1324	5.0216	1324	5.0210	1324	5.0204	1324	702
400	5.1542	1327	5.1540	1327	5.1534	1328	5.1528	1328	720
410	5.2869	1332	5.2867	1332	5.2862	1332	5.2856	1333	738
420	5.4201	1336	5.4199	1336	5.4194	1336	5.4189	1337	756
430	5.5537	1340	5.5535	1340	5.5530	1341	5.5526	1340	774
440	5.6877	1345	5.6875	1346	5.6871	1345	5.6866	1346	792
450	5.8222	1349	5.8221	1349	5.8216	1350	5.8212	1349	810
460	5.9571	1353	5.9570	1353	5.9566	1353	5.9561	1354	828
470	6.0924	1358	6.0923	1358	6.0919	1358	6.0915	1359	846
480	6.2282	1362	6.2281	1362	6.2277	1362	6.2274	1362	864
490	6.3644	1367	6.3643	1367	6.3639	1368	6.3636	1368	882
500	6.5011	1371	6.5010	1371	6.5007	1371	6.5004	1371	900
510	6.6382	1376	6.6381	1376	6.6378	1376	6.6375	1376	918
520	6.7758	1380	6.7757	1380	6.7754	1380	6.7751	1381	936
530	6.9138	1385	6.9137	1385	6.9134	1386	6.9132	1385	954
540	7.0523	1389	7.0522	1389	7.0520	1389	7.0517	1390	972
550	7.1912	1394	7.1911	1394	7.1909	1394	7.1907	1394	990
560	7.3306	1398	7.3305	1398	7.3303	1398	7.3301	1398	1008
570	7.4704	1402	7.4703	1402	7.4701	1403	7.4699	1403	1026
580	7.6106	1407	7.6105	1407	7.6104	1407	7.6102	1407	1044
590	7.7513	1411	7.7512	1411	7.7511	1411	7.7509	1411	1062
600	7.8924	1415	7.8923	1416	7.8922	1415	7.8920	1416	1080
610	8.0339	1419	8.0339	1419	8.0337	1419	8.0336	1419	1098
620	8.1758	1423	8.1758	1423	8.1756	1423	8.1755	1423	1116
630	8.3181	1428	8.3181	1428	8.3179	1429	8.3178	1429	1134
640	8.4609	1431	8.4609	1431	8.4608	1431	8.4607	1431	1152
650	8.6040	1436	8.6040	1436	8.6039	1436	8.6038	1436	1170
660	8.7476	1439	8.7476	1439	8.7475	1439	8.7474	1439	1188
670	8.8915	1443	8.8915	1443	8.8914	1443	8.8913	1444	1206
680	9.0358	1447	9.0358	1447	9.0357	1447	9.0357	1447	1224
690	9.1805	1450	9.1805	1450	9.1804	1450	9.1804	1450	1242
700	9.3255		9.3255		9.3254		9.3254		1260

*The enthalpy function is divided here by a constant RT_0 where T_0 = 273.16°K(491.688°R).

°K	.01 atm		.1 atm		.4 atm		.7 atm		°R
700	9.3255	1454	9.3255	1454	9.3254	1455	9.3254	1454	1260
710	9.4709	1458	9.4709	1458	9.4709	1458	9.4708	1458	1278
720	9.6167	1461	9.6167	1461	9.6167	1461	9.6166	1462	1296
730	9.7628	1465	9.7628	1465	9.7628	1465	9.7628	1465	1314
740	9.9093	1468	9.9093	1468	9.9093	1468	9.9093	1468	1332
750	10.0561	1471	10.0561	1471	10.0561	1471	10.0561	1471	1350
760	10.2032	1475	10.2032	1475	10.2032	1475	10.2032	1475	1368
770	10.3507	1478	10.3507	1478	10.3507	1478	10.3507	1479	1386
780	10.4985	1481	10.4985	1481	10.4985	1481	10.4986	1481	1404
790	10.6466	1484	10.6466	1484	10.6466	1485	10.6467	1484	1422
800	10.7950	7464	10.7950	7464	10.7951	7464	10.7951	7465	1440
850	11.5414	7532	11.5414	7532	11.5415	7531	11.5416	7531	1530
900	12.2946	7595	12.2946	7595	12.2946	7597	12.2947	7597	1620
950	13.0541	7652	13.0541	7653	13.0543	7652	13.0544	7653	1710
1000	13.8193	7703	13.8194	7703	13.8195	7703	13.8197	7703	1800
1050	14.5896	7751	14.5897	7751	14.5898	7752	14.5900	7751	1890
1100	15.3647	7795	15.3648	7795	15.3650	7795	15.3651	7796	1980
1150	16.1442	7836	16.1443	7836	16.1445	7836	16.1447	7836	2070
1200	16.9278	7873	16.9279	7873	16.9281	7873	16.9283	7873	2160
1250	17.7151	7908	17.7152	7908	17.7154	7908	17.7156	7909	2250
1300	18.5059	7943	18.5060	7943	18.5062	7943	18.5065	7943	2340
1350	19.3002	7974	19.3003	7974	19.3005	7975	19.3008	7974	2430
1400	20.0976	8005	20.0977	8005	20.0980	8005	20.0982	8005	2520
1450	20.8981	8035	20.8982	8035	20.8985	8035	20.8987	8036	2610
1500	21.7016	8064	21.7017	8064	21.7020	8064	21.7023	8064	2700
1550	22.5080	8091	22.5081	8091	22.5084	8091	22.5087	8091	2790
1600	23.3171	8119	23.3172	8119	23.3175	8119	23.3178	8119	2880
1650	24.1290	8147	24.1291	8147	24.1294	8147	24.1297	8147	2970
1700	24.9437	8172	24.9438	8172	24.9441	8172	24.9444	8172	3060
1750	25.7609	8200	25.7610	8200	25.7613	8200	25.7616	8201	3150
1800	26.5809	8227	26.5810	8227	26.5813	8227	26.5817	8227	3240
1850	27.4036	8252	27.4037	8252	27.4040	8252	27.4044	8252	3330
1900	28.2288	8277	28.2289	8277	28.2292	8278	28.2296	8277	3420
1950	29.0565	8304	29.0566	8304	29.0570	8304	29.0573	8304	3510
2000	29.8869	8329	29.8870	8329	29.8874	8329	29.8877	8329	3600
2050	30.7198	8356	30.7199	8356	30.7203	8356	30.7206	8356	3690
2100	31.5554	8381	31.5555	8381	31.5559	8381	31.5562	8381	3780
2150	32.3935	8406	32.3936	8406	32.3940	8406	32.3943	8406	3870
2200	33.2341	8430	33.2342	8430	33.2346	8430	33.2349	8430	3960
2250	34.0771	8456	34.0772	8456	34.0776	8456	34.0779	8456	4050
2300	34.9227	8482	34.9228	8482	34.9232	8482	34.9235	8483	4140
2350	35.7709	8508	35.7710	8508	35.7714	8508	35.7718	8508	4230
2400	36.6217	8530	36.6218	8530	36.6222	8530	36.6226	8530	4320
2450	37.4747	8555	37.4748	8555	37.4752	8555	37.4756	8555	4410
2500	38.3302	8580	38.3303	8580	38.3307	8580	38.3311	8580	4500
2550	39.1882	8605	39.1883	8605	39.1887	8605	39.1891	8605	4590
2600	40.0487	8627	40.0488	8627	40.0492	8627	40.0496	8627	4680
2650	40.9114	8651	40.9115	8651	40.9119	8651	40.9123	8651	4770
2700	41.7765	8675	41.7766	8675	41.7770	8675	41.7774	8675	4860
2750	42.6440	8698	42.6441	8698	42.6445	8698	42.6449	8698	4950
2800	43.5138	8720	43.5139	8720	43.5143	8720	43.5147	8720	5040
2850	44.3858	8743	44.3859	8743	44.3863	8743	44.3867	8743	5130
2900	45.2601	8765	45.2602	8765	45.2606	8765	45.2610	8765	5220
2950	46.1366	8786	46.1367	8786	46.1371	8786	46.1375	8786	5310
3000	47.0152		47.0153		47.0157		47.0161		5400

*The enthalpy function is divided here by a constant RT_0 where T_0 = 273.16°K (491.688°R).

Table 8-4. ENTHALPY OF OXYGEN - Cont.* $(H-E_0^0)/RT_0$

°K	1 atm		4 atm		7 atm		10 atm		°R
100	1.254	132							180
110	1.3865	1310	1.315	148					198
120	1.5175	1302	1.4628	1393	1.394	156			216
130	1.6477	1298	1.6021	1360	1.5505	1449			234
140	1.7775	1295	1.7381	1340	1.6954	1400			252
150	1.9070	1292	1.8721	1329	1.8354	1373	1.7963	1427	270
160	2.0362	1292	2.0050	1324	1.9727	1356	1.9390	1395	288
170	2.1654	1290	2.1374	1315	2.1083	1344	2.0785	1375	306
180	2.2944	1289	2.2689	1311	2.2427	1335	2.2160	1360	324
190	2.4233	1290	2.4000	1308	2.3762	1329	2.3520	1351	342
200	2.5523	1287	2.5308	1305	2.5091	1322	2.4871	1340	360
210	2.6810	1288	2.6613	1302	2.6413	1319	2.6211	1334	378
220	2.8098	1288	2.7915	1302	2.7732	1315	2.7545	1329	396
230	2.9386	1288	2.9217	1300	2.9047	1312	2.8874	1325	414
240	3.0674	1289	3.0517	1300	3.0359	1310	3.0199	1323	432
250	3.1963	1290	3.1817	1299	3.1669	1310	3.1522	1319	450
260	3.3253	1291	3.3116	1299	3.2979	1308	3.2841	1318	468
270	3.4544	1291	3.4415	1301	3.4287	1309	3.4159	1315	486
280	3.5835	1294	3.5716	1301	3.5596	1308	3.5474	1317	504
290	3.7129	1295	3.7017	1302	3.6904	1309	3.6791	1317	522
300	3.8424	1297	3.8319	1303	3.8213	1309	3.8108	1316	540
310	3.9721	1299	3.9622	1305	3.9522	1312	3.9424	1316	558
320	4.1020	1302	4.0927	1307	4.0834	1313	4.0740	1319	576
330	4.2322	1304	4.2234	1310	4.2147	1314	4.2059	1320	594
340	4.3626	1308	4.3544	1312	4.3461	1317	4.3379	1322	612
350	4.4934	1311	4.4856	1315	4.4778	1320	4.4701	1323	630
360	4.6245	1314	4.6171	1319	4.6098	1322	4.6024	1327	648
370	4.7559	1317	4.7490	1321	4.7420	1326	4.7351	1329	666
380	4.8876	1321	4.8811	1325	4.8746	1328	4.8680	1332	684
390	5.0197	1326	5.0136	1328	5.0074	1332	5.0012	1337	702
400	5.1523	1328	5.1464	1332	5.1406	1335	5.1349	1338	720
410	5.2851	1333	5.2796	1336	5.2741	1339	5.2687	1342	738
420	5.4184	1337	5.4132	1340	5.4080	1343	5.4029	1346	756
430	5.5521	1341	5.5472	1344	5.5423	1346	5.5375	1349	774
440	5.6862	1346	5.6816	1348	5.6769	1352	5.6724	1354	792
450	5.8208	1349	5.8164	1352	5.8121	1354	5.8078	1357	810
460	5.9557	1354	5.9516	1357	5.9475	1359	5.9435	1361	828
470	6.0911	1359	6.0873	1361	6.0834	1363	6.0796	1366	846
480	6.2270	1363	6.2234	1365	6.2197	1367	6.2162	1369	864
490	6.3633	1367	6.3599	1369	6.3564	1372	6.3531	1374	882
500	6.5000	1372	6.4968	1374	6.4936	1376	6.4905	1378	900
510	6.6372	1377	6.6342	1378	6.6312	1380	6.6283	1382	918
520	6.7749	1380	6.7720	1383	6.7692	1385	6.7665	1386	936
530	6.9129	1386	6.9103	1387	6.9077	1389	6.9051	1391	954
540	7.0515	1389	7.0490	1391	7.0466	1393	7.0442	1395	972
550	7.1904	1395	7.1881	1397	7.1859	1397	7.1837	1399	990
560	7.3299	1398	7.3278	1400	7.3256	1402	7.3236	1403	1008
570	7.4697	1403	7.4678	1404	7.4658	1405	7.4639	1407	1026
580	7.6100	1407	7.6082	1409	7.6063	1411	7.6046	1412	1044
590	7.7507	1412	7.7491	1412	7.7474	1414	7.7458	1415	1062
600	7.8919	1415	7.8903	1417	7.8888	1418	7.8873	1420	1080
610	8.0334	1420	8.0320	1421	8.0306	1422	8.0293	1423	1098
620	8.1754	1423	8.1741	1425	8.1728	1426	8.1716	1427	1116
630	8.3177	1429	8.3166	1429	8.3154	1431	8.3143	1432	1134
640	8.4606	1431	8.4595	1433	8.4585	1433	8.4575	1435	1152
650	8.6037	1436	8.6028	1437	8.6018	1439	8.6010	1440	1170
660	8.7473	1440	8.7465	1441	8.7457	1441	8.7450	1442	1188
670	8.8913	1443	8.8906	1444	8.8898	1446	8.8892	1447	1206
680	9.0356	1447	9.0350	1448	9.0344	1449	9.0339	1450	1224
690	9.1803	1451	9.1798	1452	9.1793	1452	9.1789	1453	1242
700	9.3254		9.3250		9.3245		9.3242		1260

*The enthalpy function is divided here by a constant RT_0 where T_0 = 273.16°K (491.688°R).

°K	1 atm		4 atm		7 atm		10 atm		°R
700	9.3254	1454	9.3250	1455	9.3245	1457	9.3242	1457	1260
710	9.4708	1458	9.4705	1459	9.4702	1460	9.4699	1461	1278
720	9.6166	1462	9.6164	1462	9.6162	1463	9.6160	1464	1296
730	9.7628	1465	9.7626	1466	9.7625	1467	9.7624	1468	1314
740	9.9093	1468	9.9092	1469	9.9092	1470	9.9092	1471	1332
750	10.0561	1471	10.0561	1473	10.0562	1473	10.0563	1474	1350
760	10.2032	1476	10.2034	1476	10.2035	1477	10.2037	1477	1368
770	10.3508	1478	10.3510	1479	10.3512	1479	10.3514	1481	1386
780	10.4986	1481	10.4989	1482	10.4991	1483	10.4995	1483	1404
790	10.6467	1484	10.6471	1485	10.6474	1486	10.6478	1487	1422
800	10.7951	7465	10.7956	7468	10.7960	7471	10.7965	7475	1440
850	11.5416	7533	11.5424	7536	11.5431	7539	11.5440	7541	1530
900	12.2949	7596	12.2960	7598	12.2970	7601	12.2981	7603	1620
950	13.0545	7653	13.0558	7655	13.0571	7657	13.0584	7659	1710
1000	13.8198	7704	13.8213	7706	13.8228	7708	13.8243	7710	1800
1050	14.5902	7751	14.5919	7753	14.5936	7755	14.5953	7757	1890
1100	15.3653	7796	15.3672	7797	15.3691	7799	15.3710	7801	1980
1150	16.1449	7836	16.1469	7838	16.1490	7839	16.1511	7840	2070
1200	16.9285	7874	16.9307	7875	16.9329	7876	16.9351	7878	2160
1250	17.7159	7908	17.7182	7910	17.7205	7911	17.7229	7912	2250
1300	18.5067	7944	18.5092	7944	18.5116	7946	18.5141	7947	2340
1350	19.3011	7974	19.3036	7976	19.3062	7976	19.3088	7977	2430
1400	20.0985	8005	20.1012	8006	20.1038	8007	20.1065	8008	2520
1450	20.8990	8035	20.9018	8036	20.9045	8037	20.9073	8038	2610
1500	21.7025	8065	21.7054	8065	21.7082	8066	21.7111	8067	2700
1550	22.5090	8091	22.5119	8092	22.5148	8093	22.5178	8093	2790
1600	23.3181	8119	23.3211	8120	23.3241	8121	23.3271	8121	2880
1650	24.1300	8147	24.1331	8148	24.1362	8148	24.1392	8149	2970
1700	24.9447	8173	24.9479	8173	24.9510	8173	24.9541	8174	3060
1750	25.7620	8200	25.7652	8200	25.7683	8202	25.7715	8202	3150
1800	26.5820	8227	26.5852	8228	26.5885	8228	26.5917	8229	3240
1850	27.4047	8252	27.4080	8253	27.4113	8253	27.4146	8253	3330
1900	28.2299	8277	28.2333	8277	28.2366	8278	28.2399	8279	3420
1950	29.0576	8304	29.0610	8305	29.0644	8305	29.0678	8305	3510
2000	29.8880	8330	29.8915	8329	29.8949	8330	29.8983	8331	3600
2050	30.7210	8356	30.7244	8357	30.7279	8357	30.7314	8357	3690
2100	31.5566	8381	31.5601	8381	31.5636	8381	31.5671	8382	3780
2150	32.3947	8406	32.3982	8407	32.4017	8407	32.4053	8407	3870
2200	33.2353	8430	33.2389	8430	33.2424	8431	33.2460	8431	3960
2250	34.0783	8456	34.0819	8456	34.0855	8457	34.0891	8457	4050
2300	34.9239	8482	34.9275	8483	34.9312	8482	34.9348	8483	4140
2350	35.7721	8508	35.7758	8508	35.7794	8509	35.7831	8509	4230
2400	36.6229	8530	36.6266	8530	36.6303	8530	36.6340	8530	4320
2450	37.4759	8555	37.4796	8556	37.4833	8556	37.4870	8556	4410
2500	38.3314	8580	38.3352	8580	38.3389	8580	38.3426	8581	4500
2550	39.1894	8606	39.1932	8605	39.1969	8606	39.2007	8606	4590
2600	40.0500	8627	40.0537	8627	40.0575	8627	40.0613	8627	4680
2650	40.9127	8651	40.9164	8652	40.9202	8652	40.9240	8652	4770
2700	41.7778	8675	41.7816	8675	41.7854	8675	41.7892	8675	4860
2750	42.6453	8698	42.6491	8698	42.6529	8698	42.6567	8699	4950
2800	43.5151	8720	43.5189	8720	43.5227	8721	43.5266	8720	5040
2850	44.3871	8743	44.3909	8744	44.3948	8743	44.3986	8744	5130
2900	45.2614	8765	45.2653	8765	45.2691	8766	45.2730	8765	5220
2950	46.1379	8786	46.1418	8786	46.1457	8786	46.1495	8787	5310
3000	47.0165		47.0204		47.0243		47.0282		5400

*The enthalpy function is divided here by a constant RT_0 where T_0 = 273.16°K (491.688°R).

