TABLES OF THE PROPERTIES OF STEAM

AND OTHER VAPORS

AND

TEMPERATURE-ENTROPY TABLE

BY

CECIL H. PEABODY

PROFESSOR OF NAVAL ARCHITECTURE AND MARINE ENGINEERING
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

EIGHTH EDITION. REWRITTEN
TOTAL ISSUE FIFTEEN THOUSAND

NEW YORK
JOHN WILEY & SONS
LONDON: CHAPMAN & HALL, LIMITED
1909

Stanhope Press
F. H. GILSON COMPANY
BOSTON, U.S.A.

PREFACE.

THE Tables of the Properties of Steam were published in 1888, to accompany the author's "Thermodynamics of the Steam Engine"; in 1907 they were revised, taking advantage of added information then available, and a Temperature-Entropy Table was added to facilitate calculations for steam turbines.

The properties of steam have recently been redetermined by new and refined methods, that are capable of great certainty and precision, so that computations based upon them show a satisfactory concordance. These tables have been recomputed with this information, and may, therefore, be used with confidence and may be expected to have permanence.

The Temperature-Entropy Table gives solutions of all adiabatic problems (and many others) both for saturated and for superheated steam with ease and precision, and permits us to make certain determinations not otherwise possible. For engineering purposes answers to such problems may in general be read directly from the table; greater refinement can be had by interpolation when necessary.

Original data are given in the Introduction, and methods of computation are given with such completeness that each one may decide for himself the degree of accuracy he shall attribute to the properties and methods presented.

The author desires to express his appreciation of assistance given by Mr. H. A. Everett, S.B., in the preparation of material, computation of tables and reading of proof.

C. H. P.

MAY 1st, 1909.

CONTENTS.

PROPERTIES OF STEAM AND OTHER VAPORS.

INTRODUCTION.

For engineering purposes steam is generated in a boiler which is partially filled with water, and arranged to receive heat from the fire in the furnace. The ebullition is usually energetic, and more or less water is mingled with the steam; but if there is a fair allowance of steam space over the water, and if proper arrangements are provided for withdrawing the steam, it will be found when tested to contain a small amount of water, usually between half a per cent and a per cent and a half. Steam which contains a considerable percentage of water is passed through a separator which removes almost all of it. Such steam is considered to be approximately dry.

If the steam is quite free from water it is said to be dry and saturated; steam from a boiler with a large steam space and which is making steam very slowly is nearly if not quite dry.

Steam which is withdrawn from the boiler may be heated to a higher temperature than that found in the boiler, and is then said to be superheated.

The physical properties of both saturated and superheated steam have now been determined by methods susceptible of certainty and precision so that computations based on them show satisfactory concordance. The results of these investigations will be quoted directly from the original authorities, together with their estimate of the degree of precision to be attributed to their results. This matter should be read with care, so that each one may determine for himself the confidence he can have in the following tables and the accuracy of computation made by their aid.

Saturated Steam. — The essential properties of saturated steam are heat of the liquid, heat of vaporization, specific pressure and specific volume; other properties dependent on these are heat equivalent of external work, heat equivalent of internal work, entropy of the liquid and entropy of vaporization. All these properties depend on the temperature only, and may conveniently be determined and tabulated for use in solving engineering problems. They are given by Tables I and III for each

degree Fahrenheit and each degree Centigrade, and by Table II for each pound per square inch. Properties of some other vapors are given in Tables IV to XI.

Thermometric Scales. — Temperatures are commonly measured by mercurial thermometers which may be graduated on the Fahrenheit or the centigrade scales. The centigrade scale has its zero at the freezing-point of water, and the boiling-point is called 100 degrees. The Fahrenheit thermometer has its freezing-point numbered 32° F., and its boiling-point 212 degrees. It is clear that

$$t_F = \frac{9}{5}\, t_C + 32 \quad \text{and} \quad t_C = \frac{5}{9}(t_F - 32).$$

Physicists base their heat measurements on a thermodynamic scale, which is determined from certain theoretical considerations of the properties of gases. For engineering purposes the difference between this scale and the scale of the mercurial thermometer is not important.

Standard Temperature. — It is customary to refer all calculations for gases to the standard conditions of the pressure of the atmosphere (760 mm. of mercury) and to the freezing-point of water. Formerly the freezing-point was taken as the standard temperature for water and steam as even now it is the initial point for tables of the properties of saturated vapors. But the investigation of the mechanical equivalent of heat by Rowland resulted in a determination of the specific heat of water with much greater delicacy than is possible by Regnault's method of mixtures, and showed that the freezing-point is not well adapted for the standard temperature for water. It is the habit of many physicists to take 15° C. as the standard temperature, and this corresponds substantially with 62° F., at which the English units of measure are standard.

Unit of Heat. — The unit for the measurement of heat is the amount of heat required to raise one unit of weight of water one degree from the standard temperature.

The calorie is the amount of heat required to raise the temperature of one kilogram of water from 15° to 16° C.

The British Thermal Unit is the amount of heat required to raise the temperature of one pound of water from 62° to 63° F.

These two definitions lead to a discrepancy of 0.03 of one per cent, which is insignificant for engineering purposes; in these tables the B.T.U. is taken as the standard, and the discrepancy noted is ignored.

Some physicists prefer to use for the unit of heat, one hundredth part of the heat required to raise a kilogram of water from freezing-point to boiling-point. Such a mean calorie is greater than those defined above, by 0.2 of one per cent. It requires also that a different value shall be assigned to the mechanical equivalent of heat than that given in the following section.

Mechanical Equivalent of Heat.—If mechanical energy or work is transformed into heat and applied to heating water, it will be found that 778 foot-pounds of work will be required to heat one pound of water from 62° to 63° F.; in other words, one B.T.U. is equivalent to that number of foot-pounds. This is known as the mechanical equivalent of heat. The most authoritative determination of this important constant appears to be that by Rowland,* who gives the value quoted, namely,

778 foot-pounds.

This is equivalent to

427 metre kilograms

in the metric system. Since his experiments were made, this important physical constant has been investigated by several experimenters, and also a recomputation of his results has been made after a recomparison of his thermometers. The conclusion appears to be that his results may be a little small, but the differences are not important, and it is not certain that the conclusion is valid. There seems, therefore, no sufficient reason for changing the accepted values given above.

Specific Heat is the number of thermal units required to raise a unit of weight of a given substance one degree of temperature. The specific heat of water at standard temperature is unity, and any specific heat is essentially a ratio.

Specific Heat of Water. — The most reliable determination of the specific heat of water is that by Dr. Barnes,† who used an electrical method devised by Professor Callendar and himself, and who extended the method to and below freezing-point by carefully cooling water without the formation of ice to − 5° C. This method gives relative results with great refinement, and gives also a good confirmation of Rowland's determination of the mechanical equivalent of heat. Dr. Barnes reports values of the specific heat of water up to 95° C.

* *Proc. Am. Acad.*, vol. xv (N. S. vii), 1879.
† *Physical Review*, vol. xv, p. 71, 1902.

For temperatures above boiling-point values of the specific heat of water have been determined by the author from Regnault's * experiments on the heat of the liquid, allowing for the correct specific heat of the water in his calorimeter from Barnes's work. The probable error of the heats of the liquid thus obtained, appears to be one-fourth of a per cent. But the heat of the liquid for temperatures above boiling-point is habitually associated with the heat of vaporization, and the above error is less than one-tenth per cent of their sum.

In the following table Barnes's results are quoted directly from 0° to 55° C.; from 55 to 95 degrees his results have been slightly increased to join with results determined by recomputing Regnault's experiments on the heat of the liquid for water by allowing for the true specific heat at low temperature from Dr. Barnes's experiments. The maximum effect of modifying Dr. Barnes's results is to increase the heat of the liquid at 95 degrees by one-tenth of one per cent.

Temperature.		Specific Heat.	Temperature.		Specific Heat.	Temperature.		Specific Heat.
C.	F.		C.	F.		C.	F.	
0	32	1.0094	45	113	0.99760	90	194	1.00705
5	41	1.00530	50	122	0.99800	95	103	1.00855
10	50	1.00230	55	131	0.99850	100	212	1.01010
15	59	1.00030	60	140	0.99940	120	248	1.01620
20	68	0.99895	65	149	1.00040	140	284	1.02230
25	77	0.99806	70	158	1.00150	160	320	1.02850
30	86	0.99759	75	167	1.00275	180	356	1.03475
35	95	0.99735	80	176	1.00415	200	392	1.04100
40	104	0.99735	85	188	1.00557	220	428	1.04760

The specific heats of water at high temperatures have been determined by Dieterici† using a method which does not appear to have the certainty of Barnes's method. His results appear to be systematically larger than Barnes's results, the discrepancy at 95° C. being four-tenths of a per cent. Should his specific heats be used to determine the heat of the liquid at 200° C., the results would appear to be four-tenths of a per cent larger than the tabular values of the heat of the liquid at 200° C., in Table III. Even so if this be compared with the sum of the heat of the liquid and the

* *Mémoires de l'Institut de France*, etc., tome xxvi.

† *Annalen der Physik*, vol. 16, part 4, p. 593. 1905.

heat of vaporization, the discrepancy becomes about one-tenth of a per cent.

Heat of the Liquid. — The heat required to raise one unit of weight of any liquid from freezing-point to a given temperature is called the heat of the liquid at that temperature.

If the specific heat of water were constant the heat of the liquid would be found by multiplying the increase of temperature by the specific heat. An approximate result can be obtained by using the mean specific heat. For example, the mean specific heat from 0° to 25° C. may be taken to be $\frac{1}{5}(\frac{1}{2} \times 1.0094 + 1.00530 + 1.00230 + 1.00030 + 0.99895 + \frac{1}{2} \times 0.99806) = 1.00212$,

and $$25 \times 1.00212 = 25.05,$$

which in this case corresponds exactly with the tabular value in Table III.

The integral calculus gives for a varying specific heat the expression

$$q = \int c\, dt$$

for the heat of the liquid. An equivalent of the operation represented by this equation is to draw a curve with temperatures and specific heats as coördinates and to measure the area under that curve. The fact that the specific heat does not vary much from unity suggests the following method:

Let $$c = 1 + k$$

where k is the difference between the specific heat and unity; it may be positive or negative as the case may be. Then

$$q = t + \int k d,$$

which leads to a convenient graphical method since k is always small, and the diagram may be drawn with a large scale for ordinates, and accurate results can be obtained. The values for the heat of the liquid in the tables were obtained in this way.

The following table gives equations for heats of the liquid for various substances as determined by Regnault:*

* *Mémoires de l'Institut de France*, etc., tome xxvi.

HEAT OF THE LIQUID.

Alcohol	$q = 0.54754t + 0.0011218t^2 + 0.00000220 6t^3$
Ether	$q = 0.52901t + 0.0002959t^2$
Chloroform	$q = 0.23235t + 0.0000507t^2$
Carbon bisulphide	$q = 0.23523t + 0.0000815t^2$
Carbon tetrachloride	$q = 0.19798t + 0.0000906t^2$
Aceton	$q = 0.50643t + 0.0003965t^2$

Heat of Vaporization. — If a unit of weight of a liquid be at a certain temperature and subject to the corresponding pressure, then the amount of heat required to entirely vaporize it into dry saturated vapor at that temperature and against that pressure, is called the heat of vaporization. Henning* gives the following formula for the heat of vaporization of a kilogram of water in calories,

$$r = 94.210\ (365 - t)^{0.31249} \qquad (1)$$

He gives as the probable error of this equation one-tenth of one per cent. Other experiments by Dieterici,† Griffiths,‡ and A. C. Smith§ are represented by this equation with nearly the same degree of precision.

The heat of vaporization of one pound of water in B.T.U. is given by the following equation, obtained by transforming equation (1).

$$r = 141.124\ (689 - t)^{0.31249}. \qquad (2)$$

Both of the above equations are applicable from freezing to boiling-point; equation (1) from 0° to 100° C., and equation (2) from 32° to 212° F.

Total Heat. — The amount of heat required to raise a unit of weight of a liquid from freezing-point to a given temperature and to vaporize it into dry saturated vapor against the corresponding temperature is called the total heat.

The quantity is clearly equal to the sum of the heat of the liquid and the heat of vaporization; if the first is represented by q and the latter by r, then H, the total heat, is given by the following equation,

$$H = r + q. \qquad (3)$$

Conversely, if H and q are known, the preceding equation will give r.

* *Annalen der Physik*, vol. 21, part 4, p. 849, 1906.
† *Annalen der Physik*, vol. 16, part 4, p. 912, 1905.
‡ *Phil. Trans.* 186, p. 261, 1895; p. 593, 1905.
§ *Physical Review*, vol. xxv, 1907.

From an investigation of certain experiments on the superheating of steam by throttling, Dr. Harvey N. Davis* gives for the total heat of steam in B.T.U. per pound,

$$H = H_{212} + 0.3745\ (t - 212) - 0.000550\ (t - 212)^2, \qquad (4)$$

in which H_{212} is the total heat at boiling point. Equation (2) gives for the heat of vaporization at boiling-point 969.7, and the method on page 5, for finding the heat of the liquid, gives 180.3 at that temperature, consequently the above equation may be written, for English units,

$$H = 1150 + 0.3745\ (t - 212) - 0.000550\ (t - 212)^2. \qquad (5)$$

For French units the equation takes the form

$$H = 638.9 + 0.3745\ (t - 100) - 0.00099\ (t - 100)^2. \qquad (6)$$

Dr. Davis gives one-tenth of one per cent for the probable error of this equation.

For other liquids the heats of vaporization are given by Regnault.

Ether	$H = 94$	$+ 0.45t - 0.00055556t^2$
Chloroform	$H = 67$	$+ 0.1375\ t$
Carbon bisulphide	$H = 90$	$+ 0.14601t - 0.0004123t^2$
Carbon tetrachloride	$H = 52$	$+ 0.14625t - 0.000172t^2$
Aceton	$H = 140.5$	$+ 0.36644t - 0.000516t^2$

Specific Pressure. — It is customary to develop theoretical thermodynamic equations with the specific pressure expressed in pounds per square foot, for English units. Engineers habitually express pressures in pounds per square inch.

For French units, specific pressures are expressed in kilograms per square meter. Engineers use kilograms per square centimeter, and on the other hand physicists commonly express pressure in millimeters of mercury.

One cubic decimeter (or one liter) of mercury weighs 13.5959 kilograms, and a cubic decimeter is one-thousandth of a cubic meter, consequently the pressure of a column of mercury one millimeter high, on a base one meter square, is 13.5959 kilograms.

The normal pressure of the atmosphere is taken to be 760 mm. of mercury (at 0° C.), which is equivalent to 10,333 kilograms per square meter.

* *Trans. Am. Soc. Mech. Eng.*, 1908.

The normal pressure of the atmosphere is, therefore, 1.0333 kilograms per square centimeter. It was formerly the custom to graduate pressure gauges in atmospheres, for use in countries using the metric system. There is a tendency to confusion of units that are roughly approximate, and in some cases it is necessary to determine whether a pressure is intended to be in atmospheres or in kilograms per square centimeter.

Taking the meter to be equivalent to 39.37 inches, and the kilogram to weigh 2.20462 pounds, then one millimeter of mercury will be equivalent to

$$\frac{13.5959 \times 2.20462}{39.37^2} = .019338$$

of a pound per square inch. The normal pressure of the atmosphere is 760 times this, or 14.696 pounds per square inch. The corresponding specific pressure is 2116 pounds per square foot.

Pressure of Saturated Steam. — Recent determinations of the pressure of saturated steam have been made by Holborn and Henning* with all the resources of modern physical methods including the platinum thermometer. Their results reduced to the thermometric scale are set down in Table III exactly as given in their original report. Their own tests covered the range of temperature from 50° C. to 200° C., but they extend their results to 205° C. The results which they give from freezing-point to 50° C. were deduced by them from experiments of Thiesen and Scheel. In Table III the pressures from 205° to 220° C. are extrapolated by the author by aid of a curve of corrections for Regnault's equation for the range 100° to 220° C.

Holborn and Henning attribute to their own experiments a precision of $\frac{1}{100}$ of a degree Centigrade; this is far beyond technical requirements for direct application, but is needed in the computation of specific volumes, as will appear later. Thiesen and Scheel's experiments had a less degree of precision; and the extrapolation from 205° to 220° C. is open to some doubt.

Pressures of Other Vapors. — Regnault determined the pressures of various vapors and deduced for all of them equations having the form

$$\log p = a + b\alpha^n + c\beta^n. \qquad (7)$$

* *Annalen der Physik*, vol. 26, part 4, p. 833, 1908.

The following table gives the special forms of the equation and the constants for several vapors:

	log α.	a.	b.	c.
Alcohol	$a - b\alpha^n + c\beta^n$	5.4562028	4.9809960	0.0485397
Ether	$a + b\alpha^n - c\beta^n$	5.0286298	0.0002284	3.1906390
Chloroform	$a - b\alpha^n - c\beta^n$	5.2253893	2.9531281	0.0668673
Carbon bisulphide	$a - b\alpha^n - c\beta^n$	5.4011662	3.4405663	0.2857386
Carbon tetrachloride	$a - b\alpha^n - c\beta^n$	12.0962331	9.1375180	1.9674890

	log α.	log β.	n.	Limits.
Alcohol	9.99708557 − 10	9.9409485 − 10	$t + 20$	− 20°, + 150° C.
Ether	0.0145775	9.996877 − 10	$t + 20$	− 20°, + 120° C.
Chloroform	9.9974144 − 10	9.9868176 − 10	$t - 20$	+ 20°, + 164° C.
Carbon bisulphide	9.9977628 − 10	9.9911997 − 10	$t + 20$	− 20°, + 140° C.
Carbon tetrachloride	9.9997120 − 10	9.9949780 − 10	$t + 20$	− 20°, + 188° C.

Zeuner* gives the following equation for aceton based on Regnault's work:

$$\log p = a - b\alpha^n + c\beta^n;$$
$$a = 5.3085419;$$
$$\log b\alpha^n = + 0.5312766 - 0.0026148\, t;$$
$$\log c\beta^n = - 0.9645222 - 0.0215592\, t.$$

Specific Volume of Saturated Vapor. — From the extreme difficulty of direct experimental determinations of the specific volume of saturated vapor it has been customary to compute this property by aid of the equation

$$s = u + \sigma = \frac{r}{AT\dfrac{dp}{dt}} + \sigma, \qquad (8)$$

where s is the volume of the vapor and σ is the volume of the liquid; the other quantities are r the heat of vaporization, T the absolute temperature, $\frac{1}{A}$ the mechanical equivalent of heat, and $\frac{dp}{dt}$ the differential coefficient of the pressure with regard to temperature. A close approximation to the differential coefficient may be had by the following process: choosing a temperature (for example 100° C), take the pressure at two degrees

* Mechanische Wärmetheorie.

higher (102° C.) and at two degrees lower (98° C.) and divide by 4. The pressures must be in kilograms per square meter. From Table III we deduce

$$\frac{\Delta p}{\Delta t} = \frac{1109.3 - 961.6}{4} = 36.92.$$

The pressures are 1000 times the tabular pressures in kilograms per square centimeter. The expression $\frac{\Delta p}{\Delta t}$ is taken to represent an operation of the nature explained above. This statement is given in hopes that it may make evident an important method to readers who are not conversant with calculus.

Equation (8) must be used for all other vapors than steam, and for steam at temperatures less than 100° C.; it probably gives the best values for the specific volume of steam at temperatures higher than 100° C., as will appear in the discussion of experimental results.

Laws of Thermodynamics. — Theoretical thermodynamics is based on two propositions or laws known as the first and second laws. The first law is stated on page 3, under the heading Mechanical Equivalent of Heat.

The second law cannot be stated so briefly and satisfactorily; it may perhaps be best represented by one of its consequences, which can be written

$$e = \frac{T - T'}{T}, \tag{9}$$

where e is the efficiency of an ideal perfect heat engine and T and T' are absolute temperatures at which the engine receives and rejects heat.

For our present purpose it may be sufficient to define the absolute temperature by the expressions

$$T = t + 273° \text{ C.} \tag{10}$$
$$T = t + 459.5° \text{ F.} \tag{11}$$

Derivation of Equation (8).—It is hoped that the following simple derivation of equation (8) may be evident even to those who are not familiar with theoretical thermodynamics. Suppose that we have a simple engine consisting only of a piston moving in a cylinder with a closed end, both being supposed to be made of a non-conducting substance. Let Fig. 1 represent the indicator diagram of a series of operations as follows. First assume that there is one pound of water at the temperature t in the cylin-

der at the beginning of operations which can be represented by a; to this let there be applied the heat r; it will entirely vaporize the water at constant pressure and the volume will increase from σ to s, the increase being

$$u = s - \sigma. \qquad (12)$$

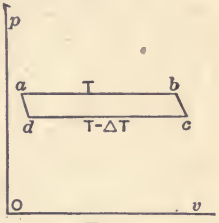

FIG. 1.

The second operation is an expansion represented by bc. During the third operation, represented by cd, we must imagine that heat is withdrawn in some way and that the steam partially condenses. Finally we have a compression da, which closes the diagram.

The second law of thermodynamics, represented by equation (9), gives for the efficiency of the diagram

$$\frac{T - (T - \Delta T)}{T} = \frac{\Delta T}{T},$$

for the temperature at which heat is withdrawn is ΔT degrees less than T. Consequently the heat changed into work is

$$\frac{r\Delta T}{T}.$$

But by the first law of thermodynamics this heat is equivalent to the work represented by the diagram. If $\frac{1}{A}$ is the mechanical equivalent, then the work produced from the heat is

$$\frac{1}{A}\frac{r\Delta T}{T}.$$

But the pressure is p pounds per square foot during the forward stroke and $p - \Delta p$ during the return stroke, so that the effective work is

$$\Delta p \,.\, u,$$

where u is the increase in volume. For example, the piston might have one square foot of area and move u feet. Equating the above expressions

$$u\Delta p = \frac{r\Delta T}{AT}.$$

Now it can make no difference whether the change of temperature is measured in the usual way and written Δt or measured as above. Therefore

$$u = \frac{r}{AT\dfrac{\Delta p}{\Delta t}}. \qquad (13)$$

The expression $\frac{\Delta p}{\Delta t}$ is that discussed on page 10. Those familiar with calculus will recognize that equation (13) leads to

$$u = \frac{r}{AT\frac{dp}{dt}}. \qquad (14)$$

Specific Volume of Saturated Steam. — The relation of the pressure of saturated steam to the temperature is given by Holborn and Henning in the form of a table of results which are quoted directly in Table III, the pressure being expressed in millimeters of mercury. It is considered that the best way of dealing with the differential coefficient $\frac{dp}{dt}$ is to replace it by the ratio $\frac{\Delta p}{\Delta t}$, as discussed on page 10, using 4° C. for the interval of temperatures Δt.

A number of elements enter into this consideration. If the relation of the pressure to the temperature could be represented by a second degree curve, that is, if such a curve were a parabola with its axis vertical, the ratio $\frac{\Delta p}{\Delta t}$ for any interval would be precisely equal to $\frac{dp}{dt}$. A table that could be represented by such a curve would have constant second differences; by second differences are meant the differences of the tabular differences as in Table III. An examination of second differences derived from Table III shows that they increase slowly, but that the increase is not perceptible for four degrees. For a six-degree interval the increase is barely perceptible, and for ten degrees it is very apparent. Now the precision claimed for the measurement of temperature is $\frac{1}{100}$ of a degree, so that a four-degree interval appears to give a precision of computation of $\frac{1}{400}$ for a single value of $\frac{\Delta p}{\Delta t}$. It may be noted in passing that the precision of observation of the height of the mercury column is better than the temperature determinations and therefore does not contribute to the probable error.

In order to diminish the effect of local variations of the nature of accidental errors, the values of the ratio $\frac{\Delta p}{\Delta t}$ were computed for each degree

of temperature from 0° C. to 220° C. The first and second differences were then computed, and the computed values of $\frac{\Delta p}{\Delta t}$ were changed when necessary to the amount of $\frac{1}{10000}$ in order to make the second differences regular. This process is equivalent to drawing a smooth or fair curve to represent physical properties obtained by observation.

Having values of the ratio $\frac{\Delta p}{\Delta t}$ for each degree of temperature, the specific volumes were computed by equation (8). These values were then tested for fairness by taking second differences, and again the computed values were varied when necessary to the extent of $\frac{1}{10000}$ to make the second differences regular. The combined effect of both fairings is estimated not to exceed $\frac{1}{5000}$, and it is believed that the probable error of the specific volumes thus determined is not greater than that amount for the range of temperature 50° C. to 200° C. covered by Holborn and Henning's experiments. This estimate carries with it the assumption that the methods of fairing give somewhat greater mean precision than can be attributed to a single computation of $\frac{\Delta p}{\Delta t}$.

For the range of temperature from 0° C. to 50° C., and especially for temperatures less than 30° C. (86° F.), so small a probable error cannot be claimed for the specific volumes; but that range has less interest for engineers. For temperatures less than 30° C. the specific volumes were derived in the following way. In the first place the values Apu given in Table III were computed from the specific volumes, and a curve was drawn to represent them; above 30° C. the computed values varied from the curve less than $\frac{1}{5000}$; in only a few cases was the variation greater than $\frac{1}{10000}$. Below 30° C. it was considered more correct to take values of Apu from the curve which was there appreciably straight, and values of the specific volume were obtained for Table III by inversion of the method of computing Apu. In passing it may be said that all values of Apu in Tables I and III were derived from the curve mentioned, which gave a greater degree of precision than needed for that purpose.

Since the pressures corresponding to temperatures above 200° C. are extrapolated, the specific volumes computed from them are affected by the same degree of uncertainty that attaches to the pressures.

Specific Volumes of Other Vapors. — In order to apply equation (8) to the computation of vapors for which Regnault's equations are given on page 9, we may derive the differential coefficient in the form

$$\frac{1}{p}\frac{dp}{dt} = A\alpha^n + B\beta^n. \qquad (15)$$

The following table gives values to be used for the factors that appear in that equation.

	Sign.		Log $(A\alpha^n)$.	Log $(B\beta^n)$.
	$A\alpha^n$.	$B\beta^n$.		
Alcohol	+	−	$-1.1720041-0.0029143\,t$	$-2.9992701-0.0590515\,t$
Ether	+	+	$-1.3396624-0.0031223\,t$	$-4.4616396+0.0145775\,t$
Chloroform	+	+	$-1.3410130-0.0025856\,t$	$-2.0667124-0.0131824\,t$
Carbon bisulphide	+	+	$-1.4339778-0.0022372\,t$	$-2.0511078-0.0088003\,t$
Carbon tetrachloride	+	+	$-1.8611078-0.0002880\,t$	$-1.3812195-0.0050220\,t$
Aceton	+	+	$-1.3268535-0.0026148\,t$	$-1.9064582-0.0215592\,t$
			t, temperature C.	

Experimental Determinations of Specific Volumes. — By far the best direct determinations of the specific volumes of saturated steam are those reported by Knoblauch,* Linde, and Klebe in connection with their determinations of the properties of superheated steam. These experiments determined the pressures at constant volume, and the results are so treated as to give the volume at saturation by extrapolation with great certainty. In their report they claim for their results, including volumes at saturation, a probable error not greater than $\frac{1}{500}$.

COMPARISON OF EXPERIMENTAL AND COMPUTED VALUES OF THE SPECIFIC VOLUME OF SATURATED STEAM.

Temperature.	Volumes Cu. M.			Temperature.	Volume Cu. M.		
	Experimental.	Computed.	Per Cent Deviation.		Experimental.	Computed.	Per Cent Deviation.
100	1.674	1.671	+0.18	145	0.4458	0.4457	+0.02
105	1.421	1.419	+0.14	150	0.3927	0.3921	+0.15
110	1.211	1.209	+0.17	155	0.3466	0.3463	+0.09
115	1.036	1.036	0	160	0.3069	0.3063	+0.20
120	0.8894	0.8910	−0.18	165	0.2724	0.2729	+0.18
125	0.7688	0.7698	−0.13	170	0.2426	0.2423	+0.12
130	0.6670	0.6677	−0.10	175	0.2168	0.2164	+0.19
135	0.5809	0.5812	−0.05	180	0.1940	0.1941	−0.05
140	0.5080	0.5081	−0.02	.....	.....	.....	.....

* *Mitteilungen über Forschungsarbeiten*, etc., Heft 21, S. 33, 1905.

These experimenters give 32 determinations of the volume of saturated steam. In order to make a comparison of these experimental values with computations in Table III, a large plot was made with temperatures for abscissæ and logarithms of volumes for ordinates, and a fair curve was drawn; from this curve the experimental values set down in the preceding table were deduced; the computed values are taken from Table III.

The greatest deviation is 0.2 of one per cent, which is the probable error assigned by the experimenters to their work. It may therefore be concluded that the claim of a probable error not in excess of $\frac{1}{500}$ for the computed values of the specific volume of saturated steam, and of a similar degree of precision for the experimental values, is warranted.

Now equation (8) includes explicitly the heat of vaporization, the absolute temperature and the mechanical equivalent of heat as well as the differential coefficient $\frac{dp}{dt}$. It also includes the heat of the liquid implicitly, since the heat of vaporization is derived from the total heat. Consequently the claim of a precision of $\frac{1}{500}$ for the specific volume attributes a like degree of precision to the first three named properties, and the same effective certainty to the heat of the liquid. It is true that we may independently attribute a greater precision to the three first properties named. Thus a probable error of $\frac{1}{1000}$ is claimed for the total heat by Dr. Davis, and Callendar* claims a probable error of $\frac{1}{2000}$ or better for the absolute temperature; the real value of the mechanical equivalent is even now slightly in question, but the value assigned is probably in error less than $\frac{1}{1000}$.

The conclusion appears to be that our knowledge of the properties of saturated steam is sufficient for engineering purposes, and that tables computed with available data will not require change.

Specific Volume of Liquids. — The coefficient of expansion of most liquids is large as compared with that of solids, but it is small as compared with that of gases or vapors. Again, the specific volume of a vapor is large compared with that of the liquid from which it is formed. Consequently the error of neglecting the increase of volume of a liquid with the rise of temperature is small in equations relating to the thermodynamics of a saturated vapor, or of a mixture of a liquid and its vapor when a considerable part by weight of the mixture is vapor. It is, therefore, customary to consider the specific volume of a liquid to be constant.

* *Phil. Mag.*, Jan., 1903.

Table XII, giving the specific volumes of various liquids, was taken from the *Phys.-Chem.* Tabellen of Landolt and Börnstein.

Volume of Water. — Table XIII gives the volumes of water compared with its volume at 4°. From 0° to 100° C., the values are those given by Rossetti. Above 100°, the values are those calculated by Hirn's equation.

Volumes of Liquids. — The volumes of liquids at high temperatures, compared with the volume at freezing-point, are represented by the following equations given by Hirn:* —

		Logs.
Water 100° C. to 200° C. (vol. at 4° C.= unity).....	$v = 1 + 0.00010867875t$	6.0361445−10
	$+ 0.0000030073653t^2$	4.4781862−10
	$+ 0.0000000028730422t^3$	1.4583419−10
	$- 0.000000000006645703 1t^4$	8.8225409−20
Alcohol 30° C. to 160° C. (vol. at 0° C.= unity).....	$v = 1 + 0.00073892265t$	6.8685991−10
	$+ 0.00001055235t^2$	3.0233492−10
	$- 0.0000000924808 42t^3$	2.9660517−10
	$+ 0.0000000004041356 7t^4$	0.6065278−10
Ether 30° C. to 130° C. (vol. at 0° C.= unity).....	$v = 1 + 0.0013489059t$	7.1299817−10
	$+ 0.0000065537t^2$	4.8164866−10
	$- 0.000000034490756t^3$	2.5377028−10
	$+ 0.0000000003377206 2t^4$	0.5285571−10
Carbon bisulphide 30° to 160° C. (vol. at 0° C.= unity).....	$v = 1 + 0.0011680559t$	7.0674636−10
	$+ 0.0000016489598t^2$	4.2172103−10
	$- 0.000000008111906 2t^3$	0.9091229−10
	$+ 0.0000000000609465 89t^4$	8.7849494−20
Carbon tetrahcloride 30° to 160° C. (vol. at 0° C.= unity).....	$v = 1 + 0.0010671883t$	7.0282409−10
	$+ 0.0000035651378t^2$	4.5520763−10
	$- 0.000000014949281t^3$	2.1746202−10
	$+ 0.0000000000851823 18t^4$	9.9303494−20

Internal and External Latent Heat. — The heat of vaporization overcomes external pressure, and changes the state from liquid to vapor at constant temperature and pressure. Let the specific volume of the saturated vapor be s, and that of the liquid be σ, then the change of volume is $s - \sigma = u$, on passing from the liquid to the vaporous state. The external work is

$$p\,(s - \sigma) = pu,$$

and the corresponding amount of heat, or the external latent heat, is

$$Ap\,(s - \sigma) = Apu,$$

A being the reciprocal of the mechanical equivalent of heat.

* *Annales de Chimie et de Physique*, 1867.

That part of the heat of vaporization which is not used in doing external work is considered to be used in changing the state from liquid to vapor. This work required to change the molecular arrangement is called disgregation work. The heat required to do the disgregation work is represented by

$$\rho = r - Apu. \tag{15}$$

Quality or Dryness Factor. — All the properties of saturated steam, such as pressure, volume, and heat of vaporization, depend on the temperature only, and are determinable either by direct experiment or by computation, and are commonly taken from tables like those assembled in this book.

Many of the problems met in engineering deal with mixtures of liquid and vapor, such as water and steam. In such problems it is convenient to represent the proportions of water and steam by a variable known as the quality or the dryness factor; this factor, x, is defined as that portion of each pound of the mixture which is steam; the remnant, $1 - x$, is consequently water.

Specific Volume of Wet Steam. — If a pound of a homogeneous mixture of water and steam is x part steam, then the specific volume may be represented by

$$v = xs + (1 - x)\,\sigma = xu + \sigma,$$

where u is the increase of volume due to vaporization.

Intrinsic Energy. — When heat is applied to a substance, a part is expended in increasing the temperature, a part is required to do the external work, and the remainder is considered to be used up in changing the molecular arrangement or condition. It has been seen that these three portions can be separated for saturated vapor; they are represented by q, Apu, and ρ. In some cases the first and last cannot be separated and must be treated together; in any case it is convenient to consider them together. The mechanical equivalent of their sum is called the intrinsic energy and may be represented by

$$E = \frac{1}{A}(\rho + q). \tag{16}$$

If only a portion of the liquid is vaporized the external work and the disgregation work may be obtained by multiplying the proper quantity by the dryness factor, and the heat equivalents will be

$$Axpu \quad \text{and} \quad x\rho.$$

In such case the intrinsic energy is

$$E = \frac{1}{A}(x\rho + q). \tag{17}$$

Entropy. — In the discussion of steam-engines or other heat engines, it is convenient to begin by considering the way in which steam (or other working substance) would behave if the cylinder were made of non-conducting material. Afterwards the effect of the actual material can be investigated. The expansion line which an indicator would draw under such conditions is called an adiabatic line. Calculations for adiabatic changes of steam can be made by aid of a special function devised for the purpose and called entropy. A discussion of adiabatic actions and of entropy can be found in any text-book on Thermodynamics; for example, on pages 17 and 31 of the "Thermodynamics of the Steam Engine" by the author. It is sufficient for our present purpose to consider that entropy can be expressed numerically and that the numerical values enter into the calculation of certain engineering problems.

It is customary to represent entropy in general by ϕ, but entropy may be represented by θ in dealing with a liquid.

To calculate the increase of entropy during any operation we may divide the heat added by the absolute temperature at which it is added. This leads to a very simple calculation in the case of vaporization of a liquid, as will be seen in the next paragraph. If the heat is added at a varying temperature, an approximation may be had by breaking the heat into small portions and dividing each by the mean temperature and then summing up.

Such an operation can be represented by the expression

$$\phi - \phi_0 = \int \frac{dQ}{T}, \tag{18}$$

where dQ represents an infinitesimal amount of heat and T is the absolute temperature at which it is added.

Equation (18) is a consequence of the second law of thermodynamics, and that law is sometimes said to be represented by it.

Entropy of Vaporization. — If a pound of water at the temperature t (or absolute temperature T) is partially vaporized, the heat expended is xr. The method of calculating entropy in the preceding paragraph gives in this case

$$\phi - \phi_0 = \frac{xr}{T} = x\frac{r}{T}. \tag{19}$$

In Tables I, II, and III values of $\frac{r}{T}$ are given for each degree or each pound.

Entropy of the Liquid. — When water is heated the specific heat varies and the heat is added at a varying temperature. While an approximation can be had by breaking up the heat into small parts as indicated in the preceding paragraph, a satisfactory determination of the entropy of the liquid can be made only by aid of the methods of the integral calculus. These methods give for the entropy of the liquid

$$\theta = \int \frac{dq}{T} = \int \frac{cdt}{T}. \tag{20}$$

It is shown on page 5 that the specific heat of water can be represented by

$$c = 1 + k,$$

and this expression introduced in the preceding equation gives

$$\theta = \int \frac{dt}{T} + \int \frac{kdt}{T} = \log_e \frac{T}{T_0} + \int_{t_0}^{t} k \frac{dt}{T}, \tag{21}$$

in which t_0 and T_0 are the temperature by the thermometer of freezing, and the corresponding absolute temperature. The first part of the above expression for the entropy of the liquid can be computed readily, and the second part (which is small) can be determined graphically with great precision. This method was used for the tables of the properties of saturated steam.

To obtain the entropy of any liquid named on page 6, we may first differentiate the proper equation to obtain dq and then integrate as indicated by the equation

$$\theta = \int \frac{dq}{T}.$$

The values given in Tables IV to IX were determined in this way.

Entropy of a Mixture of a Liquid and its Vapor. — The increase in entropy due to heating a unit of weight of a liquid from freezing-point to the temperature t and then vaporizing x portion of it is

$$\theta + \frac{xr}{T},$$

where θ is the entropy of the liquid, r is the heat of vaporization, and T is the absolute temperature. For steam $\frac{r}{T}$ may be taken from the tables for other vapors it must usually be calculated.

For any other state determined by x_1 and t_1 we shall have, for the increase of entropy above that of the liquid at freezing-point,

$$\frac{x_1 r_1}{T_1} + \theta_1.$$

The change of entropy in passing from one state to another is

$$\phi - \phi_1 = \frac{xr}{T} + \theta - \frac{x_1 r_1}{T_1} - \theta_1.$$

When the condition of the mixture of a liquid and its vapor is given by the pressure and the value of x, then Table II giving the properties at each pound may be conveniently used for this computation.

Adiabatic Equation for a Liquid and its Vapor. — During an adiabatic change the entropy is constant, so that the preceding equation gives

$$\frac{x_1 r_1}{T_1} + \theta_1 = \frac{x_2 r_2}{T_2} + \theta_2. \qquad (22)$$

When the initial state, determined by x_1 and t_1 or p_1, is known and the final temperature t_2, or the final pressure p_2, the final value x_2 may be found by this equation. The initial and final volumes may be calculated by the equations

$$v_1 = x_1 u_1 + \sigma \quad \text{and} \quad v_2 = x_2 u_2 + \sigma.$$

Tables of the properties of saturated vapor commonly give the specific volume s but

$$s = u + \sigma.$$

The value of σ for water is 0.016, and for other liquids will be found in Table XII.

For example, one pound of dry steam at 100 pounds absolute has the following properties found in Table II:

$$t_1 = 327°.9 \text{ F.} \qquad \frac{r_1}{T_1} = 1.1273; \qquad \theta_1 = 0.4748;$$

$$s_1 = 4.432; \qquad x_1 = 1.$$

If the final pressure is 15 pounds absolute, we have

$$t_2 = 213°.0\,\text{F.} \qquad \frac{r_2}{T_2} = 1.4409;\ \theta_2 = 0.3140;\ s_2 = 26.28,$$

whence

$$1.6021 = 1.4409\,x + 0.3140.$$
$$\therefore x_2 = .8939.$$

The initial and final volumes are

$$v_1 = s_1 = 4.432,$$
$$v_2 = x_2 u_2 + \sigma = 23.43.$$

Such a problem cannot be solved inversely, that is, we cannot assume a final volume and determine directly the temperature and pressure corresponding. The Temperature-Entropy Table to be explained later will, however, give an approximate solution directly, and an exact solution by interpolation.

External Work during Adiabatic Expansion. — Since no heat is transmitted during an adiabatic expansion, all of the intrinsic energy lost is changed into external work, so that

$$W = E_1 - E_2 = \frac{1}{A}(q_1 - q_2 + x_1\rho_1 - x_2\rho_2). \qquad (23)$$

For example, the external work of one pound of dry steam in expanding adiabatically from 100 pounds to 15 pounds absolute is

$$W = 778\,(298.5 - 181.3 + 1 \times 805.7 - 0.8939 \times 896.2),$$
$$W = 121.8 \times 778 = 94{,}760 \text{ foot-pounds.}$$

Attention should be called to the unavoidable defect of this method of calculation of external work during adiabatic expansion, in that it depends on taking the difference of quantities which are of the same order of magnitude. For example, the above calculation appears to give four places of significant figures, while, as a matter of fact, the total heat H from which ρ is derived is affected by a probable error of $\frac{1}{1000}$ or perhaps more. Both the quantities

$$q_1 + x_1\rho_1 \quad \text{and} \quad q_2 + x_2\rho_2$$

have a numerical value somewhere near 1000, and an error of $\frac{1}{1000}$ is nearly equivalent to one thermal unit, so that the probable error of the above calculation is nearly one per cent. For a wider range of temperature the error is less; had the lower pressure been 1 pound the error would

have been $\frac{1}{3}$ of a per cent. This matter should be borne in mind in considering the use of approximate methods of calculation, for example, by aid of a diagram like the temperature-entropy diagram.

Heat Contents. — The heat required to raise one pound of water from freezing-point to a given temperature t corresponding to a pressure p, and to vaporize a part x at that pressure, is represented by

$$xr + q;$$

this quantity may be called the heat contents.

Rankine's Cycle. — An important investigation for the steam-engine may be made by aid of the accompanying figure which represents the indicator diagram from a steam-engine without clearance and with a non-conducting cylinder. Steam is admitted at an absolute pressure p_1 from a to b; adiabatic expansion follows from b to c; finally the steam is exhausted from c to d at the pressure p_2. The external work during admission for one pound of steam having the quality x_1 is

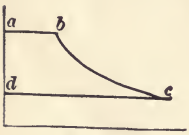

FIG. 2.

$$p_1 v_1 = p_1(x_1 u_1 + \sigma);$$

the external work during expansion is

$$E_1 - E_2 = \frac{1}{A}(q_1 - q_2 + x_1\rho_1 - x_2\rho_2);$$

and the external work during exhaust is

$$p_2 v_2 = p_2 (x_2 u_2 + \sigma),$$

which must be subtracted since it is done by the piston on the steam. The effective work of the cycle is

$$p_1 v_1 + E_1 - E_2 - p_2 v_2,$$

or, substituting the proper values,

$$W = \frac{1}{A}(q_1 + x_1\rho_1 + A p_1 x_1 u_1 - q_1 - x_2\rho_2 - A p_2 x_2 u_2) + (p_1 + p_2)\sigma;$$

the last term is small and may be dropped.

Remembering that

$$r = \rho + A p u,$$

we have

$$W = \frac{1}{A}(q_1 + x_1 r_1 - q_2 - x_2 r_2).$$

The values of r and q may be taken from Tables I, II, or III, and the value of x_2 can be determined by aid of the equation

$$\frac{x_1 r_1}{T_1} + \theta_1 = \frac{x_2 r_2}{T_2} + \theta_2.$$

By the first law of thermodynamics the difference between the heat supplied to an engine and the heat rejected is equivalent to the work done, provided there are no losses; therefore,

$$Q_1 - Q_2 = x_1 r_1 + q_1 - (x_2 r_2 + q_2).$$

This most important conclusion can be stated as follows: the heat changed into work by a steam-engine working on Rankine's cycle is equal to the difference in the heat contents of the steam supplied to and exhausted by the engine.

This same expression is found in the discussion of steam-turbines.

Problems of this nature can be solved immediately by aid of the Temperature-Entropy Table.

Superheated Steam. — A dry and saturated vapor, not in contact with the liquid from which it is formed, may be heated to a temperature greater than that corresponding to the given pressure for the same vapor when saturated; such a vapor is said to be superheated. When far removed from the temperature of saturation, such a vapor follows the laws of perfect gases very nearly, but near the temperature of saturation the departure from those laws is too great to allow of calculations by them for engineering purposes.

All the characteristic equations that have been proposed have been derived from the equation

$$pv = RT,$$

which is very nearly true for the so-called perfect gases at moderate temperatures and pressures; it is, however, well known that the equation does not give satisfactory results at very high pressures or very low temperatures. To adapt this equation to represent superheated steam a corrective term is added to the right-hand side which may most conveniently be assumed to be a function of the temperature and pressure, so that calculations by it may be made to join on to those for saturated steam.

The most satisfactory characteristic equation of this sort is that given by Knoblauch,* Linde, and Klebe,

$$pv = BT - p\,(1 + ap)\left[C\left(\frac{373}{T}\right)^3 - D\right]. \qquad (24)$$

p the pressure is in kilograms per square metre, v is in cubic metres, and T is the absolute temperature by the Centigrade thermometer. The constants have the following values:

$$B = 47.10, \quad a = 0.000002, \quad C = 0.031, \quad D = 0.0052.$$

In the English system of units, the pressures being in pounds per square foot, the volumes in cubic feet per pound, and the temperatures in the Fahrenheit scale, we have

$$pv = 85.85\,T - p\,(1 + 0.00000976\,p)\left(\frac{150{,}300{,}000}{T^3} - 0.0833\right). \qquad (25)$$

The following equation may be used with the pressure in pounds per square *inch:*

$$pv = 0.5962\,T - p\,(1 + 0.0014p)\left(\frac{150{,}300{,}000}{T^3} - 0.0833\right). \qquad (26)$$

The labor of calculation is principally in reducing the corrective term, and especially in the computation of the factor containing the temperature. Table XV gives values of this factor for each five degrees from 100° to 600° F. For ordinary use the nearest value in the table may be selected without interpolation; when this is done the error in calculation of a volume will not exceed 0.2 of a per cent for pressures less than 150°; for higher pressures and near saturation the error may be twice as much. By interpolation the corrective factor may be obtained with precision for all conditions.

Knoblauch attributes to his equation a probable error of 0.2 of a per cent within the range of his experiments which extends from 100° C. to 180° C., and to about 50° C. of superheating. It has been shown that a special treatment of his experimental values extrapolated to saturation shows at no place a greater discrepancy from the tabular values of Table III than 0.2 of a per cent. His equation when applied to saturated steam is nearly as good, the maximum discrepancy within his

* *Mitteilungen über Forschungsarbeiten,* Heft 21, S. 33, 1905.

range being one-third of a per cent at 160° C. Below boiling-point the greatest discrepancy of his equation is half a per cent at 50° C.; toward freezing-point the discrepancy decreases to zero.

Specific Heat of Superheated Steam. — A very laborious investigation of the specific heat of superheated steam was made by Professor Knoblauch * and Dr. Jakob with the special object of avoiding the presence of moisture in the steam near saturation.

Professor Knoblauch's report gives the results of the investigations made under his direction in the form of a table giving specific heats at various temperatures and pressures and in a diagram, which can be found in the original memoir, and he also gives a table of mean specific heats from the temperature of saturation to various temperatures at several pressures. This latter table is given here in both the metric system and in the English system of units.

SPECIFIC HEAT OF SUPERHEATED STEAM.

Knoblauch and Jakob.

p Kg. per Sq. Cm. p Lbs. per Sq. In. t_s Cent. t_s Fahr.		1 14.2 99° 210°	2 28.4 120° 248°	4 56.9 143° 289°	6 85.3 158° 316°	8 113.8 169° 336°	10 142.2 179° 350°	12 170.6 187° 368°	14 199.1 194° 381°	16 227.5 200° 392°	18 156.0 206° 403°	20 284.4 211° 412°
Fahr.	Cent.											
212°	100°	0.463	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
302°	150°	0.462	0.478	0.515	.....	.....	.....	.....	.....	.....	.....	.....
392°	200°	0.462	0.475	0.502	0.530	0.560	0.597	0.635	0.677	.....	.....	.....
482°	250°	0.463	0.474	0.495	0.514	0.532	0.552	0.570	0.588	0.609	0.635	0.664
572°	300°	0.464	0.475	0.492	0.505	0.517	0.530	0.541	0.550	0.561	0.572	0.585
662°	350°	0.468	0.477	0.492	0.503	0.512	0.522	0.529	0.536	0.543	0.550	0.557
752°	400°	0.473	0.481	0.494	0.504	0.512	0.520	0.526	0.531	0.537	0.542	0.547

The construction of this table is readily understood from the following example: — *Required* the heat needed to superheat a kilogram of steam at 4 kilograms per square centimetre from saturation to 300° C. The saturation temperature (to the nearest degree) is 143° C.; so that the steam at 300 degrees is superheated 157 degrees, and for this is required the heat

$$157 \times 0.492 = 77.2 \text{ calories.}$$

The experiments of Professor Knoblauch were made at 2, 4, 6, and 8 kilograms per square centimetre; the remainder of the table was obtained

* *Mitteilungen über Forschungsarbeiten*, Heft 36, s. 109.

from his diagram, which was extended graphically to the extent indicated. Within the limits of the experimental work the table may be used with confidence, the greatest error being probably not more than one-third of one per cent.

Total Heat of Superheated Steam. — In the solution of problems that arise in engineering it is convenient to use the total amount of heat required to raise one pound of water from freezing-point to the temperature of saturated steam at the given pressure and to vaporize it and to superheat it at that pressure to the given temperature. This total heat may be represented by the expression

$$H = q + r + c_p (t - t_s), \qquad (27)$$

where t is the temperature of the superheated steam, t_s is the temperature of saturated steam at the given pressure p, and q and r are the corresponding heat of the liquid and heat of vaporization. The mean specific heat c_p may usually be taken from the table on page 25 without interpolation, as a small variation does not have a very large effect.

The total heats or heat contents of superheated steam in the temperature-entropy table were obtained by the following method. From Professor Knoblauch's table of true specific heats as given in his report a diagram was drawn with degrees of superheating for abscissæ and true specific heats as ordinates; this diagram (which was substantially equivalent to Knoblauch's diagram) consisted of curves, which gave the specific heats at various constant pressures from 1 kilogram per square centimetre to 20 kilograms. His tabular values were taken directly for pressures from 1 kilogram to 10 kilograms, and the resultant diagram was faired by cross-curves, which were also used to extrapolate curves below 1 kilogram and above 10 kilograms; but in this extrapolation attention was given to his extrapolation, substantially the same results being obtained except near saturation for higher pressures. The diagram constructed, (which was better adapted for extension to saturation than Knoblauch's), indicated, at high pressure, the selection of smaller values of the specific heat at saturation, and there is reason to think that such values are more correct. The difference for pressures below 10 kilograms per square centimetre (140 pounds per square inch) in the resultant total heat computed by equation (27) is insignificant.

At 20 kilograms (280 pounds) the difference amounts to one thermal unit out of about 1200.

The diagram described furnished the basis of a diagram from which the heat required to superheat the steam at a given pressure and to a given degree could be obtained graphically for English units. Having values of the third term in equation (27) the total heat was readily obtained.

Entropy of Superheated Steam. — By the entropy of superheated steam is meant the increase of entropy due to heating water from freezing-point to the temperature of saturated steam at the given pressure, to the vaporization and to the superheating at that pressure. This operation may be represented as follows:

$$\theta + \frac{r}{T_s} + \int_{T_s}^{T} \frac{c_p dt}{T},$$

in which T is the absolute temperature of the superheated steam and T_s is the temperature of the saturated steam at the given pressure; θ and $\frac{r}{T}$ can be taken from Table I. The last term was obtained for the temperature-entropy table by graphical integration of curves plotted with values of $\frac{c_p}{T}$ derived from the curves of specific heats at various temperatures just described under the previous section.

Properties of Ammonia and Sulphur Dioxide. — One of the most interesting and important applications of the theory of superheated vapors is found in the approximate calculation of properties of certain volatile liquids which are used in refrigerating-machines, and for which we have not sufficient experimental data to construct tables in the manner followed for the fluids already discussed.

All attempts in this line have followed the example of Ledoux, who made the first attempt and who took for the basis of his investigations the form of equation proposed by Zeuner for superheated steam, namely,

$$pv = BT - Cp^{a}.$$

Investigations by Knoblauch already discussed show that this equation can be considered only a crude approximation for steam, and consequently less confidence can be placed on investigations by its aid than we formerly thought.. Nevertheless, in our present condition and until

more complete experimental data are available we are constrained to use some such approximate method, and it does not appear profitable to recompute tables at this time.

Fortunately Regnault determined the relation of temperature and pressure, and gave the following equations for pressure in millimetres of mercury, the temperature being on the Centigrade thermometer.

SULPHUR DIOXIDE.	AMMONIA.
$\log p = a - b\alpha^n - c\beta^n$	$\log p = a - b\alpha^n - c\beta^n$
$a = 5.6663790$	$a = 11.5043330$
$b = 3.0146890$	$b = 7.4503520$
$c = 0.1465400$	$c = 0.9499674$
$\log \alpha = 9.9972989 - 10$	$\log \alpha = 9.9996014 - 10$
$\log \beta = 9.9872900 - 10$	$\log \beta = 9.9939729 - 10$
$n = t + 28$	$n = t + 22$
Limits, -28, $+62$.	Limits, -22, $+82$.

The corresponding equations for pressures in pounds per square inch for temperatures Fahrenheit are:

SULPHUR DIOXIDE.	AMMONIA.
$\log p = a - b\alpha^n - c\beta^n$	$\log p = a - b\alpha^n - c\beta^n$
$a = 3.9527847$	$a = 9.7907380$
$\log b = 0.4792425$	$\log b = 0.8721769 - 10$
$\log c = 9.1659562 - 10$	$\log c = 9.9777087 - 10$
$\log \alpha = 9.9984994 - 10$	$\log \alpha = 9.9997786 - 10$
$\log \beta = 9.99293890 - 10$	$\log \beta = 9.9966516 - 10$
$n = t + 18°.4$ F.	$n = t + 7°.6$ F.

In the "Thermodynamics of the Steam Engine" by the author, pages 117 to 126, this calculation has been carried out with the best ascertained properties of the superheated vapors of sulphur dioxide and ammonia with the following results:

	SULPHUR DIOXIDE.	AMMONIA.
French units,	$pv = 14.5\,T - 48\,p^{0.22}$;	$pv = 54.3\,T - 142p^{\frac{1}{4}}$
English units,	$pv = 26.4\,T - 184\,p^{0.22}$;	$pv = 99\,\ T - 710p^{\frac{1}{4}}$

The application of these equations to the vapors when saturated gives the following results:

Heat of Vaporization.

SULPHUR DIOXIDE.	AMMONIA.
French units, $r = 98 - 0.27t$	$r = 300 - 0.8t$
English units, $r = 176 - 0.27\ (t - 32)$	$r = 540 - 0.8\ (t - 32)$

Specific Heat of the Liquid.

SULPHUR DIOXIDE.	AMMONIA.
$c = 0.4$	$c = 1.1$

Tables X and XI were calculated by aid of the equations written, and may be of use for approximate calculations, in default of more reliable tables.

Other Data. — For convenience the following data are assembled: —

Length of the metre in inches	39.37.
Weight of the kilogram in pounds	2.2046.
Weight of 1 litre (1 cubic decimetre) of mercury	13.5959 kilos.
One horsepower, in foot-pounds per second	550.
Cheval à vapeur, in kilogrammetres per second	75.
Normal pressure of the atmosphere	760 mm. of mercury. 10,333 kilos per sq. m. 14.7 lbs. per sq. in. 2116 lbs. per sq. ft. 29.921 in. of mercury.
One inch of mercury is equivalent to	0.4912 pound.
Absolute temperature of freezing-point	273° C. 491°.5 F.
Mechanical equivalent of heat $\frac{1}{A}$	427 metre-kilograms. 778 foot-pounds.

Explanation of Tables. — Table I gives the properties of saturated steam for each degree Fahrenheit, in English units. It is in part computed directly and in part derived from Table III by interpolation, but the interpolation was so guarded that the numerical accuracy is the same as would be possible by direct computation. The proper degree of precision to be attributed to any property may be judged from the

preceding statements of data and transformation. In general, attention is given to this matter, each property being stated with the precision considered proper, avoiding superfluous figures. Exceptions are found in the cases of r, p and $\frac{r}{T}$, which are sometimes given to five places, while the data do not warrant more than four; but there are practical conveniences in keeping one decimal place for those properties.

Table II, which gives properties of steam for each pound pressure, is made by interpolation from Table I, the interpolation being so done that it has practically the same degree of accuracy.

Table III is the fundamental table because the pressures are quoted directly from the original authorities. These pressures in millimetres of mercury are directly converted into kilograms per square centimetre and into pounds per square inch. They also serve as the basis of computation of specific volumes which were computed both in cubic metres and in cubic feet. The degree of precision of interpolation for pressures at each degree Fahrenheit was readily made greater than that required in practice, and the degree of precision for volumes was quite as good as the data warranted. Consequently all these tables have the same degree of reliability.

This table gives properties for each degree Centigrade both in French and in English units, which frequently is of direct convenience. It also serves as a conversion table.

Tables IV to IX were taken from Zeuner's "Mechanische Wärmetheorie," making a correction for the true value of the mechanical equivalent of heat, instead of Joule's earlier value, and adding columns of entropy of the liquid.

Tables X and XI for sulphur dioxide and ammonia were calculated by the approximate method described earlier; though open to a considerable degree of error they may be used till better information can be obtained.

Tables XII and XIII do not appear to call for comment.

Table XIV has been computed to aid in reducing data from tests where pressures are recorded in inches of mercury. Pressures measured in inches of mercury are usually less than that of the atmosphere, and the reading gives the vacuum, which is to be subtracted from the barometric reading to find the absolute pressure in inches of mercury. The table then gives the pressure in pounds per square inch, which can be taken to Table II to find the properties of steam.

Table XV has been computed to reduce the labor of calculating the volume of superheated steam. It gives the value of the factor

$$\frac{150{,}300{,}000}{T^3} - 0.0833$$

in Knoblauch's equation on page 24 for English units. By aid of this table the volume for a given temperature and pressure can be readily computed. The inverse calculation assuming the volume cannot be made directly, but such problems can be resolved by trial without much labor. If the pressure and volume are assumed the temperature can be found neglecting the correction term, and this will enable us to enter the table at nearly the right place.

Temperature-Entropy Table.

This table has been made to facilitate the solution of problems involving adiabatic action for steam and some other problems.

It gives for each degree Fahrenheit and for each hundredth of a unit of entropy the quality, heat contents, and specific volume, both for moist and for superheated steam. For convenience the pressures corresponding to the temperatures are also given.

The properties named may be more exactly stated as follows:—

Moist Steam.

Quality, x; the portion of a pound which is steam.
Heat contents, $xr + q$.
Specific volume, $v = xu + \sigma$.

Superheated Steam.

Quality, $t - t_{sat}$; the number of degrees of superheating.
Heat contents, $r + q + c_p (t - t_{sat})$.
Specific volume, v.

The table is arranged in groups of eight triple columns, four on each of two pages, which face each other. Such a group is continued from the highest to the lowest temperature; then comes the next group of eight triple columns, etc. Commonly the solution of a given problem may be found in a single group or in two successive groups. It is important to note this feature of arrangement to avoid aimless search.

For engineering purposes it will be found sufficient to take the nearest temperature of saturated steam and the nearest column of entropy, and to take from the corresponding place in the table the required quantities. At the highest temperature (420° F.), the variation of half a degree of temperature corresponds to a variation of a pound and a half in pressure; the other properties have the following variations: heat contents 0.15 of a B.T.U., and specific volume 0.008 of a cubic foot, which latter amounts to half of one per cent. At lower temperature the variation of pressure is progressively less, but the other two properties named are affected to about the same degree. Such variations if they were carried into computations and united with others in such a way as to occasion greater uncertainties would be liable to be inconvenient; but when found in the final results of computations and their limits known, are not likely to cause trouble.

On the other hand the variation of half a hundredth of a unit of entropy will at 400 degrees correspond to 0.5 of a per cent of priming or moisture in the steam, and will carry a like variation into all of the work. This uncertainty of using the table without interpolation will be nearly the same throughout the table.

Should the variations named be considered to be too large in any case, greater accuracy can be had by interpolation. Direct interpolation for temperature or for entropy can be made with facility; cross-interpolation will be somewhat more troublesome.

The use of the tables can best be illustrated by a few examples.

Example 1. — Given the pressure by the gauge 150.3 pounds (165 absolute) and the priming 2.0 per cent ($x = 0.980$), to find the entropy, heat contents, and specific volume. This condition is found most nearly on page 80 and gives

$$\phi = 1.54 \qquad xr + q = 1176.8 \qquad v = 2.697.$$

Example 2. — Given the pressure 150.3 pounds by the gauge and the temperature 508° F., to find the entropy, heat contents, and specific volume. The temperature of saturated steam corresponding to 165 pounds absolute is 366° F and the superheating is 142°. These conditions are found on page 95 and give

$$\phi = 1.65 \qquad r + q + c_p (t - t_s) = 1273.3 \qquad v = 3.396.$$

Example 3. — Required the amount of heat changed into work per pound of steam for Rankine's cycle, the initial pressure being 150.3 pounds

by the gauge and the exhaust being under a vacuum of 26 inches of mercury. The steam initially has 1.0 per cent of priming, and the barometer stands at 30 inches of mercury.

The exhaust pressure is 4 inches of mercury, which by Table XIV corresponds to 1.96 pound. The initial absolute pressure is found by adding the equivalent of 30 inches of mercury or

14.7 pounds to 150.3, giving 165.0.

The solution of this problem is found in the column for entropy 1.55.

	p	t	x	$xr + q$	v
Initial.....	165	366	.990	1185.0	2.723
Final.....	2	126	.789	899.1	137.0
Heat changed into work B.T.U.				285.9	

Example 4. — Required the velocity of discharge from a nozzle which takes steam at 150.3 pounds by the gauge and expands down to 26 inches of vacuum; the initial priming being .01 and the barometer being at 30 inches.

The available heat is the same as that for the previous problem, namely, 285.9 B.T.U. for an adiabatic expansion. The velocity without friction would be

$$V = \sqrt{2 \times 32.2 \times 778 \times 285.9} = 3786.$$

If an allowance of ten per cent can be made for friction the velocity will be

$$V = \sqrt{2 \times 32.2 \times 778 \times 0.90 \times 285.9} = 3590.$$

The specific volume at exit can be found as follows: The heat that would be changed into work with an allowance of ten per cent for friction will be

$$0.90 \times 285.9 = 257.2 \text{ B.T.U.}$$

Subtracting from the initial heat contents leaves

$$1185 - 257 = 928 \text{ B.T.U.}$$

for the heat contents at 126° F. at the discharge, and this property is found for the entropy 1.60; the corresponding specific volume is 142 cubic feet.

Example 5. — Suppose that the conditions of example 3 are applied to a steam-turbine which has four pressure stages. For adiabatic expansion the available heat per stage will be

$$285.9 \div 4 = 71.4 \text{ B.T.U.}$$

This quantity may be subtracted four times successively from the initial heat contents and the results will be the heat contents for the intermediate and final pressures. All the properties are to be located in the columns for entropy 1.55. The results are as follows: —

	INITIAL STAGE.	SECOND STAGE.	THIRD STAGE.	FOURTH STAGE.	DISCHARGE.
Heat contents...	1185.0	1113.5	1042.1	970.6	899.1
Temperatures...	366	299	237	180	126
Pressures.....	165	66.0	23.4	7.51	1.99

A full discussion of this method with allowance for friction and other losses together with its limitations will be found in the author's *Thermodynamics of the Steam Engine.*

TABLE I.

SATURATED STEAM.

ENGLISH UNITS.

Temperature, Degrees Fahrenheit. t	Pressure, Pounds per Square Inch. p	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
32	0.0886	0.0	1071.7	1017.5	54.2	0.0000	2.1804	3308_{129}	0.000302_{13}	32
33	0.0923 $_{37}$	1.0	1071.2	1016.9	54.3	0.0021	2.1749	3179_{117}	0.000315_{12}	33
34	0.0960 $_{37}$	2.0	1070.7	1016.3	54.4	0.0041	2.1695	3062_{112}	0.000327_{12}	34
	$_{39}$									
35	0.0999	3.0	1070.2	1015.6	54.6	0.0061	2.1642	2950_{108}	0.000339_{13}	35
36	0.1040 $_{41}$	4.0	1069.7	1015.0	54.7	0.0082	2.1588	2842_{105}	0.000352_{13}	36
37	0.1082 $_{42}$	5.0	1069.2	1014.4	54.8	0.0102	2.1535	2737_{103}	0.000365_{14}	37
	$_{44}$									
38	0.1126	6.1	1068.7	1013.8	54.9	0.0122	2.1481	2634_{96}	0.000379_{15}	38
39	0.1171 $_{45}$	7.1	1068.2	1013.2	55.0	0.0142	2.1427	2538_{92}	0.000394_{15}	39
40	0.1217 $_{46}$	8.1	1067.6	1012.5	55.1	0.0163	2.1373	2446_{88}	0.000409_{15}	40
	$_{48}$									
41	0.1265	9.1	1067.1	1011.9	55.2	0.0183	2.1321	2358_{86}	0.000424_{16}	41
42	0.1315 $_{50}$	10.1	1066.6	1011.3	55.3	0.0203	2.1267	2272_{82}	0.000440_{17}	42
43	0.1367 $_{52}$	11.1	1066.0	1010.6	55.4	0.0223	2.1214	2190_{80}	0.000457_{17}	43
	$_{54}$									
44	0.1421	12.1	1065.5	1010.0	55.5	0.0243	2.1162	2110_{75}	0.000474_{17}	44
45	0.1476 $_{55}$	13.1	1065.0	1009.4	55.6	0.0262	2.1109	2035_{72}	0.000491_{18}	45
46	0.1533 $_{57}$	14.1	1064.4	1008.7	55.7	0.0282	2.1057	1963_{69}	0.000509_{19}	46
	$_{58}$									
47	0.1591	15.1	1063.9	1008.1	55.8	0.0302	2.1005	1894_{66}	0.000528_{19}	47
48	0.1652 $_{61}$	16.1	1063.4	1007.5	55.9	0.0322	2.0954	1828_{64}	0.000547_{20}	48
49	0.1715 $_{63}$	17.1	1062.8	1006.8	56.0	0.0342	2.0902	1764_{61}	0.000567_{20}	49
	$_{65}$									
50	0.1780	18.1	1062.3	1006.2	56.1	0.0361	2.0850	1703_{60}	0.000587_{21}	50
51	0.1848 $_{68}$	19.1	1061.8	1005.6	56.2	0.0381	2.0799	1643_{57}	0.000608_{22}	51
52	0.1918 $_{70}$	20.1	1061.3	1005.0	56.3	0.0401	2.0748	1586_{55}	0.000630_{23}	52
	$_{72}$									
53	0.1990	21.1	1060.7	1004.3	56.4	0.0420	2.0697	1531_{52}	0.000653_{23}	53
54	0.2064 $_{74}$	22.1	1060.2	1003.7	56.5	0.0440	2.0647	1479_{50}	0.000676_{24}	54
55	0.2140 $_{76}$	23.1	1059.7	1003.1	56.6	0.0459	2.0596	1429_{48}	0.000700_{24}	55
	$_{79}$									
56	0.2219	24.1	1059.1	1002.4	56.7	0.0479	2.0546	1381_{46}	0.000724_{25}	56
57	0.2301 $_{82}$	25.1	1058.6	1001.7	56.9	0.0498	2.0496	1335_{44}	0.000749_{26}	57
58	0.2385 $_{84}$	26.1	1058.1	1001.1	57.0	0.0517	2.0446	1291_{43}	0.000775_{26}	58
	$_{86}$									
59	0.2471	27.1	1057.6	1000.5	57.1	0.0537	2.0396	1248_{41}	0.000801_{27}	59
60	0.2561 $_{90}$	28.1	1057.0	999.8	57.2	0.0556	2.0347	1207_{40}	0.000828_{29}	60
61	0.2654 $_{93}$	29.1	1056.5	999.2	57.3	0.0575	2.0298	1167_{39}	0.000857_{30}	61
	$_{96}$									
62	0.2750	30.1	1056.0	998.6	57.4	0.0594	2.0249	1128_{37}	0.000887_{30}	62
63	0.2848 $_{98}$	31.1	1055.5	998.0	57.5	0.0614	2.0201	1091_{35}	0.000917_{30}	63
	$_{101}$									

Temperature, Degrees Fahrenheit. t	Pressure, Pounds per Square Inch. p	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
64	0.2949_{105}	32.1	1055.0	997.4	57.6	0.0633	2.0152	1056_{35}	0.000947_{32}	64
65	0.3054_{107}	33.1	1054.4	996.7	57.7	0.0652	2.0103	1021_{33}	0.000979_{33}	65
66	0.3161_{111}	34.1	1053.9	996.1	57.8	0.0671	2.0055	988_{32}	0.001012_{34}	66
67	0.3272_{114}	35.1	1053.4	995.5	57.9	0.0690	2.0007	956_{31}	0.001046_{35}	67
68	0.3386_{119}	36.1	1052.8	994.8	58.0	0.0709	1.9959	925_{29}	0.001081_{35}	68
69	0.3505_{122}	37.1	1052.3	994.2	58.1	0.0728	1.9911	896_{28}	0.001116_{36}	69
70	0.3627_{125}	38.1	1051.8	993.6	58.2	0.0747	1.9863	868_{28}	0.001152_{38}	70
71	0.3752_{127}	39.1	1051.2	992.9	58.3	0.0766	1.9816	840_{27}	0.001190_{40}	71
72	0.3879_{133}	40.1	1050.7	992.3	58.4	0.0784	1.9769	813_{25}	0.001230_{39}	72
73	0.4012_{137}	41.1	1050.2	991.7	58.5	0.0803	1.9722	788_{25}	0.001269_{42}	73
74	0.4149_{140}	42.1	1049.7	991.1	58.6	0.0822	1.9675	763_{24}	0.001311_{42}	74
75	0.4289_{145}	43.1	1049.2	990.5	58.7	0.0841	1.9629	739_{22}	0.001353_{42}	75
76	0.4434_{148}	44.1	1048.7	989.8	58.9	0.0859	1.9583	717_{22}	0.001395_{44}	76
77	0.4582_{154}	45.1	1048.1	989.1	59.0	0.0878	1.9536	695_{21}	0.001439_{45}	77
78	0.4736_{158}	46.1	1047.6	988.5	59.1	0.0896	1.9490	674_{20}	0.001484_{45}	78
79	0.4894_{162}	47.1	1047.1	987.9	59.2	0.0915	1.9444	654_{20}	0.001529_{48}	79
80	0.5056_{167}	48.1	1046.5	987.2	59.3	0.0934	1.9398	634_{19}	0.001577_{49}	80
81	0.5223_{172}	49.1	1046.0	986.6	59.4	0.0952	1.9352	615_{19}	0.001626_{52}	81
82	0.5395_{177}	50.1	1045.4	985.9	59.5	0.0971	1.9306	596_{18}	0.001678_{52}	82
83	0.5572_{182}	51.1	1044.9	985.3	59.6	0.0989	1.9261	578_{17}	0.001730_{53}	83
84	0.5754_{188}	52.1	1044.4	984.7	59.7	0.1007	1.9216	561_{17}	0.001783_{55}	84
85	0.5942_{192}	53.1	1043.9	984.1	59.8	0.1026	1.9171	544_{16}	0.001838_{56}	85
86	0.6134_{198}	54.1	1043.3	983.4	59.9	0.1044	1.9126	528_{15}	0.001894_{56}	86
87	0.6332_{203}	55.1	1042.8	982.8	60.0	0.1062	1.9081	513_{150}	0.001950_{58}	87
88	0.6535_{210}	56.1	1042.3	982.2	60.1	0.1081	1.9037	498.0_{146}	0.002008_{61}	88
89	0.6745_{215}	57.1	1041.7	981.5	60.2	0.1099	1.8992	483.4_{142}	0.002069_{62}	89
90	0.6960_{221}	58.1	1041.2	980.9	60.3	0.1117	1.8948	469.2_{138}	0.002131_{65}	90
91	0.7181_{227}	59.1	1040.6	980.2	60.4	0.1135	1.8903	455.4_{134}	0.002196_{66}	91
92	0.7408_{234}	60.1	1040.1	979.6	60.5	0.1153	1.8859	442.0_{129}	0.002262_{68}	92
93	0.7642_{240}	61.1	1039.5	978.9	60.6	0.1171	1.8815	429.1_{124}	0.002330_{70}	93
94	0.7882_{246}	62.1	1039.0	978.3	60.7	0.1189	1.8771	416.7_{119}	0.002400_{70}	94
95	0.8128_{253}	63.1	1038.5	977.7	60.8	0.1207	1.8728	404.8_{115}	0.002470_{72}	95
96	0.8381_{259}	64.1	1037.9	977.0	60.9	0.1225	1.8684	393.3_{112}	0.002542_{75}	96
97	0.8640_{267}	65.0	1037.4	976.4	61.0	0.1243	1.8641	382.1_{108}	0.002617_{76}	97
98	0.8907_{273}	66.0	1036.8	975.7	61.1	0.1261	1.8597	371.3_{104}	0.002693_{78}	98
99	0.9180_{281}	67.0	1036.3	975.1	61.2	0.1279	1.8554	360.9_{101}	0.002771_{80}	99
100	0.9461_{290}	68.0	1035.7	974.4	61.3	0.1297	1.8511	350.8_{97}	0.002851_{81}	100
101	0.9751_{296}	69.0	1035.1	973.7	61.4	0.1314	1.8468	341.1_{95}	0.002932_{84}	101
102	1.0047_{304}	70.0	1034.6	973.0	61.6	0.1332	1.8426	331.6_{92}	0.003016_{86}	102
103	1.0351_{312}	71.0	1034.0	972.3	61.7	0.1350	1.8383	322.4_{89}	0.003102_{88}	103
104	1.0663_{322}	72.0	1033.5	971.7	61.8	0.1368	1.8341	313.5_{87}	0.003190_{91}	104

Temperature, Degrees Fahrenheit. t	Pressure, Pounds per Square Inch. p	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
105	1.098_{33}	73.0	1032.9	971.0	61.9	0.1385	1.8298	304.8_{84}	0.003281_{93}	105
106	1.131_{34}	74.0	1032.4	970.4	62.0	0.1403	1.8256	296.4_{82}	0.003374_{96}	106
107	1.165_{35}	75.0	1031.8	969.7	62.1	0.1421	1.8214	288.2_{80}	0.003470_{99}	107
108	1.200_{35}	76.0	1031.2	969.0	62.2	0.1438	1.8172	280.2_{76}	0.003569_{99}	108
109	1.235_{36}	77.0	1030.7	968.4	62.3	0.1456	1.8130	272.6_{74}	0.003668_{103}	109
110	1.271_{37}	78.0	1030.1	967.7	62.4	0.1473	1.8088	265.2_{72}	0.003771_{105}	110
111	1.308_{39}	79.0	1029.6	967.1	62.5	0.1491	1.8047	258.0_{69}	0.003876_{107}	111
112	1.347_{39}	80.0	1029.0	966.4	62.6	0.1508	1.8005	251.1_{67}	0.003983_{109}	112
113	1.386_{40}	81.0	1028.4	965.7	62.7	0.1526	1.7963	244.4_{64}	0.004092_{110}	113
114	1.426_{41}	82.0	1027.8	965.0	62.8	0.1543	1.7922	238.0_{62}	0.004202_{112}	114
115	1.467_{42}	83.0	1027.2	964.3	62.9	0.1560	1.7881	231.8_{61}	0.004314_{116}	115
116	1.509_{43}	84.0	1026.7	963.7	63.0	0.1578	1.7840	225.7_{59}	0.004430_{120}	116
117	1.552_{45}	85.0	1026.1	963.0	63.1	0.1595	1.7799	219.8_{58}	0.004550_{123}	117
118	1.597_{45}	86.0	1025.5	962.3	63.2	0.1612	1.7758	214.0_{56}	0.004673_{125}	118
119	1.642_{47}	87.0	1025.0	961.7	63.3	0.1630	1.7717	208.4_{54}	0.004798_{128}	119
120	1.689_{48}	88.0	1024.4	961.0	63.4	0.1647	1.7677	203.0_{52}	0.004926_{130}	120
121	1.737_{48}	89.0	1023.8	960.2	63.6	0.1664	1.7637	197.8_{51}	0.00506_{13}	121
122	1.785_{50}	90.0	1023.2	959.5	63.7	0.1682	1.7597	192.7_{50}	0.00519_{14}	122
123	1.835_{51}	91.0	1022.7	958.9	63.8	0.1699	1.7557	187.7_{48}	0.00533_{14}	123
124	1.886_{52}	92.0	1022.1	958.2	63.9	0.1716	1.7517	182.9_{46}	0.00547_{14}	124
125	1.938_{54}	93.0	1021.5	957.5	64.0	0.1733	1.7477	178.3_{45}	0.00561_{14}	125
126	1.992_{55}	94.0	1021.0	956.9	64.1	0.1750	1.7438	173.8_{44}	0.00575_{15}	126
127	2.047_{56}	95.0	1020.4	956.2	64.2	0.1767	1.7398	169.4_{42}	0.00590_{15}	127
128	2.103_{58}	96.0	1019.8	955.5	64.3	0.1784	1.7359	165.2_{41}	0.00605_{16}	128
129	2.161_{59}	97.0	1019.3	954.9	64.4	0.1801	1.7320	161.1_{40}	0.00621_{16}	129
130	2.220_{60}	98.0	1018.7	954.2	64.5	0.1818	1.7281	157.1_{39}	0.00637_{16}	130
131	2.280_{61}	99.0	1018.1	953.5	64.6	0.1835	1.7242	153.2_{37}	0.00653_{16}	131
132	2.341_{62}	100.0	1017.6	952.9	64.7	0.1852	1.7204	149.5_{37}	0.00669_{17}	132
133	2.403_{64}	101.0	1017.0	952.2	64.8	0.1869	1.7165	145.8_{36}	0.00686_{17}	133
134	2.467_{66}	102.0	1016.5	951.6	64.9	0.1886	1.7127	142.2_{34}	0.00703_{17}	134
135	2.533_{67}	103.0	1015.9	950.9	65.0	0.1902	1.7088	138.8_{34}	0.00720_{18}	135
136	2.600_{69}	104.0	1015.4	950.3	65.1	0.1919	1.7050	135.4_{33}	0.00738_{19}	136
137	2.669_{71}	105.0	1014.8	949.6	65.2	0.1936	1.7012	132.1_{32}	0.00757_{19}	137
138	2.740_{72}	106.0	1014.2	948.9	65.3	0.1952	1.6974	128.9_{31}	0.00776_{19}	138
139	2.812_{73}	107.0	1013.6	948.2	65.4	0.1969	1.6936	125.8_{30}	0.00795_{19}	139
140	2.885_{75}	108.0	1013.1	947.5	65.6	0.1986	1.6899	122.8_{29}	0.00814_{20}	140
141	2.960_{77}	109.0	1012.5	946.8	65.7	0.2002	1.6861	119.9_{28}	0.00834_{20}	141
142	3.037_{79}	110.0	1011.9	946.1	65.8	0.2019	1.6823	117.1_{28}	0.00854_{21}	142
143	3.116_{80}	111.0	1011.4	945.5	65.9	0.2036	1.6786	114.3_{27}	0.00875_{21}	143
144	3.196_{82}	112.0	1010.8	944.8	66.0	0.2052	1.6749	111.6_{26}	0.00896_{21}	144
145	3.278_{83}	113.0	1010.2	944.1	66.1	0.2069	1.6711	109.0_{25}	0.00917_{22}	145

Temperature, Degrees Fahrenheit. t	Pressure, Pounds per Square Inch. p	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
146	3.361_{86}	114.0	1009.6	943.4	66.2	0.2085	1.6674	106.5_{25}	0.00939_{22}	146
147	3.447_{88}	115.0	1009.0	942.7	66.3	0.2102	1.6636	104.0_{24}	0.00961_{23}	147
148	3.535_{89}	116.0	1008.4	942.0	66.4	0.2118	1.6599	101.6_{24}	0.00984_{24}	148
149	3.624_{91}	117.0	1007.8	941.3	66.5	0.2135	1.6563	99.2_{23}	0.01008_{24}	149
150	3.715_{93}	118.0	1007.2	940.6	66.6	0.2151	1.6526	96.9_{22}	0.01032_{24}	150
151	3.808_{95}	119.0	1006.7	940.0	66.7	0.2168	1.6490	94.7_{22}	0.01056_{25}	151
152	3.903_{97}	120.0	1006.1	939.3	66.8	0.2184	1.6453	92.5_{21}	0.01081_{25}	152
153	4.000_{99}	121.0	1005.5	938.6	66.9	0.2200	1.6416	90.4_{20}	0.01106_{25}	153
154	4.099_{101}	122.0	1004.9	937.9	67.0	0.2217	1.6380	88.4_{20}	0.01131_{26}	154
155	4.200_{103}	123.0	1004.3	937.2	67.1	0.2233	1.6344	86.4_{19}	0.01157_{26}	155
156	4.303_{106}	124.0	1003.7	936.5	67.2	0.2249	1.6307	84.5_{19}	0.01183_{28}	156
157	4.409_{108}	125.0	1003.1	935.8	67.3	0.2265	1.6271	82.6_{19}	0.01211_{28}	157
158	4.517_{109}	126.0	1002.5	935.1	67.4	0.2282	1.6235	80.7_{18}	0.01239_{28}	158
159	4.626_{112}	127.0	1002.0	934.4	67.6	0.2298	1.6200	78.9_{17}	0.01267_{29}	159
160	4.738_{114}	128.0	1001.4	933.7	67.7	0.2314	1.6164	77.2_{18}	0.01296_{30}	160
161	4.852_{117}	129.0	1000.8	933.0	67.8	0.2330	1.6129	75.4_{17}	0.01326_{31}	161
162	4.969_{119}	130.0	1000.2	932.3	67.9	0.2347	1.6093	73.7_{16}	0.01357_{30}	162
163	5.088_{122}	131.0	999.6	931.6	68.0	0.2363	1.6058	72.1_{15}	0.01387_{30}	163
164	5.210_{124}	132.0	999.0	930.9	68.1	0.2379	1.6023	70.6_{15}	0.01417_{30}	164
165	5.334_{126}	133.0	998.4	930.2	68.2	0.2395	1.5988	69.1_{14}	0.01447_{30}	165
166	5.460_{129}	134.0	997.9	929.6	68.3	0.2411	1.5953	67.7_{15}	0.01477_{33}	166
167	5.589_{131}	135.0	997.3	928.9	68.4	0.2427	1.5918	66.2_{14}	0.01510_{33}	167
168	5.720_{133}	136.0	996.7	928.2	68.5	0.2443	1.5884	64.8_{14}	0.01543_{34}	168
169	5.853_{137}	137.0	996.1	927.5	68.6	0.2459	1.5849	63.4_{14}	0.01577_{36}	169
170	5.990_{139}	138.0	995.5	926.8	68.7	0.2475	1.5814	62.0_{14}	0.01613_{37}	170
171	6.129_{141}	139.0	994.9	926.1	68.8	0.2491	1.5780	60.6_{13}	0.01650_{36}	171
172	6.270_{145}	140.0	994.3	925.4	68.9	0.2506	1.5745	59.3_{12}	0.01686_{36}	172
173	6.415_{148}	141.0	993.7	924.7	69.0	0.2522	1.5711	58.1_{12}	0.01722_{36}	173
174	6.563_{151}	142.0	993.1	924.0	69.1	0.2538	1.5677	56.9_{12}	0.01758_{37}	174
175	6.714_{154}	143.0	992.5	923.3	69.2	0.2554	1.5643	55.7_{12}	0.01795_{39}	175
176	6.868_{157}	144.0	991.9	922.6	69.3	0.2570	1.5609	54.5_{11}	0.01834_{39}	176
177	7.025_{160}	145.0	991.3	921.9	69.4	0.2585	1.5575	53.4_{11}	0.01873_{39}	177
178	7.185_{161}	146.0	990.7	921.2	69.5	0.2601	1.5541	52.3_{11}	0.01912_{41}	178
179	7.346_{164}	147.0	990.1	920.5	69.6	0.2617	1.5507	51.2_{10}	0.01953_{40}	179
180	7.510_{168}	148.0	989.5	919.8	69.7	0.2633	1.5474	$50.2_{107/102}$	0.01993_{42}	180
181	7.678_{171}	149.0	988.9	919.1	69.8	0.2648	1.5440	49.13_{102}	0.02035_{43}	181
182	7.849_{175}	150.1	988.3	918.4	69.9	0.2664	1.5406	48.11_{99}	0.02078_{44}	182
183	8.024_{178}	151.1	987.7	917.7	70.0	0.2680	1.5373	47.12_{95}	0.02122_{44}	183
184	8.202_{181}	152.1	987.1	917.0	70.1	0.2696	1.5340	46.17_{94}	0.02166_{45}	184
185	8.383_{185}	153.1	986.5	916.3	70.2	0.2711	1.5307	45.23_{90}	0.02211_{45}	185
186	8.568_{188}	154.1	985.9	915.6	70.3	0.2727	1.5273	44.33_{88}	0.02256_{45}	186

