

Date of Issue: June 1996

Affected Publication: Addendum to Chapter 11, "Physical Properties Data," Section 2, Part 2—Compressibility Factors for Hydrocarbons, Correlation of Vapor Pressure for Commercial Natural Gas Liquids of the *Manual of Petroleum Measurement Standards*, First Edition, December 1994 (1st printing)

ERRATA

Page 22, mid-page, correct the following code:

Old code: $A = 6.4837D0$

Corrected code: $A = 6.4827D0$

Page 22, near the bottom of the page, correct the following code:

Old code: $A = 2.085371D1$

Corrected code: $A = 2.08537D1$

Page 23, Line 12, correct the following code:

Old code: $K = (C+D*RDEN) / 553.0D0 * 1.0D5$

Corrected code: $K = (C+D*RDEN) / 543.0D0 * 1.0D5$

Manual of Petroleum Measurement Standards

Chapter 11.2.2—Compressibility Factors for Hydrocarbons: 350–637 Relative Density (60°F/60°F) and –50°F to 140°F Metering Temperature

SECOND EDITION, OCTOBER 1986

REAFFIRMED, SEPTEMBER 2017



AMERICAN PETROLEUM INSTITUTE

Manual of Petroleum Measurement Standards

Chapter 11.2.2—Compressibility Factors for Hydrocarbons: 350–637 Relative Density (60°F/60°F) and –50°F to 140°F Metering Temperature

Measurement Coordination

SECOND EDITION, OCTOBER 1986

REAFFIRMED, SEPTEMBER 2017



AMERICAN PETROLEUM INSTITUTE

Nothing contained in any API publication is to be construed as granting any right, by implication or otherwise, for the manufacture, sale, or use in connection with any method, apparatus, or product covered by letters patent nor as indemnifying anyone from or against any liability for infringement of letters patent.

This publication may be used by anyone desiring to do so. The Institute hereby expressly disclaims any liability or responsibility for loss or damage resulting from its use; for the violation of any federal, state, or municipal regulation with which an API publication may conflict; or for the infringement of any patent resulting from the use of an API publication. Every effort has been made by the Institute to assure the accuracy and reliability of the data presented.

FOREWORD

This publication provides tables to correct hydrocarbon volumes metered under pressure to corresponding volumes at the equilibrium pressure for the metered temperature. The parallel publication in metric (SI) units is the *Manual of Petroleum Measurement Standards*, Chapter 11.2.2M.

The table presented in this volume is also available from API as a computer tape, along with a manual containing the text information in this publication.

Suggested revisions are invited and should be submitted to the director, Measurement Coordination Department, American Petroleum Institute, 1220 L Street, N.W., Washington, D.C. 20005.

COMMITTEE ON STATIC PETROLEUM MEASUREMENT WORKING GROUP ON COMPRESSIBILITY

F. P. Gielzecki (Retired)
Imperial Oil, Ltd.

K. M. Goin, Ph.D.
Cities Service Oil and Gas Corporation

R. A. Griffith (Chairman, Retired)
Texaco Trading and Transportation Company

R. B. Hall
Texas Eastern Transmission Company

J. A. Hamshar
Cities Service Oil and Gas Corporation

K. T. Liu, Ph.D.
Chevron Oil Field Research Company

M. A. Plummer, Ph.D.
Marathon Oil Company

J. Polowek
Interprovincial Pipe Line Ltd.

G. W. Singletary (Deceased)
Texas Eastern Transmission Company

G. W. Swinney (Retired)
Phillips Petroleum Company

CONTENTS

CHAPTER 11.2.2—COMPRESSIBILITY FACTORS FOR HYDROCARBONS: 0.350–0.637 RELATIVE DENSITY (60°F/60°F) AND –50°F TO 140°F METERING TEMPERATURE

	PAGE
11.2.2.1 Scope	1
11.2.2.2 History and Development	1
11.2.2.3 Type of Standard and Limits	1
11.2.2.4 Example Use of the Standard	1
11.2.2.5 Data Base	2
11.2.2.6 Basic Model	5
11.2.2.7 Uncertainty Analysis	6
11.2.2.8 Calculation Procedure	8
11.2.2.9 References	10
Table of Compressibility Factors for Hydrocarbons: 0.350–0.637 Relative Density (60°F/60°F) and –50°F to 140°F Metering Temperature	11
Text Tables	
1—Summary of Data Base	2
2—Data Mixture Compositions (Mole Percent)	4
3—Effect of Pressure on Compressibility Factors	6
4—Expected Frequency of Errors When Using Temperatures to the Nearest 0.25°C Versus the Nearest 0.5°F	6
Figures	
1—Limits of Data Base by Relative Density and Temperature	3
2—Uncertainties (95-Percent Confidence Level) in Volume Versus Temperature and Relative Density	7

Chapter 11—Physical Properties Data

SECTION 2—VOLUME CORRECTION FACTORS FOR METER PROVING AND HYDROCARBON COMPRESSIBILITY

11.2.2 Compressibility Factors for Hydrocarbons: 0.350–0.637 Relative Density (60°F/60°F) and –50°F to 140°F Metering Temperature

11.2.2.1 SCOPE

The purpose of this standard is to correct hydrocarbon volumes metered under pressure to the corresponding volumes at the equilibrium pressure for the metered temperature. This standard contains compressibility factors related to the meter temperature and relative density (60°F/60°F) of the metered material. The corresponding metric (SI) version is Chapter 11.2.2M.

11.2.2.2 HISTORY AND DEVELOPMENT

The previous API standard for hydrocarbon compressibility, Standard 1101, *Measurement of Petroleum Liquid Hydrocarbons by Positive Displacement Meter*, was developed from graphical correlations prepared in 1945. This standard was based on limited data with only a few points for pure fluids in the range from propane to pentane. No lighter mixtures and no effect of pressure on the compressibility factor were considered.

In 1981, the Committee on Static Petroleum Measurement formed a subcommittee, the Hydrocarbon Compressibility Group, to revise the compressibility tables of Standard 1101. As a result of an extensive literature survey, the data base found for the relative density portion of the table covers a broader range than that used in Standard 1101 but is lacking in data for unsaturated hydrocarbons. The data base was used to develop a mathematical model that includes the effect of pressure on the compressibility factor. The printed table produced from the model is the standard. This standard replaces the discontinued Standard 1101 and the first edition of Chapter 11.2.2, *Compressibility Factors for Hydrocarbons: 0.500–0.611 Relative Density Range and 20–128°F*.

11.2.2.3 TYPE OF STANDARD AND LIMITS

The actual standard is the printed table of 224 pages that follows this text. The increments used in the table are 0.5°F and 0.002 relative density. Interpolation to 0.001 relative density is allowed. Compressibilities are in the usual units of reciprocal pounds per square inch but are calculated from two terms, A and B , and the pressure difference from equilibrium, D_p . This is necessary to obtain the desired accuracy

in volume because of the important effect of pressure on the compressibility factor for light hydrocarbons. The range of the table is from –50°F to 140°F and from 0.350 to 0.637 relative density (60°F/60°F), for use with pressure differences above equilibrium from 0 to 2200 pounds per square inch.

The equation used to generate the table is given for those who wish to duplicate the table using their specific computer and language. Identical table information is available on a computer tape. The use of this computer tape to verify individually developed computer subroutines is highly recommended.

11.2.2.4 EXAMPLE USE OF THE STANDARD

In this standard, the compressibility factor (F) is used in the normal manner for volume correction (* denotes multiplication):

$$C_{pl} = V_e/V_m = 1/(1 - F * D_p)$$

Where:

C_{pl} = correction factor for pressure.

V_e = volume at the equilibrium (bubble point) pressure, P_e .

V_m = volume at the meter pressure, P_m .

$D_p = P_m - P_e$.

P_e and P_m may be in either pounds per square inch gage or pounds per square inch absolute, but both must be in the same units.

As an example, calculate the volume at equilibrium pressure of 1000 barrels (V_m) of a material with a relative density (60°F/60°F) of 0.5297 metered under a pressure of 500 pounds per square inch at a temperature of 55.1°F. The equilibrium pressure (P_e) for this material at 55.1°F is 45 pounds per square inch. The rounded relative density and temperature values of 0.530 and 55.0°F yield an A factor of 35,641 and a B factor of 5.516. The compressibility factor (F) is calculated as follows:

$$\begin{aligned} F &= 1/(A + D_p * B) \\ &= 1/[35,641 + (500 - 45) * 5.516] \\ &= 0.00002621 \end{aligned}$$

The value for F is rounded to the eighth decimal place, to the maximum of four significant digits.

Then,

$$C_{pl} = 1/[1.0 - 0.00002621 * (500 - 45)] \\ = 1.0121$$

The value for C_{pl} is rounded to the maximum of four decimal places.

$$V_e = V_m * C_{pl} \\ = 1000 * 1.0121 \\ = 1012 \text{ barrels}$$

The value for V_e is rounded to the nearest whole barrel.

For additional examples and more details, see Chapter 12.2, *Calculation of Liquid Petroleum Quantities Measured by Turbine or Displacement Meters*.

11.2.2.5 DATA BASE

An initial 2278 data points were obtained from the literature for pure fluid compounds and mixtures of light hydrocarbon liquids. These data were examined to eliminate data for gases, data with large errors, and data with other

abnormalities. The final data base used in this standard consists of 1724 data points from 13 sources (see Table 1).