Table 8-4. ENTHALPY OF OXYGEN - Cont.* $(H-E_0^o)/RT_0$

°K	10 atm		40 atm		70 atm		100 atm		°R
150	1.7963	1427							270
160	1.9390	1395	1.48	23					288
170	2.0785	1375	1.711	194	1.16	33			306
180	2.2160	1360	1.905	177	1.490	261			324
190	2.3520	1351	2.082	166	1.751	221			342
200	2.4871	1340	2.248	158	1.972	198	1.659	257	360
210	2.6211	1334	2.406	153	2.170	182	1.916	222	378
220	2.7545	1329	2.559	150	2.352	172	2.138	202	396
230	2.8874	1325	2.709	142	2.524	165	2.340	186	414
240	3.0199	1323	2.851	150	2.689	160	2.526	177	432
250	3.1522	1319	3.001	143	2.849	156	2.703	169	450
260	3.2841	1318	3.144	142	3.005	152	2.872	163	468
270	3.4159	1315	3.286	140	3.157	150	3.035	160	486
280	3.5474	1317	3.426	140	3.307	148	3.195	156	504
290	3.6791	1317	3.566	139	3.455	147	3.351	154	522
300	3.8108	1316	3.705	138	3.602	145	3.505	151	540
310	3.9424	1316	3.843	138	3.747	144	3.656	150	558
320	4.0740	1319	3.981	138	3.891	143	3.806	148	576
330	4.2059	1320	4.119	137	4.034	142	3.954	147	594
340	4.3379	1322	4.256	137	4.176	142	4.101	147	612
350	4.4701	1323	4.393	137	4.318	142	4.248	146	630
360	4.6024	1327	4.530	137	4.460	141	4.394	145	648
370	4.7351	1329	4.667	137	4.601	141	4.539	144	666
380	4.8680	1332	4.804	137	4.742	140	4.683	144	684
390	5.0012	1337	4.941	137	4.882	141	4.827	144	702
400	5.1349	1338	5.078	137	5.023	140	4.971	143	720
410	5.2687	1342	5.215	137	5.163	141	5.114	143	738
420	5.4029	1346	5.352	138	5.304	140	5.257	143	756
430	5.5375	1349	5.490	138	5.444	141	5.400	143	774
440	5.6724	1354	5.628	138	5.585	140	5.543	144	792
450	5.8078	1357	5.766	138	5.725	141	5.687	143	810
460	5.9435	1361	5.904	138	5.866	141	5.830	143	828
470	6.0796	1366	6.042	139	6.007	141	5.973	143	846
480	6.2162	1369	6.181	139	6.148	141	6.116	143	864
490	6.3531	1374	6.320	140	6.289	142	6.259	144	882
500	6.4905	1378	6.460	140	6.431	141	6.403	143	900
510	6.6283	1382	6.600	140	6.572	142	6.546	144	918
520	6.7665	1386	6.740	140	6.714	142	6.690	144	936
530	6.9051	1391	6.880	141	6.856	143	6.834	144	954
540	7.0442	1395	7.021	141	6.999	143	6.978	144	972
550	7.1837	1399	7.162	141	7.142	143	7.122	145	990
560	7.3236	1403	7.303	142	7.285	143	7.267	145	1008
570	7.4639	1407	7.445	143	7.428	144	7.412	145	1026
580	7.6046	1412	7.588	142	7.572	144	7.557	145	1044
590	7.7458	1415	7.730	143	7.716	144	7.702	146	1062
600	7.8873	1420	7.873	143	7.860	144	7.848	146	1080
610	8.0293	1423	8.016	144	8.004	145	7.994	146	1098
620	8.1716	1427	8.160	144	8.149	145	8.140	146	1116
630	8.3143	1432	8.304	144	8.294	146	8.286	147	1134
640	8.4575	1435	8.448	145	8.440	146	8.433	146	1152
650	8.6010	1440	8.593	145	8.586	146	8.579	148	1170
660	8.7450	1442	8.738	145	8.732	146	8.727	147	1188
670	8.8892	1447	8.883	146	8.878	147	8.874	148	1206
680	9.0339	1450	9.029	146	9.025	147	9.022	147	1224
690	9.1789	1453	9.175	146	9.172	147	9.169	149	1242
700	9.3242		9.321		9.319		9.318		1260

*The enthalpy function is divided here by a constant RT_0 where T_0 = 273.16°K (491.688°R).

Table 8-4. ENTHALPY OF OXYGEN - Cont.* $(H-E_0^o)/RT_0$

°K	10 atm		40 atm		70 atm		100 atm		°R
700	9.3242	1457	9.321	147	9.319	148	9.318	148	1260
710	9.4699	1461	9.468	147	9.467	148	9.466	149	1278
720	9.6160	1464	9.615	147	9.615	148	9.615	149	1296
730	9.7624	1468	9.762	148	9.763	148	9.764	149	1314
740	9.9092	1471	9.910	148	9.911	149	9.913	150	1332
750	10.0563	1474	10.058	148	10.060	149	10.063	149	1350
760	10.2037	1477	10.206	148	10.209	149	10.212	150	1368
770	10.3514	1481	10.354	149	10.358	149	10.362	151	1386
780	10.4995	1483	10.503	149	10.507	150	10.513	150	1404
790	10.6478	1487	10.652	150	10.657	150	10.663	151	1422
800	10.7965	15016	10.802	1507	10.807	1514	10.814	1519	1440
900	12.2981	15262	12.309	1531	12.321	1536	12.333	1541	1620
1000	13.8243	15467	13.840	1551	13.857	1554	13.874	1557	1800
1100	15.3710	15641	15.391	1567	15.411	1570	15.431	1573	1980
1200	16.9351	15790	16.958	1581	16.981	1584	17.004	1587	2160
1300	18.5141	15924	18.539	1595	18.565	1596	18.591	1598	2340
1400	20.1065	16046	20.134	1606	20.161	1608	20.189	1610	2520
1500	21.7111	16160	21.740	1618	21.769	1619	21.799	1620	2700
1600	23.3271	16270	23.358	1628	23.388	1630	23.419	1631	2880
1700	24.9541	16376	24.986	1639	25.018	1640	25.050	1641	3060
1800	26.5917	16482	26.625	1649	26.658	1650	26.691	1651	3240
1900	28.2399	16584	28.274	1659	28.308	1660	28.342	1661	3420
2000	29.8983	16688	29.933	1669	29.968	1670	30.003	1671	3600
2100	31.5671	16789	31.602	1680	31.638	1680	31.674	1681	3780
2200	33.2460	16888	33.282	1689	33.318	1690	33.355	1690	3960
2300	34.9348	16992	34.971	1700	35.008	1700	35.045	1700	4140
2400	36.6340	17086	36.671	1709	36.708	1710	36.745	1710	4320
2500	38.3426	17187	38.380	1719	38.418	1719	38.455	1720	4500
2600	40.0613	17279	40.099	1728	40.137	1729	40.175	1729	4680
2700	41.7892	17374	41.827	1738	41.866	1738	41.904	1739	4860
2800	43.5266	17464	43.565	1747	43.604	1747	43.643	1747	5040
2900	45.2730	17552	45.312	1755	45.351	1756	45.390	1756	5220
3000	47.0282		47.067		47.107		47.146		5400

*The enthalpy function is divided here by a constant RT_0 where T_0 = 273.16°K (491.688°R).

°K	.01 atm		.1 atm		.4 atm		.7 atm		°R
100	25.4396	3337	23.1336	3345	21.7357	3372	21.1638	3404	180
110	25.7733	3049	23.4681	3054	22.0729	3072	21.5042	3092	198
120	26.0782	2802	23.7735	2806	22.3801	2821	21.8134	2833	216
130	26.3584	2595	24.0541	2598	22.6622	2607	22.0967	2618	234
140	26.6179	2417	24.3139	2419	22.9229	2426	22.3585	2433	252
150	26.8596	2259	24.5558	2261	23.1655	2267	22.6018	2274	270
160	27.0855	2123	24.7819	2124	23.3922	2129	22.8292	2134	288
170	27.2978	2002	24.9943	2003	23.6051	2007	23.0426	2010	306
180	27.4980	1894	25.1946	1896	23.8058	1898	23.2436	1902	324
190	27.6874	1796	25.3842	1796	23.9956	1799	23.4338	1802	342
200	27.8670	1710	25.5638	1711	24.1755	1713	23.6140	1715	360
210	28.0380	1631	25.7349	1631	24.3468	1633	23.7855	1634	378
220	28.2011	1559	25.8980	1559	24.5101	1561	23.9489	1563	396
230	28.3570	1493	26.0539	1494	24.6662	1495	24.1052	1496	414
240	28.5063	1433	26.2033	1433	24.8157	1434	24.2548	1435	432
250	28.6496	1378	26.3466	1378	24.9591	1380	24.3983	1381	450
260	28.7874	1328	26.4844	1329	25.0971	1329	24.5364	1330	468
270	28.9202	1280	26.6173	1280	25.2300	1281	24.6694	1282	486
280	29.0482	1238	26.7453	1238	25.3581	1239	24.7976	1239	504
290	29.1720	1197	26.8691	1198	25.4820	1198	24.9215	1199	522
300	29.2917	1160	26.9889	1160	25.6018	1160	25.0414	1161	540
310	29.4077	1125	27.1049	1125	25.7178	1126	25.1575	1126	558
320	29.5202	1093	27.2174	1093	25.8304	1094	25.2701	1094	576
330	29.6295	1062	27.3267	1062	25.9398	1062	25.3795	1063	594
340	29.7357	1035	27.4329	1035	26.0460	1036	25.4858	1036	612
350	29.8392	1007	27.5364	1007	26.1496	1007	25.5894	1008	630
360	29.9399	982	27.6371	982	26.2503	983	25.6902	983	648
370	30.0381	959	27.7353	959	26.3486	959	25.7885	959	666
380	30.1340	936	27.8312	937	26.4445	936	25.8844	937	684
390	30.2276	916	27.9249	916	26.5381	917	25.9781	917	702
400	30.3192	896	28.0165	896	26.6298	896	26.0698	896	720
410	30.4088	876	28.1061	876	26.7194	876	26.1594	877	738
420	30.4964	859	28.1937	859	26.8070	859	26.2471	859	756
430	30.5823	841	28.2796	841	26.8929	842	26.3330	841	774
440	30.6664	826	28.3637	826	26.9771	826	26.4171	827	792
450	30.7490	810	28.4463	810	27.0597	810	26.4998	810	810
460	30.8300	795	28.5273	795	27.1407	795	26.5808	796	828
470	30.9095	780	28.6068	780	27.2202	780	26.6604	780	846
480	30.9875	768	28.6848	769	27.2982	769	26.7384	768	864
490	31.0643	754	28.7617	754	27.3751	754	26.8152	754	882
500	31.1397	742	28.8371	742	27.4505	742	26.8906	743	900
510	31.2139	730	28.9113	730	27.5247	730	26.9649	730	918
520	31.2869	718	28.9843	718	27.5977	718	27.0379	718	936
530	31.3587	707	29.0561	707	27.6695	707	27.1097	707	954
540	31.4294	696	29.1268	696	27.7402	696	27.1804	697	972
550	31.4990	686	29.1964	686	27.8098	687	27.2501	686	990
560	31.5676	676	29.2650	676	27.8785	676	27.3187	676	1008
570	31.6352	666	29.3326	666	27.9461	666	27.3863	666	1026
580	31.7018	657	29.3992	657	28.0127	657	27.4529	657	1044
590	31.7675	648	29.4649	648	28.0784	648	27.5186	648	1062
600	31.8323	639	29.5297	639	28.1432	639	27.5834	639	1080
610	31.8962	630	29.5936	630	28.2071	630	27.6473	631	1098
620	31.9592	622	29.6566	622	28.2701	622	27.7104	622	1116
630	32.0214	614	29.7188	614	28.3323	614	27.7726	614	1134
640	32.0828	607	29.7802	607	28.3937	607	27.8340	607	1152
650	32.1435	598	29.8409	598	28.4544	598	27.8947	598	1170
660	32.2033	591	29.9007	591	28.5142	591	27.9545	591	1188
670	32.2624	584	29.9598	584	28.5733	584	28.0136	584	1206
680	32.3208	577	30.0182	577	28.6317	577	28.0720	577	1224
690	32.3785	570	30.0759	570	28.6894	571	28.1297	570	1242
700	32.4355		30.1329		28.7465		28.1867		1260