Temperature, Degrees Fahrenheit. t	Pressure, Pounds per Square Inch. p	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
187	8.756_{191}	155.1	985.3	914.9	70.4	0.2742	1.5240	43.45_{86}	0.02301_{47}	187
188	8.947_{194}	156.1	984.7	914.2	70.5	0.2758	1.5207	42.59_{84}	0.02348_{47}	188
189	9.141_{198}	157.1	984.0	913.4	70.6	0.2773	1.5174	41.75_{83}	0.02395_{49}	189
190	9.339_{202}	158.1	983.4	912.7	70.7	0.2789	1.5141	40.92_{81}	0.02444_{49}	190
191	9.541_{205}	159.1	982.8	912.0	70.8	0.2805	1.5108	40.11_{80}	0.02493_{51}	191
192	9.746_{209}	160.1	982.2	911.3	70.9	0.2820	1.5076	39.31_{78}	0.02544_{51}	192
193	9.955_{213}	161.1	981.5	910.5	71.0	0.2835	1.5043	38.53_{76}	0.02595_{52}	193
194	10.168_{217}	162.1	980.9	909.8	71.1	0.2851	1.5010	37.77_{74}	0.02647_{53}	194
195	10.385_{220}	163.1	980.3	909.1	71.2	0.2866	1.4978	37.03_{72}	0.02700_{54}	195
196	10.605_{225}	164.1	979.7	908.4	71.3	0.2882	1.4946	36.31_{70}	0.02754_{54}	196
197	10.830_{229}	165.1	979.1	907.7	71.4	0.2897	1.4913	35.61_{68}	0.02808_{55}	197
198	11.059_{232}	166.2	978.4	906.9	71.5	0.2912	1.4881	34.93_{66}	0.02863_{55}	198
199	11.291_{237}	167.2	977.8	906.2	71.6	0.2928	1.4849	34.27_{65}	0.02918_{56}	199
200	11.528_{240}	168.2	977.2	905.5	71.7	0.2943	1.4817	33.62_{63}	0.02974_{57}	200
201	11.768_{245}	169.2	976.6	904.8	71.8	0.2958	1.4786	32.99_{62}	0.03031_{58}	201
202	12.013_{248}	170.2	976.0	904.1	71.9	0.2973	1.4754	32.37_{62}	0.03089_{60}	202
203	12.261_{253}	171.2	975.4	903.4	72.0	0.2989	1.4723	31.75_{60}	0.03149_{61}	203
204	12.514_{257}	172.2	974.7	902.6	72.1	0.3004	1.4691	31.15_{59}	0.03210_{62}	204
205	12.771_{262}	173.2	974.1	901.9	72.2	0.3019	1.4659	30.56_{58}	0.03272_{63}	205
206	13.033_{266}	174.2	973.5	901.2	72.3	0.3034	1.4628	29.98_{57}	0.03335_{64}	206
207	13.299_{271}	175.2	972.8	900.4	72.4	0.3049	1.4596	29.41_{55}	0.03399_{66}	207
208	13.570_{275}	176.2	972.2	899.7	72.5	0.3064	1.4565	28.86_{54}	0.03465_{66}	208
209	13.845_{280}	177.2	971.6	899.0	72.6	0.3079	1.4534	28.32_{52}	0.03531_{66}	209
210	14.125_{284}	178.3	970.9	898.3	72.6	0.3095	1.4502	27.80_{51}	0.03597_{67}	210
211	14.409_{289}	179.3	970.3	897.6	72.7	0.3110	1.4471	27.29_{51}	0.03664_{70}	211
212	14.698_{294}	180.3	969.7	896.9	72.8	0.3125	1.4441	26.78_{49}	0.03734_{70}	212
213	14.992_{299}	181.3	969.1	896.2	72.9	0.3140	1.4410	26.29_{48}	0.03804_{70}	213
214	15.291_{304}	182.3	968.5	895.5	73.0	0.3155	1.4380	25.81_{47}	0.03874_{72}	214
215	15.595_{308}	183.3	967.8	894.7	73.1	0.3170	1.4349	25.34_{46}	0.03946_{73}	215
216	15.903_{314}	184.3	967.2	894.0	73.2	0.3185	1.4318	24.88_{45}	0.04019_{74}	216
217	16.217_{319}	185.3	966.5	893.2	73.3	0.3200	1.4287	24.43_{44}	0.04093_{75}	217
218	16.536_{323}	186.3	965.9	892.5	73.4	0.3215	1.4257	23.99_{43}	0.04168_{76}	218
219	16.859_{329}	187.4	965.2	891.7	73.5	0.3230	1.4226	23.56_{42}	0.04244_{77}	219
220	17.188_{335}	188.4	964.6	891.0	73.6	0.3244	1.4196	23.14_{41}	0.04321_{78}	220
221	17.523_{340}	189.4	964.0	890.3	73.7	0.3259	1.4165	22.73_{40}	0.04399_{79}	221
222	17.863_{345}	190.4	963.3	889.5	73.8	0.3274	1.4135	22.33_{40}	0.04478_{82}	222
223	18.208_{350}	191.4	962.7	888.8	73.9	0.3289	1.4105	21.93_{39}	0.04560_{83}	223
224	18.558_{356}	192.4	962.0	888.1	73.9	0.3304	1.4075	21.54_{38}	0.04643_{83}	224
225	18.914_{361}	193.4	961.4	887.4	74.0	0.3319	1.4045	21.16_{38}	0.04726_{85}	225
226	19.275_{368}	194.4	960.7	886.6	74.1	0.3333	1.4015	20.78_{36}	0.04811_{86}	226
227	19.643_{373}	195.4	960.1	885.9	74.2	0.3348	1.3985	20.42_{35}	0.04897_{86}	227

Temperature, Degrees Fahrenheit. t	Pressure, Pounds per Square Inch. p	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
228	20.02_{38}	196.5	959.4	885.1	74.3	0.3363	1.3955	20.07_{35}	0.04983_{87}	228
229	20.40_{39}^{38}	197.5	958.7	884.3	74.4	0.3378	1.3925	19.72_{33}^{35}	0.0507_{9}	229
230	20.78_{39}	198.5	958.1	883.6	74.5	0.3392	1.3895	19.37_{33}	0.0516_{9}	230
231	21.17_{40}	199.5	957.4	882.8	74.6	0.3407	1.3866	19.04_{33}	0.0525_{9}	231
232	21.57_{40}^{40}	200.5	956.8	882.1	74.7	0.3422	1.3836	18.71_{32}^{33}	0.0534_{9}^{10}	232
233	21.97_{41}	201.5	956.1	881.3	74.8	0.3436	1.3806	18.39_{31}^{32}	0.0544_{9}^{10}	233
234	22.38_{41}	202.5	955.4	880.6	74.8	0.3451	1.3777	18.08_{31}	0.0553_{10}	234
235	22.79_{42}^{41}	203.6	954.8	879.9	74.9	0.3466	1.3748	17.77_{31}^{31}	0.0563_{10}^{10}	235
236	23.21_{43}^{42}	204.6	954.1	879.1	75.0	0.3480	1.3718	17.46_{30}^{31}	0.0573_{10}^{10}	236
237	23.64_{44}	205.6	953.4	878.3	75.1	0.3495	1.3689	17.16_{29}	0.0583_{10}	237
238	24.08_{44}^{44}	206.6	952.8	877.6	75.2	0.3509	1.3660	16.87_{28}^{29}	0.0593_{10}^{10}	238
239	24.52_{45}^{44}	207.6	952.1	876.8	75.3	0.3524	1.3631	16.59_{28}	0.0603_{10}^{10}	239
240	24.97_{45}	208.6	951.4	876.0	75.4	0.3538	1.3602	16.31_{27}	0.0613_{10}	240
241	25.42_{46}^{45}	209.6	950.8	875.4	75.4	0.3553	1.3573	16.04_{27}^{27}	0.0623_{11}^{10}	241
242	25.88_{47}^{46}	210.7	950.1	874.6	75.5	0.3567	1.3544	15.77_{26}^{27}	0.0634_{11}^{11}	242
243	26.35_{48}	211.7	949.4	873.8	75.6	0.3582	1.3515	15.51_{25}	0.0645_{10}	243
244	26.83_{48}^{48}	212.7	948.7	873.0	75.7	0.3596	1.3486	15.26_{25}^{25}	0.0655_{11}^{10}	244
245	27.31_{49}^{48}	213.7	948.1	872.3	75.8	0.3611	1.3457	15.01_{24}^{25}	0.0666_{11}^{11}	245
246	27.80_{49}	214.7	947.4	871.5	75.9	0.3625	1.3429	14.77_{25}	0.0677_{12}	246
247	28.29_{50}^{49}	215.7	946.7	870.7	76.0	0.3639	1.3401	14.52_{24}^{25}	0.0689_{12}^{11}	247
248	28.79_{51}^{50}	216.7	946.0	870.0	76.0	0.3654	1.3372	14.28_{23}^{24}	0.0700_{12}^{12}	248
249	29.30_{52}	217.7	945.4	869.3	76.1	0.3668	1.3343	14.05_{23}	0.0712_{12}	249
250	29.82_{53}^{52}	218.8	944.7	868.5	76.2	0.3683	1.3315	13.82_{23}^{23}	0.0724_{12}^{12}	250
251	30.35_{53}^{53}	219.8	944.0	867.7	76.3	0.3697	1.3286	13.59_{22}^{23}	0.0736_{12}^{12}	251
252	30.88_{54}	220.8	943.3	866.9	76.4	0.3711	1.3258	13.37_{21}	0.0748_{12}	252
253	31.42_{55}^{54}	221.8	942.6	866.1	76.5	0.3726	1.3229	13.16_{22}^{21}	0.0760_{12}^{13}	253
254	31.97_{56}^{55}	222.8	941.9	865.3	76.6	0.3740	1.3201	12.94_{21}^{22}	0.0773_{12}^{12}	254
255	32.53_{56}	223.8	941.2	864.5	76.7	0.3754	1.3173	12.73_{20}	0.0785_{13}	255
256	33.09_{57}^{56}	224.9	940.5	863.7	76.8	0.3768	1.3145	12.53_{20}^{20}	0.0798_{13}^{13}	256
257	33.66_{58}^{57}	225.9	939.8	863.0	76.8	0.3782	1.3117	12.33_{20}^{20}	0.0811_{13}^{13}	257
258	34.24_{59}	226.9	939.1	862.2	76.9	0.3797	1.3089	12.13_{19}	0.0824_{13}	258
259	34.83_{59}^{59}	227.9	938.4	861.4	77.0	0.3811	1.3062	11.94_{19}^{19}	0.0837_{13}^{14}	259
260	35.42_{60}^{59}	229.0	937.8	860.7	77.1	0.3825	1.3034	11.75_{18}^{19}	0.0851_{13}^{14}	260
261	36.02_{62}	230.0	937.1	859.9	77.2	0.3839	1.3006	11.57_{18}	0.0864_{14}	261
262	36.64_{63}^{62}	231.0	936.4	859.2	77.2	0.3853	1.2978	11.39_{18}^{18}	0.0878_{14}^{14}	262
263	37.26_{63}^{62}	232.0	935.7	858.4	77.3	0.3867	1.2950	11.21_{17}^{18}	0.0892_{14}^{14}	263
264	37.89_{64}	233.0	935.0	857.6	77.4	0.3881	1.2923	11.04_{17}	0.0906_{14}	264
265	38.53_{64}^{64}	234.0	934.3	856.8	77.5	0.3895	1.2895	10.87_{17}^{17}	0.0920_{15}^{14}	265
266	39.17_{66}^{64}	235.0	933.6	856.0	77.6	0.3909	1.2868	10.70_{17}^{17}	0.0935_{15}^{15}	266
267	39.83_{66}	236.1	932.9	855.3	77.6	0.3923	1.2840	10.53_{16}	0.0950_{14}	267
268	40.49_{67}^{66}	237.1	932.1	854.4	77.7	0.3937	1.2813	10.37_{16}^{16}	0.0964_{15}^{14}	268

Temperature, Degrees Fahrenheit. t	Pressure, Pounds per Square Inch. p	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. v	Density, Pounds per Cubic Foot. $\frac{1}{v}$	Temperature, Degrees Fahrenheit. t
269	41.16_{68}	238.1	931.4	853.6	77.8	0.3951	1.2786	10.21_{16}	0.0979_{16}	269
270	41.84_{70}	239.1	930.7	852.8	77.9	0.3965	1.2758	10.05_{15}	0.0995_{15}	270
271	42.54_{70}	240.2	930.0	852.0	78.0	0.3979	1.2731	9.901_{152}	0.1010_{16}	271
272	43.24_{71}	241.2	929.3	851.3	78.0	0.3993	1.2704	9.749_{150}	0.1026_{16}	272
273	43.95_{72}	242.2	928.6	850.5	78.1	0.4007	1.2677	9.599_{146}	0.1042_{16}	273
274	44.67_{72}	243.2	927.9	849.7	78.2	0.4021	1.2650	9.453_{144}	0.1058_{16}	274
275	45.39_{74}	244.2	927.2	848.9	78.3	0.4035	1.2623	9.309_{140}	0.1074_{16}	275
276	46.13_{75}	245.3	926.5	848.1	78.4	0.4049	1.2596	9.169_{136}	0.1090_{17}	276
277	46.88_{76}	246.3	925.7	847.3	78.4	0.4063	1.2569	9.033_{133}	0.1107_{17}	277
278	47.64_{77}	247.3	925.0	846.5	78.5	0.4077	1.2542	8.900_{132}	0.1124_{17}	278
279	48.41_{78}	248.3	924.3	845.7	78.6	0.4091	1.2516	8.768_{129}	0.1141_{17}	279
280	49.19_{79}	249.4	923.6	844.9	78.7	0.4104	1.2489	8.639_{128}	0.1158_{17}	280
281	49.98_{79}	250.4	922.9	844.2	78.7	0.4118	1.2463	8.511_{126}	0.1175_{18}	281
282	50.77_{81}	251.4	922.1	843.3	78.8	0.4132	1.2436	8.385_{124}	0.1193_{18}	282
283	51.58_{81}	252.4	921.4	842.5	78.9	0.4146	1.2409	8.261_{121}	0.1211_{18}	283
284	52.39_{83}	253.4	920.7	841.7	79.0	0.4160	1.2383	8.140_{119}	0.1229_{18}	284
285	53.22_{84}	254.5	920.0	841.0	79.0	0.4173	1.2356	8.021_{118}	0.1247_{18}	285
286	54.06_{86}	255.5	919.2	840.1	79.1	0.4187	1.2330	7.903_{115}	0.1265_{19}	286
287	54.92_{86}	256.5	918.5	839.3	79.2	0.4201	1.2304	7.788_{114}	0.1284_{19}	287
288	55.78_{87}	257.5	917.7	838.5	79.2	0.4215	1.2277	7.674_{111}	0.1303_{19}	288
289	56.65_{88}	258.6	917.0	837.7	79.3	0.4228	1.2251	7.563_{109}	0.1322_{19}	289
290	57.53_{89}	259.6	916.3	836.9	79.4	0.4242	1.2225	7.454_{107}	0.1341_{20}	290
291	58.42_{91}	260.6	915.5	836.0	79.5	0.4255	1.2199	7.347_{105}	0.1361_{20}	291
292	59.33_{91}	261.6	914.8	835.3	79.5	0.4269	1.2173	7.242_{103}	0.1381_{20}	292
293	60.24_{93}	262.7	914.1	834.5	79.6	0.4283	1.2147	7.139_{102}	0.1401_{20}	293
294	61.17_{94}	263.7	913.3	833.6	79.7	0.4297	1.2121	7.037_{100}	0.1421_{20}	294
295	62.11_{96}	264.7	912.6	832.8	79.8	0.4310	1.2095	6.937_{98}	0.1441_{21}	295
296	63.07_{96}	265.7	911.8	832.0	79.8	0.4324	1.2070	6.839_{97}	0.1462_{21}	296
297	64.03_{97}	266.7	911.1	831.2	79.9	0.4337	1.2044	6.742_{95}	0.1483_{21}	297
298	65.00_{98}	267.8	910.4	830.4	80.0	0.4351	1.2018	6.647_{93}	0.1504_{22}	298
299	65.98_{100}	268.8	909.6	829.6	80.0	0.4364	1.1992	6.554_{92}	0.1526_{21}	299
300	66.98_{101}	269.8	908.9	828.8	80.1	0.4378	1.1967	6.462_{91}	0.1547_{22}	300
301	67.99_{102}	270.8	908.1	827.9	80.2	0.4391	1.1942	6.371_{89}	0.1569_{23}	301
302	69.01_{103}	271.9	907.4	827.1	80.3	0.4405	1.1916	6.282_{87}	0.1592_{22}	302
303	70.04_{105}	272.9	906.6	826.3	80.3	0.4418	1.1891	6.195_{86}	0.1614_{23}	303
304	71.09_{106}	273.9	905.9	825.5	80.4	0.4432	1.1865	6.109_{85}	0.1637_{23}	304
305	72.15_{107}	274.9	905.1	824.7	80.4	0.4445	1.1840	6.024_{83}	0.1660_{23}	305
306	73.22_{108}	276.0	904.4	823.9	80.5	0.4458	1.1814	5.941_{82}	0.1683_{24}	306
307	74.30_{110}	277.0	903.6	823.0	80.6	0.4472	1.1788	5.859_{81}	0.1707_{24}	307
308	75.40_{111}	278.0	902.9	822.2	80.7	0.4485	1.1763	5.778_{79}	0.1731_{24}	308
309	76.51_{112}	279.1	902.1	821.4	80.7	0.4499	1.1738	5.699_{77}	0.1755_{24}	309

Temperature, Degrees Fahrenheit. t	Pressure, Pounds per Square Inch. p	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
310	77.63_{113}	280.1	901.3	820.5	80.8	0.4512	1.1713	5.622_{76}	0.1779_{24}	310
311	78.76_{115}	281.1	900.5	819.7	80.8	0.4525	1.1688	5.546_{74}	0.1803_{24}	311
312	79.91_{116}	282.1	899.8	818.9	80.9	0.4538	1.1663	5.472_{73}	0.1827_{25}	312
313	81.07_{118}	283.2	899.1	818.1	81.0	0.4552	1.1639	5.399_{73}	0.1852_{25}	313
314	82.25_{119}	284.2	898.3	817.3	81.0	0.4565	1.1614	5.326_{72}	0.1877_{26}	314
315	83.44_{120}	285.2	897.6	816.5	81.1	0.4578	1.1589	5.254_{72}	0.1903_{26}	315
316	84.64_{122}	286.2	896.8	815.6	81.2	0.4592	1.1564	5.182_{70}	0.1929_{27}	316
317	85.86_{123}	287.3	896.0	814.8	81.2	0.4605	1.1539	5.112_{69}	0.1956_{27}	317
318	87.09_{124}	288.3	895.2	813.9	81.3	0.4618	1.1514	5.043_{69}	0.1983_{27}	318
319	88.33_{126}	289.3	894.5	813.1	81.4	0.4631	1.1490	4.974_{67}	0.2010_{28}	319
320	89.59_{128}	290.4	893.7	812.3	81.4	0.4644	1.1465	4.907_{66}	0.2038_{27}	320
321	90.87_{129}	291.4	892.9	811.4	81.5	0.4658	1.1440	4.841_{64}	0.2065_{28}	321
322	92.16_{130}	292.4	892.2	810.6	81.6	0.4671	1.1416	4.777_{63}	0.2093_{28}	322
323	93.46_{132}	293.4	891.4	809.8	81.6	0.4684	1.1392	4.714_{61}	0.2121_{28}	323
324	94.78_{134}	294.5	890.6	808.9	81.7	0.4697	1.1367	4.653_{59}	0.2149_{28}	324
325	96.12_{134}	295.5	889.8	808.1	81.7	0.4710	1.1343	4.594_{57}	0.2177_{27}	325
326	97.46_{136}	296.5	889.0	807.2	81.8	0.4723	1.1318	4.537_{57}	0.2204_{28}	326
327	98.82_{138}	297.5	888.3	806.4	81.9	0.4736	1.1294	4.480_{56}	0.2232_{28}	327
328	100.20_{138}	298.6	887.5	805.6	81.9	0.4749	1.1269	4.424_{56}	0.2260_{29}	328
329	101.58_{140}	299.6	886.7	804.7	82.0	0.4762	1.1245	4.368_{56}	0.2289_{30}	329
330	102.98_{142}	300.6	885.9	803.8	82.1	0.4775	1.1221	4.312_{55}	0.2319_{30}	330
331	104.40_{144}	301.7	885.1	803.0	82.1	0.4789	1.1197	4.257_{56}	0.2349_{31}	331
332	105.84_{146}	302.7	884.3	802.1	82.2	0.4802	1.1173	4.201_{55}	0.2380_{32}	332
333	107.30_{147}	303.7	883.5	801.3	82.2	0.4815	1.1149	4.146_{54}	0.2412_{32}	333
334	108.77_{148}	304.8	882.8	800.5	82.3	0.4828	1.1125	4.092_{54}	0.2444_{32}	334
335	110.25_{149}	305.8	882.0	799.6	82.4	0.4841	1.1101	4.038_{53}	0.2476_{33}	335
336	111.74_{152}	306.8	881.2	798.8	82.4	0.4854	1.1077	3.985_{51}	0.2509_{33}	336
337	113.26_{153}	307.9	880.4	797.9	82.5	0.4867	1.1053	3.934_{51}	0.2542_{33}	337
338	114.79_{155}	308.9	879.6	797.1	82.5	0.4880	1.1029	3.883_{50}	0.2575_{34}	338
339	116.34_{157}	309.9	878.8	796.2	82.6	0.4892	1.1006	3.833_{49}	0.2609_{33}	339
340	117.91_{159}	310.9	878.0	795.3	82.7	0.4905	1.0982	3.784_{47}	0.2642_{34}	340
341	119.50_{160}	312.0	877.2	794.5	82.7	0.4918	1.0958	3.737_{46}	0.2676_{33}	341
342	121.10_{161}	313.0	876.4	793.6	82.8	0.4931	1.0934	3.691_{46}	0.2709_{34}	342
343	122.71_{164}	314.0	875.6	792.8	82.8	0.4944	1.0911	3.645_{46}	0.2743_{35}	343
344	124.35_{165}	315.1	874.8	791.9	82.9	0.4957	1.0887	3.599_{45}	0.2778_{35}	344
345	126.00_{167}	316.1	874.0	791.0	83.0	0.4970	1.0864	3.554_{44}	0.2813_{36}	345
346	127.67_{168}	317.1	873.2	790.2	83.0	0.4982	1.0840	3.510_{43}	0.2849_{35}	346
347	129.35_{171}	318.2	872.4	789.3	83.1	0.4995	1.0817	3.467_{42}	0.2884_{36}	347
348	131.06_{172}	319.2	871.6	788.5	83.1	0.5008	1.0793	3.425_{42}	0.2920_{36}	348
349	132.78_{174}	320.2	870.8	787.6	83.2	0.5021	1.0770	3.383_{41}	0.2956_{36}	349
350	134.52_{175}	321.3	870.0	786.8	83.2	0.5034	1.0747	3.342_{40}	0.2992_{36}	350

Temperature, Degrees Fahrenheit. t	Pressure, Pounds per Square Inch. p	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
351	136.27_{177}	322.3	869.2	785.9	83.3	0.5047	1.0724	3.302_{39}	0.3028_{37}	351
352	138.04_{179}	323.3	868.3	785.0	83.3	0.5059	1.0700	3.263_{39}	0.3065_{37}	352
353	139.83_{181}	324.4	867.5	784.1	83.4	0.5072	1.0677	3.224_{39}	0.3102_{38}	353
354	141.64_{182}	325.4	866.7	783.3	83.4	0.5085	1.0654	3.185_{38}	0.3140_{38}	354
355	143.46_{184}	326.4	865.9	782.4	83.5	0.5097	1.0631	3.147_{38}	0.3178_{39}	355
356	145.30_{187}	327.5	865.1	781.5	83.6	0.5110	1.0608	3.109_{38}	0.3217_{39}	356
357	147.17_{188}	328.5	864.3	780.7	83.6	0.5123	1.0585	3.071_{38}	0.3256_{41}	357
358	149.05_{191}	329.5	863.5	779.8	83.7	0.5135	1.0562	3.033_{37}	0.3297_{41}	358
359	150.96_{193}	330.6	862.6	778.9	83.7	0.5148	1.0539	2.996_{36}	0.3338_{40}	359
360	152.89_{194}	331.6	861.8	778.1	83.7	0.5161	1.0516	2.960_{35}	0.3378_{41}	360
361	154.83_{195}	332.6	861.0	777.2	83.8	0.5173	1.0493	2.925_{35}	0.3419_{41}	361
362	156.78_{198}	333.7	860.2	776.3	83.9	0.5186	1.0470	2.890_{34}	0.3460_{42}	362
363	158.76_{200}	334.7	859.3	775.4	83.9	0.5199	1.0448	2.856_{35}	0.3502_{43}	363
364	160.76_{201}	335.7	858.5	774.6	83.9	0.5211	1.0425	2.821_{34}	0.3545_{43}	364
365	162.77_{204}	336.8	857.7	773.7	84.0	0.5224	1.0403	2.787_{33}	0.3588_{43}	365
366	164.81_{207}	337.8	856.8	772.8	84.0	0.5236	1.0380	2.754_{33}	0.3631_{44}	366
367	166.88_{208}	338.8	856.0	771.9	84.1	0.5249	1.0357	2.721_{32}	0.3675_{44}	367
368	168.96_{210}	339.9	855.2	771.0	84.2	0.5261	1.0335	2.689_{32}	0.3719_{44}	368
369	171.06_{211}	340.9	854.4	770.2	84.2	0.5274	1.0312	2.657_{31}	0.3763_{45}	369
370	173.17_{214}	341.9	853.5	769.3	84.2	0.5286	1.0289	2.626_{30}	0.3808_{44}	370
371	175.31_{216}	343.0	852.7	768.4	84.3	0.5299	1.0267	2.596_{30}	0.3852_{45}	371
372	177.47_{218}	344.0	851.8	767.5	84.3	0.5311	1.0245	2.566_{30}	0.3897_{46}	372
373	179.65_{220}	345.0	851.0	766.6	84.4	0.5324	1.0222	2.536_{29}	0.3943_{46}	373
374	181.85_{223}	346.1	850.2	765.8	84.4	0.5336	1.0200	2.507_{29}	0.3989_{46}	374
375	184.08_{224}	347.1	849.3	764.9	84.4	0.5349	1.0178	2.478_{28}	0.4035_{47}	375
376	186.32_{228}	348.2	848.5	764.0	84.5	0.5361	1.0156	2.450_{28}	0.4082_{47}	376
377	188.60_{228}	349.2	847.6	763.1	84.5	0.5374	1.0134	2.422_{28}	0.4129_{48}	377
378	190.88_{231}	350.2	846.8	762.2	84.6	0.5386	1.0112	2.394_{28}	0.4177_{49}	378
379	193.19_{233}	351.3	846.0	761.4	84.6	0.5398	1.0089	2.366_{27}	0.4226_{49}	379
380	195.52_{235}	352.3	845.1	760.5	84.6	0.5411	1.0066	2.339_{27}	0.4275_{50}	380
381	197.87_{238}	353.3	844.3	759.6	84.7	0.5423	1.0045	2.312_{27}	0.4325_{51}	381
382	200.25_{239}	354.4	843.4	758.7	84.7	0.5435	1.0022	2.285_{26}	0.4376_{50}	382
383	202.64_{241}	355.4	842.5	757.7	84.8	0.5448	1.0000	2.259_{25}	0.4426_{50}	383
384	205.05_{244}	356.5	841.7	756.9	84.8	0.5460	0.9978	2.234_{25}	0.4476_{51}	384
385	207.49_{247}	357.5	840.8	756.0	84.8	0.5473	0.9957	2.209_{25}	0.4527_{52}	385
386	209.96_{249}	358.5	840.0	755.1	84.9	0.5485	0.9935	2.184_{24}	0.4579_{51}	386
387	212.45_{251}	359.6	839.1	754.2	84.9	0.5497	0.9913	2.160_{24}	0.4630_{52}	387
388	214.96_{254}	360.6	838.3	753.3	85.0	0.5509	0.9891	2.136_{24}	0.4682_{53}	388
389	217.50_{255}	361.7	837.4	752.4	85.0	0.5522	0.9869	2.112_{24}	0.4735_{54}	389
390	220.05_{258}	362.7	836.6	751.6	85.0	0.5534	0.9848	2.088_{24}	0.4789_{56}	390
391	222.63_{260}	363.7	835.7	750.6	85.1	0.5546	0.9826	2.064_{23}	0.4845_{55}	391

Temperature, Degrees Fahrenheit. t	Pressure, Pounds per Square Inch. p	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
392	225.2_{27}	364.8	834.8	749.7	85.1	0.5558	0.9804	2.041_{22}	0.490_{5}	392
393	227.9_{26}	365.8	834.0	748.9	85.1	0.5571	0.9783	2.019_{22}	0.495_{6}	393
394	230.5_{27}	366.9	833.1	747.9	85.2	0.5583	0.9761	1.997_{22}	0.501_{5}	394
395	233.2_{27}	367.9	832.2	747.0	85.2	0.5595	0.9740	1.975_{22}	0.506_{6}	395
396	235.9_{27}	368.9	831.4	746.2	85.2	0.5607	0.9718	1.953_{22}	0.512_{6}	396
397	238.6_{28}	370.0	830.5	745.2	85.3	0.5619	0.9696	1.931_{21}	0.518_{6}	397
398	241.4_{27}	371.0	829.7	744.4	85.3	0.5632	0.9675	1.910_{21}	0.524_{5}	398
399	244.1_{28}	372.0	828.8	743.5	85.3	0.5644	0.9654	1.889_{21}	0.529_{6}	399
400	246.9_{28}	373.1	827.9	742.6	85.3	0.5656	0.9633	1.868_{21}	0.535_{6}	400
401	249.7_{29}	374.1	827.0	741.6	85.4	0.5668	0.9611	1.847_{21}	0.541_{7}	401
402	252.6_{29}	375.2	826.1	740.7	85.4	0.5680	0.9589	1.826_{20}	0.548_{6}	402
403	255.5_{29}	376.2	825.2	739.8	85.4	0.5692	0.9568	1.806_{20}	0.554_{6}	403
404	258.4_{29}	377.3	824.4	739.0	85.4	0.5704	0.9547	1.786_{20}	0.560_{6}	404
405	261.3_{30}	378.3	823.5	738.1	85.4	0.5716	0.9525	1.766_{19}	0.566_{6}	405
406	264.3_{30}	379.4	822.6	737.1	85.5	0.5728	0.9504	1.747_{19}	0.572_{7}	406
407	267.3_{30}	380.4	821.7	736.2	85.5	0.5741	0.9483	1.728_{19}	0.579_{6}	407
408	270.3_{30}	381.4	820.8	735.3	85.5	0.5753	0.9462	1.709_{18}	0.585_{6}	408
409	273.3_{30}	382.5	820.0	734.5	85.5	0.5765	0.9441	1.691_{18}	0.591_{7}	409
410	276.3_{31}	383.5	819.1	733.6	85.5	0.5777	0.9420	1.673_{18}	0.598_{6}	410
411	279.4_{31}	384.6	818.2	732.7	85.5	0.5789	0.9399	1.655_{18}	0.604_{7}	411
412	282.5_{32}	385.6	817.3	731.7	85.6	0.5801	0.9378	1.637_{18}	0.611_{7}	412
413	285.7_{32}	386.7	816.4	730.8	85.6	0.5813	0.9357	1.619_{18}	0.618_{7}	413
414	288.9_{31}	387.7	815.5	729.9	85.6	0.5825	0.9336	1.601_{17}	0.625_{6}	414
415	292.0_{32}	388.7	814.6	729.0	85.6	0.5837	0.9315	1.584_{17}	0.631_{7}	415
416	295.2_{33}	389.8	813.7	728.1	85.6	0.5849	0.9294	1.567_{17}	0.638_{7}	416
417	298.5_{33}	390.8	812.8	727.2	85.6	0.5861	0.9273	1.550_{17}	0.645_{7}	417
418	301.8_{33}	391.9	811.9	726.3	85.6	0.5873	0.9253	1.533_{17}	0.652_{8}	418
419	305.1_{34}	392.9	811.0	725.4	85.6	0.5885	0.9232	1.516_{17}	0.660_{7}	419
420	308.5_{33}	394.0	810.1	724.5	85.6	0.5896	0.9211	1.499_{16}	0.667_{7}	420
421	311.8_{34}	395.0	809.2	723.6	85.6	0.5908	0.9191	1.483_{16}	0.674_{8}	421
422	315.2_{34}	396.1	808.3	722.7	85.6	0.5920	0.9170	1.467_{15}	0.682_{7}	422
423	318.6_{35}	397.1	807.4	721.8	85.6	0.5932	0.9149	1.452_{16}	0.689_{7}	423
424	322.1_{35}	398.2	806.5	720.9	85.6	0.5944	0.9128	1.436_{15}	0.696_{8}	424
425	325.6_{35}	399.2	805.6	720.0	85.6	0.5955	0.9108	1.421_{15}	0.704_{7}	425
426	329.1_{35}	400.3	804.7	719.1	85.6	0.5967	0.9088	1.406_{15}	0.711_{8}	426
427	332.6_{36}	401.3	803.8	718.2	85.6	0.5979	0.9067	1.391_{15}	0.719_{8}	427
428	336.2	402.3	802.9	717.3	85.6	0.5991	0.9047	1.376	0.727	428

TABLE II.

SATURATED STEAM.

ENGLISH UNITS.

Pressure, Pounds per Square Inch. p	Temperature, Degrees Fahrenheit. t	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Pressure, Pounds per Square Inch. p
1	101.84 2431	69.8	1034.7	973.1	61.6	0.1329	1.8433	333.1 1600	0.00300 278	1
2	126.15 1537	94.2	1021.9	957.8	64.1	0.1753	1.7432	173.1 547	0.00578 267	2
3	141.52 1148	109.6	1012.2	946.4	65.8	0.2011	1.6841	118.4 280	0.00845 261	3
4	153.00 926	121.0	1005.5	938.6	66.9	0.2200	1.6416	90.4 171	0.01106 258	4
5	162.26 781	130.3	1000.0	932.1	67.9	0.2351	1.6084	73.3 114	0.01364 252	5
6	170.07 677	138.1	995.5	926.8	68.7	0.2476	1.5812	61.9 83	0.01616 250	6
7	176.84 602	144.9	991.4	922.0	69.4	0.2583	1.5580	53.6 63	0.01866 250	7
8	182.86 541	150.9	987.8	917.8	70.0	0.2678	1.5378	47.26 490	0.02116 246	8
9	188.27 494	156.4	984.5	914.0	70.5	0.2762	1.5198	42.36 399	0.02362 244	9
10	193.21 453	161.3	981.4	910.4	71.0	0.2838	1.5036	38.37 326	0.02606 242	10
11	197.74 421	165.9	978.6	907.1	71.5	0.2908	1.4889	35.11 271	0.02848 240	11
12	201.95 392	170.1	976.0	904.1	71.9	0.2972	1.4756	32.40 234	0.03088 239	12
13	205.87 368	174.1	973.6	901.3	72.3	0.3032	1.4632	30.06 203	0.03327 240	13
14	209.55 348	177.8	971.2	898.6	72.6	0.3088	1.4516	28.03 175	0.03567 238	14
15	213.03 328	181.3	969.1	896.2	72.9	0.3140	1.4409	26.28 154	0.03805 237	15
16	216.31 312	184.6	967.0	893.8	73.2	0.3189	1.4308	24.74 136	0.04042 235	16
17	219.43 297	187.8	965.0	891.5	73.5	0.3236	1.4213	23.38 121	0.04277 234	17
18	222.40 284	190.8	963.1	889.3	73.8	0.3280	1.4123	22.17 110	0.04511 235	18
19	225.24 271	193.7	961.2	887.2	74.0	0.3322	1.4038	21.07 98	0.04746 232	19
20	227.95 261	196.4	959.4	885.1	74.3	0.3362	1.3957	20.09 90	0.04978 23	20
21	230.56 251	199.1	957.7	883.1	74.6	0.3401	1.3879	19.19 82	0.0521 23	21
22	233.07 243	201.6	956.0	881.2	74.8	0.3438	1.3804	18.37 75	0.0544 24	22
23	235.50 232	204.1	954.4	879.4	75.0	0.3473	1.3733	17.62 70	0.0568 23	23
24	237.82 225	206.4	952.9	877.7	75.2	0.3507	1.3665	16.92 63	0.0591 23	24
25	240.07 219	208.7	951.4	876.0	75.4	0.3539	1.3600	16.29 59	0.0614 23	25
26	242.26 210	210.9	949.9	874.4	75.5	0.3571	1.3536	15.70 53	0.0637 22	26
27	244.36 205	213.0	948.5	872.8	75.7	0.3601	1.3475	15.17 50	0.0659 23	27
28	246.41 200	215.1	947.1	871.2	75.9	0.3631	1.3417	14.67 48	0.0682 23	28
29	248.41 193	217.2	945.8	869.7	76.1	0.3660	1.3360	14.19 45	0.0705 23	29
30	250.34 188	219.1	944.4	868.2	76.2	0.3687	1.3305	13.74 42	0.0728 23	30
31	252.22 183	221.0	943.1	866.7	76.4	0.3714	1.3252	13.32 39	0.0751 22	31
32	254.05 179	222.9	941.8	865.2	76.6	0.3740	1.3200	12.93 37	0.0773 23	32

Pressure, Pounds per Square Inch. p	Temperature, Degrees Fahrenheit. t	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Pressure, Pounds per Square Inch. p
33	255.84_{175}	224.7	940.6	863.8	76.8	0.3766	1.3149	12.56_{35}	0.0796_{23}	33
34	257.59_{170}	226.5	939.4	862.5	76.9	0.3791	1.3101	12.21_{33}	0.0819_{23}	34
35	259.29_{167}	228.2	938.2	861.2	77.0	0.3815	1.3054	11.88_{30}	0.0842_{22}	35
36	260.96_{162}	229.9	937.1	859.9	77.2	0.3838	1.3007	11.58_{29}	0.0864_{22}	36
37	262.58_{159}	231.6	935.9	858.6	77.3	0.3861	1.2962	11.29_{28}	0.0886_{22}	37
38	264.17_{156}	233.2	934.8	857.4	77.4	0.3883	1.2918	11.01_{26}	0.0908_{22}	38
39	265.73_{153}	234.8	933.7	856.2	77.5	0.3905	1.2875	10.75_{26}	0.0930_{23}	39
40	267.26_{150}	236.4	932.6	855.0	77.6	0.3927	1.2833	10.49_{24}	0.0953_{23}	40
41	268.76_{147}	237.9	931.6	853.8	77.8	0.3948	1.2792	10.25_{23}	0.0976_{22}	41
42	270.23_{143}	239.4	930.6	852.7	77.9	0.3968	1.2752	10.02_{22}	0.0998_{22}	42
43	271.66_{141}	240.8	929.5	851.5	78.0	0.3988	1.2713	9.801_{212}	0.1020_{23}	43
44	273.07_{139}	242.3	928.5	850.4	78.1	0.4008	1.2675	9.589_{202}	0.1043_{22}	44
45	274.46_{136}	243.7	927.5	849.3	78.2	0.4027	1.2638	9.387_{192}	0.1065_{22}	45
46	275.82_{134}	245.1	926.6	848.2	78.4	0.4046	1.2601	9.195_{183}	0.1087_{22}	46
47	277.16_{131}	246.4	925.6	847.2	78.4	0.4065	1.2565	9.012_{174}	0.1109_{22}	47
48	278.47_{129}	247.8	924.7	846.2	78.5	0.4083	1.2530	8.838_{168}	0.1131_{22}	48
49	279.76_{127}	249.1	923.8	845.1	78.7	0.4101	1.2496	8.670_{163}	0.1153_{23}	49
50	281.03_{125}	250.4	922.8	844.1	78.7	0.4119	1.2462	8.507_{157}	0.1176_{22}	50
51	282.28_{124}	251.7	921.9	843.1	78.8	0.4136	1.2428	8.350_{152}	0.1198_{22}	51
52	283.52_{122}	253.0	921.0	842.1	78.9	0.4153	1.2395	8.198_{146}	0.1220_{22}	52
53	284.74_{119}	254.2	920.1	841.1	79.0	0.4170	1.2363	8.052_{140}	0.1242_{22}	53
54	285.93_{116}	255.4	919.3	840.2	79.1	0.4186	1.2332	7.912_{134}	0.1264_{22}	54
55	287.09_{116}	256.6	918.4	839.2	79.2	0.4202	1.2302	7.778_{131}	0.1286_{22}	55
56	288.25_{115}	257.8	917.6	838.3	79.3	0.4218	1.2271	7.647_{128}	0.1308_{22}	56
57	289.40_{113}	259.0	916.7	837.4	79.3	0.4233	1.2241	7.519_{122}	0.1330_{22}	57
58	290.53_{111}	260.1	915.9	836.5	79.4	0.4249	1.2211	7.397_{117}	0.1352_{22}	58
59	291.64_{110}	261.3	915.1	835.6	79.5	0.4264	1.2182	7.280_{114}	0.1374_{21}	59
60	292.74_{108}	262.4	914.3	834.7	79.6	0.4279	1.2154	7.166_{111}	0.1395_{22}	60
61	293.82_{106}	263.5	913.5	833.8	79.7	0.4294	1.2126	7.055_{106}	0.1417_{22}	61
62	294.88_{105}	264.6	912.7	832.9	79.8	0.4308	1.2099	6.949_{103}	0.1439_{22}	62
63	295.93_{104}	265.7	911.9	832.1	79.8	0.4323	1.2072	6.846_{101}	0.1461_{22}	63
64	296.97_{103}	266.7	911.1	831.2	79.9	0.4337	1.2045	6.745_{98}	0.1483_{21}	64
65	298.00_{102}	267.8	910.4	830.4	80.0	0.4351	1.2018	6.647_{95}	0.1504_{22}	65
66	299.02_{100}	268.8	909.6	829.6	80.0	0.4365	1.1992	6.552_{92}	0.1526_{22}	66
67	300.02_{99}	269.8	908.9	828.8	80.1	0.4378	1.1966	6.460_{90}	0.1548_{22}	67
68	301.01_{98}	270.9	908.1	827.9	80.2	0.4391	1.1942	6.370_{87}	0.1570_{22}	68
69	301.99_{97}	271.9	907.4	827.1	80.3	0.4405	1.1917	6.283_{84}	0.1592_{21}	69
70	302.96_{95}	272.9	906.6	826.3	80.3	0.4418	1.1892	6.199_{82}	0.1613_{22}	70
71	303.91_{95}	273.8	905.9	825.5	80.4	0.4430	1.1867	6.117_{81}	0.1635_{22}	71
72	304.86_{93}	274.8	905.2	824.8	80.4	0.4443	1.1843	6.036_{78}	0.1657_{21}	72
73	305.79_{93}	275.8	904.5	824.0	80.5	0.4456	1.1819	5.958_{76}	0.1678_{22}	73

Pressure, Pounds per Square Inch. p	Temperature, Degrees Fahrenheit. t	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Pressure, Pounds per Square Inch. p
74	306.72_{92}	276.7	903.8	823.2	80.6	0.4468	1.1795	5.882_{75}	0.1700_{22}	74
75	307.64_{90}	277.7	903.1	822.4	80.7	0.4480	1.1772	5.807_{72}	0.1722_{22}	75
76	308.54_{90}	278.6	902.4	821.7	80.7	0.4492	1.1750	5.735_{70}	0.1744_{21}	76
77	309.44_{89}	279.5	901.8	821.0	80.8	0.4504	1.1727	5.665_{68}	0.1765_{22}	77
78	310.33_{88}	280.4	901.1	820.3	80.8	0.4516	1.1705	5.597_{67}	0.1787_{21}	78
79	311.21_{87}	281.3	900.4	819.6	80.8	0.4528	1.1683	5.530_{64}	0.1808_{21}	79
80	312.08_{86}	282.2	899.8	818.9	80.9	0.4540	1.1661	5.466_{63}	0.1829_{22}	80
81	312.94_{85}	283.1	899.1	818.1	81.0	0.4551	1.1640	5.403_{61}	0.1851_{21}	81
82	313.79_{84}	283.9	898.5	817.4	81.1	0.4562	1.1619	5.342_{61}	0.1872_{22}	82
83	314.63_{84}	284.8	897.8	816.7	81.1	0.4573	1.1598	5.281_{61}	0.1894_{22}	83
84	315.47_{83}	285.7	897.2	816.1	81.1	0.4584	1.1577	5.220_{59}	0.1916_{22}	84
85	316.30_{82}	286.5	896.6	815.4	81.2	0.4595	1.1557	5.161_{57}	0.1938_{21}	85
86	317.12_{81}	287.4	895.9	814.7	81.2	0.4606	1.1536	5.104_{56}	0.1959_{22}	86
87	317.93_{80}	288.2	895.3	814.0	81.3	0.4617	1.1516	5.048_{55}	0.1981_{22}	87
88	318.73_{80}	289.0	894.7	813.3	81.4	0.4628	1.1496	4.993_{54}	0.2003_{22}	88
89	319.53_{79}	289.9	894.1	812.7	81.4	0.4638	1.1477	4.939_{53}	0.2025_{22}	89
90	320.32_{78}	290.7	893.5	812.1	81.4	0.4649	1.1457	4.886_{51}	0.2047_{21}	90
91	321.10_{78}	291.5	892.9	811.4	81.5	0.4659	1.1438	4.835_{50}	0.2068_{22}	91
92	321.88_{77}	292.3	892.3	810.7	81.6	0.4669	1.1419	4.785_{49}	0.2090_{22}	92
93	322.65_{76}	293.1	891.7	810.1	81.6	0.4679	1.1400	4.736_{47}	0.2112_{21}	93
94	323.41_{75}	293.9	891.1	809.5	81.6	0.4689	1.1382	4.689_{45}	0.2133_{20}	94
95	324.16_{75}	294.6	890.5	808.8	81.7	0.4699	1.1363	4.644_{45}	0.2153_{21}	95
96	324.91_{75}	295.4	889.9	808.2	81.7	0.4709	1.1345	4.599_{43}	0.2174_{21}	96
97	325.66_{74}	296.2	889.3	807.5	81.8	0.4719	1.1327	4.556_{42}	0.2195_{20}	97
98	326.40_{73}	296.9	888.7	806.9	81.8	0.4729	1.1309	4.514_{41}	0.2215_{21}	98
99	327.13_{73}	297.7	888.2	806.3	81.9	0.4738	1.1291	4.473_{41}	0.2236_{20}	99
100	327.86_{72}	298.5	887.6	805.7	81.9	0.4748	1.1273	4.432_{41}	0.2256_{21}	100
101	328.58_{72}	299.2	887.0	805.1	81.9	0.4757	1.1255	4.391_{40}	0.2277_{21}	101
102	329.30_{71}	299.9	886.5	804.5	82.0	0.4766	1.1238	4.351_{40}	0.2298_{22}	102
103	330.01_{71}	300.6	885.9	803.8	82.1	0.4776	1.1221	4.311_{39}	0.2320_{21}	103
104	330.72_{70}	301.4	885.3	803.2	82.1	0.4785	1.1204	4.272_{39}	0.2341_{21}	104
105	331.42_{69}	302.1	884.8	802.7	82.1	0.4794	1.1187	4.233_{38}	0.2362_{22}	105
106	332.11_{68}	302.8	884.3	802.1	82.2	0.4803	1.1170	4.195_{38}	0.2384_{22}	106
107	332.79_{69}	303.5	883.7	801.5	82.2	0.4812	1.1154	4.157_{37}	0.2406_{21}	107
108	333.48_{68}	304.2	883.2	800.9	82.3	0.4821	1.1137	4.120_{37}	0.2427_{22}	108
109	334.16_{67}	304.9	882.6	800.3	82.3	0.4830	1.1121	4.083_{36}	0.2449_{22}	109
110	334.83_{67}	305.6	882.1	799.7	82.4	0.4838	1.1105	4.047_{36}	0.2471_{22}	110
111	335.50_{67}	306.3	881.6	799.2	82.4	0.4847	1.1089	4.011_{35}	0.2493_{22}	111
112	336.17_{66}	307.0	881.0	798.6	82.4	0.4856	1.1073	3.976_{33}	0.2515_{21}	112
113	336.83_{65}	307.7	880.5	798.0	82.5	0.4864	1.1057	3.943_{34}	0.2536_{22}	113
114	337.48_{66}	308.3	880.0	797.5	82.5	0.4873	1.1041	3.909_{33}	0.2558_{22}	114

Pressure, Pounds per Square Inch. p	Temperature, Degrees Fahrenheit. t	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Pressure, Pounds per Square Inch. p
115	338.14_{64}	309.0	879.5	797.0	82.5	0.4881	1.1026	3.876_{32}	0.2580_{21}	115
116	338.78_{64}	309.7	879.0	796.4	82.6	0.4890	1.1011	3.844_{32}	0.2601_{22}	116
117	339.42_{64}	310.3	878.5	795.9	82.6	0.4898	1.0996	3.812_{31}	0.2623_{21}	117
118	340.06_{63}	311.0	878.0	795.3	82.7	0.4906	1.0981	3.781_{29}	0.2644_{21}	118
119	340.69_{62}	311.7	877.4	794.7	82.7	0.4914	1.0966	3.752_{29}	0.2665_{21}	119
120	341.31_{63}	312.3	876.9	794.2	82.7	0.4922	1.0951	3.723_{29}	0.2686_{21}	120
121	341.94_{62}	312.9	876.4	793.6	82.8	0.4930	1.0936	3.694_{29}	0.2707_{22}	121
122	342.56_{62}	313.6	875.9	793.1	82.8	0.4938	1.0921	3.665_{28}	0.2729_{21}	122
123	343.18_{61}	314.2	875.4	792.6	82.8	0.4946	1.0907	3.637_{28}	0.2750_{21}	123
124	343.79_{60}	314.8	875.0	792.1	82.9	0.4954	1.0892	3.609_{28}	0.2771_{22}	124
125	344.39_{61}	315.5	874.5	791.6	82.9	0.4962	1.0878	3.581_{27}	0.2793_{21}	125
126	345.00_{60}	316.1	874.0	791.0	83.0	0.4970	1.0864	3.554_{27}	0.2814_{21}	126
127	345.60_{60}	316.7	873.5	790.5	83.0	0.4977	1.0850	3.527_{26}	0.2835_{21}	127
128	346.20_{59}	317.3	873.0	790.0	83.0	0.4985	1.0836	3.501_{25}	0.2856_{21}	128
129	346.79_{59}	317.9	872.6	789.5	83.1	0.4993	1.0822	3.476_{25}	0.2877_{21}	129
130	347.38_{58}	318.6	872.1	789.0	83.1	0.5000	1.0808	3.451_{24}	0.2898_{20}	130
131	347.96_{59}	319.2	871.6	788.5	83.1	0.5008	1.0794	3.427_{25}	0.2918_{21}	131
132	348.55_{58}	319.8	871.1	788.0	83.1	0.5015	1.0780	3.402_{24}	0.2939_{21}	132
133	349.13_{57}	320.4	870.7	787.5	83.2	0.5023	1.0767	3.378_{24}	0.2960_{21}	133
134	349.70_{57}	320.9	870.2	787.0	83.2	0.5030	1.0754	3.354_{23}	0.2981_{21}	134
135	350.27_{57}	321.5	869.8	786.5	83.3	0.5037	1.0741	3.331_{23}	0.3002_{21}	135
136	350.84_{57}	322.1	869.3	786.0	83.3	0.5044	1.0728	3.308_{22}	0.3023_{20}	136
137	351.41_{57}	322.7	868.8	785.5	83.3	0.5052	1.0714	3.286_{22}	0.3043_{21}	137
138	351.98_{56}	323.3	868.3	785.0	83.3	0.5059	1.0701	3.264_{22}	0.3064_{21}	138
139	352.54_{55}	323.9	867.9	784.5	83.4	0.5066	1.0688	3.242_{22}	0.3085_{21}	139
140	353.09_{56}	324.4	867.4	784.0	83.4	0.5073	1.0675	3.220_{21}	0.3106_{20}	140
141	353.65_{55}	325.0	867.0	783.6	83.4	0.5080	1.0662	3.199_{22}	0.3126_{21}	141
142	354.20_{55}	325.6	866.5	783.1	83.4	0.5087	1.0649	3.177_{21}	0.3147_{21}	142
143	354.75_{54}	326.2	866.1	782.6	83.5	0.5094	1.0637	3.156_{20}	0.3168_{21}	143
144	355.29_{54}	326.7	865.6	782.1	83.5	0.5101	1.0624	3.136_{21}	0.3189_{21}	144
145	355.83_{54}	327.3	865.2	781.6	83.6	0.5108	1.0612	3.115_{20}	0.3210_{21}	145
146	356.37_{54}	327.8	864.8	781.2	83.6	0.5115	1.0599	3.095_{21}	0.3231_{22}	146
147	356.91_{53}	328.4	864.3	780.7	83.6	0.5122	1.0587	3.074_{20}	0.3253_{21}	147
148	357.44_{53}	328.9	863.9	780.3	83.6	0.5128	1.0575	3.054_{20}	0.3274_{22}	148
149	357.97_{53}	329.5	863.5	779.8	83.7	0.5135	1.0563	3.034_{20}	0.3296_{22}	149
150	358.50_{52}	330.0	863.0	779.3	83.7	0.5142	1.0551	3.014_{19}	0.3318_{21}	150
151	359.02_{52}	330.6	862.6	778.9	83.7	0.5148	1.0539	2.995_{18}	0.3339_{20}	151
152	359.54_{52}	331.1	862.2	778.5	83.7	0.5155	1.0527	2.977_{19}	0.3359_{21}	152
153	360.06_{51}	331.6	861.8	778.1	83.7	0.5162	1.0515	2.958_{18}	0.3380_{21}	153
154	360.57_{52}	332.2	861.3	777.6	83.7	0.5168	1.0503	2.940_{18}	0.3401_{21}	154
155	361.09_{51}	332.7	860.9	777.1	83.8	0.5175	1.0491	2.922_{18}	0.3422_{22}	155

Pressure, Pounds per Square Inch. p	Temperature, Degrees Fahrenheit. t	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Pressure, Pounds per Square Inch. p
156	361.60_{51}	333.2	860.5	776.6	83.9	0.5181	1.0479	2.904_{18}	0.3444_{21}	156
157	362.11_{50}^{51}	333.8	860.1	776.2	83.9	0.5187	1.0468	2.886_{17}^{18}	0.3465_{21}^{22}	157
158	362.62_{50}	334.3	859.6	775.7	83.9	0.5194	1.0456	2.869_{17}	0.3486_{21}	158
159	363.12_{50}	334.8	859.2	775.3	83.9	0.5200	1.0445	2.852_{18}	0.3507_{21}	159
160	363.62_{50}	335.3	858.8	774.9	83.9	0.5206	1.0434	2.834_{17}	0.3528_{22}	160
161	364.12_{50}	335.9	858.4	774.5	83.9	0.5213	1.0422	2.817_{17}	0.3550_{21}	161
162	364.62_{49}	336.4	858.0	774.0	84.0	0.5219	1.0411	2.800_{17}	0.3571_{22}	162
163	365.11_{49}	336.9	857.6	773.6	84.0	0.5225	1.0400	2.783_{16}	0.3593_{21}	163
164	365.60_{49}	337.4	857.2	773.2	84.0	0.5231	1.0389	2.767_{16}	0.3614_{21}	164
165	366.09_{49}	337.9	856.8	772.8	84.0	0.5237	1.0378	2.751_{16}	0.3635_{21}	165
166	366.58_{48}	338.4	856.4	772.3	84.1	0.5244	1.0367	2.735_{16}	0.3656_{21}	166
167	367.06_{48}	338.9	856.0	771.9	84.1	0.5250	1.0356	2.719_{15}	0.3677_{21}	167
168	367.54_{48}	339.4	855.6	771.4	84.2	0.5256	1.0345	2.704_{16}	0.3698_{22}	168
169	368.02_{48}	339.9	855.2	771.0	84.2	0.5262	1.0335	2.688_{15}	0.3720_{21}	169
170	368.50_{47}	340.4	854.8	770.6	84.2	0.5268	1.0324	2.673_{15}	0.3741_{21}	170
171	368.97_{48}	340.9	854.4	770.2	84.2	0.5273	1.0313	2.658_{15}	0.3762_{22}	171
172	369.45_{47}	341.4	854.0	769.8	84.2	0.5279	1.0302	2.643_{15}	0.3784_{21}	172
173	369.92_{47}	341.8	853.6	769.4	84.2	0.5285	1.0291	2.628_{14}	0.3805_{21}	173
174	370.39_{47}	342.3	853.2	769.0	84.2	0.5291	1.0280	2.614_{14}	0.3826_{20}	174
175	370.86_{46}^{47}	342.8	852.8	768.5	84.3	0.5297	1.0270	2.600_{14}	0.3846_{21}	175
176	371.32_{46}	343.3	852.4	768.1	84.3	0.5303	1.0260	2.586_{13}	0.3867_{20}	176
177	371.78_{46}	343.8	852.0	767.7	84.3	0.5309	1.0250	2.573_{14}	0.3887_{21}	177
178	372.24_{46}^{46}	344.2	851.6	767.3	84.3	0.5314	1.0239	2.559_{14}^{13}	0.3908_{21}^{20}	178
179	372.70_{46}	344.7	851.3	766.9	84.4	0.5320	1.0229	2.545_{14}	0.3929_{22}	179
180	373.16_{45}	345.2	850.9	766.5	84.4	0.5326	1.0219	2.531_{13}	0.3951_{21}	180
181	373.61_{45}^{46}	345.7	850.5	766.1	84.4	0.5331	1.0209	2.518_{13}^{14}	0.3972_{21}^{20}	181
182	374.07_{45}	346.2	850.1	765.7	84.4	0.5337	1.0199	2.505_{13}	0.3992_{21}	182
183	374.52_{44}	346.6	849.7	765.3	84.4	0.5343	1.0189	2.492_{13}	0.4013_{21}	183
184	374.96_{44}^{45}	347.1	849.4	764.9	84.5	0.5348	1.0179	2.479_{12}^{13}	0.4034_{21}^{20}	184
185	375.41_{45}	347.5	849.0	764.5	84.5	0.5354	1.0169	2.467_{13}	0.4054_{21}	185
186	375.86_{44}	348.0	848.6	764.1	84.5	0.5359	1.0159	2.454_{12}	0.4075_{20}	186
187	376.30_{44}^{44}	348.5	848.2	763.7	84.5	0.5365	1.0149	2.442_{13}^{12}	0.4095_{21}^{20}	187
188	376.74_{44}	348.9	847.8	763.3	84.5	0.5370	1.0140	2.429_{12}	0.4116_{21}	188
189	377.18_{43}	349.4	847.5	763.0	84.5	0.5376	1.0130	2.417_{12}	0.4137_{21}	189
190	377.61_{44}^{43}	349.8	847.1	762.6	84.5	0.5381	1.0121	2.405_{12}^{12}	0.4158_{21}^{21}	190
191	378.05_{44}	350.3	846.8	762.2	84.6	0.5387	1.0111	2.393_{13}	0.4179_{22}	191
192	378.49_{43}	350.7	846.4	761.8	84.6	0.5392	1.0101	2.380_{12}	0.4201_{21}	192
193	378.92_{43}^{43}	351.2	846.0	761.4	84.6	0.5397	1.0091	2.368_{12}^{11}	0.4222_{21}^{21}	193
194	379.35_{43}	351.6	845.7	761.1	84.6	0.5403	1.0081	2.357_{12}	0.4243_{21}	194
195	379.78_{42}	352.1	845.3	760.7	84.6	0.5408	1.0071	2.345_{11}	0.4264_{21}	195
196	380.20_{43}	352.5	844.9	760.3	84.6	0.5413	1.0062	2.334_{12}	0.4285_{21}	196

Pressure, Pounds per Square Inch. p	Temperature, Degrees Fahrenheit. t	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Pressure, Pounds per Square Inch. p
197	380.63_{42}	353.0	844.6	759.9	84.7	0.5418	1.0053	2.322_{11}	0.4306_{21}	197
198	381.05_{42}	353.4	844.2	759.5	84.7	0.5424	1.0044	2.311_{12}	0.4327_{22}	198
199	381.47_{42}	353.8	843.9	759.2	84.7	0.5429	1.0034	2.299_{11}	0.4349_{22}	199
200	381.89_{42}	354.3	843.5	758.8	84.7	0.5434	1.0025	2.288_{11}	0.4371_{21}	200
201	382.31_{42}	354.7	843.1	758.4	84.7	0.5439	1.0015	2.277_{11}	0.4392_{21}	201
202	382.73_{42}	355.1	842.8	758.0	84.8	0.5444	1.0006	2.266_{11}	0.4413_{21}	202
203	383.15_{41}	355.6	842.4	757.6	84.8	0.5450	0.9997	2.255_{10}	0.4434_{20}	203
204	383.56_{42}	356.0	842.1	757.3	84.8	0.5455	0.9988	2.245_{10}	0.4454_{21}	204
205	383.98_{41}	356.4	841.7	756.9	84.8	0.5460	0.9979	2.235_{11}	0.4475_{21}	205
206	384.39_{41}	356.9	841.3	756.5	84.8	0.5465	0.9970	2.224_{10}	0.4496_{21}	206
207	384.80_{41}	357.3	841.0	756.2	84.8	0.5470	0.9961	2.214_{10}	0.4517_{20}	207
208	385.21_{40}	357.7	840.7	755.8	84.9	0.5475	0.9952	2.204_{10}	0.4537_{21}	208
209	385.61_{41}	358.1	840.3	755.4	84.9	0.5480	0.9944	2.194_{10}	0.4558_{21}	209
210	386.02_{40}	358.6	840.0	755.1	84.9	0.5485	0.9935	2.184_{10}	0.4579_{21}	210
211	386.42_{40}	359.0	839.6	754.7	84.9	0.5490	0.9926	2.174_{10}	0.4600_{21}	211
212	386.82_{40}	359.4	839.3	754.4	84.9	0.5495	0.9917	2.164_{9}	0.4621_{20}	212
213	387.22_{40}	359.8	839.0	754.1	84.9	0.5500	0.9908	2.155_{10}	0.4641_{21}	213
214	387.62_{40}	360.2	838.6	753.7	84.9	0.5505	0.9899	2.145_{9}	0.4662_{20}	214
215	388.02_{39}	360.6	838.3	753.3	85.0	0.5510	0.9891	2.136_{10}	0.4682_{21}	215
216	388.41_{39}	361.0	837.9	752.9	85.0	0.5514	0.9882	2.126_{9}	0.4703_{21}	216
217	388.80_{40}	361.4	837.6	752.6	85.0	0.5519	0.9873	2.117_{10}	0.4724_{22}	217
218	389.20_{39}	361.9	837.2	752.2	85.0	0.5524	0.9865	2.107_{9}	0.4746_{21}	218
219	389.59_{39}	362.3	836.9	751.9	85.0	0.5529	0.9857	2.098_{10}	0.4767_{22}	219
220	389.98_{39}	362.7	836.6	751.6	85.0	0.5534	0.9848	2.088_{9}	0.4789_{21}	220
221	390.37_{39}	363.1	836.2	751.2	85.0	0.5538	0.9840	2.079_{9}	0.4810_{21}	221
222	390.76_{38}	363.5	835.9	750.8	85.1	0.5543	0.9831	2.070_{9}	0.4831_{21}	222
223	391.14_{39}	363.9	835.6	750.5	85.1	0.5548	0.9823	2.061_{9}	0.4852_{21}	223
224	391.53_{38}	364.3	835.2	750.1	85.1	0.5553	0.9814	2.052_{9}	0.4873_{21}	224
225	391.91_{38}	364.7	834.9	749.8	85.1	0.5557	0.9806	2.043_{8}	0.4894_{20}	225
226	392.29_{38}	365.1	834.6	749.5	85.1	0.5562	0.9798	2.035_{9}	0.4914_{21}	226
227	392.67_{37}	365.5	834.3	749.2	85.1	0.5566	0.9790	2.026_{8}	0.4935_{21}	227
228	393.04_{38}	365.9	833.9	748.8	85.1	0.5571	0.9782	2.018_{8}	0.4956_{20}	228
229	393.42_{38}	366.2	833.6	748.5	85.1	0.5576	0.9774	2.010_{9}	0.4976_{21}	229
230	393.80_{38}	366.6	833.3	748.1	85.2	0.5580	0.9765	2.001_{8}	0.4997_{2}	230
231	394.18_{38}	367.0	832.9	747.7	85.2	0.5585	0.9757	1.993_{8}	0.502_{2}	231
232	394.56_{37}	367.4	832.6	747.4	85.2	0.5590	0.9749	1.985_{8}	0.504_{2}	232
233	394.93_{37}	367.8	832.3	747.1	85.2	0.5594	0.9741	1.977_{9}	0.506_{2}	233
234	395.30_{37}	368.2	832.0	746.8	85.2	0.5598	0.9733	1.968_{8}	0.508_{2}	234
235	395.67_{37}	368.6	831.7	746.5	85.2	0.5603	0.9725	1.960_{8}	0.510_{2}	235
236	396.04_{37}	369.0	831.3	746.1	85.2	0.5608	0.9717	1.952_{8}	0.512_{2}	236
237	396.41_{37}	369.4	831.0	745.8	85.2	0.5612	0.9709	1.944_{8}	0.514_{3}	237

Pressure, Pounds per Square Inch. p	Temperature, Degrees Fahrenheit. t	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Pressure, Pounds per Square Inch. p
238	396.78_{36}	369.7	830.7	745.4	85.3	0.5617	0.9701	1.936_{8}	0.517_{2}	238
239	397.14_{36}	370.1	830.4	745.1	85.3	0.5621	0.9693	1.928_{7}	0.519_{2}	239
240	397.50_{36}	370.5	830.1	744.8	85.3	0.5625	0.9686	1.921_{8}	0.521_{2}	240
241	397.86_{36}	370.9	829.8	744.5	85.3	0.5630	0.9678	1.913_{8}	0.523_{2}	241
242	398.22_{37}	371.2	829.5	744.2	85.3	0.5634	0.9670	1.905_{7}	0.525_{2}	242
243	398.59_{37}	371.6	829.1	743.8	85.3	0.5639	0.9663	1.898_{8}	0.527_{2}	243
244	398.96_{36}	372.0	828.8	743.5	85.3	0.5643	0.9655	1.890_{8}	0.529_{2}	244
245	399.32_{36}	372.4	828.5	743.2	85.3	0.5648	0.9647	1.882_{7}	0.531_{2}	245
246	399.68_{36}	372.8	828.2	742.9	85.3	0.5652	0.9640	1.875_{8}	0.533_{3}	246
247	400.04_{35}	373.1	827.8	742.5	85.3	0.5656	0.9632	1.867_{7}	0.536_{2}	247
248	400.39_{36}	373.5	827.5	742.2	85.3	0.5661	0.9624	1.860_{8}	0.538_{2}	248
249	400.75_{35}	373.9	827.2	741.8	85.4	0.5665	0.9617	1.852_{7}	0.540_{2}	249
250	401.10_{35}	374.2	826.9	741.5	85.4	0.5669	0.9609	1.845_{7}	0.542_{2}	250
251	401.45_{34}	374.6	826.6	741.2	85.4	0.5673	0.9601	1.838_{8}	0.544_{2}	251
252	401.79_{35}	375.0	826.3	740.9	85.4	0.5678	0.9594	1.830_{7}	0.546_{3}	252
253	402.14_{34}	375.3	826.0	740.6	85.4	0.5682	0.9586	1.823_{7}	0.549_{2}	253
254	402.48_{35}	375.7	825.7	740.3	85.4	0.5686	0.9579	1.816_{7}	0.551_{2}	254
255	402.83_{34}	376.0	825.4	740.0	85.4	0.5690	0.9572	1.809_{6}	0.553_{2}	255
256	403.17_{35}	376.4	825.1	739.7	85.4	0.5694	0.9564	1.803_{7}	0.555_{2}	256
257	403.52_{34}	376.8	824.8	739.4	85.4	0.5699	0.9557	1.796_{7}	0.557_{2}	257
258	403.86_{35}	377.1	824.5	739.1	85.4	0.5703	0.9550	1.789_{7}	0.559_{2}	258
259	404.21_{34}	377.5	824.2	738.8	85.4	0.5707	0.9542	1.782_{7}	0.561_{2}	259
260	404.55_{34}	377.8	823.9	738.5	85.4	0.5711	0.9535	1.775_{7}	0.563_{3}	260
261	404.89_{34}	378.2	823.6	738.2	85.4	0.5715	0.9527	1.768_{6}	0.566_{2}	261
262	405.23_{34}	378.5	823.3	737.9	85.4	0.5719	0.9520	1.762_{7}	0.568_{2}	262
263	405.57_{33}	378.9	823.0	737.5	85.5	0.5723	0.9513	1.755_{6}	0.570_{2}	263
264	405.90_{33}	379.2	822.7	737.2	85.5	0.5727	0.9506	1.749_{6}	0.572_{2}	264
265	406.23_{34}	379.6	822.4	736.9	85.5	0.5731	0.9499	1.743_{7}	0.574_{2}	265
266	406.57_{33}	379.9	822.1	736.6	85.5	0.5735	0.9492	1.736_{6}	0.576_{2}	266
267	406.90_{33}	380.3	821.8	736.3	85.5	0.5739	0.9485	1.730_{6}	0.578_{2}	267
268	407.23_{34}	380.6	821.5	736.0	85.5	0.5743	0.9478	1.724_{7}	0.580_{2}	268
269	407.57_{33}	381.0	821.2	735.7	85.5	0.5747	0.9471	1.717_{6}	0.582_{2}	269
270	407.90_{33}	381.3	820.9	735.4	85.5	0.5751	0.9464	1.711_{6}	0.584_{3}	270
271	408.23_{34}	381.7	820.6	735.1	85.5	0.5755	0.9457	1.705_{6}	0.587_{2}	271
272	408.57_{33}	382.0	820.3	734.8	85.5	0.5759	0.9450	1.699_{6}	0.589_{2}	272
273	408.90_{33}	382.4	820.1	734.6	85.5	0.5763	0.9443	1.693_{6}	0.591_{2}	273
274	409.23_{34}	382.7	819.8	734.3	85.5	0.5767	0.9436	1.687_{6}	0.593_{2}	274
275	409.57_{33}	383.1	819.5	734.0	85.5	0.5771	0.9429	1.681_{6}	0.595_{2}	275
276	409.90_{33}	383.4	819.2	733.7	85.5	0.5775	0.9422	1.675_{6}	0.597_{2}	276
277	410.23_{32}	383.8	818.9	733.4	85.5	0.5779	0.9415	1.669_{6}	0.599_{2}	277
278	410.55_{32}	384.1	818.6	733.1	85.5	0.5783	0.9408	1.663_{6}	0.601_{2}	278

Pressure, Pounds per Square Inch. p	Temperature, Degrees Fahrenheit. t	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Pressure, Pounds per Square Inch. p
279	410.87_{32}	384.4	818.3	732.8	85.5	0.5787	0.9402	1.657_{5}	0.603_{2}	279
280	411.19^{33}	384.8	818.0	732.5	85.5	0.5791	0.9395	1.652^{6}_{5}	0.605^{3}_{2}	280
281	411.52^{32}_{32}	385.1	817.7	732.1	85.6	0.5795	0.9388	1.646^{6}_{6}	0.608^{3}_{2}	281
282	411.84_{32}	385.4	817.4	731.8	85.6	0.5799	0.9381	1.640_{6}	0.610_{2}	282
283	412.16^{31}	385.8	817.2	731.6	85.6	0.5803	0.9375	1.634^{6}_{5}	0.612^{2}_{2}	283
284	412.47^{31}_{31}	386.1	816.9	731.3	85.6	0.5806	0.9368	1.629^{5}_{6}	0.614^{2}_{2}	284
285	412.78_{31}	386.4	816.6	731.0	85.6	0.5810	0.9362	1.623_{6}	0.616_{2}	285
286	413.09^{32}_{31}	386.7	816.3	730.7	85.6	0.5814	0.9355	1.617^{5}_{6}	0.618^{2}_{2}	286
287	413.41^{32}_{31}	387.1	816.0	730.4	85.6	0.5818	0.9348	1.612^{5}_{6}	0.620^{3}_{2}	287
288	413.72_{31}	387.4	815.8	730.2	85.6	0.5821	0.9342	1.606_{6}	0.623_{2}	288
289	414.03^{32}_{31}	387.7	815.5	729.9	85.6	0.5825	0.9335	1.600^{5}_{6}	0.625^{2}_{2}	289
290	414.35^{32}_{33}	388.1	815.2	729.6	85.6	0.5829	0.9329	1.595^{5}_{6}	0.627^{2}_{2}	290
291	414.68_{32}	388.4	814.9	729.3	85.6	0.5833	0.9322	1.589_{5}	0.629_{2}	291
292	415.00^{31}	388.7	814.6	729.0	85.6	0.5837	0.9315	1.584^{5}_{5}	0.631^{2}_{2}	292
293	415.31^{32}_{32}	389.1	814.3	728.7	85.6	0.5840	0.9308	1.579^{6}_{6}	0.633^{3}_{3}	293
294	415.63_{31}	389.4	814.1	728.5	85.6	0.5844	0.9302	1.573_{5}	0.636_{2}	294
295	415.94^{30}_{31}	389.7	813.8	728.2	85.6	0.5848	0.9295	1.568^{5}_{5}	0.638^{2}_{2}	295
296	416.24^{30}_{31}	390.0	813.5	727.9	85.6	0.5852	0.9289	1.563^{5}_{5}	0.640^{2}_{2}	296
297	416.55_{30}	390.4	813.2	727.6	85.6	0.5855	0.9282	1.558_{5}	0.642_{2}	297
298	416.85^{30}_{30}	390.7	813.0	727.4	85.6	0.5859	0.9276	1.553^{6}_{5}	0.644^{2}_{2}	298
299	417.15^{30}_{30}	391.0	812.7	727.1	85.6	0.5862	0.9270	1.547^{5}_{5}	0.646^{3}_{3}	299
300	417.45_{31}	391.3	812.4	726.8	85.6	0.5866	0.9264	1.542_{5}	0.649_{2}	300
301	417.76^{30}_{30}	391.6	812.1	726.5	85.6	0.5870	0.9258	1.537^{5}_{5}	0.651^{2}_{2}	301
302	418.06^{30}_{30}	391.9	811.9	726.3	85.6	0.5873	0.9252	1.532^{5}_{5}	0.653^{2}_{2}	302
303	418.36_{31}	392.3	811.6	726.0	85.6	0.5877	0.9245	1.527_{5}	0.655_{2}	303
304	418.67^{30}_{31}	392.6	811.3	725.7	85.6	0.5881	0.9239	1.522^{5}_{5}	0.657^{2}_{2}	304
305	418.97^{30}_{29}	392.9	811.1	725.5	85.6	0.5884	0.9233	1.517^{5}_{5}	0.659^{2}_{2}	305
306	419.26_{30}	393.2	810.8	725.2	85.6	0.5888	0.9227	1.512_{5}	0.661_{3}	306
307	419.56^{29}_{30}	393.5	810.5	724.9	85.6	0.5891	0.9220	1.507^{5}_{5}	0.664^{3}_{2}	307
308	419.85^{29}_{30}	393.8	810.3	724.7	85.6	0.5895	0.9214	1.502^{5}_{5}	0.666^{2}_{2}	308
309	420.15_{30}	394.1	810.0	724.4	85.6	0.5898	0.9208	1.497_{5}	0.668_{2}	309
310	420.45^{31}	394.4	809.7	724.1	85.6	0.5902	0.9202	1.492^{5}_{5}	0.670^{2}_{2}	310
311	420.76^{30}_{30}	394.8	809.5	723.9	85.6	0.5905	0.9196	1.487^{5}_{5}	0.672^{2}_{3}	311
312	421.06_{29}	395.1	809.2	723.6	85.6	0.5909	0.9190	1.482_{5}	0.675_{2}	312
313	421.35^{30}	395.4	808.9	723.3	85.6	0.5912	0.9184	1.477^{5}_{4}	0.677^{2}_{2}	313
314	421.65^{30}_{29}	395.7	808.7	723.1	85.6	0.5916	0.9177	1.473^{4}_{5}	0.679^{2}_{2}	314
315	421.94_{30}	396.0	808.4	722.8	85.6	0.5919	0.9171	1.468_{5}	0.681_{2}	315
316	422.24^{29}_{29}	396.3	808.1	722.5	85.6	0.5923	0.9165	1.463^{4}_{4}	0.683^{2}_{2}	316
317	422.53^{29}_{29}	396.6	807.9	722.3	85.6	0.5926	0.9159	1.459^{4}_{4}	0.685^{2}_{2}	317
318	422.82_{29}	396.9	807.6	722.0	85.6	0.5930	0.9153	1.455_{5}	0.687_{3}	318
319	423.11_{29}	397.2	807.3	721.7	85.6	0.5933	0.9147	1.450^{4}_{4}	0.690^{2}_{2}	319

Pressure, Pounds per Square Inch. p	Temperature, Degrees Fahrenheit. t	Heat of the Liquid. q	Heat of Vaporization. r	Heat Equivalent of Internal Work. ρ	Heat Equivalent of External Work. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume, Cubic Feet per Pound. s	Density, Pounds per Cubic Foot. $\frac{1}{s}$	Pressure, Pounds per Square Inch. p
320	423.40_{29}	397.5	807.1	721.5	85.6	0.5937	0.9141	1.446_{5}	0.692_{2}	320
321	423.69_{28}	397.8	806.8	721.2	85.6	0.5940	0.9135	1.441_{5}	0.694_{2}	321
322	423.97_{29}	398.1	806.6	721.0	85.6	0.5943	0.9129	1.436_{4}	0.696_{2}	322
323	424.26_{28}	398.4	806.3	720.7	85.6	0.5947	0.9123	1.432_{4}	0.698_{2}	323
324	424.54_{29}	398.7	806.0	720.4	85.6	0.5950	0.9117	1.428_{4}	0.700_{2}	324
325	424.83_{28}	399.0	805.8	720.2	85.6	0.5953	0.9111	1.424_{5}	0.702_{3}	325
326	425.11_{29}	399.3	805.5	719.9	85.6	0.5957	0.9106	1.419_{4}	0.705_{2}	326
327	425.40_{29}	399.6	805.3	719.7	85.6	0.5960	0.9100	1.415_{4}	0.707_{2}	327
328	425.69_{28}	399.9	805.0	719.4	85.6	0.5964	0.9094	1.411_{5}	0.709_{2}	328
329	425.97_{29}	400.2	804.7	719.1	85.6	0.5967	0.9089	1.406_{4}	0.711_{2}	329
330	426.26_{28}	400.5	804.5	718.9	85.6	0.5970	0.9083	1.402_{4}	0.713_{2}	330
331	426.54_{29}	400.8	804.2	718.6	85.6	0.5974	0.9077	1.398_{4}	0.715_{2}	331
332	426.83_{28}	401.1	804.0	718.4	85.6	0.5977	0.9071	1.394_{5}	0.717_{3}	332
333	427.11_{28}	401.4	803.7	718.1	85.6	0.5980	0.9065	1.389_{4}	0.720_{2}	333
334	427.39_{28}	401.7	803.5	717.9	85.6	0.5984	0.9059	1.385_{4}	0.722_{2}	334
335	427.67_{27}	402.0	803.2	717.6	85.6	0.5987	0.9054	1.381_{4}	0.724_{2}	335
336	427.94^{27}	402.2	803.0	717.4	85.6	0.5990	0.9048	1.377^{4}	0.726^{2}	336

TABLE III.

SATURATED STEAM.

FRENCH AND ENGLISH CONVERSION TABLES.*

Temperature, Degrees Centigrade. t	Pressure. Millimeters of Mercury. p	Pressure. Kilograms per Square Centimeter. p	Pressure. Pounds per Square Inch. p	Heat of the Liquid. Calories. q	Heat of the Liquid. B.T.U. q	Heat of Vaporization. Calories. r	Heat of Vaporization. B.T.U. r	Heat Equivalent of Internal Work. Calories. ρ	Heat Equivalent of Internal Work. B.T.U. ρ	Temperature, Degrees Fahrenheit. t
0	4.579	0.00623	0.0886	0.00	0.0	595.4	1071.7	565.3	1017.5	32
1	4.924 345	0.00670 47	0.0952 66	1.01	1.8	594.9	1070.8	564.7	1016.4	33.8
2	5.290 366	0.00719 49	0.1023 71	2.02	3.6	594.4	1069.9	564.0	1015.3	35.6
3	5.681 391	0.00772 53	0.1099 76	3.03	5.5	593.9	1069.0	563.4	1014.2	37.4
4	6.097 416	0.00829 57	0.1179 80	4.03	7.3	593.3	1068.0	562.8	1013.1	39.2
5	6.541 444	0.00889 60	0.1265 86	5.04	9.1	592.8	1067.1	562.2	1011.9	41
6	7.011 470	0.00953 64	0.1356 91	6.04	10.9	592.3	1066.1	561.5	1010.7	42.8
7	7.511 500	0.01021 68	0.1453 97	7.05	12.7	591.8	1065.2	560.9	1009.6	44.6
8	8.042 531 564	0.01093 72 77	0.1555 102 109	8.05	14.5	591.2	1064.2	560.2	1008.5	46.4
9	8.606 599	0.01170 82	0.1664 116	9.05	16.3	590.7	1063.3	559.6	1007.4	48.2
10	9.205 635	0.01252 86	0.1780 123	10.06	18.1	590.2	1062.3	559.0	1006.2	50
11	9.840 673	0.01338 91	0.1903 130	11.06	19.9	589.6	1061.3	558.3	1005.0	51.8
12	10.513 713	0.01429 97	0.2033 138	12.06	21.7	589.1	1060.4	557.7	1003.9	53.6
13	11.226 754	0.01526 103	0.2171 146	13.06	23.5	588.6	1059.4	557.1	1002.7	55.4
14	11.980 799	0.01629 108	0.2317 154	14.06	25.3	588.1	1058.5	556.5	1001.6	57.2
15	12.779 845	0.01737 115	0.2471 164	15.06	27.1	587.6	1057.6	555.9	1000.5	59
16	13.624 893	0.01852 122	0.2635 172	16.06	28.9	587.0	1056.6	555.2	999.4	60.8
17	14.517 943	0.01974 128	0.2807 183	17.06	30.7	586.5	1055.7	554.6	998.3	62.6
18	15.460 996	0.02102 135	0.2990 192	18.06	32.5	585.9	1054.7	553.9	997.1	64.4
19	16.456 1054	0.02237 144	0.3182 204	19.06	34.3	585.4	1053.8	553.3	996.0	66.2
20	17.51 111	0.02381 151	0.3386 215	20.06	36.1	584.9	1052.8	552.7	994.8	68
21	18.62 117	0.02532 159	0.3601 226	21.06	37.9	584.4	1051.9	552.1	993.7	69.8
22	19.79 123	0.02691 167	0.3827 238	22.06	39.7	583.9	1051.0	551.5	992.6	71.6
23	21.02 130	0.02858 177	0.4065 251	23.06	41.5	583.3	1050.0	550.8	991.4	73.4
24	22.32 137	0.03035 186	0.4316 265	24.06	43.3	582.8	1049.1	550.2	990.3	75.2
25	23.69 144	0.03221 196	0.4581 279	25.05	45.1	582.3	1048.1	549.5	989.1	77
26	25.13 152	0.03417 206	0.4860 294	26.05	46.9	581.8	1047.2	548.9	988.0	78.8
27	26.65 160	0.03623 218	0.5154 309	27.05	48.7	581.2	1046.2	548.2	986.9	80.6
28	28.25 169	0.03841 230	0.5463 327	28.05	50.5	580.7	1045.2	547.6	985.7	82.4
29	29.94 177	0.04071 240	0.5790 342	29.04	52.3	580.2	1044.3	547.0	984.6	84.2
30	31.71 186	0.04311 253	0.6132 360	30.04	54.1	579.6	1043.3	546.3	983.4	86

* NOTE: This table gives the Metric values for *one kilogram* and the English values for *one pound* at corresponding temperatures.