The ranges of the experimental data were relative densities (60°F/60°F) from 0.3477 to 0.6312, temperatures from -28°F to 160°F, and pressure differences from 41 to 2036 pounds per square inch gage (see Figure 1). The actual ranges for the standard, as determined by an API survey, are relative densities (60°F/60°F) from 0.350 to 0.637, temperatures from -50°F to 140°F, and pressure differences from 0 to 2200 pounds per square inch gage. Hence, some portions of the standard represent extrapolated results. The uncertainty analysis presented in 11.2.2.7 may not be valid for these extrapolated portions. For the lower relative densities, 140°F is above the pseudocritical temperature at which liquid exists. For these fluids, the range is restricted to 96 percent of the pseudocritical temperature.

The data set contains 46 different mixtures of normal hydrocarbons from methane to decane. The compositions of the mixtures are listed in Table 2. The use of the standard for compositions not close to those in the data base represents an extrapolation whose results may have a greater uncertainty.

Table 1—Summary of Data Base

Sample	Relative Density (60°/60°F)	Temperature (°F)	Pressure (pounds per square inch gage)	Number of Data Points	References
NGPA/TP2	0.35–0.61	32–140	180–2000	455	12
NGPA/TP1	0.35–0.51	40–130	150–2000	218	21
Cal Tech	0.50–0.63	70–160	100–2000	157	9, 10, 13, 14, 15, 16, 17
Tulsa	0.35–0.51	-20–120	100–1500	542	1
Manley/Swift	0.508	-20–100	300–1600	13	8
Pope	0.356	-25–63	198–1788	36	11
Straty	0.356	-28–66	320–2200	67	18
Douslin	0.356	-13–32	460–2100	5	3
Dittmar	0.508	32–140	140–2120	33	2
Haynes	0.51–0.58	-28–80	242–2040	81	5, 6, 7
Ely	0.508	-28–100	121–2130	57	4
Thomas	0.508	32–122	121–1477	50	20
Teichmann	0.508	122–149	400–1465	10	19

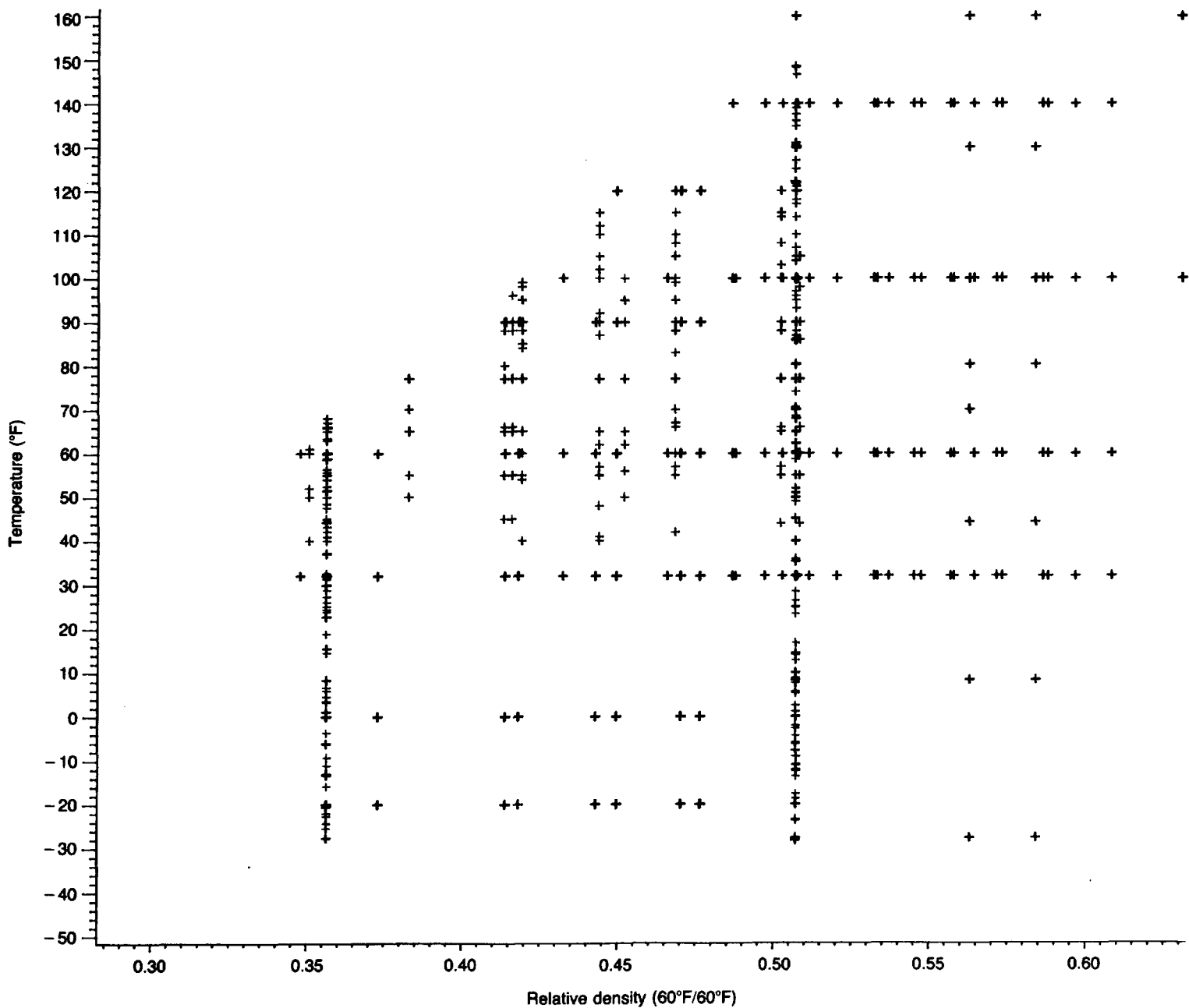


Figure 1—Limits of Data Base by Relative Density and Temperature

Table 2—Data Mixture Compositions (Mole Percent)

Sample	C ₁	C ₂	C ₃	nC ₄	iC ₄	nC ₅	iC ₅	C ₆	C ₇	C ₈	C ₉	C ₁₀
1	3.10	96.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.02	35.29	19.80	8.11	6.70	5.74	6.54	6.88	5.71	3.18	2.03
3	0.28	8.83	32.08	18.00	7.37	6.09	5.22	5.95	6.25	5.19	2.89	1.85
4	0.52	16.17	29.41	16.50	6.76	5.58	4.78	5.45	5.73	4.76	2.65	1.69
5	0.89	27.70	25.21	14.14	5.79	4.79	4.10	4.67	4.91	4.08	2.27	1.45
6	1.16	36.33	22.06	12.38	5.07	4.19	3.59	4.09	4.30	3.57	1.99	1.27
7	1.55	48.45	17.64	9.90	4.06	3.35	2.87	3.27	3.44	2.86	1.59	1.02
8	1.88	58.83	13.87	7.78	3.19	2.63	2.26	2.57	2.70	2.24	1.25	0.80
9	0.00	0.02	50.13	18.20	7.17	4.46	3.82	4.35	4.58	3.80	2.12	1.35
10	0.28	8.83	45.59	16.54	6.52	4.05	3.47	3.95	4.16	3.45	1.93	1.23
11	0.52	16.17	41.77	15.17	5.97	3.72	3.18	3.62	3.82	3.17	1.77	1.12
12	0.89	27.70	35.81	13.00	5.12	3.19	2.73	3.11	3.27	2.71	1.51	0.96
13	1.16	36.34	31.33	11.38	4.48	2.79	2.39	2.72	2.86	2.38	1.33	0.84
14	1.55	48.44	25.07	9.10	3.59	2.23	1.91	2.18	2.29	1.90	1.06	0.68
15	1.88	58.84	19.70	7.15	2.82	1.75	1.50	1.71	1.80	1.49	0.83	0.53
16	0.00	0.00	63.77	17.74	6.21	2.90	1.97	2.91	2.62	0.93	0.95	0.00
17	0.29	8.93	57.89	16.11	5.64	2.63	1.79	2.64	2.38	0.84	0.86	0.00
18	0.52	16.15	53.17	14.78	5.17	2.42	1.62	2.43	2.18	0.77	0.79	0.00
19	0.89	27.68	45.55	12.67	4.44	2.07	1.41	2.08	1.87	0.66	0.68	0.00
20	1.16	36.34	39.86	11.09	3.88	1.81	1.23	1.82	1.64	0.58	0.59	0.00
21	1.55	48.45	31.86	8.87	3.11	1.45	0.99	1.46	1.31	0.47	0.48	0.00
22	1.88	58.83	25.06	6.97	2.44	1.14	0.77	1.14	1.03	0.37	0.37	0.00
23	2.33	72.67	15.93	4.44	1.55	0.73	0.49	0.73	0.66	0.23	0.24	0.00
24	0.00	0.08	99.85	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	2.42	0.00	97.58	0	0	0	0	0	0	0	0	0
27	0.00	0.00	99.11	0.89	0	0	0	0	0	0	0	0
28	0.00	37.00	63.00	0.00	0	0	0	0	0	0	0	0
29	0.00	49.89	50.11	0.00	0	0	0	0	0	0	0	0
30	3.23	48.28	48.49	0.00	0	0	0	0	0	0	0	0
31	0.00	71.71	28.29	0.00	0	0	0	0	0	0	0	0
32	2.31	70.05	27.64	0.00	0	0	0	0	0	0	0	0
33	2.18	69.52	27.47	0.83	0	0	0	0	0	0	0	0
34	0.00	89.97	10.03	0.00	0	0	0	0	0	0	0	0
35	0.00	100.00	0.00	0.00	0	0	0	0	0	0	0	0
36	2.26	97.74	0.00	0.00	0	0	0	0	0	0	0	0
37	0.00	0.00	0.00	100.00	0	0	0	0	0	0	0	0
38	0.00	0.00	0.00	0.00	0	100	0	0	0	0	0	0
39	0.00	0.00	100.00	0.00	0	0	0	0	0	0	0	0
40	0.00	0.00	0.00	0.00	100	0	0	0	0	0	0	0
44	0.00	0.00	100.00	0.00	0	0	0	0	0	0	0	0
45	0.00	30.13	69.87	0.00	0	0	0	0	0	0	0	0
46	0.00	51.28	48.72	0.00	0	0	0	0	0	0	0	0
47	0.00	71.60	28.40	0.00	0	0	0	0	0	0	0	0
48	0.00	100.00	0.00	0.00	0	0	0	0	0	0	0	0
49	2.55	28.90	68.55	0.00	0	0	0	0	0	0	0	0
50	2.70	49.17	48.13	0.00	0	0	0	0	0	0	0	0
51	2.52	67.76	29.72	0.00	0	0	0	0	0	0	0	0
52	2.51	87.76	9.73	0.00	0	0	0	0	0	0	0	0
68	0.00	0.00	100.00	0.00	0	0	0	0	0	0	0	0
70	0	100	0	0	0	0	0	0	0	0	0	0
71	0	100	0	0	0	0	0	0	0	0	0	0
72	0	100	0	0	0	0	0	0	0	0	0	0
73	0	0	100	0	0	0	0	0	0	0	0	0
74	0	0	100	0	0	0	0	0	0	0	0	0
75	0	0	100	0	0	0	0	0	0	0	0	0
76	0	0	100	0	0	0	0	0	0	0	0	0
77	0	0	100	0	0	0	0	0	0	0	0	0
78	0	0	100	0	0	0	0	0	0	0	0	0
79	0	0	0	0	100	0	0	0	0	0	0	0
80	0	0	0	0	100	0	0	0	0	0	0	0
81	0	0	0	100	0	0	0	0	0	0	0	0
82	0	0	0	100	0	0	0	0	0	0	0	0