°K	.01 atm		.1 atm		.4 atm		.7 atm		°R
700	32.4355	564	30.1329	564	28.7465	564	28.1867	565	1260
710	32.4919	557	30.1893	557	28.8029	557	28.2432	557	1278
720	32.5476	550	30.2450	550	28.8586	550	28.2989	550	1296
730	32.6026	545	30.3000	545	28.9136	545	28.3539	545	1314
740	32.6571	538	30.3545	538	28.9681	538	28.4084	538	1332
750	32.7109	532	30.4083	532	29.0219	532	28.4622	532	1350
760	32.7641	527	30.4615	527	29.0751	527	28.5154	527	1368
770	32.8168	521	30.5142	521	29.1278	521	28.5681	521	1386
780	32.8689	515	30.5663	515	29.1799	515	28.6202	515	1404
790	32.9204	510	30.6178	510	29.2314	510	28.6717	510	1422
800	32.9714	2472	30.6688	2472	29.2824	2472	28.7227	2472	1440
850	33.2186	2352	30.9160	2352	29.5296	2352	28.9699	2353	1530
900	33.4538	2243	31.1512	2243	29.7648	2243	29.2052	2243	1620
950	33.6781	2145	31.3755	2145	29.9891	2145	29.4295	2145	1710
1000	33.8926	2053	31.5900	2053	30.2036	2053	29.6440	2053	1800
1050	34.0979	1970	31.7953	1970	30.4089	1971	29.8493	1970	1890
1100	34.2949	1893	31.9923	1893	30.6060	1893	30.0463	1893	1980
1150	34.4842	1821	32.1816	1821	30.7953	1821	30.2356	1821	2070
1200	34.6663	1756	32.3637	1756	30.9774	1756	30.4177	1756	2160
1250	34.8419	1695	32.5393	1695	31.1530	1695	30.5933	1695	2250
1300	35.0114	1638	32.7088	1638	31.3225	1638	30.7628	1639	2340
1350	35.1752	1584	32.8726	1584	31.4863	1584	30.9267	1584	2430
1400	35.3336	1535	33.0310	1535	31.6447	1535	31.0851	1535	2520
1450	35.4871	1488	33.1845	1488	31.7982	1488	31.2386	1488	2610
1500	35.6359	1444	33.3333	1444	31.9470	1444	31.3874	1444	2700
1550	35.7803	1404	33.4777	1404	32.0914	1404	31.5318	1404	2790
1600	35.9207	1364	33.6181	1364	32.2318	1364	31.6722	1364	2880
1650	36.0571	1329	33.7545	1329	32.3682	1329	31.8086	1329	2970
1700	36.1900	1294	33.8874	1294	32.5011	1294	31.9415	1294	3060
1750	36.3194	1262	34.0168	1262	32.6305	1262	32.0709	1262	3150
1800	36.4456	1232	34.1430	1232	32.7567	1232	32.1971	1232	3240
1850	36.5688	1202	34.2662	1202	32.8799	1202	32.3203	1202	3330
1900	36.6890	1175	34.3864	1175	33.0001	1175	32.4405	1175	3420
1950	36.8065	1148	34.5039	1148	33.1176	1148	32.5580	1148	3510
2000	36.9213	1124	34.6187	1124	33.2324	1124	32.6728	1124	3600
2050	37.0337	1100	34.7311	1100	33.3448	1100	32.7852	1100	3690
2100	37.1437	1077	34.8411	1077	33.4548	1077	32.8952	1077	3780
2150	37.2514	1056	34.9488	1056	33.5625	1056	33.0029	1056	3870
2200	37.3570	1035	35.0544	1035	33.6681	1035	33.1085	1035	3960
2250	37.4605	1015	35.1579	1015	33.7716	1015	33.2120	1015	4050
2300	37.5620	997	35.2594	997	33.8731	997	33.3135	997	4140
2350	37.6617	978	35.3591	978	33.9728	978	33.4132	978	4230
2400	37.7595	961	35.4569	961	34.0706	961	33.5110	961	4320
2450	37.8556	945	35.5530	945	34.1667	945	33.6071	945	4410
2500	37.9501	928	35.6475	928	34.2612	928	33.7016	928	4500
2550	38.0429	912	35.7403	912	34.3540	912	33.7944	912	4590
2600	38.1341	898	35.8315	898	34.4452	898	33.8856	898	4680
2650	38.2239	884	35.9213	884	34.5350	884	33.9754	884	4770
2700	38.3123	869	36.0097	869	34.6234	869	34.0638	869	4860
2750	38.3992	856	36.0966	856	34.7103	856	34.1507	856	4950
2800	38.4848	844	36.1822	844	34.7959	844	34.2363	844	5040
2850	38.5692	830	36.2666	830	34.8803	830	34.3207	830	5130
2900	38.6522	819	36.3496	819	34.9633	819	34.4037	819	5220
2950	38.7341	807	36.4315	807	35.0452	807	34.4856	807	5310
3000	38.8148		36.5122		35.1259		34.5663		5400

°K	1 atm		4 atm		7 atm		10 atm		°R
100	20.794	344							180
110	21.1381	3113							198
120	21.4494	2848	19.981	304					216
130	21.7342	2627	20.2851	2751	19.651	294			234
140	21.9969	2442	20.5602	2529	19.9448	2639			252
150	22.2411	2279	20.8131	2345	20.2087	2421	19.8036	2514	270
160	22.4690	2138	21.0476	2188	20.4508	2246	20.0550	2310	288
170	22.6828	2016	21.2664	2055	20.6754	2099	20.2860	2148	306
180	22.8844	1904	21.4719	1937	20.8853	1973	20.5008	2010	324
190	23.0748	1805	21.6656	1832	21.0826	1860	20.7018	1890	342
200	23.2553	1717	21.8488	1739	21.2686	1763	20.8908	1788	360
210	23.4270	1636	22.0227	1655	21.4449	1674	21.0696	1695	378
220	23.5906	1564	22.1882	1580	21.6123	1597	21.2391	1614	396
230	23.7470	1498	22.3462	1512	21.7720	1525	21.4005	1540	414
240	23.8968	1437	22.4974	1449	21.9245	1461	21.5545	1473	432
250	24.0405	1381	22.6423	1391	22.0706	1403	21.7018	1415	450
260	24.1786	1331	22.7814	1340	22.2109	1349	21.8433	1359	468
270	24.3117	1283	22.9154	1292	22.3458	1300	21.9792	1306	486
280	24.4400	1240	23.0446	1247	22.4758	1254	22.1098	1263	504
290	24.5640	1199	23.1693	1206	22.6012	1212	22.2361	1218	522
300	24.6839	1162	23.2899	1167	22.7224	1173	22.3579	1179	540
310	24.8001	1127	23.4066	1132	22.8397	1138	22.4758	1142	558
320	24.9128	1094	23.5198	1099	22.9535	1104	22.5900	1108	576
330	25.0222	1064	23.6297	1067	23.0639	1071	22.7008	1076	594
340	25.1286	1036	23.7364	1040	23.1710	1044	22.8084	1048	612
350	25.2322	1008	23.8404	1012	23.2754	1015	22.9132	1019	630
360	25.3330	983	23.9416	986	23.3769	989	23.0151	992	648
370	25.4313	960	24.0402	963	23.4758	966	23.1143	969	666
380	25.5273	937	24.1365	939	23.5724	942	23.2112	944	684
390	25.6210	917	24.2304	920	23.6666	921	23.3056	924	702
400	25.7127	896	24.3224	898	23.7587	902	23.3980	904	720
410	25.8023	877	24.4122	879	23.8489	880	23.4884	882	738
420	25.8900	860	24.5001	862	23.9369	864	23.5766	866	756
430	25.9760	841	24.5863	843	24.0233	845	23.6632	847	774
440	26.0601	827	24.6706	828	24.1078	830	23.7479	831	792
450	26.1428	810	24.7534	812	24.1908	813	23.8310	815	810
460	26.2238	796	24.8346	797	24.2721	798	23.9125	800	828
470	26.3034	780	24.9143	782	24.3519	783	23.9925	784	846
480	26.3814	769	24.9925	769	24.4302	771	24.0709	772	864
490	26.4583	754	25.0694	756	24.5073	757	24.1481	758	882
500	26.5337	742	25.1450	743	24.5830	744	24.2239	746	900
510	26.6079	731	25.2193	732	24.6574	733	24.2985	733	918
520	26.6810	718	25.2925	719	24.7307	720	24.3718	721	936
530	26.7528	707	25.3644	708	24.8027	709	24.4439	710	954
540	26.8235	697	25.4352	697	24.8736	698	24.5149	699	972
550	26.8932	686	25.5049	687	24.9434	688	24.5848	689	990
560	26.9618	676	25.5736	677	25.0122	678	24.6537	678	1008
570	27.0294	666	25.6413	667	25.0800	667	24.7215	668	1026
580	27.0960	658	25.7080	658	25.1467	659	24.7883	660	1044
590	27.1618	648	25.7738	649	25.2126	649	24.8543	650	1062
600	27.2266	639	25.8387	640	25.2775	641	24.9193	641	1080
610	27.2905	630	25.9027	631	25.3416	631	24.9834	632	1098
620	27.3535	622	25.9658	622	25.4047	623	25.0466	623	1116
630	27.4157	615	26.0280	615	25.4670	616	25.1089	616	1134
640	27.4772	607	26.0895	608	25.5286	608	25.1705	609	1152
650	27.5379	598	26.1503	598	25.5894	599	25.2314	599	1170
660	27.5977	591	26.2101	592	25.6493	592	25.2913	593	1188
670	27.6568	584	26.2693	584	25.7085	585	25.3506	585	1206
680	27.7152	577	26.3277	578	25.7670	578	25.4091	578	1224
690	27.7729	570	26.3855	570	25.8248	571	26.4669	572	1242
700	27.8299		26.4425		25.8819		25.5241		1260

°K	1 atm		4 atm		7 atm		10 atm		°R
700	27.8299	564	26.4425	565	25.8819	564	25.5241	565	1260
710	27.8863	558	26.4990	557	25.9383	558	25.5806	558	1278
720	27.9421	550	26.5547	551	25.9941	551	25.6364	551	1296
730	27.9971	545	26.6098	545	26.0492	546	25.6915	546	1314
740	28.0516	538	26.6643	539	26.1038	538	25.7461	539	1332
750	28.1054	532	26.7182	532	26.1576	533	25.8000	533	1350
760	28.1586	527	26.7714	527	26.2109	528	25.8533	528	1368
770	28.2113	521	26.8241	522	26.2637	521	25.9061	522	1386
780	28.2634	515	26.8763	515	26.3158	516	25.9583	516	1404
790	28.3149	510	26.9278	510	26.3674	511	26.0099	511	1422
800	28.3659	2473	26.9788	2474	26.4185	2474	26.0610	2475	1440
850	28.6132	2352	27.2262	2353	26.6659	2354	26.3085	2355	1530
900	28.8484	2243	27.4615	2244	26.9013	2245	26.5440	2246	1620
950	29.0727	2145	27.6859	2146	27.1258	2146	26.7686	2147	1710
1000	29.2872	2054	27.9005	2054	27.3404	2055	26.9833	2055	1800
1050	29.4926	1970	28.1059	1970	27.5459	1971	27.1888	1971	1890
1100	29.6896	1893	28.3029	1894	27.7430	1894	27.3859	1895	1980
1150	29.8789	1821	28.4923	1821	27.9324	1822	27.5754	1822	2070
1200	30.0610	1756	28.6744	1757	28.1146	1756	27.7576	1757	2160
1250	30.2366	1695	28.8501	1695	28.2902	1696	27.9333	1696	2250
1300	30.4061	1638	29.0196	1638	28.4598	1638	28.1029	1638	2340
1350	30.5699	1584	29.1834	1585	28.6236	1585	28.2667	1585	2430
1400	30.7283	1535	29.3419	1535	28.7821	1535	28.4252	1536	2520
1450	30.8818	1489	29.4954	1488	28.9356	1489	28.5788	1488	2610
1500	31.0307	1444	29.6442	1444	29.0845	1444	28.7276	1445	2700
1550	31.1751	1404	29.7886	1404	29.2289	1404	28.8721	1404	2790
1600	31.3155	1364	29.9290	1365	29.3693	1365	29.0125	1364	2880
1650	31.4519	1329	30.0655	1329	29.5058	1329	29.1489	1330	2970
1700	31.5848	1294	30.1984	1295	29.6387	1294	29.2819	1294	3060
1750	31.7142	1262	30.3279	1261	29.7681	1262	29.4113	1262	3150
1800	31.8404	1232	30.4540	1232	29.8943	1232	29.5375	1233	3240
1850	31.9636	1202	30.5772	1202	30.0175	1202	29.6608	1202	3330
1900	32.0838	1175	30.6974	1175	30.1377	1176	29.7810	1175	3420
1950	32.2013	1148	30.8149	1148	30.2553	1148	29.8985	1148	3510
2000	32.3161	1124	30.9297	1124	30.3701	1124	30.0133	1124	3600
2050	32.4285	1100	31.0421	1100	30.4825	1100	30.1257	1101	3690
2100	32.5385	1077	31.1521	1077	30.5925	1077	30.2358	1077	3780
2150	32.6462	1056	31.2598	1057	30.7002	1056	30.3435	1056	3870
2200	32.7518	1035	31.3655	1035	30.8058	1035	30.4491	1035	3960
2250	32.8553	1015	31.4690	1015	30.9093	1015	30.5526	1015	4050
2300	32.9568	997	31.5705	997	31.0108	997	30.6541	997	4140
2350	33.0565	978	31.6702	978	31.1105	978	30.7538	978	4230
2400	33.1543	961	31.7680	961	31.2083	962	30.8516	961	4320
2450	33.2504	945	31.8641	945	31.3045	945	30.9477	945	4410
2500	33.3449	928	31.9586	928	31.3990	928	31.0422	929	4500
2550	33.4377	912	32.0514	912	31.4918	912	31.1351	912	4590
2600	33.5289	898	32.1426	898	31.5830	898	31.2263	898	4680
2650	33.6187	884	32.2324	884	31.6728	884	31.3161	884	4770
2700	33.7071	869	32.3208	869	31.7612	869	31.4045	869	4860
2750	33.7940	856	32.4077	856	31.8481	856	31.4914	856	4950
2800	33.8796	844	32.4933	844	31.9337	844	31.5770	844	5040
2850	33.9640	830	32.5777	830	32.0181	830	31.6614	830	5130
2900	34.0470	819	32.6607	819	32.1011	819	31.7444	819	5220
2950	34.1289	807	32.7426	807	32.1830	807	31.8263	807	5310
3000	34.2096		32.8233		32.2637		31.9070		5400

°K	10 atm		40 atm		70 atm		100 atm		°R
150	19.8036	2514							270
160	20.0550	2310	18.10	37					288
170	20.2860	2148	18.474	304	17.2	5			306
180	20.5008	2010	18.778	261	17.74	38			324
190	20.7018	1890	19.0369	2320	18.121	310			342
200	20.8908	1788	19.2709	2113	18.431	263	17.74	34	360
210	21.0696	1695	19.4822	1949	18.694	232	18.084	282	378
220	21.2391	1614	19.6771	1820	18.926	209	18.366	245	396
230	21.4005	1540	19.8591	1707	19.135	192	18.611	217	414
240	21.5545	1473	20.0298	1616	19.327	178	18.828	196	432
250	21.7018	1415	20.1914	1531	19.505	167	19.024	182	450
260	21.8433	1359	20.3445	1461	19.672	157	19.206	169	468
270	21.9792	1306	20.4906	1396	19.829	149	19.375	158	486
280	22.1098	1263	20.6302	1339	19.978	142	19.533	150	504
290	22.2361	1218	20.7641	1287	20.120	136	19.683	142	522
300	22.3579	1179	20.8928	1239	20.2555	1300	19.825	136	540
310	22.4758	1142	21.0167	1195	20.3855	1248	19.961	130	558
320	22.5900	1108	21.1362	1156	20.5103	1204	20.091	125	576
330	22.7008	1076	21.2518	1119	20.6307	1161	20.216	119	594
340	22.8084	1048	21.3637	1087	20.7468	1126	20.335	117	612
350	22.9132	1019	21.4724	1053	20.8594	1087	20.4516	1120	630
360	23.0151	992	21.5777	1025	20.9681	1055	20.5636	1085	648
370	23.1143	969	21.6802	997	21.0736	1027	20.6721	1052	666
380	23.2112	944	21.7799	972	21.1763	997	20.7773	1021	684
390	23.3056	924	21.8771	948	21.2760	973	20.8794	995	702
400	23.3980	904	21.9719	926	21.3733	947	20.9789	967	720
410	23.4884	882	22.0645	904	21.4680	924	21.0756	943	738
420	23.5766	866	22.1549	883	21.5604	903	21.1699	920	756
430	23.6632	847	22.2432	864	21.6507	880	21.2619	898	774
440	23.7479	831	22.3296	849	21.7387	864	21.3517	878	792
450	23.8310	815	22.4145	830	21.8251	846	21.4395	860	810
460	23.9125	800	22.4975	813	21.9097	827	21.5255	840	828
470	23.9925	784	22.5788	797	21.9924	811	21.6095	823	846
480	24.0709	772	22.6585	785	22.0735	794	21.6918	807	864
490	24.1481	758	22.7370	769	22.1529	782	21.7725	792	882
500	24.2239	746	22.8139	756	22.2311	767	21.8517	777	900
510	24.2985	733	22.8895	744	22.3078	753	21.9294	763	918
520	24.3718	721	22.9639	730	22.3831	740	22.0057	748	936
530	24.4439	710	23.0369	719	22.4571	728	22.0805	736	954
540	24.5149	699	23.1088	708	22.5299	715	22.1541	724	972
550	24.5848	689	23.1796	696	22.6014	704	22.2265	712	990
560	24.6537	678	23.2492	686	22.6718	693	22.2977	699	1008
570	24.7215	668	23.3178	676	22.7411	683	22.3676	689	1026
580	24.7883	660	23.3854	665	22.8094	672	22.4365	679	1044
590	24.8543	650	23.4519	657	22.8766	663	22.5044	668	1062
600	24.9193	641	23.5176	647	22.9429	652	22.5712	659	1080
610	24.9834	632	23.5823	637	23.0081	643	22.6371	648	1098
620	25.0466	623	23.6460	630	23.0724	635	22.7019	639	1116
630	25.1089	616	23.7090	620	23.1359	626	22.7658	631	1134
640	25.1705	609	23.7710	614	23.1985	618	22.8289	623	1152
650	25.2314	599	23.8324	604	23.2603	608	22.8912	613	1170
660	25.2913	593	23.8928	597	23.3211	601	22.9525	605	1188
670	25.3506	585	23.9525	589	23.3812	594	23.0130	597	1206
680	25.4091	578	24.0114	583	23.4406	587	23.0727	591	1224
690	26.4669	572	24.0697	575	23.4993	578	23.1318	582	1242
700	25.5241		24.1272		23.5571		23.1900		1260