TABLE III.

SATURATED STEAM.

FRENCH AND ENGLISH CONVERSION TABLES.*

Temperature, Degrees Centigrade. t	Heat Equivalent of External Work. Calories. Apu	Heat Equivalent of External Work. B.T.U. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume. Cubic Meters per Kilo. s	Specific Volume. Cubic Feet per Pound. s	Density. Kilos per Cubic Meter. $\frac{1}{s}$	Density. Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
0	30.1	54.2	0.0000	2.1804	206.3_{136}	3304_{217}	0.00485_{34}	0.000303_{21}	32
1	30.2	54.4	0.0037	2.1706	192.7_{127}	3087_{203}	0.00519_{37}	0.000324_{23}	33.8
2	30.4	54.6	0.0074	2.1609	180.0_{118}	2884_{190}	0.00556_{39}	0.000347_{24}	35.6
3	30.5	54.8	0.0110	2.1513	168.2_{110}	2694_{176}	0.00595_{41}	0.000371_{26}	37.4
4	30.5	54.9	0.0146	2.1416	157.2_{101}	2518_{162}	0.00636_{44}	0.000397_{27}	39.2
5	30.6	55.2	0.0183	2.1320	147.1_{94}	2356_{150}	0.00680_{46}	0.000424_{29}	41
6	30.8	55.4	0.0219	2.1225	137.7_{87}	2206_{139}	0.00726_{49}	0.000453_{31}	42.8
7	30.9	55.6	0.0256	2.1130	129.0_{81}	2067_{130}	0.00775_{52}	0.000484_{32}	44.6
8	31.0	55.7	0.0290	2.1036	120.9_{75}	1937_{121}	0.00827_{55}	0.000516_{35}	46.4
9	31.1	55.9	0.0326	2.0943	113.4_{71}	1816_{113}	0.00882_{59}	0.000551_{36}	48.2
10	31.2	56.1	0.0361	2.0850	106.3_{65}	1703_{104}	0.00941_{61}	0.000587_{38}	50
11	31.3	56.3	0.0397	2.0758	99.8_{61}	1599_{97}	0.01002_{65}	0.000625_{41}	51.8
12	31.4	56.5	0.0433	2.0667	93.7_{56}	1502_{91}	0.01067_{68}	0.000666_{43}	53.6
13	31.5	56.7	0.0467	2.0576	88.1_{52}	1411_{84}	0.01135_{71}	0.000709_{45}	55.4
14	31.6	56.9	0.0502	2.0486	82.9_{50}	1327_{79}	0.01206_{77}	0.000754_{47}	57.2
15	31.7	57.1	0.0537	2.0396	77.9_{46}	1248_{74}	0.01283_{81}	0.000801_{51}	59
16	31.8	57.3	0.0571	2.0308	73.3_{42}	1174_{69}	0.01364_{83}	0.000852_{53}	60.8
17	31.9	57.4	0.0607	2.0220	69.1_{40}	1105_{64}	0.01447_{89}	0.000905_{56}	62.6
18	32.0	57.6	0.0641	2.0132	65.1_{38}	1041_{59}	0.01536_{95}	0.000961_{57}	64.4
19	32.1	57.8	0.0675	2.0045	61.3_{35}	982_{56}	0.01631_{99}	0.001018_{62}	66.2
20	32.2	58.0	0.0709	1.9959	57.8_{33}	926_{53}	0.01730_{105}	0.001080_{65}	68
21	32.3	58.2	0.0743	1.9873	54.5_{30}	873_{49}	0.01835_{107}	0.001145_{69}	69.8
22	32.4	58.4	0.0776	1.9788	51.5_{29}	824_{46}	0.01942_{116}	0.001214_{72}	71.6
23	32.5	58.6	0.0811	1.9703	48.60_{268}	778_{43}	0.02058_{120}	0.001286_{75}	73.4
24	32.6	58.8	0.0845	1.9620	45.92_{252}	735_{40}	0.02178_{126}	0.001361_{78}	75.2
25	32.8	59.0	0.0878	1.9536	43.40_{235}	695_{38}	0.02304_{132}	0.001439_{83}	77
26	32.9	59.2	0.0911	1.9453	41.05_{222}	657_{35}	0.02436_{139}	0.001522_{86}	78.8
27	33.0	59.3	0.0945	1.9370	38.83_{209}	622_{33}	0.02575_{147}	0.001608_{90}	80.6
28	33.1	59.5	0.0978	1.9288	36.74_{196}	589_{32}	0.02722_{153}	0.001698_{97}	82.4
29	33.2	59.7	0.1011	1.9207	34.78_{183}	557_{29}	0.02875_{160}	0.001795_{99}	84.2
30	33.3	59.9	0.1044	1.9126	32.95_{171}	528_{27}	0.03035_{166}	0.001894_{102}	86

* NOTE: This table gives the Metric values for *one kilogram* and the English values for *one pound* at corresponding temperatures. If refinement is desired Table I should be used.

Temperature, Degrees Centigrade.	Pressure.			Heat of the Liquid.		Heat of Vaporization.		Heat Equivalent of Internal Work.		Temperature, Degrees Fahrenheit.
	Millimeters of Mercury.	Kilograms per Square Centimeter.	Pounds per Square Inch.	Calories.	B.T.U.	Calories.	B.T.U.	Calories.	B.T.U.	
t	p	p	p	q	q	r	r	ρ	ρ	t
31	33.57_{196}	0.04564_{266}	0.6492_{379}	31.04	55.9	579.1	1042.4	545.7	982.2	87.8
32	35.53_{206}	0.04830_{281}	0.6871_{398}	32.04	57.7	578.6	1041.4	545.1	981.0	89.6
33	37.59_{216}	0.05111_{293}	0.7269_{418}	33.04	59.5	578.0	1040.4	544.4	979.9	91.4
34	39.75_{227}	0.05404_{309}	0.7687_{439}	34.03	61.3	577.4	1039.4	543.7	978.7	93.2
35	42.02_{238}	0.05713_{324}	0.8126_{460}	35.03	63.1	576.9	1038.5	543.1	977.6	95
36	44.40_{250}	0.06037_{339}	0.8586_{482}	36.03	64.9	576.4	1037.5	542.5	976.4	96.8
37	46.90_{261}	0.06376_{355}	0.9068_{506}	37.02	66.6	575.8	1036.5	541.8	975.2	98.6
38	49.51_{275}	0.06731_{374}	0.9574_{531}	38.02	68.4	575.3	1035.5	541.2	974.0	100.4
39	52.26_{287}	0.07105_{390}	1.0105_{556}	39.02	70.2	574.7	1034.5	540.5	972.8	102.2
40	55.13_{301}	0.07495_{410}	1.0661_{582}	40.02	72.0	574.2	1033.5	539.9	971.7	104
41	58.14_{316}	0.07905_{429}	1.1243_{611}	41.01	73.8	573.6	1032.5	539.2	970.5	105.8
42	61.30_{329}	0.08334_{448}	1.1854_{638}	42.01	75.6	573.1	1031.5	538.6	969.3	107.6
43	64.59_{346}	0.08782_{470}	1.2492_{667}	43.01	77.4	572.5	1030.5	537.9	968.2	109.4
44	68.05_{361}	0.09252_{491}	1.3159_{699}	44.01	79.2	571.9	1029.4	537.2	966.9	111.2
45	71.66_{377}	0.09743_{513}	1.3858_{729}	45.00	81.0	571.3	1028.4	536.5	965.7	113
46	75.43_{395}	0.10256_{536}	1.4587_{763}	46.00	82.8	570.8	1027.4	535.8	964.5	114.8
47	79.38_{412}	0.10792_{561}	1.5350_{797}	47.00	84.6	570.2	1026.4	535.1	963.3	116.6
48	83.50_{430}	0.11353_{584}	1.6147_{832}	48.00	86.4	569.6	1025.3	534.4	962.0	118.4
49	87.80_{450}	0.11937_{612}	1.6979_{870}	48.99	88.2	569.0	1024.3	533.7	960.8	120.2
50	92.30_{469}	0.12549_{638}	1.7849_{907}	49.99	90.0	568.4	1023.2	533.0	959.6	122
51	96.99_{489}	0.13187_{665}	1.8756_{945}	50.99	91.8	567.8	1022.2	532.3	958.4	123.8
52	101.88_{511}	0.13852_{694}	1.9701_{988}	51.99	93.6	567.3	1021.2	531.7	957.2	125.6
53	106.99_{531}	0.14546_{722}	2.0689_{103}	52.99	95.4	566.8	1020.2	531.1	956.0	127.4
54	112.30_{555}	0.15268_{755}	2.172_{107}	53.98	97.2	566.2	1019.1	530.4	954.7	129.2
55	117.85_{576}	0.16023_{783}	2.279_{111}	54.98	99.0	565.6	1018.1	529.7	953.5	131
56	123.61_{602}	0.16806_{818}	2.390_{116}	55.98	100.8	565.1	1017.1	529.1	952.3	132.8
57	129.63_{626}	0.17624_{851}	2.506_{121}	56.98	102.6	564.5	1016.1	528.4	951.1	134.6
58	135.89_{652}	0.18475_{887}	2.627_{127}	57.98	104.4	563.9	1015.1	527.7	949.9	136.4
59	142.41_{678}	0.19362_{922}	2.754_{131}	58.97	106.2	563.4	1014.1	527.1	948.7	138.2
60	149.19_{705}	0.20284_{958}	2.885_{136}	59.97	108.0	562.8	1013.1	526.4	947.5	140
61	156.24_{734}	0.21242_{100}	3.021_{142}	60.97	109.8	562.2	1012.0	525.7	946.3	141.8
62	163.58_{762}	0.2224_{104}	3.163_{147}	61.97	111.6	561.7	1011.0	525.1	945.1	143.6
63	171.20_{793}	0.2328_{107}	3.310_{154}	62.97	113.4	561.1	1009.9	524.4	943.8	145.4
64	179.13_{823}	0.2435_{112}	3.464_{159}	63.98	115.2	560.5	1008.9	523.7	942.6	147.2
65	187.36_{856}	0.2547_{117}	3.623_{166}	64.98	117.0	559.9	1007.8	523.0	941.3	149
66	195.92_{888}	0.2664_{120}	3.789_{171}	65.98	118.8	559.3	1006.8	522.3	940.1	150.8
67	204.80_{922}	0.2784_{126}	3.960_{179}	66.98	120.6	558.8	1005.8	521.7	938.9	152.6
68	214.02_{956}	0.2910_{130}	4.139_{185}	67.98	122.4	558.2	1004.7	521.0	937.6	154.4
69	223.58_{995}	0.3040_{135}	4.324_{192}	68.98	124.2	557.6	1003.6	520.3	936.3	156.2
70	233.53_{103}	0.3175_{140}	4.516_{199}	69.98	126.0	556.9	1002.5	519.5	935.0	158

Temperature, Degrees Centigrade. t	Heat Equivalent of External Work. Calories. Apu	Heat Equivalent of External Work. B.T.U. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume. Cubic Meters per Kilo. s	Specific Volume. Cubic Feet per Pound. s	Density. Kilos per Cubic Meter. $\frac{1}{s}$	Density. Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
31	33.4	60.2	0.1077	1.9046	31.24_{162}	501	0.03201_{175}	0.001996_{111}	87.8
32	33.5	60.4	0.1110	1.8966	29.62_{154}	474.7_{250}^{26}	0.03376_{185}	0.002107_{117}	89.6
33	33.6	60.5	0.1142	1.8886	28.08_{146}	449.7_{232}	0.03561_{196}	0.002224_{121}	91.4
34	33.7	60.7	0.1175	1.8806	26.62_{137}	426.5_{218}	0.03757_{203}	0.002345_{126}	93.2
35	33.8	60.9	0.1207	1.8728	25.25_{127}	404.7_{205}	0.03960_{210}	0.002471_{132}	95
36	33.9	61.1	0.1239	1.8650	23.98_{120}	384.2_{193}	0.04170_{220}	0.002603_{137}	96.8
37	34.0	61.3	0.1272	1.8572	22.78_{113}	364.9_{181}	0.04390_{229}	0.002740_{144}	98.6
38	34.1	61.5	0.1304	1.8494	21.65_{107}	346.8_{171}	0.04619_{240}	0.002884_{149}	100.4
39	34.2	61.7	0.1336	1.8417	20.58_{101}	329.7_{162}	0.04859_{25}^{240}	0.003033_{157}	102.2
40	34.3	61.8	0.1368	1.8341	19.57 96	313.5_{155}	0.0511_{26}	0.003190_{166}	104
41	34.4	62.0	0.1399	1.8265	18.61 92	298.0_{147}	0.0537_{28}	0.003356_{174}	105.8
42	34.5	62.2	0.1431	1.8189	17.69 87	283.3_{138}	0.0565_{30}	0.003530_{181}	107.6
43	34.6	62.3	0.1463	1.8113	16.82 81	269.5_{130}	0.0595_{30}	0.003711_{188}	109.4
44	34.7	62.5	0.1494	1.8038	16.01 76	256.5_{121}	0.0625_{31}	0.003899_{193}	111.2
45	34.8	62.7	0.1526	1.7963	15.25 71	244.4_{114}	0.0656_{32}	0.004092_{200}	113
46	35.0	62.9	0.1557	1.7889	14.54 68	233.0_{109}	0.0688_{34}	0.004292_{210}	114.8
47	35.1	63.1	0.1588	1.7815	13.86 65	222.1_{104}	0.0722_{35}	0.004502_{222}	116.6
48	35.2	63.3	0.1619	1.7742	13.21 61	211.7_{98}	0.0757_{37}	0.004724_{229}	118.4
49	35.3	63.5	0.1650	1.7669	12.60 58	201.9 93	0.0794_{38}	0.00495_{24}	120.2
50	35.4	63.6	0.1682	1.7597	12.02 55	192.6 88	0.0832_{40}	$0.0051\,9_{25}$	122
51	35.5	63.8	0.1713	1.7525	11.47 51	183.8 83	0.0872_{40}	$0.0054\,4_{26}$	123.8
52	35.6	64.0	0.1743	1.7454	10.96 49	175.5 78	0.0912_{43}	$0.0057\,0_{26}$	125.6
53	35.7	64.2	0.1774	1.7383	10.47 47	167.7 74	0.0955_{45}	$0.0059\,6_{28}$	127.4
54	35.8	64.4	0.1804	1.7312	10.00 44	160.3 71	0.1000_{46}	$0.0062\,4_{29}$	129.2
55	35.9	64.6	0.1835	1.7242	9.56 42	153.2 67	0.1046_{48}	$0.0065\,3_{30}$	131
56	36.0	64.8	0.1865	1.7173	9.14 40	146.5 64	0.1094_{50}	$0.0068\,3_{30}$	132.8
57	36.1	65.0	0.1895	1.7104	8.74 38	140.1 61	0.1144_{52}	$0.0071\,3_{33}$	134.6
58	36.2	65.2	0.1925	1.7035	8.36 36	134.0 57	0.1196_{54}	$0.0074\,6_{33}$	136.4
59	36.3	65.4	0.1955	1.6967	8.00 34	128.3 55	0.1250_{55}	$0.0077\,9_{35}$	138.2
60	36.4	65.6	0.1986	1.6899	7.66 32	122.8 52	0.1305_{57}	$0.0081\,4_{36}$	140
61	36.5	65.7	0.2016	1.6831	7.34 31	117.6 49	0.1362_{60}	$0.0085\,0_{37}$	141.8
62	36.6	65.9	0.2046	1.6764	7.03 29	112.7 47	0.1422_{62}	$0.0088\,7_{39}$	143.6
63	36.7	66.1	0.2075	1.6696	6.74 28	108.0 45	0.1484_{64}	$0.0092\,6_{40}$	145.4
64	36.8	66.3	0.2105	1.6629	6.46 27	103.5 43	0.1548_{67}	$0.0096\,6_{42}$	147.2
65	36.9	66.5	0.2135	1.6563	6.19 25	99.2 41	0.1615_{69}	$0.0100\,8_{43}$	149
66	37.0	66.7	0.2164	1.6497	5.94 24	95.1 38	0.1684_{70}	$0.0105\,1_{44}$	150.8
67	37.1	66.9	0.2194	1.6431	5.70 23	91.3 37	0.1754_{74}	$0.0109\,5_{47}$	152.6
68	37.2	67.1	0.2223	1.6366	5.47 22	87.6 35	0.1828_{77}	$0.0114\,2_{47}$	154.4
69	37.3	67.3	0.2253	1.6300	5.25 21	84.1 34	0.1905_{79}	$0.0118\,9_{50}$	156.2
70	37.4	67.4	0.2282	1.6235	5.04 20	80.7 32	0.1984_{83}	$0.0123\,9_{51}$	158

Temperature, Degrees Centigrade. t	Pressure. Millimeters of Mercury. p	Pressure. Kilograms per Square Centimeter. p	Pressure. Pounds per Square Inch. p	Heat of the Liquid. Calories. q	Heat of the Liquid. B.T.U. q	Heat of Vaporization. Calories. r	Heat of Vaporization. B.T.U. r	Heat Equivalent of Internal Work. Calories. ρ	Heat Equivalent of Internal Work. B.T.U. ρ	Temperature, Degrees Fahrenheit. t
71	243.8_{107}	0.3315_{145}	4.715_{206}	70.98	127.8	556.4	1001.5	518.8	933.9	159.8
72	254.5_{111}	0.3460_{151}	4.921_{215}	71.99	129.6	555.8	1000.4	518.1	932.6	161.6
73	265.6_{115}	0.3611_{156}	5.136_{222}	72.99	131.4	555.2	999.4	517.4	931.4	163.4
74	277.1_{119}	0.3767_{162}	5.358_{231}	73.99	133.2	554.6	998.3	516.7	930.1	165.2
75	289.0_{123}	0.3929_{167}	5.589_{237}	74.99	135.0	554.0	997.3	516.0	928.8	167
76	301.3_{127}	0.4096_{173}	5.826_{246}	76.00	136.8	553.4	996.2	515.3	927.6	168.8
77	314.0_{132}	0.4269_{180}	6.072_{255}	77.00	138.6	552.9	995.2	514.7	926.4	170.6
78	327.2_{137}	0.4449_{186}	6.327_{265}	78.00	140.4	552.3	994.1	514.0	925.2	172.4
79	340.9_{142}	0.4635_{193}	6.592_{275}	79.01	142.2	551.7	993.0	513.3	923.9	174.2
80	355.1_{146}	0.4828_{198}	6.867_{283}	80.01	144.0	551.1	991.9	512.6	922.6	176
81	369.7_{152}	0.5026_{207}	7.150_{293}	81.02	145.8	550.5	990.8	511.9	921.3	177.8
82	384.9_{156}	0.5233_{212}	7.443_{302}	82.02	147.6	549.9	989.8	511.2	920.1	179.6
83	400.5_{162}	0.5445_{220}	7.745_{313}	83.03	149.4	549.3	988.7	510.5	918.8	181.4
84	416.7_{168}	0.5665_{229}	8.058_{325}	84.03	151.2	548.7	987.6	509.8	917.6	183.2
85	433.5_{173}	0.5894_{235}	8.383_{334}	85.04	153.1	548.1	986.5	509.1	916.3	185
86	450.8_{178}	0.6129_{242}	8.717_{345}	86.04	154.9	547.4	985.4	508.3	915.0	186.8
87	468.6_{185}	0.6371_{252}	9.062_{357}	87.05	156.7	546.8	984.3	507.6	913.7	188.6
88	487.1_{190}	0.6623_{258}	9.419_{368}	88.06	158.5	546.2	983.2	506.9	912.5	190.4
89	506.1_{197}	0.6881_{268}	9.787_{380}	89.06	160.3	545.6	982.1	506.2	911.2	192.2
90	525.8_{203}	0.7149_{276}	10.167_{393}	90.07	162.1	544.9	980.9	505.4	909.9	194
91	546.1_{210}	0.7425_{285}	10.560_{406}	91.08	163.9	544.3	979.8	504.7	908.5	195.8
92	567.1_{216}	0.7710_{294}	10.966_{418}	92.08	165.7	543.7	978.7	504.0	907.2	197.6
93	588.7_{223}	0.8004_{303}	11.384_{431}	93.09	167.5	543.1	977.6	503.3	906.0	199.4
94	611.0_{230}	0.8307_{313}	11.815_{445}	94.10	169.3	542.5	976.5	502.6	904.7	201·2
95	634.0_{237}	0.8620_{322}	12.260_{458}	95.11	171.2	541.9	975.4	501.9	903.4	203
96	657.7_{244}	0.8942_{332}	12.718_{472}	96.12	173.0	541.2	974.2	501.1	902.1	204.8
97	682.1_{252}	0.9274_{342}	13.190_{488}	97.12	174.8	540.6	973.1	500.4	900.8	206.6
98	707.3_{260}	0.9616_{354}	13.678_{502}	98.13	176.6	539.9	971.9	499.6	899.4	208.4
99	733.3_{267}	0.9970_{363}	14.180_{517}	99.14	178.5	539.3	970.8	498.9	898.2	210.2
100	760.0_{275}	1.0333_{374}	14.697_{532}	100.2	180.3	538.7	969.7	498.2	896.9	212
101	787.5_{284}	1.0707_{386}	15.229_{549}	101.2	182.1	538.1	968.5	497.5	895.5	213.8
102	815.9_{292}	1.1093_{397}	15.778_{564}	102.2	183.9	537.4	967.3	496.8	894.1	215.6
103	845.1_{300}	1.1490_{408}	16.342_{581}	103.2	185.7	536.8	966.2	496.1	892.9	217.4
104	875.1_{310}	1.1898_{421}	16.923_{599}	104.2	187.6	536.2	965.1	495.4	891.6	219.2
105	906.1_{318}	1.2319_{433}	17.522_{615}	105.2	189.4	535.6	964.0	494.7	890.3	221
106	937.9_{327}	1.2752_{444}	18.137_{632}	106.2	191.2	534.9	962.8	493.9	889.0	222.8
107	970.6_{337}	1.3196_{457}	18.769_{651}	107.2	193.0	534.2	961.6	493.1	887.6	224.6
108	1004.3_{345}	1.3653_{470}	19.420_{669}	108.2	194.8	533.6	960.5	492.4	886.3	226.4
109	1038.8_{357}	1.4123_{485}	20.089_{688}	109.3	196.7	532.9	959.3	491.6	885.0	228.2
110	1074.5_{366}	1.4608_{498}	20.777_{709}	110.3	198.5	532.3	958.1	490.9	883.6	230

Temperature, Degrees Centigrade. t	Heat Equivalent of External Work. Calories. Apu	Heat Equivalent of External Work. B.T.U. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume. Cubic Meters per Kilo. s	Specific Volume. Cubic Feet per Pound. s	Density. Kilos per Cubic Meter. $\frac{1}{s}$	Density. Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
71	37.6	67.6	0.2311	1.6171	4.838_{191}	77.5_{31}	0.2067_{85}	0.01290_{54}	159.8
72	37.7	67.8	0.2340	1.6107	4.647_{181}	74.4_{29}	0.2152_{87}	0.01344_{54}	161.6
73	37.8	68.0	0.2369	1.6044	4.466_{172}	71.5_{27}	0.2239_{90}	0.01398_{55}	163.4
74	37.9	68.2	0.2398	1.5981	4.294_{164}	68.8_{26}	0.2329_{92}	0.01453_{57}	165.2
75	38.0	68.5	0.2427	1.5918	4.130_{157}	66.2_{25}	0.2421_{96}	0.01510_{60}	167
76	38.1	68.6	0.2456	1.5856	3.973_{151}	63.7_{25}	0.2517_{99}	0.01570_{64}	168.8
77	38.2	68.8	0.2484	1.5793	3.822_{146}	61.2_{24}	0.2616_{104}	0.01634_{66}	170.6
78	38.3	68.9	0.2513	1.5731	3.676_{139}	58.8_{22}	0.2720_{107}	0.01700_{67}	172.4
79	38.4	69.1	0.2541	1.5670	3.537_{133}	56.6_{21}	0.2827_{111}	0.01767_{68}	174.2
80	38.5	69.3	0.2570	1.5609	3.404_{127}	54.5_{20}	0.2938_{114}	0.01835_{70}	176
81	38.6	69.5	0.2598	1.5548	3.277_{121}	52.5_{19}	0.3052_{116}	0.01905_{71}	177.8
82	38.7	69.7	0.2626	1.5487	3.156_{116}	50.6_{19}	0.3168_{121}	0.01976_{77}	179.6
83	38.8	69.9	0.2654	1.5426	3.040_{111}	48.71_{179}	0.3289_{125}	0.02053_{78}	181.4
84	38.9	70.0	0.2682	1.5366	2.929_{105}	46.92_{169}	0.3414_{127}	0.02131_{80}	183.2
85	39.0	70.2	0.2711	1.5307	2.824_{101}	45.23_{161}	0.3541_{131}	0.02211_{82}	185
86	39.1	70.4	0.2739	1.5247	2.723_{96}	43.62_{154}	0.3672_{135}	0.02293_{83}	186.8
87	39.2	70.6	0.2767	1.5187	2.627_{93}	42.08_{149}	0.3807_{139}	0.02376_{87}	188.6
88	39.3	70.7	0.2795	1.5128	2.534_{90}	40.59_{144}	0.3946_{145}	0.02463_{91}	190.4
89	39.4	70.9	0.2823	1.5069	2.444_{86}	39.15_{138}	0.4091_{150}	0.02554_{94}	192.2
90	39.5	71.0	0.2851	1.5010	2.358_{83}	37.77_{132}	0.4241_{154}	0.02648_{95}	194
91	39.6	71.3	0.2879	1.4952	2.275_{78}	36.45_{126}	0.4395_{157}	0.02743_{99}	195.8
92	39.7	71.5	0.2906	1.4894	2.197_{75}	35.19_{119}	0.4552_{161}	0.02842_{99}	197.6
93	39.8	71.6	0.2934	1.4836	2.122_{72}	34.00_{114}	0.4713_{165}	0.02941_{102}	199.4
94	39.9	71.8	0.2961	1.4779	2.050_{70}	32.86_{111}	0.4878_{172}	0.03043_{106}	201.2
95	40.0	72.0	0.2989	1.4723	1.980_{67}	31.75_{108}	0.505_{18}	0.03149_{111}	203
96	40.1	72.1	0.3016	1.4666	1.913_{64}	30.67_{104}	0.523_{18}	0.03260_{115}	204.8
97	40.2	72.3	0.3043	1.4609	1.849_{62}	29.63_{99}	0.541_{19}	0.03375_{117}	206.6
98	40.3	72.5	0.3070	1.4552	1.787_{59}	28.64_{95}	0.560_{19}	0.03492_{119}	208.4
99	40.4	72.6	0.3097	1.4496	1.728_{57}	27.69_{91}	0.579_{19}	0.03611_{123}	210.2
100	40.5	72.8	0.3125	1.4441	1.671_{54}	26.78_{88}	0.598_{20}	0.03734_{127}	212
101	40.6	73.0	0.3152	1.4386	1.617_{53}	25.90_{84}	0.618_{21}	0.03861_{129}	213.8
102	40.6	73.2	0.3179	1.4330	1.564_{50}	25.06_{81}	0.639_{22}	0.03990_{134}	215.6
103	40.7	73.3	0.3205	1.4275	1.514_{49}	24.25_{78}	0.661_{22}	0.04124_{137}	217.4
104	40.8	73.5	0.3232	1.4220	1.465_{46}	23.47_{74}	0.683_{22}	0.04261_{139}	219.2
105	40.9	73.7	0.3259	1.4165	1.419_{45}	22.73_{72}	0.705_{23}	0.04400_{143}	221
106	41.0	73.8	0.3286	1.4111	1.374_{43}	22.01_{70}	0.728_{23}	0.04543_{149}	222.8
107	41.1	74.0	0.3312	1.4057	1.331_{42}	21.31_{67}	0.751_{25}	0.04692_{153}	224.6
108	41.2	74.2	0.3339	1.4003	1.289_{41}	20.64_{65}	0.776_{25}	0.04845_{157}	226.4
109	41.3	74.3	0.3365	1.3949	1.248_{39}	19.99_{62}	0.801_{26}	0.0500_{16}	228.2
110	41.4	74.5	0.3392	1.3895	1.209_{37}	19.37_{60}	0.827_{26}	0.0516_{17}	230

Temperature, Degrees Centigrade. t	Pressure. Millimeters of Mercury. p	Pressure. Kilograms per Square Centimeter. p	Pressure. Pounds per Square Inch. p	Heat of the Liquid. Calories. q	Heat of the Liquid. B.T.U. q	Heat of Vaporization. Calories. r	Heat of Vaporization. B.T.U. r	Heat Equivalent of Internal Work. Calories. ρ	Heat Equivalent of Internal Work. B.T.U. ρ	Temperature, Degrees Fahrenheit. t
111	1111.1_{376}	1.5106_{511}	21.486_{728}	111.3	200.3	531.6	956.9	490.2	882.3	**231.8**
112	1148.7_{387}	1.5617_{527}	22.214_{748}	112.3	202.1	530.9	955.7	489.4	880.9	**233.6**
113	1187.4_{397}	1.6144_{540}	22.962_{767}	113.3	203.9	530.3	954.5	488.7	879.5	**235.4**
114	1227.1_{408}	1.6684_{554}	23.729_{789}	114.3	205.8	529.6	953.3	487.9	878.2	**237.2**
115	1267.9_{419}	1.7238_{570}	24.518_{810}	115.3	207.6	528.9	952.1	487.1	876.8	**239**
116	1309.8_{430}	1.7808_{585}	25.328_{832}	116.4	209.4	528.2	950.8	486.3	875.4	**240.8**
117	1352.8_{442}	1.8393_{600}	26.160_{855}	117.4	211.2	527.5	949.5	485.5	873.9	**242.6**
118	1397.0_{454}	1.8993_{618}	27.015_{878}	118.4	213.0	526.9	948.4	484.8	872.6	**244.4**
119	1442.4_{465}	1.9611_{632}	27.893_{899}	119.4	214.9	526.2	947.2	484.0	871.3	**246.2**
120	1488.9_{477}	2.0243_{648}	28.792_{923}	120.4	216.7	525.6	946.0	483.4	870.0	**248**
121	1536.6_{491}	2.0891_{665}	29.715_{949}	121.4	218.5	524.9	944.8	482.6	868.6	**249.8**
122	1585.7_{503}	2.1556_{685}	30.664_{973}	122.5	220.4	524.2	943.5	481.8	867.1	**251.6**
123	1636.0_{515}	2.2241_{702}	31.637_{100}	123.5	222.2	523.5	942.3	481.0	865.8	**253.4**
124	1687.5_{530}	2.2943_{720}	32.64_{102}	124.5	224.1	522.8	941.0	480.2	864.3	**255.2**
125	1740.5_{542}	2.3663_{738}	33.66_{105}	125.5	225.9	522.1	939.8	479.4	863.0	**257**
126	1794.7_{556}	2.4401_{755}	34.71_{107}	126.5	227.7	521.4	938.6	478.6	861.6	**258.8**
127	1850.3_{570}	2.5156_{775}	35.78_{110}	127.5	229.5	520.7	937.3	477.8	860.2	**260.6**
128	1907.3_{585}	2.5931_{795}	36.88_{113}	128.6	231.4	520.0	936.1	477.0	858.8	**262.4**
129	1965.8_{598}	2.6726_{814}	38.01_{116}	129.6	233.3	519.3	934.8	476.3	857.4	**264.2**
130	2025.6_{613}	2.7540_{833}	39.17_{119}	130.6	235.1	518.6	933.6	475.5	856.0	**266**
131	2086.9_{629}	2.8373_{854}	40.36_{121}	131.6	236.9	517.9	932.3	474.7	854.6	**267.8**
132	2149.8_{642}	2.9227_{874}	41.57_{124}	132.6	238.7	517.3	931.1	474.0	853.2	**269.6**
133	2214.0_{660}	3.0101_{898}	42.81_{128}	133.7	240.6	516.6	929.8	473.3	851.8	**271.4**
134	2280.0_{675}	3.0999_{917}	44.09_{130}	134.7	242.4	515.9	928.5	472.5	850.4	**273.2**
135	2347.5_{690}	3.1916_{938}	45.39_{134}	135.7	244.2	515.1	927.2	471.6	848.9	**275**
136	2416.5_{708}	3.2854_{962}	46.73_{137}	136.7	246.0	514.4	925.9	470.8	847.5	**276.8**
137	2487.3_{724}	3.3816_{985}	48.10_{140}	137.7	247.9	513.7	924.6	470.1	846.1	**278.6**
138	2559.7_{741}	3.4801_{101}	49.50_{143}	138.8	249.7	513.0	923.3	469.3	844.6	**280.4**
139	2633.8_{757}	3.581_{103}	50.93_{146}	139.8	251.6	512.3	922.1	468.5	843.3	**282.2**
140	2709.5_{776}	3.684_{105}	52.39_{150}	140.8	253.4	511.5	920.7	467.6	841.8	**284**
141	2787.1_{793}	3.789_{108}	53.89_{154}	141.8	255.3	510.7	919.3	466.8	840.2	**285.8**
142	2866.4_{813}	3.897_{111}	55.43_{157}	142.8	257.1	510.1	918.1	466.1	838.9	**287.6**
143	2947.7_{828}	4.008_{113}	57.00_{160}	143.9	259.0	509.3	916.7	465.3	837.4	**289.4**
144	3030.5_{848}	4.121_{115}	58.60_{164}	144.9	260.8	508.6	915.4	464.4	835.9	**291.2**
145	3115.3_{868}	4.236_{118}	60.24_{168}	145.9	262.7	507.8	914.1	463.6	834.5	**293**
146	3202.1_{887}	4.354_{120}	61.92_{172}	146.9	264.5	507.1	912.8	462.8	833.1	**294.8**
147	3290.8_{905}	4.474_{123}	63.64_{175}	148.0	266.4	506.4	911.5	462.0	831.6	**296.6**
148	3381.3_{927}	4.597_{126}	65.39_{179}	149.0	268.2	505.6	910.1	461.2	830.1	**298.4**
149	3474.0_{947}	4.723_{129}	67.18_{183}	150.0	270.1	504.9	908.8	460.4	828.7	**300.2**
150	3568.7_{966}	4.852_{132}	69.01_{187}	151.0	271.9	504.1	907.4	459.5	827.2	**302**

Temperature, Degrees Centigrade. t	Heat Equivalent of External Work. Calories. Apu	Heat Equivalent of External Work. B.T.U. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume. Cubic Meters per Kilo. s	Specific Volume. Cubic Feet per Pound. s	Density. Kilos per Cubic Meter. $\frac{1}{s}$	Density. Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
111	41.4	74.6	0.3418	1.3842	1.172_{36}	18.77_{57}	0.853_{27}	0.0533_{17}	231.8
112	41.5	74.8	0.3445	1.3789	1.136_{35}	18.20_{56}	0.880_{28}	0.0550_{17}	233.6
113	41.6	75.0	0.3471	1.3736	1.101_{33}	17.64_{54}	0.908_{28}	0.0567_{18}	235.4
114	41.7	75.1	0.3498	1.3683	1.068_{32}	17.10_{51}	0.936_{29}	0.0585_{18}	237.2
115	41.8	75.3	0.3524	1.3631	1.036_{31}	16.59_{50}	0.965_{30}	0.0603_{19}	239
116	41.9	75.4	0.3550	1.3579	1.005_{30}	16.09_{48}	0.995_{31}	0.0622_{19}	240.8
117	42.0	75.6	0.3576	1.3527	0.9746_{286}	15.61_{45}	1.026_{31}	0.0641_{18}	242.6
118	42.1	75.8	0.3602	1.3475	0.9460_{277}	15.16_{44}	1.057_{32}	0.0659_{20}	244.4
119	42.2	75.9	0.3628	1.3423	0.9183_{269}	14.72_{44}	1.089_{33}	0.0679_{21}	246.2
120	42.2	76.0	0.3654	1.3372	0.8914_{261}	14.28_{42}	1.122_{34}	0.0700_{21}	248
121	42.3	76.2	0.3680	1.3321	0.8653_{252}	13.86_{40}	1.156_{34}	0.0721_{22}	249.8
122	42.4	76.4	0.3705	1.3269	0.8401_{243}	13.46_{39}	1.190_{36}	0.0743_{22}	251.6
123	42.5	76.5	0.3731	1.3218	0.8158_{234}	13.07_{38}	1.226_{36}	0.0765_{23}	253.4
124	42.6	76.7	0.3756	1.3167	0.7924_{226}	12.69_{36}	1.262_{37}	0.0788_{23}	255.2
125	42.7	76.8	0.3782	1.3117	0.7698_{219}	12.33_{35}	1.299_{38}	0.0811_{24}	257
126	42.8	77.0	0.3807	1.3067	0.7479_{212}	11.98_{34}	1.337_{39}	0.0835_{24}	258.8
127	42.9	77.1	0.3833	1.3017	0.7267_{204}	11.64_{32}	1.376_{40}	0.0859_{24}	260.6
128	43.0	77.3	0.3858	1.2967	0.7063_{196}	11.32_{32}	1.416_{40}	0.0883_{26}	262.4
129	43.0	77.4	0.3884	1.2917	0.6867_{190}	11.00_{30}	1.456_{42}	0.0909_{26}	264.2
130	43.1	77.6	0.3909	1.2868	0.6677_{184}	10.70_{30}	1.498_{42}	0.0935_{26}	266
131	43.2	77.7	0.3934	1.2818	0.6493_{178}	10.40_{28}	1.540_{43}	0.0961_{27}	267.8
132	43.3	77.9	0.3959	1.2769	0.6315_{173}	10.12_{28}	1.583_{45}	0.0988_{28}	269.6
133	43.3	78.0	0.3985	1.2720	0.6142_{168}	9.839_{270}	1.628_{46}	0.1016_{29}	271.4
134	43.4	78.1	0.4010	1.2672	0.5974_{162}	9.569_{260}	1.674_{47}	0.1045_{29}	273.2
135	43.5	78.3	0.4035	1.2623	0.5812_{156}	9.309_{249}	1.721_{47}	0.1074_{30}	275
136	43.6	78.4	0.4060	1.2574	0.5656_{150}	9.060_{240}	1.768_{48}	0.1104_{30}	276.8
137	43.6	78.5	0.4085	1.2526	0.5506_{145}	8.820_{233}	1.816_{49}	0.1134_{31}	278.6
138	43.7	78.7	0.4110	1.2479	0.5361_{142}	8.587_{227}	1.865_{51}	0.1165_{31}	280.4
139	43.8	78.8	0.4135	1.2431	0.5219_{138}	8.360_{220}	1.916_{52}	0.1196_{33}	282.2
140	43.9	78.9	0.4160	1.2383	0.5081_{133}	8.140_{214}	1.968_{53}	0.1229_{33}	284
141	43.9	79.1	0.4185	1.2335	0.4948_{129}	7.926_{207}	2.021_{54}	0.1262_{34}	285.8
142	44.0	79.2	0.4209	1.2288	0.4819_{125}	7.719_{200}	2.075_{55}	0.1296_{34}	287.6
143	44.0	79.3	0.4234	1.2241	0.4694_{120}	7.519_{193}	2.130_{56}	0.1330_{35}	289.4
144	44.2	79.5	0.4259	1.2194	0.4574_{117}	7.326_{187}	2.186_{58}	0.1365_{36}	291.2
145	44.2	79.6	0.4283	1.2147	0.4457_{114}	7.139_{182}	2.244_{59}	0.1401_{36}	293
146	44.3	79.7	0.4307	1.2100	0.4343_{111}	6.957_{177}	2.303_{60}	0.1437_{38}	294.8
147	44.4	79.9	0.4332	1.2054	0.4232_{107}	6.780_{171}	2.363_{61}	0.1475_{38}	296.6
148	44.4	80.0	0.4356	1.2008	0.4125_{103}	6.609_{166}	2.424_{62}	0.1513_{39}	298.4
149	44.5	80.1	0.4380	1.1962	0.4022_{101}	6.443_{161}	2.486_{64}	0.1552_{40}	300.2
150	44.6	80.2	0.4405	1.1916	0.3921_{97}	6.282_{156}	2.550_{65}	0.1592_{40}	302

Temperature, Degrees Centigrade. t	Pressure. Millimeters of Mercury. p	Pressure. Kilograms per Square Centimeter. p	Pressure. Pounds per Square Inch. p	Heat of the Liquid. Calories. q	Heat of the Liquid. B.T.U. q	Heat of Vaporization. Calories. r	Heat of Vaporization. B.T.U. r	Heat Equivalent of Internal Work. Calories. ρ	Heat Equivalent of Internal Work. B.T.U. ρ	Temperature, Degrees Fahrenheit. t
151	3665.3_{988}	4.984_{134}	70.88_{191}	152.1	273.8	503.4	906.1	458.7	825.7	303.8
152	3764.1_{1008}	5.118_{137}	72.79_{195}	153.1	275.6	502.6	904.7	457.9	824.2	305.6
153	3864.9_{1031}	5.255_{140}	74.74_{199}	154.1	277.4	501.9	903.3	457.1	822.7	307.4
154	3968_{105}	5.395_{143}	76.73_{203}	155.1	279.2	501.1	901.9	456.3	821.2	309.2
155	4073_{108}	5.538_{146}	78.76_{208}	156.2	281.1	500.3	900.5	455.4	819.6	311
156	4181_{109}	5.684_{149}	80.84_{212}	157.2	283.0	499.6	899.2	454.6	818.2	312.8
157	4290_{112}	5.833_{152}	82.96_{216}	158.2	284.8	498.8	897.8	453.8	816.7	314.6
158	4402_{115}	5.985_{156}	85.12_{221}	159.3	286.7	498.1	896.5	453.0	815.3	316.4
159	4517_{116}	6.141_{159}	87.33_{226}	160.3	288.5	497.3	895.1	452.1	813.7	318.2
160	4633_{119}	6.300_{162}	89.59_{230}	161.3	290.4	496.5	893.7	451.2	812.2	320
161	4752_{122}	6.462_{166}	91.89_{236}	162.3	292.2	495.7	892.3	450.4	810.7	321.8
162	4874_{124}	6.628_{168}	94.25_{240}	163.4	294.1	494.9	890.9	449.5	809.2	323.6
163	4998_{126}	6.796_{171}	96.65_{244}	164.4	295.9	494.2	889.5	448.7	807.7	325.4
164	5124_{129}	6.967_{175}	99.09_{249}	165.4	297.7	493.4	888.1	447.9	806.2	327.2
165	5253_{131}	7.142_{178}	101.58_{253}	166.5	299.6	492.6	886.7	447.0	804.7	329
166	5384_{134}	7.320_{182}	104.11_{260}	167.5	301.5	491.9	885.4	446.3	803.3	330.8
167	5518_{137}	7.502_{186}	106.71_{264}	168.5	303.3	491.1	883.9	445.4	801.7	332.6
168	5655_{139}	7.688_{189}	109.35_{269}	169.5	305.1	490.3	882.5	444.6	800.1	334.4
169	5794_{143}	7.877_{194}	112.04_{275}	170.6	307.0	489.5	881.0	443.7	798.5	336.2
170	5937_{144}	8.071_{197}	114.79_{280}	171.6	308.9	488.7	879.6	442.8	797.0	338
171	6081_{148}	8.268_{201}	117.59_{286}	172.6	310.7	487.9	878.3	441.9	795.6	339.8
172	6229_{150}	8.469_{204}	120.45_{291}	173.7	312.6	487.1	876.9	441.1	794.1	341.6
173	6379_{154}	8.673_{209}	123.36_{297}	174.7	314.5	486.3	875.4	440.2	792.5	343.4
174	6533_{156}	8.882_{212}	126.33_{302}	175.7	316.3	485.5	873.9	439.4	790.9	345.2
175	6689_{159}	9.094_{216}	129.35_{308}	176.8	318.2	484.7	872.4	438.5	789.3	347
176	6848_{162}	9.310_{221}	132.43_{313}	177.8	320.0	483.9	871.0	437.7	787.8	348.8
177	7010_{165}	9.531_{224}	135.56_{319}	178.8	321.8	483.1	869.5	436.8	786.2	350.6
178	7175_{168}	9.755_{228}	138.75_{325}	179.9	323.7	482.3	868.1	436.0	784.7	352.4
179	7343_{171}	9.983_{233}	142.00_{330}	180.9	325.6	481.4	866.6	435.0	783.1	354.2
180	7514_{174}	10.216_{237}	145.30_{337}	181.9	327.5	480.6	865.1	434.2	781.5	356
181	7688_{178}	10.453_{242}	148.67_{344}	183.0	329.3	479.8	863.6	433.3	779.9	357.8
182	7866_{180}	10.695_{245}	152.11_{349}	184.0	331.2	479.0	862.2	432.5	778.4	359.6
183	8046_{184}	10.940_{249}	155.60_{355}	185.0	333.0	478.2	860.7	431.6	776.9	361.4
184	8230_{187}	11.189_{255}	159.15_{362}	186.1	334.9	477.4	859.2	430.8	775.3	363.2
185	8417_{191}	11.444_{259}	162.77_{369}	187.1	336.8	476.6	857.7	429.9	773.7	365
186	8608_{194}	11.703_{264}	166.46_{375}	188.1	338.6	475.7	856.3	429.0	772.2	366.8
187	8802_{197}	11.967_{268}	170.21_{381}	189.2	340.5	474.8	854.7	428.0	770.5	368.6
188	8999_{201}	12.235_{273}	174.02_{388}	190.2	342.4	474.0	853.2	427.2	768.9	370.4
189	9200_{204}	12.508_{278}	177.90_{395}	191.2	344.2	473.2	851.7	426.3	767.4	372.2
190	9404_{208}	12.786_{282}	181.85_{402}	192.3	346.1	472.3	850.2	425.4	765.8	374

Temperature, Degrees Centigrade. t	Heat Equivalent of External Work. Calories. Apu	Heat Equivalent of External Work. B.T.U. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\int \frac{r}{T}$	Specific Volume. Cubic Meters per Kilo. s	Specific Volume. Cubic Feet per Pound. s	Density. Kilos per Cubic Meter. $\frac{1}{s}$	Density. Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
151	44.6	80.4	0.4429	1.1870	0.3824_{95}	6.126_{152}	2.615_{67}	0.1632_{42}	303.8
152	44.7	80.5	0.4453	1.1824	0.3729_{92}	5.974_{148}	2.682_{68}	0.1674_{42}	305.6
153	44.8	80.6	0.4477	1.1778	0.3637_{89}	5.826_{143}	2.750_{68}	0.1716_{43}	307.4
154	44.8	80.7	0.4501	1.1733	0.3548_{85}	5.683_{137}	2.818_{70}	0.1759_{44}	309.2
155	44.9	80.9	0.4525	1.1688	0.3463_{83}	5.546_{133}	2.888_{71}	0.1803_{44}	311
156	45.0	81.0	0.4549	1.1644	0.3380_{82}	5.413_{131}	2.959_{73}	0.1847_{46}	312.8
157	45.0	81.1	0.4573	1.1599	0.3298_{80}	5.282_{128}	3.032_{76}	0.1893_{47}	314.6
158	45.1	81.2	0.4596	1.1554	0.3218_{78}	5.154_{125}	3.108_{77}	0.1940_{48}	316.4
159	45.2	81.4	0.4620	1.1509	0.3140_{77}	5.029_{123}	3.185_{80}	0.1988_{50}	318.2
160	45.3	81.5	0.4644	1.1465	0.3063_{74}	4.906_{117}	3.265_{80}	0.2038_{50}	320
161	45.3	81.6	0.4668	1.1421	0.2989_{69}	4.789_{112}	3.345_{80}	0.2088_{50}	321.8
162	45.4	81.7	0.4692	1.1377	0.2920_{65}	4.677_{106}	3.425_{78}	0.2138_{50}	323.6
163	45.5	81.8	0.4715	1.1333	0.2855_{63}	4.571_{102}	3.503_{79}	0.2188_{50}	325.4
164	45.5	81.9	0.4739	1.1289	0.2792_{63}	4.469_{101}	3.582_{82}	0.2238_{51}	327.2
165	45.6	82.0	0.4763	1.1245	0.2729_{63}	4.368_{100}	3.664_{87}	0.2289_{54}	329
166	45.6	82.1	0.4786	1.1202	0.2666_{63}	4.268_{100}	3.751_{91}	0.2343_{56}	330.8
167	45.7	82.2	0.4810	1.1159	0.2603_{63}	4.168_{98}	3.842_{95}	0.2399_{58}	332.6
168	45.7	82.4	0.4833	1.1115	0.2540_{60}	4.070_{95}	3.937_{95}	0.2457_{59}	334.4
169	45.8	82.5	0.4857	1.1072	0.2480_{57}	3.975_{92}	4.032_{95}	0.2516_{59}	336.2
170	45.9	82.6	0.4880	1.1029	0.2423_{55}	3.883_{89}	4.127_{96}	0.2575_{61}	338
171	46.0	82.7	0.4903	1.0987	0.2368_{54}	3.794_{85}	4.223_{99}	0.2636_{60}	339.8
172	46.0	82.8	0.4926	1.0944	0.2314_{52}	3.709_{83}	4.322_{99}	0.2696_{62}	341.6
173	46.1	82.9	0.4949	1.0901	0.2262_{50}	3.626_{81}	4.421_{100}	0.2758_{63}	343.4
174	46.1	83.0	0.4972	1.0859	0.2212_{48}	3.545_{78}	4.521_{100}	0.2821_{63}	345.2
175	46.2	83.1	0.4995	1.0817	0.2164_{47}	3.467_{76}	4.621_{103}	0.2884_{65}	347
176	46.2	83.2	0.5018	1.0775	0.2117_{45}	3.391_{73}	4.724_{102}	0.2949_{65}	348.8
177	46.3	83.3	0.5041	1.0733	0.2072_{45}	3.318_{71}	4.826_{107}	0.3014_{66}	350.6
178	46.3	83.4	0.5064	1.0691	0.2027_{44}	3.247_{70}	4.933_{110}	0.3080_{68}	352.4
179	46.4	83.5	0.5087	1.0649	0.1983_{42}	3.177_{68}	5.04_{11}	0.3148_{69}	354.2
180	46.4	83.6	0.5110	1.0608	0.1941_{42}	3.109_{68}	5.15_{12}	0.3217_{71}	356
181	46.5	83.7	0.5133	1.0567	0.1899_{42}	3.041_{67}	5.27_{11}	0.3288_{74}	357.8
182	46.5	83.8	0.5156	1.0525	0.1857_{40}	2.974_{63}	5.38_{12}	0.3362_{73}	359.6
183	46.6	83.8	0.5178	1.0484	0.1817_{39}	2.911_{62}	5.50_{12}	0.3435_{75}	361.4
184	46.6	83.9	0.5201	1.0443	0.1778_{38}	2.849_{62}	5.62_{13}	0.3510_{78}	363.2
185	46.7	84.0	0.5224	1.0403	0.1740_{38}	2.787_{60}	5.75_{13}	0.3588_{79}	365
186	46.7	84.1	0.5246	1.0362	0.1702_{36}	2.727_{58}	5.88_{12}	0.3667_{79}	366.8
187	46.8	84.2	0.5269	1.0321	0.1666_{34}	2.669_{55}	6.00_{13}	0.3746_{80}	368.6
188	46.8	84.3	0.5291	1.0280	0.1632_{34}	2.614_{54}	6.13_{13}	0.3826_{80}	370.4
189	46.9	84.3	0.5314	1.0240	0.1598_{33}	2.560_{53}	6.26_{13}	0.3906_{83}	372.2
190	46.9	84.4	0.5336	1.0200	0.1565_{32}	2.507_{51}	6.39_{13}	0.3989_{83}	374

Temperature, Degrees Centigrade. t	Pressure. Millimeters of Mercury. p	Pressure. Kilograms per Square Centimeter. p	Pressure. Pounds per Square Inch. p	Heat of the Liquid. Calories. q	Heat of the Liquid. B.T.U. q	Heat of Vaporization. Calories. r	Heat of Vaporization. B.T.U. r	Heat Equivalent of Internal Work. Calories. ρ	Heat Equivalent of Internal Work. B.T.U. ρ	Temperature, Degrees Fahrenheit. t
191	9612_{211}	13.068_{287}	185.87_{409}	193.3	347.9	471.5	848.7	424.5	764.2	375.8
192	9823_{215}	13.355_{292}	189.96_{415}	194.4	349.8	470.6	847.1	423.6	762.5	377.6
193	10038_{218}	13.647_{297}	194.11_{422}	195.4	351.7	469.8	845.6	422.8	761.0	379.4
194	10256_{223}	13.944_{303}	198.33_{431}	196.4	353.5	468.9	844.1	421.9	759.4	381.2
195	10479_{226}	14.247_{307}	202.64_{437}	197.5	355.4	468.1	842.5	421.0	757.7	383
196	10705_{229}	14.554_{312}	207.01_{444}	198.5	357.3	467.2	841.0	420.1	756.1	384.8
197	10934_{234}	14.866_{318}	211.45_{451}	199.5	359.2	466.4	839.5	419.2	754.6	386.6
198	11168_{238}	15.184_{323}	215.96_{460}	200.6	361.1	465.6	838.0	418.4	753.0	388.4
199	11406_{241}	15.507_{328}	220.56_{467}	201.6	362.9	464.7	836.4	417.4	751.3	390.2
200	11647_{246}	15.835_{334}	225.23_{475}	202.7	364.8	463.8	834.8	416.5	749.7	392
201	11893_{249}	16.169_{339}	229.98_{482}	203.7	366.7	462.9	833.3	415.6	748.1	393.8
202	12142_{253}	16.508_{344}	234.80_{491}	204.7	368.5	462.1	831.8	414.8	746.6	395.6
203	12395_{258}	16.852_{350}	239.71_{498}	205.8	370.4	461.2	830.2	413.8	744.9	397.4
204	12653_{262}	17.202_{356}	244.69_{506}	206.8	372.3	460.3	828.6	412.9	743.3	399.2
205	12915_{266}	17.558_{363}	249.75_{514}	207.9	374.1	459.4	827.0	412.0	741.6	401
206	13181_{271}	17.921_{368}	254.89_{524}	208.9	376.0	458.6	825.4	411.1	740.0	402.8
207	13452_{275}	18.289_{374}	260.13_{532}	210.0	377.9	457.7	823.8	410.2	738.3	404.6
208	13727_{279}	18.663_{379}	265.45_{540}	211.0	379.8	456.8	822.2	409.3	736.7	406.4
209	14006_{284}	19.042_{386}	270.85_{549}	212.0	381.6	455.9	820.6	408.4	735.1	408.2
210	14290_{288}	19.428_{392}	276.34_{557}	213.1	383.5	455.0	819.1	407.5	733.6	410
211	14578_{293}	19.820_{398}	281.91_{566}	214.1	385.4	454.1	817.4	406.6	731.9	411.8
212	14871_{297}	20.218_{404}	287.57_{574}	215.2	387.3	453.2	815.8	405.7	730.2	413.6
213	15168_{302}	20.622_{411}	293.31_{585}	216.2	389.2	452.4	814.3	404.9	728.7	415.4
214	15470_{308}	21.033_{419}	299.16_{594}	217.3	391.1	451.5	812.7	404.0	727.1	417.2
215	15778_{312}	21.452_{424}	305.10_{604}	218.3	392.9	450.6	811.0	403.1	725.4	419
216	16090_{316}	21.876_{430}	311.14_{612}	219.3	394.8	449.6	809.3	402.1	723.7	420.8
217	16406_{322}	22.306_{437}	317.26_{622}	220.4	396.7	448.7	807.7	401.2	722.1	422.6
218	16728_{327}	22.743_{445}	323.48_{633}	221.4	398.5	447.8	806.1	400.3	720.5	424.4
219	17055_{332}	23.188_{451}	329.81_{643}	222.5	400.4	446.9	804.5	399.4	718.9	426.2
220	$17387_{}$	$23.639_{}$	$336.24_{}$	223.5	402.3	446.0	802.9	398.5	717.3	428

Temperature, Degrees Centigrade. t	Heat Equivalent of External Work. Calories. Apu	Heat Equivalent of External Work. B.T.U. Apu	Entropy of the Liquid. θ	Entropy of Vaporization. $\frac{r}{T}$	Specific Volume. Cubic Meters per Kilo. s	Specific Volume. Cubic Feet per Pound. s	Density. Kilos per Cubic Meter. $\frac{1}{s}$	Density. Pounds per Cubic Foot. $\frac{1}{s}$	Temperature, Degrees Fahrenheit. t
191	47.0	84.5	0.5358	1.0160	0.1533_{32}	2.456_{51}	6.52_{14}	0.4072_{86}	375.8
192	47.0	84.6	0.5381	1.0120	0.1501_{31}	2.405_{50}	6.66_{14}	0.4158_{88}	377.6
193	47.0	84.6	0.5403	1.0080	0.1470_{30}	2.355_{49}	6.80_{14}	0.4246_{90}	379.4
194	47.0	84.7	0.5426	1.0040	0.1440_{29}	2.306_{47}	6.94_{15}	0.4336_{90}	381.2
195	47.1	84.8	0.5448	1.0000	0.1411_{29}	2.259_{45}	7.09_{14}	0.4426_{90}	383
196	47.1	84.9	0.5470	0.9961	0.1382_{28}	2.214_{45}	7.23_{15}	0.4516_{94}	384.8
197	47.2	84.9	0.5492	0.9922	0.1354_{27}	2.169_{43}	7.38_{15}	0.4610_{94}	386.6
198	47.2	85.0	0.5514	0.9882	0.1327_{27}	2.126_{43}	7.53_{16}	0.4704_{97}	388.4
199	47.3	85.1	0.5536	0.9843	0.1300_{26}	2.083_{42}	7.69_{15}	0.4801_{99}	390.2
200	47.3	85.1	0.5558	0.9804	0.1274_{25}	2.041_{40}	7.84_{16}	0.4900_{98}	392
201	47.3	85.2	0.5580	0.9765	0.1249_{24}	2.001_{39}	8.00_{16}	0.4998_{98}	393.8
202	47.3	85.2	0.5602	0.9727	0.1225_{24}	1.962_{39}	8.16_{17}	0.510_{10}	395.6
203	47.4	85.3	0.5624	0.9688	0.1201_{24}	1.923_{38}	8.33_{17}	0.520_{11}	397.4
204	47.4	85.3	0.5646	0.9650	0.1177_{24}	1.885_{38}	8.50_{17}	0.531_{10}	399.2
205	47.4	85.4	0.5668	0.9611	0.1153_{23}	1.847_{37}	8.67_{18}	0.541_{11}	401
206	47.5	85.4	0.5690	0.9572	0.1130_{22}	1.810_{36}	8.85_{18}	0.552_{12}	402.8
207	47.5	85.5	0.5712	0.9534	0.1108_{22}	1.774_{35}	9.03_{18}	0.564_{11}	404.6
208	47.5	85.5	0.5733	0.9496	0.1086_{21}	1.739_{34}	9.21_{18}	0.575_{12}	406.4
209	47.5	85.5	0.5755	0.9458	0.1065_{21}	1.705_{32}	9.39_{19}	0.587_{11}	408.2
210	47.5	85.5	0.5777	0.9420	0.1044_{20}	1.673_{33}	9.58_{19}	0.598_{12}	410
211	47.5	85.5	0.5799	0.9382	0.1024_{20}	1.640_{32}	9.77_{19}	0.610_{12}	411.8
212	47.5	85.6	0.5820	0.9344	0.1004_{20}	1.608_{31}	9.96_{20}	0.622_{12}	413.6
213	47.5	85.6	0.5842	0.9307	0.0984_{19}	1.577_{31}	10.16_{20}	0.634_{13}	415.4
214	47.5	85.6	0.5863	0.9269	0.0965_{18}	1.546_{30}	10.36_{20}	0.647_{13}	417.2
215	47.5	85.6	0.5885	0.9232	0.0947_{19}	1.516_{30}	10.56_{22}	0.660_{13}	419
216	47.5	85.6	0.5906	0.9195	0.0928_{18}	1.486_{28}	10.78_{21}	0.673_{13}	420.8
217	47.5	85.6	0.5927	0.9157	0.0910_{17}	1.458_{28}	10.99_{21}	0.686_{13}	422.6
218	47.5	85.6	0.5948	0.9120	0.0893_{17}	1.430_{27}	11.20_{21}	0.699_{14}	424.4
219	47.5	85.6	0.5969	0.9084	0.0876_{16}	1.403_{27}	11.41_{21}	0.713_{14}	426.2
220	47.5	85.6	0.5991	0.9047	0.0860	1.376	11.62	0.727	428

TABLE IV.

SATURATED VAPOR OF ETHER.

FRENCH UNITS.

Temperature, Degrees Centigrade. t	Pressure, Millimeters of Mercury. p	Heat of the Liquid. q	Total Heat. H	Heat of Vaporization. r	Heat equivalent of Internal Work. ρ	Heat equivalent of External Work. Apu	Entropy of the Liquid. θ	Specific Volume. s	Density. Weight, in Kilos, of One Cubic Meter. γ	Temperature, Degrees Centigrade. t
0	184.39	0.00	94.00	94.00	86.45	7.55	0.0000	1.278	0.728	0
10	286.83	5.32	98.44	93.12	85.37	7.75	0.01909	0.8440	1.185	10
20	432.78	10.70	102.78	92.08	84.13	7.95	0.03772	0.5741	1.742	20
30	634.80	16.14	107.00	90.86	82.72	8.14	0.05593	0.4013	2.492	30
40	907.04	21.63	111.11	89.48	81.15	8.33	0.07374	0.2877	3.746	40
50	1264.8	27.19	115.11	87.92	79.41	8.51	0.09117	0.2108	4.744	50
60	1725.0	32.80	119.00	86.20	77.53	8.67	0.1083	0.1580	6.329	60
70	2304.9	38.48	122.78	84.30	75.49	8.81	0.1250	0.1203	8.313	70
80	3022.8	44.21	126.44	82.23	73.32	8.91	0.1415	0.0932	10.73	80
90	3898.3	50.00	130.00	80.00	71.03	8.97	0.1576	0.0731	13.68	90
100	4953.3	55.86	133.44	77.58	68.62	8.96	0.1735	0.0577	17.33	100
110	6214.6	61.77	136.78	75.01	66.13	8.88	0.1891	0.0459	21.79	110
120	7719.2	67.74	140.00	72.26	63.57	8.69	0.2045	0.0364	27.47	120

TABLE V.

SATURATED VAPOR OF ALCOHOL.

FRENCH UNITS.

Temperature, Degrees Centigrade. t	Pressure, Millimeters of Mercury. p	Heat of the Liquid. q	Total Heat. H	Heat of Vaporization. r	Heat equivalent of Internal Work. ρ	Heat equivalent of External Work. Apu	Entropy of the Liquid. θ	Specific Volume. s	Density. Weight, in Kilos, of One Cubic Meter. γ	Temperature, Degrees Centigrade. t
0	12.70	0.00	236.5	236.50	223.38	13.12	0.0000	32.21	0.03105	0
10	24.23	5.59	244.4	238.81	225.29	13.52	0.01996	17.39	0.05750	10
20	44.46	11.42	252.0	240.58	226.56	14.02	0.04003	9.847	0.1016	20
30	78.52	17.49	258.0	240.51	226.03	14.48	0.06029	5.753	0.1738	30
40	133.69	23.71	262.0	238.29	223.44	14.85	0.08073	3.465	0.2886	40
50	219.90	30.21	264.0	233.79	218.59	15.10	0.1014	2.143	0.4666	50
60	350.21	37.37	265.0	227.63	212.38	15.25	0.1223	1.359	0.7358	60
70	541.15	44.58	265.2	220.62	205.28	15.34	0.1435	0.8855	1.129	70
80	812.91	52.11	265.2	213.09	197.69	15.40	0.1650	0.5921	1.689	80
90	1189.3	59.97	266.0	206.03	190.54	15.49	0.1868	0.4073	2.455	90
100	1697.6	68.18	267.3	199.12	183.54	15.58	0.2090	0.2874	3.479	100
110	2367.6	76.74	269.6	192.86	177.15	15.71	0.2315	0.2083	4.801	110
120	3231.7	85.67	272.5	186.83	170.97	15.86	0.2544	0.1544	6.477	120
130	4323.0	94.98	276.0	181.02	164.99	16.03	0.2776	0.1170	8.547	130
140	5674.6	104.70	280.5	175.80	159.55	16.25	0.3013	0.0905	11.05	140
150	7318.4	114.82	285.3	170.48	154.03	16.45	0.3254	0.0714	14.01	150

TABLE VI.

SATURATED VAPOR OF CHLOROFORM.

FRENCH UNITS.

Temperature, Degrees Centigrade. t	Pressure, Millimeters of Mercury. p	Heat of the Liquid. q	Total Heat. H	Heat of Vaporization. r	Heat equivalent of Internal Work. ρ	Heat equivalent of External Work. Apu	Entropy of the Liquid. θ	Specific Volume. s	Density. Weight, in Kilos, of One Cubic Meter. γ	Temperature, Degrees Centigrade. t
0	59.72	0.00	67.00	67.00	62.45	4.55	0.00000	2.377	0.4207	0
10	100.47	2.33	68.38	66.04	61.29	4.75	0.00836	1.475	0.6780	10
20	160.47	4.67	69.75	65.08	60.14	4.94	0.01646	0.9601	1.042	20
30	247.51	7.02	71.12	64.10	59.00	5.10	0.02432	0.6437	1.554	30
40	369.26	9.37	72.50	63.13	57.87	5.26	0.03196	0.4449	2.248	40
50	535.05	11.74	73.87	62.13	56.73	5.40	0.03940	0.3155	3.170	50
60	755.44	14.12	75.25	61.13	55.60	5.53	0.04664	0.2291	4.356	60
70	1042.1	16.51	76.62	60.11	54.45	5.66	0.05369	0.1700	5.88	70
80	1407.6	18.91	78.00	59.09	53.31	5.78	0.06057	0.1286	7.78	80
90	1865.2	21.32	79.37	58.05	52.16	5.89	0.06729	0.0991	10.09	90
100	2428.5	23.74	80.75	57.01	51.01	6.00	0.07386	0.0777	12.87	100
110	3111.0	26.17	82.12	55.95	49.84	6.11	0.08027	0.0618	16.18	110
120	3925.7	28.61	83.50	54.89	48.67	6.22	0.08655	0.0500	20.00	120
130	4885.1	31.06	84.87	53.81	47.48	6.33	0.09270	0.0410	24.39	130
140	6000.2	33.52	86.25	52.73	46.30	6.43	0.09872	0.0340	29.4	140
150	7280.6	35.99	87.62	51.63	45.10	6.53	0.10462	0.0286	35.0	150
160	8734.2	38.47	89.00	50.53	43.90	6.63	0.11041	0.0243	41.2	160

TABLE VII.

SATURATED VAPOR OF CARBON BISULPHIDE.

FRENCH UNITS.

Temperature, Degrees Centigrade. t	Pressure, Millimeters of Mercury. p	Heat of the Liquid. q	Total Heat. H	Heat of Vaporization. r	Heat equivalent of Internal Work. ρ	Heat equivalent of External Work. Apu	Entropy of the Liquid. θ	Specific Volume. s	Density. Weight, in Kilos, of one Cubic Meter. γ	Temperature, Degrees Centigrade. t
0	127.91	0.00	90.00	90.00	82.76	7.24	0.00000	1.766	0.5662	0
10	198.46	2.36	91.42	89.06	81.58	7.48	0.00847	1.177	0.8496	10
20	298.03	4.74	92.76	88.02	80.31	7.71	0.01670	0.8071	1.239	20
30	434.62	7.13	94.01	86.88	78.97	7.91	0.02472	0.5684	1.759	30
40	617.53	9.54	95.18	85.64	77.54	8.10	0.03252	0.4098	2.440	40
50	857.07	11.96	96.27	84.31	76.04	8.27	0.04013	0.3017	3.315	50
60	1164.5	14.41	97.28	82.87	74.45	8.42	0.04756	0.2264	4.417	60
70	1552.1	16.86	98.20	81.34	72.78	8.56	0.05482	0.1726	5.794	70
80	2032.5	19.34	99.04	79.70	71.03	8.67	0.06192	0.1338	7.473	80
90	2619.1	21.83	99.80	77.97	69.20	8.77	0.06886	0.1052	9.51	90
100	3325.2	24.34	100.48	76.14	67.29	8.85	0.07566	0.0837	11.95	100
110	4164.1	26.86	101.07	74.21	65.31	8.90	0.08233	0.0674	14.84	110
120	5148.8	29.40	101.58	72.18	63.24	8.94	0.08886	0.0549	18.21	120
130	6291.6	31.96	102.01	70.05	61.09	8.96	0.09527	0.0452	22.12	130
140	7604.0	34.53	102.36	67.83	58.88	8.95	0.10157	0.0375	26.7	140
150	9095.9	37.12	102.62	65.50	56.58	8.92	0.10775	0.0314	31.8	150

TABLE VIII.

SATURATED VAPOR OF CARBON TETRACHLORIDE.

FRENCH UNITS.

Temperature, Degrees Centigrade. t	Pressure, Millimeters of Mercury. p	Heat of the Liquid. q	Total Heat. H $q+r$	Heat of Vaporization. r	Heat equivalent of Internal Work. ρ	Heat equivalent of External Work. Apu	Entropy of the Liquid. θ	Specific Volume. s	Density. Weight, in Kilos, of One Cubic Meter. γ	Temperature, Degrees Centigrade. t
0	32.95	0.00	52.00	52.00	48.54	3.46	0.00000	3.272	0.3056	0
10	55.97	1.99	53.44	51.45	47.85	3.60	0.00714	2.005	0.4987	10
20	90.99	3.99	54.86	50.87	47.13	3.74	0.01409	1.283	0.7794	20
30	142.27	6.02	56.23	50.21	46.33	3.88	0.02087	0.8510	1.175	30
40	214.81	8.06	57.58	49.52	45.51	4.01	0.02749	0.5831	1.715	40
50	314.38	10.12	58.88	48.76	44.62	4.14	0.03396	0.4109	2.434	50
60	447.43	12.20	60.16	47.96	43.69	4.25	0.04028	0.2969	3.368	60
70	621.15	14.30	61.40	47.10	42.75	4.35	0.04648	0.2192	4.562	70
80	843.29	16.42	62.60	46.18	41.74	4.44	0.04255	0.1650	6.061	80
90	1122.3	18.55	63.77	45.22	40.50	4.72	0.05849	0.1263	7.92	90
100	1467.1	20.70	64.90	44.20	39.62	4.58	0.06432	0.0980	10.20	100
110	1887.4	22.87	66.01	43.14	38.52	4.62	0.07006	0.0770	12.99	110
120	2393.7	25.06	67.07	42.01	37.36	4.65	0.07569	0.0611	16.37	120
130	2996.9	27.27	68.10	40.83	36.18	4.65	0.08122	0.0490	20.41	130
140	3709.0	29.49	69.10	39.61	34.95	4.63	0.08666	0.0395	25.3	140
150	4543.1	31.73	70.07	38.34	33.75	4.59	0.09201	0.0321	31.2	150
160	5513.1	34.00	71.00	37.00	32.47	4.53	0.09729	0.0262	38.2	160

TABLE IX.

SATURATED VAPOR OF ACETON.

FRENCH UNITS.

Temperature, Degrees Centigrade. t	Pressure, Millimeters of Mercury. p	Heat of the Liquid. q	Total Heat. H	Heat of Vaporization. r	Heat equivalent of Internal Work. ρ	Heat equivalent of External Work. Apu	Entropy of the Liquid. θ	Specific Volume. s	Density. Weight, in Kilos, of One Cubic Meter. γ	Temperature, Degrees Centigrade. t
0	63.33	0.00	140.50	140.50	131.82	8.68	0.00000	4.275	0.2339	0
10	110.32	5.10	144.11	139.01	129.51	9.50	0.01832	2.686	0.3723	10
20	180.08	10.29	147.62	137.33	127.16	10.17	0.03627	1.758	0.5688	20
30	280.05	15.55	151.03	135.48	124.83	10.65	0.05389	1.187	0.8425	30
40	419.35	20.89	154.33	133.44	121.39	11.05	0.07119	0.8227	1.215	40
50	608.81	26.31	157.53	131.22	119.86	11.36	0.08820	0.5830	1.715	50
60	860.96	31.81	160.63	128.82	117.22	11.60	0.1049	0.4215	2.372	60
70	1189.9	37.39	163.62	126.23	114.43	11.80	0.1214	0.3106	3.220	70
80	1611.1	43.05	166.51	123.46	111.49	11.97	0.1376	0.2328	4.296	80
90	2140.8	48.79	169.30	120.51	108.41	12.10	0.1536	0.1773	5.640	90
100	2796.2	54.61	171.98	117.37	105.17	12.20	0.1694	0.1372	7.289	100
110	3594.3	60.50	174.56	114.06	101.78	12.28	0.1850	0.1076	9.294	110
120	4552.0	66.48	177.04	110.56	98.23	12.33	0.2004	0.0856	11.68	120
130	5684.9	72.54	179.42	106.88	94.53	12.35	0.2156	0.0689	14.51	130
140	7007.6	78.67	181.69	103.02	90.67	12.35	0.2306	0.0561	17.83	140

TABLE X.

SATURATED VAPOR OF AMMONIA.

ENGLISH UNITS.

Temperature, Degrees Fahrenheit. t	Pressure, Pounds per Square Inch. p	Heat of the Liquid. q	Total Heat. H	Heat of Vaporization. r	Heat equivalent of Internal Work. ρ	Heat equivalent of External Work. Apu	Entropy of the Liquid. θ	Specific Volume. s	Density. Weight, in pounds, of One Cubic Foot. γ	Temperature, Degrees Fahrenheit. t
−40	9.93	−79	519	598	550	48	−0.1737	26.1	0.0383	−40
−35	11.53	−74	520	594	546	48	−0.1607	22.6	0.0442	−35
−30	13.36	−68	522	590	541	49	−0.1482	19.7	0.0507	−30
−25	15.40	−63	523	586	537	49	−0.1354	17.3	0.0580	−25
−20	17.70	−57	525	582	532	50	−0.1229	15.2	0.0660	−20
−15	20.25	−52	526	578	528	50	−0.1102	13.3	0.0750	−15
−10	23.10	−46	528	574	524	50	−0.0982	11.8	0.0848	−10
−5	26.25	−41	529	570	519	51	−0.0859	10.5	0.0956	−5
0	29.74	−35	531	566	515	51	−0.0738	9.32	0.108	0
5	33.58	−30	532	562	511	51	−0.0619	8.31	0.120	5
10	37.80	−24	534	558	506	52	−0.0501	7.44	0.134	10
15	42.43	−19	535	554	502	52	−0.0386	6.68	0.150	15
20	47.49	−13	537	550	497	53	−0.0271	6.02	0.166	20
25	53.01	−8	538	546	493	53	−0.0157	5.43	0.184	25
30	59.01	−2	540	542	489	53	−0.0044	4.92	0.203	30
35	65.53	3	541	538	484	54	0.0067	4.46	0.225	35
40	72.59	9	543	534	480	54	0.0177	4.06	0.247	40
45	80.21	14	544	530	475	55	0.0287	3.70	0.270	45
50	88.44	20	546	526	471	55	0.0395	3.38	0.296	50
55	97.30	25	547	522	467	55	0.0502	3.09	0.323	55
60	106.82	31	549	518	462	56	0.0608	2.84	0.352	60
65	117.04	36	550	514	458	56	0.0713	2.61	0.383	65
70	127.98	42	552	510	454	56	0.0817	2.40	0.416	70
75	139.67	47	553	506	449	57	0.0921	2.22	0.451	75
80	152.15	53	555	502	445	57	0.1023	2.05	0.488	80
85	165.47	58	556	498	441	57	0.1124	1.90	0.527	85
90	179.64	64	558	494	436	58	0.1224	1.76	0.568	90
95	194.70	69	559	490	432	58	0.1324	1.63	0.612	95
100	210.70	75	561	486	428	58	0.1423	1.52	0.657	100

TABLE XI.

SATURATED VAPOR OF SULPHUR DIOXIDE.

ENGLISH UNITS.

Temperature, Degrees Fahrenheit. t	Pressure, Pounds per Square Inch. p	Heat of the Liquid. q	Total Heat. H	Heat of Vaporization. r	Heat equivalent of Internal Work. ρ	Heat equivalent of External Work. Apu	Entropy of the Liquid. θ	Specific Volume. s	Density. Weight, in pounds, of One Cubic Foot. γ	Temperature, Degrees Fahrenheit. t
−40	3.14	−29	166	195	182	13	−0.0632	23.0	0.0434	−40
−35	3.70	−27	167	194	180	14	−0.0584	19.7	0.0507	−35
−30	4.34	−25	168	193	179	14	−0.0539	17.0	0.0590	−30
−25	5.07	−23	168	191	177	14	−0.0492	14.7	0.0682	−25
−20	5.90	−21	169	190	176	14	−0.0447	12.7	0.0785	−20
−15	6.83	−19	170	189	175	14	−0.0401	11.1	0.0901	−15
−10	7.88	−17	170	187	173	14	−0.0357	9.73	0.103	−10
−5	9.05	−15	171	186	172	14	−0.0312	8.56	0.117	−5
0	10.35	−13	172	185	170	15	−0.0268	7.54	0.133	0
5	11.81	−11	172	183	168	15	−0.0225	6.67	0.450	5
10	13.41	−9	173	182	167	15	−0.0182	5.93	0.169	10
15	15.19	−7	174	181	166	15	−0.0140	5.29	0.189	15
20	17.15	−5	174	179	164	15	−0.0098	4.72	0.212	20
25	19.30	−3	175	178	163	15	−0.0057	4.23	0.236	25
30	21.66	−1	176	177	162	15	−0.0016	3.81	0.263	30
35	24.24	1	176	175	160	15	0.0024	3.43	0.291	35
40	27.06	3	177	174	158	16	0.0064	3.10	0.322	40
45	30.12	5	177	172	156	16	0.0104	2.81	0.356	45
50	33.45	7	178	171	155	16	0.0144	2.58	0.390	50
55	37.07	9	179	170	154	16	0.0182	2.32	0.430	55
60	40.98	11	179	168	152	16	0.0221	2.11	0.473	60
65	45.20	13	180	167	151	16	0.0259	1.94	0.516	65
70	49.75	15	181	166	150	16	0.0297	1.78	0.563	70
75	54.64	17	181	164	148	16	0.0334	1.63	0.614	75
80	59.90	19	182	163	146	17	0.0372	1.50	0.668	80
85	65.54	21	183	162	145	17	0.0409	1.38	0.725	85
90	71.57	23	183	160	143	17	0.0445	1.27	0.786	90
95	78.02	25	184	159	142	17	0.0482	1.18	0.849	95
100	84.90	27	185	158	141	17	0.0518	1.09	0.917	100

TABLE XII.

SPECIFIC GRAVITY AND SPECIFIC VOLUME OF LIQUIDS.

Name of Liquid.	Specific Gravity, compared with Water at 4° C.	Specific Volume. Cubic Meters per Kilo.
Alcohol, C_2H_6O	0.80625 [Mendelejeff, 1869]	0.001240
Ether, $C_4H_{10}O$	0.736 [Kopp, 1860]	0.001358
Chloroform	1.527 [Thorpe, 1880]	0.000655
Carbon bisulphide, CS_2	1.2922 [Thorpe, 1880]	0.000774
Carbon tetrachloride, CCl_4	1.6320 [Thorpe, 1880]	0.000613
Aceton, C_3H_6O	0.81 [Zander, 1882]	0.00123
Sulphur Dioxide, SO_2	1.4336 [Andréeff, 1859]	0.0006981
Ammonia, NH_3	0.6364 [Andréeff, 1859]	0.001571

TABLE XIII.

VOLUME OF WATER.

Vol. at 4° C. = 1.

[Rossetti, 1871] and [Hirn, 1867].

Temperature.	Volume.	Temperature.	Volume.	Temperature.	Volume.	Temperature.	Volume.
10	1.000253	60	1.01691	110	1.0512	160	1.1018
20	1.001744	70	1.02256	120	1.0599	170	1.1139
30	1.00425	80	1.02887	130	1.0694	180	1.1268
40	1.00770	90	1.03567	140	1.0795	190	1.1403
50	1.01195	100	1.04312	150	1.0903	200	1.1544

TABLE XIV.

CONVERSION TABLE.

INCHES OF MERCURY AND POUNDS PER SQUARE INCH.

		1	2	3	4	5	6	7	8	9
0	0.00	0.05	0.10	0.15	0.20	0.25	0.29	0.34	0.39	0.44
1	0.49	0.54	0.59	0.64	0.69	0.74	0.79	0.84	0.88	0.93
2	0.98	1.03	1.08	1.13	1.18	1.23	1.28	1.33	1.38	1.42
3	1.47	1.52	1.57	1.62	1.67	1.72	1.77	1.82	1.87	1.91
4	1.96	2.01	2.06	2.11	2.16	2.21	2.26	2.31	2.36	2.41
5	2.46	2.51	2.55	2.60	2.65	2.70	2.75	2.80	2.85	2.90
6	2.95	3.00	3.05	3.09	3.14	3.19	3.24	3.29	3.34	3.39
7	3.44	3.49	3.54	3.59	3.63	3.68	3.73	3.78	3.83	3.88
8	3.93	3.98	4.03	4.08	4.13	4.18	4.22	4.27	4.32	4.37
9	4.42	4.47	4.52	4.57	4.62	4.67	4.72	4.76	4.81	4.86
10	4.91	4.96	5.01	5.06	5.11	5.16	5.21	5.26	5.30	5.35
11	5.40	5.45	5.50	5.55	5.60	5.65	5.70	5.75	5.80	5.85
12	5.89	5.94	5.99	6.04	6.09	6.14	6.19	6.24	6.29	6.34
13	6.39	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83
14	6.88	6.93	6.97	7.02	7.07	7.12	7.17	7.22	7.27	7.32
15	7.37	7.42	7.47	7.52	7.56	7.61	7.66	7.71	7.76	7.81
16	7.86	7.91	7.96	8.01	8.06	8.10	8.15	8.20	8.25	8.30
17	8.35	8.40	8.45	8.50	8.55	8.60	8.64	8.69	8.74	8.79
18	8.84	8.89	8.94	8.99	9.04	9.09	9.14	9.19	9.23	9.28
19	9.33	9.38	9.43	9.48	9.53	9.58	9.63	9.68	9.73	9.77
20	9.82	9.87	9.92	9.97	10.02	10.07	10.12	10.17	10.22	10.27
21	10.32	10.37	10.41	10.46	10.51	10.56	10.61	10.66	10.71	10.76
22	10.81	10.86	10.90	10.95	11.00	11.05	11.10	11.15	11.20	11.25
23	11.30	11.35	11.40	11.44	11.49	11.54	11.59	11.64	11.69	11.74
24	11.79	11.84	11.89	11.94	11.99	12.03	12.08	12.13	12.18	12.23
25	12.28	12.33	12.38	12.43	12.48	12.53	12.57	12.62	12.67	12.72
26	12.77	12.82	12.87	12.92	12.97	13.02	13.07	13.11	13.16	13.21
27	13.26	13.31	13.36	13.41	13.46	13.51	13.56	13.61	13.66	13.70
28	13.75	13.80	13.85	13.90	13.95	14.00	14.05	14.10	14.15	14.20
29	14.24	14.29	14.34	14.39	14.44	14.49	14.54	14.59	14.64	14.69
30	14.74	14.78	14.83	14.88	14.93	14.98	15.03	15.08	15.13	15.18

TABLE XV.