11.2.2.6 BASIC MODEL

In this standard, the compressibility factor (F) is used in the normal manner for volume correction:

$$C_{pl} = V_e/V_m = 1/(1 - F * D_p)$$

The effect of pressure on the compressibility factor (F) is not negligible for the range of conditions of the standard. Therefore, the pressure effect is included in the model by the use of two factors, A and B . The basic mathematical model used to develop this standard relates compressibility to relative density, temperature, and pressure difference as follows:

$$F = 1/(A + D_p * B)$$

$$\begin{aligned} A * 10^{-5} = & -2.1465891D-6 * TR^2 + 1.5774390D-5 * TR^2 * G^2 \\ & -1.0502139D-5 * TR^2 * G^4 + 2.8324481D-7 * TR^3 * G^6 \\ & -0.95495939D0 + 7.2900662D-8 * TR^3 * G^2 \\ & -2.7769343D-7 * TR^3 * G^4 + 0.03645838D0 * TR * G^2 \\ & -0.05110158D0 * TR * G + 0.00795529D0 * TR \\ & + 9.13114910D0 * G \end{aligned}$$

$$\begin{aligned} B * 10^{-5} = & -6.0357667D-10 * TR^2 + 2.2112678D-6 * TR * G^2 \\ & + 0.00088384D0 * G - 0.00204016D0 * G^2 \end{aligned}$$

Where:

D_p = pressure above the equilibrium bubble point pressure, in consistent units of pounds per square inch gage or pounds per square inch absolute.

DX = double-precision accuracy to the X th power of 10.

TR = temperature, in degrees Rankine.

G = relative density (60°F/60°F).

The use of higher powers of TR and G and other combinations of them did not improve the correlation.

11.2.2.7 UNCERTAINTY ANALYSIS

The uncertainty in the compressibility factor is ± 10.8 percent at the 95-percent confidence level. (The figure 10.8 is 2.0 times the standard deviation of 5.4 percent, where 2.0 is the two-tail probability value of a normal distribution for 1709 degrees of freedom at 95 percent.) These uncertainties represent the likelihood of the correlation's ability to reproduce the data for a specific sample. They do not indicate how accurate the data are. In many cases, the accuracy of the experimental data is unknown. The corresponding uncertainty in volume and in C_{pi} is ± 0.56 percent at the 95-percent confidence level, derived from a computed standard deviation of 0.28 percent, as described above.

These volumetric uncertainties depend on operating conditions, the type of material, and the effect of pressure on the compressibility factor. They may not be true for the extrapolated portions of the standard. The regions where various uncertainties can be expected, averaged for all pressures, are plotted in Figure 2. The uncertainty for specific materials and temperature conditions can be obtained from this figure. For samples at lower relative densities, the uncertainty increases as the mixture's critical temperature is approached. The correlation is valid for temperatures less than or equal to 96 percent of the pseudocritical temperature.

If the effect of pressure on compressibility were ignored, there would be greater uncertainties in the volume. To il-

lustrate this, the uncertainties in the calculated volume would range from 0.2 to 11 percent if a mean compressibility factor for 500 pounds per square inch, instead of the compressibility factor at the correct pressure, were used. This is from 2 to more than 100 times the desired uncertainty of 0.1 percent in the volume. Table 3 provides more details about the uncertainties due to ignoring the effect of pressure on compressibility at various conditions.

In situations where either Chapter 11.2.2M or Chapter 11.2.2 could be used to obtain corrected volumes, differences in C_{pi} can arise. Because of rounding, the increment in metered temperature of 0.25°C in Chapter 11.2.2M does not always yield C_{pi} values equal to those from Chapter 11.2.2, which uses 0.5°F increments. Table 4 shows the frequency of errors that can be expected when using temperature to the nearest 0.25°C, as opposed to the nearest 0.5°F. In addition, maximum differences in C_{pi} of ± 0.0001 can be expected (at a frequency of 0.4 percent) because of conversion of pressure from pounds per square inch to kilopascals. It is therefore recommended that in cases where one party ordinarily uses metric units and the other party ordinarily uses customary units, the use of either Chapter 11.2.2M or Chapter 11.2.2 should be agreed on before a transaction is made.

Table 3—Effect of Pressure on Compressibility Factors

Relative Density	Temperature (°F)	F Errors (%)		C_{pi} Errors (%)	
		$D_p = 1000$ psi	$D_p = 2000$ psi	$D_p = 1000$ psi	$D_p = 2000$ psi
0.360	-20	11.0	27.0	1.5	3.9
	68	26.0	52.0	5.4	11.1
0.636	-20	0.5	1.5	0.4	0.2
	140	5.1	13.8	0.9	2.5

NOTE: The values in the table are the errors when the compressibility factor at 500 psi, instead of the one at the measured pressure, is used.

Table 4—Expected Frequency of Errors When Using Temperatures to the Nearest 0.25°C Versus the Nearest 0.5°F

Absolute Difference in C_{pi}	Frequency (%)
$0.0010 \leq \text{Difference} \leq 0.0015$	0.06
Difference ≥ 0.0005	0.28
Difference ≥ 0.0001	2.9



Figure 2—Uncertainties (95-Percent Confidence Level) in Volume Versus Temperature and Relative Density

11.2.2.8 CALCULATION PROCEDURE

This procedure is recommended for computers with 11 or more significant digits. With some computers, this could require the use of double precision for all variables and constants, as shown in the following steps and example.

11.2.2.8.1 Initialize the Temperature and Relative Density

1. To verify the standard, increment relative density (G) by 0.002, with the 0.637 value as a special case. Ensure only three significant digits by:

$$G = \text{INT}(G * 1000.0\text{D}0 + 0.5\text{D}0) * 0.001\text{D}0$$

The INT intrinsic function returns an integer by truncating all digits to the right of the decimal point. Verify that G is between 0.350 and 0.637, and do not calculate if it is outside this range.

$$G = 0.\text{XXX}: 0.350 \leq G \leq 0.637$$

For individual point calculations, G may be rounded to the nearest 0.002 by:

$$G = \text{INT}(G * 1000.0\text{D}0/2.0\text{D}0 + 0.5\text{D}0) * 0.002\text{D}0$$

2. To verify the standard, increment temperature (TEMP) by 0.5°F and verify that it is between -50°F and 140°F and less than or equal to 96 percent of the pseudocritical temperature. The pseudocritical temperature is calculated from the relative density as follows:

$$\begin{aligned} \text{TC} &= 621.418\text{D}0 - 822.686\text{D}0 * G \\ &\quad + 1737.86\text{D}0 * G * G \\ \text{TMAX} &= \text{TC} * 0.96\text{D}0 \end{aligned}$$

Where:

TC = pseudocritical temperature, in degrees Rankine.

TMAX = maximum allowable temperature, in degrees Rankine.

$$\text{TEMP} = \text{XXX.X}^\circ\text{F}: -50^\circ\text{F} \leq \text{TEMP} \leq 140^\circ\text{F}$$

Ensure that TEMP is to the nearest 0.5°F, and convert to degrees Rankine as follows (this procedure is also valid for individual point calculations):

TX = INT(TEMP): that is, truncation.

$$\text{DIFF} = \text{TEMP} - \text{TX}$$

If $\text{DIFF} \geq 0.0$ then SIGN = 1.0 else SIGN = -1.0.