Table 8-5. ENTROPY OF OXYGEN - Cont. S/R

°K	10 atm		40 atm		70 atm		100 atm		°R
700	25.5241	565	24.1272	568	23.5571	573	23.1900	576	1260
710	25.5806	558	24.1840	561	23.6144	564	23.2476	568	1278
720	25.6364	551	24.2401	555	23.6708	557	23.3044	561	1296
730	25.6915	546	24.2956	549	23.7265	553	23.3605	555	1314
740	25.7461	539	24.3505	542	23.7818	545	23.4160	548	1332
750	25.8000	533	24.4047	536	23.8363	539	23.4708	542	1350
760	25.8533	528	24.4583	531	23.8902	532	23.5250	536	1368
770	25.9061	522	24.5114	524	23.9434	528	23.5786	530	1386
780	25.9583	516	24.5638	519	23.9962	520	23.6316	523	1404
790	26.0099	511	24.6157	513	24.0482	517	23.6839	518	1422
800	26.0610	2475	24.6670	2487	24.0999	2496	23.7357	2507	1440
850	26.3085	2355	24.9157	2364	24.3495	2374	23.9864	2382	1530
900	26.5440	2246	25.1521	2252	24.5869	2258	24.2246	2267	1620
950	26.7686	2147	25.3773	2153	24.8127	2160	24.4513	2165	1710
1000	26.9833	2055	25.5926	2060	25.0287	2065	24.6678	2070	1800
1050	27.1888	1971	25.7986	1977	25.2352	1982	24.8748	1985	1890
1100	27.3859	1895	25.9963	1898	25.4334	1902	25.0733	1907	1980
1150	27.5754	1822	26.1861	1824	25.6236	1828	25.2640	1831	2070
1200	27.7576	1757	26.3685	1761	25.8064	1763	25.4471	1766	2160
1250	27.9333	1696	26.5446	1698	25.9827	1700	25.6237	1702	2250
1300	28.1029	1638	26.7144	1641	26.1527	1644	25.7939	1646	2340
1350	28.2667	1585	26.8785	1587	26.3171	1589	25.9585	1591	2430
1400	28.4252	1536	27.0372	1538	26.4760	1539	26.1176	1540	2520
1450	28.5788	1488	27.1910	1489	26.6299	1491	26.2716	1493	2610
1500	28.7276	1445	27.3399	1446	26.7790	1447	26.4209	1450	2700
1550	28.8721	1404	27.4845	1405	26.9237	1407	26.5659	1408	2790
1600	29.0125	1364	27.6250	1366	27.0644	1367	26.7067	1367	2880
1650	29.1489	1330	27.7616	1330	27.2011	1331	26.8434	1332	2970
1700	29.2819	1294	27.8946	1295	27.3342	1296	26.9766	1297	3060
1750	29.4113	1262	28.0241	1264	27.4638	1264	27.1063	1265	3150
1800	29.5375	1233	28.1505	1233	27.5902	1234	27.2328	1235	3240
1850	29.6608	1202	28.2738	1203	27.7136	1203	27.3563	1204	3330
1900	29.7810	1175	28.3941	1175	27.8339	1176	27.4767	1177	3420
1950	29.8985	1148	28.5116	1149	27.9515	1149	27.5944	1150	3510
2000	30.0133	1124	28.6265	1125	28.0664	1125	27.7094	1125	3600
2050	30.1257	1101	28.7390	1100	28.1789	1101	27.8219	1101	3690
2100	30.2358	1077	28.8490	1078	28.2890	1079	27.9320	1079	3780
2150	30.3435	1056	28.9568	1057	28.3969	1056	28.0399	1057	3870
2200	30.4491	1035	29.0625	1035	28.5025	1036	28.1456	1036	3960
2250	30.5526	1015	29.1660	1015	28.6061	1016	28.2492	1016	4050
2300	30.6541	997	29.2675	998	28.7077	997	28.3508	998	4140
2350	30.7538	978	29.3673	978	28.8074	979	28.4506	979	4230
2400	30.8516	961	29.4651	962	28.9053	962	28.5485	962	4320
2450	30.9477	945	29.5613	945	29.0015	945	28.6447	946	4410
2500	31.0422	929	29.6558	928	29.0960	929	28.7393	929	4500
2550	31.1351	912	29.7486	913	29.1889	913	28.8322	913	4590
2600	31.2263	898	29.8399	898	29.2802	898	28.9235	898	4680
2650	31.3161	884	29.9297	884	29.3700	885	29.0133	885	4770
2700	31.4045	869	30.0181	869	29.4585	869	29.1018	869	4860
2750	31.4914	856	30.1050	857	29.5454	856	29.1887	857	4950
2800	31.5770	844	30.1907	844	29.6310	844	29.2744	844	5040
2850	31.6614	830	30.2751	830	29.7154	831	29.3588	831	5130
2900	31.7444	819	30.3581	819	29.7985	820	29.4419	820	5220
2950	31.8263	807	30.4400	807	29.8805	807	29.5239	808	5310
3000	31.9070		30.5207		29.9612		29.6047		5400

Table 8-6. SPECIFIC-HEAT RATIO OF OXYGEN $\gamma = C_p/C_v$

°K	.01 atm		.1 atm		1 atm			°R
100	1.400		1.402	-1				180
120	1.400		1.401		1.417	-6		216
140	1.400		1.401		1.411	-3		252
160	1.400		1.401	-1	1.408	-2		288
180	1.400		1.400		1.406	-2		324
200	1.400	-1	1.400		1.404	-1		360
220	1.399		1.400	-1	1.403	-1		396
240	1.399	-1	1.399	-1	1.402	-2		432
260	1.398	-2	1.398	-2	1.400	-2		468
280	1.396	-1	1.396	-1	1.398	-2		504
300	1.395	-2	1.395	-2	1.396	-2		540
320	1.393	-3	1.393	-3	1.394	-2		576
340	1.390	-2	1.390	-2	1.392	-3		612
360	1.388	-3	1.388	-3	1.389	-3		648
380	1.385	-3	1.385	-3	1.386	-4		684
400	1.382	-4	1.382	-4	1.382	-3		720
420	1.378	-3	1.378	-3	1.379	-3		756
440	1.375	-3	1.375	-3	1.376	-4		792
460	1.372	-4	1.372	-4	1.372	-3		828
480	1.368	-3	1.368	-3	1.369	-3		864
500	1.365	-3	1.365	-3	1.366	-4		900
520	1.362	-3	1.362	-3	1.362	-3		936
540	1.359	-3	1.359	-4	1.359	-3		972
560	1.356	-3	1.355	-2	1.356	-3		1008
580	1.353	-3	1.353	-3	1.353	-3		1044
600	1.350	-3	1.350	-3	1.350	-3		1080
620	1.347	-3	1.347	-3	1.347	-3		1116
640	1.344	-2	1.344	-2	1.344	-2		1152
660	1.342	-3	1.342	-3	1.342	-2		1188
680	1.339	-2	1.339	-2	1.340	-3		1224
700	1.337	-2	1.337	-2	1.337	-2		1260
720	1.335	-2	1.335	-2	1.335	-2		1296
740	1.333	-2	1.333	-2	1.333	-2		1332
760	1.331	-2	1.331	-2	1.331	-2		1368
780	1.329	-2	1.329	-2	1.329	-2		1404
800	1.327	-8	1.327	-8	1.327	-8		1440
900	1.319	-6	1.319	-6	1.319	-6		1620
1000	1.313	-5	1.313	-5	1.313	-5		1800
1100	1.308	-4	1.308	-4	1.308	-4		1980
1200	1.304	-4	1.304	-4	1.304	-4		2160
1300	1.300	-3	1.300	-3	1.300	-3		2340
1400	1.297	-3	1.297	-3	1.297	-3		2520
1500	1.294	-2	1.294	-2	1.294	-2		2700
1600	1.292	-3	1.292	-3	1.292	-3		2880
1700	1.289	-2	1.289	-2	1.289	-2		3060
1800	1.287	-2	1.287	-2	1.287	-3		3240
1900	1.285	-3	1.285	-3	1.284	-2		3420
2000	1.282	-2	1.282	-2	1.282	-2		3600
2100	1.280	-2	1.280	-2	1.280	-2		3780
2200	1.278	-2	1.278	-2	1.278	-2		3960
2300	1.276	-2	1.276	-2	1.276	-2		4140
2400	1.274	-2	1.274	-2	1.274	-2		4320
2500	1.272	-2	1.272	-2	1.272	-2		4500
2600	1.270	-2	1.270	-2	1.270	-2		4680
2700	1.268	-2	1.268	-2	1.268	-2		4860
2800	1.266	-2	1.266	-2	1.266	-2		5040
2900	1.264	-1	1.264	-1	1.264	-1		5220
3000	1.263		1.263		1.263			5400

Table 8-6. SPECIFIC-HEAT RATIO OF OXYGEN - Cont. $\gamma = C_p/C_v$

°K	1 atm		4 atm		7 atm		10 atm		°R
120	1.417	-6							216
140	1.411	-3	1.450	-15					252
160	1.408	-2	1.435	-9	1.466	-18	1.500	-29	288
180	1.406	-2	1.426	-6	1.448	-12	1.471	-18	324
200	1.404	-1	1.420	-5	1.436	-8	1.453	-12	360
220	1.403	-1	1.415	-3	1.428	-6	1.441	-9	396
240	1.402	-2	1.412	-4	1.422	-5	1.432	-7	432
260	1.400	-2	1.408	-3	1.417	-5	1.425	-5	468
280	1.398	-2	1.405	-3	1.412	-4	1.420	-6	504
300	1.396	-2	1.402	-3	1.408	-4	1.414	-5	540
320	1.394	-2	1.399	-3	1.404	-4	1.409	-4	576
340	1.392	-3	1.396	-4	1.400	-4	1.405	-5	612
360	1.389	-3	1.392	-3	1.396	-4	1.400	-4	648
380	1.386	-4	1.389	-4	1.392	-4	1.396	-5	684
400	1.382	-3	1.385	-3	1.388	-4	1.391	-4	720
420	1.379	-3	1.382	-4	1.384	-4	1.387	-4	756
440	1.376	-4	1.378	-4	1.380	-4	1.383	-5	792
460	1.372	-3	1.374	-3	1.376	-3	1.378	-4	828
480	1.369	-3	1.371	-4	1.373	-4	1.374	-3	864
500	1.366	-4	1.367	-3	1.369	-4	1.371	-4	900
520	1.362	-3	1.364	-4	1.365	-3	1.367	-4	936
540	1.359	-3	1.360	-3	1.362	-4	1.363	-3	972
560	1.356	-3	1.357	-3	1.358	-3	1.360	-4	1008
580	1.353	-3	1.354	-3	1.355	-3	1.356	-3	1044
600	1.350	-3	1.351	-3	1.352	-3	1.353	-3	1080
620	1.347	-3	1.348	-3	1.349	-3	1.350	-3	1116
640	1.344	-2	1.345	-2	1.346	-2	1.347	-3	1152
660	1.342	-2	1.343	-3	1.344	-3	1.344	-2	1188
680	1.340	-3	1.340	-2	1.341	-2	1.342	-3	1224
700	1.337	-2	1.338	-2	1.339	-3	1.339	-2	1260
720	1.335	-2	1.336	-2	1.336	-2	1.337	-2	1296
740	1.333	-2	1.334	-2	1.334	-2	1.335	-2	1332
760	1.331	-2	1.332	-2	1.332	-2	1.333	-2	1368
780	1.329	-2	1.330	-2	1.330	-2	1.331	-2	1404
800	1.327	-8	1.328	-8	1.328	-8	1.329	-9	1440
900	1.319	-6	1.320	-7	1.320	-6	1.320	-6	1620
1000	1.313	-5	1.313	-5	1.314	-6	1.314	-5	1800
1100	1.308	-4	1.308	-4	1.308	-4	1.309	-5	1980
1200	1.304	-4	1.304	-4	1.304	-3	1.304	-3	2160
1300	1.300	-3	1.300	-3	1.301	-4	1.301	-4	2340
1400	1.297	-3	1.297	-3	1.297	-3	1.297	-2	2520
1500	1.294	-2	1.294	-2	1.294	-2	1.295	-3	2700
1600	1.292	-3	1.292	-3	1.292	-3	1.292	-3	2880
1700	1.289	-2	1.289	-2	1.289	-2	1.289	-2	3060
1800	1.287	-3	1.287	-3	1.287	-3	1.287	-2	3240
1900	1.284	-2	1.284	-2	1.284	-2	1.285	-3	3420
2000	1.282	-2	1.282	-2	1.282	-2	1.282	-2	3600
2100	1.280	-2	1.280	-2	1.280	-2	1.280	-2	3780
2200	1.278	-2	1.278	-2	1.278	-2	1.278	-2	3960
2300	1.276	-2	1.276	-2	1.276	-2	1.276	-2	4140
2400	1.274	-2	1.274	-2	1.274	-2	1.274	-2	4320
2500	1.272	-2	1.272	-2	1.272	-2	1.272	-2	4500
2600	1.270	-2	1.270	-2	1.270	-2	1.270	-2	4680
2700	1.268	-2	1.268	-2	1.268	-2	1.268	-2	4860
2800	1.266	-2	1.266	-2	1.266	-2	1.266	-2	5040
2900	1.264	-1	1.264	-1	1.264	-1	1.264	-1	5220
3000	1.263		1.263		1.263		1.263		5400

°K	10 atm		40 atm		70 atm		100 atm		°R
160	1.500	-29							288
180	1.471	-18	1.840	-157					324
200	1.453	-12	1.683	- 81	2.080	-262			360
220	1.441	- 9	1.602	- 49	1.818	-124	2.120	-270	396
240	1.432	- 7	1.553	- 33	1.694	- 71	1.850	-129	432
260	1.425	- 5	1.520	- 24	1.623	- 46	1.721	- 73	468
280	1.420	- 6	1.496	- 18	1.577	- 35	1.648	- 49	504
300	1.414	- 5	1.478	- 15	1.542	- 24	1.599	- 35	540
320	1.409	- 4	1.463	- 13	1.518	- 23	1.564	- 27	576
340	1.405	- 5	1.450	- 11	1.495	- 17	1.537	- 23	612
360	1.400	- 4	1.439	- 10	1.478	- 15	1.514	- 19	648
380	1.396	- 5	1.429	- 8	1.463	- 13	1.495	- 17	684
400	1.391	- 4	1.421	- 8	1.450	- 11	1.478	- 14	720
420	1.387	- 4	1.413	- 7	1.439	- 10	1.464	- 13	756
440	1.383	- 5	1.406	- 7	1.429	- 10	1.451	- 12	792
460	1.378	- 4	1.399	- 6	1.419	- 8	1.439	- 10	828
480	1.374	- 3	1.393	- 6	1.411	- 7	1.429	- 9	864
500	1.371	- 4	1.387	- 5	1.404	- 7	1.420	- 9	900
520	1.367	- 4	1.382	- 5	1.397	- 7	1.411	- 8	936
540	1.363	- 3	1.377	- 5	1.390	- 6	1.403	- 7	972
560	1.360	- 4	1.372	- 4	1.384	- 6	1.396	- 7	1008
580	1.356	- 3	1.368	- 5	1.378	- 5	1.389	- 6	1044
600	1.353	- 3	1.363	- 3	1.373	- 4	1.383	- 5	1080
620	1.350	- 3	1.360	- 4	1.369	- 5	1.378	- 5	1116
640	1.347	- 3	1.356	- 4	1.364	- 4	1.373	- 5	1152
660	1.344	- 2	1.352	- 3	1.360	- 4	1.368	- 5	1188
680	1.342	- 3	1.349	- 3	1.356	- 3	1.363	- 4	1224
700	1.339	- 2	1.346	- 3	1.353	- 4	1.359	- 4	1260
720	1.337	- 2	1.343	- 2	1.349	- 3	1.355	- 3	1296
740	1.335	- 2	1.341	- 3	1.346	- 3	1.352	- 3	1332
760	1.333	- 2	1.338	- 2	1.343	- 3	1.349	- 4	1368
780	1.331	- 2	1.336	- 3	1.340	- 2	1.345	- 3	1404
800	1.329	- 9	1.333	- 9	1.338	- 11	1.342	- 12	1440
900	1.320	- 6	1.324	- 8	1.327	- 8	1.330	- 9	1620
1000	1.314	- 5	1.316	- 6	1.319	- 7	1.321	- 7	1800
1100	1.309	- 5	1.310	- 4	1.312	- 5	1.314	- 6	1980
1200	1.304	- 3	1.306	- 4	1.307	- 4	1.308	- 4	2160
1300	1.301	- 4	1.302	- 4	1.303	- 4	1.304	- 4	2340
1400	1.297	- 2	1.298	- 3	1.299	- 3	1.300	- 3	2520
1500	1.295	- 3	1.295	- 3	1.296	- 3	1.297	- 4	2700
1600	1.292	- 3	1.292	- 2	1.293	- 3	1.293	- 3	2880
1700	1.289	- 2	1.290	- 3	1.290	- 3	1.290	- 2	3060
1800	1.287	- 2	1.287	- 2	1.287	- 2	1.288	- 3	3240
1900	1.285	- 3	1.285	- 3	1.285	- 2	1.285	- 2	3420
2000	1.282	- 2	1.282	- 2	1.283	- 3	1.283	- 3	3600
2100	1.280	- 2	1.280	- 2	1.280	- 2	1.280	- 2	3780
2200	1.278	- 2	1.278	- 2	1.278	- 2	1.278	- 2	3960
2300	1.276	- 2	1.276	- 2	1.276	- 2	1.276	- 2	4140
2400	1.274	- 2	1.274	- 2	1.274	- 2	1.274	- 2	4320
2500	1.272	- 2	1.272	- 2	1.272	- 2	1.272	- 2	4500
2600	1.270	- 2	1.270	- 2	1.270	- 2	1.270	- 2	4680
2700	1.268	- 2	1.268	- 2	1.268	- 2	1.268	- 2	4860
2800	1.266	- 2	1.266	- 2	1.266	- 2	1.266	- 2	5040
2900	1.264	- 1	1.264	- 1	1.264	- 1	1.264	- 1	5220
3000	1.263		1.263		1.263		1.263		5400