CORRECTIVE FACTORS FOR SUPERHEATED STEAM.

Values of the factor $\frac{150{,}300{,}000}{T^3} - 0.0833$.

Temperature.		Value of Factor.	Temperature.		Value of Factor.	Temperature.		Value of Factor.
Fahr.	Abs.		Fahr.	Abs.		Fahr.	Abs.	
200	659.5	0.441	335	794.5	0.216	470	929.5	0.104
205	664.5	0.429	340	799.5	0.211	475	934.5	0.101
210	669.5	0.417	345	804.5	0.205	480	939.5	0.098
215	674.5	0.405	350	809.5	0.200	485	944.5	0.095
220	679.5	0.395	355	814.5	0.195	490	949.5	0.092
225	684.5	0.385	360	819.5	0.190	495	954.5	0.090
230	689.5	0.375	365	824.5	0.185	500	959.5	0.087
235	694.5	0.365	370	829.5	0.180	505	964.5	0.084
240	699.5	0.356	375	834.5	0.175	510	969.5	0.082
245	704.5	0.347	380	839.5	0.171	515	974.5	0.079
250	709.5	0.338	385	844.5	0.166	520	979.5	0.077
255	714.5	0.329	390	849.5	0.162	525	984.5	0.074
260	719.5	0.320	395	854.5	0.158	530	989.5	0.072
265	724.5	0.312	400	859.5	0.153	535	994.5	0.070
270	729.5	0.304	405	864.5	0.149	540	999.5	0.067
275	734.5	0.296	410	869.5	0.145	545	1004.5	0.065
280	739.5	0.288	415	874.5	0.141	550	1009.5	0.063
285	744.5	0.281	420	879.5	0.138	555	1014.5	0.061
290	749.5	0.274	425	884.5	0.134	560	1019.5	0.059
295	754.5	0.267	430	889.5	0.131	565	1024.5	0.057
300	759.5	0.260	435	894.5	0.127	570	1029.5	0.055
305	764.5	0.253	440	899.5	0.123	575	1034.5	0.053
310	769.5	0.247	445	904.5	0.120	580	1039.5	0.051
315	774.5	0.240	450	909.5	0.117	585	1044.5	0.049
320	779.5	0.234	455	914.5	0.113	590	1049.5	0.047
325	784.5	0.228	460	919.5	0.110	595	1054.5	0.045
330	789.5	0.222	465	924.5	0.107			

TEMPERATURE–ENTROPY TABLE

THIS table gives the properties of moist and of superheated steam at each degree of temperature Fahrenheit, and for each hundredth of a unit of entropy.

At the left hand of each page are given the temperatures and the corresponding pressures of saturated steam; the lines across the tables are, therefore, constant pressure lines, and for moist steam are also constant temperature lines.

The table is divided by a broken line which corresponds roughly to the saturation line; properties to the left of that line are for moist steam and to the right are for superheated steam.

The triple-columns are headed with the entropy, and are constant entropy lines; they can be used for solving problems concerning adiabatic operations in a closed cylinder, and similar problems.

At any point in the table, determined by the entropy and the pressure (or the corresponding temperature of saturated steam), there are given three properties: —

(1) *The quality*, which for moist steam is the proportion of a pound that is steam, and for superheated steam is the number of degrees of superheating.

(2) *The heat contents*, or the number of thermal units required to change a pound of water at freezing into steam at the given pressure and with the given quality.

(3) *The specific volume* in cubic feet per pound.

For examples, solved by aid of the table, see page 32.

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.52			1.53			1.54			1.55		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
420	308.5	10.7	1212.5	1.535	23.1	1221.2	1.569	36.5	1230.4	1.609	50.7	1239.6	1.651
419	305.1	9.7	1211.5	1.548	22.0	1220.3	1.584	35.4	1229.4	1.622	49.6	1238.5	1.665
418	301.8	8.6	1210.5	1.562	21.0	1219.3	1.599	34.3	1228.4	1.637	48.4	1237.5	1.679
417	298.5	7.6	1209.5	1.576	19.9	1218.4	1.612	33.1	1227.4	1.652	47.2	1236.5	1.694
416	295.2	6.6	1208.6	1.589	18.8	1217.5	1.626	32.0	1226.4	1.667	45.9	1235.5	1.709
415	292.0	5.5	1207.6	1.603	17.7	1216.5	1.640	30.8	1225.4	1.681	44.7	1234.5	1.723
414	288.9	4.5	1206.6	1.617	16.6	1215.5	1.655	29.7	1224.4	1.696	43.5	1233.5	1.738
413	285.7	3.4	1205.6	1.632	15.4	1214.4	1.670	28.5	1223.4	1.711	42.3	1232.5	1.753
412	282.5	2.4	1204.7	1.645	14.3	1213.4	1.685	27.3	1222.4	1.724	41.2	1231.5	1.768
411	279.4	1.3	1203.8	1.660	13.2	1212.4	1.700	26.2	1221.5	1.740	40.0	1230.5	1.783
410	276.3	0.3	1202.9	1.674	12.2	1211.5	1.715	25.1	1220.5	1.754	38.8	1229.5	1.799
409	273.3	9994	1201.9	1.690	11.1	1210.5	1.730	23.9	1219.5	1.770	37.6	1228.4	1.814
408	270.3	9984	1201.0	1.706	10.0	1209.6	1.745	22.7	1218.5	1.786	36.4	1227.4	1.830
407	267.3	9974	1200.0	1.723	9.0	1208.7	1.760	21.6	1217.5	1.802	35.1	1226.4	1.845
406	264.3	9966	1199.2	1.741	7.9	1207.7	1.776	20.5	1216.5	1.819	33.9	1225.4	1.861
405	261.3	9956	1198.2	1.759	6.8	1206.7	1.791	19.3	1215.5	1.834	32.7	1224.4	1.877
404	258.4	9947	1197.3	1.777	5.7	1205.7	1.808	18.2	1214.6	1.850	31.5	1223.4	1.894
403	255.5	9937	1196.3	1.795	4.6	1204.7	1.823	17.1	1213.7	1.865	30.3	1222.4	1.910
402	252.6	9928	1195.3	1.813	3.5	1203.8	1.839	16.0	1212.7	1.882	29.1	1221.4	1.927
401	249.7	9918	1194.3	1.832	2.4	1202.9	1.856	14.9	1211.8	1.899	27.9	1220.4	1.944
400	246.9	9907	1193.4	1.851	1.3	1202.0	1.873	13.8	1210.8	1.915	26.7	1219.4	1.961
399	244.1	9899	1192.4	1.870	0.2	1201.0	1.890	12.7	1209.8	1.931	25.5	1218.4	1.978
398	241.4	9889	1191.5	1.889	9993	1200.0	1.909	11.5	1208.8	1.950	24.3	1217.4	1.995
397	238.6	9881	1190.6	1.908	9984	1199.1	1.928	10.4	1207.9	1.968	23.1	1216.4	2.013
396	235.9	9871	1189.6	1.928	9974	1198.1	1.948	9.3	1206.9	1.985	21.9	1215.4	2.030
395	233.2	9862	1188.6	1.948	9965	1197.2	1.968	8.1	1206.0	2.002	20.7	1214.4	2.049
394	230.5	9852	1187.7	1.967	9955	1196.3	1.988	7.0	1205.0	2.020	19.5	1213.4	2.068
393	227.9	9843	1186.7	1.987	9945	1195.3	2.008	5.9	1204.0	2.039	18.3	1212.4	2.087
392	225.2	9835	1185.8	2.007	9937	1194.3	2.028	4.8	1203.0	2.058	17.1	1211.4	2.105
391	222.6	9825	1184.8	2.028	9927	1193.3	2.049	3.7	1202.0	2.076	15.9	1210.4	2.124
390	220.1	9816	1183.9	2.049	9917	1192.3	2.071	2.6	1201.0	2.095	14.7	1209.3	2.144
389	217.5	9806	1182.9	2.071	9907	1191.4	2.092	1.5	1200.0	2.115	13.5	1208.3	2.163
388	215.0	9798	1181.9	2.093	9899	1190.4	2.114	0.3	1198.9	2.135	12.3	1207.3	2.183
387	212.5	9788	1180.9	2.114	9889	1189.4	2.136	9990	1197.8	2.158	11.1	1206.3	2.203
386	210.0	9779	1179.9	2.136	9879	1188.4	2.158	9980	1196.8	2.180	9.9	1205.3	2.223
385	207.5	9769	1179.0	2.158	9870	1187.4	2.180	9970	1195.8	2.202	8.7	1204.3	2.244
384	205.1	9761	1178.0	2.181	9861	1186.5	2.203	9962	1194.8	2.225	7.5	1203.3	2.265
383	202.6	9752	1177.1	2.203	9852	1185.5	2.226	9952	1193.9	2.248	6.3	1202.3	2.286
382	200.3	9743	1176.1	2.226	9843	1184.4	2.249	9943	1192.9	2.272	5.1	1201.3	2.308
381	197.9	9734	1175.1	2.251	9833	1183.5	2.274	9933	1191.9	2.297	3.9	1200.3	2.329
380	195.5	9724	1174.2	2.274	9823	1182.6	2.298	9923	1190.9	2.321	2.7	1199.3	2.351
379	193.2	9716	1173.2	2.299	9815	1181.6	2.322	9914	1190.0	2.346	1.5	1198.3	2.373
378	190.9	9705	1172.2	2.323	9804	1180.6	2.347	9903	1189.0	2.371	0.3	1197.3	2.394
377	188.6	9696	1171.2	2.348	9795	1179.6	2.372	9893	1188.0	2.396	9992	1196.3	2.420
376	186.3	9687	1170.2	2.374	9786	1178.6	2.397	9884	1187.0	2.422	9983	1195.3	2.446
375	184.1	9679	1169.2	2.399	9777	1177.5	2.423	9876	1185.9	2.447	9974	1194.2	2.472
374	181.9	9671	1168.3	2.426	9769	1176.5	2.449	9867	1184.9	2.474	9965	1193.2	2.498
373	179.7	9661	1167.3	2.451	9759	1175.5	2.475	9857	1183.9	2.500	9955	1192.2	2.524

Temperatures, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.56			1.57			1.58			1.59		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
420	308.5	66.1	1248.8	1.692	82.7	1258.3	1.739	100.5	1267.8	1.784	118.9	1277.7	1.830
419	305.1	64.9	1247.7	1.705	81.4	1257.2	1.753	99.0	1266.7	1.799	117.4	1276.6	1.845
418	301.8	63.6	1246.7	1.720	80.0	1256.2	1.768	97.5	1265.6	1.814	115.9	1275.6	1.861
417	298.5	62.3	1245.6	1.735	78.7	1255.1	1.783	96.0	1264.5	1.829	114.4	1274.5	1.877
416	295.2	61.0	1244.6	1.750	77.3	1254.1	1.799	94.6	1263.4	1.844	112.9	1273.5	1.893
415	292.0	59.7	1243.5	1.765	76.0	1253.1	1.814	93.1	1262.3	1.859	111.4	1272.4	1.909
414	288.9	58.4	1242.5	1.781	74.7	1252.0	1.829	91.7	1261.3	1.875	109.9	1271.3	1.926
413	285.7	57.1	1241.5	1.796	73.3	1251.0	1.844	90.3	1260.3	1.890	108.3	1270.2	1.942
412	282.5	55.9	1240.5	1.812	72.0	1250.0	1.859	88.9	1259.3	1.906	106.8	1269.1	1.958
411	279.4	54.6	1239.5	1.827	70.7	1248.9	1.875	87.4	1258.2	1.922	105.3	1268.1	1.975
410	276.3	53.3	1238.4	1.843	69.4	1247.9	1.891	86.0	1257.2	1.939	103.9	1267.1	1.992
409	273.3	52.1	1237.4	1.858	68.0	1246.9	1.906	84.6	1256.1	1.954	102.4	1266.0	2.009
408	270.3	50.8	1236.4	1.874	66.6	1245.8	1.923	83.2	1255.1	1.971	100.9	1264.9	2.025
407	267.3	49.5	1235.4	1.891	65.3	1244.8	1.940	81.8	1254.1	1.988	99.4	1263.8	2.043
406	264.3	48.3	1234.4	1.907	64.0	1243.8	1.956	80.3	1253.1	2.003	97.9	1262.7	2.060
405	261.3	46.9	1233.4	1.924	62.6	1242.6	1.972	78.9	1252.1	2.021	96.4	1261.6	2.078
404	258.4	45.6	1232.3	1.940	61.3	1241.5	1.989	77.5	1250.9	2.039	94.9	1260.5	2.095
403	255.5	44.4	1231.3	1.957	59.9	1240.4	2.006	76.0	1249.7	2.056	93.4	1259.4	2.113
402	252.6	43.1	1230.3	1.974	58.5	1239.4	2.023	74.5	1248.6	2.074	91.9	1258.4	2.131
401	249.7	41.8	1229.3	1.991	57.1	1238.3	2.040	73.0	1247.5	2.093	90.4	1257.3	2.150
400	246.9	40.6	1228.3	2.009	55.8	1237.3	2.058	71.6	1246.4	2.110	88.9	1256.2	2.168
399	244.1	39.3	1227.2	2.027	54.5	1236.3	2.077	70.3	1245.3	2.129	87.5	1255.2	2.187
398	241.4	38.0	1226.2	2.045	53.1	1235.2	2.095	68.9	1244.3	2.148	86.0	1254.1	2.205
397	238.6	36.7	1225.1	2.064	51.8	1234.2	2.113	67.5	1243.3	2.167	84.5	1253.0	2.224
396	235.9	35.5	1224.1	2.082	50.4	1233.2	2.131	66.0	1242.3	2.186	83.0	1251.9	2.243
395	233.2	34.3	1223.1	2.101	49.1	1232.1	2.150	64.7	1241.2	2.205	81.5	1250.8	2.263
394	230.5	33.0	1222.1	2.120	47.8	1231.0	2.169	63.3	1240.2	2.224	80.1	1249.7	2.282
393	227.9	31.8	1221.1	2.138	46.4	1230.0	2.188	61.9	1239.1	2.244	78.6	1248.6	2.303
392	225.2	30.6	1220.1	2.157	45.0	1229.0	2.208	60.5	1238.0	2.263	77.1	1247.5	2.323
391	222.6	29.3	1219.0	2.178	43.7	1227.9	2.227	59.2	1237.0	2.283	75.7	1246.4	2.343
390	220.1	28.0	1218.0	2.198	42.4	1226.9	2.247	57.9	1235.9	2.304	74.2	1245.3	2.363
389	217.5	26.7	1217.0	2.217	41.1	1225.9	2.268	56.5	1234.8	2.325	72.7	1244.2	2.384
388	215.0	25.5	1216.0	2.236	39.8	1224.8	2.289	55.0	1233.8	2.346	71.2	1243.1	2.405
387	212.5	24.3	1215.0	2.257	38.4	1223.7	2.310	53.6	1232.7	2.367	69.8	1242.0	2.427
386	210.0	23.0	1213.9	2.278	37.0	1222.7	2.331	52.3	1231.6	2.389	68.3	1240.9	2.449
385	207.5	21.8	1212.8	2.299	35.7	1221.6	2.352	50.9	1230.6	2.410	66.8	1239.8	2.470
384	205.1	20.5	1211.8	2.320	34.4	1220.5	2.374	49.6	1229.6	2.432	65.3	1238.7	2.493
383	202.6	19.3	1210.8	2.341	33.0	1219.5	2.395	48.1	1228.5	2.454	63.8	1237.6	2.516
382	200.3	18.0	1209.8	2.362	31.7	1218.4	2.418	46.7	1227.4	2.476	62.3	1236.5	2.539
381	197.9	16.8	1208.7	2.384	30.4	1217.4	2.440	45.4	1226.4	2.500	60.8	1235.4	2.561
380	195.5	15.6	1207.7	2.406	29.1	1216.3	2.463	43.9	1225.3	2.523	59.4	1234.3	2.585
379	193.2	14.3	1206.7	2.429	27.8	1215.3	2.486	42.6	1224.2	2.546	57.9	1233.2	2.609
378	190.9	13.0	1205.6	2.452	26.4	1214.2	2.509	41.3	1223.2	2.570	56.4	1232.1	2.633
377	188.6	11.8	1204.6	2.474	25.1	1213.1	2.533	39.9	1222.1	2.594	55.0	1230.9	2.658
376	186.3	10.5	1203.6	2.497	23.8	1212.1	2.557	38.5	1221.0	2.619	53.5	1229.7	2.682
375	184.1	9.3	1202.6	2.520	22.5	1211.1	2.581	37.1	1219.9	2.643	52.0	1228.6	2.707
374	181.9	8.0	1201.6	2.544	21.1	1210.1	2.605	35.7	1218.8	2.668	50.6	1227.5	2.732
373	179.7	6.8	1200.6	2.568	19.8	1209.0	2.630	34.3	1217.6	2.694	49.1	1226.4	2.758

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.52			1.53			1.54			1.55		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
372	177.5	9653	1166.3	2.478	9751	1174.6	2.502	9848	1182.9	2.527	9946	1191.2	2.552
371	175.3	9644	1165.3	2.504	9741	1173.6	2.529	9838	1181.9	2.554	9936	1190.2	2.579
370	173.2	9635	1164.3	2.531	9732	1172.6	2.556	9830	1180.9	2.581	9927	1189.1	2.607
369	171.1	9626	1163.3	2.559	9723	1171.6	2.583	9820	1179.9	2.609	9917	1188.1	2.635
368	169.0	9617	1162.3	2.587	9714	1170.6	2.612	9811	1178.9	2.638	9908	1187.1	2.664
367	166.9	9608	1161.3	2.615	9705	1169.5	2.641	9801	1177.8	2.667	9898	1186.0	2.693
366	164.8	9600	1160.3	2.645	9696	1168.6	2.670	9792	1176.8	2.697	9889	1185.0	2.723
365	162.8	9590	1159.3	2.674	9686	1167.6	2.701	9783	1175.8	2.726	9879	1184.0	2.753
364	160.8	9582	1158.3	2.704	9678	1166.5	2.731	9774	1174.8	2.757	9870	1183.0	2.784
363	158.8	9572	1157.3	2.735	9668	1165.5	2.762	9764	1173.7	2.789	9860	1182.0	2.816
362	156.8	9564	1156.3	2.765	9660	1164.5	2.793	9755	1172.7	2.819	9851	1181.0	2.847
361	154.8	9556	1155.3	2.796	9651	1163.5	2.824	9746	1171.7	2.851	9841	1179.9	2.879
360	152.9	9546	1154.3	2.826	9641	1162.5	2.855	9736	1170.7	2.883	9832	1178.9	2.910
359	151.0	9538	1153.3	2.859	9633	1161.5	2.887	9728	1169.7	2.914	9823	1177.9	2.943
358	149.1	9529	1152.3	2.891	9624	1160.5	2.920	9719	1168.6	2.948	9813	1176.8	2.976
357	147.2	9520	1151.3	2.925	9614	1159.5	2.954	9709	1167.6	2.982	9803	1175.8	3.011
356	145.3	9512	1150.3	2.958	9606	1158.4	2.987	9700	1166.6	3.016	9795	1174.7	3.045
355	143.5	9503	1149.3	2.992	9597	1157.4	3.021	9692	1165.6	3.050	9786	1173.7	3.080
354	141.6	9494	1148.3	3.025	9588	1156.4	3.055	9682	1164.6	3.085	9776	1172.7	3.114
353	139.8	9486	1147.3	3.059	9579	1155.4	3.089	9673	1163.5	3.120	9767	1171.7	3.149
352	138.0	9477	1146.2	3.093	9571	1154.3	3.124	9664	1162.5	3.154	9758	1170.6	3.184
351	136.3	9468	1145.2	3.127	9561	1153.3	3.158	9654	1161.4	3.189	9748	1169.5	3.219
350	134.5	9459	1144.2	3.162	9552	1152.3	3.193	9645	1160.4	3.224	9739	1168.5	3.254
349	132.8	9451	1143.2	3.198	9544	1151.3	3.230	9637	1159.3	3.261	9730	1167.4	3.291
348	131.1	9443	1142.2	3.235	9535	1150.3	3.267	9628	1158.3	3.299	9721	1166.4	3.329
347	129.4	9434	1141.2	3.272	9527	1149.3	3.304	9619	1157.3	3.336	9712	1165.4	3.367
346	127.7	9426	1140.2	3.310	9518	1148.2	3.342	9611	1156.2	3.374	9703	1164.3	3.406
345	126.0	9417	1139.1	3.348	9509	1147.2	3.380	9601	1155.2	3.413	9693	1163.2	3.445
344	124.4	9408	1138.1	3.387	9500	1146.2	3.420	9592	1154.2	3.453	9684	1162.2	3.486
343	122.7	9400	1137.1	3.427	9492	1145.1	3.461	9583	1153.1	3.494	9675	1161.1	3.527
342	121.1	9391	1136.1	3.467	9483	1144.1	3.501	9574	1152.1	3.535	9666	1160.1	3.569
341	119.5	9383	1135.0	3.507	9474	1143.0	3.542	9566	1151.0	3.576	9657	1159.0	3.610
340	117.9	9375	1134.0	3.548	9466	1142.0	3.583	9557	1150.0	3.617	9648	1158.0	3.652
339	116.3	9366	1133.0	3.591	9457	1140.9	3.626	9548	1148.9	3.661	9639	1156.9	3.696
338	114.8	9357	1131.9	3.634	9448	1139.9	3.669	9538	1147.9	3.705	9629	1155.8	3.740
337	113.3	9349	1130.9	3.679	9439	1138.8	3.714	9530	1146.8	3.750	9620	1154.8	3.786
336	111.7	9340	1129.8	3.723	9430	1137.8	3.759	9521	1145.7	3.795	9611	1153.7	3.831
335	110.3	9332	1128.8	3.769	9422	1136.8	3.805	9512	1144.7	3.842	9602	1152.6	3.878
334	108.8	9323	1127.8	3.816	9413	1135.8	3.853	9503	1143.7	3.890	9593	1151.6	3.926
333	107.3	9315	1126.7	3.863	9405	1134.7	3.900	9494	1142.6	3.937	9584	1150.5	3.975
332	105.8	9306	1125.7	3.911	9396	1133.6	3.948	9485	1141.5	3.986	9575	1149.4	4.023
331	104.4	9298	1124.7	3.959	9387	1132.6	3.997	9477	1140.5	4.035	9566	1148.4	4.073
330	103.0	9291	1123.7	4.007	9380	1131.5	4.046	9469	1139.4	4.084	9558	1147.3	4.122
329	101.6	9282	1122.6	4.055	9370	1130.5	4.094	9459	1138.4	4.133	9548	1146.2	4.172
328	100.2	9274	1121.6	4.104	9363	1129.5	4.143	9451	1137.4	4.182	9540	1145.2	4.222
327	98.8	9265	1120.5	4.152	9354	1128.4	4.192	9442	1136.3	4.231	9531	1144.1	4.271
326	97.5	9257	1119.5	4.201	9345	1127.3	4.241	9434	1135.2	4.281	9522	1143.0	4.321
325	96.1	9248	1118.4	4.250	9337	1126.3	4.290	9425	1134.1	4.331	9513	1142.0	4.371

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.56			1.57			1.58			1.59		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
372	177.5	5.5	1199.5	2.592	18.5	1207.9	2.655	32.9	1216.5	2.720	47.7	1225.3	2.783
371	175.3	4.2	1198.5	2.616	17.2	1206.8	2.680	31.5	1215.4	2.746	46.1	1224.1	2.810
370	173.2	3.0	1197.4	2.640	15.9	1205.8	2.706	30.0	1214.3	2.772	44.7	1222.9	2.836
369	171.1	1.7	1196.4	2.665	14.6	1204.7	2.732	28.6	1213.2	2.798	43.3	1221.9	2.864
368	169.0	0.4	1195.4	2.690	13.3	1203.7	2.759	27.3	1212.2	2.824	41.8	1220.8	2.891
367	166.9	9994	1194.3	2.719	12.0	1202.7	2.785	25.9	1211.1	2.852	40.4	1219.7	2.919
366	164.8	9985	1193.3	2.750	10.7	1201.6	2.811	24.5	1210.0	2.879	39.0	1218.6	2.946
365	162.8	9975	1192.3	2.780	9.4	1200.5	2.838	23.2	1209.0	2.906	37.5	1217.5	2.974
364	160.8	9966	1191.2	2.811	8.1	1199.5	2.865	21.8	1207.9	2.935	36.1	1216.4	3.002
363	158.8	9955	1190.2	2.843	6.8	1198.4	2.894	20.4	1206.7	2.964	34.6	1215.3	3.030
362	156.8	9946	1189.2	2.874	5.5	1197.4	2.920	19.0	1205.6	2.993	33.2	1214.2	3.060
361	154.8	9937	1188.1	2.906	4.2	1196.4	2.949	17.6	1204.5	3.021	31.8	1213.0	3.089
360	152.9	9927	1187.1	2.938	2.9	1195.3	2.978	16.3	1203.4	3.050	30.3	1211.9	3.119
359	151.0	9917	1186.1	2.971	1.6	1194.3	3.007	14.9	1202.3	3.081	28.9	1210.9	3.148
358	149.1	9908	1185.0	3.005	0.4	1193.3	3.037	13.6	1201.2	3.111	27.4	1209.8	3.178
357	147.2	9898	1183.9	3.040	9992	1192.2	3.069	12.2	1200.2	3.141	26.0	1208.7	3.209
356	145.3	9889	1182.9	3.074	9983	1191.1	3.104	10.9	1199.1	3.171	24.6	1207.6	3.240
355	143.5	9880	1181.9	3.109	9974	1190.0	3.139	9.5	1198.1	3.201	23.2	1206.5	3.270
354	141.6	9870	1180.9	3.143	9963	1189.0	3.173	8.1	1197.0	3.232	21.8	1205.4	3.302
353	139.8	9860	1179.8	3.179	9954	1187.9	3.209	6.8	1196.0	3.264	20.4	1204.3	3.334
352	138.0	9851	1178.7	3.215	9945	1186.8	3.245	5.4	1195.0	3.296	19.0	1203.3	3.367
351	136.3	9841	1177.6	3.249	9934	1185.7	3.280	4.0	1193.9	3.328	17.5	1202.1	3.400
350	134.5	9832	1176.6	3.286	9925	1184.7	3.317	2.7	1192.8	3.360	16.0	1201.0	3.433
349	132.8	9822	1175.5	3.323	9915	1183.6	3.354	1 3	1191.7	3.392	14.6	1199.9	3.466
348	131.1	9813	1174.5	3.361	9906	1182.6	3.393	9999	1190.6	3.425	13.2	1198.8	3.499
347	129.4	9804	1173.5	3.399	9897	1181.6	3.431	9989	1189.6	3.463	11.8	1197.7	3.534
346	127.7	9795	1172.4	3.438	9887	1180.5	3.470	9979	1188.5	3.503	10.4	1196.7	3.570
345	126.0	9785	1171.3	3.477	9877	1179.4	3.510	9969	1187.4	5.543	8.9	1195.5	3.606
344	124.4	9776	1170.3	3.518	9868	1178.3	3.551	9959	1186.3	3.584	7.5	1194.4	3.641
343	122.7	9766	1169.2	3.561	9858	1177.2	3.593	9950	1185.2	3.627	6.0	1193.3	3.679
342	121.1	9757	1168.1	3.601	9849	1176.1	3.635	9940	1184.1	3.669	4.6	1192.2	3.716
341	119.5	9748	1167.1	3.643	9839	1175.1	3.677	9931	1183.0	3.711	3.2	1191.1	3.754
340	117.9	9739	1166.0	3.685	9830	1174.0	3.720	9921	1182.0	3.754	1.8	1190.1	3.792
339	116.3	9730	1164.9	3.729	9820	1172.9	3.764	9911	1180.9	3.799	0.3	1189.0	3.832
338	114.8	9720	1163.8	3.774	9810	1171.8	3.809	9901	1179.8	3.845	9992	1187.8	3.880
337	113.3	9710	1162.7	3.820	9801	1170.7	3.856	9891	1178.7	3.891	9982	1186.7	3.927
336	111.7	9701	1161.6	3.866	9791	1169.6	3.902	9882	1177.6	3.938	9972	1185.6	3.974
335	110.3	9692	1160.6	3.914	9782	1168.5	3.950	9872	1176.5	3.986	9962	1184.5	4.023
334	108.8	9683	1159.6	3.963	9773	1167.5	3.999	9863	1175.4	4.036	9953	1183.4	4.073
333	107.3	9674	1158.5	4.012	9763	1166.4	4.048	9853	1174.3	4.085	9943	1182.3	4.122
332	105.8	9664	1157.4	4.061	9754	1165.3	4.098	9843	1173.2	4.135	9933	1181.1	4.173
331	104.4	9655	1156.3	4.111	9745	1164.2	4.148	9834	1172.1	4.186	9923	1180.0	4.224
330	103.0	9646	1155.2	4.161	9736	1163.1	4.198	9825	1171.0	4.237	9914	1178.9	4.275
329	101.6	9637	1154.1	4.211	9726	1162.1	4.249	9815	1170.0	4.287	9904	1177.8	4.326
328	100.2	9629	1153.1	4.261	9718	1161.0	4.299	9806	1168.9	4.338	9895	1176.7	4.378
327	98.8	9620	1152.0	4.311	9708	1159.9	4.349	9797	1167.8	4.389	9885	1175.6	4.429
326	97.5	9610	1150.9	4.361	9699	1158.8	4.400	9787	1166.6	4.440	9876	1174.5	4.481
325	96.1	9601	1149.8	4.412	9689	1157.7	4.451	9777	1165.5	4.492	9866	1173.4	4.532

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.52			1.53			1.54			1.55		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
324	94.8	9239	1117.3	4.300	9327	1125.2	4.341	9415	1133.0	4.382	9503	1140.8	4.423
323	93.5	9231	1116.3	4.352	9319	1124.1	4.394	9407	1131.9	4.435	9495	1139.8	4.477
322	92.2	9223	1115.2	4.407	9311	1123.1	4.449	9398	1130.9	4.491	9486	1138.7	4.532
321	90.9	9215	1114.2	4.462	9302	1122.0	4.504	9389	1129.8	4.546	9477	1137.6	4.589
320	89.6	9207	1113.2	4.519	9294	1121.0	4.562	9382	1128.8	4.605	9469	1136.6	4.647
319	88.3	9199	1112.1	4.576	9286	1119.9	4.620	9373	1127.7	4.663	9460	1135.5	4.706
318	87.1	9190	1111.1	4.636	9277	1118.8	4.679	9364	1126.6	4.723	9451	1134.4	4.767
317	85.9	9182	1110.0	4.695	9269	1117.8	4.739	9355	1125.5	4.783	9442	1133.3	4.828
316	84.6	9173	1108.9	4.755	9260	1116.6	4.799	9346	1124.4	4.844	9433	1132.1	4.889
315	83.4	9166	1107.9	4.817	9252	1115.6	4.862	9338	1123.4	4.907	9425	1131.1	4.953
314	82.3	9157	1106.8	4.878	9243	1114.6	4.924	9330	1122.3	4.970	9416	1130.0	5.016
313	81.1	9149	1105.8	4.941	9235	1113.5	4.987	9321	1121.2	5.033	9407	1128.9	5.080
312	79.9	9141	1104.7	5.003	9227	1112.4	5.050	9313	1120.1	5.097	9399	1127.8	5.144
311	78.8	9133	1103.6	5.066	9219	1111.3	5.114	9304	1119.0	5.161	9390	1126.7	5.209
310	77.6	9125	1102.5	5.131	9210	1110.2	5.179	9295	1117.9	5.227	9381	1125.6	5.275
309	76.5	9116	1101.5	5.196	9201	1109.2	5.245	9287	1116.8	5.293	9372	1124.5	5.342
308	75.4	9109	1100.4	5.264	9194	1108.1	5.313	9279	1115.7	5.362	9364	1123.4	5.411
307	74.3	9100	1099.3	5.333	9185	1107.0	5.383	9270	1114.6	5.432	9355	1122.3	5.482
306	73.2	9093	1098.2	5.403	9177	1106.0	5.453	9262	1113.6	5.503	9347	1121.3	5.554
305	72.2	9084	1097.1	5.473	9169	1104.8	5.524	9253	1112.4	5.575	9337	1120.1	5.626
304	71.1	9076	1096.0	5.545	9160	1103.7	5.597	9244	1111.3	5.648	9329	1118.9	5.700
303	70.0	9068	1095.0	5.620	9152	1102.7	5.671	9236	1110.3	5.723	9320	1117.9	5.775
302	69.0	9059	1093.9	5.693	9143	1101.6	5.745	9227	1109.2	5.798	9311	1116.8	5.850
301	68.0	9052	1092.8	5.769	9136	1100.4	5.821	9219	1108.0	5.875	9303	1115.6	5.928
300	67.0	9043	1091.7	5.846	9127	1099.3	5.899	9210	1106.9	5.953	9294	1114.5	6.007
299	66.0	9036	1090.7	5.924	9119	1098.3	5.978	9203	1105.9	6.032	9286	1113.5	6.087
298	65.0	9027	1089.6	6.002	9111	1097.2	6.057	9194	1104.8	6.112	9277	1112.3	6.167
297	64.0	9020	1088.5	6.083	9103	1096.1	6.138	9186	1103.7	6.194	9269	1111.2	6.250
296	63.1	9011	1087.4	6.165	9094	1095.0	6.220	9177	1102.5	6.277	9260	1110.0	6.334
295	62.1	9004	1086.3	6.248	9086	1093.9	6.304	9169	1101.4	6.361	9252	1108.9	6.419
294	61.2	8995	1085.2	6.332	9077	1092.8	6.389	9160	1100.3	6.447	9242	1107.8	6.505
293	60.2	8987	1084.1	6.418	9070	1091.7	6.476	9152	1099.2	6.535	9234	1106.7	6.593
292	59.3	8980	1083.1	6.505	9062	1090.6	6.564	9144	1098.1	6.623	9226	1105.6	6.682
291	58.4	8972	1082.0	6.594	9054	1089.5	6.654	9136	1097.0	6.713	9218	1104.5	6.773
290	57.5	8963	1080.9	6.683	9045	1088.4	6.744	9127	1095.9	6.804	9209	1103.4	6.865
289	56.7	8956	1079.8	6.775	9037	1087.3	6.837	9119	1094.8	6.898	9201	1102.2	6.959
288	55.8	8947	1078.7	6.868	9029	1086.2	6.931	9110	1093.6	6.992	9192	1101.1	7.055
287	54.9	8940	1077.6	6.964	9021	1085.1	7.027	9102	1092.5	7.090	9183	1100.0	7.153
286	54.1	8932	1076.5	7.061	9013	1084.0	7.125	9094	1091.4	7.188	9175	1098.9	7.252
285	53.2	8924	1075.4	7.160	9005	1082.9	7.225	9086	1090.3	7.289	9167	1097.7	7.354
284	52.4	8916	1074.3	7.259	8996	1081.7	7.325	9077	1089.1	7.390	9158	1096.5	7.455
283	51.6	8908	1073.2	7.361	8988	1080.6	7.427	9069	1088.0	7.493	9150	1095.4	7.559
282	50.8	8900	1072.1	7.465	8980	1079.5	7.532	9061	1086.9	7.600	9141	1094.3	7.666
281	50.0	8892	1071.0	7.570	8973	1078.4	7.639	9053	1085.8	7.707	9133	1093.2	7.774
280	49.19	8885	1069.9	7.677	8965	1077.3	7.746	9045	1084.7	7.816	9125	1092.1	7.884
279	48.41	8876	1068.8	7.784	8956	1076.2	7.854	9036	1083.6	7.924	9116	1090.9	7.994
278	47.64	8868	1067.6	7.895	8948	1075.0	7.966	9028	1082.4	8.037	9107	1089.7	8.106
277	46.88	8860	1066.5	8.006	8940	1073.9	8.077	9020	1081.3	8.149	9099	1088.6	8.220

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.56			1.57			1.58			1.59		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
324	94.8	9591	1148.7	4.464	9679	1156.5	4.505	9767	1164.3	4.545	9855	1172.2	4.586
323	93.5	9583	1147.6	4.518	9670	1155.4	4.559	9758	1163.2	4.600	9846	1171.1	4.641
322	92.2	9573	1146.5	4.574	9661	1154.3	4.616	9749	1162.1	4.657	9836	1169.9	4.699
321	90.9	9564	1145.4	4.631	9652	1153.2	4.673	9739	1161.0	4.715	9827	1168.8	4.757
320	89.6	9556	1144.4	4.690	9643	1152.2	4.733	9730	1160.0	4.775	9818	1167.8	4.818
319	88.3	9547	1143.2	4.750	9634	1151.0	4.793	9721	1158.8	4.835	9808	1166.6	4.879
318	87.1	9538	1142.2	4.811	9625	1149.9	4.855	9711	1157.7	4.897	9798	1165.5	4.941
317	85.9	9528	1141.0	4.872	9615	1148.8	4.916	9702	1156.6	4.960	9788	1164.4	5.004
316	84.6	9519	1139.9	4.934	9606	1147.6	4.979	9692	1155.4	5.022	9779	1163.1	5.067
315	83.4	9511	1138.9	4.998	9597	1146.6	5.043	9684	1154.3	5.088	9770	1162.1	5.133
314	82.3	9502	1137.8	5.062	9588	1145.5	5.108	9674	1153.2	5.152	9760	1161.0	5.198
313	81.1	9493	1136.7	5.126	9579	1144.4	5.172	9665	1152.1	5.218	9750	1159.8	5.264
312	79.9	9484	1135.5	5.191	9570	1143.2	5.238	9656	1151.0	5.284	9742	1158.7	5.331
311	78.8	9475	1134.4	5.256	9561	1142.1	5.303	9646	1149.8	5.350	9732	1157.5	5.397
310	77.6	9466	1133.3	5.323	9552	1141.0	5.370	9637	1148.7	5.419	9722	1156.4	5.466
309	76.5	9457	1132.2	5.391	9542	1139.9	5.439	9627	1147.6	5.488	9713	1155.3	5.535
308	75.4	9449	1131.1	5.460	9534	1138.8	5.510	9619	1146.4	5.559	9704	1154.1	5.607
307	74.3	9439	1130.0	5.532	9524	1137.6	5.581	9609	1145.3	5.631	9694	1153.0	5.680
306	73.2	9431	1128.9	5.604	9516	1136.6	5.654	9600	1144.2	5.705	9685	1151.9	5.755
305	72.2	9422	1127.7	5.677	9506	1135.3	5.728	9591	1143.0	5.779	9675	1150.6	5.829
304	71.1	9413	1126.6	5.751	9497	1134.2	5.803	9581	1141.8	5.854	9666	1149.5	5.906
303	70.0	9404	1125.5	5.827	9488	1133.2	5.879	9573	1140.8	5.931	9657	1148.4	5.983
302	69.0	9395	1124.4	5.903	9479	1132.0	5.956	9563	1139.6	6.008	9647	1147.2	6.061
301	68.0	9387	1123.2	5.981	9471	1130.8	6.035	9554	1138.5	6.088	9638	1146.1	6.141
300	67.0	9378	1122.1	6.061	9461	1129.7	6.115	9545	1137.3	6.169	9628	1144.9	6.223
299	66.0	9369	1121.1	6.142	9453	1128.6	6.196	9536	1136.2	6.251	9620	1143.8	6.306
298	65.0	9360	1119.9	6.223	9443	1127.5	6.278	9527	1135.0	6.333	9610	1142.6	6.389
297	64.0	9352	1118.8	6.306	9435	1126.4	6.362	9518	1133.9	6.418	9601	1141.5	6.474
296	63.1	9343	1117.6	6.390	9426	1125.2	6.447	9508	1132.7	6.504	9591	1140.3	6.560
295	62.1	9334	1116.5	6.476	9417	1124.1	6.534	9500	1131.6	6.591	9582	1139.1	6.648
294	61.2	9325	1115.4	6.563	9407	1122.9	6.621	9490	1130.5	6.679	9572	1138.0	6.737
293	60.2	9317	1114.3	6.652	9399	1121.8	6.711	9481	1129.4	6.770	9564	1136.9	6.828
292	59.3	9308	1113.1	6.742	9390	1120.6	6.801	9473	1128.2	6.861	9555	1135.7	6.920
291	58.4	9300	1112.0	6.834	9382	1119.5	6.894	9464	1127.1	6.954	9546	1134.6	7.014
290	57.5	9291	1110.9	6.926	9372	1118.4	6.987	9454	1125.9	7.048	9536	1133.4	7.109
289	56.7	9282	1109.7	7.021	9364	1117.2	7.083	9445	1124.7	7.145	9527	1132.2	7.206
288	55.8	9273	1108.5	7.117	9355	1116.0	7.180	9436	1123.5	7.242	9517	1131.0	7.305
287	54.9	9265	1107.4	7.216	9346	1114.9	7.280	9427	1122.4	7.343	9508	1129.9	7.406
286	54.1	9256	1106.3	7.316	9337	1113.8	7.380	9418	1121.2	7.444	9499	1128.7	7.508
285	53.2	9248	1105.2	7.419	9329	1112.6	7.483	9410	1120.0	7.548	9490	1127.5	7.613
284	52.4	9239	1104.0	7.521	9319	1111.4	7.587	9400	1118.9	7.653	9481	1126.3	7.718
283	51.6	9230	1102.9	7.626	9311	1110.3	7.693	9391	1117.7	7.759	9472	1125.2	7.826
282	50.8	9222	1101.8	7 733	9302	1109.2	7.801	9382	1116.6	7.868	9463	1124.0	7.936
281	50.0	9213	1100.7	7.842	9293	1108.1	7.911	9374	1115.5	7.979	9454	1122.9	8.047
280	49.19	9205	1099.5	7.953	9285	1106.9	8.022	9365	1114.3	8.091	9445	1121.7	8.161
279	48.41	9195	1098.2	8.064	9275	1105.7	8.134	9355	1113.1	8.204	9435	1120.5	8.274
278	47.64	9187	1097.1	8.177	9267	1104.5	8.248	9347	1111.9	8.319	9426	1119.2	8.390
277	46.88	9179	1096.0	8.292	9258	1103.3	8.364	9338	1110.7	8.436	9417	1118.0	8.508

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.52			1.53			1.54			1.55		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
276	46.13	8853	1065.4	8.119	8932	1072.8	8.192	9011	1080.2	8.265	9091	1087.5	8.336
275	45.39	8845	1064.3	8.236	8924	1071.7	8.310	9003	1079.0	8.383	9083	1086.4	8.456
274	44.67	8837	1063.2	8.356	8916	1070.5	8.431	8995	1077.8	8.505	9074	1085.2	8.579
273	43.95	8829	1062.1	8.477	8908	1069.4	8.553	8987	1076.7	8.629	9066	1084.1	8.704
272	43.24	8822	1061.0	8.602	8900	1068.3	8.679	8979	1075.6	8.756	9058	1082.9	8.832
271	42.54	8814	1059.9	8.728	8892	1067.2	8.806	8971	1074.5	8.884	9049	1081.8	8.962
270	41.84	8806	1058.7	8.852	8884	1066.0	8.931	8963	1073.3	9.009	9041	1080.6	9.088
269	41.16	8798	1057.6	8.985	8876	1064.9	9.065	8955	1072.2	9.144	9033	1079.5	9.224
268	40.49	8790	1056.5	9.117	8868	1063.8	9.198	8946	1071.0	9.279	9024	1078.3	9.360
267	39.83	8782	1055.4	9.250	8860	1062.6	9.332	8938	1069.9	9.414	9016	1077.1	9.496
266	39.17	8774	1054.2	9.390	8851	1061.4	9.473	8929	1068.7	9.556	9007	1075.9	9.639
265	38.53	8767	1053.1	9.532	8844	1060.3	9.616	8922	1067.6	9.700	8999	1074.8	9.784
264	37.89	8759	1051.9	9.672	8836	1059.2	9.757	8914	1066.4	9.843	8991	1073.6	9.928
263	37.26	8751	1050.8	9.812	8828	1058.1	9.899	8906	1065.3	9.985	8983	1072.5	10.07
262	36.64	8743	1049.7	9.961	8820	1056.9	10.05	8897	1064.1	10.13	8975	1071.3	10.22
261	36.02	8735	1048.6	10.11	8812	1055.8	10.20	8889	1063.0	10.28	8966	1070.2	10.37
260	35.42	8728	1047.4	10.25	8804	1054.6	10.35	8881	1061.8	10.44	8958	1069.0	10.53
259	34.83	8720	1046.3	10.41	8796	1053.4	10.50	8873	1060.6	10.59	8949	1067.8	10.69
258	34.24	8712	1045.1	10.57	8788	1052.2	10.66	8865	1059.4	10.75	8941	1066.6	10.85
257	33.66	8705	1044.0	10.73	8781	1051.1	10.83	8857	1058.3	10.92	8933	1065.5	11.01
256	33.09	8697	1042.9	10.90	8773	1050.0	10.99	8849	1057.2	11.09	8925	1064.3	11.18
255	32.53	8689	1041.7	11.06	8765	1048.8	11.16	8841	1056.0	11.25	8917	1063.1	11.35
254	31.97	8681	1040.5	11.23	8757	1047.6	11.33	8832	1054.7	11.43	8908	1061.9	11.53
253	31.42	8673	1039.4	11.41	8749	1046.5	11.51	8824	1053.6	11.61	8900	1060.8	11.71
252	30.88	8666	1038.2	11.59	8741	1045.4	11.69	8817	1052.5	11.79	8892	1059.6	11.89
251	30.35	8658	1037.1	11.77	8733	1044.2	11.87	8808	1051.3	11.97	8884	1058.4	12.07
250	29.82	8650	1035.9	11.95	8725	1043.0	12.06	8800	1050.1	12.16	8875	1057.2	12.27
249	29.30	8643	1034.8	12.14	8718	1041.9	12.25	8792	1048.9	12.35	8867	1056.0	12.46
248	28.79	8635	1033.6	12.33	8710	1040.7	12.44	8784	1047.7	12.54	8859	1054.8	12.65
247	28.29	8628	1032.5	12.53	8702	1039.6	12.64	8777	1046.6	12.74	8851	1053.7	12.85
246	27.80	8620	1031.3	12.73	8694	1038.4	12.84	8768	1045.4	12.95	8843	1052.5	13.06
245	27.31	8612	1030.2	12.93	8686	1037.3	13.04	8760	1044.3	13.15	8835	1051.3	13.26
244	26.83	8604	1029.0	13.13	8679	1036.1	13.24	8753	1043.1	13.36	8827	1050.1	13.47
243	26.35	8597	1027.9	13.33	8671	1035.0	13.45	8745	1042.0	13.56	8819	1049.0	13.68
242	25.88	8589	1026.8	13.55	8663	1033.8	13.66	8737	1040.8	13.78	8811	1047.8	13.89
241	25.42	8581	1025.6	13.76	8655	1032.6	13.88	8729	1039.6	14.00	8802	1046.6	14.12
240	24.97	8574	1024.4	13.98	8647	1031.4	14.10	8721	1038.3	14.22	8794	1045.3	14.34
239	24.52	8566	1023.2	14.21	8639	1030.2	14.33	8713	1037.2	14.45	8786	1044.2	14.58
238	24.08	8559	1022.0	14.44	8632	1029.0	14.56	8705	1036.0	14.69	8778	1043.0	14.81
237	23.64	8551	1020.9	14.67	8624	1027.9	14.80	8697	1034.8	14.92	8770	1041.8	15.05
236	23.21	8543	1019.7	14.92	8616	1026.7	15.04	8689	1033.6	15.17	8762	1040.6	15.30
235	22.79	8535	1018.5	15.17	8608	1025.5	15.30	8681	1032.4	15.43	8754	1039.4	15.56
234	22.38	8528	1017.3	15.42	8601	1024.2	15.55	8673	1031.2	15.68	8746	1038.1	15.81
233	21.97	8521	1016.1	15.67	8593	1023.1	15.80	8666	1030.0	15.94	8738	1036.9	15.07
232	21.57	8513	1014.9	15.93	8585	1021.9	16.06	8657	1028.8	16.20	8729	1035.7	16.33
231	21.17	8505	1013.8	16.19	8577	1020.8	16.33	8649	1027.7	16.47	8722	1034.5	16.61
230	20.78	8498	1012.7	16.46	8570	1019.6	16.60	8642	1026.5	16.74	8714	1033.3	16.88
229	20.40	8490	1011.4	16.74	8562	1018.3	16.88	8633	1025.2	17.02	8705	1032.1	17.17

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.56			1.57			1.58			1.59		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
276	46.13	9170	1094.9	8.409	9250	1102.2	8.482	9329	1109.6	8.555	9408	1116.9	8.628
275	45.39	9162	1093.7	8.530	9241	1101.1	8.604	9320	1108.4	8.677	9400	1115.7	8.751
274	44.67	9153	1092.5	8.654	9232	1099.9	8.729	9312	1107.2	8.803	9391	1114.5	8.878
273	43.95	9145	1091.4	8.779	9224	1098.8	8.855	9303	1106.1	8.931	9382	1113.4	9.006
272	43.24	9136	1090.3	8.908	9215	1097.6	8.985	9294	1104.9	9.062	9373	1112.2	9.138
271	42.54	9128	1089.1	9.039	9206	1096.4	9.116	9285	1103.7	9.194	9364	1111.0	9.272
270	41.84	9119	1087.9	9.166	9198	1095.2	9.245	9276	1102.5	9.324	9355	1109.8	9.402
269	41.16	9111	1086.8	9.303	9189	1094.1	9.383	9267	1101.3	9.463	9346	1108.6	9.543
268	40.49	9102	1085.6	9.439	9180	1092.9	9.520	9258	1100.1	9.601	9336	1107.4	9.682
267	39.83	9094	1084.4	9.577	9172	1091.7	9.659	9250	1098.9	9.741	9328	1106.2	9.823
266	39.17	9085	1083.2	9.721	9162	1090.4	9.805	9240	1097.7	9.888	9318	1104.9	9.971
265	38.53	9077	1082.1	9.868	9155	1089.3	9.952	9232	1096.5	10.04	9310	1103.8	10.12
264	37.89	9069	1080.9	10.01	9146	1088.1	10.10	9223	1095.3	10.18	9301	1102.6	10.27
263	37.26	9060	1079.7	10.16	9137	1087.0	10.24	9215	1094.2	10.33	9292	1101.4	10.42
262	36.64	9052	1078.5	10.31	9129	1085.8	10.40	9206	1093.0	10.49	9283	1100.2	10.57
261	36.02	9043	1077.4	10.46	9120	1084.6	10.55	9197	1091.8	10.64	9274	1099.0	10.73
260	35.42	9035	1076.2	10.62	9111	1083.4	10.71	9188	1090.6	10.80	9265	1097.8	10.89
259	34.83	9026	1075.0	10.78	9103	1082.2	10.87	9179	1089.4	10.96	9256	1096.6	11.05
258	34.24	9017	1073.8	10.94	9094	1080.9	11.03	9170	1088.1	11.12	9247	1095.3	11.22
257	33.66	9010	1072.7	11.11	9086	1079.8	11.20	9162	1087.0	11.30	9238	1094.1	11.39
256	33.09	9001	1071.5	11.28	9077	1078.6	11.37	9153	1085.8	11.47	9229	1092.9	11.56
255	32.53	8993	1070.3	11.45	9068	1077.4	11.54	9144	1084.6	11.64	9220	1091.7	11.74
254	31.97	8984	1069.0	11.63	9060	1076.1	11.72	9135	1083.3	11.82	9211	1090.4	11.92
253	31.42	8975	1067.9	11.81	9051	1075.0	11.91	9127	1082.1	12.01	9202	1089.2	12.11
252	30.88	8967	1066.7	11.99	9043	1073.8	12.09	9118	1080.9	12.19	9194	1088.0	12.29
251	30.35	8959	1065.5	12.18	9034	1072.6	12.28	9109	1079.7	12.38	9185	1086.8	12.48
250	29.82	8950	1064.3	12.37	9025	1071.4	12.47	9101	1078.5	12.58	9176	1085.6	12.68
249	29.30	8942	1063.1	12.56	9017	1070.2	12.67	9092	1077.3	12.77	9167	1084.4	12.88
248	28.79	8934	1061.9	12.76	9009	1069.0	12.86	9084	1076.0	12.97	9158	1083.1	13.08
247	28.29	8926	1060.7	12.96	9001	1067.8	13.07	9075	1074.8	13.18	9150	1081.9	13.29
246	27.80	8917	1059.5	13.17	8992	1066.6	13.28	9066	1073.6	13.39	9141	1080.7	13.50
245	27.31	8909	1058.4	13.37	8983	1065.4	13.48	9058	1072.5	13.60	9132	1079.5	13.71
244	26.83	8901	1057.2	13.58	8975	1064.2	13.70	9049	1071.3	13.81	9124	1078.3	13.92
243	26.35	8893	1056.0	13.79	8967	1063.0	13.91	9041	1070.1	14.02	9114	1077.1	14.14
242	25.88	8885	1054.8	14.01	8958	1061.8	14.13	9032	1068.8	14.24	9106	1075.9	14.36
241	25.42	8876	1053.6	14.24	8950	1060.6	14.36	9023	1067.6	14.47	9097	1074.6	14.59
240	24.97	8868	1052.3	14.46	8942	1059.3	14.58	9015	1066.3	14.70	9089	1073.3	14.82
239	24.52	8859	1051.1	14.70	8933	1058.1	14.82	9006	1065.1	14.94	9080	1072.1	15.06
238	24.08	8851	1049.9	14.93	8925	1056.9	15.06	8998	1063.9	15.18	9071	1070.9	15.30
237	23.64	8843	1048.7	15.17	8916	1055.7	15.30	8989	1062.7	15.42	9062	1069.7	15.55
236	23.21	8835	1047.5	15.43	8908	1054.5	15.55	8981	1061.5	15.68	9054	1068.4	15.81
235	22.79	8826	1046.3	15.68	8899	1053.3	15.81	8972	1060.2	15.94	9044	1067.1	16.07
234	22.38	8818	1045.0	15.94	8891	1052.0	16.07	8963	1058.9	16.21	9036	1065.8	16.34
233	21.97	8810	1043.8	16.20	8883	1050.8	16.34	8955	1057.7	16.47	9028	1064.6	16.60
232	21.57	8802	1042.6	16.47	8874	1049.5	16.60	8946	1056.4	16.74	9018	1063.3	16.87
231	21.17	8794	1041.4	16.74	8866	1048.3	16.88	8938	1055.2	17.02	9010	1062.1	17.16
230	20.78	8786	1040.2	17.02	8858	1047.1	17.16	8930	1054.0	17.30	9002	1060.9	17.44
229	20.40	8777	1039.0	17.31	8849	1045.9	17.45	8921	1052.8	17.59	8992	1059.6	17.73

Temperatures, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.52			1.53			1.54			1.55		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
228	20.02	8482	1010.2	17.02	8553	1017.1	17.17	8625	1024.0	17.31	8697	1030.8	17.45
227	19.64	8475	1009.1	17.31	8546	1015.9	17.45	8618	1022.8	17.60	8689	1029.6	17.74
226	19.28	8468	1007.9	17.60	8540	1014.7	17.75	8611	1021.6	17.89	8682	1028.4	18.04
225	18.91	8459	1006.7	17.90	8531	1013.5	18.05	8602	1020.4	18.20	8673	1027.2	18.35
224	18.56	8452	1005.5	18.21	8523	1012.3	18.36	8594	1019.2	18.51	8665	1026.0	18.66
223	18.21	8445	1004.4	18.52	8515	1011.2	18.67	8586	1018.0	18.83	8657	1024.8	18.99
222	17.86	8437	1003.2	18.84	8508	1010.0	19.00	8579	1016.8	19.16	8649	1023.6	19.31
221	17.52	8430	1002.0	19.16	8500	1008.8	19.32	8571	1015.6	19.48	8642	1022.4	19.64
220	17.19	8422	1000.8	19.49	8493	1007.6	19.65	8563	1014.4	19.81	8634	1021.2	19.98
219	16.86	8414	999.6	19.82	8484	1006.4	19.99	8555	1013.1	20.15	8625	1019.9	20.32
218	16.54	8406	998.3	20.17	8477	1005.1	20.34	8547	1011.8	20.50	8617	1018.6	20.67
217	16.22	8399	997.1	20.52	8469	1003.9	20.69	8539	1010.6	20.86	8609	1017.4	21.03
216	15.90	8392	995.9	20.88	8461	1002.7	21.05	8531	1009.4	21.23	8601	1016.2	21.40
215	15.60	8384	994.7	21.25	8454	1001.5	21.42	8524	1008.2	21.60	8593	1015.0	21.78
214	15.29	8377	993.5	21.62	8446	1000.3	21.80	8516	1007.0	21.98	8585	1013.7	22.16
213	14.99	8369	992.3	22.00	8438	999.1	22.18	8508	1005.8	22.37	8577	1012.5	22.55
212	14.70	8361	991.1	22.39	8431	997.9	22.58	8500	1004.6	22.76	8569	1011.3	22.95
211	14.41	8354	989.9	22.80	8424	996.7	22.99	8493	1003.4	23.18	8562	1010.1	23.36
210	14.13	8347	988.7	23.20	8416	995.4	23.40	8485	1002.1	23.59	8554	1008.8	23.78
209	13.85	8340	987.5	23.62	8409	994.2	23.81	8478	1000.9	24.01	8546	1007.5	24.20
208	13.57	8332	986.3	24.05	8401	993.0	24.25	8470	999.6	24.44	8538	1006.3	24.64
207	13.30	8325	985.1	24.48	8393	991.7	24.68	8462	998.4	24.89	8530	1005.1	25.09
206	13.03	8317	983.8	24.93	8385	990.5	25.14	8454	997.2	25.34	8522	1003.8	25.55
205	12.77	8309	982.6	25.39	8378	989.3	25.60	8446	995.9	25.81	8514	1002.6	26.02
204	12.51	8302	981.4	25.86	8370	988.0	26.07	8438	994.7	26.28	8506	1001.3	26.50
203	12.26	8294	980.2	26.33	8362	986.8	26.55	8430	993.4	26.76	8498	1000.1	26.98
202	12.01	8287	979.0	26.83	8355	985.6	27.05	8423	992.2	27.26	8491	998.9	27.48
201	11.77	8280	977.8	27.31	8347	984.4	27.54	8415	991.0	27.76	8483	997.6	27.98
200	11.53	8272	976.5	27.81	8340	983.1	28.04	8407	989.7	28.26	8475	996.3	28.49
199	11.29	8265	975.3	28.32	8332	981.9	28.55	8399	988.5	28.78	8467	995.1	29.01
198	11.06	8257	974.1	28.84	8325	980.7	29.08	8392	987.3	29.31	8459	993.9	29.55
197	10.83	8250	972.8	29.38	8317	979.4	29.62	8384	985.9	29.85	8451	992.5	30.09
196	10.61	8242	971.5	29.93	8309	978.1	30.17	8376	984.7	30.41	8443	991.2	30.65
195	10.39	8235	970.4	30.49	8302	976.9	30.74	8368	983.4	30.99	8435	990.0	31.24
194	10.17	8227	969.1	31.07	8294	975.6	31.33	8360	982.2	31.58	8427	988.7	31.83
193	9.96	8220	967.9	31.67	8286	974.4	31.93	8353	981.0	32.18	8419	987.5	32.44
192	9.75	8212	966.7	32.28	8278	973.2	32.54	8345	979.7	32.80	8411	986.2	33.06
191	9.54	8204	965.4	32.91	8270	971.9	33.17	8336	978.4	33.44	8403	984.9	33.70
190	9.34	8197	964.2	33.54	8263	970.7	33.81	8329	977.2	34.08	8395	983.7	34.35
189	9.14	8190	963.0	34.19	8256	969.5	34.47	8321	976.0	34.74	8387	982.4	35.02
188	8.95	8182	961.7	34.85	8247	968.2	35.13	8313	974.7	35.41	8379	981.1	35.69
187	8.76	8174	960.5	35.52	8240	967.0	35.80	8306	973.4	36.09	8371	979.9	36.37
186	8.57	8166	959.2	36.20	8232	965.7	36.49	8297	972.1	36.78	8363	978.6	37.07
185	8.38	8159	958.0	36.90	8224	964.5	37.20	8290	970.9	37.49	8355	977.4	37.79
184	8.20	8151	956.7	37.63	8216	963.2	37.93	8282	969.6	38.24	8347	976.0	38.54
183	8.02	8144	955.5	38.37	8209	961.9	38.68	8274	968.4	38.99	8339	974.8	39.29
182	7.85	8137	954.3	39.15	8202	960.7	39.46	8267	967.1	39.77	8332	973.5	40.08
181	7.68	8130	953.0	39.94	8194	959.4	40.26	8259	965.8	40.58	8324	972.2	40.90

Temperatures, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.56			1.57			1.58			1.59		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
228	20.02	8768	1037.7	17.60	8840	1044.6	17.74	8912	1051.5	17.89	8983	1058.3	18.03
227	19.64	8761	1036.5	17.89	8832	1043.4	18.04	8904	1050.3	18.18	8975	1057.1	18.33
226	19.28	8754	1035.3	18.19	8825	1042.2	18.34	8896	1049.0	18.49	8968	1055.9	18.63
225	18.91	8744	1034.1	18.50	8815	1041.0	18.65	8887	1047.8	18.80	8958	1054.6	18.95
224	18.56	8736	1032.8	18.82	8807	1039.7	18.97	8878	1046.5	19.12	8949	1053.3	19.28
223	18.21	8728	1031.6	19.14	8799	1038.5	19.30	8870	1045.3	19.45	8941	1052.1	19.61
222	17.86	8720	1030.4	19.47	8791	1037.2	19.63	8862	1044.0	19.79	8932	1050.9	19.95
221	17.52	8712	1029.2	19.80	8783	1036.0	19.96	8853	1042.8	20.12	8924	1049.7	20.28
220	17.49	8704	1028.0	20.14	8774	1034.8	20.30	8845	1041.6	20.47	8915	1048.4	20.63
219	16.86	8695	1026.7	20.49	8765	1033.5	20.65	8836	1040.3	20.82	8906	1047.1	20.98
218	16.54	8687	1025.4	20.84	8757	1032.2	21.01	8827	1039.0	21.18	8897	1045.8	21.34
217	16.22	8679	1024.2	21.20	8749	1031.0	21.37	8819	1037.7	21.54	8889	1044.5	21.72
216	15.90	8671	1022.9	21.57	8741	1029.7	21.75	8811	1036.4	21.92	8880	1043.2	22.09
215	15.60	8663	1021.7	21.95	8733	1028.5	22.13	8802	1035.2	22.30	8872	1042.0	22.48
214	15.29	8655	1020.5	22.34	8724	1027.2	22.52	8794	1033.9	22.70	8863	1040.7	22.88
213	14.99	8647	1019.3	22.73	8716	1026.0	22.91	8785	1032.7	23.10	8855	1039.4	23.28
212	14.70	8638	1018.0	23.13	8708	1024.7	23.32	8777	1031.4	23.50	8846	1038.1	23.69
211	14.41	8631	1016.8	23.55	8700	1023.5	23.74	8769	1030.2	23.93	8838	1036.9	24.12
210	14.13	8623	1015.5	23.97	8692	1022.2	24.16	8761	1028.9	24.35	8830	1035.6	24.55
209	13.85	8615	1014.2	24.40	8684	1020.9	24.59	8753	1027.6	24.79	8822	1034.3	24.98
208	13.57	8607	1013.0	24.84	8676	1019.7	25.04	8744	1026.3	25.24	8813	1033.0	25.43
207	13.30	8599	1011.7	25.29	8667	1018.4	25.49	8736	1025.1	25.69	8804	1031.7	25.89
206	13.03	8590	1010.5	25.75	8659	1017.1	25.96	8727	1023.8	26.16	8796	1030.4	26.37
205	12.77	8582	1009.2	26.23	8651	1015.9	26.44	8719	1022.5	26.64	8787	1029.1	26.85
204	12.51	8574	1007.9	26.71	8642	1014.6	26.92	8710	1021.2	27.13	8778	1027.8	27.34
203	12.26	8566	1006.7	27.20	8634	1013.3	27.41	8702	1019.9	27.63	8770	1026.6	27.84
202	12.01	8558	1005.5	27.70	8626	1012.1	27.92	8694	1018.7	28.14	8762	1025.3	28.36
201	11.77	8550	1004.2	28.21	8618	1010.8	28.43	8685	1017.4	28.65	8753	1024.0	28.88
200	11.53	8542	1002.9	28.72	8610	1009.5	28.94	8677	1016.1	29.17	8745	1022.7	29.40
199	11.29	8534	1001.7	29.25	8601	1008.3	29.48	8669	1014.8	29.71	8736	1021.4	29.94
198	11.06	8526	1000.4	29.78	8593	1007.0	30.02	8661	1013.6	30.25	8728	1020.2	30.49
197	10.83	8518	999.1	30.33	8585	1005.6	30.57	8652	1012.2	30.81	8719	1018.7	31.05
196	10.61	8509	997.8	30.90	8576	1004.3	31.14	8643	1010.9	31.38	8710	1017.4	31.63
195	10.39	8502	996.5	31.48	8569	1003.1	31.73	8635	1009.6	31.98	8702	1016.2	32.22
194	10.17	8494	995.2	32.08	8560	1001.8	32.33	8627	1008.3	32.58	8693	1014.9	32.83
193	9.96	8486	994.0	32.70	8552	1000.5	32.95	8619	1007.1	33.21	8685	1013.6	33.46
192	9.75	8477	992.7	33.32	8544	999.2	33.58	8610	1005.7	33.85	8676	1012.3	34.11
191	9.54	8469	991.4	33.97	8535	997.9	34.23	8601	1004.4	34.50	8667	1010.9	34.76
190	9.34	8461	990.2	34.62	8527	996.7	34.89	8593	1003.2	35.16	8659	1009.7	35.43
189	9.14	8453	988.9	35.29	8519	995.4	35.57	8585	1001.9	35.84	8651	1008.4	36.12
188	8.95	8445	987.6	35.97	8510	994.1	36.25	8576	1000.6	36.53	8642	1007.0	36.81
187	8.76	8437	986.4	36.66	8502	992.8	36.94	8568	999.3	37.23	8634	1005.8	37.51
186	8.57	8428	985.1	37.36	8494	991.5	37.65	8559	998.0	37.94	8625	1004.4	38.23
185	8.38	8420	983.8	38.08	8486	990.2	38.38	8551	996.7	38.68	8616	1003.1	38.97
184	8.20	8412	982.5	38.84	8477	988.9	39.14	8542	995.3	39.44	8607	1001.8	39.74
183	8.02	8404	981.2	39.60	8469	987.6	39.91	8534	994.1	40.21	8599	1000.5	40.52
182	7.85	8397	979.9	40.40	8461	986.4	40.71	8526	992.8	41.02	8591	999.2	41.33
181	7.68	8389	978.6	41.21	8453	985.0	41.53	8518	991.4	41.85	8583	997.8	42.17

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.52			1.53			1.54			1.55		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
180	7.51	8122	951.7	40.77	8186	958.1	41.09	8251	964.5	41.42	8316	970.8	41.74
179	7.35	8114	950.4	41.55	8179	956.8	41.88	8243	963.2	42.21	8308	969.6	42.54
178	7.19	8107	949.2	42.40	8171	955.6	42.74	8236	961.9	43.07	8300	968.3	43.41
177	7.03	8100	947.9	43.25	8164	954.3	43.59	8228	960.7	43.94	8292	967.0	44.28
176	6.87	8092	946.6	44.10	8156	953.0	44.45	8220	959.3	44.80	8284	965.7	45.15
175	6.71	8084	945.4	45.03	8148	951.7	45.39	8212	958.1	45.74	8276	964.4	46.10
174	6.56	8077	944.1	45.96	8141	950.5	46.32	8205	956.8	46.68	8268	963.1	47.05
173	6.42	8070	942.9	46.88	8133	949.2	47.25	8197	955.5	47.62	8261	961.9	47.99
172	6.27	8062	941.6	47.81	8126	947.9	48.19	8189	954.3	48.56	8253	960.6	48.94
171	6.13	8054	940.3	48.81	8117	946.6	49.19	8181	952.9	49.58	8244	959.2	49.96
170	5.99	8047	939.0	49.89	8110	945.3	50.3	8173	951.6	50.7	8236	957.9	51.1
169	5.85	8039	937.8	51.0	8102	944.1	51.4	8165	950.3	51.8	8228	956.6	52.2
168	5.72	8032	936.5	52.0	8095	942.8	52.5	8158	949.1	52.9	8221	955.3	53.3
167	5.59	8024	935.2	53.1	8087	941.5	53.5	8150	947.8	54.0	8212	954.0	54.4
166	5.46	8017	934.0	54.3	8079	940.2	54.7	8142	946.5	55.1	8205	952.7	55.5
165	5.33	8009	932.7	55.3	8072	938.9	55.8	8134	945.2	56.2	8197	951.4	56.6
164	5.21	8002	931.4	56.5	8064	937.6	56.9	8127	943.9	57.4	8189	950.1	57.8
163	5.09	7994	930.1	57.6	8057	936.3	58.1	8119	942.6	58.5	8181	948.8	59.0
162	4.969	7987	928.8	58.9	8049	935.0	59.3	8111	941.2	59.8	8173	947.5	60.2
161	4.852	7979	927.6	60.2	8041	933.8	60.6	8103	940.0	61.1	8165	946.2	61.6
160	4.738	7972	926.3	61.5	8034	932.5	62.0	8096	938.7	62.5	8157	944.9	63.0
159	4.626	7964	925.0	62.8	8026	931.2	63.3	8088	937.4	63.8	8150	943.5	64.3
158	4.517	7957	923.7	64.2	8018	929.9	64.7	8080	936.0	65.2	8142	942.2	65.7
157	4.409	7950	922.4	65.7	8011	928.6	66.2	8072	934.8	66.7	8134	940.9	67.2
156	4.303	7942	921.1	67.1	8003	927.3	67.6	8065	933.4	68.1	8126	939.6	68.7
155	4.200	7934	919.8	68.5	7995	926.0	69.1	8056	932.1	69.6	8118	938.3	70.1
154	4.099	7926	918.5	70.1	7987	924.6	70.6	8048	930.8	71.1	8109	936.9	71.7
153	4.000	7919	917.2	71.6	7980	923.4	72.1	8041	929.5	72.7	8102	935.6	73.2
152	3.903	7911	915.9	73.2	7972	922.0	73.7	8033	928.2	74.3	8093	934.3	74.9
151	3.808	7903	914.6	74.8	7964	920.7	75.4	8024	926.8	76.0	8085	932.9	76.6
150	3.715	7896	913.3	76.5	7957	919.4	77.1	8017	925.5	77.7	8078	931.6	78.3
149	3.624	7888	912.0	78.3	7949	918.1	78.8	8009	924.2	79.4	8069	930.3	80.0
148	3.535	7881	910.7	80.1	7941	916.8	80.7	8002	922.9	81.3	8062	929.0	81.9
147	3.447	7873	909.4	81.9	7933	915.5	82.5	7993	921.5	83.1	8053	927.6	83.8
146	3.361	7866	908.1	83.8	7926	914.2	84.4	7986	920.2	85.0	8046	926.3	85.7
145	3.278	7858	906.8	85.6	7917	912.8	86.3	7977	918.9	87.0	8037	924.9	87.6
144	3.196	7850	905.5	87.6	7910	911.5	88.3	7970	917.6	88.9	8029	923.6	89.6
143	3.116	7842	904.1	89.6	7902	910.2	90.3	7961	916.2	91.0	8021	922.2	91.7
142	3.037	7835	902.8	91.7	7894	908.9	92.4	7954	914.9	93.1	8013	920.9	93.8
141	2.960	7827	901.5	93.9	7887	907.5	94.6	7946	913.5	95.3	8005	919.6	96.0
140	2.885	7820	900.2	96.0	7879	906.2	96.8	7938	912.2	97.5	7997	918.2	98.2
139	2.812	7812	898.9	98.3	7871	904.9	99.0	7930	910.8	99.8	7989	916.8	100.5
138	2.740	7805	897.6	100.6	7864	903.5	101.4	7923	909.5	102.1	7982	915.5	102.9
137	2.669	7797	896.2	103.0	7855	902.2	103.8	7914	908.1	104.5	7973	914.1	105.3
136	2.600	7789	894.9	105.5	7848	900.8	106.3	7907	906.8	107.1	7965	912.7	107.8
135	2.533	7782	893.6	108.0	7840	899.5	108.8	7899	905.5	109.6	7957	911.4	110.4
134	2.467	7774	892.2	110.5	7832	898.1	111.4	7890	904.1	112.2	7949	910.0	113.0
133	2.403	7766	890.9	113.2	7825	896.8	114.1	7883	902.7	114.9	7941	908.6	115.8

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.56			1.57			1.58			1.59		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
180	7.51	8380	977.2	42.07	8445	983.6	42.39	8509	990.0	42.72	8574	996.4	43.04
179	7.35	8372	976.0	42.87	8437	982.3	43.20	8501	988.7	43.53	8566	995.1	43.86
178	7.19	8364	974.7	43.75	8429	981.1	44.08	8493	987.4	44.42	8557	993.8	44.76
177	7.03	8357	973.4	44.62	8421	979.8	44.97	8485	986.1	45.31	8549	992.5	45.65
176	6.87	8348	972.1	45.50	8412	978.4	45.85	8476	984.8	46.19	8540	991.1	46.54
175	6.71	8340	970.8	46.45	8404	977.1	46.81	8468	983.5	47.17	8532	989.8	47.52
174	6.56	8332	969.5	47.41	8396	975.8	47.77	8460	982.1	48.14	8524	988.5	48.50
173	6.42	8324	968.2	48.36	8388	974.5	48.73	8452	980.8	49.10	8515	987.2	49.47
172	6.27	8316	966.9	49.32	8380	973.2	49.69	8443	979.5	50.1	8507	985.8	50.4
171	6.13	8308	965.5	50.3	8371	971.8	50.7	8434	978.1	51.1	8498	984.4	51.5
170	5.99	8300	964.2	51.5	8363	970.5	51.8	8426	976.8	52.2	8489	983.1	52.6
169	5.85	8291	962.9	52.6	8355	969.2	53.0	8418	975.5	53.4	8481	981.8	53.8
168	5.72	8284	961.6	53.7	8347	967.9	54.1	8410	974.2	54.5	8473	980.4	54.9
167	5.59	8275	960.3	54.8	8338	966.6	55.2	8401	972.8	55.6	8464	979.1	56.0
166	5.46	8267	959.0	56.0	8330	965.2	56.4	8393	971.5	56.8	8455	977.7	57.2
165	5.33	8259	957.7	57.1	8322	963.9	57.5	8385	970.1	57.9	8447	976.4	58.4
164	5.21	8251	956.3	58.3	8314	962.6	58.7	8376	968.8	59.1	8439	975.0	59.6
163	5.09	8243	955.0	59.4	8306	961.2	59.9	8368	967.5	60.3	8430	973.7	60.8
162	4.969	8235	953.7	60.7	8297	959.9	61.2	8359	966.1	61.6	8421	972.3	62.1
161	4.852	8227	952.4	62.0	8289	958.6	62.5	8351	964.8	63.0	8413	971.0	63.4
160	4.738	8219	951.1	63.5	8281	957.3	63.9	8343	963.5	64.4	8405	969.7	64.9
159	4.626	8211	949.7	64.8	8273	955.9	65.3	8335	962.1	65.8	8396	968.3	66.2
158	4.517	8203	948.4	66.2	8265	954.6	66.7	8326	960.7	67.2	8388	966.9	67.7
157	4.409	8195	947.1	67.7	8257	953.3	68.2	8318	959.4	68.7	8380	965.6	69.2
156	4.303	8187	945.8	69.2	8248	951.9	69.7	8310	958.1	70.2	8371	964.2	70.7
155	4.200	8179	944.4	70.7	8240	950.5	71.2	8301	956.7	71.7	8362	962.8	72.3
154	4.099	8170	943.0	72.2	8231	949.2	72.8	8293	955.3	73.3	8354	961.5	73.8
153	4.000	8163	941.7	73.8	8224	947.9	74.3	8284	954.0	74.9	8345	960.1	75.4
152	3.903	8154	940.4	75.4	8215	946.5	76.0	8276	952.6	76.5	8336	958.7	77.1
151	3.808	8146	939.0	77.1	8206	945.1	77.7	8267	951.2	78.3	8328	957.3	78.9
150	3.715	8138	937.7	78.9	8199	943.8	79.4	8259	949.9	80.0	8320	956.0	80.6
149	3.624	8130	936.3	80.6	8190	942.4	81.2	8250	948.5	81.8	8311	954.6	82.4
148	3.535	8122	935.0	82.5	8182	941.1	83.1	8243	947.2	83.7	8303	953.3	84.4
147	3.447	8114	933.7	84.4	8174	939.7	85.0	8234	945.8	85.6	8294	951.8	86.3
146	3.361	8106	932.3	86.3	8165	938.4	87.0	8225	944.4	87.6	8285	950.5	88.2
145	3.278	8097	930.9	88.3	8157	937.0	88.9	8217	943.0	89.6	8276	949.1	90.2
144	3.196	8089	929.6	90.3	8149	935.7	90.9	8208	941.7	91.6	8268	947.7	92.3
143	3.116	8081	928.2	92.4	8140	934.3	93.0	8200	940.3	93.7	8259	946.3	94.4
142	3.037	8073	926.9	94.5	8132	932.9	95.2	8192	938.9	95.9	8251	944.9	96.6
141	2.960	8065	925.6	96.7	8124	931.6	97.4	8183	937.6	98.1	8243	943.6	98.8
140	2.885	8056	924.2	98.9	8115	930.2	99.7	8175	936.1	100.4	8234	942.1	101.1
139	2.812	8048	922.8	101.3	8107	928.8	102.0	8166	934.8	102.8	8226	940.8	103.5
138	2.740	8041	921.5	103.6	8099	927.4	104.4	8158	933.4	105.2	8217	939.4	105.9
137	2.669	8032	920.1	106.1	8091	926.0	106.9	8149	932.0	107.7	8208	938.0	108.4
136	2.600	8024	918.7	108.6	8083	924.7	109.4	8141	930.6	110.2	8200	936.6	111.0
135	2.533	8016	917.3	111.3	8075	923.3	112.1	8133	929.2	112.9	8192	935.2	113.7
134	2.467	8007	915.9	113.9	8066	921.9	114.7	8124	927.8	115.5	8182	933.7	116.4
133	2.403	7999	914.6	116.6	8058	920.5	117.5	8116	926.4	118.3	8174	932.3	119.2

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.52			1.53			1.54			1.55		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
132	2.341	7759	889.5	116.0	7817	895.4	116.9	7875	901.4	117.7	7933	907.3	118.6
131	2.280	7751	888.2	118.7	7809	894.1	119.6	7867	900.0	120.5	7925	905.9	121.4
130	2.220	7744	886.9	121.7	7802	892.8	122.6	7860	898.7	123.5	7917	904.6	124.4
129	2.161	7736	885.5	124.6	7794	891.4	125.6	7852	897.3	126.5	7909	903.2	127.4
128	2.103	7729	884.2	127.7	7786	890.1	128.6	7844	895.9	129.6	7901	901.8	130.5
127	2.047	7721	882.9	130.8	7778	888.8	131.8	7836	894.6	132.7	7893	900.5	133.7
126	1.992	7713	881.5	134.1	7770	887.4	135.0	7828	893.2	136.0	7885	899.1	137.0
125	1.938	7705	880.2	137.4	7763	886.1	138.4	7820	891.9	139.4	7877	897.8	140.4
124	1.886	7698	878.8	140.8	7755	884.6	141.8	7812	890.5	142.9	7869	896.3	143.9
123	1.835	7690	877.5	144.3	7747	883.3	145.4	7804	889.1	146.5	7861	895.0	147.5
122	1.785	7682	876.1	148.0	7739	881.9	149.1	7796	887.7	150.2	7853	893.5	151.3
121	1.737	7675	874.8	151.8	7732	880.6	152.9	7788	886.4	154.1	7845	892.2	155.2
120	1.689	7667	873.4	155.6	7724	879.2	156.8	7780	885.0	157.9	7837	890.8	159.1
119	1.642	7659	872.1	159.6	7716	877.9	160.8	7772	883.7	162.0	7828	889.4	163.1
118	1.597	7652	870.7	163.7	7708	876.5	164.9	7764	882.3	166.2	7821	888.0	167.4
117	1.552	7644	869.3	168.0	7700	875.1	169.2	7756	880.9	170.5	7812	886.6	171.7
116	1.509	7636	867.9	172.3	7692	873.7	173.6	7748	879.4	174.9	7804	885.2	176.1
115	1.467	7628	866.6	176.8	7684	872.4	178.1	7740	878.1	179.4	7796	883.8	180.7
114	1.426	7620	865.2	181.4	7676	871.0	182.7	7732	876.7	184.0	7788	882.4	185.3
113	1.386	7612	863.9	186.0	7668	869.6	187.4	7724	875.3	188.8	7779	881.0	190.1
112	1.347	7605	862.5	190.9	7660	868.2	192.3	7716	873.9	193.7	7771	879.6	195.1
111	1.308	7597	861.2	196.0	7652	866.8	207.4	7707	872.5	198.8	7763	878.2	200.3
110	1.271	7589	859.8	201.3	7644	865.4	202.7	7699	871.1	204.2	7755	876.8	205.7
109	1.235	7581	858.4	206.7	7636	864.1	208.2	7691	869.7	209.7	7746	875.4	211.2
108	1.200	7573	857.0	212.2	7629	862.7	213.7	7684	868.3	215.3	7739	874.0	216.8
107	1.165	7565	855.6	218.0	7620	861.3	219.6	7675	866.9	221.2	7730	872.6	222.8
106	1.131	7558	854.2	224.0	7612	859.9	225.6	7667	865.5	227.3	7722	871.2	228.9
105	1.098	7550	852.8	230.1	7605	858.5	231.8	7659	864.1	233.5	7714	869.8	235.1
104	1.066	7542	851.4	236.4	7596	857.1	238.1	7651	862.7	239.9	7705	868.3	241.5
103	1.035	7534	850.1	242.9	7589	855.7	244.7	7643	861.3	246.4	7697	866.9	248.2
102	1.005	7526	848.7	249.6	7581	854.3	251.4	7635	859.9	253.2	7689	865.5	255.0
101	0.975	7519	847.3	256.5	7573	852.9	258.3	7627	858.5	260.2	7681	864.1	262.0
100	0.946	7511	845.9	263.5	7565	851.5	265.4	7619	857.1	267.3	7673	862.7	269.2
99	0.918	7503	844.5	270.8	7557	850.1	272.7	7611	855.7	274.7	7665	861.3	276.6
98	0.891	7495	843.1	278.3	7549	848.7	280.3	7603	854.2	282.3	7656	859.8	284.3
97	0.864	7487	841.8	286.1	7541	847.4	288.1	7595	852.9	290.2	7648	858.5	292.2
96	0.838	7480	840.4	294.2	7533	846.0	296.3	7587	851.5	298.4	7640	857.1	300.5
95	0.813	7472	839.0	302.5	7525	844.6	304.6	7579	850.1	306.8	7632	855.7	308.9
94	0.788	7464	837.6	311.0	7517	843.1	313.2	7571	848.7	315.5	7624	854.2	317.7
93	0.764	7456	836.2	319.9	7509	841.7	322.2	7563	847.3	324.5	7616	852.8	326.8
92	0.741	7448	834.8	329.2	7501	840.3	331.6	7554	845.8	333.9	7607	851.3	336.2
91	0.718	7440	833.4	338.8	7493	838.9	341.2	7546	844.4	343.7	7599	849.9	346.1
90	0.696	7433	832.0	348.7	7485	837.5	351.2	7538	843.0	353.7	7591	848.4	356.2
89	0.675	7425	830.6	358.9	7477	836.1	361.5	7530	841.6	364.0	7583	847.0	366.5
88	0.654	7417	829.1	369.4	7469	834.6	372.0	7522	840.1	374.6	7574	845.5	377.2
87	0.633	7409	827.7	380.1	7462	833.2	382.8	7514	838.7	385.5	7567	844.1	388.2
86	0.613	7401	826.3	390.8	7454	831.8	393.5	7506	837.2	396.3	7558	842.7	399.1
85	0.594	7393	824.9	402.2	7446	830.3	405.0	7498	835.8	407.9	7550	841.2	410.7