DIFF = ABS(DIFF): that is, the absolute value.

If $\text{DIFF} < 0.25$ then TEMP = TX.

If $0.25 \leq \text{DIFF} < 0.75$ then TEMP = TX + 0.5 * SIGN.

If $\text{DIFF} \geq 0.75$ then TEMP = TX + 1.0 * SIGN.

TR = TEMP + 459.7: that is, conversion to degrees Rankine.

Check that $\text{TR} \leq \text{TMAX}$.

For example, where temperature is 55.0°F and relative density is 0.530:

$$\text{TEMP} = 55.00000000000000$$

$$\text{TR} = 514.7000000000000 = \text{TEMP} + 459.7\text{D}0$$

$$\text{TC} = 673.5602266357421$$

NOTE: Results are shown to 16 digits for comparison purposes. Only 11 digits are required to generate the standard. Constants must use 11 digits, as indicated by the D exponent.

3. Calculate the powers of temperature:

$$\text{TR}2 = 264916.0900000000 = \text{TR} * \text{TR}$$

$$\text{TR}3 = 136352311.5230000 = \text{TR} * \text{TR}2$$

4. Calculate the powers of relative density:

$$G = 0.5300000000000000$$

$$G2 = 0.2809000000000000 = G * G$$

$$G4 = 0.7890480999999998\text{D}-01 = G2 * G2$$

$$G6 = 0.2216436112899999\text{D}-01 = G2 * G4$$

11.2.2.8.2 Calculate the A Factor

1. Calculate the terms and sum to A:

$$\begin{aligned}
 A &= 0.0000000000000000D+00 && \text{START A TERM} \\
 A &= -0.5686659912086190 && = A - 2.1465891D-6 * TR2 \\
 A &= 0.6051841314020503 && = A + 1.5774390D-5 * TR2 * G2 \\
 A &= 0.3856563052085592 && = A - 1.0502139D-5 * TR2 * G4 \\
 A &= 1.241667970820398 && = A + 2.8324481D-7 * TR3 * G6 \\
 A &= 0.2867085808203977 && = A - 0.95495939D0 \\
 A &= 3.078903394290068 && = A + 7.2900662D-8 * TR3 * G2 \\
 A &= 0.9124053693424172D-01 && = A - 2.7769343D-7 * TR3 * G4 \\
 A &= 5.362365044381641 && = A + 0.03645838D0 * TR * G2 \\
 A &= -8.577686065398357 && = A - 0.05110158D0 * TR * G \\
 A &= -4.483098302398357 && = A + 0.00795529D0 * TR \\
 A &= 0.3564107206016427 && = A + 9.13114910D0 * G
 \end{aligned}$$

2. Round and scale A to get the A factor:

$$\begin{aligned}
 A &= \text{INT}(A * 100000.0D0 + 0.5D0) \\
 &= 35641 \text{ (rounded to a whole number)}
 \end{aligned}$$

11.2.2.8.3 Calculate the B Factor

1. Calculate the powers of temperature, as in 11.2.2.8.1, Item 3.
2. Calculate the powers of relative density, as in 11.2.2.8.1, Item 4.
3. Calculate the terms and sum to B:

$$\begin{aligned}
 B &= 0.0000000000000000D+00 && \text{START B TERM} \\
 B &= -0.1598971714316203D-03 && = B - 6.0357667D-10 * TR2 \\
 B &= 0.1598062244161737D-03 && = B + 2.2112678D-6 * TR * G2 \\
 B &= 0.6282414244161736D-03 && = B + 0.00088384D0 * G \\
 B &= 0.5516048041617370D-04 && = B - 0.00204016D0 * G2
 \end{aligned}$$

4. Round and scale B to get the B factor:

$$\begin{aligned}
 B &= \text{INT}(B * 100000000.0D0 + 0.5D0) * 0.001D0 \\
 &= 5.516 \text{ (rounded to three significant decimal places)}
 \end{aligned}$$

11.2.2.8.4 Verify the Table

Because of the complexity of the calculations, each term in the table should be verified against the standard. A tape of the table is available for use in verifying that the computer procedure will reproduce the standard.

11.2.2.9 REFERENCES

1. Bdeir, M. H., "Surface Fitting of Compressibility and Thermal Expansion Data for Ethane-Propane Mixtures and Heavier Hydrocarbons," Thesis, University of Tulsa, Oklahoma, 1967.
2. Dittmar, P., Schulz, F., and Strese, G., "Druck/Dichte/Temperatur—Werte fuer Propan und Propylen," *Chemie Ing. Techn.*, June 1962, Vol. 34, No. 6, p. 437.
3. Douslin, D. R., and Harrison, R. H., "Pressure-Volume-Temperature Relations of Ethane," *J. Chem. Thermodynamics*, 1973, Vol. 5, No. 4, p. 491.
4. Ely, J. F., and Kobayashi, R., "Isochoric Pressure-Volume-Temperature Measurements for Compressed Liquid Propane," *J. Chem. Eng. Data*, 1979, Vol. 23, No. 3, p. 221.
5. Haynes, W. M., and Hiza, M. J., "Measurements of the Orthobaric Liquid Densities of Methane, Ethane, Propane, Isobutane, and Normal Butane," *J. Chem. Thermodynamics*, 1977, Vol. 9, No. 2, p. 179.
6. Haynes, W. M., "Measurements of Densities and Dielectric Constants of Liquid Isobutane from 120 to 300k at Pressures to 35 MPa," in press.
7. Haynes, W. M., "Measurements of Densities and Dielectric Constants of Liquid Normal Butane from 140 to 300k at Pressures to 35 MPa," in press.
8. Manley, D. B., and Swift, G. W., "Relative Volatility of Propane-Propene System by Integration of General Coexistence Equation," *J. Chem. & E. Data*, 1971, Vol. 16, No. 3.
9. Morris, W. M., Sage, B. H., and Lacey, W. N., "Volumetric Behavior of Isobutane," Technical Publication 1128, *Petroleum Technology* (American Institute of Mining and Metallurgical Engineers preprint), November 1939.
10. Olds, R. H., Reamer, H. H., Sage, B. H., and Lacey, W. N., "Phase Equilibria in Hydrocarbon Systems: Volumetric Behavior of *n*-Butane," *Ind. Eng. Chem.*, March 1944, Vol. 36, No. 3, pp. 282–284.
11. Pope, G. A., "Calculation of Argon, Methane and Ethane Virial Coefficients at Low Reduced Temperature Based on Data Obtained by Isochorically Coupled Burnett Experiments," Thesis, Rice University, Department of Chemical Engineering, Houston, Texas, July 1971.
12. Provence, T. K., Jr., Wiener, L. D., and Walton, D. K., "Liquid Densities of High-Ethane Raw Make Streams," Technical Publication TP-2, Natural Gas Processors Association, Tulsa, Oklahoma, February 1972.
13. Reamer, H. H., Sage, B. H., and Lacey, W. N., "Phase Equilibria in Hydrocarbon Systems: Volumetric Behavior of Propane," *Ind. Eng. Chem.*, 1942, Vol. 41, No. 3, p. 482.
14. Sage, B. H., et al., "Phase Equilibria in Hydrocarbon Systems: V. Pressure-Volume-Temperature Relations and Thermal Properties of Propane," *Ind. & Engr. Chem.*, November 1934, Vol. 26, No. 11, pp. 1218–1224.
15. Sage, B. H., et al., "Phase Equilibria in Hydrocarbon Systems: XIX. Thermodynamic Properties of *n*-Butane," *Ind. & Engr. Chem.*, October 1937, Vol. 29, No. 10, pp. 1188–1194.
16. Sage, B. H., and Lacey, W. N., "Phase Equilibrium in Hydrocarbon Systems: Thermodynamic Properties of Isobutane," *Ind. & Engr. Chem.*, June 1938, Vol. 30, No. 6, pp. 673–681.
17. Sage, B. H., and Lacey, W. N., "Phase Equilibria in Hydrocarbon Systems: Thermodynamic Properties of *n*-Pentane," *Ind. & Engr. Chem.*, June 1942, Vol. 34, No. 6, pp. 730–736.
18. Straty, G. C., and Tsumura, R., "PVT and Vapor Pressure Measurements on Ethane in the Critical Region," *J. Chem. Phys.*, 1974, Vol. 60, No. 8, p. 3109.
19. Teichmann, J., "Pressure-Density-Temperature Measurements of Liquid Propane and Benzene," Ph.D. dissertation, Ruhr University, Bochum, West Germany, 1978.
20. Thomas, R. H. P., and Harrison, R. H., "Pressure, Volume, Temperature Relations of Propane," *J. Chem. Eng. Data*, in press.
21. Tomlinson, J. R., "Liquid Densities of Ethane, Propane, and Ethane-Propane Mixtures," Technical Publication TP-1, Natural Gas Processors Association, Tulsa, Oklahoma, February 1971.