Table 8-7. SOUND VELOCITY AT LOW FREQUENCY IN OXYGEN a/a_0

°K	.01 atm		.1 atm		1 atm			°R
100	.606	58	.605	58				180
120	.664	53	.663	54	.659	54		216
140	.717	49	.717	49	.713	51		252
160	.766	47	.766	47	.764	47		288
180	.813	44	.813	44	.811	45		324
200	.857	41	.857	41	.856	42		360
220	.898	40	.898	40	.898	40		396
240	.938	38	.938	38	.938	38		432
260	.976	36	.976	36	.976	36		468
280	1.012	36	1.012	36	1.012	35		504
300	1.048	33	1.048	33	1.047	34		540
320	1.081	32	1.081	32	1.081	33		576
340	1.113	32	1.113	32	1.114	31		612
360	1.145	30	1.145	30	1.145	30		648
380	1.175	29	1.175	29	1.175	29		684
400	1.204	28	1.204	28	1.204	28		720
420	1.232	28	1.232	28	1.232	28		756
440	1.260	26	1.260	26	1.260	27		792
460	1.286	26	1.286	26	1.287	26		828
480	1.312	26	1.312	26	1.313	26		864
500	1.338	25	1.338	25	1.339	24		900
520	1.363	24	1.363	24	1.363	25		936
540	1.387	24	1.387	24	1.388	23		972
560	1.411	24	1.411	24	1.411	24		1008
580	1.435	22	1.435	22	1.435	23		1044
600	1.457	23	1.457	23	1.458	22		1080
620	1.480	22	1.480	22	1.480	22		1116
640	1.502	22	1.502	22	1.502	22		1152
660	1.524	21	1.524	21	1.524	22		1188
680	1.545	22	1.545	22	1.546	21		1224
700	1.567	21	1.567	21	1.567	21		1260
720	1.588	20	1.588	20	1.588	21		1296
740	1.608	21	1.608	21	1.609	20		1332
760	1.629	20	1.629	20	1.629	20		1368
780	1.649	19	1.649	20	1.649	20		1404
800	1.668	96	1.669	95	1.669	96		1440
900	1.764	92	1.764	92	1.765	91		1620
1000	1.856	86	1.856	86	1.856	87		1800
1100	1.942	84	1.942	84	1.943	83		1980
1200	2.026	79	2.026	79	2.026	80		2160
1300	2.105	77	2.105	77	2.106	77		2340
1400	2.182	74	2.182	74	2.183	74		2520
1500	2.256	72	2.256	72	2.257	72		2700
1600	2.328	69	2.328	69	2.329	69		2880
1700	2.397	68	2.397	68	2.398	67		3060
1800	2.465	65	2.465	65	2.465	65		3240
1900	2.530	63	2.530	63	2.530	63		3420
2000	2.593	62	2.593	62	2.593	62		3600
2100	2.655	60	2.655	60	2.655	61		3780
2200	2.715	59	2.715	59	2.716	59		3960
2300	2.774	58	2.774	58	2.775	57		4140
2400	2.832	56	2.832	56	2.832	56		4320
2500	2.888	55	2.888	55	2.888	55		4500
2600	2.943	53	2.943	53	2.943	54		4680
2700	2.996	53	2.996	53	2.997	52		4860
2800	3.049	51	3.049	51	3.049	52		5040
2900	3.100	52	3.100	52	3.101	51		5220
3000	3.152		3.152		3.152			5400

°K	1 atm		4 atm		7 atm		10 atm		°R
120	.659	54							216
140	.713	51	.703	54					252
160	.764	47	.757	50	.750	52	.743	54	288
180	.811	45	.807	46	.802	47	.797	49	324
200	.856	42	.853	43	.849	45	.846	46	360
220	.898	40	.896	41	.894	41	.892	42	396
240	.938	38	.937	38	.935	40	.934	40	432
260	.976	36	.975	37	.975	37	.974	39	468
280	1.012	35	1.012	36	1.012	36	1.013	35	504
300	1.047	34	1.048	34	1.048	34	1.048	35	540
320	1.081	33	1.082	32	1.082	33	1.083	33	576
340	1.114	31	1.114	32	1.115	32	1.116	32	612
360	1.145	30	1.146	30	1.147	30	1.148	31	648
380	1.175	29	1.176	29	1.177	30	1.179	29	684
400	1.204	28	1.205	29	1.207	28	1.208	29	720
420	1.232	28	1.234	28	1.235	28	1.237	28	756
440	1.260	27	1.262	26	1.263	27	1.265	26	792
460	1.287	26	1.288	27	1.290	26	1.291	27	828
480	1.313	26	1.315	25	1.316	26	1.318	26	864
500	1.339	24	1.340	25	1.342	25	1.344	25	900
520	1.363	25	1.365	24	1.367	24	1.369	24	936
540	1.388	23	1.389	24	1.391	24	1.393	24	972
560	1.411	24	1.413	24	1.415	23	1.417	23	1008
580	1.435	23	1.437	23	1.438	23	1.440	23	1044
600	1.458	22	1.460	22	1.461	23	1.463	23	1080
620	1.480	22	1.482	22	1.484	22	1.486	22	1116
640	1.502	22	1.504	22	1.506	22	1.508	22	1152
660	1.524	22	1.526	22	1.528	22	1.530	22	1188
680	1.546	21	1.548	21	1.550	21	1.552	21	1224
700	1.567	21	1.569	21	1.571	21	1.573	21	1260
720	1.588	21	1.590	21	1.592	20	1.594	21	1296
740	1.609	20	1.611	20	1.612	21	1.615	20	1332
760	1.629	20	1.631	20	1.633	20	1.635	20	1368
780	1.649	20	1.651	20	1.653	20	1.655	20	1404
800	1.669	96	1.671	96	1.673	96	1.675	95	1440
900	1.765	91	1.767	91	1.769	91	1.770	92	1620
1000	1.856	87	1.858	87	1.860	86	1.862	86	1800
1100	1.943	83	1.945	83	1.946	83	1.948	83	1980
1200	2.026	80	2.028	79	2.029	80	2.031	79	2160
1300	2.106	77	2.107	77	2.109	77	2.110	77	2340
1400	2.183	74	2.184	74	2.186	74	2.187	75	2520
1500	2.257	72	2.258	72	2.260	72	2.262	71	2700
1600	2.329	69	2.330	69	2.332	68	2.333	69	2880
1700	2.398	67	2.399	68	2.400	68	2.402	67	3060
1800	2.465	65	2.467	64	2.468	65	2.469	66	3240
1900	2.530	63	2.531	64	2.533	63	2.535	62	3420
2000	2.593	62	2.595	62	2.596	62	2.597	62	3600
2100	2.655	61	2.657	60	2.658	60	2.659	61	3780
2200	2.716	59	2.717	59	2.718	59	2.720	58	3960
2300	2.775	57	2.776	57	2.777	57	2.778	58	4140
2400	2.832	56	2.833	56	2.834	57	2.836	56	4320
2500	2.888	55	2.889	55	2.891	54	2.892	55	4500
2600	2.943	54	2.944	54	2.945	54	2.947	53	4680
2700	2.997	52	2.998	52	2.999	53	3.000	53	4860
2800	3.049	52	3.050	52	3.052	51	3.053	51	5040
2900	3.101	51	3.102	52	3.103	52	3.104	52	5220
3000	3.152		3.154		3.155		3.156		5400

°K	10 atm		40 atm		70 atm		100 atm		°R
160	.743	54							288
180	.797	49	.749	70					324
200	.846	46	.819	57	.812	64			360
220	.892	42	.876	51	.876	55	.911	45	396
240	.934	40	.927	46	.931	49	.956	44	432
260	.974	39	.973	42	.980	45	1.000	42	468
280	1.013	35	1.015	40	1.025	41	1.042	41	504
300	1.048	35	1.055	37	1.066	39	1.083	39	540
320	1.083	33	1.092	35	1.105	36	1.122	37	576
340	1.116	32	1.127	34	1.141	35	1.159	35	612
360	1.148	31	1.161	32	1.176	33	1.194	33	648
380	1.179	29	1.193	30	1.209	31	1.227	32	684
400	1.208	29	1.223	30	1.240	31	1.259	31	720
420	1.237	28	1.253	29	1.271	29	1.290	29	756
440	1.265	26	1.282	27	1.300	27	1.319	28	792
460	1.291	27	1.309	27	1.327	28	1.347	27	828
480	1.318	26	1.336	26	1.355	26	1.374	27	864
500	1.344	25	1.362	25	1.381	26	1.401	26	900
520	1.369	24	1.387	25	1.407	24	1.427	25	936
540	1.393	24	1.412	24	1.431	25	1.452	24	972
560	1.417	23	1.436	24	1.456	23	1.476	24	1008
580	1.440	23	1.460	23	1.479	23	1.500	23	1044
600	1.463	23	1.483	23	1.502	23	1.523	23	1080
620	1.486	22	1.506	22	1.525	23	1.546	22	1116
640	1.508	22	1.528	21	1.548	21	1.568	22	1152
660	1.530	22	1.549	22	1.569	22	1.590	21	1188
680	1.552	21	1.571	21	1.591	21	1.611	21	1224
700	1.573	21	1.592	21	1.612	21	1.632	21	1260
720	1.594	21	1.613	21	1.633	20	1.653	21	1296
740	1.615	20	1.634	20	1.653	21	1.674	20	1332
760	1.635	20	1.654	20	1.674	19	1.694	19	1368
780	1.655	20	1.674	20	1.693	20	1.713	20	1404
800	1.675	95	1.694	95	1.713	95	1.733	95	1440
900	1.770	92	1.789	91	1.808	90	1.828	89	1620
1000	1.862	86	1.880	86	1.898	86	1.917	85	1800
1100	1.948	83	1.966	83	1.984	82	2.002	81	1980
1200	2.031	79	2.049	79	2.066	78	2.083	79	2160
1300	2.110	77	2.128	76	2.144	76	2.162	75	2340
1400	2.187	75	2.204	73	2.220	73	2.237	73	2520
1500	2.262	71	2.277	71	2.293	71	2.310	69	2700
1600	2.333	69	2.348	69	2.364	68	2.379	68	2880
1700	2.402	67	2.417	67	2.432	66	2.447	67	3060
1800	2.469	66	2.484	65	2.498	65	2.514	63	3240
1900	2.535	62	2.549	62	2.563	63	2.577	63	3420
2000	2.597	62	2.611	62	2.626	60	2.640	60	3600
2100	2.659	61	2.673	60	2.686	60	2.700	59	3780
2200	2.720	58	2.733	58	2.746	58	2.759	58	3960
2300	2.778	58	2.791	57	2.804	57	2.817	57	4140
2400	2.836	56	2.848	56	2.861	55	2.874	55	4320
2500	2.892	55	2.904	55	2.916	55	2.929	54	4500
2600	2.947	53	2.959	53	2.971	53	2.983	53	4680
2700	3.000	53	3.012	52	3.024	52	3.036	52	4860
2800	3.053	51	3.064	52	3.076	51	3.088	50	5040
2900	3.104	52	3.116	51	3.127	51	3.138	51	5220
3000	3.156		3.167		3.178		3.189		5400

Table 8-8. VISCOSITY OF OXYGEN AT ATMOSPHERIC PRESSURE

°K	η/η_0		°R
100	.4050	403	180
110	.4453	396	198
120	.4849	390	216
130	.5239	381	234
140	.5620	373	252
150	.5993	366	270
160	.6359	359	288
170	.6718	351	306
180	.7069	341	324
190	.7410	333	342
200	.7743	328	360
210	.8071	321	378
220	.8392	315	396
230	.8707	309	414
240	.9016	304	432
250	.9320	297	450
260	.9617	292	468
270	.9909	285	486
280	1.0194	281	504
290	1.0475	276	522
300	1.0751	274	540
310	1.1025	269	558
320	1.1294	264	576
330	1.1558	260	594
340	1.1818	258	612
350	1.2076	255	630
360	1.2331	251	648
370	1.2582	248	666
380	1.2830	245	684
390	1.3075	241	702
400	1.3316	239	720
410	1.3555	236	738
420	1.3791	233	756
430	1.4024	231	774
440	1.4255	229	792
450	1.4484	226	810
460	1.4710	225	828
470	1.4935	222	846
480	1.5157	220	864
490	1.5377	218	882
500	1.5595		900

°K	η/η_0		°R
500	1.5595	216	900
510	1.5811	214	918
520	1.6025	212	936
530	1.6237	210	954
540	1.6447	209	972
550	1.6656	208	990
560	1.6864	207	1008
570	1.7071	205	1026
580	1.7276	203	1044
590	1.7479	201	1062
600	1.7680	200	1080
610	1.7880	198	1098
620	1.8078	197	1116
630	1.8275	195	1134
640	1.8470	194	1152
650	1.8664	193	1170
660	1.8857	192	1188
670	1.9049	192	1206
680	1.9241	191	1224
690	1.9432	190	1242
700	1.9622	188	1260
710	1.9810	186	1278
720	1.9996	185	1296
730	2.0181	184	1314
740	2.0365	182	1332
750	2.0547	181	1350
760	2.0728	181	1368
770	2.0909	180	1386
780	2.1089	179	1404
790	2.1268	179	1422
800	2.1447	177	1440
810	2.1624	175	1458
820	2.1799	175	1476
830	2.1974	174	1494
840	2.2148	173	1512
850	2.2321	173	1530
860	2.2494	172	1548
870	2.2666	172	1566
880	2.2838	172	1584
890	2.3010	171	1602
900	2.3181		1620

°K	η/η_0		°R
900	2.3181	170	1620
910	2.3351	169	1638
920	2.3520	169	1656
930	2.3689	168	1674
940	2.3857	167	1692
950	2.4024	166	1710
960	2.4190	165	1728
970	2.4355	165	1746
980	2.4520	164	1764
990	2.4684	17	1782
1000	2.485	17	1800
1010	2.502	16	1818
1020	2.518	16	1836
1030	2.534	16	1854
1040	2.550	16	1872
1050	2.566	16	1890
1060	2.582	16	1908
1070	2.598	16	1926
1080	2.614	17	1944
1090	2.631	17	1962
1100	2.648	155	1980
1200	2.803	148	2160
1300	2.951	145	2340
1400	3.096	141	2520
1500	3.237	137	2700
1600	3.374	135	2880
1700	3.509	131	3060
1800	3.640	130	3240
1900	3.770	127	3420
2000	3.897		3600

Table 8-9. THERMAL CONDUCTIVITY OF OXYGEN AT ATMOSPHERIC PRESSURE

°K	k/k_0		°R
80	.293	38	144
90	.331	37	162
100	.368	38	180
110	.406	38	198
120	.444	38	216
130	.482	38	234
140	.520	37	252
150	.557	38	270
160	.595	37	288
170	.632	37	306
180	.669	37	324
190	.706	37	342
200	.743	36	360
210	.779	36	378
220	.815	35	396
230	.850	35	414
240	.885	35	432
250	.920	34	450
260	.954	35	468
270	.989	3	486
280	1.02	4	504
290	1.06	3	522
300	1.09	3	540
310	1.12	4	558
320	1.16	3	576
330	1.19	3	594
340	1.22	3	612
350	1.25		630