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.56			1.57			1.58			1.59		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
132	2.341	7991	913.2	119.5	8049	919.1	120.3	8108	925.0	121.2	8166	930.9	122.1
131	2.280	7983	911.8	122.3	8041	917.7	123.2	8099	923.6	124.1	8157	929.5	125.0
130	2.220	7975	910.4	125.3	8033	916.3	126.2	8091	922.2	127.1	8149	928.1	128.0
129	2.161	7967	909.1	128.3	8025	915.0	129.3	8083	920.8	130.2	8140	926.7	131.1
128	2.103	7959	907.7	131.5	8017	913.6	132.4	8074	919.4	133.4	8132	925.3	134.3
127	2.047	7951	906.3	134.7	8008	912.2	135.7	8066	918.0	136.6	8123	923.9	137.6
126	1.992	7942	904.9	138.0	8000	910.8	139.0	8057	916.6	140.0	8115	922.5	141.0
125	1.938	7934	903.6	141.5	7991	909.4	142.5	8049	915.3	143.5	8106	921.1	144.5
124	1.886	7926	902.1	145.0	7983	908.0	146.0	8040	913.8	147.1	8097	919.6	148.1
123	1.835	7918	900.8	148.6	7975	906.6	149.7	8032	912.5	150.8	8088	918.3	151.8
122	1.785	7910	899.3	152.4	7966	905.1	153.5	8023	911.0	154.6	8080	916.8	155.7
121	1.737	7902	898.0	156.3	7958	903.8	157.4	8015	909.6	158.5	8072	915.4	159.7
120	1.689	7893	896.6	160.2	7950	902.4	161.4	8007	908.2	162.5	8063	914.0	163.7
119	1.642	7885	895.2	164.3	7941	901.0	165.5	7998	906.8	166.7	8054	912.6	167.8
118	1.597	7877	893.8	168.6	7933	899.6	169.8	7990	905.4	171.0	8046	911.1	172.2
117	1.552	7869	892.4	172.9	7925	898.2	174.2	7981	903.9	175.4	8037	909.7	176.7
116	1.509	7860	890.9	177.4	7916	896.7	178.7	7972	902.4	179.9	8028	908.2	181.2
115	1.467	7852	889.6	182.0	7908	895.3	183.3	7964	901.0	184.6	8020	906.8	185.9
114	1.426	7843	888.2	186.7	7899	893.9	188.0	7955	899.6	189.3	8011	905.4	190.7
113	1.386	7835	886.8	191.5	7891	892.5	192.8	7946	898.2	194.2	8002	904.0	195.6
112	1.347	7827	885.4	196.5	7882	891.1	197.9	7938	896.8	199.3	7993	902.5	200.7
111	1.308	7818	884.0	201.7	7874	889.7	203.1	7929	895.4	204.6	7984	901.1	206.0
110	1.271	7810	882.5	207.1	7866	888.2	208.6	7921	893.9	210.1	7976	899.6	211.5
109	1.235	7801	881.1	212.7	7857	886.8	214.2	7912	892.5	215.7	7967	898.2	217.2
108	1.200	7794	879.7	218.4	7849	885.4	219.9	7904	891.0	221.5	7959	896.7	223.0
107	1.165	7785	878.3	224.4	7840	884.0	225.9	7895	889.6	227.5	7950	895.3	229.1
106	1.131	7777	876.8	230.5	7831	882.5	232.1	7886	888.1	233.7	7941	893.8	235.4
105	1.098	7769	875.4	236.8	7823	881.1	238.4	7878	886.7	240.1	7933	892.4	241.8
104	1.066	7760	874.0	243.3	7814	879.6	245.0	7869	885.2	246.7	7923	890.9	248.4
103	1.035	7752	872.6	249.9	7806	878.2	251.7	7861	883.8	253.4	7915	889.5	255.2
102	1.005	7744	871.1	256.8	7798	876.8	258.6	7852	882.4	260.4	7906	888.0	262.2
101	0.975	7735	869.7	263.9	7790	875.3	265.7	7844	880.9	267.5	7898	886.5	269.4
100	0.946	7727	868.3	271.0	7781	873.8	272.9	7835	879.4	274.8	7889	885.0	276.7
99	0.918	7718	866.9	278.6	7772	872.4	280.5	7826	878.0	282.5	7880	883.6	284.4
98	0.891	7710	865.4	286.3	7764	871.0	288.3	7818	876.5	290.3	7872	882.1	292.3
97	0.864	7702	864.0	294.3	7756	869.6	296.3	7809	875.1	298.4	7863	880.7	300.4
96	0.838	7694	862.6	302.6	7747	868.2	304.7	7801	873.7	306.8	7854	879.3	308.9
95	0.813	7685	861.2	311.1	7739	866.8	313.3	7792	872.3	315.4	7846	877.9	317.6
94	0.788	7677	859.7	319.9	7730	865.3	322.1	7784	870.8	324.3	7837	876.4	326.6
93	0.764	7669	858.3	329.1	7722	863.9	331.4	7775	869.4	333.6	7828	874.9	335.9
92	0.741	7660	856.9	338.6	7713	862.4	340.9	7766	867.9	343.3	7819	873.4	345.6
91	0.718	7652	855.4	348.5	7705	860.9	350.9	7758	866.4	353.3	7811	871.9	355.7
90	0.696	7644	853.9	358.6	7696	859.4	361.1	7749	864.9	363.6	7802	870.4	366.0
89	0.675	7635	852.5	369.1	7688	858.0	371.6	7741	863.5	374.2	7793	868.9	376.7
88	0.654	7627	851.0	379.8	7679	856.5	382.4	7732	862.0	385.0	7785	867.4	387.7
87	0.633	7619	849.5	390.9	7671	855.1	393.5	7724	860.5	396.2	7776	866.0	398.9
86	0.613	7610	848.1	401.8	7663	853.6	404.6	7715	859.0	407.4	7767	864.5	410.1
85	0.594	7602	846.7	413.5	7654	852.1	416.4	7706	857.5	419.2	7759	863.0	422.1

Temperatures, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.60			1.61			1.62			1.63		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
420	308.5	138.3	1287.8	1.881	158.4	1298.3	1.931	179.8	1309.0	1.983	201.4	1320.0	2.031
419	305.1	136.6	1286.7	1.895	156.7	1297.1	1.946	178.0	1307.8	2.000	199.5	1318.7	2.048
418	301.8	135.0	1285.6	1.912	155.0	1295.9	1.963	176.2	1306.7	2.016	197.7	1317.5	2.065
417	298.5	133.4	1284.5	1.927	153.4	1294.7	1.979	174.5	1305.5	2.033	195.9	1316.2	2.082
416	295.2	131.9	1283.4	1.944	151.8	1293.6	1.996	172.7	1304.3	2.050	194.0	1315.0	2.099
415	292.0	130.3	1282.3	1.959	150.1	1292.5	2.013	171.0	1303.1	2.066	192.2	1313.7	2.116
414	288.9	128.7	1281.2	1.975	148.4	1291.3	2.030	169.2	1301.9	2.084	190.4	1312.5	2.133
413	285.7	127.1	1280.1	1.991	146.7	1290.2	2.047	167.5	1300.7	2.100	188.6	1311.3	2.150
412	282.5	125.5	1279.0	2.008	145.0	1289.0	2.064	165.8	1299.6	2.118	186.8	1310.2	2.168
411	279.4	124.0	1277.9	2.025	143.4	1287.9	2.081	164.0	1298.4	2.135	184.9	1308.9	2.187
410	276.3	122.3	1276.7	2.043	141.7	1286.7	2.098	162.2	1297.2	2.154	183.0	1307.7	2.205
409	273.3	120.8	1275.5	2.060	140.1	1285.6	2.116	160.5	1296.0	2.172	181.2	1306.5	2.224
408	270.3	119.2	1274.4	2.077	138.4	1284.5	2.133	158.7	1294.8	2.190	179.4	1305.3	2.243
407	267.3	117.7	1273.3	2.095	136.8	1283.3	2.152	157.0	1293.6	2.208	177.6	1304.0	2.261
406	264.3	116.1	1272.2	2.112	135.1	1282.1	2.170	155.3	1292.4	2.226	175.7	1302.8	2.280
405	261.3	114.5	1271.1	2.130	133.4	1281.0	2.188	153.5	1291.3	2.244	174.0	1301.6	2.299
404	258.4	112.9	1270.0	2.148	131.8	1279.9	2.206	151.8	1290.1	2.263	172.2	1300.4	2.318
403	255.5	111.3	1268.9	2.167	130.1	1278.7	2.225	150.0	1288.9	2.282	170.3	1299.1	2.337
402	252.6	109.7	1267.8	2.185	128.6	1277.6	2.243	148.3	1287.8	2.302	168.5	1297.9	2.356
401	249.7	108.2	1266.7	2.203	126.9	1276.4	2.261	146.6	1286.6	2.321	166.8	1296.7	2.377
400	246.9	106.7	1265.6	2.223	125.3	1275.3	2.280	144.9	1285.4	2.340	164.9	1295.5	2.398
399	244.1	105.2	1264.4	2.241	123.6	1274.2	2.301	143.0	1284.2	2.360	163.1	1294.3	2.418
398	241.4	103.6	1263.3	2.260	122.0	1273.1	2.320	141.4	1283.0	2.380	161.3	1293.1	2.438
397	238.6	102.0	1262.2	2.279	120.4	1271.9	2.340	139.6	1281.8	2.400	159.5	1291.9	2.459
396	235.9	100.5	1261.1	2.300	118.6	1270.7	2.360	137.9	1280.7	2.420	157.7	1290.7	2.479
395	233.2	99.0	1260.1	2.320	117.0	1269.6	2.380	136.1	1279.4	2.440	155.9	1289.6	2.500
394	230.5	97.5	1259.0	2.340	115.4	1268.4	2.400	134.5	1278.3	2.461	154.1	1288.4	2.521
393	227.9	95.9	1257.9	2.361	113.8	1267.3	2.421	132.9	1277.1	2.482	152.3	1287.2	2.543
392	225.2	94.4	1256.8	2.382	112.2	1266.1	2.441	131.1	1276.0	2.504	150.6	1286.0	2.565
391	222.6	92.8	1255.6	2.403	110.5	1265.0	2.462	129.4	1274.8	2.525	148.8	1284.8	2.587
390	220.1	91.3	1254.5	2.424	108.9	1263.9	2.483	127.7	1273.6	2.546	147.0	1283.6	2.610
389	217.5	89.8	1253.4	2.444	107.3	1262.8	2.505	126.0	1272.5	2.569	145.2	1282.4	2.632
388	215.0	88.2	1252.3	2.466	105.7	1261.6	2.527	124.3	1271.3	2.591	143.4	1281.2	2.654
387	212.5	86.6	1251.2	2.488	104.1	1260.4	2.549	122.5	1270.1	2.613	141.6	1280.0	2.677
386	210.0	85.0	1250.0	2.510	102.4	1259.2	2.571	120.9	1268.9	2.636	139.9	1278.8	2.701
385	207.5	83.5	1248.9	2.532	100.8	1258.1	2.594	119.1	1267.7	2.660	138.1	1277.6	2.725
384	205.1	81.9	1247.8	2.554	99.2	1257.0	2.617	117.5	1266.5	2.684	136.3	1276.3	2.750
383	202.6	80.4	1246.6	2.577	97.6	1255.8	2.640	115.7	1265.4	2.707	134.5	1275.0	2.773
382	200.3	78.9	1245.4	2.600	95.9	1254.6	2.664	114.0	1264.2	2.730	132.6	1273.8	2.799
381	197.9	77.4	1244.3	2.623	94.3	1253.4	2.688	112.3	1263.0	2.755	130.9	1272.6	2.823
380	195.5	75.8	1243.2	2.646	92.6	1252.3	2.713	110.7	1261.8	2.780	129.1	1271.4	2.849
379	193.2	74.3	1242.1	2.671	91.0	1251.1	2.737	109.0	1260.6	2.805	127.3	1270.2	2.873
378	190.9	72.7	1241.0	2.696	89.4	1249.9	2.761	107.3	1259.5	2.830	125.5	1268.9	2.899
377	188.6	71.2	1239.9	2.720	87.8	1248.7	2.787	105.7	1258.4	2.856	123.7	1267.7	2.925
376	186.3	69.7	1238.7	2.745	86.1	1247.5	2.813	104.0	1257.2	2.883	122.0	1266.5	2.952
375	184.1	68.1	1237.5	2.770	84.5	1246.4	2.839	102.3	1256.0	2.909	120.1	1265.3	2.979
374	181.9	66.6	1236.3	2.795	83.0	1245.3	2.864	100.7	1254.8	2.935	118.4	1264.1	3.005
373	179.7	65.0	1235.2	2.821	81.4	1244.2	2.891	99.0	1253.6	2.962	116.7	1262.9	3.033

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.64			1.65			1.66			1.67		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
420	308.5	223.6	1331.1	2.086	245.1	1341.7	2.140	267.4	1353.3	2.193	289.7	1364.4	2.243
419	305.1	221.7	1329.9	2.103	243.2	1340.4	2.157	265.4	1352.0	2.210	287.7	1363.1	2.261
418	301.8	219.8	1328.6	2.120	241.3	1339.2	2.174	263.4	1350.6	2.229	285.7	1361.8	2.280
417	298.5	217.9	1327.3	2.138	239.4	1337.9	2.191	261.4	1349.2	2.246	283.8	1360.5	2.299
416	295.2	216.0	1326.0	2.156	237.5	1336.7	2.210	259.4	1347.8	2.264	281.9	1359.2	2.318
415	292.0	214.1	1324.7	2.174	235.5	1335.5	2.228	257.4	1346.6	2.282	279.9	1357.9	2.337
414	288.9	212.2	1323.5	2.191	233.6	1334.2	2.246	255.4	1345.3	2.300	277.9	1356.6	2.356
413	285.7	210.3	1322.3	2.209	231.7	1333.0	2.263	253.5	1344.0	2.319	275.9	1355.3	2.375
412	282.5	208.4	1321.0	2.227	229.8	1331.7	2.282	251.5	1342.6	2.338	273.9	1354.0	2.394
411	279.4	206.5	1319.8	2.245	227.9	1330.5	2.301	249.5	1341.3	2.356	271.9	1352.7	2.414
410	276.3	204.6	1318.5	2.263	226.0	1329.2	2.320	247.5	1340.1	2.376	269.9	1351.4	2.433
409	273.3	202.7	1317.3	2.282	224.0	1327.9	2.339	245.6	1338.8	2.395	267.9	1350.0	2.454
408	270.3	200.8	1316.1	2.301	222.0	1326.7	2.358	243.7	1337.5	2.414	265.9	1348.7	2.474
407	267.3	198.9	1314.8	2.320	220.1	1325.4	2.377	241.8	1336.3	2.434	263.9	1347.4	2.494
406	264.3	197.0	1313.6	2.339	218.2	1324.2	2.396	239.9	1335.0	2.455	261.9	1346.1	2.514
405	261.3	195.1	1312.3	2.359	216.3	1322.9	2.415	237.9	1333.7	2.475	259.9	1344.8	2.535
404	258.4	193.2	1311.0	2.378	214.4	1321.6	2.435	235.9	1332.4	2.495	257.9	1343.4	2.556
403	255.5	191.4	1309.8	2.398	212.5	1320.3	2.456	233.9	1331.1	2.516	255.9	1342.1	2.577
402	252.6	189.5	1308.5	2.418	210.5	1319.0	2.477	231.9	1329.8	2.536	253.9	1340.9	2.599
401	249.7	187.6	1307.3	2.437	208.5	1317.7	2.497	230.0	1328.5	2.558	251.9	1339.6	2.620
400	246.9	185.7	1306.0	2.457	206.6	1316.4	2.518	228.0	1327.2	2.580	249.9	1338.3	2.642
399	244.1	183.8	1304.8	2.478	204.7	1315.1	2.538	226.0	1325.9	2.601	248.0	1337.0	2.664
398	241.4	182.0	1303.5	2.499	202.8	1313.9	2.560	224.0	1324.6	2.623	246.0	1335.7	2.687
397	238.6	180.1	1302.3	2.520	200.9	1312.6	2.581	222.0	1323.3	2.645	244.0	1334.4	2.709
396	235.9	178.2	1301.0	2.541	199.0	1311.4	2.603	220.0	1321.9	2.667	242.0	1333.1	2.731
395	233.2	176.3	1299.7	2.563	197.1	1310.1	2.625	218.0	1320.6	2.690	240.0	1331.8	2.755
394	230.5	174.5	1298.5	2.585	195.2	1308.9	2.648	216.0	1319.3	2.713	238.0	1330.4	2.779
393	227.9	172.7	1297.3	2.607	193.3	1307.7	2.670	214.1	1318.0	2.736	236.0	1329.1	2.803
392	225.2	170.8	1296.0	2.630	191.4	1306.5	2.694	212.1	1316.7	2.759	234.0	1327.8	2.827
391	222.6	168.9	1294.8	2.652	189.5	1305.2	2.718	210.1	1315.3	2.784	232.0	1326.5	2.851
390	220.1	167.0	1293.6	2.675	187.6	1304.0	2.741	208.2	1314.1	2.808	230.0	1325.1	2.876
389	217.5	165.2	1292.4	2.699	185.6	1302.7	2.764	206.3	1312.8	2.832	228.0	1323.8	2.901
388	215.0	163.3	1291.2	2.721	183.7	1301.4	2.789	204.4	1311.6	2.856	225.9	1322.5	2.927
387	212.5	161.4	1289.9	2.746	181.8	1300.1	2.813	202.4	1310.3	2.881	223.9	1321.2	2.951
386	210.0	159.6	1288.6	2.769	179.9	1298.8	2.839	200.4	1309.1	2.907	221.9	1319.9	2.978
385	207.5	157.7	1287.4	2.793	178.0	1297.5	2.863	198.4	1307.8	2.931	219.9	1318.5	3.003
384	205.1	155.9	1286.1	2.819	176.1	1296.3	2.888	196.5	1306.5	2.958	217.9	1317.2	3.030
383	202.6	154.0	1284.9	2.843	174.1	1295.0	2.914	194.5	1305.2	2.984	215.9	1315.9	3.057
382	200.3	152.2	1283.7	2.869	172.2	1293.7	2.940	192.6	1303.9	3.010	213.9	1314.6	3.084
381	197.9	150.3	1282.5	2.893	170.3	1292.4	2.967	190.7	1302.6	3.037	211.9	1313.2	3.111
380	195.5	148.5	1281.2	2.920	168.4	1291.1	2.994	188.8	1301.4	3.065	209.8	1311.9	3.139
379	193.2	146.6	1280.0	2.946	166.5	1289.9	3.020	186.9	1300.2	3.093	207.7	1310.5	3.167
378	190.9	144.8	1278.8	2.973	164.6	1288.6	3.046	184.9	1298.9	3.120	205.7	1309.2	3.195
377	188.6	143.0	1277.6	2.999	162.7	1287.4	3.074	183.0	1297.6	3.148	203.7	1307.9	3.223
376	186.3	141.2	1276.4	3.026	160.9	1286.1	3.102	181.0	1296.3	3.176	201.7	1306.6	3.251
375	184.1	139.4	1275.2	3.053	159.0	1284.9	3.130	179.1	1295.0	3.204	199.7	1305.3	3.281
374	181.9	137.6	1273.9	3.081	157.1	1283.6	3.158	177.2	1293.7	3.233	197.7	1304.0	3.311
373	179.7	135.8	1272.7	3.109	155.2	1282.3	3.187	175.3	1292.4	3.261	195.7	1302.7	3.340

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.60			1.61			1.62			1.63		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
372	177.5	63.6	1234.1	2.848	79.8	1243.0	2.919	97.3	1252.3	2.989	115.0	1261.6	3.061
371	175.3	62.0	1233.0	2.874	78.2	1241.8	2.945	95.7	1251.2	3.018	113.2	1260.3	3.090
370	173.2	60.6	1231.9	2.901	76.6	1240.6	2.974	94.0	1250.0	3.045	111.5	1259.1	3.118
369	171.1	59.0	1230.8	2.930	75.0	1239.5	3.000	92.3	1248.8	3.073	109.7	1257.9	3.147
368	169.0	57.5	1229.6	2.956	73.3	1238.3	3.030	90.6	1247.6	3.102	108.0	1256.7	3.175
367	166.9	56.0	1228.5	2.983	71.7	1237.1	3.059	88.9	1246.4	3.130	106.3	1255.5	3.205
366	164.8	54.5	1227.4	3.012	70.1	1235.9	3.087	87.2	1245.2	3.160	104.5	1254.3	3.235
365	162.8	53.0	1226.2	3.041	68.6	1234.7	3.116	85.6	1244.0	3.190	102.9	1253.0	3.265
364	160.8	51.4	1225.1	3.070	67.0	1233.6	3.145	83.9	1242.8	3.220	101.1	1251.8	3.295
363	158.8	49.9	1224.0	3.100	65.4	1232.4	3.175	82.2	1241.6	3.250	99.4	1250.6	3.325
362	156.8	48.4	1222.9	3.130	63.9	1231.3	3.205	80.6	1240.4	3.280	97.6	1249.4	3.357
361	154.8	46.9	1221.7	3.160	62.2	1230.1	3.236	78.9	1239.2	3.312	95.9	1248.2	3.389
360	152.9	45.4	1220.6	3.190	60.6	1228.9	3.267	77.2	1238.0	3.343	94.3	1247.0	3.421
359	151.0	43.9	1219.5	3.221	59.0	1227.7	3.299	75.6	1236.9	3.375	92.5	1245.7	3.453
358	149.1	42.3	1218.3	3.252	57.5	1226.6	3.330	74.0	1235.7	3.407	90.9	1244.5	3.486
357	147.2	40.9	1217.2	3.285	56.0	1225.5	3.362	72.4	1234.5	3.440	89.2	1243.3	3.519
356	145.3	39.5	1216.1	3.317	54.4	1224.3	3.395	70.7	1233.3	3.474	87.4	1242.0	3.554
355	143.5	37.9	1215.0	3.350	52.8	1223.1	3.428	69.0	1232.2	3.507	85.8	1240.8	3.588
354	141.6	36.4	1213.9	3.382	51.2	1222.0	3.461	67.4	1231.0	3.540	84.0	1239.6	3.622
353	139.8	34.9	1212.8	3.417	49.6	1220.8	3.495	65.8	1229.8	3.576	82.4	1238.4	3.658
352	138.0	33.4	1211.7	3.450	48.0	1219.6	3.530	64.2	1228.6	3.610	80.8	1237.3	3.693
351	136.3	31.9	1210.6	3.484	46.4	1218.4	3.564	62.6	1227.5	3.648	79.1	1236.2	3.730
350	134.5	30.4	1209.4	3.520	44.9	1217.3	3.599	61.0	1226.3	3.685	77.6	1235.0	3.766
349	132.8	29.0	1208.3	3.555	43.4	1216.2	3.636	59.4	1225.1	3.720	75.9	1233.8	3.804
348	131.1	27.5	1207.2	3.590	41.9	1215.1	3.672	57.7	1223.9	3.758	74.2	1232.6	3.842
347	129.4	26.0	1206.1	3.626	40.4	1214.0	3.710	56.1	1222.7	3.796	72.5	1231.4	3.881
346	127.7	24.5	1205.0	3.663	38.9	1212.8	3.748	54.5	1221.5	3.834	70.9	1230.2	3.920
345	126.0	23.0	1203.9	3.700	37.4	1211.6	3.786	52.9	1220.3	3.874	69.3	1229.0	3.960
344	124.4	21.5	1202.8	3.738	35.9	1210.5	3.824	51.3	1219.2	3.914	67.6	1227.9	4.000
343	122.7	20.0	1201.6	3.776	34.3	1209.4	3.863	49.7	1218.1	3.954	66.0	1226.7	4.042
342	121.1	18.5	1200.5	3.815	32.7	1208.3	3.903	48.0	1216.9	3.995	64.4	1225.6	4.085
341	119.5	17.0	1199.3	3.853	31.2	1207.1	3.943	46.5	1215.8	4.036	62.6	1224.4	4.128
340	117.9	15.5	1198.2	3.893	29.7	1206.0	3.984	44.9	1214.7	4.079	61.0	1223.2	4.171
339	116.3	14.0	1197.1	3.933	28.1	1204.8	4.026	43.3	1213.5	4.120	59.3	1222.0	4.215
338	114.8	12.5	1196.0	3.973	26.5	1203.7	4.067	41.7	1212.4	4.164	57.7	1220.8	4.260
337	113.3	11.0	1194.8	4.014	25.0	1202.6	4.110	40.1	1211.2	4.207	56.0	1219.6	4.304
336	111.7	9.6	1193.7	4.056	23.4	1201.4	4.151	38.5	1210.0	4.250	54.3	1218.4	4.350
335	110.3	8.1	1192 5	4.098	21.9	1200.2	4.194	36.9	1208.9	4.294	52.7	1217.2	4.395
334	108.8	6.6	1191.4	4.140	20.3	1199.0	4.238	35.4	1207.6	4.339	51.0	1216.0	4.442
333	107.3	5.1	1190.3	4.181	18.8	1197.9	4.283	33.8	1206.4	4.383	49.3	1214.7	4.489
332	105.8	3.6	1189.2	4.225	17.3	1196.8	4.328	32.2	1205.2	4.429	47.7	1213.5	4.536
331	104.4	2.1	1188.1	4.268	15.7	1195.6	4.372	30.5	1204.1	4.473	46.0	1212.4	4.584
330	103.0	0.5	1186.9	4.312	14.2	1194.5	4.417	28.9	1203.0	4.520	44.3	1211.2	4.631
329	101.6	9993	1185.7	4.365	12.7	1193.4	4.461	27.3	1201.8	4.566	42.7	1210.0	4.680
328	100.2	9984	1184.5	4.417	11.1	1192.3	4.509	25.7	1200.6	4.613	41.0	1208.8	4.730
327	98.8	9974	1183.4	4.468	9.6	1191.1	4.557	24.1	1199.4	4.661	39.3	1207.6	4.780
326	97.5	9964	1182.3	4.521	8.0	1190.0	4.603	22.5	1198.2	4.710	37.7	1206.4	4.830
325	96.1	9954	1181.2	4.573	6.5	1189.0	4.650	20.9	1197.0	4.760	36.0	1205.3	4.880

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.64			1.65			1.66			1.67		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
372	177.5	133.9	1271.4	3.138	153.3	1281.0	3.215	173.4	1291.2	3.293	193.7	1301.4	3.370
371	175.3	132.1	1270.1	3.167	151.4	1279.8	3.245	171.5	1289.9	3.323	191.7	1300.1	3.400
370	173.2	130.3	1268.9	3.196	149.5	1278.5	3.275	169.6	1288.6	3.354	189.7	1298.8	3.432
369	171.1	128.5	1267.7	3.225	147.6	1277.2	3.305	167.7	1287.4	3.384	187.7	1297.5	3.464
368	169.0	126.7	1266.5	3.254	145.7	1275.9	3.335	165.7	1286.1	3.415	185.7	1296.2	3.495
367	166.9	124.9	1265.3	3.284	143.8	1274.6	3.365	163.8	1284.8	3.447	183.7	1294.9	3.527
366	164.8	123.1	1264.0	3.314	142.0	1273.3	3.396	161.9	1283.5	3.479	181.7	1293.6	3.559
365	162.8	121.3	1262.8	3.344	140.0	1272.1	3.428	160.0	1282.2	3.511	179.7	1292.3	3.593
364	160.8	119.5	1261.6	3.376	138.2	1270.9	3.460	158.0	1280.9	3.545	177.7	1291.0	3.626
363	158.8	117.7	1260.3	3.408	136.3	1269.6	3.490	156.0	1279.6	3.579	175.7	1289.7	3.660
362	156.8	115.9	1259.0	3.440	134.4	1268.3	3.524	154.0	1278.3	3.612	173.8	1288.4	3.695
361	154.8	114.1	1257.8	3.472	132.5	1267.0	3.557	152.0	1277.0	3.647	171.8	1287.0	3.730
360	152.9	112.3	1256.6	3.504	130.6	1265.7	3.590	150.0	1275.7	3.682	169.8	1285.6	3.765
359	151.0	110.5	1255.3	3.537	128.8	1264.5	3.624	148.1	1274.4	3.716	167.9	1284.3	3.801
358	149.1	108.8	1254.1	3.570	127.0	1263.2	3.660	146.2	1273.1	3.750	166.0	1283.0	3.839
357	147.2	107.1	1252.9	3.605	125.1	1262.0	3.695	144.3	1271.8	3.786	164.0	1281.7	3.874
356	145.3	105.3	1251.7	3.640	123.2	1260.7	3.730	142.4	1270.5	3.822	162.0	1280.4	3.913
355	143.5	103.6	1250.5	3.675	121.4	1259.4	3.765	140.5	1269.2	3.860	160.0	1279.0	3.950
354	141.6	101.8	1249.3	3.713	119.6	1258.2	3.803	138.7	1268.0	3.898	158.0	1277.7	3.990
353	139.8	100.1	1248.0	3.749	117.8	1257.0	3.840	136.9	1266.7	3.936	156.0	1276.4	4.029
352	138.0	98.4	1246.8	3.787	115.9	1255.8	3.878	135.0	1265.4	3.975	154.0	1275.0	4.068
351	136.3	96.5	1245.6	3.824	114.1	1254.6	3.915	133.1	1264.2	4.014	152.0	1273.7	4.108
350	134.5	94.7	1244.3	3.861	112.4	1253.3	3.955	131.2	1262.9	4.052	150.1	1272.4	4.149
349	132.8	93.0	1243.0	3.900	110.6	1252.0	3.994	129.4	1261.6	4.091	148.2	1271.1	4.190
348	131.1	91.3	1241.8	3.940	108.8	1250.8	4.033	127.5	1260.3	4.132	146.2	1269.8	4.230
347	129.4	89.5	1240.6	3.980	107.0	1249.6	4.075	125.6	1259.0	4.172	144.2	1268.5	4.273
346	127.7	87.8	1239.3	4.020	105.1	1248.3	4.115	123.7	1257.8	4.213	142.2	1267.2	4.314
345	126.0	86.0	1238.0	4.062	103.3	1247.0	4.157	121.9	1256.5	4.255	140.3	1265.8	4.357
344	124.4	84.1	1236.8	4.104	101.5	1245.8	4.200	120.0	1255.2	4.297	138.4	1264.5	4.400
343	122.7	82.4	1235.6	4.148	99.7	1244.6	4.241	118.0	1253.9	4.340	136.4	1263.2	4.443
342	121.1	80.7	1234.3	4.190	97.9	1243.3	4.285	116.1	1252.6	4.384	134.5	1261.9	4.488
341	119.5	79.0	1233.0	4.232	96.1	1242.0	4.329	114.2	1251.3	4.428	132.5	1260.6	4.533
340	117.9	77.1	1231.8	4.276	94.3	1240.8	4.373	112.3	1250.0	4.473	130.6	1259.3	4.579
339	116.3	75.4	1230.6	4.320	92.5	1239.6	4.417	110.4	1248.8	4.519	128.7	1258.0	4.625
338	114.8	73.6	1229.3	4.364	90.7	1238.3	4.461	108.6	1247.5	4.564	126.7	1256.7	4.672
337	113.3	71.9	1228.0	4.409	89.0	1237.0	4.507	106.7	1246.3	4.610	124.8	1255.4	4.720
336	111.7	70.1	1226.8	4.455	87.2	1235.8	4.553	104.8	1245.0	4.657	122.9	1254.1	4.768
335	110.3	68.4	1225.6	4.500	85.4	1234.6	4.599	103.0	1243.7	4.705	120.9	1252.7	4.817
334	108.8	66.7	1224.3	4.548	83.7	1233.3	4.648	101.1	1242.4	4.754	119.0	1251.4	4.865
333	107.3	65.0	1223.1	4.595	81.9	1232.1	4.697	99.3	1241.1	4.803	117.0	1250.1	4.916
332	105.8	63.2	1221.9	4.642	80.2	1230.9	4.744	97.4	1239.8	4.850	115.0	1248.7	4.967
331	104.4	61.4	1220.7	4.692	78.4	1229.7	4.793	95.6	1238.6	4.900	113.0	1247.4	5.019
330	103.0	59.8	1219.4	4.740	76.6	1228.4	4.845	93.7	1237.3	4.953	111.1	1246.0	5.070
329	101.6	58.0	1218.2	4.790	74.9	1227.2	4.895	91.9	1236.0	5.005	109.2	1244.7	5.123
328	100.2	56.3	1217.0	4.840	73.1	1226.0	4.947	90.0	1234.7	5.057	107.3	1243.4	5.180
327	98.8	54.6	1215.7	4.890	71.4	1224.7	4.998	88.1	1233.4	5.109	105.4	1242.1	5.233
326	97.5	52.9	1214.5	4.941	69.5	1223.5	5.050	86.3	1232.1	5.163	103.5	1240.8	5.290
325	96.1	51.1	1213.2	4.994	67.7	1222.2	5.105	84.5	1230.7	5.218	101.7	1239.5	5.345

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.60			1.61			1.62			1.63		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
324	94.8	9943	1180.0	4.626	5.0	1187.9	4.700	19.3	1195.8	4.810	34.3	1204.0	4.934
323	93.5	9934	1178.9	4.683	3.5	1186.7	4.747	17.7	1194.7	4.860	32.7	1202.8	4.987
322	92.2	9924	1177.8	4.741	1.9	1185.5	4.797	16.1	1193.5	4.910	31.0	1201.6	5.040
321	90.9	9914	1176.6	4.799	0.3	1184.4	4.845	14.4	1192.3	4.965	29.3	1200.4	5.093
320	89.6	9905	1175.6	4.860	9992	1183.3	4.903	12.9	1191.2	5.018	27.7	1199.2	5.146
319	88.3	9895	1174.4	4.922	9982	1182.1	4.965	11.3	1190.1	5.073	26.0	1198.0	5.200
318	87.1	9885	1173.3	4.985	9972	1181.0	5.029	9.7	1188.9	5.128	24.4	1196.9	5.257
317	85.9	9875	1172.1	5.048	9962	1179.8	5.092	8.1	1187.7	5.182	22.7	1195.7	5.314
316	84.6	9865	1170.9	5.112	9952	1178.6	5.157	6.5	1186.5	5.239	21.0	1194.5	5.370
315	83.4	9856	1169.8	5.178	9942	1177.5	5.224	4.9	1185.3	5.296	19.3	1193.4	5.429
314	82.3	9846	1168.7	5.244	9932	1176.4	5.290	3.3	1184.2	5.351	17.6	1192.2	5.487
313	81.1	9836	1167.6	5.311	9922	1175.3	5.357	1.6	1183.0	5.410	16.0	1191.0	5.545
312	79.9	9827	1166.4	5.378	9913	1174.1	5.424	9999	1181.8	5.471	14.3	1189.8	5.605
311	78.8	9817	1165.3	5.445	9903	1173.0	5.492	9989	1180.6	5.540	12.6	1188.6	5.665
310	77.6	9808	1164.1	5.514	9893	1171.8	5.562	9978	1179.4	5.610	11.0	1187.4	5.725
309	76.5	9798	1163.0	5.584	9883	1170.6	5.632	9968	1178.3	5.681	9.3	1186.2	5.788
308	75.4	9789	1161.8	5.656	9874	1169.5	5.705	9959	1177.1	5.754	7.6	1184.9	5.850
307	74.3	9779	1160.6	5.729	9864	1168.3	5.779	9948	1175.9	5.829	5.8	1183.6	5.915
306	73.2	9770	1159.5	5.804	9854	1167.2	5.855	9939	1174.8	5.905	4.0	1182.4	5.980
305	72.2	9760	1158.3	5.879	9844	1165.9	5.930	9929	1173.6	5.981	2.2	1181.2	6.047
304	71.1	9750	1157.1	5.956	9834	1164.8	6.008	9918	1172.4	6.059	0.4	1180.0	6.110
303	70.0	9741	1156.0	6.034	9825	1163.7	6.086	9909	1171.3	6.139	9993	1178.9	6.191
302	69.0	9731	1154.9	6.113	9815	1162.5	6.166	9899	1170.1	6.218	9983	1177.7	6.271
301	68.0	9722	1153.7	6.194	9806	1161.3	6.247	9889	1168.9	6.300	9973	1176.5	6.353
300	67.0	9712	1152.5	6.276	9795	1160.1	6.330	9879	1167.7	6.384	9963	1175.3	6.438
299	66.0	9703	1151.4	6.359	9786	1159.0	6.414	9870	1166.6	6.469	9953	1174.1	6.523
298	65.0	9693	1150.2	6.443	9776	1157.8	6.498	9859	1165.4	6.554	9943	1172.9	6.609
297	64.0	9684	1149.0	6.530	9767	1156.6	6.585	9850	1164.2	6.641	9933	1171.7	6.697
296	63.1	9674	1147.8	6.617	9757	1155.4	6.673	9840	1162.9	6.729	9923	1170.5	6.786
295	62.1	9665	1146.7	6.706	9748	1154.3	6.762	9830	1161.8	6.819	9913	1169.3	6.877
294	61.2	9655	1145.5	6.795	9737	1153.1	6.852	9820	1160.6	6.910	9902	1168.1	6.968
293	60.2	9646	1144.4	6.887	9728	1151.9	6.945	9811	1159.4	7.004	9893	1166.9	7.063
292	59.3	9637	1143.2	6.980	9719	1150.7	7.038	9801	1158.2	7.098	9883	1165.7	7.157
291	58.4	9628	1142.0	7.075	9710	1149.6	7.134	9792	1157.1	7.194	9874	1164.5	7.254
290	57.5	9618	1140.9	7.169	9700	1148.4	7.229	9782	1155.9	7.290	9863	1163.3	7.351
289	56.7	9609	1139.7	7.268	9690	1147.2	7.329	9772	1154.7	7.390	9854	1162.1	7.452
288	55.8	9599	1138.5	7.367	9680	1146.0	7.430	9762	1153.5	7.491	9843	1160.9	7.554
287	54.9	9590	1137.3	7.469	9671	1144.8	7.533	9752	1152.3	7.595	9834	1159.7	7.658
286	54.1	9581	1136.2	7.572	9662	1143.6	7.637	9743	1151.1	7.700	9824	1158.5	7.764
285	53.2	9571	1135.0	7.678	9652	1142.4	7.743	9733	1149.9	7.807	9814	1157.3	7.872
284	52.4	9562	1133.8	7.784	9642	1141.2	7.850	9723	1148.6	7.915	9804	1156.1	7.980
283	51.6	9553	1132.6	7.892	9633	1140.0	7.959	9714	1147.4	8.024	9794	1154.9	8.091
282	50.8	9543	1131.4	8.003	9624	1138.8	8.071	9704	1146.2	8.137	9784	1153.7	8.204
281	50.0	9534	1130.3	8.116	9614	1137.6	8.184	9695	1145.1	8.251	9775	1152.5	8.319
280	49.19	9525	1129.1	8.230	9605	1136.5	8.299	9685	1143.9	8.368	9765	1151.3	8.436
279	48.41	9515	1127.9	8.344	9595	1135.2	8.414	9675	1142.6	8.484	9755	1150.0	8.553
278	47.64	9506	1126.6	8.461	9586	1134.0	8.532	9665	1141.4	8.603	9745	1148.7	8.673
277	46.88	9497	1125.4	8.580	9576	1132.8	8.651	9656	1140.2	8.723	9736	1147.5	8.794

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.64			1.65			1.66			1.67		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
324	94.8	49.4	1212.0	5.048	66.0	1220.9	5.160	82.6	1229.5	5.273	99.9	1238.3	5.400
323	93.5	47.8	1210.8	5.100	64.2	1219.6	5.216	80.8	1228.2	5.330	98.0	1237.0	5.459
322	92.2	46.0	1209.6	5.155	62.4	1218.3	5.270	78.9	1226.9	5.389	96.1	1235.7	5.518
321	90.9	44.3	1208.4	5.210	60.6	1217.1	5.327	77.0	1225.6	5.446	94.2	1234.4	5.575
320	89.6	42.6	1207.2	5.265	58.8	1215.9	5.384	75.1	1224.3	5.506	92.4	1233.1	5.635
319	88.3	40.9	1206.0	5.322	57.0	1214.6	5.440	73.3	1223.0	5.565	90.5	1231.8	5.697
318	87.1	39.1	1204.8	5.380	55.1	1213.3	5.500	71.4	1221.7	5.625	88.7	1230.5	5.759
317	85.9	37.5	1203.6	5.435	53.3	1212.0	5.560	69.6	1220.4	5.685	86.8	1229.2	5.820
316	84.6	35.7	1202.4	5.495	51.5	1210.8	5.623	67.8	1219.1	5.750	84.9	1227.9	5.885
315	83.4	34.0	1201.2	5.554	49.8	1209.6	5.685	66.0	1217.8	5.813	83.0	1226.6	5.949
314	82.3	32.3	1200.0	5.614	48.0	1208.3	5.745	64.1	1216.5	5.875	81.1	1225.3	6.02
313	81.1	30.5	1198.8	5.673	46.2	1207.1	5.810	62.3	1215.2	5.940	79.2	1224.0	6.09
312	79.9	28.8	1197.6	5.734	44.4	1205.9	5.873	60.4	1214.0	6.00	77.3	1222.7	6.16
311	78.8	27.0	1196.4	5.798	42.7	1204.7	5.937	58.6	1212.8	6.07	75.4	1221.4	6.23
310	77.6	25.4	1195.2	5.863	40.9	1203.5	6.00	56.8	1211.6	6.14	73.4	1220.1	6.30
309	76.5	23.7	1193.9	5.928	39.1	1202.2	6.07	55.0	1210.3	6.20	71.5	1218.7	6.37
308	75.4	21.9	1192.7	5.990	37.3	1200.9	6.14	53.1	1209.0	6.27	69.6	1217.4	6.44
307	74.3	20.1	1191.5	6.06	35.5	1199.7	6.21	51.3	1207.7	6.34	67.7	1216.1	6.51
306	73.2	18.5	1190.3	6.12	33.8	1198.5	6.27	49.4	1206.5	6.41	65.8	1214.8	6.58
305	72.2	16.8	1189.1	6.19	32.0	1197.3	6.34	47.5	1205.2	6.48	63.9	1213.5	6.65
304	71.1	15.0	1187.9	6.26	30.1	1196.0	6.41	45.7	1203.9	6.55	62.0	1212.2	6.73
303	70.0	13.3	1186.7	6.33	28.3	1194.7	6.49	43.9	1202.6	6.62	60.1	1210.9	6.80
302	69.0	11.6	1185.5	6.40	26.5	1193.4	6.56	42.0	1201.3	6.70	58.2	1209.6	6.88
301	68.0	9.9	1184.3	6.48	24.8	1192.2	6.64	40.1	1200.0	6.78	56.3	1208.3	6.96
300	67.0	8.1	1183.1	6.56	23.0	1191.0	6.71	38.3	1198.7	6.86	54.4	1207.0	7.04
299	66.0	6.4	1181.9	6.64	21.2	1189.8	6.79	36.4	1197.4	6.94	52.5	1205.7	7.12
298	65.0	4.7	1180.7	6.71	19.4	1188.5	6.87	34.5	1196.2	7.01	50.5	1204.4	7.20
297	64.0	2.9	1179.4	6.78	17.6	1187.2	6.95	32.6	1194.9	7.09	48.6	1203.1	7.28
296	63.1	1.2	1178.1	6.86	15.8	1185.9	7.02	30.8	1193.6	7.17	46.7	1201.8	7.37
295	62.1	9996	1176.8	6.934	14.0	1184.6	7.10	29.0	1192.3	7.25	44.8	1200.5	7.45
294	61.2	9985	1175.6	7.026	12.2	1183.4	7.18	27.1	1191.0	7.34	42.9	1199.2	7.53
293	60.2	9975	1174.4	7.121	10.4	1182.2	7.27	25.3	1189.7	7.43	41.0	1197.9	7.62
292	59.3	9965	1173.2	7.217	8.6	1181.0	7.35	23.4	1188.4	7.51	39.0	1196.6	7.70
291	58.4	9956	1172.0	7.314	6.8	1179.7	7.44	21.5	1187.1	7.60	37.0	1195.3	7.80
290	57.5	9945	1170.8	7.412	5.0	1178.5	7.52	19.7	1185.9	7.69	35.0	1194.0	7.89
289	56.7	9935	1169.5	7.514	3.2	1177.2	7.61	17.9	1184.7	7.78	33.1	1192.7	7.99
288	55.8	9925	1168.3	7.616	1.3	1176.0	7.70	16.0	1183.5	7.88	31.2	1191.4	8.08
287	54.9	9915	1167.1	7.722	9996	1174.6	7.785	14.1	1182.2	7.97	29.3	1190.1	8.17
286	54.1	9905	1166.0	7.828	9986	1173.4	7.892	12.3	1180.9	8.06	27.4	1188.8	8.27
285	53.2	9895	1164.7	7.937	9976	1172.1	8.002	10.4	1179.7	8.15	25.5	1187.5	8.36
284	52.4	9885	1163.4	8.046	9965	1170.8	8.112	8.5	1178.5	8.25	23.6	1186.2	8.45
283	51.6	9875	1162.2	8.158	9955	1169.6	8.224	6.7	1177.3	8.35	21.7	1184.9	8.55
282	50.8	9865	1161.1	8.272	9945	1168.5	8.339	4.9	1176.0	8.45	19.8	1183.6	8.65
281	50.0	9855	1159.9	8.388	9935	1167.3	8.456	3.0	1174.7	8.55	17.9	1182.3	8.76
280	49.19	9845	1158.7	8.505	9925	1166.1	8.575	1.1	1173.4	8.65	16.0	1181.0	8.86
279	48.41	9835	1157.4	8.623	9915	1164.8	8.693	9994	1172.2	8.763	14.0	1179.7	8.97
278	47.64	9825	1156.1	8.744	9905	1163.5	8.815	9984	1170.9	8.886	12.1	1178.4	9.07
277	46.88	9815	1154.9	8.866	9895	1162.3	8.938	9974	1169.7	9.010	10.1	1177.1	9.18

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.60			1.61			1.62			1.63		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
276	46.13	9488	1124.3	8.701	9567	1131.7	8.773	9647	1139.0	8.846	9726	1146.4	8.918
275	45.39	9479	1123.1	8.825	9558	1130.5	8.899	9637	1137.8	8.972	9716	1145.2	9.045
274	44.67	9470	1121.9	8.953	9549	1129.2	9.027	9628	1136.5	9.102	9707	1143.9	9.176
273	43.95	9461	1120.7	9.082	9539	1128.0	9.158	9618	1135.3	9.234	9697	1142.7	9.308
272	43.24	9451	1119.5	9.215	9530	1126.8	9.292	9609	1134.1	9.369	9687	1141.5	9.445
271	42.54	9442	1118.3	9.350	9521	1125.6	9.427	9599	1132.9	9.505	9678	1140.2	9.583
270	41.84	9433	1117.1	9.481	9511	1124.3	9.560	9590	1131.6	9.639	9668	1138.9	9.717
269	41.16	9424	1115.9	9.623	9502	1123.2	9.703	9580	1130.4	9.782	9658	1137.7	9.862
268	40.49	9414	1114.7	9.763	9492	1122.0	9.844	9570	1129.2	9.925	9648	1136.5	10.00
267	39.83	9406	1113.5	9.905	9483	1120.8	9.987	9561	1128.0	10.07	9639	1135.3	10.15
266	39.17	9395	1112.2	10.05	9473	1119.5	10.14	9551	1126.7	10.22	9629	1134.0	10.30
265	38.53	9387	1111.0	10.20	9465	1118.3	10.29	9542	1125.5	10.37	9620	1132.8	10.46
264	37.89	9378	1109.8	10.35	9456	1117.0	10.44	9533	1124.3	10.52	9610	1131.5	10.61
263	37.26	9369	1108.6	10.50	9446	1115.8	10.59	9523	1123.1	10.68	9601	1130.3	10.76
262	36.64	9360	1107.4	10.66	9437	1114.6	10.75	9514	1121.8	10.84	9591	1129.1	10.92
261	36.02	9351	1106.2	10.82	9428	1113.4	10.91	9504	1120.6	11.00	9581	1127.9	11.09
260	35.42	9341	1105.0	10.98	9418	1112.2	11.07	9495	1119.4	11.16	9572	1126.6	11.25
259	34.83	9332	1103.8	11.14	9409	1110.9	11.23	9485	1118.1	11.33	9562	1125.3	11.42
258	34.24	9323	1102.5	11.31	9399	1109.6	11.40	9476	1116.8	11.49	9552	1124.0	11.59
257	33.66	9315	1101.3	11.48	9391	1108.5	11.58	9467	1115.6	11.67	9543	1122.8	11.77
256	33.09	9305	1100.1	11.66	9381	1107.3	11.75	9458	1114.4	11.85	9534	1121.6	11.95
255	32.53	9296	1098.8	11.83	9372	1106.0	11.93	9448	1113.1	12.03	9524	1120.3	12.12
254	31.97	9287	1097.6	12.02	9363	1104.7	12.12	9438	1111.8	12.21	9514	1119.0	12.31
253	31.42	9278	1096.4	12.21	9353	1103.5	12.31	9429	1110.6	12.41	9505	1117.8	12.51
252	30.88	9269	1095.2	12.39	9345	1102.3	12.49	9420	1109.4	12.60	9495	1116.5	12.70
251	30.35	9260	1094.0	12.58	9335	1101.1	12.69	9410	1108.2	12.79	9486	1115.3	12.89
250	29.82	9251	1092.7	12.78	9326	1099.8	12.89	9401	1106.9	12.99	9476	1114.0	13.10
249	29.30	9242	1091.5	12.99	9317	1098.6	13.09	9392	1105.6	13.20	9467	1112.7	13.30
248	28.79	9233	1090.2	13.18	9308	1097.3	13.29	9383	1104.3	13.40	9457	1111.4	13.51
247	28.29	9225	1089.0	13.39	9299	1096.1	13.50	9374	1103.1	13.61	9448	1110.2	13.72
246	27.80	9215	1087.8	13.61	9290	1094.8	13.72	9364	1101.9	13.83	9439	1108.9	13.94
245	27.31	9206	1086.6	13.82	9280	1093.6	13.93	9355	1100.7	14.04	9429	1107.7	14.15
244	26.83	9198	1085.3	14.04	9272	1092.4	14.15	9346	1099.4	14.26	9420	1106.4	14.38
243	26.35	9188	1084.1	14.25	9262	1091.2	14.37	9336	1098.2	14.48	9410	1105.2	14.60
242	25.88	9180	1082.9	14.48	9254	1089.9	14.59	9328	1096.9	14.71	9401	1103.9	14.83
241	25.42	9171	1081.6	14.71	9244	1088.6	14.83	9318	1095.6	14.95	9392	1102.6	15.06
240	24.97	9162	1080.3	14.94	9236	1087.3	15.06	9309	1094.3	15.18	9383	1101.3	15.30
239	24.52	9153	1079.1	15.18	9226	1086.1	15.31	9300	1093.1	15.43	9373	1100.1	15.55
238	24.08	9144	1077.8	15.43	9217	1084.8	15.55	9291	1091.8	15.67	9364	1098.8	15.80
237	23.64	9135	1076.6	15.68	9208	1083.6	15.80	9281	1090.6	15.93	9354	1097.5	16.05
236	23.21	9127	1075.4	15.93	9199	1082.3	16.06	9272	1089.3	16.19	9345	1096.2	16.32
235	22.79	9117	1074.1	16.20	9190	1081.0	16.33	9263	1088.0	16.46	9335	1094.9	16.59
234	22.38	9109	1072.8	16.47	9181	1079.7	16.60	9254	1086.6	16.73	9326	1093.6	16.86
233	21.97	9100	1071.6	16.74	9173	1078.5	16.87	9245	1085.4	17.00	9317	1092.3	17.13
232	21.57	9091	1070.3	17.01	9163	1077.2	17.14	9235	1084.1	17.28	9308	1091.0	17.41
231	21.17	9082	1069.1	17.29	9154	1076.0	17.43	9226	1082.9	17.57	9299	1089.8	17.70
230	20.78	9074	1067.8	17.58	9146	1074.7	17.72	9218	1081.6	17.85	9290	1088.5	17.99
229	20.40	9064	1066.5	17.87	9136	1073.4	18.02	9208	1080.3	18.16	9280	1087.2	18.30

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.64			1.65			1.66			1.67		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
276	46.13	9805	1153.7	8.991	9885	1161.1	9.063	9964	1168.5	9.136	8.2	1175.9	9.29
275	45.39	9796	1152.5	9.119	9875	1159.8	9.193	9954	1167.2	9.266	6.3	1174.6	9.40
274	44.67	9786	1151.2	9.251	9865	1158.5	9.325	9944	1165.9	9.400	4.3	1173.3	9.51
273	43.95	9776	1150.0	9.384	9855	1157.3	9.460	9934	1164.6	9.536	2.4	1172.0	9.63
272	43.24	9766	1148.8	9.521	9845	1156.1	9.598	9924	1163.4	9.675	0.6	1170.7	9.76
271	42.54	9756	1147.5	9.660	9835	1154.8	9.737	9913	1162.1	9.815	9992	1169.4	9.89
270	41.84	9746	1146.2	9.795	9825	1153.5	9.874	9903	1160.8	9.953	9982	1168.1	10.03
269	41.16	9737	1145.0	9.941	9815	1152.3	10.02	9893	1159.6	10.10	9971	1166.9	10.18
268	40.49	9726	1143.8	10.09	9804	1151.1	10.17	9882	1158.3	10.25	9960	1165.6	10.33
267	39.83	9717	1142.5	10.23	9795	1149.8	10.31	9873	1157.0	10.40	9950	1164.3	10.48
266	39.17	9706	1141.2	10.39	9784	1148.5	10.47	9861	1155.7	10.55	9937	1163.0	10.64
265	38.53	9697	1140.0	10.54	9775	1147.3	10.63	9852	1154.5	10.71	9930	1161.8	10.79
264	37.89	9688	1138.7	10.70	9765	1146.0	10.78	9842	1153.2	10.87	9920	1160.5	10.95
263	37.26	9678	1137.5	10.85	9755	1144.8	10.94	9832	1152.0	11.02	9910	1159.2	11.11
262	36.64	9668	1136.3	11.01	9745	1143.5	11.10	9822	1150.7	11.19	9899	1157.9	11.28
261	36.02	9658	1135.1	11.17	9735	1142.3	11.26	9812	1149.5	11.35	9889	1156.7	11.44
260	35.42	9648	1133.8	11.34	9725	1141.0	11.43	9802	1148.2	11.52	9878	1155.4	11.61
259	34.83	9639	1132.5	11.51	9715	1139.7	11.60	9792	1146.9	11.69	9868	1154.1	11.78
258	34.24	9629	1131.2	11.68	9705	1138.3	11.77	9781	1145.5	11.86	9858	1152.7	11.96
257	33.66	9620	1130.0	11.86	9696	1137.1	11.95	9772	1144.3	12.05	9848	1151.5	12.14
256	33.09	9610	1128.7	12.04	9686	1135.9	12.14	9762	1143.0	12.23	9838	1150.2	12.33
255	32.53	9600	1127.4	12.22	9676	1134.6	12.32	9752	1141.7	12.41	9828	1148.9	12.51
254	31.97	9590	1126.1	12.41	9666	1133.2	12.51	9741	1140.4	12.61	9817	1147.5	12.70
253	31.42	9580	1124.9	12.61	9656	1132.0	12.71	9731	1139.2	12.81	9807	1146.3	12.91
252	30.88	9571	1123.6	12.80	9646	1130.7	12.90	9722	1137.9	13.00	9797	1145.0	13.10
251	30.35	9561	1122.4	12.99	9636	1129.5	13.10	9712	1136.6	13.20	9787	1143.7	13.30
250	29.82	9551	1121.1	13.20	9626	1128.2	13.30	9701	1135.3	13.41	9776	1142.4	13.51
249	29.30	9542	1119.8	13.41	9617	1126.9	13.51	9692	1134.0	13.62	9767	1141.1	13.72
248	28.79	9532	1118.5	13.61	9607	1125.6	13.72	9682	1132.6	13.83	9757	1139.7	13.93
247	28.29	9523	1117.3	13.83	9598	1124.3	13.94	9672	1131.4	14.04	9747	1138.4	14.15
246	27.80	9513	1116.0	14.05	9588	1123.0	14.16	9662	1130.1	14.27	9737	1137.1	14.38
245	27.31	9503	1114.8	14.26	9578	1121.8	14.38	9652	1128.8	14.49	9726	1135.9	14.60
244	26.83	9494	1113.5	14.49	9569	1120.5	14.60	9643	1127.5	14.71	9717	1134.6	14.83
243	26.35	9484	1112.2	14.71	9558	1119.2	14.83	9632	1126.3	14.94	9706	1133.3	15.05
242	25.88	9475	1110.9	14.94	9549	1117.9	15.06	9623	1125.0	15.18	9697	1132.0	15.29
241	25.42	9465	1109.6	15.18	9539	1116.6	15.30	9613	1123.7	15.42	9686	1130.7	15.54
240	24.97	9456	1108.3	15.42	9530	1115.3	15.54	9603	1122.3	15.66	9677	1129.3	15.78
239	24.52	9446	1107.0	15.67	9520	1114.0	15.79	9593	1121.0	15.91	9666	1128.0	16.04
238	24.08	9437	1105.7	15.92	9510	1112.7	16.04	9584	1119.7	16.17	9657	1126.7	16.29
237	23.64	9427	1104.5	16.18	9500	1111.4	16.30	9573	1118.4	16.43	9646	1125.4	16.55
236	23.21	9418	1103.2	16.44	9491	1110.1	16.57	9564	1117.1	16.70	9637	1124.0	16.83
235	22.79	9408	1101.9	16.72	9481	1108.8	16.85	9554	1115.8	16.98	9626	1122.7	17.11
234	22.38	9399	1100.5	16.99	9472	1107.4	17.12	9544	1114.4	17.26	9617	1121.3	17.39
233	21.97	9390	1099.2	17.27	9462	1106.1	17.40	9535	1113.1	17.53	9607	1120.0	17.67
332	21.57	9380	1097.9	17.55	9452	1104.8	17.68	9524	1111.8	17.82	9597	1118.7	17.96
231	21.17	9371	1096.7	17.84	9443	1103.6	17.98	9515	1110.5	18.12	9587	1117.4	18.25
230	20.78	9362	1095.4	18.13	9434	1102.3	18.27	9505	1109.2	18.41	9577	1116.1	18.55
229	20.40	9351	1094.1	18.44	9423	1100.9	18.58	9495	1107.8	18.72	9567	1114.7	18.87

Temperatures, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.60			1.61			1.62			1.63		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
228	20.02	9055	1065.2	18.17	9127	1072.1	18.32	9198	1079.0	18.46	9270	1085.8	18.60
227	19.64	9047	1064.0	18.47	9118	1070.9	18.62	9190	1077.7	18.77	9261	1084.6	18.91
226	19.28	9039	1062.7	18.78	9110	1069.6	18.93	9182	1076.4	19.08	9253	1083.3	19.23
225	18.91	9029	1061.5	19.11	9100	1068.3	19.26	9171	1075.1	19.41	9243	1082.0	19.56
224	18.56	9020	1060.2	19.43	9091	1067.0	19.58	9162	1073.8	19.74	9234	1080.7	19.89
223	18.21	9012	1059.0	19.76	9083	1065.8	19.92	9154	1072.6	20.07	9224	1079.4	20.23
222	17.86	9003	1057.7	20.10	9074	1064.5	20.26	9145	1071.3	20.42	9215	1078.1	20.58
221	17.52	8995	1056.5	20.44	9065	1063.3	20.60	9136	1070.1	20.77	9206	1076.9	20.93
220	17.19	8986	1055.2	20.79	9056	1062.0	20.96	9127	1068.8	21.12	9197	1075.6	21.28
219	16.86	8976	1053.9	21.15	9047	1060.7	21.31	9117	1067.4	21.48	9187	1074.2	21.65
218	16.54	8968	1052.6	21.51	9038	1059.3	21.68	9108	1066.0	21.85	9178	1072.8	22.02
217	16.22	8959	1051.3	21.89	9029	1058.0	22.06	9099	1064.8	22.23	9169	1071.5	22.40
216	15.90	8950	1050.0	22.27	9020	1056.7	22.44	9090	1063.5	22.62	9160	1070.2	22.79
215	15.60	8942	1048.7	22.66	9011	1055.4	22.83	9081	1062.2	23.01	9151	1068.9	23.19
214	15.29	8933	1047.4	23.06	9002	1054.1	23.24	9072	1060.9	23.41	9141	1067.6	23.59
213	14.99	8924	1046.2	23.46	8994	1052.9	23.64	9063	1059.6	23.83	9132	1066.3	24.01
212	14.70	8915	1044.9	23.88	8985	1051.6	24.06	9054	1058.3	24.25	9123	1065.0	24.43
211	14.41	8907	1043.6	24.31	8976	1050.3	24.50	9045	1057.0	24.68	9115	1063.7	24.87
210	14.13	8899	1042.3	24.74	8968	1049.0	24.93	9037	1055.7	25.12	9106	1062.4	25.31
209	13.85	8890	1041.0	25.18	8959	1047.7	25.37	9028	1054.3	25.57	9097	1061.0	25.76
208	13.57	8882	1039.7	25.63	8950	1046.4	25.83	9019	1053.0	26.03	9088	1059.7	26.23
207	13.30	8873	1038.4	26.09	8941	1045.0	26.30	9010	1051.7	26.50	9078	1058.4	26.70
206	13.03	8864	1037.1	26.57	8932	1043.7	26.78	9001	1050.4	26.98	9069	1057.1	27.19
205	12.77	8855	1035.8	27.06	8923	1042.4	27.27	8992	1049.1	27.48	9060	1055.7	27.69
204	12.51	8846	1034.5	27.56	8914	1041.1	27.77	8983	1047.8	27.98	9051	1054.4	28.19
203	12.26	8837	1033.2	28.06	8905	1039.8	28.27	8973	1046.4	28.49	9041	1053.1	28.71
202	12.01	8830	1031.9	28.58	8897	1038.6	28.80	8965	1045.2	29.02	9033	1051.8	29.24
201	11.77	8821	1030.6	29.10	8888	1037.2	29.32	8956	1043.8	29.55	9024	1050.4	29.77
200	11.53	8812	1029.3	29.63	8879	1035.9	29.85	8947	1042.5	30.08	9014	1049.1	30.31
199	11.29	8803	1028.0	30.17	8871	1034.6	30.40	8938	1041.2	30.63	9005	1047.7	30.86
198	11.06	8795	1026.7	30.72	8862	1033.3	30.96	8929	1039.9	31.19	8997	1046.5	31.43
197	10.83	8786	1025.3	31.29	8853	1031.9	31.53	8920	1038.4	31.76	8987	1045.0	32.00
196	10.61	8777	1024.0	31.87	8844	1030.5	32.11	8911	1037.1	32.36	8978	1043.6	32.60
195	10.39	8769	1022.7	32.47	8836	1029.3	32.72	8902	1035.8	32.97	8969	1042.4	33.21
194	10.17	8760	1021.4	33.09	8827	1027.9	33.34	8893	1034.5	33.59	8960	1041.0	33.84
193	9.96	8752	1020.1	33.72	8818	1026.6	33.98	8885	1033.2	34.23	8951	1039.7	34.49
192	9.75	8743	1018.8	34.37	8809	1025.3	34.63	8875	1031.8	34.89	8942	1038.3	35.15
191	9.54	8734	1017.4	35.03	8800	1023.9	35.30	8866	1030.4	35.56	8932	1037.0	35.83
190	9.34	8725	1016.2	35.70	8791	1022.6	35.97	8857	1029.1	36.24	8923	1035.6	36.51
189	9.14	8717	1014.9	36.39	8783	1021.4	36.67	8849	1027.8	36.94	8915	1034.3	37.22
188	8.95	8708	1013.5	37.09	8774	1020.0	37.37	8839	1026.5	37.65	8905	1032.9	37.93
187	8.76	8699	1012.2	37.80	8765	1018.7	38.08	8830	1025.2	38.37	8896	1031.6	38.65
186	8.57	8690	1010.9	38.52	8756	1017.3	38.81	8821	1023.8	39.10	8887	1030.2	39.39
185	8.38	8682	1009.6	39.27	8747	1016.0	39.56	8812	1022.5	39.86	8878	1028.9	40.15
184	8.20	8673	1008.2	40.04	8738	1014.6	40.34	8803	1021.1	40.64	8868	1027.5	40.94
183	8.02	8664	1006.9	40.83	8729	1013.3	41.13	8795	1019.8	41.44	8860	1026.2	41.75
182	7.85	8656	1005.4	41.64	8721	1012.0	41.96	8786	1018.4	42.27	8851	1024.8	42.58
181	7.68	8648	1004.2	42.49	8712	1010.6	42.80	8777	1017.0	43.12	8842	1023.4	43.44

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.64			1.65			1.66			1.67		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
228	20.02	9342	1092.7	18.75	9413	1099.6	18.89	9485	1106.5	19.04	9557	1113.3	19.18
227	19.64	9333	1091.4	19.06	9404	1098.3	19.20	9476	1105.2	19.35	9547	1112.0	19.50
226	19.28	9324	1090.1	19.38	9396	1097.0	19.52	9467	1103.9	19.67	9539	1110.7	19.82
225	18.91	9314	1088.8	19.71	9385	1095.7	19.86	9456	1102.6	20.01	9527	1109.4	20.16
224	18.56	9305	1087.5	20.04	9376	1094.3	20.20	9447	1101.2	20.35	9518	1108.0	20.50
223	18.21	9295	1086.2	20.38	9366	1093.1	20.54	9437	1099.9	20.70	9508	1106.7	20.85
222	17.86	9286	1084.9	20.74	9357	1091.8	20.89	9428	1098.6	21.05	9498	1105.4	21.21
221	17.52	9277	1083.6	21.09	9347	1090.5	21.25	9418	1097.3	21.41	9489	1104.1	21.57
220	17.19	9268	1082.3	21.45	9338	1089.1	21.61	9408	1095.9	21.77	9479	1102.7	21.93
219	16.86	9258	1081.0	21.81	9328	1087.8	21.98	9398	1094.5	22.14	9468	1101.3	22.31
218	16.54	9248	1079.6	22.19	9318	1086.4	22.35	9388	1093.1	22.52	9459	1099.9	22.69
217	16.22	9239	1078.3	22.57	9309	1085.1	22.74	9379	1091.8	22.91	9449	1098.6	23.08
216	15.90	9230	1077.0	22.96	9300	1083.7	23.14	9369	1090.5	23.31	9439	1097.2	23.48
215	15.60	9220	1075.7	23.36	9290	1082.4	23.54	9360	1089.2	23.72	9430	1095.9	23.89
214	15.29	9211	1074.4	23.77	9281	1081.1	23.95	9350	1087.8	24.13	9420	1094.6	24.31
213	14.99	9202	1073.1	24.19	9271	1079.8	24.37	9341	1086.5	24.56	9410	1093.3	24.74
212	14.70	9192	1071.7	24.62	9262	1078.4	24.80	9331	1085.1	24.99	9400	1091.9	25.17
211	14.41	9184	1070.4	25.06	9253	1077.1	25.25	9322	1083.8	25.44	9391	1090.6	25.63
210	14.13	9174	1069.1	25.51	9243	1075.8	25.70	9312	1082.5	25.89	9381	1089.2	26.08
209	13.85	9166	1067.7	25.96	9234	1074.4	26.15	9303	1081.1	26.35	9372	1087.8	26.54
208	13.57	9156	1066.4	26.42	9225	1073.1	26.62	9294	1079.7	26.82	9362	1086.4	27.02
207	13.30	9147	1065.0	26.90	9215	1071.7	27.10	9284	1078.4	27.30	9352	1085.0	27.51
206	13.03	9137	1063.7	27.39	9206	1070.4	27.60	9274	1077.0	27.80	9342	1083.7	28.01
205	12.77	9128	1062.4	27.90	9196	1069.0	28.10	9265	1075.7	28.31	9333	1082.3	28.52
204	12.51	9119	1061.0	28.40	9187	1067.7	28.62	9255	1074.3	28.83	9323	1080.9	29.04
203	12.26	9109	1059.7	28.92	9177	1066.3	29.14	9245	1072.9	29.35	9313	1079.6	29.57
202	12.01	9101	1058.4	29.46	9168	1065.0	29.68	9236	1071.6	29.90	9304	1078.2	30.12
201	11.77	9091	1057.0	29.99	9159	1063.6	30.21	9227	1070.3	30.44	9294	1076.9	30.66
200	11.53	9082	1055.7	30.53	9149	1062.3	30.76	9217	1068.9	30.99	9284	1075.5	31.21
199	11.29	9073	1054.3	31.09	9140	1060.9	31.32	9207	1067.5	31.55	9275	1074.1	31.78
198	11.06	9064	1053.0	31.66	9131	1059.6	31.89	9198	1066.2	32.13	9265	1072.8	32.36
197	10.83	9054	1051.6	32.24	9121	1058.1	32.48	9188	1064.7	32.72	9255	1071.3	32.96
196	10.61	9045	1050.2	32.84	9112	1056.8	33.08	9179	1063.3	33.33	9245	1069.9	33.57
195	10.39	9036	1048.9	33.46	9103	1055.4	33.71	9170	1062.0	33.95	9236	1068.5	34.20
194	10.17	9026	1047.5	34.09	9093	1054.1	34.34	9160	1060.6	34.60	9226	1067.1	34.85
193	9.96	9018	1046.2	34.74	9084	1052.7	35.00	9151	1059.3	35.26	9217	1065.8	35.51
192	9.75	9008	1044.8	35.41	9074	1051.4	35.67	9141	1057.9	35.93	9207	1064.4	36.19
191	9.54	8998	1043.5	36.09	9065	1050.0	36.36	9131	1056.5	36.62	9197	1063.0	36.89
190	9.34	8989	1042.1	36.78	9055	1048.6	37.05	9121	1055.1	37.32	9188	1061.6	37.60
189	9.14	8980	1040.8	37.49	9046	1047.3	37.77	9112	1053.8	38.04	9178	1060.3	38.32
188	8.95	8971	1039.4	38.21	9037	1045.9	38.49	9102	1052.4	38.77	9168	1058.8	39.05
187	8.76	8962	1038.1	38.94	9027	1044.6	39.22	9093	1051.0	39.51	9159	1057.5	39.79
186	8.57	8954	1036.7	39.68	9018	1043.1	39.97	9083	1049.6	40.27	9149	1056.1	40.56
185	8.38	8943	1035.4	40.45	9008	1041.8	40.74	9074	1048.2	41.04	9139	1054.7	41.33
184	8.20	8933	1034.0	41.25	8999	1040.4	41.55	9064	1046.8	41.85	9129	1053.2	42.15
183	8.02	8925	1032.6	42.05	8990	1039.0	42.36	9055	1045.5	42.67	9120	1051.9	42.97
182	7.85	8916	1031.3	42.89	8981	1037.7	43.21	9046	1044.1	43.52	9111	1050.5	43.83
181	7.68	8907	1029.8	43.76	8972	1036.2	44.08	9036	1042.6	44.40	9101	1049.0	44.71

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.60			1.61			1.62			1.63		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
180	7.51	8639	1002.8	43.37	8703	1009.2	43.69	8768	1015.6	44.01	8833	1022.0	44.34
179	7.35	8630	1001.5	44.19	8695	1007.9	44.52	8759	1014.3	44.85	8824	1020.7	45.18
178	7.19	8622	1000.2	45.09	8686	1006.6	45.43	8750	1012.9	45.76	8815	1019.3	46.10
177	7.03	8613	998.9	45.99	8678	1005.2	46.34	8742	1011.6	46.68	8806	1018.0	47.02
176	6.87	8604	997.5	46.89	8668	1003.8	47.24	8732	1010.2	47.59	8796	1016.5	47.94
175	6.71	8596	996.1	47.88	8660	1002.5	48.23	8724	1008.8	48.59	8788	1015.2	48.95
174	6.56	8587	994.8	48.86	8651	1001.2	49.22	8715	1007.5	49.59	8779	1013.8	49.95
173	6.42	8579	993.5	49.84	8643	999.8	50.2	8706	1006.1	50.6	8770	1012.5	51.0
172	6.27	8570	992.1	50.8	8634	998.5	51.2	8697	1004.8	51.6	8761	1011.1	52.0
171	6.13	8561	990.7	51.9	8624	997.0	52.3	8688	1003.4	52.6	8751	1009.7	53.0
170	5.99	8552	989.4	53.0	8616	995.7	53.4	8679	1002.0	53.8	8742	1008.3	54.2
169	5.85	8544	988.1	54.2	8607	994.3	54.6	8670	1000.6	55.0	8733	1006.9	55.4
168	5.72	8536	986.7	55.3	8599	993.0	55.7	8662	999.3	56.1	8725	1005.5	56.5
167	5.59	8527	985.3	56.4	8589	991.6	56.9	8652	997.9	57.3	8715	1004.1	57.7
166	5.46	8518	984.0	57.7	8581	990.2	58.1	8644	996.5	58.5	8706	1002.8	58.9
165	5.33	8510	982.6	58.8	8572	988.9	59.2	8635	995.1	59.7	8697	1001.4	60.1
164	5.21	8501	981.3	60.0	8563	987.5	60.5	8626	993.7	60.9	8688	1000.0	61.3
163	5.09	8492	979.9	61.2	8555	986.1	61.7	8617	992.4	62.1	8679	998.6	62.6
162	4.969	8484	978.5	62.5	8546	984.7	63.0	8608	991.0	63.4	8670	997.2	63.9
161	4.852	8475	977.2	63.9	8537	983.4	64.4	8599	989.6	64.8	8661	995.8	65.3
160	4.738	8467	975.8	65.4	8529	982.0	65.8	8590	988.2	66.3	8652	994.4	66.8
159	4.626	8458	974.5	66.7	8520	980.7	67.2	8582	986.8	67.7	8643	993.0	68.2
158	4.517	8449	973.1	68.2	8511	979.3	68.7	8573	985.4	69.2	8634	991.6	69.7
157	4.409	8441	971.8	69.7	8503	977.9	70.2	8564	984.1	70.7	8626	990.3	71.2
156	4.303	8432	970.4	71.3	8494	976.5	71.8	8555	982.7	72.3	8616	988.8	72.8
155	4.200	8424	969.0	72.8	8485	975.1	73.3	8546	981.3	73.8	8607	987.4	74.4
154	4.099	8415	967.6	74.4	8476	973.7	74.9	8537	979.9	75.5	8598	986.0	76.0
153	4.000	8406	966.2	76.0	8467	972.4	76.5	8528	978.5	77.1	8589	984.6	77.6
152	3.903	8397	964.8	77.7	8458	971.0	78.2	8519	977.1	78.8	8580	983.2	79.4
151	3.808	8388	963.4	79.4	8449	969.5	80.0	8510	975.7	80.6	8570	981.8	81.2
150	3.715	8380	962.1	81.2	8441	968.2	81.8	8501	974.3	82.4	8562	980.4	83.0
149	3.624	8371	960.7	83.0	8432	966.8	83.6	8492	972.9	84.2	8552	978.9	84.8
148	3.535	8363	959.3	85.0	8423	965.4	85.6	8483	971.5	86.2	8544	977.6	86.8
147	3.447	8354	957.9	86.9	8414	964.0	87.5	8474	970.0	88.1	8534	976.1	88.8
146	3.361	8345	956.6	88.9	8405	962.6	89.5	8465	968.7	90.2	8525	974.7	90.8
145	3.278	8336	955.1	90.9	8396	961.2	91.5	8456	967.2	92.2	8516	973.3	92.8
144	3.196	8328	953.8	92.9	8388	959.8	93.6	8447	965.8	94.3	8507	971.9	94.9
143	3.116	8319	952.3	95.1	8378	958.4	95.8	8438	964.4	96.4	8498	970.4	97.1
142	3.037	8311	951.0	97.3	8370	957.0	98.0	8429	963.0	98.7	8489	969.0	99.4
141	2.960	8302	949.6	99.5	8361	955.6	100.3	8421	961.6	101.0	8480	967.6	101.7
140	2.885	8293	948.1	101.8	8352	954.1	102.6	8411	960.1	103.3	8470	966.1	104.0
139	2.812	8285	946.8	104.3	8344	952.7	105.0	8403	958.7	105.8	8462	964.7	106.5
138	2.740	8276	945.4	106.7	8335	951.3	107.4	8394	957.3	108.2	8453	963.3	109.0
137	2.669	8267	943.9	109.2	8326	949.9	110.0	8384	955.8	110.8	8443	961.8	111.5
136	2.600	8258	942.5	111.8	8317	948.5	112.6	8376	954.4	113.4	8434	960.4	114.2
135	2.533	8250	941.1	114.5	8309	947.1	115.3	8367	953.0	116.1	8426	959.0	116.9
134	2.467	8241	939.7	117.2	8299	945.6	118.0	8358	951.5	118.8	8416	957.5	119.7
133	2.403	8232	938.3	120.0	8291	944.2	120.9	8349	950.1	121.7	8407	956.0	122.6

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.64			1.65			1.66			1.67		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
180	7.51	8897	1028.4	44.66	8962	1034.8	44.99	9026	1041.2	45.31	9091	1047.6	45.64
179	7.35	8888	1027.0	45.51	8953	1033.4	45.84	9017	1039.8	46.17	9082	1046.2	46.50
178	7.19	8879	1025.7	46.44	8944	1032.1	46.77	9008	1038.4	47.11	9072	1044.8	47.45
177	7.03	8870	1024.3	47.37	8934	1030.7	47.71	8999	1037.1	48.05	9063	1043.4	48.39
176	6.87	8860	1022.9	48.29	8925	1029.3	48.64	8989	1035.6	48.99	9053	1042.0	49.34
175	6.71	8852	1021.5	49.30	8916	1027.9	49.66	8979	1034.2	50.0	9043	1040.6	50.4
174	6.56	8843	1020.2	50.3	8906	1026.5	50.7	8970	1032.8	51.0	9034	1039.2	51.4
173	6.42	8833	1018.8	51.3	8897	1025.1	51.7	8961	1031.4	52.1	9024	1037.8	52.4
172	6.27	8824	1017.4	52.3	8888	1023.7	52.7	8951	1030.0	53.1	9015	1036.4	53.5
171	6.13	8815	1016.0	53.4	8878	1022.3	53.8	8941	1028.6	54.2	9005	1034.9	54.6
170	5.99	8805	1014.6	54.6	8869	1020.9	55.0	8932	1027.2	55.4	8995	1033.5	55.8
169	5.85	8796	1013.2	55.8	8859	1019.5	56.2	8922	1025.8	56.6	8986	1032.0	57.0
168	5.72	8788	1011.8	56.9	8851	1018.1	57.4	8914	1024.4	57.8	8977	1030.6	58.2
167	5.59	8778	1010.4	58.1	8841	1016.7	58.5	8904	1022.9	58.9	8966	1029.2	59.4
166	5.46	8769	1009.0	59.4	8832	1015.3	59.8	8894	1021.6	60.2	8957	1027.8	60.6
165	5.33	8760	1007.6	60.5	8822	1013.9	61.0	8885	1020.1	61.4	8948	1026.3	61.8
164	5.21	8751	1006.2	61.8	8813	1012.4	62.2	8876	1018.7	62.7	8938	1024.9	63.1
163	5.09	8742	1004.8	63.0	8804	1011.0	63.5	8866	1017.3	63.9	8928	1023.5	64.4
162	4.969	8732	1003.4	64.4	8794	1009.6	64.8	8856	1015.8	65.3	8919	1022.0	65.7
161	4.852	8723	1002.0	65.8	8785	1008.2	66.2	8847	1014.5	66.7	8909	1020.7	67.2
160	4.738	8714	1000.6	67.3	8776	1006.8	67.8	8838	1013.0	68.2	8900	1019.2	68.7
159	4.626	8705	999.2	68.7	8767	1005.4	69.2	8829	1011.6	69.7	8890	1017.8	70.1
158	4.517	8696	997.8	70.2	8757	1004.0	70.7	8819	1010.1	71.2	8881	1016.3	71.7
157	4.409	8687	996.4	71.8	8748	1002.6	72.3	8810	1008.8	72.8	8871	1014.9	73.3
156	4.303	8678	995.0	73.3	8739	1001.1	73.8	8800	1007.3	74.4	8862	1013.5	74.9
155	4.200	8668	993.6	74.9	8729	999.7	75.4	8791	1005.9	76.0	8852	1012.0	76.5
154	4.099	8659	992.1	76.5	8720	998.3	77.1	8781	1004.4	77.6	8842	1010.5	78.2
153	4.000	8650	990.7	78.2	8711	996.9	78.7	8772	1003.0	79.3	8833	1009.1	79.8
152	3.903	8640	989.3	79.9	8701	995.4	80.5	8762	1001.5	81.0	8823	1007.7	81.6
151	3.808	8631	987.9	81.7	8692	994.0	82.3	8752	1000.1	82.9	8813	1006.2	83.5
150	3.715	8622	986.5	83.5	8683	992.6	84.1	8743	998.7	84.7	8804	1004.8	85.3
149	3.624	8613	985.0	85.4	8673	991.1	86.0	8733	997.2	86.6	8794	1003.3	87.2
148	3.535	8604	983.6	87.4	8664	989.7	88.0	8724	995.8	88.6	8785	1001.9	89.3
147	3.447	8594	982.2	89.4	8654	988.2	90.0	8715	994.3	90.6	8775	1000.4	91.3
146	3.361	8585	980.8	91.4	8645	986.8	92.1	8705	992.9	92.7	8765	998.9	93.3
145	3.278	8576	979.3	93.5	8636	985.4	94.1	8695	991.4	94.8	8755	997.4	95.4
144	3.196	8567	977.9	95.6	8626	983.9	96.3	8686	990.0	96.9	8746	996.0	97.6
143	3.116	8557	976.4	97.8	8617	982.5	98.5	8676	988.5	99.2	8736	994.5	99.9
142	3.037	8548	975.0	100.1	8608	981.0	100.8	8667	987.0	101.5	8727	993.1	102.2
141	2.960	8539	973.6	102.4	8598	979.6	103.1	8658	985.6	103.8	8717	991.6	104.5
140	2.885	8530	972.1	104.7	8589	978.1	105.5	8648	984.1	106.2	8707	990.1	106.9
139	2.812	8521	970.7	107.3	8580	976.7	108.0	8639	982.7	108.7	8698	988.6	109.5
138	2.740	8512	969.3	109.7	8571	975.2	110.5	8630	981.2	111.2	8689	987.2	112.0
137	2.669	8502	967.8	112.3	8561	973.7	113.1	8620	979.7	113.9	8678	985.7	114.6
136	2.600	8493	966.3	115.0	8552	972.3	115.8	8610	978.3	116.6	8669	984.2	117.4
135	2.533	8484	964.9	117.8	8543	970.9	118.6	8601	976.8	119.4	8660	982.7	120.2
134	2.467	8474	963.4	120.5	8533	969.3	121.3	8591	975.3	122.2	8649	981.2	123.0
133	2.403	8465	962.0	123.4	8524	967.9	124.3	8582	973.8	125.1	8640	979.7	126.0