**API MANUAL OF PETROLEUM MEASUREMENT STANDARDS
CHAPTER 11.2.2**

**COMPRESSIBILITY FACTORS FOR HYDROCARBONS:
0.350–0.637 RELATIVE DENSITY (60°F/60°F) AND
– 50°F TO 140°F METERING TEMPERATURE**

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
		RELATIVE DENSITY (60/60 DEG F)															
TEMP DEG F		0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
-50.0	A	30326	30540	30764	30997	31239	31491	31751	32020	32299	32586	32882	33186	33500	33822	34152	34491
	B	6.909	6.927	6.943	6.959	6.974	6.988	7.001	7.013	7.024	7.034	7.044	7.052	7.060	7.066	7.072	7.077
-49.5	A	30170	30384	30606	30838	31079	31330	31589	31857	32134	32420	32715	33018	33330	33651	33981	34319
	B	6.898	6.916	6.932	6.948	6.963	6.977	6.990	7.003	7.014	7.024	7.034	7.043	7.050	7.057	7.063	7.068
-49.0	A	30015	30228	30449	30680	30920	31169	31427	31694	31970	32255	32548	32851	33162	33481	33810	34147
	B	6.887	6.905	6.921	6.937	6.953	6.967	6.980	6.993	7.004	7.015	7.024	7.033	7.041	7.048	7.054	7.059
-48.5	A	29861	30072	30292	30522	30761	31008	31265	31531	31806	32090	32382	32683	32993	33312	33639	33975
	B	6.875	6.893	6.911	6.927	6.942	6.956	6.970	6.982	6.994	7.005	7.015	7.024	7.032	7.039	7.045	7.050
-48.0	A	29706	29916	30136	30364	30602	30848	31104	31369	31642	31925	32216	32516	32825	33142	33468	33803
	B	6.864	6.882	6.900	6.916	6.931	6.946	6.959	6.972	6.984	6.995	7.005	7.014	7.022	7.030	7.036	7.041
-47.5	A	29552	29761	29979	30206	30443	30688	30943	31207	31479	31760	32051	32349	32657	32973	33298	33632
	B	6.853	6.871	6.889	6.905	6.921	6.935	6.949	6.962	6.974	6.985	6.995	7.004	7.013	7.020	7.027	7.033
-47.0	A	29399	29606	29823	30049	30285	30529	30782	31045	31316	31596	31885	32183	32490	32805	33128	33461
	B	6.841	6.860	6.877	6.894	6.910	6.925	6.939	6.952	6.964	6.975	6.985	6.995	7.003	7.011	7.018	7.024
-46.5	A	29245	29452	29667	29892	30126	30370	30622	30883	31153	31433	31720	32017	32322	32636	32959	33290
	B	6.830	6.849	6.866	6.883	6.899	6.914	6.928	6.941	6.954	6.965	6.976	6.985	6.994	7.002	7.009	7.015
-46.0	A	29092	29297	29512	29736	29969	30211	30462	30722	30991	31269	31556	31851	32156	32468	32790	33120
	B	6.819	6.837	6.855	6.872	6.888	6.904	6.918	6.931	6.944	6.955	6.966	6.976	6.984	6.992	7.000	7.006
-45.5	A	28939	29143	29357	29580	29811	30052	30302	30561	30829	31106	31392	31686	31989	32301	32621	32950
	B	6.807	6.826	6.844	6.861	6.878	6.893	6.907	6.921	6.933	6.945	6.956	6.966	6.975	6.983	6.990	6.997
-45.0	A	28787	28990	29202	29424	29654	29894	30143	30401	30668	30943	31228	31521	31823	32133	32453	32780
	B	6.796	6.815	6.833	6.850	6.867	6.882	6.897	6.910	6.923	6.935	6.946	6.956	6.965	6.974	6.981	6.988
-44.5	A	28635	28837	29048	29268	29498	29736	29984	30241	30506	30781	31064	31356	31657	31967	32285	32611
	B	6.784	6.804	6.822	6.839	6.856	6.871	6.886	6.900	6.913	6.925	6.936	6.946	6.956	6.964	6.972	6.979
-44.0	A	28483	28684	28894	29113	29341	29579	29825	30081	30345	30619	30901	31192	31492	31800	32117	32442
	B	6.773	6.792	6.811	6.828	6.845	6.861	6.876	6.890	6.903	6.915	6.926	6.937	6.946	6.955	6.963	6.969
-43.5	A	28331	28531	28740	28958	29185	29421	29667	29921	30185	30457	30738	31028	31326	31634	31949	32274
	B	6.761	6.781	6.799	6.817	6.834	6.850	6.865	6.879	6.892	6.905	6.916	6.927	6.937	6.945	6.953	6.960
-43.0	A	28180	28378	28586	28803	29029	29264	29509	29762	30024	30295	30575	30864	31162	31468	31782	32106
	B	6.750	6.769	6.788	6.806	6.823	6.839	6.854	6.869	6.882	6.895	6.906	6.917	6.927	6.936	6.944	6.951
-42.5	A	28029	28226	28433	28649	28874	29108	29351	29603	29864	30134	30413	30701	30997	31302	31616	31938
	B	6.738	6.758	6.777	6.795	6.812	6.828	6.844	6.858	6.872	6.884	6.896	6.907	6.917	6.926	6.935	6.942

TEMP DEG F	COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
	RELATIVE DENSITY (60/60 DEG F)										0.370	0.372	0.374	0.376	0.378	0.380
-42.0 A	0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
	B	27879	28075	28280	28495	28719	28952	29194	29445	29705	29974	30251	30538	30833	31137	31449
-41.5 A	6.726	6.746	6.765	6.784	6.801	6.817	6.833	6.848	6.861	6.874	6.886	6.897	6.907	6.917	6.925	6.933
	B	27728	27923	28127	28341	28564	28796	29037	29286	29545	29813	30090	30375	30669	30972	31283
-41.0 A	6.715	6.735	6.754	6.772	6.790	6.807	6.822	6.837	6.851	6.864	6.876	6.887	6.898	6.907	6.916	6.923
	B	27578	27772	27975	28188	28409	28640	28880	29129	29386	29653	29928	30213	30506	30807	31118
-40.5 A	6.703	6.723	6.743	6.761	6.779	6.796	6.811	6.826	6.841	6.854	6.866	6.877	6.888	6.898	6.906	6.914
	B	27429	27621	27823	28035	28255	28485	28723	28971	29228	29493	29768	30051	30343	30643	30952
-40.0 A	6.691	6.712	6.731	6.750	6.768	6.785	6.801	6.816	6.830	6.843	6.856	6.867	6.878	6.888	6.897	6.905
	B	27279	27471	27672	27882	28101	28330	28567	28814	29069	29334	29607	29889	30180	30479	30787
-39.5 A	6.679	6.700	6.720	6.739	6.757	6.774	6.790	6.805	6.820	6.833	6.846	6.857	6.868	6.878	6.887	6.895
	B	27130	27321	27520	27729	27948	28175	28411	28657	28911	29175	29447	29728	30017	30316	30623
-39.0 A	6.668	6.688	6.708	6.727	6.745	6.763	6.779	6.794	6.809	6.823	6.835	6.847	6.858	6.868	6.878	6.886
	B	26981	27171	27369	27577	27794	28021	28256	28500	28754	29016	29287	29567	29855	30152	30458
-38.5 A	6.656	6.677	6.697	6.716	6.734	6.752	6.768	6.784	6.798	6.812	6.825	6.837	6.848	6.859	6.868	6.877
	B	26833	27021	27219	27426	27642	27867	28101	28344	28596	28857	29127	29406	29693	29990	30294
-38.0 A	6.644	6.665	6.685	6.705	6.723	6.741	6.757	6.773	6.788	6.802	6.815	6.827	6.839	6.849	6.859	6.867
	B	26685	26872	27068	27274	27489	27713	27946	28188	28439	28699	28968	29246	29532	29827	30131
-37.5 A	6.632	6.653	6.674	6.693	6.712	6.729	6.746	6.762	6.777	6.791	6.805	6.817	6.829	6.839	6.849	6.858
	B	26537	26723	26918	27123	27337	27560	27792	28033	28283	28542	28809	29086	29371	29665	29967
-37.0 A	6.620	6.641	6.662	6.682	6.700	6.718	6.735	6.751	6.767	6.781	6.794	6.807	6.819	6.829	6.839	6.848
	B	26390	26575	26769	26972	27185	27407	27638	27877	28126	28384	28651	28926	29210	29503	29804
-36.5 A	6.608	6.630	6.650	6.670	6.689	6.707	6.724	6.740	6.756	6.770	6.784	6.797	6.809	6.819	6.830	6.839
	B	26243	26426	26619	26822	27033	27254	27484	27723	27970	28227	28493	28767	29050	29342	29642
-36.0 A	6.596	6.618	6.639	6.659	6.678	6.696	6.713	6.730	6.745	6.760	6.774	6.786	6.798	6.810	6.820	6.829
	B	26096	26278	26470	26672	26882	27102	27330	27568	27815	28070	28335	28608	28890	29180	29480
-35.5 A	6.584	6.606	6.627	6.647	6.666	6.685	6.702	6.719	6.734	6.749	6.763	6.776	6.788	6.800	6.810	6.820
	B	25949	26131	26322	26522	26731	26950	27177	27414	27659	27914	28177	28449	28730	29020	29318
-35.0 A	6.572	6.594	6.615	6.636	6.655	6.673	6.691	6.708	6.724	6.739	6.753	6.766	6.778	6.790	6.800	6.810
	B	25803	25983	26173	26372	26580	26798	27024	27260	27504	27758	28020	28291	28571	28859	29156
-34.5 A	6.560	6.582	6.603	6.624	6.643	6.662	6.680	6.697	6.713	6.728	6.742	6.756	6.768	6.780	6.790	6.800
	B	25657	25836	26025	26223	26430	26646	26872	27106	27350	27602	27863	28133	28412	28699	28995
		6.548	6.570	6.592	6.612	6.632	6.651	6.669	6.686	6.702	6.717	6.732	6.745	6.758	6.770	6.781