°K	k/k_0		°R
350	1.25	3	630
360	1.28	4	648
370	1.32	3	666
380	1.35	3	684
390	1.38	3	702
400	1.41	3	720
410	1.44	3	738
420	1.47	3	756
430	1.50	3	774
440	1.53	3	792
450	1.56	3	810
460	1.59	3	828
470	1.62	2	846
480	1.64	3	864
490	1.67	3	882
500	1.70	3	900
510	1.73	3	918
520	1.76	2	936
530	1.78	3	954
540	1.81	3	972
550	1.84	2	990
560	1.86	3	1008
570	1.89	3	1026
580	1.92	2	1044
590	1.94	3	1062
600	1.97		1080

Table 8-10. PRANDTL NUMBER OF OXYGEN AT ATMOSPHERIC PRESSURE $\eta C_p/k$

°K	(N_{Pr})		$(N_{Pr})^{2/3}$		$(N_{Pr})^{1/3}$		$(N_{Pr})^{1/2}$		°R
100	.815	-15	.873	-11	.934	-6	.903	-9	180
110	.800	-9	.862	-7	.928	-3	.894	-5	198
120	.791	-7	.855	-5	.925	-3	.889	-4	216
130	.784	-6	.850	-4	.922	-2	.885	-3	234
140	.778	-5	.846	-4	.920	-2	.882	-3	252
150	.773	-7	.842	-5	.918	-3	.879	-4	270
160	.766	-5	.837	-3	.915	-2	.875	-3	288
170	.761	-5	.834	-4	.913	-2	.872	-3	306
180	.756	-5	.830	-4	.911	-2	.869	-2	324
190	.751	-6	.826	-4	.909	-2	.867	-4	342
200	.745	-5	.822	-4	.907	-2	.863	-3	360
210	.740	-4	.818	-3	.905	-2	.860	-2	378
220	.736	-4	.815	-3	.903	-2	.858	-2	396
230	.732	-4	.812	-3	.901	-1	.856	-3	414
240	.728	-3	.809	-2	.900	-2	.853	-2	432
250	.725	-3	.807	-2	.898	-1	.851	-1	450
260	.722	-4	.805	-3	.897	-2	.850	-3	468
270	.718	-1	.802	-1	.895		.847		486
280	.717	-7	.801	-5	.895	-3	.847	-4	504
290	.710	-1	.796	-1	.892		.843	-1	522
300	.709		.795		.892		.842		540
310	.709	-6	.795	-4	.892	-3	.842	-4	558
320	.703	-1	.791	-1	.889		.838		576
330	.702		.790		.889		.838		594
340	.702		.790		.889		.838		612
350	.702	-1	.790	-1	.889	-1	.838	-1	630
360	.701	-5	.789	-4	.888	-2	.837	-3	648
370	.696		.785		.886		.834		666
380	.696		.785		.886		.834		684
390	.696	-1	.785		.886		.834		702
400	.695		.785		.886		.834		720
410	.695		.785		.886		.834		738
420	.695		.785		.886		.834		756
430	.695	-1	.785	-1	.886	-1	.834	-1	774
440	.694		.784		.885		.833		792
450	.694		.784		.885		.833		810
460	.694	1	.784	1	.885	1	.833	1	828
470	.695	2	.785	1	.886	1	.834	1	846
480	.697		.786		.887		.835		864
490	.697		.786		.887		.835		882
500	.697		.786		.887		.835		900
510	.697		.786		.887		.835		918
520	.697	3	.786	2	.887	1	.835	2	936
530	.700		.788		.888		.837		954
540	.700		.788		.888		.837		972
550	.700	1	.788	1	.888		.837		990
560	.701	1	.789	1	.888	1	.837	1	1008
570	.702		.790		.889		.838		1026
580	.702	2	.790	1	.889	1	.838	1	1044
590	.704		.791		.890		.839		1062
600	.704		.791		.890		.839		1080

Table 8-11. VAPOR PRESSURE OF OXYGEN

2/T	T	$Log_{10}P(atm)^*$		P	T	3.6/T
$^oK^{-1}$	^oK			atm	^oR	$^oR^{-1}$
.037	54.054	7.133-10	197	.0014	97.297	.037
.036	55.556	7.330-10	197	.0021	100.000	.036
.035	57.143	7.527-10	197	.0034	102.857	.035
.034	58.824	7.724-10	197	.0053	105.882	.034
.033	60.606	7.921-10	197	.0083	109.091	.033
.032	62.500	8.118-10	197	.0131	112.500	.032
.031	64.516	8.315 -10	196	.0207	116.129	.031
.030	66.667	8.511 -10	195	.0324	120.000	.030
.029	68.966	8.706 -10	194	.0508	124.138	.029
.028	71.429	8.900 -10		.0794	128.571	.028
1/T						1.8/T
.0140	71.429	8.8999-10	385	.0794	128.571	.0140
.0139	71.942	8.9384-10	384	.0868	129.496	.0139
.0138	72.464	8.9768-10	383	.0948	130.435	.0138
.0137	72.993	9.0151-10	383	.1035	131.387	.0137
.0136	73.529	9.0534-10	382	.1131	132.353	.0136
.0135	74.074	9.0916-10	382	.1235	133.333	.0135
.0134	74.627	9.1298-10	382	.1348	134.328	.0134
.0133	75.188	9.1680-10	381	.1472	135.338	.0133
.0132	75.758	9.2061-10	381	.1607	136.364	.0132
.0131	76.336	9.2442-10	381	.1755	137.404	.0131
.0130	76.923	9.2823-10	381	.1916	138.462	.0130
.0129	77.519	9.3204-10	380	.2091	139.535	.0129
.0128	78.125	9.3584-10	380	.2282	140.625	.0128
.0127	78.740	9.3964-10	378	.2491	141.732	.0127
.0126	79.365	9.4342-10	377	.2718	142.857	.0126
.0125	80.000	9.4719-10	377	.2964	144.000	.0125
.0124	80.645	9.5096-10	376	.3233	145.161	.0124
.0123	81.301	9.5472-10	376	.3525	146.341	.0123
.0122	81.967	9.5848-10	375	.3844	147.541	.0122
.0121	82.645	9.6223-10	375	.4191	148.760	.0121
.0120	83.333	9.6598-10	375	.4569	150.000	.0120
.0119	84.034	9.6973-10	375	.4981	151.260	.0119
.0118	84.746	9.7348-10	374	.5430	152.542	.0118
.0117	85.470	9.7722-10	374	.5918	153.846	.0117
.0116	86.207	9.8096-10	373	.6451	155.172	.0116
.0115	86.957	9.84686-10	3725	.7029	156.522	.0115
.0114	87.719	9.88411-10	3718	.7658	157.895	.0114
.0113	88.496	9.92129-10	3712	.8342	159.292	.0113
.0112	89.286	9.95841-10	3704	.9087	160.714	.0112
.0111	90.090	9.99545-10	3697	.9896	162.162	.0111
.0110	90.909	.03242	3690	1.0775	163.636	.0110
.0109	91.743	.06932	3685	1.1731	165.138	.0109
.0108	92.593	.10617	3679	1.2769	166.667	.0108
.0107	93.458	.14296	3674	1.3898	168.224	.0107
.0106	94.340	.17970	3669	1.5125	169.811	.0106
.0105	95.238	.21639	3663	1.6459	171.428	.0105
.0104	96.154	.25302	3659	1.7907	173.077	.0104
.0103	97.087	.28961	3654	1.9481	174.757	.0103
.0102	98.039	.32615	3649	2.1191	176.470	.0102
.0101	99.010	.36264	3644	2.3048	178.218	.0101
.0100	100.000	.39908		2.5066	180.000	.0100

*Tabulated values in this column are for interpolation with respect to reciprocal temperature.

Table 8-11. VAPOR PRESSURE OF OXYGEN - Cont.

1/T	T	$Log_{10}P$(atm)*		P	T	1.8/T
$^oK^{-1}$	^oK			atm	^oR	$^oR^{-1}$
.0100	100.000	.39908	3641	2.5066	180.000	.0100
.0099	101.010	.43549	3639	2.7258	181.818	.0099
.0098	102.041	.47188	3636	2.9640	183.673	.0098
.0097	103.093	.50824	3634	3.2228	185.567	.0097
.0096	104.167	.54458	3630	3.5041	187.500	.0096
.0095	105.263	.58088	3627	3.8096	189.474	.0095
.0094	106.383	.61715	3623	4.1414	191.489	.0094
.0093	107.527	.65338	3622	4.5017	193.548	.0093
.0092	108.696	.68960	3620	4.8933	195.652	.0092
.0091	109.890	.72580	3620	5.3186	197.802	.0091
.0090	111.111	.76200	3619	5.7810	200.000	.0090
.0089	112.360	.79819	3618	6.2833	202.247	.0089
.0088	113.636	.83437	3619	6.8292	204.545	.0088
.0087	114.943	.87056	3619	7.4227	206.896	.0087
.0086	116.279	.90675	3621	8.0677	209.302	.0086
.0085	117.647	.94296	3622	8.7692	211.765	.0085
.0084	119.048	.97918	3624	9.5319	214.286	.0084
.0083	120.482	1.01542	3626	10.361	216.867	.0083
.0082	121.951	1.05168	3631	11.264	219.512	.0082
.0081	123.457	1.08799	3636	12.246	222.222	.0081
.0080	125.000	1.12435	3640	13.315	225.000	.0080
.0079	126.582	1.16075	3646	14.479	227.848	.0079
.0078	128.205	1.19721		15.747	230.769	.0078
2/T						3.6/T
.0156	128.2051	1.19721	1826	15.747	230.769	.0156
.0155	129.0323	1.21547	1826	16.424	232.258	.0155
.0154	129.8701	1.23373	1829	17.129	233.766	.0154
.0153	130.7190	1.25202	1832	17.866	235.294	.0153
.0152	131.5789	1.27034	1834	18.635	236.842	.0152
.0151	132.4503	1.28868	1836	19.439	238.410	.0151
.0150	133.3333	1.30704	1840	20.279	240.000	.0150
.0149	134.2282	1.32544	1842	21.156	241.611	.0149
.0148	135.1351	1.34386	1846	22.073	243.243	.0148
.0147	136.0544	1.36232	1849	23.031	244.898	.0147
.0146	136.9863	1.38081	1853	24.033	246.575	.0146
.0145	137.9310	1.39934	1856	25.081	248.276	.0145
.0144	138.8889	1.41790	1860	26.176	250.000	.0144
.0143	139.8601	1.43650	1864	27.321	251.748	.0143
.0142	140.8451	1.45514	1869	28.519	253.521	.0142
.0141	141.8440	1.47383	1875	29.774	255.319	.0141
.0140	142.8571	1.49258	1880	31.087	257.143	.0140
.0139	143.8849	1.51138	1886	32.462	258.993	.0139
.0138	144.9275	1.53024	1893	33.903	260.870	.0138
.0137	145.9854	1.54917	1900	35.414	262.774	.0137
.0136	147.0588	1.56817	1909	36.997	264.706	.0136
.0135	148.1481	1.58726	1919	38.660	266.667	.0135
.0134	149.2537	1.60645	1930	40.406	268.657	.0134
.0133	150.3759	1.62575	1942	42.243	270.677	.0133
.0132	151.5152	1.64517	1956	44.174	272.727	.0132
.0131	152.6718	1.66473	1977	46.209	274.809	.0131
.0130	153.8462	1.68450	2008	48.362	276.923	.0130
.0129	155.0388	1.70458	2050	50.650	279.070	.0129
.0128	156.2500	1.72508		53.098	281.250	.0128

* Tabulated values in this column are for interpolation with respect to reciprocal temperature.

Table 8-11/a. VAPOR PRESSURE OF OXYGEN

Remarks	T	P	P	P	T
	°K	mm Hg	atm	psia	°R
Triple point- - - - - - -	54.363	1.14	.00150	.022	97.853
Normal boiling point- - -	90.190	760.0	1.000	14.696	162.342
Critical point- - - - - -	154.7_8	381_{09}.	50.1_4	$736._9$	278.6_0
	55	1.38	.00182	.027	99
	60	5.44	.00716	.105	108
	65	17.4	.0229	.34	117
	70	46.8	.0616	.90	126
	75	108.7	.1430	2.10	135
	80	225.3	.2964	4.36	144
	85	425.4	.5597	8.23	153
	90	745.0	.9803	14.41	162
	95	1223.3	1.6096	23.65	171
	100	1905.0	2.5066	36.84	180
	105	2838.2	3.7345	54.88	189
	110	4072.9	5.3591	78.76	198
	115	5661.6	7.4495	109.48	207
	120	7658.6	10.077	148.09	216
	125	10120	13.316	195.7	225
	130	13102	17.239	253.4	234
	135	16670	21.934	322.3	243
	140	20892	27.489	404.0	252
	145	25843	34.004	499.7	261
	150	31631	41.620	611.6	270

Table 8-12. IDEAL-GAS THERMODYNAMIC FUNCTIONS FOR MOLECULAR OXYGEN

°K	$\frac{C_p^\circ}{R}$		$\frac{(H^\circ - E_0^\circ)}{RT_0}$ *		$\frac{S^\circ}{R}$		$\frac{-(F^\circ - E_0^\circ)}{RT}$		°R
10	3.5423	-278	.1222	1291	12.7490	24447	9.411	2350	18
20	3.5145	- 68	.2513	1285	15.1937	14043	11.761	1379	36
30	3.5077	- 33	.3798	1283	16.5980	10276	13.140	1016	54
40	3.5044	- 15	.5081	1283	17.6256	7860	14.156	779	72
50	3.5029	- 6	.6364	1282	18.4116	6345	14.935	630	90
60	3.5023	- 4	.7646	1282	19.0461	5376	15.565	535	108
70	3.5019	- 3	.8928	1282	19.5837	4698	16.100	467	126
80	3.5016	- 1	1.0210	1282	20.0535	4121	16.567	411	144
90	3.5015	- 1	1.1492	1282	20.4656	3692	16.978	368	162
100	3.5014	- 1	1.2774	1282	20.8348	3336	17.346	332	180
110	3.5013		1.4056	1281	21.1684	3048	17.678	304	198
120	3.5013	- 1	1.5337	1282	21.4732	2802	17.982	279	216
130	3.5012	1	1.6619	1282	21.7534	2595	18.261	259	234
140	3.5013		1.7901	1282	22.0129	2416	18.520	241	252
150	3.5013	2	1.9183	1281	22.2545	2259	18.761	226	270
160	3.5015	2	2.0464	1282	22.4804	2123	18.987	212	288
170	3.5017	3	2.1746	1282	22.6927	2002	19.199	199	306
180	3.5020	5	2.3028	1282	22.8929	1894	19.398	189	324
190	3.5025	7	2.4310	1283	23.0823	1796	19.587	179	342
200	3.5032	10	2.5593	1282	23.2619	1710	19.766	171	360
210	3.5042	14	2.6875	1283	23.4329	1630	19.937	163	378
220	3.5056	17	2.8158	1284	23.5959	1559	20.100	155	396
230	3.5073	22	2.9442	1284	23.7518	1493	20.255	149	414
240	3.5095	27	3.0726	1286	23.9011	1433	20.404	143	432
250	3.5122	33	3.2012	1286	24.0444	1378	20.547	137	450
260	3.5155	38	3.3298	1288	24.1822	1328	20.684	132	468
270	3.5193	45	3.4586	1289	24.3150	1280	20.816	127	486
280	3.5238	50	3.5875	1291	24.4430	1238	20.943	123	504
290	3.5288	56	3.7166	1293	24.5668	1197	21.066	119	522
300	3.5344	63	3.8459	1295	24.6865	1160	21.185	115	540
310	3.5407	69	3.9754	1297	24.8025	1125	21.300	111	558
320	3.5476	75	4.1051	1300	24.9150	1093	21.411	108	576
330	3.5551	80	4.2351	1303	25.0243	1062	21.519	104	594
340	3.5631	86	4.3654	1306	25.1305	1035	21.623	102	612
350	3.5717	90	4.4960	1309	25.2340	1007	21.725	99	630
360	3.5807	95	4.6269	1313	25.3347	982	21.824	96	648
370	3.5902	100	4.7582	1316	25.4329	959	21.920	94	666
380	3.6002	103	4.8898	1320	25.5288	936	22.014	91	684
390	3.6105	107	5.0218	1324	25.6224	916	22.105	89	702
400	3.6212	110	5.1542	1327	25.7140	896	22.194	87	720
410	3.6322	113	5.2869	1332	25.8036	876	22.281	85	738
420	3.6435	115	5.4201	1336	25.8912	859	22.366	83	756
430	3.6550	118	5.5537	1340	25.9771	841	22.449	81	774
440	3.6668	119	5.6877	1345	26.0612	826	22.530	80	792
450	3.6787	120	5.8222	1349	26.1438	810	22.610	77	810
460	3.6907	122	5.9571	1353	26.2248	795	22.687	77	828
470	3.7029	122	6.0924	1358	26.3043	780	22.764	74	846
480	3.7151	123	6.2282	1362	26.3823	768	22.838	73	864
490	3.7274	122	6.3644	1367	26.4591	754	22.911	72	882
500	3.7396	124	6.5011	1371	26.5345	742	22.983	70	900
510	3.7520	123	6.6382	1376	26.6087	730	23.053	69	918
520	3.7643	122	6.7758	1380	26.6817	718	23.122	68	936
530	3.7765	122	6.9138	1385	26.7535	707	23.190	67	954
540	3.7887	121	7.0523	1389	26.8242	696	23.257	65	972
550	3.8008	121	7.1912	1394	26.8938	686	23.322	65	990
560	3.8129	119	7.3306	1398	26.9624	676	23.387	63	1008
570	3.8248	118	7.4704	1402	27.0300	666	23.450	62	1026
580	3.8366	117	7.6106	1407	27.0966	657	23.512	62	1044
590	3.8483	116	7.7513	1411	27.1623	648	23.574	60	1062
600	3.8599		7.8924		27.2271		23.634		1080

* The enthalpy function is divided here by a constant RT_0 where T_0 = 273.16°K (491.688°R).