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.60			1.61			1.62			1.63		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
132	2.341	8224	936.9	122.9	8282	942.8	123.8	8340	948.7	124.7	8398	954.6	125.6
131	2.280	8215	935.4	125.9	8273	941.3	126.7	8331	947.3	127.6	8389	953.2	128.5
130	2.220	8207	934.0	128.9	8265	939.9	129.8	8323	945.8	130.7	8380	951.7	131.7
129	2.161	8198	932.6	132.1	8256	938.5	133.0	8314	944.4	133.9	8371	950.3	134.9
128	2.103	8189	931.2	135.3	8247	937.1	136.2	8305	942.9	137.2	8362	948.8	138.1
127	2.047	8181	929.8	138.6	8238	935.7	139.6	8296	941.5	140.5	8353	947.4	141.5
126	1.992	8172	928.3	142.0	8229	934.2	143.0	8287	940.0	144.0	8344	945.9	145.0
125	1.938	8163	926.9	145.5	8220	932.8	146.6	8278	938.6	147.6	8335	944.5	148.6
124	1.886	8154	925.5	149.1	8211	931.3	150.2	8268	937.1	151.2	8326	943.0	152.3
123	1.835	8145	924.1	152.9	8202	929.9	154.0	8259	935.7	155.0	8316	941.6	156.1
122	1.785	8137	922.6	156.8	8194	928.4	157.9	8250	934.2	159.0	8307	940.1	160.1
121	1.737	8129	921.2	160.8	8185	927.0	161.9	8242	932.8	163.0	8299	938.6	164.1
120	1.689	8120	919.8	164.8	8176	925.6	166.0	8233	931.3	167.1	8289	937.1	168.3
119	1.642	8111	918.4	169.0	8167	924.2	170.2	8224	929.9	171.4	8280	935.7	172.6
118	1.597	8102	916.9	173.4	8159	922.7	174.6	8215	928.5	175.8	8271	934.2	177.0
117	1.552	8093	915.5	177.9	8149	921.2	179.1	8206	927.0	180.4	8262	932.7	181.6
116	1.509	8084	914.0	182.5	8140	919.7	183.7	8196	925.5	185.0	8253	931.2	186.3
115	1.467	8076	912.6	187.2	8132	918.3	188.5	8188	924.1	189.8	8244	929.8	191.1
114	1.426	8067	911.1	192.0	8122	916.8	193.3	8178	922.6	194.6	8234	928.3	196.0
113	1.386	8058	909.7	196.9	8113	915.4	198.3	8169	921.1	199.6	8225	926.9	201.0
112	1.347	8049	908.2	202.1	8104	913.9	203.5	8160	919.6	204.9	8216	925.4	206.3
111	1.308	8040	906.8	207.4	8095	912.5	208.9	8151	918.2	210.3	8206	923.9	211.7
110	1.271	8031	905.3	213.0	8087	911.0	214.5	8142	916.7	215.9	8197	922.4	217.4
109	1.235	8022	903.9	218.7	8077	909.6	220.2	8132	915.2	221.7	8188	920.9	223.2
108	1.200	8014	902.4	224.5	8069	908.1	226.1	8124	913.7	227.6	8179	919.4	229.2
107	1.165	8004	901.0	230.7	8059	906.6	232.3	8114	912.3	233.9	8169	917.9	235.4
106	1.131	7996	899.5	237.0	8051	905.1	238.6	8105	910.8	240.2	8160	916.4	241.9
105	1.098	7987	898.0	243.4	8042	903.6	245.1	8096	909.3	246.8	8151	914.9	248.4
104	1.066	7978	896.5	250.1	8032	902.1	251.8	8087	907.8	253.5	8142	913.4	255.2
103	1.035	7969	895.1	256.9	8024	900.7	258.7	8078	906.3	260.4	8133	911.9	262.2
102	1.005	7961	893.6	264.0	8015	899.2	265.8	8069	904.8	267.6	8123	910.4	269.4
101	0.975	7952	892.1	271.2	8006	897.7	273.1	8060	903.3	274.9	8115	908.9	276.8
100	0.946	7943	890.6	278.6	7997	896.2	280.5	8051	901.8	282.4	8105	907.4	284.3
99	0.918	7934	889.2	286.4	7988	894.8	288.3	8042	900.3	290.2	8096	905.9	292.2
98	0.891	7925	887.7	294.3	7979	893.3	296.3	8033	898.8	298.3	8087	904.4	300.3
97	0.864	7917	886.3	302.5	7970	891.9	304.5	8024	897.4	306.6	8077	903.0	308.6
96	0.838	7908	884.9	311.0	7961	890.4	313.1	8015	896.0	315.2	8068	901.5	317.3
95	0.813	7899	883.4	319.8	7952	888.9	321.9	8006	894.5	324.1	8059	900.0	326.2
94	0.788	7890	881.9	328.8	7943	887.4	331.0	7997	893.0	333.2	8050	898.5	335.4
93	0.764	7882	880.4	338.2	7935	885.9	340.5	7988	891.5	342.8	8041	897.0	345.0
92	0.741	7872	878.9	348.0	7925	884.4	350.3	7978	889.9	352.6	8031	895.5	355.0
91	0.718	7864	877.4	358.1	7917	882.9	360.5	7969	888.4	362.9	8022	894.0	365.3
90	0.696	7855	875.9	368.5	7908	881.4	371.0	7960	886.9	373.5	8013	892.4	376.0
89	0.675	7846	874.4	379.3	7899	879.9	381.8	7951	885.4	384.4	8004	890.9	386.9
88	0.654	7837	872.9	390.3	7890	878.4	392.9	7942	883.9	395.5	7995	889.3	398.1
87	0.633	7829	871.4	401.6	7881	876.9	404.3	7933	882.4	407.0	7986	887.8	409.7
86	0.613	7820	869.9	412.9	7872	875.4	415.6	7924	880.9	418.4	7976	886.3	421.2
85	0.594	7811	868.4	424.9	7863	873.9	427.7	7915	879.3	430.6	7967	884.8	433.4

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.64			1.65			1.66			1.67		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
132	2.341	8456	960.5	126.4	8515	966.4	127.3	8573	972.3	128.2	8631	978.3	129.0
131	2.280	8447	959.1	129.4	8505	965.0	130.3	8563	970.9	131.2	8621	976.8	132.1
130	2.220	8438	957.6	132.6	8496	963.5	133.5	8554	969.4	134.4	8612	975.3	135.3
129	2.161	8429	956.2	135.8	8487	962.0	136.7	8544	967.9	137.7	8602	973.8	138.6
128	2.103	8420	954.7	139.1	8478	960.6	140.0	8535	966.4	141.0	8593	972.3	142.0
127	2.047	8411	953.3	142.5	8468	959.1	143.4	8526	965.0	144.4	8583	970.8	145.4
126	1.992	8401	951.8	146.0	8459	957.6	147.0	8516	963.5	148.0	8573	969.3	149.0
125	1.938	8392	950.4	149.6	8449	956.2	150.6	8506	962.1	151.7	8564	967.7	152.7
124	1.886	8383	948.8	153.3	8440	954.6	154.4	8497	960.5	155.4	8554	966.3	156.4
123	1.835	8373	947.4	157.2	8430	953.2	158.2	8487	959.1	159.3	8544	964.9	160.4
122	1.785	8364	945.9	161.2	8421	951.7	162.3	8478	957.5	163.4	8535	963.3	164.5
121	1.737	8355	944.4	165.3	8412	950.2	166.4	8469	956.0	167.5	8525	961.8	168.6
120	1.689	8346	942.9	169.4	8403	948.7	170.6	8459	954.5	171.7	8516	960.3	172.9
119	1.642	8336	941.5	173.7	8393	947.3	174.9	8449	953.0	176.1	8506	958.8	177.3
118	1.597	8328	940.0	178.2	8384	945.8	179.4	8440	951.5	180.6	8496	957.3	181.8
117	1.552	8318	938.5	182.8	8374	944.3	184.1	8430	950.0	185.3	8487	955.8	186.5
116	1.509	8309	937.0	187.5	8365	942.8	188.8	8421	948.5	190.1	8477	954.2	191.3
115	1.467	8300	935.5	192.4	8355	941.3	193.7	8411	947.0	195.0	8467	952.8	196.3
114	1.426	8290	934.0	197.3	8346	939.8	198.6	8401	945.5	200.0	8457	951.3	201.3
113	1.386	8280	932.6	202.4	8336	938.3	203.7	8392	944.0	205.1	8447	949.8	206.4
112	1.347	8271	931.1	207.7	8327	936.8	209.1	8382	942.5	210.5	8438	948.2	211.9
111	1.308	8261	929.6	213.1	8317	935.3	214.6	8372	941.0	216.0	8428	946.7	217.4
110	1.271	8253	928.1	218.9	8308	933.8	220.3	8363	939.5	221.8	8418	945.2	223.3
109	1.235	8243	926.6	224.7	8298	932.3	226.2	8353	938.0	227.7	8408	943.7	229.2
108	1.200	8234	925.1	230.7	8289	930.8	232.3	8344	936.4	233.8	8399	942.1	235.3
107	1.165	8224	923.6	237.0	8279	929.3	238.6	8334	934.9	240.2	8389	940.6	241.8
106	1.131	8215	922.1	243.5	8270	927.7	245.1	8324	933.4	246.7	8379	939.0	248.4
105	1.098	8206	920.6	250.1	8260	926.2	251.8	8315	931.9	253.4	8370	937.5	255.1
104	1.066	8196	919.1	256.9	8251	924.7	258.7	8305	930.3	260.4	8360	936.0	262.1
103	1.035	8187	917.6	263.9	8241	923.2	265.7	8296	928.8	267.5	8350	934.5	269.2
102	1.005	8178	916.1	271.2	8232	921.7	273.0	8286	927.3	274.8	8341	932.9	276.6
101	0.975	8169	914.5	278.6	8223	920.2	280.5	8277	925.8	282.3	8331	931.4	284.2
100	0.946	8159	913.0	286.2	8213	918.6	288.1	8267	924.2	290.0	8321	929.8	291.9
99	0.918	8150	911.5	294.1	8205	917.1	296.1	8257	922.7	298.0	8311	928.3	300.0
98	0.891	8140	910.0	302.3	8194	915.6	304.2	8248	921.2	306.2	8302	926.7	308.2
97	0.864	8131	908.5	310.7	8185	914.1	312.7	8238	919.7	314.8	8292	925.2	316.8
96	0.838	8122	907.1	319.4	8175	912.6	321.5	8229	918.2	323.6	8282	923.7	325.7
95	0.813	8113	905.5	328.4	8166	911.1	330.6	8219	916.7	332.7	8273	922.2	334.9
94	0.788	8103	904.0	337.7	8157	909.6	339.9	8210	915.1	342.1	8263	920.6	344.3
93	0.764	8094	902.5	347.3	8147	908.1	349.6	8200	913.6	351.9	8254	919.1	354.2
92	0.741	8085	901.0	357.3	8138	906.5	359.7	8191	912.0	362.0	8244	917.5	364.4
91	0.718	8075	899.4	367.7	8128	905.0	370.2	8181	910.5	372.6	8234	916.0	375.0
90	0.696	8066	897.9	378.5	8119	903.4	380.9	8171	908.9	383.4	8224	914.4	385.9
89	0.675	8057	896.4	389.5	8109	901.9	392.0	8162	907.4	394.5	8215	912.9	397.1
88	0.654	8047	894.8	400.7	8100	900.3	403.4	8152	905.8	406.0	8205	911.2	408.6
87	0.633	8038	893.3	412.4	8091	898.8	415.0	8143	904.3	417.7	8195	909.7	420.4
86	0.613	8029	891.8	423.9	8081	897.2	426.7	8133	902.7	429.4	8186	908.1	432.2
85	0.594	8019	890.2	436.2	8072	895.7	439.1	8124	901.1	441.9	8176	906.5	444.8

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.68			1.69			1.70			1.71		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
420	308.5	...	...	...	...	...	...	...	...	...	...	...	...
419	305.1	...	...	...	...	...	...	...	...	...	...	...	...
418	301.8	...	...	...	...	...	...	...	...	...	...	...	...
417	298.5	...	...	...	...	...	...	...	...	...	...	...	...
416	295.2	...	...	...	...	...	...	...	...	...	...	...	...
415	292.0	...	...	...	...	...	...	...	...	...	...	...	...
414	288.9	300.9	1368.3	2.410	...	...	...	...	...	...	...	...	...
413	285.7	298.7	1366.8	2.430	...	...	...	...	...	...	...	...	...
412	282.5	296.6	1365.4	2.450	...	...	...	...	...	...	...	...	...
411	279.4	294.5	1364.0	2.470	...	...	...	...	...	...	...	...	...
410	276.3	292.4	1362.6	2.490	...	...	...	...	...	...	...	...	...
409	273.3	290.4	1361.3	2.510	...	...	...	...	...	...	...	...	...
408	270.3	288.3	1359.9	2.530	...	...	...	...	...	...	...	...	...
407	267.3	286.2	1358.6	2.551	...	...	...	...	...	...	...	...	...
406	264.3	284.1	1357.3	2.572	...	...	...	...	...	...	...	...	...
405	261.3	282.0	1355.9	2.593	...	...	...	...	...	...	...	...	...
404	258.4	280.0	1354.6	2.614	...	...	...	...	...	...	...	...	...
403	255.5	277.9	1353.3	2.636	301.0	1364.9	2.697	...	...	...	...	...	...
402	252.6	275.9	1351.9	2.658	298.9	1363.5	2.720	...	...	...	...	...	...
401	249.7	273.8	1350.5	2.680	296.7	1362.1	2.742	...	...	...	...	...	...
400	246.9	271.7	1349.1	2.703	294.5	1360.7	2.765	...	...	...	...	...	...
399	244.1	269.6	1347.8	2.725	292.3	1359.3	2.788	...	...	...	...	...	...
398	241.4	267.6	1346.4	2.748	290.2	1357.9	2.811	...	...	...	...	...	...
397	238.6	265.5	1345.0	2.770	288.1	1356.5	2.835	...	...	...	...	...	...
396	235.9	263.5	1343.7	2.794	286.0	1355.2	2.859	...	...	...	...	...	...
395	233.2	261.4	1342.4	2.820	283.9	1353.9	2.884	...	...	...	...	...	...
394	230.5	259.4	1341.0	2.843	281.9	1352.6	2.909	...	...	...	...	...	...
393	227.9	257.3	1339.7	2.868	279.8	1351.2	2.933	...	...	...	...	...	...
392	225.2	255.3	1338.3	2.892	277.7	1349.8	2.958	299.9	1361.0	3.030	...	...	...
391	222.6	253.3	1337.0	2.917	275.5	1348.3	2.983	297.6	1359.6	3.056	...	...	...
390	220.1	251.2	1335.7	2.941	273.3	1346.9	3.009	295.4	1358.2	3.083	...	...	...
389	217.5	249.2	1334.3	2.967	271.1	1345.5	3.036	293.2	1356.8	3.109	...	...	...
388	215.0	247.1	1333.0	2.993	269.0	1344.0	3.061	291.1	1355.4	3.136	...	...	...
387	212.5	245.0	1331.7	3.019	266.9	1342.6	3.089	289.0	1354.0	3.164	...	...	...
386	210.0	243.0	1330.4	3.045	264.8	1341.2	3.116	287.0	1352.6	3.191	...	...	...
385	207.5	241.0	1329.0	3.071	262.6	1339.8	3.144	284.9	1351.2	3.219	...	...	...
384	205.1	238.9	1327.7	3.099	260.4	1338.4	3.171	282.7	1349.7	3.246	...	...	...
383	202.6	236.9	1326.4	3.126	258.3	1337.0	3.200	280.5	1348.2	3.275	...	...	...
382	200.3	234.8	1325.0	3.153	256.1	1335.7	3.229	278.3	1346.7	3.304	300.9	1358.4	3.386
381	197.9	232.7	1323.6	3.181	254.0	1334.3	3.258	276.1	1345.3	3.333	298.6	1356.9	3.415
380	195.5	230.6	1322.3	3.210	251.9	1332.9	3.287	273.9	1343.8	3.362	296.3	1355.4	3.445
379	193.2	228.5	1320.9	3.237	249.8	1331.6	3.316	271.8	1342.4	3.392	294.1	1354.0	3.476
378	190.9	226.5	1319.5	3.267	247.7	1330.2	3.346	269.6	1340.9	3.421	292.0	1352.7	3.506
377	188.6	224.4	1318.1	3.297	245.6	1328.9	3.376	267.4	1339.5	3.452	289.8	1351.2	3.537
376	186.3	222.4	1316.8	3.325	243.5	1327.5	3.408	265.2	1338.1	3.482	287.7	1349.8	3.568
375	184.1	220.3	1315.5	3.354	241.4	1326.1	3.438	263.0	1336.8	3.513	285.5	1348.3	3.599
374	181.9	218.2	1314.1	3.384	239.3	1324.7	3.469	261.0	1335.4	3.545	283.3	1346.8	3.631
373	179.7	216.2	1312.8	3.415	237.1	1323.3	3.501	258.9	1334.1	3.578	281.1	1345.3	3.663

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.72			1.73			1.74			1.75		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
420	308.5	...	...	...	...	...	...	...	...	...	...	...	...
419	305.1	...	...	...	...	...	...	...	...	...	...	...	...
418	301.8	...	...	...	...	...	...	...	...	...	...	...	...
417	298.5	...	...	...	...	...	...	...	...	...	...	...	...
416	295.2	...	...	...	...	...	...	...	...	...	...	...	...
415	292.0	...	...	...	...	...	...	...	...	...	...	...	...
414	288.9	...	...	...	...	...	...	...	...	...	...	...	...
413	285.7	...	...	...	...	...	...	...	...	...	...	...	...
412	282.5	...	...	...	...	...	...	...	...	...	...	...	...
411	279.4	...	...	...	...	...	...	...	...	...	...	...	...
410	276.3	...	...	...	...	...	...	...	...	...	...	...	...
409	273.3	...	...	...	...	...	...	...	...	...	...	...	...
408	270.3	...	...	...	...	...	...	...	...	...	...	...	...
407	267.3	...	...	...	...	...	...	...	...	...	...	...	...
406	264.3	...	...	...	...	..	...	...	...	...	...	...	...
405	261.3	...	...	...	...	...	...	...	...	...	...	...	...
404	258.4	...	...	...	...	...	...	...	...	...	...	...	...
403	255.5	...	...	...	...	...	...	...	...	...	...	...	...
402	252.6	...	...	...	...	...	...	...	...	...	...	...	...
401	249.7	...	...	...	...	...	...	...	...	...	...	...	...
400	246.9	...	...	...	...	...	...	...	...	...	...	...	...
399	244.1	...	...	...	...	...	...	...	...	...	...	...	...
398	241.4	...	...	...	...	...	...	...	...	...	...	...	...
397	238.6	...	...	...	...	...	...	...	...	...	...	...	...
396	235.9	...	...	...	...	...	...	...	...	...	...	...	...
395	233.2	...	...	...	...	...	...	...	...	...	...	...	...
394	230.5	...	...	...	...	...	...	...	...	...	...	...	...
393	227.9	...	...	...	...	...	...	...	...	...	...	...	...
392	225.2	...	...	...	...	...	...	...	...	...	...	...	...
391	222.6	...	...	...	...	...	...	...	...	...	...	...	...
390	220.1	...	...	...	...	...	...	...	...	...	...	...	...
389	217.5	...	...	...	...	...	...	...	...	...	...	...	...
388	215.0	...	...	...	...	...	...	...	...	...	...	...	...
387	212.5	...	...	...	...	...	...	...	...	...	...	...	...
386	210.0	...	...	...	...	...	...	...	...	...	...	...	...
385	207.5	...	...	...	...	...	...	...	...	...	...	...	...
384	205.1	...	...	...	...	...	...	...	...	...	...	...	...
383	202.6	...	...	...	...	...	...	...	...	...	...	...	...
382	200.3	...	...	...	...	...	...	...	...	...	...	...	...
381	197.9	...	...	...	...	...	...	...	...	...	...	...	...
380	195.5	...	...	...	...	...	...	...	...	...	...	...	...
379	193.2	...	...	...	...	...	...	...	...	...	...	...	...
378	190.9	...	...	...	...	...	...	...	...	...	...	...	...
377	188.6	...	...	...	...	...	...	...	...	...	...	...	...
376	186.3	...	...	...	...	...	...	...	...	...	...	...	...
375	184.1	...	...	...	...	...	...	...	...	...	...	...	...
374	181.9	...	...	...	...	...	...	...	...	...	...	...	...
373	179.7	...	...	...	...	...	...	...	...	...	...	...	...

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.68			1.69			1.70			1.71		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
372	177.5	214.1	1311.5	3.446	235.0	1321.9	3.533	256.7	1332.7	3.608	279.0	1344.0	3.698
371	175.3	212.1	1310.2	3.478	232.9	1320.6	3.565	254.5	1331.2	3.642	276.8	1342.5	3.730
370	173.2	210.0	1308.8	3.509	230.8	1319.2	3.599	252.3	1329.8	3.676	274.5	1341.0	3.765
369	171.1	208.0	1307.5	3.540	228.8	1317.8	3.631	250.1	1328.4	3.709	272.2	1339.5	3.799
368	169.0	206.0	1306.2	3.573	226.7	1316.5	3.666	248.0	1327.0	3.743	270.0	1338.0	3.834
367	166.9	204.0	1304.9	3.605	224.6	1315.1	3.700	245.9	1325.6	3.779	267.8	1336.5	3.870
366	164.8	202.0	1303.5	3.640	222.5	1313.7	3.734	243.7	1324.2	3.814	265.6	1335.1	3.905
365	162.8	200.0	1302.2	3.674	220.4	1312.4	3.768	241.5	1322.8	3.849	263.4	1333.7	3.940
364	160.8	198.0	1300.9	3.708	218.3	1311.1	3.804	239.4	1321.4	3.885	261.1	1332.2	3.979
363	158.8	195.9	1299.5	3.744	216.2	1309.8	3.840	237.2	1320.0	3.921	258.9	1330.8	4.015
362	156.8	193.9	1298.2	3.780	214.1	1308.4	3.875	235.0	1318.6	3.959	256.7	1329.4	4.053
361	154.8	191.9	1296.9	3.815	212.0	1307.1	3.912	232.9	1317.2	3.997	254.5	1328.0	4.092
360	152.9	189.9	1295.5	3.853	210.1	1305.7	3.948	230.8	1315.8	4.035	252.3	1326.6	4.131
359	151.0	187.9	1294.2	3.890	208.1	1304.3	3.986	228.7	1314.4	4.074	250.1	1325.1	4.170
358	149.1	185.8	1292.9	3.927	206.0	1302.9	4.023	226.6	1313.0	4.113	247.9	1323.7	4.210
357	147.2	183.8	1291.6	3.965	204.0	1301.5	4.061	224.4	1311.6	4.152	245.7	1322.3	4.250
356	145.3	181.7	1290.3	4.004	201.9	1300.1	4.100	222.3	1310.3	4.193	243.5	1320.8	4.292
355	143.5	179.7	1288.9	4.043	199.8	1298.8	4.140	220.1	1308.9	4.232	241.3	1319.4	4.334
354	141.6	177.7	1287.6	4.082	197.7	1297.4	4.180	218.0	1307.5	4.275	239.1	1318.0	4.376
353	139.8	175.7	1286.3	4.122	195.6	1296.0	4.220	216.0	1306.1	4.315	236.9	1316.7	4.418
352	138.0	173.7	1284.9	4.162	193.5	1294.6	4.260	213.9	1304.8	4.358	234.7	1315.4	4.460
351	136.3	171.6	1283.5	4.204	191.4	1293.2	4.303	211.9	1303.4	4.400	232.4	1314.1	4.502
350	134.5	169.6	1282.1	4.246	189.3	1291.8	4.346	209.8	1302.1	4.442	230.2	1312.6	4.546
349	132.8	167.6	1280.7	4.288	187.2	1290 5	4.388	207.7	1300.7	4.486	228.1	1311.1	4.591
348	131.1	165.5	1279.3	4.330	185.1	1289.2	4.430	205.5	1299.3	4.530	226.0	1309.6	4.638
347	129.4	163.5	1277.9	4.373	183.1	1287.8	4.474	203.4	1297.9	4.575	223.9	1308.1	4.684
346	127.7	161.4	1276.6	4.416	181.0	1286.5	4.519	201.2	1296.5	4.620	221.7	1306.6	4.730
345	126.0	159.4	1275.3	4.459	179.0	1285.1	4.562	199.1	1295.1	4.668	219.5	1305.1	4.779
344	124.4	157.4	1274.0	4.504	177.0	1283.8	4.609	197.0	1293.6	4.713	217.3	1303.7	4.825
343	122.7	155.4	1272.7	4.549	175.0	1282.5	4.656	194.9	1292.2	4.760	215.1	1302.3	4.873
342	121.1	153.4	1271.3	4.594	172.9	1281.1	4.701	192.8	1290.8	4.810	213.0	1300.9	4.920
341	119.5	151.3	1270.0	4.640	170.9	1279.7	4.750	190.6	1289.4	4.857	210.9	1299.5	4.970
340	117.9	149.3	1268.6	4.688	168.8	1278.3	4.800	188.5	1288.0	4.907	208.8	1298.1	5.020
339	116.3	147.3	1267.2	4.734	166.7	1277.0	4.848	186.4	1286.6	4.957	206.7	1296.6	5.071
338	114.8	145.3	1265.9	4.782	164.6	1275.6	4.896	184.2	1285.2	5.008	204.5	1295.2	5.123
337	113.3	143.3	1264.5	4.830	162.5	1274.2	4.946	182.0	1283.8	5.059	202.3	1293.8	5.177
336	111.7	141.3	1263.2	4.880	160.4	1272.8	4.998	179.9	1282.4	5.110	200.1	1292.3	5.230
335	110.3	139.3	1261.8	4.930	158.4	1271.4	5.048	177.9	1281.0	5.165	197.9	1290.9	5.285
334	108.8	137.3	1260.5	4.980	156.3	1270.0	5.099	175.7	1279.6	5.220	195.7	1289.5	5.340
333	107.3	135.3	1259.2	5.030	154.3	1268.6	5.150	173.5	1278.2	5.274	193.5	1288.1	5.395
332	105.8	133.3	1257.9	5.083	152.2	1267.2	5.203	171.4	1276.8	5.330	191.3	1286.7	5.450
331	104.4	131.3	1256.6	5.137	150.2	1265.9	5.257	169.3	1275.4	5.385	189.1	1285.2	5.510
330	103.0	129.3	1255.2	5.190	148.1	1264.5	5.310	167.2	1274.0	5.444	187.0	1283.8	5.567
329	101.6	127.3	1253.8	5.245	146.0	1263.2	5.366	165.0	1272.5	5.500	184.9	1282.4	5.625
328	100.2	125.3	1252.5	5.300	144.0	1261.9	5.421	162.9	1271.1	5.560	182.7	1280.9	5.684
327	98.8	123.3	1251.2	5.358	142.0	1260.5	5.479	160.8	1269.7	5.617	180.5	1279.5	5.743
326	97.5	121.3	1249.8	5.413	139.9	1259.1	5.537	158.7	1268.3	5.676	178.3	1278.0	5.805
325	96.1	119.3	1248.4	5.470	137.9	1257.8	5.595	156.5	1266.9	5.735	176.1	1276.6	5.865

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.72			1.73			1.74			1.75		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
372	177.5	300.3	1354.6	3.783	...	...	...	...	...	...	...	...	...
371	175.3	298.0	1353.1	3.817	...	...	...	...	...	...	...	...	...
370	173.2	295.7	1351.6	3.850	...	...	...	...	...	...	...	...	...
369	171.1	293.6	1350.1	3.886	...	...	...	...	...	...	...	...	...
368	169.0	291.4	1348.6	3.922	...	...	...	...	...	...	...	...	...
367	166.9	289.2	1347.2	3.959	...	...	...	...	...	...	...	...	...
366	164.8	287.0	1345.8	3.995	...	...	...	...	...	...	...	...	...
365	162.8	284.9	1344.4	4.031	...	...	...	...	...	...	...	...	...
364	160.8	282.7	1343.0	4.070	...	...	...	...	...	...	...	...	...
363	158.8	280.5	1341.6	4.107	...	...	...	...	...	...	...	...	...
362	156.8	278.3	1340.2	4.145	300.3	1351.3	4.240	...	...	...	...	...	...
361	154.8	276.0	1338.7	4.185	298.0	1349.7	4.283	...	...	...	...	...	...
360	152.9	273.7	1337.3	4.225	295.6	1348.1	4.324	...	...	...	...	...	...
359	151.0	271.4	1335.8	4.265	293.3	1346.5	4.365	...	...	...	...	...	...
358	149.1	269.2	1334.3	4.305	291.0	1345.0	4.407	...	...	...	...	...	...
357	147.2	267.0	1332.8	4.348	288.7	1343.5	4.450	...	...	...	...	...	...
356	145.3	264.7	1331.4	4.390	286.4	1342.0	4.490	...	...	...	...	...	...
355	143.5	262.4	1330.0	4.430	284.1	1340.5	4.534	...	...	...	...	...	...
354	141.6	260.1	1328.5	4.474	281.8	1339.0	4.579	...	...	...	...	...	...
353	139.8	258.0	1327.0	4.519	279.5	1337.5	4.623	...	...	...	...	...	...
352	138.0	255.8	1325.6	4.562	277.2	1336.0	4.667	299.6	1347.0	4.777	...	...	...
351	136.3	253.5	1324.1	4.608	274.9	1334.5	4.713	297.2	1345.5	4.823	...	...	...
350	134.5	251.3	1322.6	4.653	272.6	1333.0	4.760	294.9	1344.0	4.870	...	...	...
349	132.8	249.0	1321.1	4.699	270.4	1331.5	4.805	292.6	1342.5	4.918	...	...	...
348	131.1	246.7	1319.7	4.744	268.1	1330.1	4.852	290.3	1341.0	4.966	...	...	...
347	129.4	244.4	1318.2	4.790	265.9	1328.7	4.900	288.0	1339.5	5.014	...	...	...
346	127.7	242.2	1316.7	4.838	263.7	1327.2	4.948	285.6	1338.0	5.063	...	...	...
345	126.0	240.0	1315.2	4.888	261.4	1325.8	4.996	283.3	1336.5	5.113	...	...	...
344	124.4	237.7	1313.8	4.935	259.1	1324.3	5.046	281.0	1335.0	5.165	...	...	...
343	122.7	235.4	1312.3	4.983	256.9	1322.9	5.098	278.6	1333.5	5.215	299.7	1343.9	5.323
342	121.1	233.1	1310.8	5.031	254.6	1321.4	5.150	276.2	1332.0	5.269	297.4	1342.4	5.381
341	119.5	230.9	1309.3	5.082	252.3	1320.0	5.203	273.8	1330.5	5.320	295.0	1340.9	5.430
340	117.9	228.7	1307.8	5.135	250.1	1318.5	5.255	271.5	1329.0	5.376	292.6	1339.4	5.486
339	116.3	226.4	1306.3	5.186	247.8	1317.0	5.308	269.2	1327.5	5.430	290.2	1337.8	5.540
338	114.8	224.1	1304.8	5.239	245.5	1315.5	5.363	266.8	1325.9	5.485	287.9	1336.3	5.598
337	113.3	221.9	1303.3	5.293	243.3	1314.0	5.419	264.4	1324.4	5.540	285.5	1334.7	5.654
336	111.7	219.7	1301.9	5.345	241.0	1312.6	5.474	262.1	1322.9	5.596	283.1	1333.1	5.710
335	110.3	217.6	1300.5	5.400	238.8	1311.1	5.529	259.8	1321.4	5.652	280.7	1331.6	5.768
334	108.8	215.4	1299.1	5.455	236.5	1309.6	5.588	257.4	1319.9	5.710	278.3	1330.0	5.829
333	107.3	213.1	1297.6	5.510	234.2	1308.1	5.643	255.1	1318.3	5.767	275.9	1328.4	5.889
332	105.8	211.1	1296.2	5.567	231.9	1306.6	5.700	252.8	1316.8	5.825	273.5	1326.9	5.949
331	104.4	208.9	1294.8	5.626	229.6	1305.1	5.760	250.5	1315.3	5.884	271.1	1325.3	6.009
330	103.0	206.6	1293.4	5.683	227.3	1303.6	5.820	248.2	1313.8	5.945	268.7	1323.8	6.071
329	101.6	204.3	1292.0	5.740	225.0	1302.1	5.880	245.8	1312.3	6.006	266.3	1322.3	6.139
328	100.2	202.1	1290.5	5.800	222.7	1300.5	5.940	243.4	1310.8	6.068	263.9	1320.8	6.205
327	98.8	199.9	1289.0	5.863	220.4	1299.0	6.000	241.1	1309.3	6.130	261.6	1319.3	6.270
326	97.5	197.6	1287.5	5.925	218.1	1297.5	6.063	238.7	1307.8	6.192	259.2	1317.8	6.337
325	96.1	195.4	1286.0	5.987	215.8	1296.0	6.128	236.4	1306.3	6.255	256.8	1316.3	6.403

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.68			1.69			1.70			1.71		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
324	94.8	117.3	1247.0	5.528	135.9	1256.4	5.653	154.4	1265.5	5.795	174.0	1275.2	5.928
323	93.5	115.3	1245.6	5.588	133.8	1255.0	5.713	152.2	1264.0	5.857	171.9	1273.8	5.988
322	92.2	113.3	1244.3	5.646	131.8	1253.7	5.777	150.0	1262.6	5.919	169.7	1272.4	6.05
321	90.9	111.3	1242.9	5.705	129.7	1252.3	5.839	148.0	1261.2	5.980	167.5	1271.0	6.11
320	89.6	109.4	1241.6	5.768	127.7	1250.9	5.905	145.9	1259.8	6.05	165.3	1269.6	6.18
319	88.3	107.4	1240.2	5.832	125.7	1249.5	5.969	143.7	1258.4	6.11	163.1	1268.1	6.25
318	87.1	105.4	1238.9	5.898	123.7	1248.2	6.03	141.7	1257.1	6.18	161.0	1266.7	6.32
317	85.9	103.4	1237.4	5.960	121.7	1246.8	6.10	139.6	1255.7	6.25	158.8	1265.3	6.40
316	84.6	101.4	1236.1	6.03	119.7	1245.5	6.17	137.5	1254.3	6.32	156.6	1263.8	6.46
315	83.4	99.5	1234.8	6.10	117.7	1244.1	6.24	135.4	1252.9	6.39	154.4	1262.3	6.54
314	82.3	97.5	1233.5	6.17	115.6	1242.7	6.30	133.3	1251.6	6.46	152.2	1260.9	6.60
313	81.1	95.5	1232.1	6.23	113.6	1241.3	6.37	131.2	1250.2	6.53	150.0	1259.4	6.67
312	79.9	93.5	1230.8	6.30	111.6	1240.0	6.44	129.1	1248.8	6.60	147.9	1258.0	6.75
311	78.8	91.6	1229.5	6.37	109.6	1238.6	6.51	127.0	1247.4	6.67	145.7	1256.5	6.83
310	77.6	89.7	1228.2	6.44	107.5	1237.2	6.58	125.0	1246.0	6.75	143.5	1255.0	6.90
309	76.5	87.7	1226.9	6.51	105.5	1235.9	6.65	122.9	1244.6	6.81	141.3	1253.6	6.97
308	75.4	85.7	1225.6	6.58	103.5	1234.5	6.73	120.9	1243.2	6.89	139.1	1252.2	7.05
307	74.3	83.8	1224.2	6.65	101.5	1233.2	6.80	118.9	1241.8	6.97	137.0	1250.8	7.13
306	73.2	81.9	1222.9	6.73	99.5	1231.9	6.88	116.8	1240.4	7.04	134.9	1249.4	7.21
305	72.2	79.9	1221.6	6.80	97.5	1230.5	6.96	114.7	1239.0	7.12	132.7	1248.0	7.29
304	71.1	78.0	1220.3	6.88	95.4	1229.1	7.04	112.6	1237.6	7.20	130.5	1246.6	7.37
303	70.0	76.0	1218.9	6.96	93.4	1227.7	7.11	110.5	1236.2	7.28	128.4	1245.1	7.45
302	69.0	74.0	1217.6	7.03	91.4	1226.3	7.20	108.4	1234.8	7.37	126.3	1243.8	7.54
301	68.0	72.1	1216.2	7.11	89.4	1225.0	7.28	106.3	1233.4	7.45	124.1	1242.3	7.63
300	67.0	70.2	1214.9	7.20	87.3	1223.6	7.36	104.2	1232.0	7.54	122.0	1240.9	7.71
299	66.0	68.3	1213.6	7.28	85.3	1222.2	7.45	102.1	1230.7	7.62	119.9	1239.4	7.80
298	65.0	66.3	1212.3	7.36	83.3	1220.8	7.54	100.0	1229.4	7.70	117.7	1238.0	7.89
297	64.0	64.4	1211.0	7.44	81.2	1219.4	7.62	98.0	1228.0	7.80	115.5	1236.6	7.98
296	63.1	62.4	1209.7	7.53	79.2	1218.0	7.70	96.0	1226.6	7.89	113.4	1235.2	8.07
295	62.1	60.5	1208.4	7.61	77.2	1216.6	7.80	94.0	1225.2	7.99	111.3	1233.8	8.17
294	61.2	58.6	1207.1	7.70	75.2	1215.3	7.89	91.9	1223.9	8.07	109.1	1232.4	8.26
293	60.2	56.7	1205.8	7.79	73.1	1213.9	7.99	89.9	1222.5	8.16	107.0	1231.0	8.35
292	59.3	54.7	1204.5	7.88	71.1	1212.6	8.08	87.8	1221.1	8.26	104.9	1229.5	8.45
291	58.4	52.7	1203.1	7.98	69.0	1211.3	8.17	85.7	1219.7	8.36	102.7	1228.0	8.55
290	57.5	50.8	1201.8	8.08	67.0	1209.9	8.27	83.6	1218.3	8.46	100.6	1226.6	8.65
289	56.7	48.9	1200.5	8.17	65.0	1208.6	8.37	81.5	1216.9	8.55	98.4	1225.1	8.75
288	55.8	46.9	1199.1	8.26	63.0	1207.3	8.46	79.4	1215.5	8.65	96.3	1223.6	8.85
287	54.9	44.9	1197.8	8.35	61.0	1206.0	8.56	77.4	1214.1	8.75	94.1	1222.2	8.96
286	54.1	43.0	1196.5	8.45	58.9	1204.6	8.66	75.3	1212.7	8.86	92.0	1220.8	9.07
285	53.2	41.0	1195.2	8.55	56.9	1203.2	8.76	73.2	1211.3	8.96	89.9	1219.4	9.18
284	52.4	39.0	1193.8	8.65	54.9	1201.9	8.87	71.1	1209.9	9.07	87.8	1218.0	9.28
283	51.6	37.0	1192.5	8.75	52.9	1200.5	8.98	69.1	1208.5	9.18	85.7	1216.5	9.40
282	50.8	35.0	1191.2	8.85	50.9	1199.2	9.08	67.0	1207.1	9.29	83.5	1215.1	9.50
281	50.0	33.1	1189.9	8.96	48.8	1197.8	9.20	65.0	1205.7	9.40	81.4	1213.7	9.62
280	49.19	31.1	1188.6	9.06	46.8	1196.4	9.30	62.9	1204.4	9.51	79.3	1212.3	9.74
279	48.41	29.2	1187.3	9.17	44.7	1195.0	9.41	60.9	1203.0	9.62	77.2	1211.0	9.85
278	47.64	27.3	1186.0	9.28	42.7	1193.7	9.52	58.8	1201.7	9.74	75.0	1209.6	9.97
277	46.88	25.3	1184.6	9.40	40.7	1192.3	9.63	56.8	1200.3	9.86	73.0	1208.2	10.10

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.72			1.73			1.74			1.75		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
324	94.8	193.2	1284.5	6.06	213.5	1294.5	6.20	234.0	1304.7	6.33	254.4	1314.7	6.47
323	93.5	191.0	1283.0	6.12	211.2	1293.0	6.26	231.6	1303.1	6.40	252.1	1313.2	6.54
322	92.2	188.8	1281.6	6.18	208.9	1291.5	6.33	229.3	1301.5	6.47	249.7	1311.6	6.60
321	90.9	186.5	1280.1	6.25	206.6	1290.0	6.40	226.9	1299.9	6.55	247.4	1310.1	6.67
320	89.6	184.3	1278.7	6.32	204.3	1288.5	6.47	224.5	1298.4	6.61	245.0	1308.5	6.75
319	88.3	182.0	1277.3	6.38	202.0	1287.0	6.54	222.2	1296.8	6.69	242.6	1306.9	6.82
318	87.1	179.9	1275.9	6.45	199.7	1285.5	6.60	219.9	1295.3	6.76	240.3	1305.4	6.89
317	85.9	177.6	1274.5	6.53	197.4	1284.0	6.67	217.5	1293.8	6.83	238.0	1303.9	6.97
316	84.6	175.4	1273.0	6.60	195.1	1282.5	6.74	215.1	1292.3	6.90	235.6	1302.4	7.04
315	83.4	173.1	1271.6	6.67	192.8	1281.0	6.81	212.8	1290.7	6.98	233.3	1300.8	7.12
314	82.3	171.0	1270.1	6.74	190.5	1279.5	6.89	210.4	1289.2	7.05	230.9	1299.3	7.20
313	81.1	168.8	1268.6	6.81	188.2	1278.0	6.98	208.0	1287.6	7.13	228.5	1297.8	7.28
312	79.9	166.6	1267.1	6.89	185.9	1276.5	7.05	205.6	1286.1	7.21	226.1	1296.3	7.36
311	78.8	164.3	1265.7	6.97	183.6	1275.0	7.13	203.2	1284.5	7.29	223.7	1294.8	7.44
310	77.6	162.1	1264.2	7.04	181.3	1273.5	7.20	200.8	1283.0	7.37	221.4	1293.3	7.53
309	76.5	159.9	1262.7	7.12	179.0	1272.0	7.28	198.5	1281.5	7.45	219.0	1291.8	7.61
308	75.4	157.6	1261.2	7.20	176.7	1270.5	7.36	196.1	1280.0	7.54	216.7	1290.3	7.69
307	74.3	155.3	1259.8	7.28	174.4	1269.0	7.44	193.7	1278.4	7.62	214.3	1288.8	7.78
306	73.2	153.1	1258.3	7.36	172.1	1267.5	7.52	191.4	1276.9	7.70	211.9	1287.2	7.87
305	72.2	150.9	1256.8	7.44	169.8	1266.0	7.61	189.1	1275.4	7.79	209.5	1285.6	7.96
304	71.1	148.6	1255.3	7.52	167.6	1264.5	7.70	186.7	1273.9	7.88	207.1	1284.0	8.05
303	70.0	146.5	1253.9	7.61	165.3	1262.9	7.79	184.4	1272.3	7.97	204.7	1282.4	8.15
302	69.0	144.2	1252.4	7.70	163.0	1261.4	7.88	182.1	1270.8	8.06	202.3	1280.8	8.24
301	68.0	142.0	1251.0	7.79	160.7	1259.9	7.97	179.8	1269.3	8.15	199.9	1279.2	8.34
300	67.0	139.8	1249.5	7.88	158.4	1258.4	8.06	177.4	1267.8	8.24	197.5	1277.6	8.43
299	66.0	137.7	1248.1	7.97	156.1	1256.9	8.15	175.1	1266.2	8.34	195.1	1276.0	8.52
298	65.0	135.4	1246.6	8.06	153.8	1255.4	8.25	172.8	1264.7	8.43	192.7	1274.5	8.61
297	64.0	133.2	1245.1	8.15	151.6	1253.9	8.34	170.5	1263.2	8.53	190.3	1272.9	8.71
296	63.1	131.0	1243.6	8.24	149.3	1252.4	8.44	168.2	1261.7	8.63	187.9	1271.4	8.81
295	62.1	128.9	1242.2	8.34	147.0	1250.9	8.53	165.9	1260.1	8.73	185.5	1269.9	8.91
294	61.2	126.7	1240.7	8.43	144.7	1249.4	8.63	163.6	1258.6	8.83	183.1	1268.4	9.02
293	60.2	124.5	1239.2	8.53	142.5	1247.9	8.73	161.3	1257.1	8.93	180.8	1266.9	9.12
292	59.3	122.2	1237.7	8.63	140.3	1246.5	8.83	158.9	1255.6	9.03	178.4	1265.3	9.23
291	58.4	120.0	1236.2	8.73	138.0	1245.0	8.93	156.6	1254.0	9.14	176.0	1263.8	9.34
290	57.5	118.0	1234.8	8.84	135.7	1243.5	9.04	154.3	1252.5	9.24	173.6	1262.2	9.46
289	56.7	115.8	1233.4	8.94	133.5	1242.1	9.15	152.0	1251.0	9.35	171.3	1260.7	9.57
288	55.8	113.6	1232.0	9.04	131.2	1240.7	9.25	149.6	1249.5	9.46	168.9	1259.1	9.67
287	54.9	111.4	1230.6	9.15	129.0	1239.3	9.36	147.3	1248.0	9.57	166.6	1257.6	9.79
286	54.1	109.2	1229.2	9.26	126.8	1237.9	9.47	145.0	1246.5	9.68	164.2	1256.1	9.90
285	53.2	107.0	1227.7	9.37	124.6	1236.4	9.58	142.7	1245.0	9.80	161.8	1254.5	10.03
284	52.4	104.8	1226.3	9.49	122.3	1235.0	9.70	140.4	1243.5	9.92	159.4	1253.0	10.15
283	51.6	102.7	1224.8	9.60	120.0	1233.5	9.82	138.1	1242.0	10.04	157.0	1251.4	10.27
282	50.8	100.5	1223.4	9.71	117.8	1232.0	9.94	135.8	1240.5	10.16	154.6	1249.8	10.39
281	50.0	98.3	1222.0	9.83	115.6	1230.5	10.06	133.5	1239.1	10.29	152.3	1248.2	10.51
280	49.19	96.1	1220.6	9.95	113.4	1229.0	10.18	131.2	1237.7	10.41	149.9	1246.7	10.64
279	48.41	94.0	1219.2	10.07	111.1	1227.5	10.30	128.9	1236.3	10.53	147.5	1245.1	10.77
278	47.64	91.8	1217.8	10.19	108.9	1226.1	10.43	126.7	1234.8	10.67	145.1	1243.6	10.90
277	46.88	89.6	1216.4	10.31	106.7	1224.6	10.56	124.4	1233.3	10.80	142.8	1242.1	11.04

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.68			1.69			1.70			1.71		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
276	46.13	23.3	1183.4	9.51	38.6	1191.0	9.75	54.7	1199.0	9.98	70.9	1206.8	10.22
275	45.39	21.3	1182.1	9.62	36.6	1189.6	9.87	52.6	1197.6	10.10	68.8	1205.4	10.34
274	44.67	19.3	1180.8	9.73	34.5	1188.3	10.00	50.5	1196.2	10.22	66.7	1204.0	10.47
273	43.95	17.4	1179.6	9.85	32.5	1187.0	10.11	48.4	1194.8	10.34	64.5	1202.6	10.60
272	43.24	15.4	1178.3	9.97	30.5	1185.7	10.23	46.3	1193.4	10.47	62.4	1201.2	10.73
271	42.54	13.4	1177.0	10.10	28.4	1184.3	10.36	44.2	1192.0	10.60	60.3	1199.8	10.86
270	41.84	11.5	1175.7	10.23	26.4	1183.0	10.49	42.1	1190.6	10.74	58.2	1198.4	10.99
269	41.16	9.5	1174.4	10.35	24.3	1181.7	10.61	40.0	1189.2	10.88	56.1	1197.0	11.13
268	40.49	7.5	1173.1	10.48	22.3	1180.3	10.75	38.0	1187.9	11.01	54.0	1195.7	11.27
267	39.83	5.6	1171.8	10.61	20.3	1178.9	10.89	36.0	1186.5	11.14	51.9	1194.3	11.41
266	39.17	3.6	1170.5	10.75	18.3	1177.5	11.02	33.9	1185.2	11.29	49.8	1192.9	11.55
265	38.53	1.6	1169.2	10.89	16.2	1176.1	11.16	31.9	1183.8	11.42	47.7	1191.6	11.70
264	37.89	9997	1167.8	11.04	14.2	1174.8	11.30	29.8	1182.5	11.57	45.5	1190.2	11.85
263	37.26	9987	1166.5	11.20	12.1	1173.5	11.44	27.7	1181.1	11.70	43.4	1188.8	12.00
262	36.64	9976	1165.1	11.36	10.1	1172.2	11.58	25.7	1179.8	11.86	41.3	1187.5	12.15
261	36.02	9966	1163.9	11.53	8.0	1170.9	11.71	23.6	1178.4	12.01	39.3	1186.1	12.30
260	35.42	9955	1162.6	11.70	6.0	1169.6	11.87	21.6	1177.1	12.16	37.2	1184.8	12.46
259	34.83	9945	1161.3	11.87	4.0	1168.3	12.02	19.5	1175.8	12.31	35.1	1183.5	12.62
258	34.24	9934	1159.9	12.05	2.0	1166.9	12.18	17.4	1174.4	12.48	33.0	1182.1	12.79
257	33.66	9925	1158.6	12.24	0.0	1165.6	12.33	15.3	1173.0	12.63	30.9	1180.7	12.95
256	33.09	9914	1157.3	12.42	9990	1164.4	12.52	13.2	1171.7	12.80	28.8	1179.4	13.11
255	32.53	9903	1156.0	12.61	9979	1163.1	12.70	11.0	1170.3	12.96	26.7	1178.0	13.29
254	31.97	9893	1154.6	12.80	9969	1161.7	12.90	8.9	1168.9	13.13	24.5	1176.6	13.46
253	31.42	9882	1153.4	13.01	9958	1160.4	13.10	6.8	1167.5	13.30	22.4	1175.2	13.63
252	30.88	9873	1152.1	13.20	9948	1159.1	13.30	4.7	1166.1	13.47	20.3	1173.9	13.81
251	30.35	9862	1150.8	13.40	9937	1157.8	13.50	2.6	1164.8	13.65	18.1	1172.6	14.00
250	29.82	9852	1149.5	13.61	9927	1156.5	13.72	0.6	1163.5	13.83	16.0	1171.2	14.17
249	29.30	9842	1148.2	13.83	9917	1155.2	13.93	9992	1162.3	14.04	13.9	1169.9	14.36
248	28.79	9831	1146.8	14.04	9906	1153.9	14.15	9981	1161.0	14.25	11.7	1168.5	14.54
247	28.29	9822	1145.5	14.26	9896	1152.6	14.37	9971	1159.7	14.48	9.6	1167.2	14.73
246	27.80	9811	1144.2	14.49	9885	1151.3	14.60	9960	1158.4	14.71	7.5	1165.8	14.92
245	27.31	9801	1142.9	14.71	9875	1150.0	14.82	9949	1157.1	14.93	5.3	1164.4	15.11
244	26.83	9791	1141.6	14.94	9865	1148.6	15.05	9939	1155.7	15.17	3.1	1163.0	15.31
243	26.35	9780	1140.3	15.17	9854	1147.3	15.28	9928	1154.4	15.40	0.8	1161.5	15.52
242	25.88	9771	1139.0	15.41	9844	1146.0	15.52	9918	1153.0	15.64	9992	1160.0	15.76
241	25.42	9760	1137.7	15.66	9834	1144.7	15.77	9907	1151.7	15.89	9981	1158.7	16.01
240	24.97	9750	1136.3	15.90	9824	1143.3	16.02	9897	1150.3	16.14	9971	1157.3	16.26
239	24.52	9740	1135.0	16.16	9813	1142.0	16.28	9887	1149.0	16.40	9960	1156.0	16.52
238	24.08	9730	1133.6	16.39	9803	1140.6	16.54	9876	1147.6	16.66	9950	1154.6	16.78
237	23.64	9719	1132.3	16.68	9793	1139.3	16.80	9866	1146.3	16.93	9939	1153.3	17.05
236	23.21	9710	1131.0	16.95	9783	1138.0	17.08	9856	1144.9	17.21	9928	1151.9	17.33
235	22.79	9699	1129.7	17.24	9772	1136.6	17.36	9845	1143.5	17.49	9917	1150.5	17.62
234	22.38	9689	1128.3	17.52	9762	1135.2	17.65	9834	1142.1	17.78	9907	1149.1	17.91
233	21.97	9680	1127.0	17.80	9752	1133.9	17.93	9824	1140.8	18.07	9897	1147.7	18.20
232	21.57	9669	1125.6	18.09	9741	1132.5	18.23	9814	1139.4	18.36	9886	1146.3	18.50
231	21.17	9659	1124.3	18.39	9731	1131.2	18.53	9803	1138.1	18.67	9876	1145.0	18.80
230	20.78	9649	1123.0	18.69	9721	1129.9	18.83	9793	1136.8	18.97	9865	1143.7	19.11
229	20.40	9639	1121.6	19.01	9711	1128.5	19.15	9782	1135.4	19.29	9854	1142.3	19.43

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.72			1.73			1.74			1.75		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
276	46.13	87.5	1215.0	10.44	104.4	1223.2	10.69	122.1	1231.8	10.93	140.4	1240.6	11.16
275	45.39	85.3	1213.5	10.57	102.1	1221.8	10.81	119.8	1230.4	11.06	138.0	1239.0	11.30
274	44.67	83.1	1212.1	10.70	99.9	1220.3	10.96	117.5	1228.9	11.20	135.7	1237.5	11.44
273	43.95	81.0	1210.7	10.83	97.7	1218.8	11.09	115.2	1227.4	11.33	133.3	1236.0	11.59
272	43.24	78.8	1209.3	10.97	95.5	1217.3	11.22	113.0	1225.9	11.48	131.0	1234.5	11.72
271	42.54	76.6	1207.8	11.10	93.3	1215.8	11.37	110.7	1224.4	11.61	128.6	1233.0	11.88
270	41.84	74.5	1206.4	11.24	91.0	1214.4	11.50	108.4	1222.9	11.77	126.2	1231.5	12.03
269	41.16	72.3	1204.9	11.38	88.8	1213.0	11.65	106.1	1221.4	11.90	123.9	1230.0	12.18
268	40.49	70.1	1203.5	11.52	86.6	1211.5	11.80	103.8	1220.0	12.05	121.5	1228.4	12.33
267	39.83	68.0	1202.1	11.67	84.3	1210.1	11.95	101.6	1218.5	12.21	119.1	1226.9	12.49
266	39.17	65.8	1200.7	11.81	82.1	1208.6	12.10	99.3	1217.1	12.37	116.8	1225.4	12.64
265	38.53	63.6	1199.3	11.96	79.9	1207.2	12.26	97.0	1215.6	12.53	114.5	1223.9	12.80
264	37.89	61.5	1197.9	12.11	77.7	1205.8	12.41	94.8	1214.2	12.70	112.1	1222.4	12.97
263	37.26	59.4	1196.5	12.27	75.5	1204.3	12.56	92.5	1212.7	12.85	109.8	1220.9	13.14
262	36.64	57.2	1195.1	12.42	73.2	1202.9	12.73	90.2	1211.3	13.01	107.5	1219.4	13.30
261	36.02	55.0	1193.7	12.59	71.0	1201.5	12.90	88.0	1209.8	13.20	105.1	1217.9	13.48
260	35.42	52.8	1192.3	12.75	68.8	1200.1	13.07	85.5	1208.3	13.36	102.7	1216.5	13.65
259	34.83	50.6	1190.9	12.90	66.6	1198.7	13.24	83.3	1206.8	13.54	100.4	1215.0	13.82
258	34.24	48.4	1189.5	13.08	64.4	1197.3	13.40	81.0	1205.3	13.70	98.1	1213.5	14.00
257	33.66	46.2	1188.1	13.25	62.1	1195.9	13.58	78.7	1203.8	13.89	95.8	1212.0	14.19
256	33.09	44.0	1186.7	13.41	59.9	1194.4	13.76	76.4	1202.4	14.08	93.4	1210.5	14.39
255	32.53	41.9	1185.3	13.59	57.7	1193.0	13.94	74.1	1200.9	14.25	91.1	1209.0	14.57
254	31.97	39.7	1183.9	13.78	55.5	1191.5	14.12	71.8	1199.4	14.44	88.7	1207.5	14.76
253	31.42	37.5	1182.5	13.95	53.3	1190.1	14.31	69.5	1197.9	14.63	86.3	1206.0	14.96
252	30.88	35.3	1181.1	14.14	51.1	1188.7	14.50	67.2	1196.5	14.82	84.0	1204.5	15.15
251	30.35	33.1	1179.7	14.33	49.0	1187.2	14.70	64.9	1195.0	15.02	81.6	1203.0	15.35
250	29.82	31.0	1178.3	14.51	46.7	1185.8	14.90	62.6	1193.5	15.22	79.3	1201.5	15.56
249	29.30	28.8	1177.0	14.70	44.5	1184.4	15.09	60.3	1192.0	15.42	77.0	1200.0	15.77
248	28.79	26.6	1175.6	14.90	42.3	1183.0	15.29	58.0	1190.6	15.63	74.6	1198.5	15.99
247	28.29	24.4	1174.2	15.09	40.1	1181.6	15.49	55.7	1189.1	15.83	72.2	1197.0	16.20
246	27.80	22.2	1172.8	15.29	37.9	1180.1	15.70	53.4	1187.6	16.04	69.9	1195.5	16.40
245	27.31	20.0	1171.4	15.49	35.7	1178.7	15.90	51.1	1186.1	16.26	67.5	1194.0	16.62
244	26.83	17.8	1170.0	15.70	33.4	1177.2	16.11	48.8	1184.7	16.48	65.1	1192.5	16.85
243	26.35	15.7	1168.6	15.90	31.1	1175.7	16.32	46.4	1183.2	16.70	62.7	1191.0	17.08
242	25.88	13.5	1167.2	16.12	28.8	1174.3	16.55	44.1	1181.7	16.93	60.4	1189.5	17.30
241	25.42	11.3	1165.8	16.33	26.5	1172.8	16.78	41.8	1180.2	17.15	58.0	1188.0	17.54
240	24.97	9.1	1164.4	16.56	24.2	1171.4	17.00	39.5	1178.8	17.38	55.6	1186.5	17.78
239	24.52	6.9	1163.0	16.79	21.9	1170.0	17.23	37.2	1177.4	17.61	53.3	1185.0	18.02
238	24.08	4.7	1161.6	17.00	19.7	1168.6	17.45	35.0	1176.0	17.85	51.0	1183.5	18.28
237	23.64	2.5	1160.2	17.23	17.5	1167.2	17.69	32.8	1174.6	18.10	48.6	1182.0	18.52
236	23.21	0.1	1158.9	17.46	15.2	1165.8	17.94	30.5	1173.1	18.34	46.2	1180.5	18.78
235	22.79	9990	1157.4	17.75	12.9	1164.4	18.17	28.3	1171.6	18.59	43.8	1179.0	19.04
234	22.38	9980	1156.0	18.04	10.7	1163.0	18.42	26.0	1170.2	18.84	41.5	1177.5	19.30
233	21.97	9969	1154.6	18.33	8.5	1161.6	18.67	23.7	1168.7	19.10	39.1	1176.0	19.57
232	21.57	9958	1153.2	18.63	6.3	1160.2	18.93	21.4	1167.3	19.39	36.8	1174.6	19.84
231	21.17	9948	1151.9	18.94	4.1	1158.8	19.19	19.1	1165.8	19.64	34.5	1173.2	20.11
230	20.78	9937	1150.6	19.25	1.8	1157.4	19.45	16.9	1164.4	19.92	32.2	1171.7	20.40
229	20.40	9926	1149.2	19.57	9998	1156.0	19.71	14.7	1163.0	20.20	30.0	1170.3	20.69

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.68			1.69			1.70			1.71		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
228	20.02	9628	1120.2	19.32	9700	1127.1	19.47	9772	1134.0	19.61	9843	1140.8	19.76
227	19.64	9619	1118.9	19.64	9690	1125.8	19.79	9762	1132.7	19.93	9833	1139.5	20.08
226	19.28	9609	1117.6	19.97	9680	1124.4	20.12	9752	1131.3	20.27	9823	1138.1	20.41
225	18.91	9599	1116.3	20.31	9670	1123.1	20.46	9741	1129.9	20.61	9812	1136.8	20.76
224	18.56	9589	1114.9	20.65	9660	1121.7	20.81	9731	1128.5	20.96	9802	1135.4	21.11
223	18.21	9579	1113.6	21.01	9650	1120.4	21.16	9721	1127.2	21.32	9792	1134.0	21.47
222	17.86	9569	1112.2	21.37	9640	1119.0	21.53	9711	1125.8	21.68	9781	1132.6	21.84
221	17.52	9559	1110.9	21.73	9630	1117.7	21.89	9700	1124.5	22.05	9771	1131.3	22.21
220	17.19	9549	1109.5	22.10	9620	1116.3	22.26	9690	1123.1	22.42	9761	1129.9	22.59
219	16.86	9539	1108.1	22.47	9609	1114.9	22.64	9679	1121.7	22.80	9750	1128.5	22.97
218	16.54	9529	1106.7	22.86	9599	1113.5	23.03	9669	1120.3	23.20	9739	1127.0	23.36
217	16.22	9519	1105.4	23.25	9589	1112.1	23.43	9659	1118.9	23.60	9729	1125.6	23.77
216	15.90	9509	1104.0	23.66	9579	1110.7	23.83	9649	1117.5	24.01	9719	1124.3	24.18
215	15.60	9499	1102.7	24.07	9569	1109.4	24.25	9639	1116.2	24.42	9708	1122.9	24.60
214	15.29	9489	1101.3	24.49	9559	1108.0	24.67	9628	1114.8	24.85	9698	1121.5	25.03
213	14.99	9479	1100.0	24.92	9549	1106.7	25.10	9618	1113.4	25.29	9688	1120.1	25.47
212	14.70	9469	1098.6	25.36	9539	1105.3	25.54	9608	1112.0	25.73	9677	1118.7	25.92
211	14.41	9460	1097.3	25.82	9529	1103.9	26.01	9598	1110.6	26.19	9667	1117.3	26.38
210	14.13	9450	1095.9	26.27	9519	1102.5	26.46	9588	1109.2	26.66	9657	1115.9	26.85
209	13.85	9441	1094.4	26.74	9510	1101.1	26.93	9579	1107.8	27.13	9647	1114.5	27.32
208	13.57	9431	1093.1	27.22	9500	1099.8	27.42	9568	1106.4	27.61	9637	1113.1	27.81
207	13.30	9421	1091.7	27.71	9489	1098.4	27.91	9558	1105.0	28.11	9626	1111.7	28.31
206	13.03	9411	1090.3	28.21	9479	1097.0	28.42	9548	1103.6	28.62	9616	1110.3	28.83
205	12.77	9401	1088.9	28.73	9469	1095.6	28.93	9537	1102.2	29.15	9606	1108.9	29.35
204	12.51	9391	1087.6	29.25	9459	1094.2	29.46	9527	1100.8	29.68	9595	1107.5	29.89
203	12.26	9381	1086.2	29.78	9449	1092.8	30.00	9517	1099.4	30.22	9585	1106.1	30.43
202	12.01	9372	1084.9	30.34	9440	1091.5	30.56	9507	1098.1	30.78	9575	1104.7	30.99
201	11.77	9362	1083.5	30.88	9429	1090.1	31.11	9497	1096.7	31.33	9565	1103.3	31.55
200	11.53	9352	1082.1	31.44	9419	1088.7	31.67	9487	1095.3	31.89	9554	1101.9	32.12
199	11.29	9342	1080.7	32.02	9409	1087.3	32.25	9477	1093.8	32.48	9544	1100.4	32.71
198	11.06	9333	1079.3	32.60	9400	1085.9	32.83	9467	1092.5	33.07	9534	1099.1	33.30
197	10.83	9323	1077.8	33.20	9390	1084.4	33.44	9457	1091.0	33.67	9524	1097.5	33.91
196	10.61	9312	1076.4	33.81	9379	1083.0	34.06	9446	1089.5	34.30	9513	1096.1	34.54
195	10.39	9303	1075.1	34.45	9370	1081.6	34.70	9437	1088.2	34.94	9503	1094.7	35.19
194	10.17	9293	1073.7	35.10	9360	1080.2	35.35	9426	1086.7	35.60	9493	1093.3	35.85
193	9.96	9284	1072.3	35.77	9350	1078.8	36.03	9416	1085.4	36.28	9483	1091.9	36.54
192	9.75	9273	1070.9	36.45	9340	1077.4	36.71	9406	1083.9	36.97	9472	1090.4	37.24
191	9.54	9263	1069.5	37.15	9329	1076.0	37.42	9395	1082.5	37.68	9462	1089.0	37.95
190	9.34	9254	1068.1	37.87	9320	1074.6	38.14	9386	1081.1	38.41	9452	1087.6	38.68
189	9.14	9244	1066.8	38.59	9310	1073.2	38.87	9376	1079.7	39.14	9442	1086.2	39.42
188	8.95	9234	1065.3	39.33	9300	1071.8	39.61	9365	1078.3	39.89	9431	1084.7	40.17
187	8.76	9224	1063.9	40.08	9290	1070.4	40.36	9355	1076.9	40.65	9421	1083.3	40.93
186	8.57	9214	1062.5	40.85	9280	1069.0	41.14	9345	1075.4	41.43	9410	1081.9	41.72
185	8.38	9204	1061.1	41.63	9270	1067.6	41.93	9335	1074.0	42.22	9400	1080.5	42.52
184	8.20	9194	1059.7	42.45	9259	1066.1	42.75	9325	1072.6	43.05	9390	1079.0	43.35
183	8.02	9185	1058.3	43.28	9250	1064.7	43.59	9315	1071.2	43.89	9380	1077.6	44.20
182	7.85	9175	1056.9	44.14	9240	1063.3	44.45	9305	1069.8	44.77	9370	1076.2	45.08
181	7.68	9166	1055.4	45.03	9231	1061.8	45.35	9295	1068.2	45.67	9360	1074.7	45.99

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.72			1.73			1.74			1.75		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
228	20.02	9915	1147.7	19.90	9987	1154.6	20.04	12.4	1161.5	20.48	27.7	1168.8	21.00
227	19.64	9905	1146.4	20.23	9977	1153.2	20.37	10.1	1160.0	20.77	25.4	1167.4	21.29
226	19.28	9894	1145.0	20.56	9966	1151.8	20.71	7.9	1158.6	21.06	23.0	1166.0	21.59
225	18.91	9883	1143.6	20.91	9955	1150.4	21.06	5.6	1157.2	21.37	20.7	1164.5	21.89
224	18.56	9873	1142.2	21.27	9944	1149.0	21.42	3.4	1155.8	21.68	18.3	1163.0	22.19
223	18.21	9863	1140.9	21.63	9933	1147.7	21.78	1.1	1154.4	22.00	16.0	1161.6	22.51
222	17.86	9852	1139.5	22.00	9923	1146.3	22.16	9994	1153.0	22.32	13.7	1160.1	22.83
221	17.52	9842	1138.1	22.37	9912	1144.9	22.53	9983	1151.6	22.69	11.3	1158.6	23.17
220	17.19	9831	1136.7	22.75	9902	1143.5	22.91	9972	1150.2	23.08	9.0	1157.2	23.50
219	16.86	9820	1135.3	23.14	9890	1142.1	23.30	9960	1148.8	23.47	6.6	1155.7	23.83
218	16.54	9809	1133.8	23.53	9879	1140.6	23.70	9950	1147.3	23.87	4.2	1154.2	24.16
217	16.22	9799	1132.4	23.94	9869	1139.2	24.11	9939	1145.9	24.28	1.9	1152.8	24.50
216	15.90	9788	1131.0	24.35	9858	1137.8	24.53	9928	1144.5	24.70	9998	1151.3	24.87
215	15.60	9778	1129.6	24.78	9848	1136.4	24.95	9917	1143.1	25.13	9987	1149.8	25.31
214	15.29	9767	1128.2	25.21	9837	1135.0	25.39	9906	1141.7	25.57	9976	1148.4	25.75
213	14.99	9757	1126.8	25.65	9826	1133.6	25.83	9896	1140.3	26.02	9965	1147.0	26.20
212	14.70	9746	1125.4	26.10	9816	1132.2	26.29	9885	1138.9	26.47	9955	1145.6	26.66
211	14.41	9737	1124.0	26.57	9806	1130.8	26.76	9875	1137.5	26.95	9944	1144.2	27.14
210	14.13	9726	1122.6	27.04	9795	1129.3	27.23	9864	1136.0	27.42	9933	1142.7	27.61
209	13.85	9716	1121.2	27.52	9785	1127.9	27.71	9854	1134.6	27.91	9923	1141.2	28.10
208	13.57	9705	1119.8	28.01	9774	1126.5	28.21	9843	1133.1	28.41	9911	1139.8	28.60
207	13.30	9695	1118.4	28.51	9763	1125.0	28.71	9832	1131.7	28.92	9900	1138.4	29.12
206	13.03	9684	1116.9	29.03	9753	1123.6	29.24	9821	1130.3	29.44	9889	1136.9	29.65
205	12.77	9674	1115.5	29.56	9742	1122.2	29.77	9810	1128.8	29.98	9878	1135.5	30.19
204	12.51	9663	1114.1	30.10	9731	1120.7	30.31	9799	1127.4	30.52	9867	1134.0	30.74
203	12.26	9653	1112.7	30.65	9720	1119.3	30.86	9788	1125.9	31.08	9856	1132.6	31.29
202	12.01	9643	1111.3	31.21	9711	1117.9	31.43	9778	1124.5	31.65	9846	1131.2	31.87
201	11.77	9632	1109.9	31.78	9700	1116.5	32.00	9768	1123.1	32.22	9835	1129.7	32.45
200	11.53	9622	1108.4	32.35	9689	1115.0	32.58	9757	1121.6	32.80	9824	1128.2	33.03
199	11.29	9611	1107.0	32.94	9679	1113.6	33.17	9746	1120.2	33.40	9813	1126.8	33.63
198	11.06	9601	1105.6	33.54	9669	1112.2	33.77	9736	1118.8	34.01	9803	1125.4	34.24
197	10.83	9591	1104.1	34.15	9658	1110.7	34.39	9725	1117.2	34.63	9792	1123.8	34.87
196	10.61	9580	1102.6	34.78	9647	1109.2	35.03	9714	1115.8	35.27	9781	1122.3	35.51
195	10.39	9570	1101.3	35.44	9637	1107.8	35.69	9704	1114.3	35.93	9770	1120.9	36.18
194	10.17	9559	1099.8	36.11	9626	1106.3	36.36	9693	1112.9	36.61	9759	1119.4	36.86
193	9.96	9549	1098.4	36.79	9616	1104.9	37.05	9682	1111.5	37.31	9749	1118.0	37.56
192	9.75	9539	1097.0	37.50	9605	1103.5	37.76	9671	1110.0	38.02	9738	1116.5	38.28
191	9.54	9528	1095.5	38.22	9594	1102.0	38.48	9660	1108.5	38.75	9726	1115.0	39.01
190	9.34	9518	1094.1	38.95	9584	1100.6	39.22	9650	1107.1	39.49	9716	1113.6	39.76
189	9.14	9508	1092.7	39.69	9574	1099.2	39.97	9639	1105.7	40.24	9705	1112.1	40.52
188	8.95	9497	1091.2	40.45	9563	1097.7	40.73	9628	1104.2	41.01	9694	1110.6	41.29
187	8.76	9487	1089.8	41.22	9552	1096.3	41.50	9618	1102.7	41.79	9683	1109.2	42.07
186	8.57	9476	1088.3	42.01	9541	1094.8	42.30	9607	1101.2	42.59	9672	1107.7	42.88
185	8.38	9466	1086.9	42.81	9531	1093.4	43.11	9596	1099.8	43.40	9662	1106.3	43.70
184	8.20	9455	1085.4	43.65	9520	1091.9	43.95	9585	1098.3	44.26	9650	1104.7	44.56
183	8.02	9445	1084.0	44.50	9510	1090.4	44.81	9575	1096.9	45.12	9640	1103.3	45.42
182	7.85	9435	1082.6	45.39	9499	1089.0	45.70	9565	1095.4	46.02	9630	1101.8	46.33
181	7.68	9425	1081.1	46.30	9490	1087.5	46.62	9555	1093.9	46.94	9619	1100.3	47.26

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.68			1.69			1.70			1.71		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
180	7.51	9156	1054.0	45.96	9220	1060.4	46.29	9285	1066.8	46.61	9350	1073.2	46.93
179	7.35	9146	1052.6	46.83	9211	1059.0	47.16	9275	1065.4	47.49	9340	1071.7	47.82
178	7.19	9137	1051.2	47.78	9201	1057.6	48.12	9265	1063.9	48.46	9330	1070.3	48.79
177	7.03	9127	1049.8	48.74	9191	1056.1	49.08	9255	1062.5	49.42	9320	1068.9	49.77
176	6.87	9117	1048.3	49.69	9181	1054.7	50.10	9245	1061.0	50.4	9309	1067.4	50.7
175	6.71	9107	1046.9	50.7	9171	1053.3	51.1	9235	1059.6	51.4	9299	1065.9	51.8
174	6.56	9098	1045.5	51.8	9161	1051.8	52.1	9225	1058.2	52.5	9289	1064.5	52.9
173	6.42	9088	1044.1	52.8	9152	1050.4	53.2	9215	1056.7	53.5	9279	1063.1	53.9
172	6.27	9078	1042.7	53.8	9142	1049.0	54.2	9205	1055.3	54.6	9269	1061.6	55.0
171	6.13	9068	1041.2	55.0	9131	1047.5	55.3	9195	1053.8	55.7	9258	1060.1	56.1
170	5.99	9058	1039.8	56.2	9122	1046.1	56.6	9185	1052.3	56.9	9248	1058.6	57.3
169	5.85	9049	1038.3	57.4	9112	1044.6	57.8	9175	1050.9	58.2	9238	1057.2	58.6
168	5.72	9040	1036.9	58.6	9103	1043.2	59.0	9165	1049.5	59.4	9228	1055.7	59.8
167	5.59	9029	1035.5	59.8	9092	1041.7	60.2	9155	1048.0	60.6	9218	1054.3	61.0
166	5.46	9020	1034.0	61.1	9082	1040.3	61.5	9145	1046.5	61.9	9208	1052.8	62.3
165	5.33	9010	1032.6	62.3	9073	1038.8	62.7	9135	1045.1	63.1	9198	1051.3	63.6
164	5.21	9000	1031.1	63.5	9063	1037.4	64.0	9125	1043.6	64.4	9188	1049.9	64.9
163	5.09	8991	1029.7	64.8	9053	1035.9	65.3	9115	1042.2	65.7	9177	1048.4	66.2
162	4.969	8981	1028.3	66.2	9043	1034.5	66.6	9105	1040.7	67.1	9167	1046.9	67.6
161	4.852	8971	1026.9	67.6	9033	1033.1	68.1	9095	1039.3	68.6	9157	1045.5	69.0
160	4.738	8962	1025.4	69.2	9023	1031.6	69.7	9085	1037.8	70.1	9147	1044.0	70.6
159	4.626	8952	1023.9	70.6	9014	1030.1	71.1	9075	1036.3	71.6	9137	1042.5	72.1
158	4.517	8942	1022.5	72.2	9004	1028.6	72.7	9065	1034.8	73.2	9127	1041.0	73.7
157	4.409	8933	1021.1	73.8	8994	1027.2	74.3	9056	1033.4	74.8	9117	1039.6	75.3
156	4.303	8923	1019.6	75.4	8984	1025.8	75.9	9046	1031.9	76.4	9107	1038.1	77.0
155	4.200	8913	1018.1	77.0	8974	1024.3	77.5	9035	1030.4	78.1	9097	1036.6	78.6
154	4.099	8903	1016.7	78.7	8964	1022.8	79.2	9025	1028.9	79.8	9086	1035.1	80.3
153	4.000	8894	1015.2	80.4	8955	1021.4	80.9	9015	1027.5	81.5	9076	1033.6	82.0
152	3.903	8883	1013.8	82.2	8944	1019.9	82.7	9005	1026.0	83.3	9066	1032.1	83.9
151	3.808	8873	1012.3	84.0	8934	1018.4	84.6	8995	1024.5	85.2	9055	1030.6	85.8
150	3.715	8864	1010.8	85.9	8925	1017.0	86.5	8985	1023.0	87.1	9046	1029.1	87.7
149	3.624	8854	1009.4	87.8	8915	1015.4	88.4	8975	1021.5	89.0	9035	1027.6	89.6
148	3.535	8845	1007.9	89.9	8905	1014.0	90.5	8965	1020.1	91.1	9026	1026.2	91.7
147	3.447	8835	1006.4	91.9	8895	1012.5	92.5	8955	1018.6	93.1	9015	1024.6	93.8
146	3.361	8825	1005.0	94.0	8885	1011.0	94.6	8945	1017.1	95.3	9005	1023.2	95.9
145	3.278	8815	1003.5	96.1	8875	1009.5	96.7	8935	1015.6	97.4	8995	1021.6	98.0
144	3.196	8805	1002.0	98.3	8865	1008.1	98.9	8925	1014.1	99.6	8985	1020.1	100.3
143	3.116	8795	1000.5	100.5	8855	1006.6	101.2	8915	1012.6	101.9	8974	1018.6	102.6
142	3.037	8786	999.1	102.9	8845	1005.1	103.6	8905	1011.1	104.3	8964	1017.1	105.0
141	2.960	8776	997.6	105.2	8836	1003.6	105.9	8895	1009.6	106.7	8954	1015.6	107.4
140	2.885	8766	996.1	107.7	8826	1002.1	108.4	8885	1008.1	109.1	8944	1014.1	109.8
139	2.812	8757	994.6	110.2	8816	1000.6	111.0	8875	1006.6	111.7	8934	1012.6	112.5
138	2.740	8747	993.2	112.8	8806	999.1	113.5	8865	1005.1	114.3	8924	1011.1	115.0
137	2.669	8737	991.6	115.4	8796	997.6	116.2	8855	1003.6	117.0	8913	1009.5	117.7
136	2.600	8728	990.2	118.2	8786	996.1	119.0	8845	1002.1	119.8	8904	1008.0	120.6
135	2.533	8718	988.7	121.0	8777	994.6	121.8	8835	1000.6	122.6	8894	1006.5	123.4
134	2.467	8708	987.1	123.8	8766	993.1	124.7	8825	999.0	125.5	8883	1005.0	126.3
133	2.403	8698	985.7	126.8	8757	991.6	127.7	8815	997.5	128.6	8873	1003.4	129.4

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.72			1.73			1.74			1.75		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
180	7.51	9414	1079.6	47.26	9479	1086.0	47.58	9543	1092.4	47.91	9608	1098.7	48.23
179	7.35	9404	1078.1	48.15	9469	1084.5	48.48	9533	1090.9	48.81	9598	1097.3	49.14
178	7.19	9394	1076.7	49.13	9458	1083.1	49.47	9523	1089.4	49.80	9587	1095.8	50.1
177	7.03	9384	1075.2	50.1	9448	1081.6	50.5	9512	1088.0	50.8	9576	1094.3	51.1
176	6.87	9373	1073.7	51.1	9437	1080.1	51.4	9501	1086.4	51.8	9565	1092.8	52.1
175	6.71	9363	1072.3	52.2	9427	1078.6	52.5	9491	1085.0	52.9	9555	1091.3	53.2
174	6.56	9353	1070.8	53.2	9417	1077.2	53.6	9480	1083.5	53.9	9544	1089.8	54.3
173	6.42	9343	1069.4	54.3	9406	1075.7	54.7	9470	1082.0	55.0	9534	1088.4	55.4
172	6.27	9332	1067.9	55.3	9396	1074.2	55.7	9459	1080.6	56.1	9523	1086.9	56.5
171	6.13	9322	1066.4	56.5	9385	1072.7	56.9	9448	1079.0	57.3	9512	1085.3	57.6
170	5.99	9311	1064.9	57.7	9375	1071.2	58.1	9438	1077.5	58.5	9501	1083.8	58.9
169	5.85	9301	1063.5	59.0	9364	1069.8	59.4	9427	1076.0	59.8	9490	1082.3	60.2
168	5.72	9291	1062.0	60.2	9354	1068.3	60.6	9417	1074.6	61.0	9480	1080.8	61.4
167	5.59	9280	1060.5	61.4	9343	1066.8	61.9	9406	1073.1	62.3	9469	1079.3	62.7
166	5.46	9270	1059.1	62.8	9333	1065.3	63.2	9396	1071.6	63.6	9458	1077.8	64.0
165	5.33	9260	1057.6	64.0	9323	1063.8	64.4	9385	1070.1	64.9	9448	1076.3	65.3
164	5.21	9250	1056.1	65.3	9312	1062.3	65.7	9375	1068.6	66.2	9437	1074.8	66.6
163	5.09	9240	1054.6	66.6	9302	1060.8	67.1	9364	1067.1	67.5	9427	1073.3	68.0
162	4.969	9229	1053.1	68.0	9291	1059.3	68.5	9354	1065.5	68.9	9416	1071.8	69.4
161	4.852	9219	1051.7	69.5	9281	1057.9	70.0	9343	1064.1	70.4	9405	1070.3	70.9
160	4.738	9209	1050.2	71.1	9271	1056.4	71.6	9333	1062.6	72.0	9395	1068.8	72.5
159	4.626	9199	1048.7	72.6	9261	1054.9	73.1	9322	1061.1	73.6	9384	1067.2	74.0
158	4.517	9189	1047.2	74.2	9250	1053.4	74.6	9312	1059.5	75.1	9373	1065.7	75.6
157	4.409	9179	1045.7	75.8	9240	1051.9	76.3	9302	1058.1	76.8	9363	1064.2	77.3
156	4.303	9168	1044.2	77.5	9230	1050.4	78.0	9291	1056.5	78.5	9352	1062.7	79.0
155	4.200	9158	1042.7	79.1	9219	1048.9	79.7	9280	1055.0	80.2	9341	1061.2	80.7
154	4.099	9147	1041.2	80.9	9208	1047.3	81.4	9269	1053.5	81.9	9330	1059.6	82.5
153	4.000	9137	1039.7	82.6	9198	1045.9	83.2	9259	1052.0	83.7	9320	1058.1	84.3
152	3.903	9127	1038.2	84.4	9187	1044.3	85.0	9248	1050.5	85.5	9309	1056.6	86.1
151	3.808	9116	1036.7	86.3	9177	1042.8	86.9	9237	1048.9	87.5	9298	1055.0	88.1
150	3.715	9106	1035.2	88.2	9167	1041.3	88.8	9227	1047.4	89.4	9288	1053.5	90.0
149	3.624	9096	1033.7	90.2	9156	1039.8	90.8	9216	1045.9	91.4	9277	1052.0	92.0
148	3.535	9086	1032.2	92.3	9146	1038.3	92.9	9206	1044.4	93.5	9267	1050.5	94.1
147	3.447	9075	1030.7	94.4	9135	1036.8	95.0	9195	1042.8	95.6	9256	1048.9	96.3
146	3.361	9065	1029.2	96.5	9125	1035.3	97.2	9185	1041.3	97.8	9245	1047.4	98.5
145	3.278	9054	1027.7	98.7	9114	1033.7	99.3	9174	1039.8	100.0	9234	1045.8	100.6
144	3.196	9044	1026.2	100.9	9104	1032.2	101.6	9164	1038.3	102.3	9223	1044.3	102.9
143	3.116	9034	1024.6	103.3	9093	1030.7	103.9	9153	1036.7	104.6	9212	1042.7	105.3
142	3.037	9024	1023.1	105.7	9083	1029.2	106.4	9143	1035.2	107.1	9202	1041.2	107.8
141	2.960	9014	1021.6	108.1	9073	1027.6	108.8	9132	1033.6	109.5	9192	1039.7	110.2
140	2.885	9003	1020.1	110.6	9062	1026.1	111.3	9121	1032.1	112.0	9181	1038.1	112.7
139	2.812	8993	1018.6	113.2	9052	1024.6	114.0	9111	1030.5	114.7	9170	1036.5	115.5
138	2.740	8983	1017.1	115.8	9042	1023.0	116.6	9101	1029.0	117.3	9160	1035.0	118.1
137	2.669	8972	1015.5	118.5	9031	1021.5	119.3	9090	1027.4	120.1	9149	1033.4	120.9
136	2.600	8962	1014.0	121.3	9021	1019.9	122.1	9080	1025.9	122.9	9138	1031.8	123.7
135	2.533	8952	1012.5	124.3	9011	1018.4	125.1	9069	1024.4	125.9	9128	1030.3	126.7
134	2.467	8941	1010.9	127.1	9000	1016.8	128.0	9058	1022.8	128.8	9117	1028.7	129.6
133	2.403	8931	1009.4	130.2	8990	1015.3	131.1	9048	1021.2	131.9	9106	1027.1	132.8