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)										
TEMP DEG F		0.350	0.352	0.354	0.356	0.358	RELATIVE DENSITY (60/60 DEG F)					0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
-34.0	A	25512	25690	25877	26074	26280	26495	26720	26953	27195	27447	27707	27976	28253	28539	28834	29138					
	B	6.536	6.558	6.580	6.601	6.620	6.639	6.658	6.675	6.691	6.707	6.721	6.735	6.748	6.760	6.771	6.781					
-33.5	A	25366	25543	25730	25926	26131	26345	26568	26800	27041	27292	27551	27818	28095	28380	28674	28976					
	B	6.524	6.546	6.568	6.589	6.609	6.628	6.646	6.664	6.680	6.696	6.711	6.724	6.737	6.750	6.761	6.771					
-33.0	A	25221	25397	25583	25777	25981	26194	26416	26648	26888	27137	27395	27661	27937	28221	28514	28815					
	B	6.511	6.534	6.556	6.577	6.597	6.617	6.635	6.653	6.669	6.685	6.700	6.714	6.727	6.739	6.751	6.761					
-32.5	A	25077	25252	25436	25630	25832	26044	26265	26495	26734	26982	27239	27505	27779	28062	28354	28654					
	B	6.499	6.522	6.544	6.565	6.586	6.605	6.624	6.641	6.658	6.674	6.689	6.704	6.717	6.729	6.741	6.752					
-32.0	A	24933	25106	25290	25482	25684	25895	26115	26344	26582	26828	27084	27349	27622	27904	28195	28494					
	B	6.487	6.510	6.532	6.554	6.574	6.594	6.612	6.630	6.647	6.663	6.679	6.693	6.707	6.719	6.731	6.742					
-31.5	A	24789	24961	25143	25335	25535	25745	25964	26192	26429	26675	26929	27193	27465	27746	28035	28333					
	B	6.475	6.498	6.520	6.542	6.562	6.582	6.601	6.619	6.636	6.653	6.668	6.682	6.696	6.709	6.721	6.732					
-31.0	A	24645	24817	24998	25188	25387	25596	25814	26041	26277	26521	26775	27037	27309	27588	27877	28174					
	B	6.462	6.486	6.508	6.530	6.551	6.571	6.590	6.608	6.625	6.642	6.657	6.672	6.686	6.699	6.711	6.722					
-30.5	A	24502	24672	24852	25041	25240	25447	25664	25890	26125	26368	26621	26882	27152	27431	27718	28014					
	B	6.450	6.474	6.496	6.518	6.539	6.559	6.578	6.597	6.614	6.631	6.646	6.661	6.675	6.688	6.701	6.712					
-30.0	A	24359	24528	24707	24895	25092	25299	25515	25739	25973	26216	26467	26727	26996	27274	27560	27855					
	B	6.438	6.461	6.484	6.506	6.527	6.548	6.567	6.585	6.603	6.620	6.636	6.651	6.665	6.678	6.691	6.702					
-29.5	A	24216	24384	24562	24749	24945	25151	25366	25589	25822	26063	26314	26573	26841	27117	27403	27696					
	B	6.425	6.449	6.472	6.494	6.516	6.536	6.555	6.574	6.592	6.609	6.625	6.640	6.654	6.668	6.680	6.692					
-29.0	A	24074	24241	24418	24604	24799	25003	25217	25439	25671	25911	26161	26419	26686	26961	27245	27538					
	B	6.413	6.437	6.460	6.482	6.504	6.524	6.544	6.563	6.581	6.598	6.614	6.629	6.644	6.657	6.670	6.682					
-28.5	A	23932	24098	24273	24458	24653	24856	25068	25290	25520	25760	26008	26265	26531	26805	27088	27380					
	B	6.400	6.424	6.448	6.470	6.492	6.513	6.532	6.551	6.570	6.587	6.603	6.619	6.633	6.647	6.660	6.672					
-28.0	A	23790	23955	24130	24313	24507	24709	24920	25141	25370	25608	25856	26112	26376	26650	26932	27222					
	B	6.388	6.412	6.436	6.458	6.480	6.501	6.521	6.540	6.558	6.576	6.592	6.608	6.623	6.637	6.650	6.662					
-27.5	A	23648	23813	23986	24169	24361	24562	24772	24992	25220	25458	25704	25959	26222	26495	26776	27065					
	B	6.375	6.400	6.423	6.446	6.468	6.489	6.509	6.529	6.547	6.565	6.581	6.597	6.612	6.626	6.639	6.652					
-27.0	A	23507	23670	23843	24025	24216	24416	24625	24843	25071	25307	25552	25806	26069	26340	26620	26908					
	B	6.363	6.387	6.411	6.434	6.456	6.477	6.498	6.517	6.536	6.554	6.570	6.586	6.602	6.616	6.629	6.642					
-26.5	A	23367	23529	23700	23881	24071	24270	24478	24695	24921	25157	25401	25654	25915	26185	26464	26752					
	B	6.350	6.375	6.399	6.422	6.444	6.466	6.486	6.506	6.524	6.542	6.559	6.576	6.591	6.605	6.619	6.632					

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
		RELATIVE DENSITY (60/60 DEG F)															
TEMP DEG F		0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
-26.0	A	23226	23387	23557	23737	23926	24124	24331	24547	24773	25007	25250	25502	25762	26031	26309	26595
	B	6.338	6.362	6.387	6.410	6.432	6.454	6.474	6.494	6.513	6.531	6.548	6.565	6.580	6.595	6.608	6.621
-25.5	A	23086	23246	23415	23594	23782	23979	24185	24400	24624	24857	25099	25350	25609	25877	26154	26440
	B	6.325	6.350	6.374	6.398	6.420	6.442	6.463	6.483	6.502	6.520	6.537	6.554	6.569	6.584	6.598	6.611
-25.0	A	22946	23105	23273	23451	23638	23834	24039	24253	24476	24708	24949	25199	25457	25724	26000	26284
	B	6.312	6.337	6.362	6.385	6.408	6.430	6.451	6.471	6.490	6.509	6.526	6.543	6.559	6.574	6.588	6.601
-24.5	A	22807	22965	23132	23308	23494	23689	23893	24106	24328	24559	24799	25048	25305	25571	25846	26129
	B	6.299	6.325	6.349	6.373	6.396	6.418	6.439	6.459	6.479	6.497	6.515	6.532	6.548	6.563	6.577	6.591
-24.0	A	22668	22825	22991	23166	23351	23545	23748	23960	24181	24411	24649	24897	25153	25418	25692	25974
	B	6.287	6.312	6.337	6.361	6.384	6.406	6.427	6.448	6.467	6.486	6.504	6.521	6.537	6.552	6.567	6.580
-23.5	A	22529	22685	22850	23024	23208	23401	23603	23814	24034	24262	24500	24747	25002	25266	25539	25820
	B	6.274	6.300	6.325	6.349	6.372	6.394	6.416	6.436	6.456	6.475	6.493	6.510	6.526	6.542	6.556	6.570
-23.0	A	22391	22545	22709	22883	23065	23257	23458	23668	23887	24115	24351	24597	24851	25114	25386	25666
	B	6.261	6.287	6.312	6.336	6.360	6.382	6.404	6.424	6.444	6.463	6.482	6.499	6.515	6.531	6.546	6.560
-22.5	A	22252	22406	22569	22741	22923	23114	23313	23522	23740	23967	24203	24447	24701	24962	25233	25512
	B	6.248	6.274	6.300	6.324	6.347	6.370	6.392	6.413	6.433	6.452	6.470	6.488	6.504	6.520	6.535	6.549
-22.0	A	22115	22267	22429	22600	22781	22971	23169	23377	23594	23820	24055	24298	24550	24811	25081	25359
	B	6.235	6.262	6.287	6.312	6.335	6.358	6.380	6.401	6.421	6.441	6.459	6.477	6.493	6.509	6.524	6.539
-21.5	A	21977	22129	22290	22460	22639	22828	23026	23233	23448	23673	23907	24149	24400	24660	24929	25206
	B	6.223	6.249	6.274	6.299	6.323	6.346	6.368	6.389	6.410	6.429	6.448	6.466	6.483	6.499	6.514	6.528
-21.0	A	21840	21990	22150	22320	22498	22686	22882	23088	23303	23527	23759	24001	24251	24510	24777	25053
	B	6.210	6.236	6.262	6.287	6.311	6.334	6.356	6.377	6.398	6.418	6.436	6.454	6.472	6.488	6.503	6.518
-20.5	A	21703	21853	22011	22180	22357	22544	22739	22944	23158	23381	23612	23853	24102	24360	24626	24901
	B	6.197	6.223	6.249	6.274	6.298	6.322	6.344	6.366	6.386	6.406	6.425	6.443	6.460	6.477	6.492	6.507
-20.0	A	21567	21715	21873	22040	22216	22402	22597	22801	23013	23235	23466	23705	23953	24210	24475	24749
	B	6.184	6.211	6.237	6.262	6.286	6.309	6.332	6.354	6.375	6.395	6.414	6.432	6.449	6.466	6.482	6.497
-19.5	A	21431	21578	21735	21901	22076	22261	22454	22657	22869	23090	23319	23557	23805	24060	24325	24597
	B	6.171	6.198	6.224	6.249	6.274	6.297	6.320	6.342	6.363	6.383	6.402	6.421	6.438	6.455	6.471	6.486
-19.0	A	21295	21441	21597	21762	21936	22120	22312	22514	22725	22945	23173	23410	23656	23911	24174	24446
	B	6.158	6.185	6.211	6.237	6.261	6.285	6.308	6.330	6.351	6.371	6.391	6.409	6.427	6.444	6.460	6.475
-18.5	A	21159	21305	21459	21623	21797	21979	22171	22372	22581	22800	23027	23264	23509	23762	24025	24295
	B	6.145	6.172	6.198	6.224	6.249	6.273	6.296	6.318	6.339	6.360	6.379	6.398	6.416	6.433	6.449	6.465