Table 8-12. IDEAL-GAS THERMODYNAMIC FUNCTIONS FOR MOLECULAR OXYGEN - Cont.

°K	$\frac{C_p^\circ}{R}$		$\frac{(H^\circ - E_0^\circ)^*}{RT_0}$		$\frac{S^\circ}{R}$		$\frac{-(F^\circ - E_0^\circ)}{RT}$		°R
600	3.8599	114	7.8924	1415	27.2271	639	23.634	59	1080
610	3.8713	113	8.0339	1419	27.2910	630	23.693	59	1098
620	3.8826	111	8.1758	1423	27.3540	622	23.752	58	1116
630	3.8937	110	8.3181	1428	27.4162	614	23.810	56	1134
640	3.9047	108	8.4609	1431	27.4776	607	23.866	57	1152
650	3.9155	107	8.6040	1436	27.5383	598	23.923	55	1170
660	3.9262	105	8.7476	1439	27.5981	591	23.978	54	1188
670	3.9367	103	8.8915	1443	27.6572	584	24.032	54	1206
680	3.9470	101	9.0358	1447	27.7156	577	24.086	53	1224
690	3.9571	101	9.1805	1450	27.7733	570	24.139	52	1242
700	3.9672	98	9.3255	1454	27.8303	564	24.191	52	1260
710	3 9770	96	9.4709	1458	27.8867	557	24.243	51	1278
720	3.9866	95	9.6167	1461	27.9424	550	24.294	50	1296
730	3.9961	93	9.7628	1465	27.9974	545	24.344	50	1314
740	4.0054	91	9.9093	1468	28.0519	538	24.394	49	1332
750	4.0145	90	10.0561	1471	28.1057	532	24.443	49	1350
760	4.0235	88	10.2032	1475	28.1589	527	24.492	48	1368
770	4.0323	86	10.3507	1478	28.2116	521	24.540	47	1386
780	4.0409	85	10.4985	1481	28.2637	515	24.587	47	1404
790	4.0494	83	10.6466	1484	28.3152	510	24.634	46	1422
800	4.0577	393	10.7950	7464	28.3662	2472	24.680	224	1440
850	4.0970	357	11.5414	7532	28.6134	2352	24.904	213	1530
900	4.1327	325	12.2946	7595	28.8486	2243	25.117	202	1620
950	4.1652	296	13.0541	7652	29.0729	2145	25.319	194	1710
1000	4.1948	271	13.8193	7703	29.2874	2053	25.513	184	1800
1050	4.2219	250	14.5896	7751	29.4927	1970	25.697	177	1890
1100	4.2469	229	15.3647	7795	29.6897	1893	25.874	170	1980
1150	4.2698	214	16.1442	7836	29.8790	1821	26.044	164	2070
1200	4.2912	200	16.9278	7873	30.0611	1756	26.208	158	2160
1250	4.3112	188	17.7151	7908	30.2367	1695	26.366	152	2250
1300	4.3300	179	18.5059	7943	30.4062	1638	26.518	147	2340
1350	4.3479	172	19.3002	7974	30.5700	1584	26.665	142	2430
1400	4.3651	164	20.0976	8005	30.7284	1535	26.807	138	2520
1450	4.3815	160	20.8981	8035	30.8819	1488	26.945	134	2610
1500	4.3975	155	21.7016	8064	31.0307	1444	27.079	130	2700
1550	4.4130	152	22.5080	8091	31.1751	1404	27.209	126	2790
1600	4.4282	149	23.3171	8119	31.3155	1364	27.335	122	2880
1650	4.4431	147	24.1290	8147	31.4519	1329	27.457	120	2970
1700	4.4578	146	24.9437	8172	31.5848	1294	27.577	116	3060
1750	4.4724	144	25.7609	8200	31.7142	1262	27.693	114	3150
1800	4.4868	143	26.5809	8227	31.8404	1232	27.807	110	3240
1850	4.5011	142	27.4036	8252	31.9636	1202	27.917	108	3330
1900	4.5153	142	28.2288	8277	32.0838	1175	28.025	106	3420
1950	4.5295	141	29.0565	8304	32.2013	1148	28.131	103	3510
2000	4.5436	140	29.8869	8329	32.3161	1124	28.234	101	3600
2050	4.5576	139	30.7198	8356	32.4285	1100	28.335	99	3690
2100	4.5715	139	31.5554	8381	32.5385	1077	28.434	97	3780
2150	4.5854	139	32.3935	8406	32.6462	1056	28.531	94	3870
2200	4.5993	137	33.2341	8430	32.7518	1035	28.625	93	3960
2250	4.6130	137	34.0771	8456	32.8553	1015	28.718	91	4050
2300	4.6267	137	34.9227	8482	32.9568	997	28.809	90	4140
2350	4.6404	136	35.7709	8508	33.0565	978	28.899	87	4230
2400	4.6540	134	36.6217	8530	33.1543	961	28.986	86	4320
2450	4.6674	134	37.4747	8555	33.2504	945	29.072	85	4410
2500	4.6808	132	38.3302	8580	33.3449	928	29.157	83	4500
2550	4.6940	131	39.1882	8605	33.4377	912	29.240	81	4590
2600	4.7071	129	40.0487	8627	33.5289	898	29.321	81	4680
2650	4.7200	128	40.9114	8651	33.6187	884	29.402	79	4770
2700	4.7328	126	41.7765	8675	33.7071	869	29.481	77	4860
2750	4.7454	125	42.6440	8698	33.7940	856	29.558	77	4950
2800	4.7579		43.5138		33.8796		29.635		5040

* The enthalpy function is divided here by a constant RT_0 where T_0 = 273.16°K (491.688°R).

Table 8-12. IDEAL-GAS THERMODYNAMIC FUNCTIONS FOR MOLECULAR OXYGEN - Cont.

°K	$\frac{C_p^\circ}{R}$		$\frac{(H^\circ - E_0^\circ)^*}{RT_0}$		$\frac{S^\circ}{R}$		$\frac{-(F^\circ - E_0^\circ)}{RT}$		°R
2800	4.7579	124	43.5138	8720	33.8796	844	29.635	75	5040
2850	4.7703	121	44.3858	8743	33.9640	830	29.710	74	5130
2900	4.7824	120	45.2601	8765	34.0470	819	29.784	73	5220
2950	4.7944	118	46.1366	8786	34.1289	807	29.857	72	5310
3000	4.8062	115	47.0152	8809	34.2096	795	29.929	71	5400
3050	4.8177	114	47.8961	8829	34.2891	784	30.000	69	5490
3100	4.8291	111	48.7790	8850	34.3675	774	30.069	69	5580
3150	4.8402	110	49.6640	8869	34.4449	763	30.138	68	5670
3200	4.8512	107	50.5509	8889	34.5212	753	30.206	67	5760
3250	4.8619	105	51.4398	8909	34.5965	743	30.273	66	5850
3300	4.8724	103	52.3307	8929	34.6708	734	30.339	65	5940
3350	4.8827	102	53.2236	8947	34.7442	724	30.404	65	6030
3400	4.8929	99	54.1183	8965	34.8166	715	30.469	63	6120
3450	4.9028	97	55.0148	8982	34.8881	706	30.532	63	6210
3500	4.9125	95	55.9130	9002	34.9587	698	30.595	62	6300
3550	4.9220	92	56.8132	9018	35.0285	689	30.657	61	6390
3600	4.9312	91	57.7150	9033	35.0974	680	30.718	61	6480
3650	4.9403	88	58.6183	9050	35.1654	673	30.779	59	6570
3700	4.9491	87	59.5233	9068	35.2327	665	30.838	59	6660
3750	4.9578	84	60.4301	9083	35.2992	657	30.897	59	6750
3800	4.9662	82	61.3384	9098	35.3649	650	30.956	57	6840
3850	4.9744	81	62.2482	9112	35.4299	642	31.013	57	6930
3900	4.9825	78	63.1594	9127	35.4941	635	31.070	57	7020
3950	4.9903	76	64.0721	9141	35.5576	628	31.127	56	7110
4000	4.9979	75	64.9862	9160	35.6204	622	31.183	55	7200
4050	5.0054	72	65.9022	9171	35.6826	615	31.238	54	7290
4100	5.0126	71	66.8193	9178	35.7441	608	31.292	54	7380
4150	5.0197	68	67.7371	9190	35.8049	601	31.346	54	7470
4200	5.0265	67	68.6561	9204	35.8650	595	31.400	53	7560
4250	5.0332	65	69.5765	9218	35.9245	590	31.453	52	7650
4300	5.0397	63	70.4983	9234	35.9835	583	31.505	52	7740
4350	5.0460	61	71.4217	9244	36.0418	577	31.557	51	7830
4400	5.0521	59	72.3461	9254	36.0995	571	31.608	51	7920
4450	5.0580	58	73.2715	9261	36.1566	566	31.659	50	8010
4500	5.0638	55	74.1976	9270	36.2132	559	31.709	50	8100
4550	5.0693	53	75.1246	9282	36.2691	555	31.759	49	8190
4600	5.0746	51	76.0528	9299	36.3246	548	31.808	49	8280
4650	5.0797	50	76.9827	9308	36.3794	544	31.857	49	8370
4700	5.0847	49	77.9135	9310	36.4338	538	31.906	48	8460
4750	5.0896	47	78.8445	9315	36.4876	534	31.954	47	8550
4800	5.0943	44	79.7760	9326	36.5410	528	32.001	47	8640
4850	5.0987	41	80.7086	9337	36.5938	523	32.048	47	8730
4900	5.1028	40	81.6423	9347	36.6461	519	32.095	46	8820
4950	5.1068	41	82.5770	9352	36.6980	513	32.141	46	8910
5000	5.1109		83.5122		36.7493		32.187		9000

* The enthalpy function is divided here by a constant RT_0 where T_0 = 273.16°K (491.688°R).

Table 8-12/a. IDEAL-GAS THERMODYNAMIC FUNCTIONS FOR ATOMIC OXYGEN

°K	$\frac{C_p^\circ}{R}$		$\frac{(H^\circ - E_0^\circ)^*}{RT_0}$		$\frac{S^\circ}{R}$		$\frac{-(F^\circ - E_0^\circ)}{RT}$		°R
10	2.5000	9	.09152	9153	10.3601	17330	7.8601	17329	18
20	2.5009	171	.18305	9177	12.0931	10162	9.5930	10140	36
30	2.5180	512	.27482	9302	13.1093	7306	10.6070	7209	54
40	2.5692	726	.36784	9536	13.8399	5810	11.3279	5624	72
50	2.6418	724	.46320	9806	14.4209	4881	11.8903	4635	90
60	2.7142	589	.56126	10049	14.9090	4231	12.3538	3959	108
70	2.7731	414	.66175	10233	15.3321	3732	12.7497	3466	126
80	2.8145	250	.76408	10354	15.7053	3331	13.0963	3087	144
90	2.8395	115	.86762	10420	16.0384	2998	13.4050	2786	162
100	2.8510	13	.97182	1044	16.3382	2719	13.6836	2539	180
110	2.8523	- 54	1.0762	1044	16.6101	2480	13.9375	2332	198
120	2.8469	-100	1.1806	1040	16.8581	2275	14.1707	2156	216
130	2.8369	-131	1.2846	1036	17.0856	2098	14.3863	2004	234
140	2.8238	-148	1.3882	1032	17.2954	1943	14.5867	1871	252
150	2.8090	-156	1.4914	1025	17.4897	1808	14.7738	1754	270
160	2.7934	-157	1.5939	1020	17.6705	1689	14.9492	1651	288
170	2.7777	-153	1.6959	1014	17.8394	1583	15.1143	1559	306
180	2.7624	-146	1.7973	1008	17.9977	1490	15.2702	1475	324
190	2.7478	-138	1.8981	1004	18.1467	1406	15.4177	1400	342
200	2.7340	-134	1.9985	999	18.2873	1327	15.5577	1328	360
210	2.7206	-125	2.0984	994	18.4200	1262	15.6905	1269	378
220	2.7081	-117	2.1978	989	18.5462	1202	15.8174	1214	396
230	2.6964	-109	2.2967	985	18.6664	1147	15.9388	1162	414
240	2.6855	-102	2.3952	981	18.7811	1096	16.0550	1114	432
250	2.6753	- 95	2.4933	978	18.8907	1046	16.1664	1068	450
260	2.6658	- 89	2.5911	974	18.9953	1004	16.2732	1027	468
270	2.6569	- 83	2.6885	971	19.0957	966	16.3759	989	486
280	2.6486	- 77	2.7856	968	19.1923	928	16.4748	954	504
290	2.6409	- 71	2.8824	965	19.2851	895	16.5702	920	522
300	2.6338	- 67	2.9789	963	19.3746	861	16.6622	888	540
310	2.6271	- 62	3.0752	961	19.4607	833	16.7510	859	558
320	2.6209	- 58	3.1713	958	19.5440	806	16.8369	833	576
330	2.6151	- 54	3.2671	957	19.6246	780	16.9202	807	594
340	2.6097	- 51	3.3628	954	19.7026	756	17.0009	783	612
350	2.6046	- 48	3.4582	953	19.7782	733	17.0792	760	630
360	2.5998	- 44	3.5535	951	19.8515	712	17.1552	739	648
370	2.5954	- 42	3.6486	949	19.9227	691	17.2291	718	666
380	2.5912	- 39	3.7435	948	19.9918	674	17.3009	699	684
390	2.5873	- 37	3.8383	947	20.0592	654	17.3708	680	702
400	2.5836	- 34	3.9330	945	20.1246	638	17.4388	663	720
410	2.5802	- 33	4.0275	944	20.1884	621	17.5051	646	738
420	2.5769	- 31	4.1219	943	20.2505	605	17.5697	630	756
430	2.5738	- 29	4.2162	941	20.3110	592	17.6327	616	774
440	2.5709	- 28	4.3103	941	20.3702	578	17.6943	601	792
450	2.5681	- 26	4.4044	939	20.4280	563	17.7544	587	810
460	2.5655	- 25	4.4983	939	20.4843	553	17.8131	575	828
470	2.5630	- 23	4.5922	938	20.5396	539	17.8706	561	846
480	2.5607	- 22	4.6860	938	20.5935	529	17.9267	551	864
490	2.5585	- 20	4.7798	936	20.6464	516	17.9818	538	882
500	2.5565	- 20	4.8734	936	20.6980	507	18.0356	527	900
510	2.5545	- 18	4.9670	935	20.7487	495	18.0883	516	918
520	2.5527	- 18	5.0605	934	20.7982	487	18.1399	507	936
530	2.5509	- 17	5.1539	933	20.8469	476	18.1906	496	954
540	2.5492	- 16	5.2472	933	20.8945	467	18.2402	486	972
550	2.5476	- 15	5.3405	932	20.9412	459	18.2888	478	990
560	2.5461	- 15	5.4337	932	20.9871	451	18.3366	469	1008
570	2.5446	- 14	5.5269	931	21.0322	442	18.3835	460	1026
580	2.5432	- 13	5.6200	931	21.0764	435	18.4295	453	1044
590	2.5419	- 13	5.7131	930	21.1199	426	18.4748	444	1062
600	2.5406		5.8061		21.1625		18.5192		1080

* The enthalpy function is divided here by a constant RT_0 where T_0 = 273.16°K (491.688°R).

Table 8-12/a. IDEAL-GAS THERMODYNAMIC FUNCTIONS FOR ATOMIC OXYGEN - Cont.