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.68			1.69			1.70			1.71		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
132	2.341	8689	984.2	129.9	8747	990.1	130.8	8805	996.0	131.6	8863	1001.9	132.5
131	2.280	8679	982.7	133.0	8737	988.6	133.9	8795	994.5	134.7	8853	1000.4	135.6
130	2.220	8670	981.2	136.2	8728	987.1	137.1	8786	993.0	138.0	8843	998.9	138.9
129	2.161	8660	979.7	139.5	8718	985.6	140.4	8775	991.5	141.4	8833	997.3	142.3
128	2.103	8650	978.2	142.9	8708	984.1	143.9	8766	989.9	144.8	8823	995.8	145.8
127	2.047	8641	976.7	146.4	8698	982.6	147.3	8756	988.4	148.3	8813	994.3	149.3
126	1.992	8631	975.2	150.0	8688	981.0	151.0	8745	986.9	152.0	8803	992.7	153.0
125	1.938	8621	973.7	153.7	8678	979.5	154.7	8735	985.4	155.8	8793	991.2	156.8
124	1.886	8611	972.2	157.5	8668	978.0	158.5	8725	983.8	159.6	8782	989.7	160.6
123	1.835	8601	970.7	161.4	8658	976.5	162.5	8715	982.3	163.6	8772	988.2	164.6
122	1.785	8591	969.1	165.6	8648	974.9	166.7	8705	980.7	167.7	8762	986.6	168.8
121	1.737	8582	967.6	169.8	8639	973.4	170.9	8695	979.2	172.0	8752	985.1	173.1
120	1.689	8572	966.1	174.0	8629	971.9	175.2	8685	977.7	176.3	8742	983.5	177.5
119	1.642	8562	964.6	178.4	8619	970.4	179.6	8675	976.2	180.8	8732	982.0	182.0
118	1.597	8553	963.1	183.0	8609	968.9	184.2	8665	974.7	185.4	8722	980.4	186.6
117	1.552	8543	961.6	187.8	8599	967.4	189.0	8655	973.1	190.2	8711	978.9	191.5
116	1.509	8533	960.0	192.6	8589	965.8	193.8	8645	971.5	195.1	8701	977.3	196.4
115	1.467	8523	958.5	197.6	8579	964.3	198.9	8635	970.0	200.2	8691	975.8	201.5
114	1.426	8513	957.0	202.6	8569	962.7	203.9	8625	968.5	205.3	8680	974.2	206.6
113	1.386	8503	955.5	207.8	8559	961.2	209.2	8614	967.0	210.5	8670	972.7	211.9
112	1.347	8493	953.9	213.3	8549	959.7	214.7	8604	965.4	216.1	8660	971.1	217.4
111	1.308	8483	952.4	218.9	8539	958.2	220.3	8594	963.9	221.7	8649	969.6	223.2
110	1.271	8474	950.9	224.7	8529	956.6	226.2	8584	962.2	227.7	8640	968.0	229.1
109	1.235	8463	949.4	230.7	8518	955.1	232.2	8574	960.7	233.7	8629	966.4	235.2
108	1.200	8454	947.8	236.9	8509	953.5	238.4	8564	959.1	240.0	8619	964.8	241.5
107	1.165	8444	946.3	243.3	8499	952.0	244.9	8554	957.6	246.5	8608	963.3	248.1
106	1.131	8434	944.7	250.0	8489	950.4	251.6	8544	956.0	253.2	8598	961.7	254.9
105	1.098	8424	943.2	256.8	8479	948.8	258.4	8534	954.5	260.1	8588	960.1	261.8
104	1.066	8414	941.6	263.8	8469	947.2	265.5	8523	952.9	267.2	8578	958.5	268.9
103	1.035	8405	940.1	271.0	8459	945.7	272.7	8513	951.4	274.5	8568	957.0	276.2
102	1.005	8395	938.5	278.4	8449	944.1	280.2	8503	949.8	282.0	8558	955.4	283.8
101	0.975	8385	937.0	286.0	8439	942.6	287.9	8494	948.2	289.7	8548	953.8	291.6
100	0.946	8375	935.4	293.8	8429	941.0	295.7	8483	946.6	297.6	8537	952.2	299.5
99	0.918	8365	933.9	301.9	8419	939.5	303.8	8473	945.0	305.8	8527	950.6	307.7
98	0.891	8356	932.3	310.2	8409	937.9	312.2	8463	943.4	314.2	8517	949.0	316.2
97	0.864	8346	930.8	318.9	8399	936.4	320.9	8453	941.9	323.0	8507	947.5	325.0
96	0.838	8336	929.3	327.9	8389	934.8	330.0	8443	940.4	332.1	8497	946.0	334.2
95	0.813	8326	927.8	337.0	8380	933.3	339.2	8433	938.8	341.4	8486	944.4	343.5
94	0.788	8316	926.2	346.5	8370	931.7	348.8	8423	937.2	351.0	8476	942.8	353.2
93	0.764	8307	924.6	356.4	8360	930.1	358.7	8413	935.7	361.0	8466	941.3	363.3
92	0.741	8297	923.0	366.6	8350	928.5	369.1	8403	934.1	371.4	8456	939.6	373.7
91	0.718	8287	921.5	377.4	8340	927.0	379.8	8393	932.5	382.2	8446	938.0	384.6
90	0.696	8277	919.9	388.4	8330	925.4	390.8	8383	930.9	393.3	8435	936.4	395.8
89	0.675	8267	918.3	399.6	8320	923.8	402.2	8373	929.3	404.7	8425	934.8	407.3
88	0.654	8257	916.7	411.2	8310	922.2	413.8	8362	927.7	416.4	8415	933.1	419.1
87	0.633	8248	915.2	423.1	8300	920.6	425.8	8353	926.1	428.5	8405	931.6	431.2
86	0.613	8238	913.6	435.0	8290	919.0	437.7	8342	924.5	440.5	8395	930.0	443.2
85	0.594	8228	912.0	447.6	8280	917.4	450.4	8332	922.9	453.3	8384	928.3	456.1

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.72			1.73			1.74			1.75		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
132	2.341	8921	1007.8	133.4	8980	1013.7	134.2	9038	1019.6	135.1	9096	1025.6	136.0
131	2.280	8911	1006.3	136.5	8969	1012.2	137.4	9027	1018.1	138.3	9085	1024.0	139.2
130	2.220	8901	1004.8	139.8	8959	1010.7	140.7	9017	1016.6	141.7	9075	1022.5	142.6
129	2.161	8891	1003.2	143.2	8949	1009.1	144.2	9006	1015.0	145.1	9064	1020.9	146.0
128	2.103	8881	1001.7	146.7	8938	1007.6	147.7	8996	1013.4	148.6	9054	1019.3	149.6
127	2.047	8870	1000.2	150.3	8928	1006.1	151.2	8985	1011.9	152.2	9043	1017.8	153.2
126	1.992	8860	998.6	154.0	8917	1004.5	155.0	8975	1010.3	156.0	9032	1016.2	157.0
125	1.938	8850	997.1	157.8	8907	1003.0	158.8	8964	1008.8	159.8	9021	1014.7	160.9
124	1.886	8839	995.5	161.7	8896	1001.3	162.7	8953	1007.2	163.8	9011	1013.0	164.8
123	1.835	8829	994.0	165.7	8886	999.8	166.8	8943	1005.6	167.9	9000	1011.4	168.9
122	1.785	8819	992.4	169.9	8876	998.2	171.0	8932	1004.0	172.1	8989	1009.8	173.2
121	1.737	8809	990.9	174.2	8866	996.7	175.4	8922	1002.5	176.5	8979	1008.3	177.6
120	1.689	8799	989.3	178.6	8855	995.1	179.8	8912	1000.9	180.9	8968	1006.7	182.1
119	1.642	8788	987.8	183.1	8844	993.6	184.3	8901	999.4	185.5	8957	1005.1	186.7
118	1.597	8778	986.2	187.8	8834	992.0	189.0	8891	997.8	190.2	8947	1003.5	191.4
117	1.552	8767	984.6	192.7	8824	990.4	193.9	8880	996.2	195.2	8936	1001.9	196.4
116	1.509	8757	983.0	197.6	8813	988.8	198.9	8869	994.5	200.2	8925	1000.3	201.4
115	1.467	8747	981.5	202.8	8803	987.3	204.0	8859	993.0	205.3	8915	998.7	206.6
114	1.426	8736	979.9	207.9	8792	985.7	209.2	8848	991.4	210.6	8904	997.1	211.9
113	1.386	8726	978.4	213.3	8781	984.1	214.6	8837	989.8	216.0	8893	995.5	217.3
112	1.347	8715	976.8	218.8	8771	982.5	220.2	8826	988.2	221.6	8882	993.9	223.0
111	1.308	8705	975.3	224.6	8760	980.9	226.0	8816	986.6	227.4	8871	992.3	228.9
110	1.271	8695	973.7	230.6	8750	979.3	232.1	8805	985.0	233.5	8861	990.7	235.0
109	1.235	8684	972.1	236.7	8739	977.8	238.2	8794	983.4	239.7	8849	989.1	241.2
108	1.200	8674	970.5	243.0	8729	976.2	244.6	8784	981.8	246.1	8839	987.5	247.7
107	1.165	8663	968.9	249.7	8718	974.6	251.3	8773	980.2	252.8	8828	985.9	254.4
106	1.131	8653	967.3	256.5	8708	973.0	258.1	8763	978.6	259.7	8817	984.3	261.3
105	1.098	8643	965.7	263.4	8698	971.4	265.1	8752	977.0	266.8	8807	982.7	268.4
104	1.066	8632	964.1	270.6	8687	969.8	272.3	8741	975.4	274.0	8796	981.0	275.7
103	1.035	8622	962.6	278.0	8677	968.2	279.7	8731	973.8	281.5	8785	979.4	283.2
102	1.005	8612	961.0	285.6	8666	966.6	287.4	8720	972.2	289.2	8775	977.8	291.0
101	0.975	8602	959.4	293.4	8656	965.0	295.3	8710	970.6	297.1	8764	976.2	298.9
100	0.946	8591	957.8	301.4	8645	963.4	303.3	8699	969.0	305.2	8753	974.6	307.1
99	0.918	8581	956.2	309.7	8635	961.8	311.6	8689	967.4	313.6	8743	973.0	315.5
98	0.891	8571	954.6	318.2	8624	960.2	320.2	8678	965.8	322.2	8732	971.3	324.2
97	0.864	8560	953.1	327.1	8614	958.5	329.1	8668	964.2	331.2	8721	969.8	333.2
96	0.838	8550	951.5	336.3	8604	957.0	338.4	8657	962.6	340.5	8711	968.2	342.6
95	0.813	8540	949.9	345.7	8593	955.4	347.9	8647	961.0	350.0	8700	966.6	352.2
94	0.788	8529	948.3	355.4	8583	953.8	357.6	8636	959.4	359.9	8689	964.9	362.1
93	0.764	8519	946.7	365.6	8572	952.2	367.8	8626	957.8	370.1	8679	963.3	372.4
92	0.741	8509	945.1	376.1	8562	950.6	378.4	8615	956.1	380.8	8668	961.6	383.1
91	0.718	8498	943.5	387.0	8551	949.0	389.4	8604	954.5	391.8	8657	960.0	394.2
90	0.696	8488	941.9	398.3	8541	947.4	400.7	8594	952.9	403.2	8646	958.3	405.7
89	0.675	8478	940.3	409.8	8531	945.8	412.4	8583	951.3	414.9	8636	956.7	417.5
88	0.654	8467	938.6	421.7	8520	944.1	424.3	8572	949.6	426.9	8625	955.0	429.5
87	0.633	8457	937.0	433.9	8510	942.5	436.6	8562	948.0	439.2	8615	953.4	441.9
86	0.613	8447	935.4	446.0	8499	940.9	448.8	9552	946.3	451.5	8604	951.8	454.3
85	0.594	8437	933.8	458.9	8489	939.2	461.8	8541	944.7	464.6	8593	950.1	467.5

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.76			1.77			1.78			1.79		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
324	94.8	276.0	1325.4	6.60	297.5	1336.1	6.77	...	...	...	...	...	...
323	93.5	273.4	1323.7	6.67	295.0	1334.4	6.84	...	...	...	...	...	...
322	92.2	271.0	1322.1	6.75	292.5	1332.7	6.92	...	...	...	...	...	...
321	90.9	268.4	1320.4	6.82	289.9	1331.1	6.99	...	...	...	...	...	...
320	89.6	266.0	1318.8	6.90	287.4	1329.5	7.06	...	...	...	...	...	...
319	88.3	263.5	1317.1	6.97	284.9	1327.8	7.14	...	...	...	...	...	...
318	87.1	260.9	1315.5	7.04	282.3	1326.2	7.21	...	...	...	...	...	...
317	85.9	258.4	1313.9	7.11	279.8	1324.5	7.29	300.8	1335.0	7.44	...	...	...
316	84.6	255.9	1312.2	7.19	277.3	1322.9	7.37	298.3	1333.3	7.52	...	...	...
315	83.4	253.4	1310.6	7.28	274.7	1321.2	7.45	295.7	1331.6	7.60	...	...	...
314	82.3	250.9	1309.0	7.35	272.1	1319.5	7.53	293.1	1329.9	7.69	...	...	...
313	81.1	248.4	1307.4	7.44	269.6	1317.8	7.62	290.5	1328.3	7.77	...	...	...
312	79.9	245.9	1305.8	7.52	267.1	1316.2	7.70	288.0	1326.6	7.86	...	...	...
311	78.8	243.4	1304.2	7.60	264.5	1314.6	7.79	285.5	1324.9	7.95	...	...	...
310	77.6	241.0	1302.6	7.68	262.0	1313.0	7.88	283.0	1323.3	8.03	...	...	...
309	76.5	238.5	1301.0	7.77	259.5	1311.4	7.97	280.5	1321.7	8.12	...	...	...
308	75.4	236.0	1299.4	7.86	257.0	1309.7	8.05	278.0	1320.0	8.21	299.1	1330.3	8.40
307	74.3	233.6	1297.8	7.95	254.4	1308.1	8.14	275.5	1318.3	8.30	296.5	1328.6	8.50
306	73.2	231.2	1296.3	8.04	251.9	1306.4	8.23	273.0	1316.7	8.40	294.0	1326.9	8.59
305	72.2	228.8	1294.7	8.13	249.3	1304.8	8.33	270.5	1315.0	8.49	291.4	1325.3	8.69
304	71.1	226.4	1293.1	8.22	246.9	1303.2	8.42	267.9	1313.4	8.59	288.8	1323.6	8.79
303	70.0	224.0	1291.5	8.31	244.4	1301.6	8.51	265.3	1311.7	8.69	286.2	1321.9	8.89
302	69.0	221.7	1289.9	8.40	241.9	1300.0	8.60	262.8	1310.0	8.79	283.5	1320.2	8.99
301	68.0	219.2	1288.4	8.50	239.4	1298.3	8.70	260.1	1308.3	8.89	281.0	1318.5	9.09
300	67.0	216.7	1286.8	8.60	236.9	1296.7	8.80	257.6	1306.6	8.99	278.4	1316.8	9.19
299	66.0	214.2	1285.2	8.70	234.4	1295.1	8.91	255.0	1304.9	9.09	275.9	1315.1	9.29
298	65.0	211.8	1283.6	8.80	231.9	1293.5	9.01	252.5	1303.3	9.20	273.2	1313.4	9.40
297	64.0	209.3	1282.0	8.90	229.4	1291.9	9.11	250.0	1301.7	9.30	270.5	1311.7	9.50
296	63.1	206.8	1280.4	9.00	227.0	1290.3	9.22	247.4	1300.1	9.41	268.0	1310.1	9.61
295	62.1	204.4	1278.8	9.10	224.6	1288.7	9.33	244.9	1298.4	9.51	265.4	1308.5	9.72
294	61.2	202.0	1277.2	9.21	222.1	1287.1	9.44	242.3	1296.8	9.62	262.9	1306.8	9.83
293	60.2	199.5	1275.6	9.33	219.6	1285.5	9.55	239.8	1295.2	9.73	260.3	1305.2	9.95
292	59.3	197.1	1274.0	9.44	217.2	1283.9	9.66	237.3	1293.6	9.85	257.7	1303.5	10.06
291	58.4	194.7	1272.5	9.55	214.7	1282.3	9.77	234.7	1291.8	9.97	255.1	1301.9	10.18
290	57.5	192.3	1271.0	9.66	212.1	1280.6	9.88	232.1	1290.2	10.09	252.6	1300.2	10.30
289	56.7	189.8	1269.4	9.78	209.6	1279.0	10.00	229.6	1288.5	10.20	250.0	1298.5	10.42
288	55.8	187.4	1267.9	9.89	207.0	1277.4	10.12	227.0	1286.9	10.32	247.3	1296.9	10.56
287	54.9	185.0	1266.4	10.01	204.4	1275.8	10.24	224.5	1285.2	10.45	244.7	1295.2	10.68
286	54.1	182.6	1264.8	10.13	201.9	1274.2	10.36	222.0	1283.6	10.58	242.1	1293.5	10.80
285	53.2	180.2	1263.3	10.25	199.4	1272.6	10.48	219.4	1282.0	10.70	239.5	1291.8	10.94
284	52.4	177.8	1261.7	10.37	196.9	1271.0	10.61	216.9	1280.4	10.83	236.9	1290.2	11.06
283	51.6	175.4	1260.1	10.50	194.4	1269.4	10.74	214.4	1278.8	10.97	234.3	1288.5	11.20
282	50.8	173.0	1258.5	10.62	191.9	1267.8	10.87	211.9	1277.2	11.10	231.7	1286.8	11.34
281	50.0	170.6	1257.0	10.75	189.5	1266.2	11.00	209.4	1275.6	11.23	229.1	1285.2	11.47
280	49.19	168.2	1255.4	10.88	187.0	1264.6	11.14	206.8	1274.0	11.36	226.5	1283.5	11.62
279	48.41	165.8	1253.9	11.02	184.6	1263.1	11.28	204.4	1272.4	11.50	224.0	1281.8	11.76
278	47.64	163.4	1252.4	11.15	182.2	1261.6	11.42	202.0	1270.9	11.65	221.4	1280.2	11.90
277	46.88	161.0	1250.9	11.29	179.7	1260.0	11.56	199.5	1269.3	11.80	218.8	1278.6	12.05

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.80			1.81			1.82			1.83		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
324	94.8	...	...	...	...	...	...	...	...	...	...	...	...
323	93.5	...	...	...	...	...	...	...	...	...	...	...	...
322	92.2	...	...	...	...	...	...	...	...	...	...	...	...
321	90.9	...	...	...	...	...	...	...	...	...	...	...	...
320	89.6	...	...	...	...	...	...	...	...	...	...	...	...
319	88.3	...	...	...	...	...	...	...	...	...	...	...	...
318	87.1	...	...	...	...	...	...	...	...	...	...	...	...
317	85.9	...	...	...	...	...	...	...	...	...	...	...	...
316	84.6	...	...	...	...	...	...	...	...	...	...	...	...
315	83.4	...	...	...	...	...	...	...	...	...	...	...	...
314	82.3	...	...	...	...	...	...	...	...	...	...	...	...
313	81.1	...	...	...	...	...	...	...	...	...	...	...	...
312	79.9	...	...	...	...	...	...	...	...	...	...	...	...
311	78.8	...	...	...	...	...	...	...	...	...	...	...	...
310	77.6	...	...	...	...	...	...	...	...	...	...	...	...
309	76.5	...	...	...	...	...	...	...	...	...	...	...	...
308	75.4	...	...	...	...	...	...	...	...	...	...	...	...
307	74.3	...	...	...	...	...	...	...	...	...	...	...	...
306	73.2	...	...	...	...	...	...	...	...	...	...	...	...
305	72.2	...	...	...	...	...	...	...	...	...	...	...	...
304	71.1	...	...	...	...	...	...	...	...	...	...	...	...
303	70.0	...	...	...	...	...	...	...	...	...	...	...	...
302	69.0	...	...	...	...	...	...	...	...	...	...	...	...
301	68.0	...	...	...	...	...	...	...	...	...	...	...	...
300	67.0	299.0	1326.7	9.37	...	...	...	...	...	...	...	...	...
299	66.0	296.3	1325.0	9.48	...	...	...	...	...	...	...	...	...
298	65.0	293.7	1323.3	9.60	...	...	...	...	...	...	...	...	...
297	64.0	291.0	1321.6	9.70	...	...	...	...	...	...	...	...	...
296	63.1	288.4	1319.9	9.81	...	...	...	...	...	...	...	...	...
295	62.1	285.8	1318.2	9.92	...	...	...	...	...	...	...	...	...
294	61.2	283.1	1316.4	10.03	...	...	...	...	...	...	...	...	...
293	60.2	280.5	1314.7	10.15	301.5	1325.2	10.36	...	...	...	...	...	...
292	59.3	277.8	1313.0	10.27	298.7	1323.4	10.48	...	...	...	...	...	...
291	58.4	275.1	1311.4	10.39	296.0	1321.7	10.60	...	...	...	...	...	...
290	57.5	272.4	1309.7	10.52	293.3	1320.0	10.73	...	...	...	...	...	...
289	56.7	269.8	1308.0	10.65	290.6	1318.3	10.86	...	...	...	...	...	...
288	55.8	267.2	1306.4	10.77	288.0	1316.6	10.99	...	...	...	...	...	...
287	54.9	264.5	1304.7	10.90	285.3	1314.8	11.11	...	...	...	...	...	...
286	54.1	261.9	1303.0	11.03	282.5	1313.1	11.25	...	...	...	...	...	...
285	53.2	259.3	1301.4	11.16	279.8	1311.4	11.39	301.0	1321.9	11.64	...	...	...
284	52.4	256.7	1299.7	11.29	277.1	1309.7	11.53	298.3	1320.1	11.78	...	...	...
283	51.6	254.0	1298.0	11.43	274.4	1308.0	11.67	295.5	1318.3	11.93	...	...	...
282	50.8	251.4	1296.4	11.57	271.7	1306.3	11.81	292.8	1316.5	12.07	...	...	...
281	50.0	248.7	1294.7	11.72	269.0	1304.6	11.96	290.0	1314.8	12.22	...	...	...
280	49.19	246.0	1293.0	11.86	266.3	1302.9	12.10	287.2	1313.0	12.37	...	...	...
279	48.41	243.3	1291.4	12.00	263.6	1301.2	12.25	284.5	1311.2	12.53	...	...	...
278	47.64	240.7	1289.7	12.15	261.0	1299.5	12.40	281.7	1309.5	12.69	301.5	1319.0	12.95
277	46.88	238.1	1288.0	12.30	258.3	1297.8	12.56	279.0	1307.7	12.84	298.8	1317.3	13.10

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.76			1.77			1.78			1.79		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
276	46.13	158.6	1249.3	11.43	177.3	1258.4	11.70	197.0	1267.7	11.94	216.2	1277.0	12.20
275	45.39	156.2	1247.8	11.57	174.8	1256.8	11.84	194.4	1266.0	12.09	213.6	1275.3	12.35
274	44.67	153.8	1246.3	11.72	172.3	1255.2	11.99	191.9	1264.4	12.24	211.0	1273.6	12.50
273	43.95	151.4	1244.7	11.86	169.9	1253.6	12.13	189.4	1262.8	12.39	208.4	1271.9	12.66
272	43.24	149.0	1243.2	12.01	167.4	1252.0	12.29	186.9	1261.2	12.54	205.8	1270.3	12.82
271	42.54	146.6	1241.7	12.16	165.0	1250.4	12.44	184.3	1259.6	12.70	203.2	1268.6	12.99
270	41.84	144.2	1240.2	12.32	162.5	1248.8	12.60	181.7	1258.0	12.86	200.6	1266.9	13.15
269	41.16	141.8	1238.7	12.47	160.0	1247.2	12.76	179.1	1256.4	13.02	198.0	1265.3	13.31
268	40.49	139.4	1237.2	12.63	157.5	1245.7	12.92	176.5	1254.8	13.20	195.4	1263.7	13.49
267	39.83	137.0	1235.7	12.79	155.0	1244.1	13.08	174.0	1253.2	13.36	192.8	1262.0	13.66
266	39.17	134.5	1234.2	12.95	152.6	1242.6	13.25	171.5	1251.6	13.53	190.2	1260.4	13.83
265	38.53	132.1	1232.6	13.12	150.1	1241.0	13.42	169.0	1250.0	13.70	187.7	1258.8	14.01
264	37.89	129.7	1231.0	13.29	147.7	1239.5	13.58	166.4	1248.4	13.88	185.1	1257.2	14.19
263	37.26	127.3	1229.5	13.46	145.2	1237.9	13.76	163.9	1246.7	14.06	182.5	1255.6	14.38
262	36.64	124.9	1228.0	13.64	142.8	1236.4	13.94	161.3	1245.1	14.23	179.9	1254.0	14.56
261	36.02	122.5	1226.4	13.81	140.3	1234.8	14.11	158.8	1243.5	14.41	177.3	1252.4	14.75
260	35.42	120.1	1224.9	13.99	137.8	1233.2	14.30	156.2	1241.9	14.60	174.7	1250.8	14.95
259	34.83	117.7	1223.3	14.17	135.3	1231.7	14.49	153.6	1240.3	14.79	172.1	1249.1	15.14
258	34.24	115.3	1221.7	14.35	132.9	1230.1	14.67	151.0	1238.7	14.99	169.5	1247.4	15.33
257	33.66	112.9	1220.2	14.54	130.4	1228.6	14.86	148.4	1237.0	15.18	166.9	1245.8	15.53
256	33.09	110.5	1218.6	14.74	128.0	1227.0	15.05	145.8	1235.4	15.38	164.3	1244.2	15.74
255	32.53	108.1	1217.1	14.93	125.4	1225.5	15.25	143.2	1233.8	15.58	161.8	1242.6	15.94
254	31.97	105.7	1215.6	15.11	123.0	1224.0	15.44	140.6	1232.1	15.78	159.2	1241.0	16.15
253	31.42	103.3	1214.1	15.31	120.4	1222.4	15.65	138.1	1230.5	15.99	156.5	1239.3	16.36
252	30.88	100.9	1212.5	15.52	118.0	1220.8	15.86	135.5	1228.9	16.20	153.9	1237.7	16.58
251	30.35	98.5	1211.0	15.72	115.5	1219.2	16.06	133.0	1227.3	16.40	151.3	1236.1	16.80
250	29.82	96.1	1209.4	15.94	113.0	1217.6	16.27	130.4	1225.7	16.62	148.7	1234.4	17.02
249	29.30	93.7	1207.9	16.14	110.5	1216.0	16.49	127.9	1224.1	16.84	146.1	1232.8	17.24
248	28.79	91.3	1206.4	16.36	108.0	1214.4	16.70	125.4	1222.6	17.06	143.5	1231.2	17.47
247	28.29	88.9	1204.8	16.57	105.6	1212.9	16.92	122.9	1221.0	17.29	140.9	1229.6	17.70
246	27.80	86.5	1203.3	16.79	103.1	1211.4	17.14	120.4	1219.5	17.51	138.3	1227.9	17.93
245	27.31	84.0	1201.8	17.01	100.6	1209.9	17.35	117.8	1217.9	17.75	135.7	1226.3	18.17
244	26.83	81.6	1200.3	17.23	98.2	1208.3	17.60	115.3	1216.3	17.99	133.1	1224.7	18.41
243	26.35	79.2	1198.8	17.47	95.7	1206.7	17.83	112.8	1214.7	18.23	130.5	1223.1	18.67
242	25.88	76.8	1197.3	17.70	93.3	1205.1	18.07	110.3	1213.1	18.48	127.9	1221.4	18.91
241	25.42	74.4	1195.8	17.94	90.9	1203.6	18.30	107.8	1211.5	18.72	125.3	1219.8	19.17
240	24.97	72.0	1194.3	18.18	88.4	1202.0	18.56	105.2	1209.9	18.99	122.6	1218.2	19.43
239	24.52	69.6	1192.8	18.41	85.9	1200.5	18.80	102.7	1208.3	19.23	120.0	1216.6	19.70
238	24.08	67.2	1191.3	18.67	83.4	1198.9	19.06	100.2	1206.8	19.50	117.5	1215.0	19.97
237	23.64	64.8	1189.7	18.93	81.0	1197.4	19.31	97.7	1205.2	19.76	115.0	1213.4	20.24
236	23.21	62.4	1188.2	19.19	78.5	1195.8	19.59	95.2	1203.6	20.04	112.4	1211.8	20.50
235	22.79	60.0	1186.6	19.44	76.0	1194.3	19.85	92.7	1202.0	20.30	109.7	1200.1	20.80
234	22.38	57.6	1185.1	19.70	73.5	1192.7	20.12	90.1	1200.4	20.60	107.1	1208.5	21.10
233	21.97	55.2	1183.6	19.99	71.0	1191.2	20.40	87.6	1198.8	20.89	104.5	1206.9	21.39
232	21.57	52.8	1182.1	20.26	68.6	1189.6	20.69	85.1	1197.3	21.17	101.9	1205.3	21.69
231	21.17	50.4	1180.6	20.54	66.1	1188.0	20.99	82.6	1195.8	21.47	99.3	1203.7	22.00
230	20.78	48.0	1179.1	20.83	63.6	1186.4	21.29	80.1	1194.3	21.77	96.8	1202.1	22.30
229	20.40	45.7	1177.6	21.11	61.2	1184.9	21.58	77.7	1192.8	22.10	94.3	1200.5	22.61

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.80			1.81			1.82			1.83		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
276	46.13	235.4	1286.3	12.45	255.5	1296.1	12.71	276.3	1306.0	13.00	296.0	1315.6	13.26
275	45.39	232.8	1284.7	12.60	252.8	1294.4	12.87	273.5	1304.2	13.16	293.2	1313.8	13.43
274	44.67	230.2	1283.0	12.76	250.1	1292.7	13.03	270.8	1302.5	13.33	290.4	1312.0	13.60
273	43.95	227.6	1281.3	12.93	247.4	1291.0	13.20	268.0	1300.7	13.50	287.7	1310.2	13.77
272	43.24	224.9	1279.6	13.10	244.7	1289.3	13.36	265.2	1299.0	13.67	284.9	1308.5	13.95
271	42.54	222.2	1277.9	13.26	242.0	1287.6	13.54	262.5	1297.3	13.84	282.1	1306.7	14.13
270	41.84	219.5	1276.2	13.43	239.4	1285.9	13.70	259.7	1295.5	14.02	279.3	1304.9	14.31
269	41.16	216.9	1274.5	13.60	236.7	1284.2	13.89	257.0	1293.7	14.20	276.5	1303.2	14.50
268	40.49	214.3	1272.8	13.78	234.0	1282.5	14.06	254.2	1292.0	14.39	273.8	1301.4	14.68
267	39.83	211.6	1271.1	13.95	231.3	1280.8	14.24	251.4	1290.3	14.57	271.0	1299.7	14.87
266	39.17	209.0	1269.4	14.13	228.6	1279.1	14.43	248.7	1288.5	14.76	268.2	1297.9	15.06
265	38.53	206.3	1267.7	14.31	225.9	1277.4	14.60	246.0	1286.8	14.94	265.5	1296.1	15.26
264	37.89	203.6	1266.0	14.50	223.2	1275.7	14.80	243.3	1285.1	15.13	262.7	1294.4	15.45
263	37.26	200.9	1264.3	14.70	220.5	1274.0	15.00	240.5	1283.3	15.33	260.0	1292.6	15.65
262	36.64	198.3	1262.6	14.89	217.8	1272.3	15.19	237.7	1281.6	15.53	257.2	1290.9	15.86
261	36.02	195.6	1261.0	15.07	215.1	1270.6	15.39	235.0	1279.8	15.73	254.4	1289.2	16.07
260	35.42	193.0	1259.4	15.27	212.4	1268.9	15.58	232.2	1278.1	15.94	251.6	1287.4	16.27
259	34.83	190.4	1257.7	15.47	209.7	1267.1	15.79	229.5	1276.4	16.15	248.9	1285.6	16.49
258	34.24	187.9	1256.1	15.67	207.0	1265.4	16.00	226.7	1274.7	16.36	246.1	1283.9	16.70
257	33.66	185.4	1254.5	15.88	204.3	1263.6	16.20	224.0	1273.0	16.57	243.3	1282.2	16.93
256	33.09	182.9	1252.9	16.09	201.5	1261.9	16.41	221.2	1271.2	16.79	240.5	1280.5	17.15
255	32.53	180.2	1251.3	16.30	198.8	1260.2	16.62	218.5	1269.5	17.01	237.8	1278.7	17.39
254	31.97	177.6	1249.6	16.52	196.1	1258.5	16.84	215.7	1267.8	17.23	235.0	1277.0	17.60
253	31.42	174.9	1247.9	16.73	193.4	1256.8	17.06	213.0	1266.1	17.46	232.3	1275.2	17.84
252	30.88	172.2	1246.2	16.95	190.7	1255.1	17.29	210.3	1264.3	17.69	229.5	1273.5	18.09
251	30.35	169.5	1244.5	17.18	188.0	1253.3	17.52	207.5	1262.6	17.92	226.7	1271.7	18.32
250	29.82	166.8	1242.9	17.40	185.3	1251.6	17.75	204.7	1260.9	18.16	224.0	1269.9	18.56
249	29.30	164.2	1241.2	17.63	182.5	1249.9	18.00	202.0	1259.2	18.40	221.2	1268.2	18.80
248	28.79	161.5	1239.5	17.86	179.8	1248.2	18.23	199.2	1257.4	18.65	218.4	1266.5	19.06
247	28.29	158.8	1237.8	18.10	177.1	1246.6	18.48	196.4	1255.7	18.90	215.7	1264.8	19.32
246	27.80	156.1	1236.2	18.34	174.4	1244.9	18.73	193.6	1254.0	19.14	213.0	1263.1	19.59
245	27.31	153.4	1234.6	18.59	171.7	1243.2	18.99	190.9	1252.3	19.40	210.2	1261.3	19.84
244	26.83	150.7	1232.9	18.84	169.0	1241.5	19.23	188.1	1250.5	19.66	207.4	1259.6	20.11
243	26.35	148.0	1231.2	19.10	166.3	1239.8	19.49	185.3	1248.8	19.93	204.6	1257.9	20.39
242	25.88	145.4	1229.5	19.35	163.7	1238.1	19.76	182.6	1247.1	20.20	201.9	1256.2	20.67
241	25.42	142.8	1227.8	19.61	161.0	1236.4	20.03	179.9	1245.4	20.47	199.1	1254.5	20.95
240	24.97	140.1	1226.1	19.88	158.3	1234.7	20.31	177.1	1243.7	20.76	196.3	1252.8	21.25
239	24.52	137.3	1224.4	20.15	155.6	1233.0	20.59	174.3	1242.0	21.03	193.5	1251.1	21.53
238	24.08	134.5	1222.7	20.42	152.9	1231.4	20.87	171.5	1240.3	21.32	190.7	1249.3	21.82
237	23.64	131.8	1221.1	20.70	150.2	1239.7	21.16	168.8	1238.6	21.62	188.0	1247.6	22.13
236	23.21	129.1	1219.4	20.99	147.4	1228.0	21.45	166.0	1236.9	21.93	185.2	1245.9	22.44
235	22.79	126.5	1217.7	21.29	144.7	1226.3	21.76	163.2	1235.2	22.23	182.4	1244.2	22.76
234	22.38	123.8	1216.1	21.59	142.0	1224.6	22.06	160.4	1233.5	22.54	179.6	1242.4	23.09
233	21.97	121.1	1214.5	21.89	139.3	1222.9	22.38	157.6	1231.7	22.86	176.9	1240.7	23.41
232	21.57	118.4	1212.8	22.19	136.6	1221.2	22.69	154.9	1230.0	23.20	174.1	1238.9	23.74
231	21.17	115.8	1211.2	22.50	133.9	1219.5	23.02	152.1	1228.2	23.52	171.3	1237.2	24.10
230	20.78	113.2	1209.6	22.83	131.2	1217.8	23.35	149.3	1226.4	23.87	168.5	1235.4	24.45
229	20.40	110.7	1208.0	23.17	128.5	1216.1	23.68	146.6	1224.7	24.20	165.7	1233.7	24.79

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.76			1.77			1.78			1.79		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
228	20.02	43.3	1176.1	21.41	58.8	1183.3	21.90	75.2	1191.2	22.40	91.8	1198.9	22.94
227	19.64	40.9	1174.6	21.71	56.4	1181.8	22.20	72.7	1189.6	22.74	89.2	1197.2	23.29
226	19.28	38.5	1173.1	22.02	54.0	1180.3	22.53	70.2	1188.0	23.06	86.6	1195.6	23.61
225	18.91	36.1	1171.6	22.32	51.5	1178.8	22.87	67.7	1186.4	23.40	84.0	1194.0	23.96
224	18.56	33.7	1160.1	22.64	49.0	1177.3	23.20	65.2	1184.9	23.74	81.4	1192.4	24.30
223	18.21	31.3	1168.6	22.98	46.6	1175.8	23.54	62.7	1183.3	24.09	78.8	1190.8	24.67
222	17.86	29.0	1167.1	23.32	44.2	1174.3	23.90	60.2	1181.7	24.44	76.2	1189.2	25.01
221	17.52	26.6	1165.6	23.67	41.8	1172.8	24.25	57.7	1180.1	24.80	73.6	1187.6	25.40
220	17.19	24.2	1164.1	24.01	39.4	1171.3	24.60	55.1	1178.6	25.17	71.0	1186.0	25.79
219	16.86	21.7	1162.6	24.37	37.0	1169.8	24.96	52.6	1177.0	25.55	68.5	1184.4	26.15
218	16.54	19.3	1161.1	24.73	34.6	1168.3	25.33	50.1	1175.5	25.93	65.9	1182.8	26.55
217	16.22	16.9	1159.6	25.10	32.2	1166.8	25.72	47.6	1174.0	26.31	63.4	1181.2	26.94
216	15.90	14.5	1158.2	25.47	29.8	1165.3	26.10	45.1	1172.4	26.72	60.9	1179.7	27.35
215	15.60	12.1	1156.7	25.83	27.4	1163.8	26.50	42.7	1170.9	27.13	58.3	1178.1	27.77
214	15.29	9.8	1155.2	26.22	25.0	1162.3	26.90	40.3	1169.4	27.54	55.7	1176.5	28.20
213	14.99	7.4	1153.8	26.60	22.6	1160.8	27.31	37.9	1167.9	27.95	53.1	1174.9	28.61
212	14.70	5.0	1152.3	26.98	20.2	1159.3	27.73	35.5	1166.3	28.38	50.6	1173.3	29.04
211	14.41	2.6	1150.8	27.38	17.9	1157.8	28.16	33.0	1164.8	28.80	48.0	1171.7	29.47
210	14.13	0.2	1149.4	27.80	15.5	1156.3	28.59	30.5	1163.3	29.23	45.5	1170.1	29.92
209	13.85	9991	1148.0	28.29	13.1	1154.9	29.00	28.1	1161.8	29.67	43.0	1168.6	30.38
208	13.57	9980	1146.5	28.80	10.7	1153.4	29.43	25.6	1160.3	30.11	40.5	1167.0	30.83
207	13.30	9969	1145.1	29.32	8.3	1151.9	29.87	23.2	1158.7	30.59	38.0	1165.5	31.30
206	13.03	9958	1143.6	29.85	5.9	1150.4	30.30	20.7	1157.2	31.05	35.6	1164.0	31.79
205	12.77	9947	1142.1	30.40	3.5	1148.9	30.75	18.2	1155.7	31.51	33.1	1162.5	32.28
204	12.51	9936	1140.6	30.95	0.7	1147.4	31.20	15.8	1154.2	31.99	30.6	1161.0	32.78
203	12.26	9924	1139.2	31.51	9992	1145.9	31.72	13.3	1152.7	32.48	28.1	1159.4	33.27
202	12.01	9914	1137.8	32.09	9982	1144.4	32.31	10.8	1151.2	32.97	25.6	1157.8	33.78
201	11.77	9903	1136.3	32.67	9971	1142.9	32.89	8.3	1149.6	33.46	23.1	1156.2	34.30
200	11.53	9892	1134.8	33.26	9959	1141.4	33.48	5.9	1148.0	33.98	20.6	1154.7	34.82
199	11.29	9881	1133.4	33.86	9948	1139.9	34.09	3.4	1146.5	34.48	18.1	1153.2	35.35
198	11.06	9870	1131.9	34.48	9937	1138.5	34.71	1.0	1145.0	35.00	15.6	1151.8	35.90
197	10.83	9859	1130.4	35.11	9926	1136.9	35.35	9993	1143.5	35.59	13.1	1150.3	36.45
196	10.61	9848	1128.9	35.76	9915	1135.4	36.00	9981	1142.0	36.24	10.7	1148.8	37.02
195	10.39	9837	1127.4	36.43	9904	1134.0	36.67	9971	1140.5	36.92	8.2	1147.3	37.60
194	10.17	9826	1125.9	37.11	9893	1132.5	37.36	9959	1139.0	37.62	5.7	1145.7	38.18
193	9.96	9815	1124.5	37.82	9882	1131.0	38.07	9948	1137.6	38.33	3.2	1144.2	38.78
192	9.75	9804	1123.0	38.54	9870	1129.5	38.80	9937	1136.0	39.06	0.6	1142.7	39.39
191	9.54	9793	1121.5	39.28	9859	1128.0	39.54	9925	1134.5	39.81	9991	1141.1	40.07
190	9.34	9782	1120.1	40.03	9848	1126.6	40.30	9914	1133.1	40.57	9980	1139.6	40.84
189	9.14	9771	1118.6	40.79	9837	1125.1	41.07	9903	1131.6	41.35	9969	1138.1	41.62
188	8.95	9760	1117.1	41.57	9826	1123.6	41.85	9891	1130.1	42.13	9957	1136.5	42.41
187	8.76	9749	1115.7	42.36	9815	1122.1	42.64	9880	1128.6	42.93	9946	1135.1	42.21
186	8.57	9738	1114.2	43.17	9803	1120.6	43.46	9869	1127.1	43.75	9934	1133.5	44.04
185	8.38	9727	1112.7	43.99	9792	1119.1	44.29	9858	1125.6	44.59	9923	1132.0	44.88
184	8.20	9716	1111.2	44.86	9781	1117.6	45.16	9846	1124.0	45.46	9911	1130.5	45.76
183	8.02	9705	1109.7	45.73	9770	1116.1	46.04	9835	1122.6	46.34	9900	1129.0	46.65
182	7.85	9695	1108.2	46.64	9760	1114.7	46.95	9824	1121.1	47.27	9889	1127.5	47.58
181	7.68	9684	1106.7	47.58	9749	1113.1	47.90	9814	1119.5	48.21	9878	1125.9	48.53

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.80			1.81			1.82			1.83		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
228	20.02	108.1	1206.3	23.50	125.9	1214.4	24.01	143.9	1223.1	24.55	162.9	1232.0	25.13
227	19.64	105.5	1204.6	23.84	123.2	1212.7	24.37	141.2	1221.4	24.90	160.1	1230.2	25.50
226	19.28	103.0	1203.0	24.19	120.5	1211.1	24.73	138.4	1219.7	25.27	157.2	1228.4	25.89
225	18.91	100.4	1201.4	24.53	117.8	1209.5	25.09	135.5	1217.9	25.64	154.4	1226.6	26.28
224	18.56	97.8	1199.8	24.90	115.1	1207.9	25.45	132.7	1216.2	26.02	151.5	1224.9	26.65
223	18.21	95.2	1198.2	25.26	112.4	1206.3	25.82	129.9	1214.4	26.40	148.7	1223.2	27.04
222	17.86	92.6	1196.6	25.64	109.8	1204.7	26.20	127.1	1212.7	26.80	145.9	1221.4	27.43
221	17.52	90.0	1195.0	26.01	107.2	1203.0	26.60	124.4	1211.0	27.20	143.1	1219.7	27.83
220	17.19	87.4	1193.3	26.40	104.5	1201.3	26.99	121.6	1209.3	27.60	140.3	1218.0	28.25
219	16.86	84.8	1191.7	26.80	101.9	1199.7	27.39	118.9	1207.6	28.00	137.5	1216.3	28.67
218	16.54	82.1	1190.1	27.20	99.3	1198.1	27.80	116.2	1205.9	28.43	134.7	1214.5	29.10
217	16.22	79.5	1188.5	27.60	96.7	1196.5	28.20	113.5	1204.3	28.86	131.9	1212.8	29.53
216	15.90	76.9	1186.9	28.02	94.0	1194.9	28.61	110.8	1202.6	29.30	129.1	1211.0	29.98
215	15.60	74.4	1185.3	28.46	91.4	1193.3	29.05	108.1	1201.0	29.73	126.2	1209.3	30.43
214	15.29	71.9	1183.8	28.88	88.8	1191.7	29.49	105.4	1199.3	30.18	123.4	1207.5	30.89
213	14.99	69.4	1182.2	29.31	86.2	1190.0	29.93	102.8	1197.7	30.63	120.5	1205.8	31.35
212	14.70	66.9	1180.7	29.75	83.6	1188.4	30.39	100.1	1196.0	31.10	117.7	1204.1	31.83
211	14.41	64.3	1179.1	30.20	81.0	1186.8	30.85	97.4	1194.4	31.56	114.9	1202.3	32.30
210	14.13	61.7	1177.5	30.66	78.4	1185.2	31.31	94.8	1192.7	32.05	112.1	1200.7	32.79
209	13.85	59.1	1175.9	31.11	75.8	1183.6	31.80	92.1	1191.1	32.51	109.3	1199.0	33.30
208	13.57	56.5	1174.3	31.60	73.2	1182.0	32.29	89.4	1189.5	33.00	106.5	1197.3	33.80
207	13.30	53.9	1172.7	32.08	70.6	1180.4	32.77	86.8	1187.8	33.51	103.8	1195.6	34.31
206	13.03	51.3	1171.1	32.56	68.0	1178.8	33.29	84.1	1186.2	34.02	101.0	1193.9	34.84
205	12.77	48.7	1169.5	33.05	65.3	1177.2	33.78	81.5	1184.6	34.56	98.2	1192.2	35.39
204	12.51	46.2	1168.0	33.55	62.6	1175.6	34.30	78.9	1183.0	35.10	95.5	1190.5	35.93
203	12.26	43.6	1166.4	34.06	60.0	1174.0	34.83	76.3	1181.4	35.63	92.8	1188.8	36.49
202	12.01	41.0	1164.8	34.58	57.4	1172.3	35.39	73.6	1179.7	36.19	90.0	1187.2	37.06
201	11.77	38.4	1163.2	35.10	54.8	1170.7	35.94	71.0	1178.0	36.78	87.3	1185.5	37.63
200	11.53	35.8	1161.7	35.66	52.1	1169.0	36.51	68.3	1176.3	37.37	84.6	1183.8	38.21
199	11.29	33.2	1160.1	36.20	49.4	1167.4	37.10	65.6	1174.7	37.92	82.0	1182.2	38.80
198	11.06	30.7	1158.5	36.77	46.8	1165.8	37.69	62.9	1173.0	38.56	79.3	1180.6	39.40
197	10.83	28.1	1156.9	37.33	44.1	1164.2	38.30	60.1	1171.3	39.18	76.7	1179.0	40.04
196	10.61	25.6	1155.4	37.92	41.5	1162.6	38.90	57.4	1169.7	39.80	74.1	1177.4	40.67
195	10.39	23.0	1153.8	38.50	38.9	1161.0	39.52	54.7	1168.1	40.43	71.4	1175.8	41.30
194	10.17	20.5	1152.3	39.11	36.3	1159.4	40.17	52.0	1166.5	41.07	68.8	1174.2	41.95
193	9.96	18.0	1150.8	39.72	33.7	1157.8	40.83	49.3	1164.9	41.75	66.2	1172.6	42.60
192	9.75	15.5	1149.3	40.39	31.0	1156.2	41.48	46.6	1163.3	42.43	63.6	1171.0	43.30
191	9.54	13.0	1147.7	41.00	28.3	1154.6	42.12	44.0	1161.7	43.10	61.0	1169.4	44.00
190	9.34	10.4	1146.2	41.65	25.7	1153.1	42.83	41.3	1160.1	43.78	58.3	1167.8	44.70
189	9.14	7.9	1144.7	42.30	23.1	1151.5	43.52	38.6	1158.5	44.50	55.5	1166.1	45.40
188	8.95	5.3	1143.2	42.99	20.5	1149.9	44.22	36.0	1156.9	45.20	52.7	1164.5	46.10
187	8.76	2.7	1141.7	43.68	17.9	1148.3	44.95	33.3	1155.3	45.90	50.0	1162.8	46.90
186	8.57	0.1	1140.0	44.33	15.3	1146.7	45.68	30.6	1153.7	46.65	47.2	1161.1	47.70
185	8.38	9988	1138.4	45.18	12.7	1145.2	46.40	28.0	1152.1	47.40	44.4	1159.4	48.50
184	8.20	9976	1136.9	46.06	10.1	1143.7	47.15	25.3	1150.5	48.15	41.6	1157.7	49.30
183	8.02	9965	1135.3	46.96	7.5	1142.1	47.90	22.6	1148.8	48.90	38.8	1156.1	50.15
182	7.85	9954	1133.8	47.89	4.9	1140.5	48.70	20.0	1147.2	49.65	36.0	1154.5	51.05
181	7.68	9943	1132.2	48.85	2.2	1138.9	49.45	17.3	1145.6	50.40	33.2	1152.8	51.95

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.76			1.77			1.78			1.79		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
180	7.51	9673	1105.1	48.56	9737	1111.5	48.88	9802	1117.9	49.21	9867	1124.3	49.53
179	7.35	9662	1103.7	49.47	9727	1110.0	49.80	9791	1116.4	50.1	9856	1122.8	50.5
178	7.19	9651	1102.2	50.4	9716	1108.6	50.8	9780	1114.9	51.1	9844	1121.3	51.5
177	7.03	9641	1100.7	51.5	9705	1107.1	51.8	9769	1113.4	52.2	9833	1119.8	52.5
176	6.87	9629	1099.2	52.5	9693	1105.5	52.8	9757	1111.9	53.2	9821	1118.2	53.5
175	6.71	9619	1097.7	53.6	9683	1104.0	53.9	9747	1110.4	54.3	9811	1116.7	54.6
174	6.56	9608	1096.2	54.7	9672	1102.5	55.0	9736	1108.8	55.4	9799	1115.2	55.8
173	6.42	9597	1094.7	55.8	9661	1101.0	56.1	9725	1107.3	56.5	9788	1113.7	56.9
172	6.27	9587	1093.2	56.8	9650	1099.5	57.2	9714	1105.8	57.6	9777	1112.1	58.0
171	6.13	9575	1091.6	58.0	9638	1097.9	58.4	9702	1104.2	58.8	9765	1110.5	59.2
170	5.99	9564	1090.1	59.3	9627	1096.4	59.7	9691	1102.7	60.1	9754	1109.0	60.5
169	5.85	9553	1088.6	60.6	9616	1094.9	61.0	9680	1101.2	61.4	9743	1107.5	61.8
168	5.72	9543	1087.1	61.8	9606	1093.4	62.2	9669	1099.7	62.7	9732	1105.9	63.1
167	5.59	9532	1085.6	63.1	9595	1091.9	63.5	9657	1098.1	63.9	9720	1104.4	64.3
166	5.46	9521	1084.1	64.5	9584	1090.3	64.9	9646	1096.6	65.3	9709	1102.8	65.7
165	5.33	9510	1082.6	65.7	9573	1088.8	66.1	9636	1095.0	66.6	9698	1101.3	67.0
164	5.21	9500	1081.0	67.1	9562	1087.3	67.5	9624	1093.5	67.9	9687	1099.7	68.4
163	5.09	9489	1079.5	68.4	9551	1085.7	68.9	9613	1092.0	69.3	9676	1098.2	69.8
162	4.969	9478	1078.0	69.9	9540	1084.2	70.3	9602	1090.4	70.8	9664	1096.6	71.2
161	4.852	9467	1076.5	71.4	9529	1082.7	71.9	9591	1088.9	72.3	9653	1095.1	72.8
160	4.738	9457	1075.0	73.0	9518	1081.2	73.5	9580	1087.4	74.0	9642	1093.6	74.4
159	4.626	9446	1073.4	74.5	9508	1079.6	75.0	9569	1085.8	75.5	9631	1092.0	76.0
158	4.517	9435	1071.9	76.1	9497	1078.1	76.6	9558	1084.2	77.1	9620	1090.4	77.6
157	4.409	9425	1070.4	77.8	9486	1076.6	78.4	9547	1082.7	78.9	9609	1088.9	79.4
156	4.303	9414	1068.9	79.5	9475	1075.0	80.1	9536	1081.2	80.6	9598	1087.3	81.1
155	4.200	9402	1067.3	81.2	9464	1073.4	81.8	9525	1079.6	82.3	9586	1085.7	82.8
154	4.099	9391	1065.7	83.0	9453	1071.9	83.6	9514	1078.0	84.1	9575	1084.2	84.6
153	4.000	9381	1064.2	84.8	9442	1070.4	85.4	9503	1076.5	85.9	9564	1082.6	86.5
152	3.903	9370	1062.7	86.7	9431	1068.8	87.2	9491	1074.9	87.8	9552	1081.0	88.4
151	3.808	9359	1061.1	88.6	9419	1067.2	89.2	9480	1073.3	89.8	9541	1079.4	90.3
150	3.715	9348	1059.6	90.6	9409	1065.7	91.2	9469	1071.8	91.8	9530	1077.9	92.3
149	3.624	9337	1058.0	92.6	9398	1064.1	93.2	9458	1070.2	93.8	9518	1076.3	94.4
148	3.535	9327	1056.5	94.8	9387	1062.6	95.4	9447	1068.7	96.0	9508	1074.8	96.6
147	3.447	9316	1055.0	96.9	9376	1061.0	97.5	9436	1067.1	98.1	9496	1073.1	98.8
146	3.361	9305	1053.4	99.1	9365	1059.5	99.7	9425	1065.5	100.4	9485	1071.6	101.0
145	3.278	9294	1051.8	101.3	9354	1057.9	102.0	9413	1063.9	102.6	9473	1070.0	103.3
144	3.196	9283	1050.3	103.6	9343	1056.4	104.3	9403	1062.4	104.9	9462	1068.4	105.6
143	3.116	9272	1048.7	106.0	9332	1054.8	106.7	9391	1060.8	107.3	9451	1066.8	108.0
142	3.037	9262	1047.2	108.5	9321	1053.2	109.1	9380	1059.2	109.8	9440	1065.2	110.5
141	2.960	9251	1045.7	110.9	9310	1051.7	111.6	9369	1057.7	112.3	9429	1063.7	113.1
140	2.885	9240	1044.1	113.5	9299	1050.1	114.2	9358	1056.0	114.9	9417	1062.0	115.6
139	2.812	9229	1042.5	116.2	9288	1048.5	117.0	9347	1054.5	117.7	9406	1060.5	118.5
138	2.740	9219	1041.0	118.8	9278	1047.0	119.6	9337	1053.0	120.3	9396	1058.9	121.1
137	2.669	9207	1039.4	121.6	9266	1045.3	122.4	9325	1051.3	123.2	9384	1057.3	124.0
136	2.600	9197	1037.8	124.5	9256	1043.8	125.3	9314	1049.7	126.1	9372	1055.7	126.9
135	2.533	9186	1036.2	127.5	9245	1042.2	128.3	9303	1048.1	129.1	9362	1054.1	129.9
134	2.467	9175	1034.6	130.5	9233	1040.6	131.3	9292	1046.5	132.1	9350	1052.4	133.0
133	2.403	9164	1033.1	133.6	9223	1039.0	134.5	9281	1044.9	135.3	9339	1050.8	136.2

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.80			1.81			1.82			1.83		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
180	7.51	9931	1130.7	49.85	9996	1137.2	50.1	14.6	1144.0	51.2	30.4	1151.1	52.9
179	7.35	9920	1129.2	50.79	9985	1135.6	51.1	12.0	1142.5	52.0	27.6	1149.4	53.8
178	7.19	9909	1127.7	51.82	9973	1134.1	52.2	9.3	1140.9	52.8	24.7	1147.8	54.6
177	7.03	9897	1126.2	52.9	9962	1132.5	53.2	6.6	1139.3	53.5	21.8	1146.0	55.6
176	6.87	9886	1124.6	53.9	9950	1130.9	54.2	3.9	1137.7	54.3	18.9	1144.3	56.5
175	6.71	9874	1123.0	55.0	9938	1129.4	55.4	1.1	1136.0	55.1	16.0	1142.6	57.5
174	6.56	9863	1121.5	56.1	9927	1127.9	56.5	9991	1134.3	56.8	13.1	1140.9	58.4
173	6.42	9852	1120.0	57.2	9916	1126.3	57.6	9979	1132.6	58.0	10.2	1139.2	59.4
172	6.27	9841	1118.4	58.4	9904	1124.8	58.7	9968	1131.1	59.1	7.3	1137.5	60.4
171	6.13	9829	1116.8	59.6	9892	1123.1	59.9	9955	1129.5	60.3	4.4	1135.8	61.4
170	5.99	9817	1115.3	60.9	9880	1121.6	61.3	9944	1127.9	61.6	1.5	1134.2	62.4
169	5.85	9806	1113.8	62.2	9869	1120.0	62.6	9932	1126.3	63.0	9995	1132.6	63.4
168	5.72	9795	1112.2	63.5	9858	1118.5	63.9	9921	1124.8	64.3	9984	1131.0	64.7
167	5.59	9783	1110.6	64.8	9846	1116.9	65.2	9909	1123.2	65.6	9971	1129.4	66.0
166	5.46	9772	1109.1	66.2	9835	1115.3	66.6	9897	1121.6	67.0	9960	1127.9	67.4
165	5.33	9761	1107.5	67.4	9823	1113.8	67.9	9886	1120.0	68.3	9948	1126.3	68.7
164	5.21	9749	1106.0	68.8	9812	1112.2	69.3	9874	1118.4	69.7	9936	1124.7	70.2
163	5.09	9738	1104.4	70.2	9800	1110.6	70.7	9862	1116.9	71.1	9925	1123.1	71.6
162	4.969	9726	1102.8	71.7	9789	1109.0	72.1	9851	1115.3	72.6	9913	1121.5	73.1
161	4.852	9715	1101.3	73.3	9777	1107.5	73.7	9839	1113.7	74.2	9901	1119.9	74.7
160	4.738	9704	1099.7	74.9	9766	1105.9	75.4	9828	1112.1	75.9	9890	1118.3	76.3
159	4.626	9693	1098.2	76.5	9755	1104.4	77.0	9816	1110.5	77.4	9878	1116.7	77.9
158	4.517	9681	1096.6	78.1	9743	1102.8	78.6	9805	1108.9	79.1	9866	1115.1	79.6
157	4.409	9670	1095.1	79.9	9732	1101.2	80.4	9793	1107.4	80.9	9855	1113.6	81.4
156	4.303	9659	1093.5	81.6	9720	1099.6	82.1	9782	1105.8	82.7	9843	1111.9	83.2
155	4.200	9647	1091.9	83.4	9708	1098.0	83.9	9770	1104.2	84.4	9831	1110.3	84.9
154	4.099	9636	1090.3	85.2	9697	1096.4	85.7	9758	1102.6	86.3	9819	1108.7	86.8
153	4.000	9625	1088.7	87.0	9685	1094.9	87.6	9746	1101.0	88.1	9807	1107.1	88.7
152	3.903	9613	1087.1	88.9	9674	1093.3	89.5	9734	1099.4	90.0	9795	1105.5	90.6
151	3.808	9601	1085.5	90.9	9662	1091.6	91.5	9722	1097.8	92.1	9783	1103.9	92.6
150	3.715	9590	1084.0	92.9	9651	1090.1	93.5	9711	1096.2	94.1	9772	1102.3	94.7
149	3.624	9579	1082.4	95.0	9639	1088.5	95.6	9700	1094.6	96.2	9760	1100.6	96.8
148	3.535	9568	1080.8	97.2	9628	1086.9	97.8	9688	1093.0	98.4	9749	1099.1	99.0
147	3.447	9556	1079.2	99.4	9616	1085.3	100.0	9676	1091.3	100.6	9736	1097.4	101.3
146	3.361	9545	1077.7	101.7	9605	1083.7	102.3	9665	1089.8	102.9	9725	1095.8	103.6
145	3.278	9533	1076.0	103.9	9593	1082.1	104.6	9653	1088.1	105.2	9713	1094.2	105.9
144	3.196	9522	1074.5	106.3	9582	1080.5	106.9	9641	1086.5	107.6	9701	1092.6	108.3
143	3.116	9510	1072.8	108.7	9570	1078.9	109.4	9630	1084.9	110.1	9689	1090.9	110.7
142	3.037	9499	1071.3	111.2	9559	1077.3	111.9	9618	1083.3	112.6	9678	1089.3	113.3
141	2.960	9488	1069.7	113.8	9547	1075.7	114.5	9607	1081.7	115.2	9666	1087.7	115.9
140	2.885	9476	1068.0	116.4	9536	1074.0	117.1	9595	1080.0	117.8	9654	1086.0	118.6
139	2.812	9465	1066.5	119.2	9524	1072.4	120.0	9584	1078.4	120.7	9643	1084.4	121.5
138	2.740	9454	1064.9	121.9	9513	1070.8	122.6	9572	1076.8	123.4	9631	1082.8	124.1
137	2.669	9443	1063.2	124.7	9501	1069.2	125.5	9560	1075.1	126.3	9619	1081.1	127.1
136	2.600	9431	1061.6	127.7	9490	1067.6	128.5	9549	1073.5	129.3	9607	1079.5	130.1
135	2.533	9420	1060.0	130.8	9479	1066.0	131.6	9538	1071.9	132.4	9596	1077.9	133.2
134	2.467	9409	1058.4	133.8	9467	1064.3	134.6	9525	1070.2	135.4	9584	1076.2	136.3
133	2.403	9397	1056.8	137.0	9456	1062.7	137.9	9514	1068.6	138.7	9572	1074.5	139.6

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.76			1.77			1.78			1.79		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
132	2.341	9154	1031.5	136.9	9212	1037.4	137.7	9270	1043.3	138.6	9328	1049.2	139.5
131	2.280	9143	1029.9	140.1	9201	1035.8	141.0	9259	1041.7	141.9	9317	1047.6	142.7
130	2.220	9133	1028.3	143.5	9191	1034.2	144.4	9248	1040.1	145.3	9306	1046.0	146.2
129	2.161	9122	1026.8	147.0	9180	1032.7	147.9	9237	1038.5	148.8	9295	1044.4	149.7
128	2.103	9111	1025.2	150.5	9169	1031.1	151.5	9226	1036.9	152.4	9284	1042.8	153.4
127	2.047	9100	1023.6	154.2	9158	1029.5	155.1	9215	1035.3	156.1	9273	1041.2	157.1
126	1.992	9089	1022.0	158.0	9147	1027.9	159.0	9204	1033.7	160.0	9261	1039.6	161.0
125	1.938	9079	1020.5	161.9	9136	1026.3	162.9	9193	1032.2	163.9	9250	1038.0	164.9
124	1.886	9068	1018.8	165.8	9125	1024.7	166.9	9182	1030.5	167.9	9239	1036.3	169.0
123	1.835	9057	1017.3	170.0	9114	1023.1	171.1	9171	1029.0	172.1	9228	1034.8	173.2
122	1.785	9046	1015.6	174.3	9103	1021.4	175.4	9160	1027.3	176.5	9217	1033.1	177.6
121	1.737	9036	1014.0	178.7	9092	1019.9	179.8	9149	1025.7	181.0	9206	1031.5	182.1
120	1.689	9025	1012.5	183.2	9081	1018.3	184.4	9138	1024.1	185.5	9195	1029.9	186.6
119	1.642	9014	1010.9	187.8	9070	1016.7	189.0	9127	1022.5	190.2	9183	1028.3	191.4
118	1.597	9003	1009.3	192.6	9060	1015.1	193.8	9116	1020.9	195.0	9172	1026.6	196.2
117	1.552	8992	1007.7	197.6	9048	1013.5	198.9	9105	1019.2	200.1	9161	1025.0	201.4
116	1.509	8981	1006.1	202.7	9037	1011.8	204.0	9093	1017.5	205.2	9149	1023.3	206.5
115	1.467	8971	1004.5	207.9	9027	1010.2	209.2	9082	1015.9	210.5	9138	1021.7	211.8
114	1.426	8959	1002.9	213.2	9015	1008.6	214.6	9071	1014.3	215.9	9127	1020.1	217.2
113	1.386	8948	1001.3	218.7	9004	1007.0	220.1	9060	1012.7	221.4	9115	1018.4	222.8
112	1.347	8938	999.7	224.4	8993	1005.4	225.8	9049	1011.1	227.2	9104	1016.8	228.6
111	1.308	8926	998.1	230.3	8982	1003.8	231.7	9037	1009.5	233.2	9093	1015.2	234.6
110	1.271	8916	996.4	236.4	8971	1002.1	237.9	9027	1007.8	239.4	9082	1013.5	240.8
109	1.235	8905	994.8	242.7	8960	1000.5	244.2	9015	1006.2	245.7	9070	1011.9	247.2
108	1.200	8894	993.2	249.2	8949	998.9	250.8	9004	1004.5	252.3	9059	1010.2	253.8
107	1.165	8883	991.6	256.0	8938	997.3	257.6	8993	1002.9	259.2	9048	1008.6	260.8
106	1.131	8872	989.9	263.0	8927	995.6	264.6	8982	1001.2	266.2	9037	1006.9	267.8
105	1.098	8862	988.3	270.1	8916	994.0	271.8	8971	999.6	273.4	9026	1005.3	275.1
104	1.066	8850	986.7	277.5	8905	992.3	279.2	8959	997.9	280.9	9014	1003.6	282.6
103	1.035	8840	985.1	285.0	8894	990.7	286.7	8949	996.3	288.5	9003	1002.0	290.3
102	1.005	8829	983.4	292.8	8883	989.1	294.6	8938	994.7	296.4	8992	1000.3	298.2
101	0.975	8818	981.8	300.8	8873	987.4	302.6	8927	993.0	304.5	8981	998.6	306.3
100	0.946	8807	980.2	309.0	8861	985.7	310.8	8915	991.3	312.7	8969	996.9	314.6
99	0.918	8796	978.6	317.5	8850	984.1	319.4	8904	989.7	321.4	8958	995.3	323.3
98	0.891	8786	976.9	326.2	8839	982.5	328.2	8893	988.0	330.2	8947	993.6	332.2
97	0.864	8775	975.3	335.3	8828	980.9	337.3	8882	986.4	339.4	8936	992.0	341.4
96	0.838	8764	973.7	344.7	8818	979.3	346.8	8871	984.8	348.9	8925	990.4	351.0
95	0.813	8753	972.1	354.3	8807	977.7	356.5	8860	983.2	358.7	8914	988.8	360.8
94	0.788	8743	970.4	364.3	8796	976.0	366.5	8849	981.5	368.7	8902	987.1	371.0
93	0.764	8732	968.8	374.7	8785	974.4	377.0	8838	979.9	379.2	8891	985.4	381.5
92	0.741	8721	967.2	385.5	8774	972.7	387.8	8827	978.2	390.1	8880	983.7	392.5
91	0.718	8710	965.5	396.7	8763	971.0	399.1	8816	976.5	401.5	8869	982.0	403.9
90	0.696	8699	963.8	408.2	8752	969.3	410.6	8805	974.8	413.1	8858	980.3	415.6
89	0.675	8688	962.2	420.0	8741	967.7	422.5	8794	973.2	425.1	8846	978.6	427.6
88	0.654	8678	960.5	432.1	8730	966.0	434.8	8783	971.5	437.4	8835	976.9	440.0
87	0.633	8667	958.9	444.6	8719	964.4	447.3	8772	969.8	450.0	8824	975.3	452.7
86	0.613	8656	957.2	457.0	8708	962.7	459.8	8761	968.1	462.6	8813	973.6	465.3
85	0.594	8645	955.6	470.3	8697	961.0	473.1	8750	966.4	476.0	8802	971.9	478.8

Temperature, Degrees Fahr.	Pressure, Pounds per Square Inch.	1.80			1.81			1.82			1.83		
		Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.	Quality.	Heat Contents.	Specific Volume.
132	2.341	9386	1055.2	140.3	9445	1061.1	141.2	9503	1067.0	142.1	9561	1072.9	142.9
131	2.280	9375	1053.5	143.6	9433	1059.4	144.5	9491	1065.4	145.4	9549	1071.3	146.3
130	2.220	9364	1051.9	147.1	9422	1057.8	148.0	9480	1063.7	148.9	9538	1069.6	149.8
129	2.161	9353	1050.3	150.7	9411	1056.2	151.6	9468	1062.1	152.5	9526	1068.0	153.5
128	2.103	9342	1048.7	154.3	9399	1054.6	155.3	9457	1060.4	156.2	9514	1066.3	157.2
127	2.047	9330	1047.1	158.1	9388	1053.0	159.0	9445	1058.8	160.0	9503	1064.7	161.0
126	1.992	9319	1045.4	162.0	9376	1051.3	163.0	9433	1057.1	164.0	9491	1063.0	164.9
125	1.938	9307	1043.8	166.0	9365	1049.7	167.0	9422	1055.5	168.0	9479	1061.4	169.0
124	1.886	9296	1042.2	170.0	9353	1048.0	171.1	9410	1053.8	172.1	9467	1059.7	173.2
123	1.835	9285	1040.6	174.3	9342	1046.4	175.3	9398	1052.2	176.4	9455	1058.1	177.5
122	1.785	9273	1038.9	178.7	9330	1044.7	179.8	9387	1050.5	180.9	9444	1056.3	182.0
121	1.737	9263	1037.3	183.2	9319	1043.1	184.3	9376	1048.9	185.5	9433	1054.7	186.6
120	1.689	9251	1035.7	187.8	9308	1041.5	188.9	9364	1047.2	190.1	9421	1053.0	191.2
119	1.642	9240	1034.1	192.6	9296	1039.9	193.7	9352	1045.6	194.9	9409	1051.4	196.1
118	1.597	9229	1032.4	197.4	9285	1038.2	198.6	9341	1044.0	199.8	9397	1049.7	201.0
117	1.552	9217	1030.8	202.6	9273	1036.5	203.8	9329	1042.3	205.1	9385	1048.0	206.3
116	1.509	9205	1029.1	207.8	9262	1034.8	209.0	9318	1040.6	210.3	9374	1046.3	211.6
115	1.467	9194	1027.5	213.1	9250	1033.2	214.4	9306	1039.0	215.7	9362	1044.7	217.0
114	1.426	9183	1025.8	218.5	9238	1031.5	219.9	9294	1037.3	221.2	9350	1043.0	222.5
113	1.386	9171	1024.2	224.1	9227	1029.9	225.5	9282	1035.6	226.9	9338	1040.4	228.2
112	1.347	9160	1022.5	230.0	9215	1028.2	231.4	9271	1033.9	232.8	9326	1039.7	234.2
111	1.308	9148	1020.9	236.0	9203	1026.6	237.4	9259	1032.3	238.9	9314	1038.0	240.3
110	1.271	9137	1019.2	242.3	9192	1024.9	243.8	9248	1030.6	245.2	9303	1036.3	246.7
109	1.235	9125	1017.6	248.8	9180	1023.3	250.3	9236	1028.9	251.8	9291	1034.7	253.3
108	1.200	9114	1015.9	255.4	9169	1021.6	256.9	9224	1027.2	258.5	9279	1032.9	260.0
107	1.165	9103	1014.3	262.3	9157	1019.9	263.9	9212	1025.6	265.5	9267	1031.2	267.1
106	1.131	9091	1012.6	269.5	9146	1018.2	271.1	9201	1023.9	272.7	9256	1029.5	274.3
105	1.098	9080	1010.9	276.8	9135	1016.5	278.4	9189	1022.2	280.1	9244	1027.8	281.8
104	1.066	9068	1009.2	284.3	9123	1014.8	286.0	9177	1020.5	287.7	9232	1026.1	289.4
103	1.035	9057	1007.6	292.0	9112	1013.2	293.8	9166	1018.8	295.5	9221	1024.5	297.3
102	1.005	9046	1005.9	300.0	9100	1011.5	301.8	9155	1017.1	303.6	9209	1022.8	305.4
101	0.975	9035	1004.2	308.2	9089	1009.8	310.0	9143	1015.4	311.9	9197	1021.1	313.7
100	0.946	9023	1002.5	316.5	9077	1008.1	318.4	9131	1013.7	320.3	9185	1019.3	322.2
99	0.918	9012	1000.9	325.2	9066	1006.5	327.2	9120	1012.0	329.1	9174	1017.6	331.1
98	0.891	9001	999.2	334.2	9055	1004.8	336.2	9108	1010.3	338.2	9162	1015.9	340.2
97	0.864	8989	997.6	343.5	9043	1003.2	345.5	9097	1008.7	347.6	9150	1014.3	349.6
96	0.838	8978	996.0	353.1	9032	1001.5	355.2	9085	1007.1	357.3	9139	1012.6	359.4
95	0.813	8967	994.3	363.0	9020	999.8	365.1	9074	1005.4	367.3	9127	1010.9	369.5
94	0.788	8956	992.6	373.2	9009	998.1	375.4	9062	1003.7	377.6	9115	1009.2	379.8
93	0.764	8945	990.9	383.8	8998	996.4	386.1	9051	1001.9	388.4	9104	1007.5	390.6
92	0.741	8933	989.2	394.8	8986	994.7	397.2	9039	1000.2	399.5	9092	1005.8	401.9
91	0.718	8922	987.5	406.3	8975	993.0	408.7	9027	998.5	411.1	9080	1004.1	413.5
90	0.696	8910	985.8	418.1	8963	991.3	420.6	9016	996.8	423.0	9069	1002.3	425.5
89	0.675	8899	984.1	430.2	8952	989.6	432.7	9004	995.1	435.3	9057	1000.6	437.8
88	0.654	8888	982.4	442.6	8940	987.9	445.2	8993	993.4	447.8	9045	998.8	450.4
87	0.633	8877	980.7	455.4	8929	986.2	458.1	8982	991.7	460.8	9034	997.1	463.4
86	0.613	8865	979.0	468.1	8918	984.5	470.8	8970	990.0	473.6	9022	995.4	476.4
85	0.594	8854	977.3	481.6	8906	982.8	484.5	8958	988.2	487.3	9010	993.7	490.2

$e = 2.7182818$ $\log e = 0.4342945 = M$

	0	1	2	3	4	5	6	7	8	9
1.0	0.0000	0.00995	0.01980	0.02956	0.03922	0.04879	0.05827	0.06766	0.07696	0.08618
1.1	0.09531	0.1044	0.1133	0.1222	0.1310	0.1398	0.1484	0.1570	0.1655	0.1739
1.2	0.1823	0.1906	0.1988	0.2070	0.2151	0.2231	0.2311	0.2390	0.2469	0.2546
1.3	0.2624	0.2700	0.2776	0.2852	0.2927	0.3001	0.3075	0.3148	0.3221	0.3293
1.4	0.3365	0.3436	0.3507	0.3577	0.3646	0.3716	0.3784	0.3853	0.3920	0.3988
1.5	0.4055	0.4121	0.4187	0.4253	0.4318	0.4382	0.4447	0.4511	0.4574	0.4637
1.6	0.4700	0.4762	0.4824	0.4886	0.4947	0.5008	0.5068	0.5128	0.5188	0.5247
1.7	0.5306	0.5365	0.5423	0.5481	0.5539	0.5596	0.5653	0.5710	0.5766	0.5822
1.8	0.5878	0.5933	0.5988	0.6043	0.6098	0.6152	0.6206	0.6259	0.6313	0.6366
1.9	0.6418	0.6471	0.6523	0.6575	0.6627	0.6678	0.6729	0.6780	0.6831	0.6881
2.0	0.6931	0.6981	0.7031	0.7080	0.7129	0.7178	0.7227	0.7275	0.7324	0.7372
2.1	0.7419	0.7467	0.7514	0.7561	0.7608	0.7655	0.7701	0.7747	0.7793	0.7839
2.2	0.7884	0.7930	0.7975	0.8020	0.8065	0.8109	0.8154	0.8198	0.8242	0.8286
2.3	0.8329	0.8372	0.8416	0.8459	0.8502	0.8544	0.8587	0.8629	0.8671	0.8713
2.4	0.8755	0.8796	0.8838	0.8879	0.8920	0.8961	0.9002	0.9042	0.9083	0.9123
2.5	0.9163	0.9203	0.9243	0.9282	0.9322	0.9361	0.9400	0.9439	0.9478	0.9517
2.6	0.9555	0.9594	0.9632	0.9670	0.9708	0.9746	0.9783	0.9821	0.9858	0.9895
2.7	0.9933	0.9969	1.0006	1.0043	1.0080	1.0116	1.0152	1.0188	1.0225	1.0260
2.8	1.0296	1.0332	1.0367	1.0403	1.0438	1.0473	1.0508	1.0543	1.0578	1.0613
2.9	1.0647	1.0682	1.0716	1.0750	1.0784	1.0818	1.0852	1.0886	1.0919	1.0953
3.0	1.0986	1.1019	1.1053	1.1086	1.1119	1.1151	1.1184	1.1217	1.1249	1.1282
3.1	1.1314	1.1346	1.1378	1.1410	1.1442	1.1474	1.1506	1.1537	1.1569	1.1600
3.2	1.1632	1.1663	1.1694	1.1725	1.1756	1.1787	1.1817	1.1848	1.1878	1.1909
3.3	1.1939	1.1969	1.2000	1.2030	1.2060	1.2090	1.2119	1.2149	1.2179	1.2208
3.4	1.2238	1.2267	1.2296	1.2326	1.2355	1.2384	1.2413	1.2442	1.2470	1.2499
3.5	1.2528	1.2556	1.2585	1.2613	1.2641	1.2669	1.2698	1.2726	1.2754	1.2782
3.6	1.2809	1.2837	1.2865	1.2892	1.2920	1.2947	1.2975	1.3002	1.3029	1.3056
3.7	1.3083	1.3110	1.3137	1.3164	1.3191	1.3218	1.3244	1.3271	1.3297	1.3324
3.8	1.3350	1.3376	1.3403	1.3429	1.3455	1.3481	1.3507	1.3533	1.3558	1.3584
3.9	1.3610	1.3635	1.3661	1.3686	1.3712	1.3737	1.3762	1.3788	1.3813	1.3838
4.0	1.3863	1.3888	1.3913	1.3938	1.3962	1.3987	1.4012	1.4036	1.4061	1.4085
4.1	1.4110	1.4134	1.4159	1.4183	1.4207	1.4231	1.4255	1.4279	1.4303	1.4327
4.2	1.4351	1.4375	1.4398	1.4422	1.4446	1.4469	1.4493	1.4516	1.4540	1.4563
4.3	1.4586	1.4609	1.4633	1.4656	1.4679	1.4702	1.4725	1.4748	1.4770	1.4793
4.4	1.4816	1.4839	1.4861	1.4884	1.4907	1.4929	1.4951	1.4974	1.4996	1.5019
4.5	1.5041	1.5063	1.5085	1.5107	1.5129	1.5151	1.5173	1.5195	1.5217	1.5239
4.6	1.5261	1.5282	1.5304	1.5326	1.5347	1.5369	1.5390	1.5412	1.5433	1.5454
4.7	1.5476	1.5497	1.5518	1.5539	1.5560	1.5581	1.5602	1.5623	1.5644	1.5665
4.8	1.5686	1.5707	1.5728	1.5748	1.5769	1.5790	1.5810	1.5831	1.5851	1.5872
4.9	1.5892	1.5913	1.5933	1.5953	1.5974	1.5994	1.6014	1.6034	1.6054	1.6074
5.0	1.6094	1.6114	1.6134	1.6154	1.6174	1.6194	1.6214	1.6233	1.6253	1.6273
5.1	1.6292	1.6312	1.6332	1.6351	1.6371	1.6390	1.6409	1.6429	1.6448	1.6467
5.2	1.6487	1.6506	1.6525	1.6544	1.6563	1.6582	1.6601	1.6620	1.6639	1.6658
5.3	1.6677	1.6696	1.6715	1.6734	1.6752	1.6771	1.6790	1.6808	1.6827	1.6845
5.4	1.6864	1.6882	1.6901	1.6919	1.6938	1.6956	1.6974	1.6993	1.7011	1.7029
5.5	1.7047	1.7066	1.7884	1.7102	1.7120	1.7138	1.7156	1.7174	1.7192	1.7210
5.6	1.7228	1.7246	1.7263	1.7281	1.7299	1.7317	1.7334	1.7352	1.7370	1.7387

NAPERIAN LOGARITHMS.