TEMP DEG F	COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH RELATIVE DENSITY (60/60 DEG F)															
	0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
-18.0 A	21024	21168	21322	21485	21657	21839	22030	22229	22438	22656	22882	23117	23361	23614	23875	24145
B	6.132	6.159	6.186	6.211	6.236	6.260	6.284	6.306	6.327	6.348	6.368	6.387	6.405	6.422	6.439	6.454
-17.5 A	20889	21033	21185	21347	21519	21699	21889	22087	22295	22512	22737	22971	23214	23466	23726	23995
B	6.118	6.146	6.173	6.199	6.224	6.248	6.271	6.294	6.316	6.336	6.356	6.375	6.394	6.411	6.428	6.443
-17.0 A	20755	20897	21049	21210	21380	21559	21748	21946	22152	22368	22593	22826	23068	23318	23578	23845
B	6.105	6.133	6.160	6.186	6.211	6.236	6.259	6.282	6.304	6.325	6.345	6.364	6.382	6.400	6.417	6.433
-16.5 A	20621	20762	20913	21073	21242	21420	21608	21805	22010	22225	22448	22680	22921	23171	23429	23696
B	6.092	6.120	6.147	6.173	6.199	6.223	6.247	6.270	6.292	6.313	6.333	6.353	6.371	6.389	6.406	6.422
-16.0 A	20487	20627	20777	20936	21104	21281	21468	21664	21868	22082	22304	22536	22775	23024	23281	23547
B	6.079	6.107	6.134	6.161	6.186	6.211	6.235	6.258	6.280	6.301	6.321	6.341	6.360	6.378	6.395	6.411
-15.5 A	20353	20492	20641	20799	20966	21143	21328	21523	21727	21939	22161	22391	22630	22878	23134	23398
B	6.066	6.094	6.121	6.148	6.173	6.198	6.222	6.245	6.268	6.289	6.310	6.330	6.349	6.367	6.384	6.400
-15.0 A	20220	20358	20506	20663	20829	21005	21189	21383	21586	21797	22018	22247	22485	22731	22986	23250
B	6.052	6.081	6.108	6.135	6.161	6.186	6.210	6.233	6.256	6.277	6.298	6.318	6.337	6.355	6.373	6.389
-14.5 A	20087	20224	20371	20527	20692	20867	21050	21243	21445	21655	21875	22103	22340	22585	22840	23102
B	6.039	6.068	6.095	6.122	6.148	6.173	6.198	6.221	6.244	6.265	6.286	6.307	6.326	6.344	6.362	6.378
-14.0 A	19955	20091	20237	20392	20556	20729	20912	21104	21304	21514	21732	21959	22195	22440	22693	22955
B	6.026	6.054	6.082	6.109	6.135	6.161	6.185	6.209	6.232	6.254	6.275	6.295	6.314	6.333	6.351	6.368
-13.5 A	19823	19958	20102	20256	20420	20592	20774	20964	21164	21373	21590	21816	22051	22295	22547	22808
B	6.012	6.041	6.069	6.096	6.123	6.148	6.173	6.197	6.220	6.242	6.263	6.283	6.303	6.322	6.340	6.357
-13.0 A	19691	19825	19969	20122	20284	20455	20636	20826	21024	21232	21448	21674	21908	22150	22401	22661
B	5.999	6.028	6.056	6.083	6.110	6.135	6.160	6.184	6.207	6.230	6.251	6.272	6.291	6.310	6.328	6.346
-12.5 A	19559	19693	19835	19987	20148	20319	20499	20687	20885	21092	21307	21531	21764	22006	22256	22515
B	5.985	6.015	6.043	6.070	6.097	6.123	6.148	6.172	6.195	6.218	6.239	6.260	6.280	6.299	6.317	6.335
-12.0 A	19428	19560	19702	19853	20013	20183	20362	20549	20746	20952	21166	21389	21621	21862	22111	22369
B	5.972	6.001	6.030	6.057	6.084	6.110	6.135	6.160	6.183	6.206	6.227	6.248	6.268	6.288	6.306	6.324
-11.5 A	19297	19429	19569	19719	19879	20047	20225	20411	20607	20812	21025	21248	21479	21718	21966	22223
B	5.958	5.988	6.017	6.044	6.071	6.097	6.123	6.147	6.171	6.194	6.215	6.237	6.257	6.276	6.295	6.313
-11.0 A	19167	19297	19437	19586	19744	19912	20088	20274	20469	20672	20885	21106	21336	21575	21822	22078
B	5.945	5.975	6.003	6.031	6.058	6.085	6.110	6.135	6.159	6.181	6.204	6.225	6.245	6.265	6.284	6.301
-10.5 A	19037	19166	19305	19453	19610	19777	19952	20137	20331	20534	20745	20965	21194	21432	21678	21933
B	5.931	5.961	5.990	6.018	6.046	6.072	6.098	6.122	6.146	6.169	6.192	6.213	6.234	6.253	6.272	6.290

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
		RELATIVE DENSITY (60/60 DEG F)															
TEMP DEG F		0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
-10.0	A	18907	19035	19173	19320	19476	19642	19817	20000	20193	20395	20605	20825	21053	21289	21535	21788
	B	5.918	5.948	5.977	6.005	6.033	6.059	6.085	6.110	6.134	6.157	6.180	6.201	6.222	6.242	6.261	6.279
-9.5	A	18777	18905	19041	19188	19343	19508	19681	19864	20056	20257	20466	20685	20912	21147	21391	21644
	B	5.904	5.934	5.964	5.992	6.020	6.046	6.072	6.097	6.122	6.145	6.168	6.189	6.210	6.230	6.250	6.268
-9.0	A	18648	18775	18910	19056	19210	19374	19546	19728	19919	20119	20327	20545	20771	21005	21249	21500
	B	5.891	5.921	5.950	5.979	6.007	6.033	6.060	6.085	6.109	6.133	6.156	6.177	6.198	6.219	6.238	6.257
-8.5	A	18519	18645	18780	18924	19077	19240	19412	19593	19782	19981	20189	20405	20630	20864	21106	21357
	B	5.877	5.907	5.937	5.966	5.993	6.021	6.047	6.072	6.097	6.121	6.143	6.166	6.187	6.207	6.227	6.245
-8.0	A	18391	18515	18649	18792	18945	19107	19277	19457	19646	19844	20051	20266	20490	20723	20964	21214
	B	5.863	5.894	5.923	5.952	5.980	6.008	6.034	6.060	6.084	6.108	6.131	6.154	6.175	6.196	6.215	6.234
-7.5	A	18263	18386	18519	18661	18813	18974	19144	19322	19510	19707	19913	20127	20350	20582	20823	21071
	B	5.849	5.880	5.910	5.939	5.967	5.995	6.021	6.047	6.072	6.096	6.119	6.142	6.163	6.184	6.204	6.223
-7.0	A	18135	18258	18389	18531	18681	18841	19010	19188	19375	19571	19775	19989	20211	20442	20681	20929
	B	5.836	5.867	5.897	5.926	5.954	5.982	6.008	6.034	6.059	6.084	6.107	6.130	6.151	6.172	6.192	6.212
-6.5	A	18008	18129	18260	18400	18550	18709	18877	19054	19240	19435	19638	19851	20072	20302	20540	20787
	B	5.822	5.853	5.883	5.912	5.941	5.969	5.996	6.022	6.047	6.071	6.095	6.118	6.139	6.160	6.181	6.200
-6.0	A	17881	18001	18131	18270	18419	18577	18744	18920	19105	19299	19502	19713	19933	20162	20400	20646
	B	5.808	5.839	5.870	5.899	5.928	5.956	5.983	6.009	6.034	6.059	6.083	6.105	6.128	6.149	6.169	6.189
-5.5	A	17754	17873	18002	18141	18289	18445	18611	18787	18971	19164	19365	19576	19795	20023	20260	20504
	B	5.794	5.826	5.856	5.886	5.915	5.943	5.970	5.996	6.022	6.046	6.070	6.093	6.116	6.137	6.158	6.177
-5.0	A	17627	17746	17874	18012	18158	18314	18479	18653	18837	19029	19229	19439	19657	19884	20120	20364
	B	5.780	5.812	5.842	5.872	5.901	5.929	5.957	5.983	6.009	6.034	6.058	6.081	6.104	6.125	6.146	6.166
-4.5	A	17501	17619	17746	17883	18028	18183	18348	18521	18703	18894	19094	19303	19520	19746	19980	20223
	B	5.766	5.798	5.829	5.859	5.888	5.916	5.944	5.971	5.996	6.021	6.046	6.069	6.092	6.113	6.134	6.154
-4.0	A	17376	17492	17619	17754	17899	18053	18216	18388	18570	18760	18959	19166	19383	19608	19841	20083
	B	5.752	5.784	5.815	5.845	5.875	5.903	5.931	5.958	5.984	6.009	6.033	6.057	6.080	6.101	6.123	6.143
-3.5	A	17250	17366	17491	17626	17770	17923	18085	18256	18437	18626	18824	19031	19246	19470	19703	19944
	B	5.738	5.770	5.802	5.832	5.861	5.890	5.918	5.945	5.971	5.996	6.021	6.045	6.068	6.090	6.111	6.131
-3.0	A	17125	17240	17364	17498	17641	17793	17954	18125	18304	18492	18689	18895	19110	19333	19564	19804
	B	5.724	5.757	5.788	5.818	5.848	5.877	5.905	5.932	5.958	5.984	6.009	6.032	6.055	6.078	6.099	6.120
-2.5	A	17000	17114	17238	17370	17512	17664	17824	17993	18172	18359	18555	18760	18974	19196	19426	19666
	B	5.710	5.743	5.774	5.805	5.835	5.864	5.892	5.919	5.946	5.971	5.996	6.020	6.043	6.066	6.087	6.108