°K	$\frac{C_p^\circ}{R}$		$\frac{(H^\circ - E_0^\circ)^*}{RT_0}$		$\frac{S^\circ}{R}$		$\frac{-(F^\circ - E_0^\circ)}{RT}$		°R
600	2.5406	- 12	5.8061	930	21.1625	420	18.5192	436	1080
610	2.5394	- 12	5.8991	930	21.2045	412	18.5628	430	1098
620	2.5382	- 11	5.9921	929	21.2457	406	18.6058	422	1116
630	2.5371	- 11	6.0850	928	21.2863	399	18.6480	415	1134
640	2.5360	- 10	6.1778	928	21.3262	394	18.6895	408	1152
650	2.5350	- 10	6.2706	928	21.3656	387	18.7303	403	1170
660	2.5340	- 9	6.3634	928	21.4043	381	18.7706	396	1188
670	2.5331	- 10	6.4562	927	21.4424	375	18.8102	390	1206
680	2.5321	- 9	6.5489	927	21.4799	370	18.8492	384	1224
690	2.5312	- 8	6.6416	927	21.5169	365	18.8876	379	1242
700	2.5304	- 8	6.7343	926	21.5534	359	18.9255	372	1260
710	2.5296	- 8	6.8269	926	21.5893	353	18.9627	368	1278
720	2.5288	- 7	6.9195	925	21.6246	349	18.9995	361	1296
730	2.5281	- 7	7.0120	926	21.6595	344	19.0356	357	1314
740	2.5274	- 7	7.1046	925	21.6939	339	19.0713	352	1332
750	2.5267	- 6	7.1971	924	21.7278	335	19.1065	347	1350
760	2.5261	- 7	7.2895	925	21.7613	330	19.1412	343	1368
770	2.5254	- 6	7.3820	924	21.7943	326	19.1755	337	1386
780	2.5248	- 6	7.4744	924	21.8269	321	19.2092	334	1404
790	2.5242	- 5	7.5668	924	21.8590	318	19.2426	329	1422
800	2.5237	- 26	7.6592	4618	21.8908	1529	19.2755	1584	1440
850	2.5211	- 22	8.1210	4614	22.0437	1441	19.4339	1491	1530
900	2.5189	- 18	8.5824	4608	22.1878	1361	19.5830	1407	1620
950	2.5171	- 16	9.0432	4605	22.3239	1291	19.7237	1332	1710
1000	2.5155	- 14	9.5037	4603	22.4530	1226	19.8569	1266	1800
1050	2.5141	- 12	9.9640	4601	22.5756	1169	19.9835	1205	1890
1100	2.5129	- 11	10.4241	4599	22.6925	1117	20.1040	1150	1980
1150	2.5118	- 10	10.8840	4597	22.8042	1069	20.2190	1099	2070
1200	2.5108	- 8	11.3437	4595	22.9111	1025	20.3289	1054	2160
1250	2.5100	- 7	11.8032	4594	23.0136	985	20.4343	1011	2250
1300	2.5093	- 7	12.2626	4593	23.1121	947	20.5354	972	2340
1350	2.5086	- 6	12.7219	4592	23.2068	912	20.6326	934	2430
1400	2.5080	- 6	13.1811	4591	23.2980	880	20.7260	904	2520
1450	2.5074	- 4	13.6402	4589	23.3860	850	20.8164	870	2610
1500	2.5070	- 4	14.0991	4588	23.4710	822	20.9034	842	2700
1550	2.5066	- 3	14.5579	4588	23.5532	797	20.9876	816	2790
1600	2.5063	- 3	15.0167	4588	23.6329	772	21.0692	789	2880
1650	2.5060	- 3	15.4755	4587	23.7101	748	21.1481	764	2970
1700	2.5057	- 3	15.9342	4585	23.7849	726	21.2245	742	3060
1750	2.5054	- 2	16.3927	4585	23.8575	706	21.2987	721	3150
1800	2.5052	- 1	16.8512	4585	23.9281	686	21.3708	701	3240
1850	2.5051	- 2	17.3097	4586	23.9967	668	21.4409	681	3330
1900	2.5049		17.7683	4585	24.0635	651	21.5090	664	3420
1950	2.5049	- 1	18.2268	4585	24.1286	634	21.5754	646	3510
2000	2.5048	1	18.6853	4584	24.1920	618	21.6400	630	3600
2050	2.5049		19.1437	4585	24.2538	604	21.7030	614	3690
2100	2.5049	2	19.6022	4586	24.3142	589	21.7644	600	3780
2150	2.5051	2	20.0608	4587	24.3731	576	21.8244	586	3870
2200	2.5053	2	20.5195	4587	24.4307	563	21.8830	572	3960
2250	2.5055	3	20.9782	4587	24.4870	551	21.9402	560	4050
2300	2.5058	4	21.4369	4587	24.5421	539	21.9962	547	4140
2350	2.5062	5	21.8956	4587	24.5960	528	22.0509	536	4230
2400	2.5067	5	22.3543	4588	24.6488	517	22.1045	524	4320
2450	2.5072	6	22.8131	4588	24.7005	506	22.1569	514	4410
2500	2.5078	6	23.2719	4591	24.7511	497	22.2083	503	4500
2550	2.5084	8	23.7310	4592	24.8008	487	22.2586	494	4590
2600	2.5092	8	24.1902	4593	24.8495	478	22.3080	484	4680
2650	2.5100	9	24.6495	4596	24.8973	469	22.3564	475	4770
2700	2.5109	10	25.1091	4597	24.9442	461	22.4039	466	4860
2750	2.5119	11	25.5688	4599	24.9903	453	22.4505	458	4950
2800	2.5130		26.0287		25.0356		22.4963		5040

* The enthalpy function is divided here by a constant RT_0 where T_0 = 273.16°K (491.688°R).

Table 8-12/a. IDEAL-GAS THERMODYNAMIC FUNCTIONS FOR ATOMIC OXYGEN - Cont.

°K	$\frac{C_p^\circ}{R}$		$\frac{(H^\circ - E_0^\circ)}{RT_0}$ *		$\frac{S^\circ}{R}$		$\frac{-(F^\circ - E_0^\circ)}{RT}$		°R
2800	2.5130	12	26.0287	4601	25.0356	444	22.4963	449	5040
2850	2.5142	13	26.4888	4603	25.0800	438	22.5412	441	5130
2900	2.5155	13	26.9491	4606	25.1238	430	22.5853	434	5220
2950	2.5168	14	27.4097	4608	25.1668	423	22.6287	427	5310
3000	2.5182	15	27.8705	4611	25.2091	417	22.6714	419	5400
3050	2.5197	16	28.3316	4615	25.2508	410	22.7133	413	5490
3100	2.5213	16	28.7931	4617	25.2918	403	22.7546	406	5580
3150	2.5229	18	29.2548	4620	25.3321	398	22.7952	400	5670
3200	2.5247	18	29.7168	4624	25.3719	392	22.8352	393	5760
3250	2.5265	19	30.1792	4626	25.4111	386	22.8745	387	5850
3300	2.5284	20	30.6418	4629	25.4497	380	22.9132	382	5940
3350	2.5304	21	31.1047	4633	25.4877	375	22.9514	376	6030
3400	2.5325	21	31.5680	4636	25.5252	369	22.9890	370	6120
3450	2.5346	22	32.0316	4640	25.5621	365	23.0260	365	6210
3500	2.5368	23	32.4956	4645	25.5986	360	23.0625	360	6300
3550	2.5391	23	32.9601	4650	25.6346	355	23.0985	354	6390
3600	2.5414	24	33.4251	4655	25.6701	351	23.1339	350	6480
3650	2.5438	25	33.8906	4659	25.7052	346	23.1689	345	6570
3700	2.5463	25	34.3565	4664	25.7398	342	23.2034	340	6660
3750	2.5488	25	34.8229	4668	25.7740	338	23.2374	336	6750
3800	2.5513	26	35.2897	4672	25.8078	333	23.2710	332	6840
3850	2.5539	27	35.7569	4677	25.8411	330	23.3042	327	6930
3900	2.5566	27	36.2246	4681	25.8741	326	23.3369	324	7020
3950	2.5593	28	36.6927	4687	25.9067	322	23.3693	319	7110
4000	2.5621	28	37.1614	4692	25.9389	319	23.4012	315	7200
4050	2.5649	28	37.6306	4698	25.9708	314	23.4327	312	7290
4100	2.5677	29	38.1004	4703	26.0022	312	23.4639	308	7380
4150	2.5706	29	38.5707	4709	26.0334	308	23.4947	304	7470
4200	2.5735	29	39.0416	4714	26.0642	305	23.5251	300	7560
4250	2.5764	30	39.5130	4719	26.0947	302	23.5551	297	7650
4300	2.5794	30	39.9849	4724	26.1249	298	23.5848	294	7740
4350	2.5824	29	40.4573	4730	26.1547	295	23.6142	290	7830
4400	2.5853	30	40.9303	4735	26.1842	293	23.6432	287	7920
4450	2.5883	30	41.4038	4741	26.2135	289	23.6719	284	8010
4500	2.5913	31	41.8779	4747	26.2424	286	23.7003	281	8100
4550	2.5944	30	42.3526	4752	26.2710	284	23.7284	278	8190
4600	2.5974	31	42.8278	4758	26.2994	281	23.7562	275	8280
4650	2.6005	31	43.3036	4764	26.3275	278	23.7837	272	8370
4700	2.6036	30	43.7800	4769	26.3553	276	23.8109	269	8460
4750	2.6066	31	44.2569	4774	26.3829	273	23.8378	267	8550
4800	2.6097	31	44.7343	4780	26.4102	271	23.8645	263	8640
4850	2.6128	30	45.2123	4784	26.4373	268	23.8908	262	8730
4900	2.6158	31	45.6907	4789	26.4641	266	23.9170	259	8820
4950	2.6189	30	46.1696	4793	26.4907	263	23.9429	256	8910
5000	2.6219		46.6489		26.5170		23.9685		9000

* The enthalpy function is divided here by a constant RT_0 where T_0 = 273.16°K (491.688°R).

Table 8-13. COEFFICIENTS FOR THE EQUATION OF STATE FOR OXYGEN

$$Z = 1 + B_1P + C_1P^2 + D_1P^3$$

T °K	B_1 atm^{-1} *	C_1 atm^{-2} *	D_1 atm^{-3} *	T °K	B_1 atm^{-1} *	C_1 atm^{-2} *	D_1 atm^{-3} *
100	-.(1)218811	-.(3)49949	-.(3)3826	700	.(3)3096	.(6)26	-.(9)7331
110	-.(1)168698	-.(3)28147	-.(4)8265	710	.(3)3102	.(6)25	-.(9)7069
120	-.(1)132878	-.(3)16757	-.(4)2242	720	.(3)3107	.(6)24	-.(9)6816
130	-.(1)106472	-.(3)10412	-.(5)7148	730	.(3)3110	.(6)24	-.(9)6573
140	-.(2)86512	-.(4)6684	-.(5)2525	740	.(3)3112	.(6)23	-.(9)6338
150	-.(2)71105	-.(4)4404	-.(6)9312	750	.(3)3112	.(6)22	-.(9)6111
160	-.(2)58993	-.(4)2959	-.(6)3290	760	.(3)3111	.(6)22	-.(9)5893
170	-.(2)49330	-.(4)2017	-.(7)8969	770	.(3)3108	.(6)20	-.(9)5683
180	-.(2)41515	-.(4)1388	.(8)5949	780	.(3)3105	.(6)20	-.(9)5481
190	-.(2)35124	-.(5)958	.(7)4156	790	.(3)3101	.(6)20	-.(9)5287
200	-.(2)29842	-.(5)660	.(7)5150	800	.(3)3095	.(6)19	-.(9)5101
210	-.(2)25438	-.(5)450	.(7)5058	850	.(3)3056	.(6)17	-.(9)4271
220	-.(2)21734	-.(5)301	.(7)4541	900	.(3)3003	.(6)15	-.(9)3591
230	-.(2)18601	-.(5)193	.(7)3899	950	.(3)2942	.(6)13	-.(9)3035
240	-.(2)15931	-.(5)116	.(7)3261	1000	.(3)2875	.(6)11	-.(9)2577
250	-.(2)13644	-.(6)59	.(7)2683	1050	.(3)2805	.(6)10	-.(9)2200
260	-.(2)11672	-.(6)18	.(7)2180	1100	.(3)2734	.(7)9	-.(9)1887
270	-.(3)9966	.(6)12	.(7)1755	1150	.(3)2663	.(7)8	-.(9)1626
280	-.(3)8482	.(6)34	.(7)1400	1200	.(3)2590	.(7)7	-.(9)1408
290	-.(3)7186	.(6)49	.(7)1106	1250	.(3)2521	.(7)7	-.(9)1225
300	-.(3)6051	.(6)60	.(8)8649	1300	.(3)2455	.(7)6	-.(9)1070
310	-.(3)5053	.(6)67	.(8)6674	1350	.(3)2389	.(7)5	-.(10)938
320	-.(3)4172	.(6)72	.(8)5063	1400	.(3)2328	.(7)5	-.(10)826
330	-.(3)3394	.(6)75	.(8)3753	1450	.(3)2266	.(7)5	-.(10)730
340	-.(3)2704	.(6)77	.(8)2689	1500	.(3)2208	.(7)4	-.(10)647
350	-.(3)2091	.(6)78	.(8)1828	1550	.(3)2151	.(7)4	-.(10)576
360	-.(3)1544	.(6)77	.(8)1133	1600	.(3)2097	.(7)4	-.(10)514
370	-.(3)1057	.(6)76	.(9)5738	1650	.(3)2045	.(7)3	-.(10)460
380	-.(4)621	.(6)75	.(9)1256	1700	.(3)1994	.(7)3	-.(10)413
390	-.(4)231	.(6)74	-.(9)2315	1750	.(3)1946	.(7)3	-.(10)371
400	.(4)119	.(6)72	-.(9)5143	1800	.(3)1900	.(7)3	-.(10)335
410	.(4)433	.(6)70	-.(9)7362	1850	.(3)1855	.(7)3	-.(10)303
420	.(4)715	.(6)68	-.(9)9083	1900	.(3)1812	.(7)2	-.(10)275
430	.(4)969	.(6)66	-.(8)1039	1950	.(3)1771	.(7)2	-.(10)250
440	.(3)1197	.(6)64	-.(8)1138	2000	.(3)1731	.(7)2	-.(10)228
450	.(3)1403	.(6)62	-.(8)1209	2050	.(3)1693	.(7)2	-.(10)208
460	.(3)1589	.(6)59	-.(8)1258	2100	.(3)1656	.(7)2	-.(10)190
470	.(3)1756	.(6)58	-.(8)1289	2150	.(3)1621	.(7)2	-.(10)174
480	.(3)1907	.(6)55	-.(8)1306	2200	.(3)1587	.(7)2	-.(10)160
490	.(3)2044	.(6)53	-.(8)1311	2250	.(3)1554	.(7)2	-.(10)147
500	.(3)2167	.(6)52	-.(8)1306	2300	.(3)1522	.(7)1	-.(10)135
510	.(3)2277	.(6)50	-.(8)1295	2350	.(3)1491	.(7)1	-.(10)125
520	.(3)2377	.(6)48	-.(8)1277	2400	.(3)1462	.(7)1	-.(10)115
530	.(3)2467	.(6)46	-.(8)1255	2450	.(3)1433	.(7)1	-.(10)107
540	.(3)2548	.(6)45	-.(8)1229	2500	.(3)1406	.(7)1	-.(11)99
550	.(3)2621	.(6)43	-.(8)1200	2550	.(3)1379	.(7)1	-.(11)92
560	.(3)2686	.(6)42	-.(8)1170	2600	.(3)1353	.(7)1	-.(11)85
570	.(3)2745	.(6)40	-.(8)1138	2650	.(3)1328	.(7)1	-.(11)79
580	.(3)2797	.(6)39	-.(8)1105	2700	.(3)1304	.(7)1	-.(11)74
590	.(3)2843	.(6)37	-.(8)1072	2750	.(3)1281	.(7)1	-.(11)69
600	.(3)2884	.(6)36	-.(8)1039	2800	.(3)1258	.(7)1	-.(11)64
610	.(3)2921	.(6)35	-.(8)1005	2850	.(3)1236	.(7)1	-.(11)60
620	.(3)2954	.(6)34	-.(9)9728	2900	.(3)1215	.(7)1	-.(11)56
630	.(3)2982	.(6)33	-.(9)9403	2950	.(3)1194	.(7)1	-.(11)53
640	.(3)3007	.(6)32	-.(9)9084	3000	.(3)1174	.(7)1	-.(11)49
650	.(3)3029	.(6)30	-.(9)8771				
660	.(3)3048	.(6)29	-.(9)8466				
670	.(3)3063	.(6)29	-.(9)8169				
680	.(3)3076	.(6)28	-.(9)7881				
690	.(3)3087	.(6)27	-.(9)7601				

*Numbers in parentheses indicate the number of zeros immediately to the right of the decimal point.