	0	1	2.	3	4	5	6	7	8	9
5.7	1.7405	1.7422	1.7440	1.7457	1.7475	1.7492	1.7509	1.7527	1.7544	1.7561
5.8	1.7579	1.7596	1.7613	1.7630	1.7647	1.7664	1.7681	1.7699	1.7716	1.7733
5.9	1.7750	1.7766	1.7783	1.7800	1.7817	1.7834	1.7851	1.7867	1.7884	1.7901
6.0	1.7918	1.7934	1.7951	1.7967	1.7984	1.8001	1.8017	1.8034	1.8050	1.8066
6.1	1.8083	1.8099	1.8116	1.8132	1.8148	1.8165	1.8181	1.8197	1.8213	1.8229
6.2	1.8245	1.8262	1.8278	1.8294	1.8310	1.8326	1.8342	1.8358	1.8374	1.8390
6.3	1.8405	1.8421	1.8437	1.8453	1.8469	1.8485	1.8500	1.8516	1.8532	1.8547
6.4	1.8563	1.8579	1.8594	1.8610	1.8625	1.8641	1.8656	1.8672	1.8687	1.8703
6.5	1.8718	1.8733	1.8749	1.8764	1.8779	1.8795	1.8810	1.8825	1.8840	1.8856
6.6	1.8871	1.8886	1.8901	1.8916	1.8931	1.8946	1.8961	1.8976	1.8991	1.9006
6.7	1.9021	1.9036	1.9051	1.9066	1.9081	1.9095	1.9110	1.9125	1.9140	1.9155
6.8	1.9169	1.9184	1.9199	1.9213	1.9228	1.9242	1.9257	1.9272	1.9286	1.9301
6.9	1.9315	1.9330	1.9344	1.9359	1.9373	1.9387	1.9402	1.9416	1.9430	1.9445
7.0	1.9459	1.9473	1.9488	1.9502	1.9516	1.9530	1.9544	1.9559	1.9573	1.9587
7.1	1.9601	1.9615	1.9629	1.9643	1.9657	1.9671	1.9685	1.9699	1.9713	1.9727
7.2	1.9741	1.9755	1.9769	1.9782	1.9796	1.9810	1.9824	1.9838	1.9851	1.9865
7.3	1.9879	1.9892	1.9906	1.9920	1.9933	1.9947	1.9961	1.9974	1.9988	2.0001
7.4	2.0015	2.0028	2.0042	2.0055	2.0069	2.0082	2.0096	2.0109	2.0122	2.0136
7.5	2.0149	2.0162	2.0176	2.0189	2.0202	2.0215	2.0229	2.0242	2.0255	2.0268
7.6	2.0281	2.0295	2.0308	2.0321	2.0334	2.0347	2.0360	2.0373	2.0386	2.0399
7.7	2.0412	2.0425	2.0438	2.0451	2.0464	2.0477	2.0490	2.0503	2.0516	2.0528
7.8	2.0541	2.0554	2.0567	2.0580	2.0592	2.0605	2.0618	2.0631	2.0643	2.0656
7.9	2.0668	2.0681	2.0694	2.0707	2.0719	2.0732	2.0744	2.0757	2.0769	2.0782
8.0	2.0794	2.0807	2.0819	2.0832	2.0844	2.0857	2.0869	2.0881	2.0894	2.0906
8.1	2.0919	2.0931	2.0943	2.0956	2.0968	2.0980	2.0992	2.1005	2.1017	2.1029
8.2	2.1041	2.1054	2.1066	2.1078	2.1090	2.1102	2.1114	2.1126	2.1138	2.1150
8.3	2.1163	2.1175	2.1187	2.1199	2.1211	2.1223	2.1235	2.1247	2.1258	2.1270
8.4	2.1282	2.1294	2.1306	2.1318	2.1330	2.1342	2.1353	2.1365	2.1377	2.1389
8.5	2.1401	2.1412	2.1424	2.1436	2.1448	2.1459	2.1471	2.1483	2.1494	2.1506
8.6	2.1518	2.1529	2.1541	2.1552	2.1564	2.1576	2.1587	2.1599	2.1610	2.1622
8.7	2.1633	2.1645	2.1656	2.1668	2.1679	2.1691	2.1702	2.1713	2.1725	2.1736
8.8	2.1748	2.1759	2.1770	2.1782	2.1793	2.1804	2.1815	2.1827	2.1838	2.1849
8.9	2.1861	2.1872	2.1883	2.1894	2.1905	2.1917	2.1928	2.1939	2.1950	2.1961
9.0	2.1972	2.1983	2.1994	2.2006	2.2017	2.2028	2.2039	2.2050	2.2061	2.2072
9.1	2.2083	2.2094	2.2105	2.2116	2.2127	2.2138	2.2148	2.2159	2.2170	2.2181
9.2	2.2192	2.2203	2.2214	2.2225	2.2235	2.2246	2.2257	2.2268	2.2279	2.2289
9.3	2.2300	2.2311	2.2322	2.2332	2.2343	2.2354	2.2364	2.2375	2.2386	2.2396
9.4	2.2407	2.2418	2.2428	2.2439	2.2450	2.2460	2.2471	2.2481	2.2492	2.2502
9.5	2.2513	2.2523	2.2534	2.2544	2.2555	2.2565	2.2576	2.2586	2.2597	2.2607
9.6	2.2618	2.2628	2.2638	2.2649	2.2659	2.2670	2.2680	2.2690	2.2701	2.2711
9.7	2.2721	2.2732	2.2742	2.2752	2.2762	2.2773	2.2783	2.2793	2.2803	2.2814
9.8	2.2824	2.2834	2.2844	2.2854	2.2865	2.2875	2.2885	2.2895	2.2905	2.2915
9.9	2.2925	2.2935	2.2946	2.2956	2.2966	2.2976	2.2986	2.2996	2.3006	2.3016
10.0	2.3026									

LOGARITHMS.

Nat. Nos.	0	1	2	3	4	5	6	7	8	9	Proportional Parts. 1	2	3	4	5	6	7	8	9
10	0000	0043	0086	0128	0170	0212	0253	0294	0334	0374	4	8	12	17	21	25	29	33	37
11	0414	0453	0492	0531	0569	0607	0645	0682	0719	0755	4	8	11	15	19	23	26	30	34
12	0792	0828	0864	0899	0934	0969	1004	1038	1072	1106	3	7	10	14	17	21	24	28	31
13	1139	1173	1206	1239	1271	1303	1335	1367	1399	1430	3	6	10	13	16	19	23	26	29
14	1461	1492	1523	1553	1584	1614	1644	1673	1703	1732	3	6	9	12	15	18	21	24	27
15	1761	1790	1818	1847	1875	1903	1931	1959	1987	2014	3	6	8	11	14	17	20	22	25
16	2041	2068	2095	2122	2148	2175	2201	2227	2253	2279	3	5	8	11	13	16	18	21	24
17	2304	2330	2355	2380	2405	2430	2455	2480	2504	2529	2	5	7	10	12	15	17	20	22
18	2553	2577	2601	2625	2648	2672	2695	2718	2742	2765	2	5	7	9	12	14	16	19	21
19	2788	2810	2833	2856	2878	2900	2923	2945	2967	2989	2	4	7	9	11	13	16	18	20
20	3010	3032	3054	3075	3096	3118	3139	3160	3181	3201	2	4	6	8	11	13	15	17	19
21	3222	3243	3263	3284	3304	3324	3345	3365	3385	3404	2	4	6	8	10	12	14	16	18
22	3424	3444	3464	3483	3502	3522	3541	3560	3579	3598	2	4	6	8	10	12	14	15	17
23	3617	3636	3655	3674	3692	3711	3729	3747	3766	3784	2	4	6	7	9	11	13	15	17
24	3802	3820	3838	3856	3874	3892	3909	3927	3945	3962	2	4	5	7	9	11	12	14	16
25	3979	3997	4014	4031	4048	4065	4082	4099	4116	4133	2	3	5	7	9	10	12	14	15
26	4150	4166	4183	4200	4216	4232	4249	4265	4281	4298	2	3	5	7	8	10	11	13	15
27	4314	4330	4346	4362	4378	4393	4409	4425	4440	4456	2	3	5	6	8	9	11	13	14
28	4472	4487	4502	4518	4533	4548	4564	4579	4594	4609	2	3	5	6	8	9	11	12	14
29	4624	4639	4654	4669	4683	4698	4713	4728	4742	4757	1	3	4	6	7	9	10	12	13
30	4771	4786	4800	4814	4829	4843	4857	4871	4886	4900	1	3	4	6	7	9	10	11	13
31	4914	4928	4942	4955	4969	4983	4997	5011	5024	5038	1	3	4	6	7	8	10	11	12
32	5051	5065	5079	5092	5105	5119	5132	5145	5159	5172	1	3	4	5	7	8	9	11	12
33	5185	5198	5211	5224	5237	5250	5263	5276	5289	5302	1	3	4	5	6	8	9	10	12
34	5315	5328	5340	5353	5366	5378	5391	5403	5416	5428	1	3	4	5	6	8	9	10	11
35	5441	5453	5465	5478	5490	5502	5514	5527	5539	5551	1	2	4	5	6	7	9	10	11
36	5563	5575	5587	5599	5611	5623	5635	5647	5658	5670	1	2	4	5	6	7	8	10	11
37	5682	5694	5705	5717	5729	5740	5752	5763	5775	5786	1	2	3	5	6	7	8	9	10
38	5798	5809	5821	5832	5843	5855	5866	5877	5888	5899	1	2	3	5	6	7	8	9	10
39	5911	5922	5933	5944	5955	5966	5977	5988	5999	6010	1	2	3	4	5	7	8	9	10
40	6021	6031	6042	6053	6064	6075	6085	6096	6107	6117	1	2	3	4	5	6	8	9	10
41	6128	6138	6149	6160	6170	6180	6191	6201	6212	6222	1	2	3	4	5	6	7	8	9
42	6232	6243	6253	6263	6274	6284	6294	6304	6314	6325	1	2	3	4	5	6	7	8	9
43	6335	6345	6355	6365	6375	6385	6395	6405	6415	6425	1	2	3	4	5	6	7	8	9
44	6435	6444	6454	6464	6474	6484	6493	6503	6513	6522	1	2	3	4	5	6	7	8	9
45	6532	6542	6551	6561	6571	6580	6590	6599	6609	6618	1	2	3	4	5	6	7	8	9
46	6628	6637	6646	6656	6665	6675	6684	6693	6702	6712	1	2	3	4	5	6	7	7	8
47	6721	6730	6739	6749	6758	6767	6776	6785	6794	6803	1	2	3	4	5	5	6	7	8
48	6812	6821	6830	6839	6848	6857	6866	6875	6884	6893	1	2	3	4	4	5	6	7	8
49	6902	6911	6920	6928	6937	6946	6955	6964	6972	6981	1	2	3	4	4	5	6	7	8
50	6990	6998	7007	7016	7024	7033	7042	7050	7059	7067	1	2	3	3	4	5	6	7	8
51	7076	7084	7093	7101	7110	7118	7126	7135	7143	7152	1	2	3	3	4	5	6	7	8
52	7160	7168	7177	7185	7193	7202	7210	7218	7226	7235	1	2	2	3	4	5	6	7	7
53	7243	7251	7259	7267	7275	7284	7292	7300	7308	7316	1	2	2	3	4	5	6	6	7
54	7324	7332	7340	7348	7356	7364	7372	7380	7388	7396	1	2	2	3	4	5	6	6	7

LOGARITHMS.

Nat. Nos.	0	1	2	3	4	5	6	7	8	9	Proportional Parts. 1 2 3	4 5 6	7 8 9
55	7404	7412	7419	7427	7435	7443	7451	7459	7466	7474	1 2 2	3 4 5	5 6 7
56	7482	7490	7497	7505	7513	7520	7528	7536	7543	7551	1 2 2	3 4 5	5 6 7
57	7559	7566	7574	7582	7589	7597	7604	7612	7619	7627	1 2 2	3 4 5	5 6 7
58	7634	7642	7649	7657	7664	7672	7679	7686	7694	7701	1 1 2	3 4 4	5 6 7
59	7709	7716	7723	7731	7738	7745	7752	7760	7767	7774	1 1 2	3 4 4	5 6 7
60	7782	7789	7796	7803	7810	7818	7825	7832	7839	7846	1 1 2	3 4 4	5 6 6
61	7853	7860	7868	7875	7882	7889	7896	7903	7910	7917	1 1 2	3 4 4	5 6 6
62	7924	7931	7938	7945	7952	7959	7966	7973	7980	7987	1 1 2	3 3 4	5 6 6
63	7993	8000	8007	8014	8021	8028	8035	8041	8048	8055	1 1 2	3 3 4	5 5 6
64	8062	8069	8075	8082	8089	8096	8102	8109	8116	8122	1 1 2	3 3 4	5 5 6
65	8129	8136	8142	8149	8156	8162	8169	8176	8182	8189	1 1 2	3 3 4	5 5 6
66	8195	8202	8209	8215	8222	8228	8235	8241	8248	8254	1 1 2	3 3 4	5 5 6
67	8261	8267	8274	8280	8287	8293	8299	8306	8312	8319	1 1 2	3 3 4	5 5 6
68	8325	8331	8338	8344	8351	8357	8363	8370	8376	8382	1 1 2	3 3 4	4 5 6
69	8388	8395	8401	8407	8414	8420	8426	8432	8439	8445	1 1 2	2 3 4	4 5 6
70	8451	8457	8463	8470	8476	8482	8488	8494	8500	8506	1 1 2	2 3 4	4 5 6
71	8513	8519	8525	8531	8537	8543	8549	8555	8561	8567	1 1 2	2 3 4	4 5 5
72	8573	8579	8585	8591	8597	8603	8609	8615	8621	8627	1 1 2	2 3 4	4 5 5
73	8633	8639	8645	8651	8657	8663	8669	8675	8681	8686	1 1 2	2 3 4	4 5 5
74	8692	8698	8704	8710	8716	8722	8727	8733	8739	8745	1 1 2	2 3 4	4 5 5
75	8751	8756	8762	8768	8774	8779	8785	8791	8797	8802	1 1 2	2 3 3	4 5 5
76	8808	8814	8820	8825	8831	8837	8842	8848	8854	8859	1 1 2	2 3 3	4 5 5
77	8865	8871	8876	8882	8887	8893	8899	8904	8910	8915	1 1 2	2 3 3	4 4 5
78	8921	8927	8932	8938	8943	8949	8954	8960	8965	8971	1 1 2	2 3 3	4 4 5
79	8976	8982	8987	8993	8998	9004	9009	9015	9020	9025	1 1 2	2 3 3	4 4 5
80	9031	9036	9042	9047	9053	9058	9063	9069	9074	9079	1 1 2	2 3 3	4 4 5
81	9085	9090	9096	9101	9106	9112	9117	9122	9128	9133	1 1 2	2 3 3	4 4 5
82	9138	9143	9149	9154	9159	9165	9170	9175	9180	9186	1 1 2	2 3 3	4 4 5
83	9191	9196	9201	9206	9212	9217	9222	9227	9232	9238	1 1 2	2 3 3	4 4 5
84	9243	9248	9253	9258	9263	9269	9274	9279	9284	9289	1 1 2	2 3 3	4 4 5
85	9294	9299	9304	9309	9315	9320	9325	9330	9335	9340	1 1 2	2 3 3	4 4 5
86	9345	9350	9355	9360	9365	9370	9375	9380	9385	9390	1 1 2	2 3 3	4 4 5
87	9395	9400	9405	9410	9415	9420	9425	9430	9435	9440	0 1 1	2 2 3	3 4 4
88	9445	9450	9455	9460	9465	9469	9474	9479	9484	9489	0 1 1	2 2 3	3 4 4
89	9494	9499	9504	9509	9513	9518	9523	9528	9533	9538	0 1 1	2 2 3	3 4 4
90	9542	9547	9552	9557	9562	9566	9571	9576	9581	9586	0 1 1	2 2 3	3 4 4
91	9590	9595	9600	9605	9609	9614	9619	9624	9628	9633	0 1 1	2 2 3	3 4 4
92	9638	9643	9647	9652	9657	9661	9666	9671	9675	9680	0 1 1	2 2 3	3 4 4
93	9685	9689	9694	9699	9703	9708	9713	9717	9722	9727	0 1 1	2 2 3	3 4 4
94	9731	9736	9741	9745	9750	9754	9759	9763	9768	9773	0 1 1	2 2 3	3 4 4
95	9777	9782	9786	9791	9795	9800	9805	9809	9814	9818	0 1 1	2 2 3	3 4 4
96	9823	9827	9832	9836	9841	9845	9850	9854	9859	9863	0 1 1	2 2 3	3 4 4
97	9868	9872	9877	9881	9886	9890	9894	9899	9903	9908	0 1 1	2 2 3	3 4 4
98	9912	9917	9921	9926	9930	9934	9939	9943	9948	9952	0 1 1	2 2 3	3 4 4
99	9956	9961	9965	9969	9974	9978	9983	9987	9991	9996	0 1 1	2 2 3	3 3 4

SHORT-TITLE CATALOGUE

OF THE

PUBLICATIONS

OF

JOHN WILEY & SONS

NEW YORK

LONDON: CHAPMAN & HALL, LIMITED

ARRANGED UNDER SUBJECTS

Descriptive circulars sent on application. Books marked with an asterisk (*) are sold at *net* prices only. All books are bound in cloth unless otherwise stated.

AGRICULTURE—HORTICULTURE—FORESTRY.

Armsby's Principles of Animal Nutrition	8vo,	$4 00
Budd and Hansen's American Horticultural Manual:		
Part I. Propagation, Culture, and Improvement	12mo,	1 50
Part II. Systematic Pomology	12mo,	1 50
Elliott's Engineering for Land Drainage	12mo,	1 50
Practical Farm Drainage. (Second Edition, Rewritten)	12mo,	1 50
Graves's Forest Mensuration	8vo,	4 00
Green's Principles of American Forestry	12mo,	1 50
Grotenfelt's Principles of Modern Dairy Practice. (Woll.)	12mo,	2 00
* Herrick's Denatured or Industrial Alcohol	8vo,	4 00
Kemp and Waugh's Landscape Gardening. (New Edition, Rewritten. In Preparation).		
* McKay and Larsen's Principles and Practice of Butter-making	8vo,	1 50
Maynard's Landscape Gardening as Applied to Home Decoration	12mo,	1 50
Sanderson's Insects Injurious to Staple Crops	12mo,	1 50
Sanderson and Headlee's Insects Injurious to Garden Crops. (In Preparation).		
* Schwarz's Longleaf Pine in Virgin Forests	12mo,	1 25
Stockbridge's Rocks and Soils	8vo,	2 50
Winton's Microscopy of Vegetable Foods	8vo,	7 50
Woll's Handbook for Farmers and Dairymen	16mo,	1 50

ARCHITECTURE.

Baldwin's Steam Heating for Buildings	12mo,	2 50
Berg's Buildings and Structures of American Railroads	4to,	5 00
Birkmire's Architectural Iron and Steel	8vo,	3 50
Compound Riveted Girders as Applied in Buildings	8vo,	2 00
Planning and Construction of American Theatres	8vo,	3 00
Planning and Construction of High Office Buildings	8vo,	3 50
Skeleton Construction in Buildings	8vo,	3 00

Briggs's Modern American School Buildings....8vo, $4 00
Byrne's Inspection of Materials and Wormanship Employed in Construction.
16mo, 3 00
Carpenter s Heating and Ventilating of Buildings....8vo, 4 00
* Corthell's Allowable Pressure on Deep Foundations....12mo, 1 25
Freitag's Architectural Engineering....8vo, 3 50
Fireproofing of Steel Buildings....8vo, 2 50
Gerhard's Guide to Sanitary Inspections. (Fourth Edition, Entirely Revised and Enlarged)....12mo, 1 50
* Modern Baths and Bath Houses....8vo, 3 00
Sanitation of Public Buildings....12mo, 1 50
Theatre Fires and Panics....12mo, 1 50
Johnson's Statics by Algebraic and Graphic Methods....8vo, 2 00
Kellaway's How to Lay Out Suburban Home Grounds....8vo, 2 00
Kidder's Architects' and Builders' Pocket-book....16mo, mor., 5 00
Merrill's Stones for Building and Decoration....8vo, 5 00
Monckton's Stair-building....4to, 4 00
Patton's Practical Treatise on Foundations....8vo, 5 00
Peabody's Naval Architecture....8vo, 7 50
Rice's Concrete-block Manufacture....8vo, 2 00
Richey's Handbook for Superintendents of Construction....16mo, mor. 4 00
Building Foreman's Pocket Book and Ready Reference..16mo, mor. 5 00
* Building Mechanics' Ready Reference Series:
* Carpenters' and Woodworkers' Edition....16mo, mor. 1 50
* Cement Workers' and Plasterers' Edition....16mo, mor. 1 50
* Plumbers', Steam-Fitters', and Tinners' Edition..16mo, mor. 1 50
* Stone- and Brick-masons' Edition....16mo, mor. 1 50
Sabin's House Painting....12mo, 1 00
Siebert and Biggin's Modern Stone-cutting and Masonry....8vo, 1 50
Snow's Principal Species of Wood....8vo, 3 50
Towne's Locks and Builders' Hardware....16mo, mor. 3 00
Wait's Engineering and Architectural Jurisprudence....8vo, 6 00
Sheep, 6 50
Law of Contracts....8vo, 3 00
Law of Operations Preliminary to Construction in Engineering and Architecture....8vo, 5 00
Sheep, 5 50
Wilson's Air Conditioning....12mo, 1 50
Worcester and Atkinson's Small Hospitals, Establishment and Maintenance, Suggestions for Hospital Architecture, with Plans for a Small Hospital.
12mo, 1 25

ARMY AND NAVY.

Bernadou's Smokeless Powder, Nitro-cellulose, and the Theory of the Cellulose Molecule....12mo, 2 50
Chase's Art of Pattern Making....12mo, 2 50
Screw Propellers and Marine Propulsion....8vo, 3 00
* Cloke's Enlisted Specialists' Examiner....8vo, 2 00
*Gunner's Examiner....8vo, 1 50
Craig's Azimuth....4to, 3 50
Crehore and Squier's Polarizing Photo-chronograph....8vo, 3 00
* Davis's Elements of Law....8vo, 2 50
* Treatise on the Military Law of United States....8vo, 7 00
DeBrack's Cavalry Outpost Duties. (Carr.)....24mo, mor. 2 00
* Dudley s Military Law and the Procedure of Courts-martial...Large 12mo, 2 50
Durand's Resistance and Propulsion of Ships....8vo, 5 00
* Dyer's Handbook of Light Artillery....12mo, 3 00
Eissler's Modern High Explosives....8vo, 4 00
* Fiebeger's Text-book on Field Fortification....Large 12mo, 2 00
Hamilton and Bond's The Gunner's Catechism....18mo, 1 00
* Hoff's Elementary Naval Tactics....8vo, 1 50
Ingalls's Handbook of Problems in Direct Fire....8vo, 4 00
* Lissak's Ordnance and Gunnery....8vo, 6 00

* Ludlow's Logarithmic and Trigonometric Tables	8vo,	$1 00
* Lyons's Treatise on Electromagnetic Phenomena. Vols. I. and II.	8vo, each,	6 00
* Mahan's Permanent Fortifications. (Mercur.)	8vo. half mor.	7 50
Manual for Courts-martial	16mo, mor.	1 50
* Mercur's Attack of Fortified Places	12mo,	2 00
* Elements of the Art of War	8vo,	4 00
Nixon's Adjutants' Manual	24mo,	1 00
Peabody's Naval Architecture	8vo,	7 50
* Phelps's Practical Marine Surveying	8vo,	2 50
Putnam's Nautical Charts	8vo,	2 00
Rust's Ex-meridian Altitude. Azimuth and Star-Finding Tables	8vo,	5 00
Sharpe's Art of Subsisting Armies in War	18mo, mor.	1 50
* Tupes and Poole's Manual of Bayonet Exercises and Musketry Fencing.	24mo, leather,	50
* Weaver's Military Explosives	8vo,	3 00
Woodhull's Notes on Military Hygiene	16mo,	1 50

ASSAYING.

Betts's Lead Refining by Electrolysis	8vo,	4 00
Fletcher's Practical Instructions in Quantitative Assaying with the Blowpipe.	16mo, mor.	1 50
Furman and Pardoe's Manual of Practical Assaying. (Sixth Edition, Revised and Enlarged)	8vo,	3 00
Lodge's Notes on Assaying and Metallurgical Laboratory Experiments	8vo,	3 00
Low's Technical Methods of Ore Analysis	8vo,	3 00
Miller's Cyanide Process	12mo,	1 00
Manual of Assaying	12mo,	1 00
Minet's Production of Aluminum and its Industrial Use. (Waldo.)	12mo,	2 50
O'Driscoll's Notes on the Treatment of Gold Ores	8vo,	2 00
Ricketts and Miller's Notes on Assaying	8vo,	3 00
Robine and Lenglen's Cyanide Industry. (Le Clerc.)	8vo,	4 00
Ulke's Modern Electrolytic Copper Refining	8vo,	3 00
Wilson's Chlorination Process	12mo,	1 50
Cyanide Processes	12mo,	1 50

ASTRONOMY.

Comstock's Field Astronomy for Engineers	8vo,	2 50
Craig's Azimuth	4to,	3 50
Crandall's Text-book on Geodesy and Least Squares	8vo,	3 00
Doolittle's Treatise on Pracical Astronomy	8vo,	4 00
Hayford's Text-book of Geodetic Astronomy	8vo,	3 00
Hosmer's Azimuth	16mo, mor.	1 00
Merriman's Elements of Precise Surveying and Geodesy	8vo,	2 50
* Michie and Harlow's Practical Astronomy	8vo,	3 00
Rust's Ex-meridian Altitude, Azimuth and Star-Finding Tables	8vo,	5 00
* White's Elements of Theoretical and Descriptive Astronomy	12mo,	2 00

CHEMISTRY.

* Abderhalden's Physiological Chemistry in Thirty Lectures. (Hall and Defren)	8vo,	5 00
* Abegg's Theory of Electrolytic Dissociation. (von Ende.)	12mo,	1 25
Alexeyeff's General Principles of Organic Syntheses. (Matthews.)	8vo,	3 00
Allen's Tables for Iron Analysis	8vo,	3 00
Armsby's Principles of Animal Nutrition	8vo,	4 00
Arnold's Compendium of Chemistry. (Mandel.)	Large 12mo,	3 50
Association of State and National Food and Dairy Departments, Hartford Meeting, 1906	8vo,	3 00
Jamestown Meeting, 1907	8vo,	3 00

Austen's Notes for Chemical Students.....12mo, $1 50
Baskerville's Chemical Elements. (In Preparation).
Bernadou's Smokeless Powder.—Nitro-cellulose, and Theory of the Cellulose Molecule.....12mo, 2 50
Biltz's Introduction to Inorganic Chemistry. (Hall and Phelan). (In Press).
Laboratory Methods of Inorganic Chemistry. (Hall and Blanchard). 8vo, 3 00
* Blanchard's Synthetic Inorganic Chemistry.....12mo, 1 00
* Browning's Introduction to the Rarer Elements.....8vo, 1 50
* Claassen's Beet-sugar Manufacture. (Hall and Rolfe.).....8vo, 3 00
Classen's Quantitative Chemical Analysis by Electrolysis. (Boltwood.).8vo, 3 00
Cohn's Indicators and Test-papers.....12mo, 2 00
Tests and Reagents.....8vo, 3 00
* Danneel's Electrochemistry. (Merriam.).....12mo, 1 25
Dannerth's Methods of Textile Chemistry.....12mo, 2 00
Duhem's Thermodynamics and Chemistry. (Burgess.).....8vo, 4 00
Effront's Enzymes and their Applications. (Prescott.).....8vo, 3 00
Eissler's Modern High Explosives.....8vo, 4 00
Erdmann's Introduction to Chemical Preparations. (Dunlap.).....12mo, 1 25
* Fischer's Physiology of Alimentation.....Large 12mo, 2 00
Fletcher's Practical Instructions in Quantitative Assaying with the Blowpipe. 12mo, mor. 1 50
Fowler's Sewage Works Analyses.....12mo, 2 00
Fresenius's Manual of Qualitative Chemical Analysis. (Wells.).....8vo, 5 00
Manual of Qualitative Chemical Analysis. Part I. Descriptive. (Wells.)8vo, 3 00
Quantitative Chemical Analysis. (Cohn.) 2 vols.....8vo, 12 50
When Sold Separately, Vol. I, $6. Vol. II, $8.
Fuertes's Water and Public Health.....12mo, 1 50
Furman and Pardoe's Manual of Practical Assaying. (Sixth Edition, Revised and Enlarged.).....8vo, 3 00
* Getman's Exercises in Physical Chemistry.....12mo, 2 00
Gill's Gas and Fuel Analysis for Engineers.....12mo, 1 25
* Gooch and Browning's Outlines of Qualitative Chemical Analysis. Large 12mo, 1 25
Grotenfelt's Principles of Modern Dairy Practice. (Woll.).....12mo, 2 00
Groth's Introduction to Chemical Crystallography (Marshall).....12mo, 1 25
Hammarsten's Text-book of Physiological Chemistry. (Mandel.).....8vo, 4 00
Hanausek's Microscopy of Technical Products. (Winton.).....8vo, 5 00
* Haskins and Macleod's Organic Chemistry.....12mo, 2 00
Hering's Ready Reference Tables (Conversion Factors).....16mo, mor. 2 50
* Herrick's Denatured or Industrial Alcohol.....8vo, 4 00
Hinds's Inorganic Chemistry.....8vo, 3 00
* Laboratory Manual for Students.....12mo, 1 00
* Holleman's Laboratory Manual of Organic Chemistry for Beginners. (Walker.).....12mo, 1 00
Text-book of Inorganic Chemistry. (Cooper.).....8vo, 2 50
Text-book of Organic Chemistry. (Walker and Mott.).....8vo, 2 50
* Holley's Lead and Zinc Pigments.....Large 12mo, 3 00
Holley and Ladd's Analysis of Mixed Paints, Color Pigments, and Varnishes. Large 12mo, 2 50
Hopkins's Oil-chemists' Handbook.....8vo, 3 00
Jackson's Directions for Laboratory Work in Physiological Chemistry..8vo, 1 25
Johnson's Rapid Methods for the Chemical Analysis of Special Steels, Steel-making Alloys and Graphite.....Large 12mo, 3 00
Landauer's Spectrum Analysis. (Tingle.).....8vo, 3 00
* Langworthy and Austen's Occurrence of Aluminum in Vegetable Products, Animal Products, and Natural Waters.....8vo, 2 00
Lassar-Cohn's Application of Some General Reactions to Investigations in Organic Chemistry. (Tingle.).....12mo, 1 00
Leach's Inspection and Analysis of Food with Special Reference to State Control.....8vo, 7 50
Löb's Electrochemistry of Organic Compounds. (Lorenz.).....8vo, 3 00
Lodge's Notes on Assaying and Metallurgical Laboratory Experiments..8vo, 3 00
Low's Technical Method of Ore Analysis.....8vo, 3 00
Lunge's Techno-chemical Analysis. (Cohn.).....12mo, 1 00
* McKay and Larsen's Principles and Practice of Butter-making.....8vo, 1 50
Maire's Modern Pigments and their Vehicles.....12mo, 2 00

Mandel's Handbook for Bio-chemical Laboratory.....12mo, $1 50
* Martin's Laboratory Guide to Qualitative Analysis with the Blowpipe
12mo, 0 60
Mason's Examination of Water. (Chemical and Bacteriological.).....12mo, 1 25
Water-supply. (Considered Principally from a Sanitary Standpoint.)
8vo, 4 00
* Mathewson's First Principles of Chemical Theory.....8vo, 1 00
Matthews's Laboratory Manual of Dyeing and Textile Chemistry.....8vo, 3 50
Textile Fibres. 2d Edition, Rewritten.....8vo, 4 00
* Meyer's Determination of Radicles in Carbon Compounds. (Tingle.)
Third Edition.....12mo, 1 25
Miller's Cyanide Process.....12mo, 1 00
Manual of Assaying.....12mo, 1 00
Minet's Production of Aluminum and its Industrial Use. (Waldo.)...12mo, 2 50
Mixter's Elementary Text-book of Chemistry.....12mo, 1 50
Morgan's Elements of Physical Chemistry.....12mo, 3 00
Outline of the Theory of Solutions and its Results.....12mo, 1 00
* Physical Chemistry for Electrical Engineers.....12mo, 1 50
Morse's Calculations used in Cane-sugar Factories.....16mo, mor. 1 50
* Muir's History of Chemical Theories and Laws.....8vo, 4 00
Mulliken's General Method for the Identification of Pure Organic Compounds.
Vol. I. Compounds of Carbon with Hydrogen and Oxygen. Large 8vo, 5 00
Vol. II. Nitrogenous Compounds. (In Preparation).
Vol. III. The Commercial Dyestuffs. (In Press).
O'Driscoll's Notes on the Treatment of Gold Ores.....8vo, 2 00
Ostwald's Conversations on Chemistry. Part One. (Ramsey.).....12mo, 1 50
" " " " Part Two. (Turnbull.).....12mo, 2 00
Owen and Standage's Dyeing and Cleaning of Textile Fabrics.....12mo, 2 00
* Palmer's Practical Test Book of Chemistry.....12mo, 1 00
* Pauli's Physical Chemistry in the Service of Medicine. (Fischer.)..12mo, 1 25
Penfield's Tables of Minerals, Including the Use of Minerals and Statistics of Domestic Production.....8vo, 1 00
Pictet's Alkaloids and their Chemical Constitution. (Biddle.).....8vo, 5 00
Poole's Calorific Power of Fuels.....8vo, 3 00
Prescott and Winslow's Elements of Water Bacteriology, with Special Reference to Sanitary Water Analysis.....12mo, 1 50
* Reisig's Guide to Piece-Dyeing.....8vo, 25 00
Richards and Woodman's Air, Water, and Food from a Sanitary Standpoint.....8vo. 2 00
Ricketts and Miller's Notes on Assaying.....8vo, 3 00
Rideal's Disinfection and the Preservation of Food.....8vo, 4 00
Sewage and the Bacterial Purification of Sewage.....8vo, 4 00
Rigg's Elementary Manual for the Chemical Laboratory.....8vo, 1 25
Robine and Lenglen's Cyanide Industry. (Le Clerc.).....8vo, 4 00
Ruddiman's Incompatibilities in Prescriptions.....8vo, 2 00
Whys in Pharmacy.....12mo, 1 00
Ruer's Elements of Metallography. (Mathewson). (In Press.)
Sabin's Industrial and Artistic Technology of Paint and Varnish.....8vo, 3 00
Salkowski's Physiological and Pathological Chemistry. (Orndorff.).....8vo, 2 50
Schimpf's Essentials of Volumetric Analysis.....12mo, 1 25
Manual of Volumetric Analysis. (Fifth Edition, Rewritten).....8vo, 5 00
* Qualitative Chemical Analysis.....8vo, 1 25
Smith's Lecture Notes on Chemistry for Dental Students.....8vo, 2 50
Spencer's Handbook for Cane Sugar Manufacturers.....16mo, mor. 3 00
Handbook for Chemists of Beet-sugar Houses.....16mo, mor. 3 00
Stockbridge's Rocks and Soils.....8vo, 2 50
Stone's Practical Testing of Gas and Gas Meters.....8vo, 3 50
* Tillman's Descriptive General Chemistry.....8vo, 3 00
* Elementary Lessons in Heat.....8vo, 1 50
Treadwell's Qualitative Analysis. (Hall.).....8vo, 3 00
Quantitative Analysis. (Hall.).....8vo, 4 00
Turneaure and Russell's Public Water-supplies.....8vo, 5 00
Van Deventer's Physical Chemistry for Beginners. (Boltwood.).....12mo, 1 50
Venable's Methods and Devices for Bacterial Treatment of Sewage.....8vo, 3 00
Ward and Whipple's Freshwater Biology. (In Press.)
Ware's Beet-sugar Manufacture and Refining. Vol. I.....8vo, 4 00
" " " " " Vol. II.....8vo, 5 00

Washington's Manual of the Chemical Analysis of Rocks....8vo, $2 00
* Weaver's Military Explosives....8vo, 3 00
Wells's Laboratory Guide in Qualitative Chemical Analysis....8vo, 1 50
Short Course in Inorganic Qualitative Chemical Analysis for Engineering Students....12mo, 1 50
Text-book of Chemical Arithmetic....12mo, 1 25
Whipple's Microscopy of Drinking-water....8vo, 3 50
Wilson's Chlorination Process....12mo, 1 50
Cyanide Processes....12mo, 1 50
Winton's Microscopy of Vegetables Food....8vo, 7 50
Zsigmondy's Colloids and the Ultramicroscope. (Alexander)...Large 12mo, 3 00

CIVIL ENGINEERING.

BRIDGES AND ROOFS. HYDRAULICS. MATERIALS OF ENGINEERING. RAILWAY ENGINEERING.

Baker's Engineers' Surveying Instruments....12mo, 3 00
Bixby's Graphical Computing Table....Paper 19½ × 24½ inches. 25
Breed and Hosmer's Principles and Practice of Surveying. Vol. I. Elementary Surveying....8vo, 3 00
Vol. II. Higher Surveying....8vo, 2 50
* Burr's Ancient and Modern Engineering and the Isthmian Canal....8vo, 3 50
Comstock's Field Astronomy for Engineers....8vo, 2 50
* Corthell's Allowable Pressure on Deep Foundations....12mo, 1 25
Crandall's Text-book on Geodesy and Least Squares....8vo, 3 00
Davis's Elevation and Stadia Tables....8vo, 1 00
Elliott's Engineering for Land Drainage....12mo, 1 50
Practical Farm Drainage. (Second Edition Rewritten.)....12mo, 1 50
* Fiebeger's Treatise on Civil Engineering....8vo, 5 00
Flemer's Photographic Methods and Instruments....8vo, 5 00
Folwell's Sewerage. (Designing and Maintenance.)....8vo, 3 00
Freitag's Architectural Engineering....8vo, 3 50
Goodhue's Municipal Improvements....12mo, 1 50
* Hauch and Rice's Tables of Quantities for Preliminary Estimates...12mo, 1 25
Hayford's Text-book of Geodetic Astronomy....8vo, 3 00
Hering's Ready Reference Tables (Conversion Factors)....16mo, mor. 2 50
Hosmer's Azimuth....16mo, mor. 1 00
Howe' Retaining Walls for Earth....12mo, 1 25
* Ives's Adjustments of the Engineer's Transit and Level....16mo, bds. 25
Johnson's (J. B.) Theory and Practice of Surveying....Large 12mo, 4 00
Johnson's (L. J.) Statics by Algebraic and Graphic Methods....8vo, 2 00
Kinnicutt, Winslow and Pratt's Purification of Sewage. (In Preparation).
* Mahan's Descriptive Geometry....8vo, 1 50
Merriman's Elements of Precise Surveying and Geodesy....8vo, 2 50
Merriman and Brooks's Handbook for Surveyors....16mo, mor. 2 00
Nugent's Plane Surveying....8vo, 3 50
Ogden's Sewer Construction....8vo, 3 00
Sewer Design....12mo, 2 00
Parsons's Disposal of Municipal Refuse....8vo, 2 00
Patton's Treatise on Civil Engineering....8vo, half leather, 7 50
Reed's Topographical Drawing and Sketching....4to, 5 00
Rideal's Sewage and the Bacterial Purification of Sewage....8vo, 4 00
Riemer's Shaft-sinking under Difficult Conditions. (Corning and Peele.)....8vo, 3 00
Siebert and Biggin's Modern Stone-cutting and Masonry....8vo, 1 50
Smith's Manual of Topographical Drawing. (McMillan.)....8vo, 2 50
Soper's Air and Ventilation of Subways....12mo, 2 50
* Tracy's Exercises in Surveying....12mo, mor. 1 00
Tracy's Plane Surveying....16mo, mor. 3 00
* Trautwine's Civil Engineer's Pocket-book....16mo, mor. 5 00
Venable's Garbage Crematories in America....8vo, 2 00
Methods and Devices for Bacterial Treatment of Sewage....8vo, 3 00

Wait's Engineering and Architectural Jurisprudence....8vo, $6 00
Sheep, 6 50
Law of Contracts....8vo, 3 00
Law of Operations Preliminary to Construction in Engineering and Architecture....8vo, 5 00
Sheep, 5 50
Warren's Stereotomy—Problems in Stone-cutting....8vo, 2 50
* Waterbury's Vest-Pocket Hand-book of Mathematics for Engineers. 2½ × 5½ inches, mor. 1 00
Webb's Problem's in the Use and Adjustment of Engineering Instruments. 16mo, mor. 1 25
Wilson's Topographic Surveying....8vo, 3 50

BRIDGES AND ROOFS.

Boller's Practical Treatise on the Construction of Iron Highway Bridges..8vo, 2 00
* Thames River Bridge....Oblong paper, 5 00
Burr and Falk's Design and Construction of Metallic Bridges....8vo, 5 00
Influence Lines for Bridge and Roof Computations....8vo, 3 00
Du Bois's Mechanics of Engineering. Vol. II....Small 4to, 10 00
Foster's Treatise on Wooden Trestle Bridges....4to, 5 00
Fowler's Ordinary Foundations....8vo, 3 50
Greene's Arches in Wood, Iron, and Stone....8vo, 2 50
Bridge Trusses....8vo, 2 50
Roof Trusses....8vo, 1 25
Grimm's Secondary Stresses in Bridge Trusses....8vo, 2 50
Heller's Stresses in Structures and the Accompanying Deformations....8vo, 3 00
Howe's Design of Simple Roof-trusses in Wood and Steel....8vo. 2 00
Symmetrical Masonry Arches....8vo, 2 50
Treatise on Arches....8vo, 4 00
Johnson, Bryan and Turneaure's Theory and Practice in the Designing of Modern Framed Structures....Small 4to, 10 00
Merriman and Jacoby's Text-book on Roofs and Bridges:
Part I. Stresses in Simple Trusses....8vo, 2 50
Part II. Graphic Statics....8vo, 2 50
Part III. Bridge Design....8vo, 2 50
Part IV. Higher Structures....8vo, 2 50
Morison's Memphis Bridge....Oblong 4to, 10 00
Sondericker's Graphic Statics, with Applications to Trusses, Beams, and Arches....8vo, 2 00
Waddell's De Pontibus, Pocket-book for Bridge Engineers....16mo, mor. 2 00
* Specifications for Steel Bridges....12mo, 50
Waddell and Harringtoon's Bridge Engineering. (In Preparation.)
Wright's Designing of Draw-spans. Two parts in one volume....8vo, 3 50

HYDRAULICS.

Barnes's Ice Formation....8vo, 3 00
Bazin's Experiments upon the Contraction of the Liquid Vein Issuing from an Orifice. (Trautwine.)....8vo, 2 00
Bovey's Treatise on Hydraulics....8vo, 5 00
Church's Diagrams of Mean Velocity of Water in Open Channels. Oblong 4to, paper, 1 50
Hydraulic Motors....8vo, 2 00
Coffin's Graphical Solution of Hydraulic Problems....16mo, mor. 2 50
Flather's Dynamometers, and the Measurement of Power....12mo, 3 00
Folwell's Water-supply Engineering....8vo, 4 00
Frizell's Water-power....8vo, 5 00
Fuertes's Water and Public Health....12mo, 1 50
Water-filtration Works....12mo, 2 50
Ganguillet and Kutter's General Formula for the Uniform Flow of Water in Rivers and Other Channels. (Hering and Trautwine.)....8vo, 4 00

Hazen's Clean Water and How to Get It.....Large 12mo, $1 50
Filtration of Public Water-supplies.....8vo, 3 00
Hazelhurst's Towers and Tanks for Water-works.....8vo, 2 50
Herschel's 115 Experiments on the Carrying Capacity of Large, Riveted, Metal Conduits.....8vo, 2 00
Hoyt and Grover's River Discharge.....8vo, 2 00
Hubbard and Kiersted's Water-works Management and Maintenance. 8vo, 4 00
* Lyndon's Development and Electrical Distribution of Water Power. 8vo, 3 00
Mason's Water-supply. (Considered Principally from a Sanitary Standpoint.).....8vo, 4 00
Merriman's Treatise on Hydraulics.....8vo, 5 00
* Molitor's Hydraulics of Rivers, Weirs and Sluices.....8vo, 2 00
* Richards's Laboratory Notes on Industrial Water Analysis.....8vo, 50
Schuyler's Reservoirs for Irrigation, Water-power, and Domestic Water-supply. Second Edition, Revised and Enlarged.....Large 8vo, 6 00
* Thomas and Watt's Improvement of Rivers.....4to, 6 00
Turneaure and Russell's Public Water-supplies.....8vo, 5 00
Wegmann's Design and Construction of Dams. 5th Ed., enlarged.....4to, 6 00
Water-Supply of the City of New York from 1658 to 1895.....4to, 10 00
Whipple's Value of Pure Water.....Large 12mo, 1 00
Williams and Hazen's Hydraulic Tables.....8vo, 1 50
Wilson's Irrigation Engineering.....8vo, 4 00
Wood's Turbines.....8vo, 2 50

MATERIALS OF ENGINEERING.

Baker's Roads and Pavements.....8vo, 5 00
Treatise on Masonry Construction.....8vo, 5 00
Black's United States Public Works.....Oblong 4to, 5 00
Blanchard's Bituminous Roads. (In Press.)
Bleininger's Manufacture of Hydraulic Cement. (In Preparation.)
* Bovey's Strength of Materials and Theory of Structures.....8vo, 7 50
Burr's Elasticity and Resistance of the Materials of Engineering.....8vo, 7 50
Byrne's Highway Construction.....8vo, 5 00
Inspection of the Materials and Workmanship Employed in Construction. 16mo, 3 00
Church's Mechanics of Engineering.....8vo, 6 00
Du Bois's Mechanics of Engineering.
Vol. I. Kinematics, Statics, Kinetics.....Small 4to, 7 50
Vol. II. The Stresses in Framed Structures, Strength of Materials and Theory of Flexures.....Small 4to, 10 00
* Eckel's Cements, Limes, and Plasters.....8vo, 6 00
Stone and Clay Products used in Engineering. (In Preparation.)
Fowler's Ordinary Foundations.....8vo, 3 50
* Greene's Structural Mechanics.....8vo, 2 50
* Holley's Lead and Zinc Pigments.....Large 12mo, 3 00
Holley and Ladd's Analysis of Mixed Paints, Color Pigments and Varnishes. Large 12mo, 2 50
Johnson's (C. M.) Rapid Methods for the Chemical Analysis of Special Steels, Steel-making Alloys and Graphite.....Large 12mo, 3 00
Johnson's (J. B.) Materials of Construction.....Large 8vo, 6 00
Keep's Cast Iron.....8vo, 2 50
Lanza's Applied Mechanics.....8vo, 7 50
Maire's Modern Pigments and their Vehicles.....12mo, 2 00
Martens's Handbook on Testing Materials. (Henning.) 2 vols.....8vo, 7 50
Maurer's Technical Mechanics.....8vo, 4 00
Merrill's Stones for Building and Decoration.....8vo, 5 00
Merriman's Mechanics of Materials.....8vo, 5 00
* Strength of Materials.....12mo, 1 00
Metcalf's Steel. A Manual for Steel-users.....12mo, 2 00
Morrison's Highway Engineering.....8vo, 2 50
Patton's Practical Treatise on Foundations.....8vo, 5 00
Rice's Concrete Block Manufacture.....8vo, 2 00

Richardson's Modern Asphalt Pavements.....8vo, $3 00
Richey's Building Foreman's Pocket Book and Ready Reference.16mo,mor. 5 00
* Cement Workers' and Plasterers' Edition (Building Mechanics' Ready Reference Series).....16mo, mor. 1 50
Handbook for Superintendents of Construction.....16mo, mor. 4 00
* Stone and Brick Masons' Edition (Building Mechanics' Ready Reference Series).....16mo, mor. 1 50
* Ries's Clays: Their Occurrence, Properties, and Uses.....8vo, 5 00
* Ries and Leighton's History of the Clay-working Industry of the United States.....8vo. 2 50
Sabin's Industrial and Artistic Technology of Paint and Varnish.....8vo, 3 00
Smith's Strength of Material.....12mo,
Snow's Principal Species of Wood.....8vo, 3 50
Spalding's Hydraulic Cement.....12mo, 2 00
Text-book on Roads and Pavements.....12mo, 2 00
Taylor and Thompson's Treatise on Concrete, Plain and Reinforced.....8vo, 5 00
Thurston's Materials of Engineering. In Three Parts.....8vo, 8 00
Part I. Non-metallic Materials of Engineering and Metallurgy....8vo, 2 00
Part II. Iron and Steel.....8vo, 3 50
Part III. A Treatise on Brasses, Bronzes, and Other Alloys and their Constituents.....8vo, 2 50
Tillson's Street Pavements and Paving Materials.....8vo, 4 00
Turneaure and Maurer's Principles of Reinforced Concrete Construction. Second Edition, Revised and Enlarged.....8vo, 3 50
Waterbury's Cement Laboratory Manual.....12mo, 1 00
Wood's (De V.) Treatise on the Resistance of Materials, and an Appendix on the Preservation of Timber.....8vo, 2 00
Wood's (M. P.) Rustless Coatings: Corrosion and Electrolysis of Iron and Steel.....8vo, 4 00

RAILWAY ENGINEERING.

Andrews's Handbook for Street Railway Engineers.....3×5 inches, mor. 1 25
Berg's Buildings and Structures of American Railroads.....4to, 5 00
Brooks's Handbook of Street Railroad Location.....16mo, mor. 1 50
Butts's Civil Engineer's Field-book.....16mo, mor. 2 50
Crandall's Railway and Other Earthwork Tables.....8vo, 1 50
Transition Curve.....16mo, mor. 1 50
* Crockett's Methods for Earthwork Computations.....8vo, 1 50
Dredge's History of the Pennsylvania Railroad. (1879).....Paper 5 00
Fisher's Table of Cubic Yards.....Cardboard, 25
Godwin's Railroad Engineers' Field-book and Explorers' Guide..16mo, mor. 2 50
Hudson's Tables for Calculating the Cubic Contents of Excavations and Embankments.....8vo, 1 00
Ives and Hilts's Problems in Surveying, Railroad Surveying and Geodesy 16mo, mor. 1 50
Molitor and Beard's Manual for Resident Engineers.....16mo, 1 00
Nagle's Field Manual for Railroad Engineers.....16mo, mor. 3 00
* Orrock's Railroad Structures and Estimates.....8vo, 3 00
Philbrick's Field Manual for Engineers.....16mo, mor. 3 00
Raymond's Railroad Engineering. 3 volumes.
Vol. I. Railroad Field Geometry. (In Preparation.)
Vol. II. Elements of Railroad Engineering.....8vo, 3 50
Vol. III. Railroad Engineer's Field Book. (In Preparation.)
Searles's Field Engineering.....16mo, mor. 3 00
Railroad Spiral.....16mo, mor. 1 50
Taylor's Prismoidal Formulæ and Earthwork.....8vo, 1 50
* Trautwine's Field Practice of Laying Out Circular Curves for Railroads. 12mo, mor. 2 50
* Method of Calculating the Cubic Contents of Excavations and Embankments by the Aid of Diagrams.....8vo, 2 00
Webb's Economics of Railroad Construction.....Large 12mo, 2 50
Railroad Construction.....16mo, mor. 5 00
Wellington's Economic Theory of the Location of Railways.....Large 12mo, 5 00
Wilson's Elements of Railroad-Track and Construction.....12mo, 2 00

DRAWING.

Barr's Kinematics of Machinery	8vo,	$2 50
* Bartlett's Mechanical Drawing	8vo,	3 00
* " " " Abridged Ed	8vo,	1 50
Coolidge's Manual of Drawing	8vo, paper,	1 00
Coolidge and Freeman's Elements of General Drafting for Mechanical Engineers	Oblong 4to,	2 50
Durley's Kinematics of Machines	8vo,	4 00
Emch's Introduction to Projective Geometry and its Application	8vo,	2 50
French and Ives' Stereotomy	8vo,	2 50
Hill's Text-book on Shades and Shadows, and Perspective	8vo,	2 00
Jamison's Advanced Mechanical Drawing	8vo,	2 00
Elements of Mechanical Drawing	8vo,	2 50
Jones's Machine Design:		
Part I. Kinematics of Machinery	8vo,	1 50
Part II. Form, Strength, and Proportions of Parts	8vo,	3 00
Kimball and Barr's Machine Design. (In Press.)		
MacCord's Elements of Descritpive Geometry	8vo,	3 00
Kinematics; or, Practical Mechanism	8vo,	5 00
Mechanical Drawing	4to,	4 00
Velocity Diagrams	8vo,	1 50
McLeod's Descriptive Geometry	Large 12mo,	1 50
* Mahan's Descriptive Geometry and Stone-cutting	8vo,	1 50
Industrial Drawing. (Thompson.)	8vo,	3 50
Moyer's Descriptive Geometry	8vo,	2 00
Reed's Topographical Drawing and Sketching	4to,	5 00
Reid's Course in Mechanical Drawing	8vo,	2 00
Text-book of Mechanical Drawing and Elementary Machine Design	8vo,	3 00
Robinson's Principles of Mechanism	8vo,	3 00
Schwamb and Merrill's Elements of Mechanism	8vo,	3 00
Smith (A. W.) and Marx's Machine Design	8vo,	3 00
Smith's (R. S.) Manual of Topographical Drawing. (McMillan)	8vo,	2 50
* Titsworth's Elements of Mechanical Drawing	Oblong 8vo,	1 25
Warren's Drafting Instruments and Operations	12mo,	1 25
Elements of Descriptive Geometry, Shadows, and Perspective	8vo,	3 50
Elements of Machine Construction and Drawing	8vo,	7 50
Elements of Plane and Solid Free-hand Geometrical Drawing	12mo,	1 00
General Problems of Shades and Shadows	8vo,	3 00
Manual of Elementary Problems in the Linear Perspective of Forms and Shadow	12mo,	1 00
Manual of Elementary Projection Drawing	12mo,	1 50
Plane Problems in Elementary Geometry	12mo,	1 25
Problems, Theorems, and Examples in Descriptive Geometry	8vo,	2 50
Weisbach's Kinematics and Power of Transmission. (Hermann and Klein.)	8vo,	5 00
Wilson's (H. M.) Topographic Surveying	8vo,	3 50
* Wilson's (V. T.) Descriptive Geometry	8vo,	1 50
Free-hand Lettering	8vo,	1 00
Free-hand Perspective	8vo,	2 50
Woolf's Elementary Course in Descriptive Geometry	Large 8vo,	3 00

ELECTRICITY AND PHYSICS.

* Abegg's Theory of Electrolytic Dissociation. (von Ende.)	12mo,	1 25
Andrews's Hand-book for Street Railway Engineering	3×5 inches, mor.	1 25
Anthony and Brackett's Text-book of Physics. (Magie.)	Large 12mo,	3 00
Anthony and Ball's Lecture-notes on the Theory of Electrical Measurements	12mo,	1 00
Benjamin's History of Electricity	8vo,	3 00
Voltaic Cell	8vo,	3 00

Betts's Lead Refining and Electrolysis.....8vo, $4 00
Classen's Quantitative Chemical Analysis by Electrolysis. (Boltwood.).8vo, 3 00
* Collins's Manual of Wireless Telegraphy and Telephony.....12mo, 1 50
Crehore and Squier's Polarizing Photo-chronograph.....8vo, 3 00
* Danneel's Electrochemistry. (Merriam.).....12mo, 1 25
Dawson's "Engineering" and Electric Traction Pocket-book....16mo, mor. 5 00
Dolezalek's Theory of the Lead Accumulator (Storage Battery). (von Ende.)
12mo, 2 50
Duhem's Thermodynamics and Chemistry. (Burgess.).....8vo, 4 00
Flather's Dynamometers, and the Measurement of Power.....12mo, 3 00
Getman's Introduction to Physical Science.....12mo,
Gilbert's De Magnete. (Mottelay).....8vo, 2 50
* Hanchett's Alternating Currents.....12mo 1 00
Hering's Ready Reference Tables (Conversion Factors).....16mo, mor. 2 50
* Hobart and Ellis's High-speed Dynamo Electric Machinery.....8vo, 6 00
Holman's Precision of Measurements.....8vo, 2 00
Telescopic Mirror-scale Method, Adjustments, and Tests....Large 8vo, 75
* Karapetoff's Experimental Electrical Engineering.....8vo, 6 00
Kinzbrunner's Testing of Continuous-current Machines.....8vo, 2 00
Landauer's Spectrum Analysis. (Tingle.).....8vo, 3 00
Le Chatelier's High-temperature Measurements. (Boudouard—Burgess.)12mo, 3 00
Löb's Electrochemistry of Organic Compounds. (Lorenz).....8vo, 3 00
* Lyndon's Development and Electrical Distribution of Water Power..8vo, 3 00
* Lyons's Treatise on Electromagnetic Phenomena. Vols. I .and II. 8vo, each, 6 00
* Michie's Elements of Wave Motion Relating to Sound and Light.....8vo, 4 00
Morgan's Outline of the Theory of Solution and its Results.....12mo, 1 00
* Physical Chemistry for Electrical Engineers.....12mo, 1 50
* Norris's Introduction to the Study of Electrical Engineering.....8vo, 2 50
Norris and Dennison's Course of Problems on the Electrical Characteristics of Circuits and Machines. (In Press.)
* Parshall and Hobart's Electric Machine Design.....4to, half mor, 12 50
Reagan's Locomotives: Simple, Compound, and Electric. New Edition.
Large 12mo, 3 50
* Rosenberg's Electrical Engineering. (Haldane Gee—Kinzbrunner.)..8vo, 2 00
Ryan, Norris, and Hoxie's Electrical Machinery. Vol. I.....8vo, 2 50
Schapper's Laboratory Guide for Students in Physical Chemistry.....12mo, 1 00
* Tillman's Elementary Lessons in Heat.....8vo, 1 50
Tory and Pitcher's Manual of Laboratory Physics.....Large 12mo, 2 00
Ulke's Modern Electrolytic Copper Refining.....8vo, 3 00

LAW.

* Brennan's Hand-book of Useful Legal Information for Business Men.
16mo, mor. 5 00
* Davis's Elements of Law.....8vo, 2 50
* Treatise on the Military Law of United States.....8vo, 7 00
* Dudley's Military Law and the Procedure of Courts-martial..Large 12mo, 2 50
Manual for Courts-martial.....16mo, mor. 1 50
Wait's Engineering and Architectural Jurisprudence.....8vo, 6 00
Sheep, 6 50
Law of Contracts.....8vo, 3 00
Law of Operations Preliminary to Construction in Engineering and Architecture.....8vo, 5 00
Sheep, 5 50

MATHEMATICS.

Baker's Elliptic Functions.....8vo, 1 50
Briggs's Elements of Plane Analytic Geometry. (Bôcher).....12mo, 1 00
* Buchanan's Plane and Spherical Trigonometry.....8vo, 1 00

Byerley's Harmonic Functions....8vo, $1 00
Chandler's Elements of the Infinitesimal Calculus....12mo, 2 00
* Coffin's Vector Analysis....12mo, 2 50
Compton's Manual of Logarithmic Computations....12mo, 1 50
* Dickson's College Algebra....Large 12mo, 1 50
* Introduction to the Theory of Algebraic Equations....Large 12mo, 1 25
Emch's Introduction to Projective Geometry and its Application....8vo, 2 50
Fiske's Functions of a Complex Variable....8vo, 1 00
Halsted's Elementary Synthetic Geometry....8vo, 1 50
Elements of Geometry....8vo, 1 75
* Rational Geometry....12mo, 1 50
Synthetic Projective Geometry....8vo, 1 00
Hyde's Grassmann's Space Analysis....8vo, 1 00
* Johnson's (J. B.) Three-place Logarithmic Tables: Vest-pocket size, paper, 15
*100 copies, 5 00
* Mounted on heavy cardboard, 8×10 inches, 25
*10 copies, 2 00
Johnson's (W. W.) Abridged Editions of Differential and Integral Calculus. Large 12mo, 1 vol. 2 50
Curve Tracing in Cartesian Co-ordinates....12mo, 1 00
Differential Equations....8vo, 1 00
Elementary Treatise on Differential Calculus....Large 12mo, 1 50
Elementary Treatise on the Integral Calculus....Large 12mo, 1 50
* Theoretical Mechanics....12mo, 3 00
Theory of Errors and the Method of Least Squares....12mo, 1 50
Treatise on Differential Calculus....Large 12mo, 3 00
Treatise on the Integral Calculus....Large 12mo, 3 00
Treatise on Ordinary and Partial Differential Equations....Large 12mo, 3 50
Karapetoff's Engineering Applications of Higher Mathematics. (In Preparation.)
Laplace's Philosophical Essay on Probabilities. (Truscott and Emory.)....12mo, 2 00
* Ludlow and Bass's Elements of Trigonometry and Logarithmic and Other Tables....8vo, 3 00
* Trigonometry and Tables published separately....Each, 2 00
* Ludlow's Logarithmic and Trigonometric Tables....8vo, 1 00
Macfarlane's Vector Analysis and Quaternions....8vo, 1 00
McMahon's Hyperbolic Functions....8vo, 1 00
Manning's Irrational Numbers and their Representation by Sequences and Series....12mo, 1 25
Mathematical Monographs. Edited by Mansfield Merriman and Robert S. Woodward....Octavo, each 1 00
No. 1. History of Modern Mathematics, by David Eugene Smith.
No. 2. Synthetic Projective Geometry, by George Bruce Halsted.
No. 3. Determinants, by Laenas Gifford Weld. No. 4. Hyperbolic Functions, by James McMahon. No. 5. Harmonic Functions, by William E. Byerly. No. 6. Grassmann's Space Analysis, by Edward W. Hyde. No. 7. Probability and Theory of Errors, by Robert S. Woodward. No. 8. Vector Analysis and Quaternions, by Alexander Macfarlane. No. 9. Differential Equations, by William Woolsey Johnson. No. 10. The Solution of Equations, by Mansfield Merriman. No. 11. Functions of a Complex Variable, by Thomas S. Fiske.
Maurer's Technical Mechanics....8vo, 4 00
Merriman's Method of Least Squares....8vo, 2 00
Solution of Equations....8vo, 1 00
Rice and Johnson's Differential and Integral Calculus. 2 vols. in one. Large 12mo, 1 50
Elementary Treatise on the Differential Calculus....Large 12mo, 3 00
Smith's History of Modern Mathematics....8vo, 1 00
* Veblen and Lennes's Introduction to the Real Infinitesimal Analysis of One Variable....8vo, 2 00
* Waterbury's Vest Pocket Hand-book of Mathematics for Engineers. $2\frac{1}{2}\times5\frac{1}{2}$ inches, mor. 1 00
Weld's Determinants....8vo, 1 00
Wood's Elements of Co-ordinate Geometry....8vo, 2 00
Woodward's Probability and Theory of Errors....8vo, 1 00

MECHANICAL ENGINEERING.

MATERIALS OF ENGINEERING, STEAM-ENGINES AND BOILERS.

Bacon's Forge Practice	12mo,	$1 50
Baldwin's Steam Heating for Buildings	12mo,	2 50
Barr's Kinematics of Machinery	8vo,	2 50
* Bartlett's Mechanical Drawing	8vo,	3 00
* " " " Abridged Ed.	8vo,	1 50
* Burr's Ancient and Modern Engineering and the Isthmian Canal	8vo,	3 50
Carpenter's Experimental Engineering	8vo,	6 00
Heating and Ventilating Buildings	8vo,	4 00
Clerk's Gas and Oil Engine. (New edition in press.)		
Compton's First Lessons in Metal Working	12mo,	1 50
Compton and De Groodt's Speed Lathe	12mo,	1 50
Coolidge's Manual of Drawing	8vo, paper,	1 00
Coolidge and Freeman's Elements of Geenral Drafting for Mechanical Engineers	Oblong 4to,	2 50
Cromwell's Treatise on Belts and Pulleys	12mo,	1 50
Treatise on Toothed Gearing	12mo,	1 50
Dingey's Machinery Pattern Making	12mo,	2 00
Durley's Kinematics of Machines	8vo,	4 00
Flanders's Gear-cutting Machinery	Large 12mo,	3 00
Flather's Dynamometers and the Measurement of Power	12mo,	3 00
Rope Driving	12mo,	2 00
Gill's Gas and Fuel Analysis for Engineers	12mo,	1 25
Goss's Locomotive Sparks	8vo,	2 00
Greene's Pumping Machinery. (In Preparation.)		
Hering's Ready Reference Tables (Conversion Factors)	16mo, mor.	2 50
* Hobart and Ellis's High Speed Dynamo Electric Machinery	8vo,	6 00
Hutton's Gas Engine	8vo,	5 00
Jamison's Advanced Mechanical Drawing	8vo,	2 00
Elements of Mechanical Drawing	8vo,	2 50
Jones's Gas Engine	8vo,	4 00
Machine Design:		
Part I. Kinematics of Machinery	8vo,	1 50
Part II. Form, Strength, and Proportions of Parts	8vo,	3 00
Kent's Mechanical Engineer's Pocket-Book	16mo, mor.	5 00
Kerr's Power and Power Transmission	8vo,	2 00
Kimball and Barr's Machine Design. (In Press.)		
Levin's Gas Engine. (In Press.)	8vo,	
Leonard's Machine Shop Tools and Methods	8vo,	4 00
* Lorenz's Modern Refrigerating Machinery. (Pope, Haven, and Dean)	8vo,	4 00
MacCord's Kinematics; or, Practical Mechanism	8vo,	5 00
Mechanical Drawing	4to,	4 00
Velocity Diagrams	8vo,	1 50
MacFarland's Standard Reduction Factors for Gases	8vo,	1 50
Mahan's Industrial Drawing. (Thompson.)	8vo,	3 50
Mehrtens's Gas Engine Theory and Design	Large 12mo,	2 50
Oberg's Handbook of Small Tools	Large 12mo,	3 00
* Parshall and Hobart's Electric Machine Design. Small 4to, half leather,		12 50
Peele's Compressed Air Plant for Mines	8vo,	3 00
Poole's Calorific Power of Fuels	8vo,	3 00
* Porter's Engineering Reminiscences, 1855 to 1882	8vo,	3 00
Reid's Course in Mechanical Drawing	8vo,	2 00
Text-book of Mechanical Drawing and Elementary Machine Design	8vo,	3 00
Richards's Compressed Air	12mo,	1 50
Robinson's Principles of Mechanism	8vo,	3 00
Schwamb and Merrill's Elements of Mechanism	8vo,	3 00
Smith (A. W.) and Marx's Machine Design	8vo,	3 00
Smith's (O.) Press-working of Metals	8vo,	3 00
Sorel's Carbureting and Combustion in Alcohol Engines. (Woodward and Preston.)	Large 12mo,	3 00
Stone's Practical Testing of Gas and Gas Meters	8vo,	3 50

Thurston's Animal as a Machine and Prime Motor, and the Laws of Energetics. 12mo, $1 00
Treatise on Friction and Lost Work in Machinery and Mill Work. . . 8vo, 3 00
* Tillson's Complete Automobile Instructor. 16mo, 1 50
* Titsworth's Elements of Mechanical Drawing. . . . . Oblong 8vo, 1 25
Warren's Elements of Machine Construction and Drawing. 8vo, 7 50
* Waterbury's Vest Pocket Hand-book of Mathematics for Engineers. 2⅞ × 5⅜ inches, mor. 1 00
Weisbach's Kinematics and the Power of Transmission. (Herrmann—Klein.). 8vo, 5 00
Machinery of Transmission and Governors. (Hermann—Klein.). . 8vo, 5 00
Wood's Turbines. 8vo, 2 50

MATERIALS OF ENGINEERING.

* Bovey's Strength of Materials and Theory of Structures. 8vo, 7 50
Burr's Elasticity and Resistance of the Materials of Engineering. 8vo, 7 50
Church's Mechanics of Engineering. 8vo, 6 00
* Greene's Structural Mechanics. 8vo, 2 50
* Holley's Lead and Zinc Pigments. . . . . Large 12mo 3 00
Holley and Ladd's Analysis of Mixed Paints, Color Pigments, and Varnishes. Large 12mo, 2 50
Johnson's (C. M.) Rapid Methods for the Chemical Analysis of Special Steels, Steel-Making Alloys and Graphite . . . . . Large 12mo, 3 00
Johnson's (J. B.) Materials of Construction. 8vo, 6 00
Keep's Cast Iron. 8vo, 2 50
Lanza's Applied Mechanics. 8vo, 7 50
Maire's Modern Pigments and their Vehicles. 12mo, 2 00
Martens's Handbook on Testing Materials. (Henning.). 8vo, 7 50
Maurer's Techincal Mechanics. 8vo, 4 00
Merriman s Mechanics of Materials. 8vo, 5 00
* Strength of Materials. 12mo, 1 00
Metcalf's Steel. A Manual for Steel-users. 12mo, 2 00
Sabin's Industrial and Artistic Technology of Paint and Varnish. 8vo, 3 00
Smith's ((A. W.) Materials of Machines. 12mo, 1 00
Smith's (H. E.) Strength of Material. 12mo,
Thurston's Materials of Engineering. . . . . 3 vols., 8vo, 8 00
Part I. Non-metallic Materials of Engineering. 8vo, 2 00
Part II. Iron and Steel. 8vo, 3 50
Part III. A Treatise on Brasses, Bronzes, and Other Alloys and their Constituents. 8vo, 2 50
Wood's (De V.) Elements of Analytical Mechanics. 8vo, 3 00
Treatise on the Resistance of Materials and an Appendix on the Preservation of Timber. 8vo, 2 00
Wood's (M. P.) Rustless Coatings: Corrosion and Electrolysis of Iron and Steel. 8vo, 4 00

STEAM-ENGINES AND BOILERS.

Berry's Temperature-entropy Diagram. 12mo, 2 00
Carnot's Reflections on the Motive Power of Heat. (Thurston.). 12mo, 1 50
Chase's Art of Pattern Making. 12mo, 2 50
Creighton's Steam-engine and other Heat Motors. 8vo, 5 00
Dawson's "Engineering" and Electric Traction Pocket-book. . . . 16mo, mor. 5 00
Ford's Boiler Making for Boiler Makers. 18mo, 1 00
* Gebhardt's Steam Power Plant Engineering. 8vo, 6 00
Goss's Locomotive Performance. 8vo, 5 00
Hemenway's Indicator Practice and Steam-engine Economy. 12mo, 2 00
Hutton's Heat and Heat-engines. 8vo, 5 00
Mechanical Engineering of Power Plants. 8vo, 5 00
Kent's Steam boiler Economy. 8vo, 4 00

Kneass's Practice and Theory of the Injector....8vo, $1 50
MacCord's Slide-valves....8vo, 2 00
Meyer's Modern Locomotive Construction....4to, 10 00
Moyer's Steam Turbine....8vo, 4 00
Peabody's Manual of the Steam-engine Indicator....12mo, 1 50
Tables of the Properties of Steam and Other Vapors and Temperature-Entropy Table....8vo, 1 00
Thermodynamics of the Steam-engine and Other Heat-engines....8vo, 5 00
Valve-gears for Steam-engines....8vo, 2 50
Peabody and Miller's Steam-boilers....8vo, 4 00
Pupin's Thermodynamics of Reversible Cycles in Gases and Saturated Vapors. (Osterberg.)....12mo, 1 25
Reagan's Locomotives: Simple, Compound, and Electric. New Edition. Large 12mo, 3 50
Sinclair's Locomotive Engine Running and Management....12mo, 2 00
Smart's Handbook of Engineering Laboratory Practice....12mo, 2 50
Snow's Steam-boiler Practice....8vo, 3 00
Spangler's Notes on Thermodynamics....12mo, 1 00
Valve-gears....8vo, 2 50
Spangler, Greene, and Marshall's Elements of Steam-engineering....8vo, 3 00
Thomas's Steam-turbines....8vo, 4 00
Thurston's Handbook of Engine and Boiler Trials, and the Use of the Indicator and the Prony Brake....8vo, 5 00
Handy Tables....8vo, 1 50
Manual of Steam-boilers, their Designs, Construction, and Operation 8vo, 5 00
Manual of the Steam-engine....2vols., 8vo, 10 00
Part I. History, Structure, and Theory....8vo, 6 00
Part II. Design, Construction, and Operation....8vo, 6 00
Steam-boiler Explosions in Theory and in Practice....12mo, 1 50
Wehrenfennig's Analysis and Softening of Boiler Feed-water. (Patterson). 8vo, 4 00
Weisbach's Heat, Steam, and Steam-engines. (Du Bois.)....8vo, 5 00
Whitham's Steam-engine Design....8vo, 5 00
Wood's Thermodynamics, Heat Motors, and Refrigerating Machines....8vo, 4 00

MECHANICS PURE AND APPLIED.

Church's Mechanics of Engineering....8vo, 6 00
Notes and Examples in Mechanics....8vo, 2 00
Dana's Text-book of Elementary Mechanics for Colleges and Schools .12mo, 1 50
Du Bois's Elementary Principles of Mechanics:
Vol. I. Kinematics....8vo, 3 50
Vol. II. Statics....8vo, 4 00
Mechanics of Engineering. Vol. I....Small 4to, 7 50
Vol. II....Small 4to, 10 00
* Greene's Structural Mechanics....8vo, 2 50
James's Kinematics of a Point and the Rational Mechanics of a Particle. Large 12mo, 2 00
* Johnson's (W. W.) Theoretical Mechanics....12mo, 3 00
Lanza's Applied Mechanics....8vo, 7 50
* Martin's Text Book on Mechanics, Vol. I, Statics....12mo, 1 25
* Vol. II, Kinematics and Kinetics.12mo, 1 50
Maurer's Technical Mechanics....8vo, 4 00
* Merriman's Elements of Mechanics....12mo, 1 00
Mechanics of Materials....8vo, 5 00
* Michie's Elements of Analytical Mechanics....8vo, 4 00
Robinson's Principles of Mechanism....8vo, 3 00
Sanborn's Mechanics Problems....Large 12mo, 1 50
Schwamb and Merrill's Elements of Mechanism....8vo, 3 00
Wood's Elements of Analytical Mechanics....8vo, 3 00
Principles of Elementary Mechanics....12mo, 1 25

MEDICAL.

* Abderhalden's Physiological Chemistry in Thirty Lectures. (Hall and Defren.)....8vo, $5 00
von Behring's Suppression of Tuberculosis. (Bolduan.)....12mo, 1 00
Bolduan's Immune Sera....12mo, 1 50
Bordet's Studies in Immunity. (Gay). (In Press.)....8vo,
Davenport's Statistical Methods with Special Reference to Biological Variations....16mo, mor. 1 50
Ehrlich's Collected Studies on Immunity. (Bolduan.)....8vo, 6 00
* Fischer's Physiology of Alimentation....Large 12mo, 2 00
de Fursac's Manual of Psychiatry. (Rosanoff and Collins.)....Large 12mo, 2 50
Hammarsten's Text-book on Physiological Chemistry. (Mandel.)....8vo, 4 00
Jackson's Directions for Laboratory Work in Physiological Chemistry..8vo, 1 25
Lassar-Cohn's Practical Urinary Analysis. (Lorenz.)....12mo, 1 00
Mandel's Hand-book for the Bio-Chemical Laboratory....12mo, 1 50
* Pauli's Physical Chemistry in the Service of Medicine. (Fischer.)..12mo, 1 25
* Pozzi-Escot's Toxins and Venoms and their Antibodies. (Cohn.)..12mo, 1 00
Rostoski's Serum Diagnosis. (Bolduan.)....12mo, 1 00
Ruddiman's Incompatibilities in Prescriptions....8vo, 2 00
Whys in Pharmacy....12mo, 1 00
Salkowski's Physiological and Pathological Chemistry. (Orndorff.)....8vo, 2 50
* Satterlee's Outlines of Human Embryology....12mo, 1 25
Smith's Lecture Notes on Chemistry for Dental Students....8vo, 2 50
* Whipple's Tyhpoid Fever....Large 12mo, 3 00
Woodhull's Notes on Military Hygiene....16mo, 1 50
* Personal Hygiene....12mo, 1 00
Worcester and Atkinson's Small Hospitals Establishment and Maintenance, and Suggestions for Hospital Architecture, with Plans for a Small Hospital....12mo, 1 25

METALLURGY.

Betts's Lead Refining by Electrolysis....8vo, 4 00
Bolland's Encyclopedia of Founding and Dictionary of Foundry Terms used in the Practice of Moulding....12mo, 3 00
Iron Founder....12mo, 2 50
" " Supplement....12mo, 2 50
Douglas's Untechnical Addresses on Technical Subjects....12mo, 1 00
Goesel's Minerals and Metals: A Reference Book....16mo, mor. 3 00
* Iles's Lead-smelting....12mo, 2 50
Johnson's Rapid Methods for the Chemical Analysis of Special Steels, Steel-making Alloys and Graphite....Large 12mo, 3 00
Keep's Cast Iron....8vo, 2 50
Le Chatelier's High-temperature Measurements. (Boudouard—Burgess.) 12mo, 3 00
Metcalf's Steel. A Manual for Steel-users....12mo, 2 00
Minet's Production of Aluminum and its Industrial Use. (Waldo.)..12mo, 2 50
Ruer's Elements of Metallography. (Mathewson)....8vo,
Smith's Materials of Machines....12mo, 1 00
Tate and Stone's Foundry Practice....12mo, 2 00
Thurston's Materials of Engineering. In Three Parts....8vo, 8 00
Part I. Non-metallic Materials of Engineering, see Civil Engineering, page 9.
Part II. Iron and Steel....8vo, 3 50
Part III. A Treatise on Brasses, Bronzes, and Other Alloys and their Constituents....8vo, 2 50
Ulke's Modern Electrolytic Copper Refining....8vo, 3 00
West's American Foundry Practice....12mo, 2 50
Moulders' Text Book....12mo, 2 50

MINERALOGY.

Baskerville's Chemical Elements. (In Preparation.).
Boyd's Map of Southwest Virginia.....Pocket-book form. $2 00
* Browning's Introduction to the Rarer Elements.....8vo, 1 50
Brush's Manual of Determinative Mineralogy. (Penfield.).....8vo, 4 00
Butler's Pocket Hand-book of Minerals.....16mo, mor. 3 00
Chester's Catalogue of Minerals.....8vo, paper, 1 00
Cloth, 1 25
* Crane's Gold and Silver.....8vo, 5 00
Dana's First Appendix to Dana's New "System of Mineralogy"..Large 8vo, 1 00
Dana's Second Appendix to Dana's New "System of Mineralogy."
Large 8vo,
Manual of Mineralogy and Petrography.....12mo, 2 00
Minerals and How to Study Them.....12mo, 1 50
System of Mineralogy.....Large 8vo, half leather, 12 50
Text-book of Mineralogy.....8vo, 4 00
Douglas's Untechnical Addresses on Technical Subjects.....12mo, 1 00
Eakle's Mineral Tables.....8vo, 1 25
Eckel's Stone and Clay Products Used in Engineering. (In Preparation).
Goesel's Minerals and Metals: A Reference Book.....16mo, mor. 3 00
Groth's Introduction to Chemical Crystallography (Marshall).....12mo, 1 25
* Hayes's Handbook for Field Geologists.....16mo, mor. 1 50
Iddings's Igneous Rocks.....8vo, 5 00
Rock Minerals.....8vo, 5 00
Johannsen's Determination of Rock-forming Minerals in Thin Sections. 8vo,
With Thumb Index 5 00
* Martin's Laboratory Guide to Qualitative Analysis with the Blow-pipe.....12mo, 60
Merrill's Non-metallic Minerals: Their Occurrence and Uses.....8vo, 4 00
Stones for Building and Decoration.....8vo, 5 00
* Penfield's Notes on Determinative Mineralogy and Record of Mineral Tests.
8vo, paper. 50
Tables of Minerals, Including the Use of Minerals and Statistics of Domestic Production.....8vo, 1 00
* Pirsson's Rocks and Rock Minerals.....12mo, 2 50
* Richards's Synopsis of Mineral Characters.....12mo, mor. 1 25
* Ries's Clays: Their Occurrence, Properties and Uses.....8vo, 5 00
* Ries and Leighton's History of the Clay-working Industry of the United States.....8vo, 2 50
* Tillman's Text-book of Important Minerals and Rocks.....8vo, 2 00
Washington's Manual of the Chemical Analysis of Rocks.....8vo, 2 00

MINING.

* Beard's Mine Gases and Explosions.....Large 12mo, 3 00
Boyd's Map of Southwest Virginia.....Pocket-book form, 2 00
* Crane's Gold and Silver.....8vo 5 00
* Index of Mining Engineering Literature.....8vo. 4 00
* 8vo, mor. 5 00
Douglas's Untechnical Addresses on Technical Subjects.....12mo, 1 00
Eissler's Modern High Explosives.....8vo. 4 00
Goesel's Minerals and Metals: A Reference Book.....16mo, mor. 3 00
Ihlseng's Manual of Mining.....8vo, 5 00
* Iles's Lead Smelting.....12mo, 2 50
Peele's Compressed Air Plant for Mines.....8vo. 3 00
Riemer's Shaft Sinking Under Difficult Conditions. (Corning and Peele).8vo, 3 00
* Weaver's Military Explosives.....8vo, 3 00
Wilson's Hydraulic and Placer Mining. 2d edition rewritten.....12mo, 2 50
Treatise on Practical and Theoretical Mine Ventilation.....12mo, 1 25

SANITARY SCIENCE.

Association of State and National Food and Dairy Departments, Hartford Meeting, 1906. ..... 8vo, $3 00
Jamestown Meeting, 1907. ..... 8vo, 3 00
* Bashore's Outlines of Practical Sanitation. 12mo, 1 25
Sanitation of a Country House. 12mo, 1 00
Sanitation of Recreation Camps and Parks. 12mo, 1 00
Folwell's Sewerage. (Designing, Construction, and Maintenance.) 8vo, 3 00
Water-supply Engineering. 8vo, 4 00
Fowler's Sewage Works Analyses. 12mo, 2 00
Fuertes's Water-filtration Works. 12mo, 2 50
Water and Public Health. 12mo, 1 50
Gerhard's Guide to Sanitary Inspections. 12mo, 1 50
* Modern Baths and Bath Houses. 8vo, 3 00
Sanitation of Public Buildings. 12mo, 1 50
Hazen's Clean Water and How to Get It. ..... Large 12mo, 1 50
Filtration of Public Water-supplies. 8vo, 3 00
Kinnicut, Winslow and Pratt's Purification of Sewage. (In Preparation.)
Leach's Inspection and Analysis of Food with Special Reference to State Control. 8vo, 7 50
Mason's Examination of Water. (Chemical and Bacteriological) 12mo, 1 25
Water-supply. (Considered principally from a Sanitary Standpoint). 8vo, 4 00
* Merriman's Elements of Sanitary Engineering. 8vo, 2 00
Ogden's Sewer Construction 8vo, 3 00
Sewer Design. 12mo, 2 00
Parsons's Disposal of Municipal Refuse. 8vo, 2 00
Prescott and Winslow's Elements of Water Bacteriology, with Special Reference to Sanitary Water Analysis. 12mo, 1 50
* Price's Handbook on Sanitation. 12mo, 1 50
Richards's Cost of Cleanness. 12mo, 1 00
Cost of Food. A Study in Dietaries. 12mo, 1 00
Cost of Living as Modified by Sanitary Science. 12mo, 1 00
Cost of Shelter. 12mo, 1 00
* Richards and Williams's Dietary Computer. 8vo, 1 50
Richards and Woodman's Air, Water, and Food from a Sanitary Standpoint. 8vo, 2 00
* Richey's Plumbers', Steam-fitters', and Tinners' Edition (Building Mechanics' Ready Reference Series). ..... 16mo, mor. 1 50
Rideal's Disinfection and the Preservation of Food. 8vo, 4 00
Sewage and Bacterial Purification of Sewage. 8vo, 4 00
Soper's Air and Ventilation of Subways. 12mo, 2 50
Turneaure and Russell's Public Water-supplies. 8vo, 5 00
Venable's Garbage Crematories in America. 8vo, 2 00
Method and Devices for Bacterial Treatment of Sewage. 8vo, 3 00
Ward and Whipple's Freshwater Biology. (In Press.)
Whipple's Microscopy of Drinking-water. 8vo, 3 50
* Typhoid Fever. ..... Large 12mo, 3 00
Value of Pure Water. ..... Large 12mo, 1 00
Winslow's Systematic Relationship of the Coccaceæ. ..... Large 12mo, 2 50

MISCELLANEOUS.

Emmons's Geological Guide-book of the Rocky Mountain Excursion of the International Congress of Geologists. ..... Large 8vo. 1 50
Ferrel's Popular Treatise on the Winds. 8vo, 4 00
Fitzgerald's Boston Machinist. 18mo, 1 00
Gannett's Statistical Abstract of the World. 24mo, 75
Haines's American Railway Management. 12mo, 2 50
Hanausek's The Microscopy of Technical Products. (Winton). 8vo, 5 00

Jacobs's Betterment Briefs. A Collection of Published Papers on Organized Industrial Efficiency. 8vo, $3 50
Metcalfe's Cost of Manufactures, and the Administration of Workshops. . 8vo, 5 00
Putnam's Nautical Charts. 8vo, 2 00
Ricketts's History of Rensselaer Polytechnic Institute 1824–1894. Large 12mo, 3 00
Rotherham's Emphasised New Testament. . . . . Large 8vo, 2 00
Rust's Ex-Meridian Altitude, Azimuth and Star-finding Tables. 8vo, 5 00
Standage's Decoration of Wood, Glass, Metal, etc. 12mo, 2 00
Thome's Structural and Physiological Botany. (Bennett). 16mo, 2 25
Westermaier's Compendium of General Botany. (Schneider). 8vo, 2 00
Winslow's Elements of Applied Microscopy. 12mo, 1 50

HEBREW AND CHALDEE TEXT-BOOOKS.

Gesenius's Hebrew and Chaldee Lexicon to the Old Testament Scriptures. (Tregelles.) . . . . . Small 4to, half mor, 5 00
Green's Elementary Hebrew Grammar. 12mo, 1 25