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
		RELATIVE DENSITY (60/60 DEG F)															
TEMP		0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
DEG F																	
-2.0	A	16876	16989	17111	17243	17384	17535	17694	17862	18040	18226	18421	18625	18838	19059	19289	19527
	B	5.696	5.729	5.760	5.791	5.821	5.850	5.879	5.906	5.933	5.959	5.984	6.008	6.031	6.054	6.075	6.096
-1.5	A	16752	16864	16986	17116	17257	17406	17564	17732	17908	18094	18288	18491	18703	18923	19152	19389
	B	5.682	5.715	5.747	5.778	5.808	5.837	5.865	5.893	5.920	5.946	5.971	5.995	6.019	6.042	6.064	6.085
-1.0	A	16628	16740	16860	16990	17129	17278	17435	17602	17777	17962	18155	18357	18568	18787	19015	19251
	B	5.668	5.701	5.733	5.764	5.794	5.824	5.852	5.880	5.907	5.933	5.959	5.983	6.007	6.030	6.052	6.073
-0.5	A	16505	16615	16735	16864	17002	17150	17306	17472	17647	17830	18022	18223	18433	18652	18878	19114
	B	5.654	5.687	5.719	5.750	5.781	5.810	5.839	5.867	5.894	5.920	5.946	5.971	5.995	6.018	6.040	6.061
0.0	A	16382	16491	16610	16738	16875	17022	17178	17342	17516	17699	17890	18090	18299	18516	18742	18977
	B	5.640	5.673	5.705	5.736	5.767	5.797	5.826	5.854	5.881	5.908	5.933	5.958	5.982	6.006	6.028	6.050
0.5	A	16259	16368	16486	16613	16749	16895	17049	17213	17386	17568	17758	17957	18165	18382	18607	18840
	B	5.626	5.659	5.691	5.723	5.753	5.783	5.813	5.841	5.868	5.895	5.921	5.946	5.970	5.993	6.016	6.038
1.0	A	16137	16245	16361	16488	16623	16768	16922	17085	17256	17437	17627	17825	18032	18247	18471	18704
	B	5.611	5.645	5.677	5.709	5.740	5.770	5.799	5.828	5.855	5.882	5.908	5.933	5.958	5.981	6.004	6.026
1.5	A	16015	16122	16238	16363	16498	16641	16794	16956	17127	17307	17495	17693	17899	18113	18337	18568
	B	5.597	5.631	5.663	5.695	5.726	5.756	5.786	5.814	5.842	5.869	5.895	5.921	5.945	5.969	5.992	6.014
2.0	A	15894	15999	16114	16239	16372	16515	16667	16828	16998	17177	17365	17561	17766	17980	18202	18433
	B	5.583	5.616	5.649	5.681	5.713	5.743	5.773	5.801	5.829	5.856	5.883	5.908	5.933	5.957	5.980	6.002
2.5	A	15772	15877	15991	16115	16247	16389	16540	16700	16870	17047	17234	17430	17634	17847	18068	18298
	B	5.568	5.602	5.635	5.667	5.699	5.729	5.759	5.788	5.816	5.843	5.870	5.896	5.921	5.945	5.968	5.990
3.0	A	15651	15755	15868	15991	16123	16264	16414	16573	16741	16918	17104	17299	17502	17714	17934	18163
	B	5.554	5.588	5.621	5.654	5.685	5.716	5.746	5.775	5.803	5.831	5.857	5.883	5.908	5.932	5.956	5.978
3.5	A	15531	15634	15746	15868	15999	16139	16288	16446	16613	16790	16975	17168	17370	17581	17801	18029
	B	5.540	5.574	5.607	5.640	5.671	5.702	5.732	5.762	5.790	5.818	5.844	5.870	5.896	5.920	5.944	5.966
4.0	A	15411	15513	15624	15745	15875	16014	16162	16320	16486	16661	16845	17038	17239	17449	17668	17895
	B	5.525	5.559	5.593	5.626	5.657	5.689	5.719	5.748	5.777	5.805	5.832	5.858	5.883	5.908	5.931	5.954
4.5	A	15291	15392	15502	15622	15751	15890	16037	16193	16359	16533	16716	16908	17109	17318	17535	17761
	B	5.511	5.545	5.579	5.612	5.644	5.675	5.705	5.735	5.764	5.792	5.819	5.845	5.871	5.895	5.919	5.942
5.0	A	15171	15271	15381	15500	15628	15766	15912	16068	16232	16406	16588	16779	16978	17186	17403	17628
	B	5.496	5.531	5.565	5.598	5.630	5.661	5.692	5.721	5.750	5.778	5.806	5.832	5.858	5.883	5.907	5.930
5.5	A	15052	15151	15260	15378	15505	15642	15788	15942	16106	16278	16460	16650	16848	17055	17271	17495
	B	5.482	5.516	5.550	5.584	5.616	5.647	5.678	5.708	5.737	5.765	5.793	5.820	5.845	5.870	5.895	5.918

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
		RELATIVE DENSITY (60/60 DEG F)															
TEMP DEG F		0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
6.0	A	14933	15032	15140	15257	15383	15519	15663	15817	15980	16151	16332	16521	16719	16925	17140	17363
	B	5.467	5.502	5.536	5.569	5.602	5.634	5.665	5.695	5.724	5.752	5.780	5.807	5.833	5.858	5.882	5.906
6.5	A	14815	14912	15019	15136	15261	15396	15540	15692	15854	16025	16204	16392	16589	16795	17009	17231
	B	5.453	5.488	5.522	5.555	5.588	5.620	5.651	5.681	5.711	5.739	5.767	5.794	5.820	5.845	5.870	5.894
7.0	A	14697	14793	14899	15015	15139	15273	15416	15568	15729	15899	16077	16265	16460	16665	16878	17099
	B	5.438	5.473	5.508	5.541	5.574	5.606	5.637	5.668	5.697	5.726	5.754	5.781	5.807	5.833	5.858	5.882
7.5	A	14579	14675	14780	14894	15018	15151	15293	15444	15604	15773	15951	16137	16332	16535	16748	16968
	B	5.423	5.459	5.493	5.527	5.560	5.592	5.624	5.654	5.684	5.713	5.741	5.768	5.795	5.820	5.845	5.869
8.0	A	14462	14556	14661	14774	14897	15029	15170	15320	15480	15648	15824	16010	16204	16406	16618	16837
	B	5.409	5.444	5.479	5.513	5.546	5.578	5.610	5.641	5.670	5.699	5.728	5.755	5.782	5.808	5.833	5.857
8.5	A	14345	14439	14542	14655	14777	14908	15048	15197	15355	15522	15698	15883	16076	16278	16488	16707
	B	5.394	5.430	5.465	5.499	5.532	5.564	5.596	5.627	5.657	5.686	5.715	5.742	5.769	5.795	5.820	5.845
9.0	A	14228	14321	14423	14535	14656	14787	14926	15074	15232	15398	15573	15756	15949	16150	16359	16577
	B	5.379	5.415	5.450	5.484	5.518	5.550	5.582	5.613	5.644	5.673	5.702	5.729	5.756	5.783	5.808	5.833
9.5	A	14112	14204	14305	14416	14536	14666	14804	14952	15108	15274	15448	15630	15822	16022	16230	16447
	B	5.364	5.400	5.436	5.470	5.504	5.536	5.568	5.600	5.630	5.660	5.688	5.716	5.744	5.770	5.795	5.820
10.0	A	13996	14087	14188	14298	14417	14545	14683	14830	14985	15150	15323	15505	15695	15894	16102	16318
	B	5.350	5.386	5.421	5.456	5.490	5.522	5.555	5.586	5.616	5.646	5.675	5.703	5.731	5.757	5.783	5.808
10.5	A	13880	13970	14070	14179	14298	14425	14562	14708	14863	15026	15198	15379	15569	15767	15974	16189
	B	5.335	5.371	5.407	5.441	5.475	5.508	5.541	5.572	5.603	5.633	5.662	5.690	5.718	5.744	5.770	5.795
11.0	A	13765	13854	13953	14061	14179	14306	14442	14587	14740	14903	15074	15254	15443	15640	15846	16060
	B	5.320	5.356	5.392	5.427	5.461	5.494	5.527	5.558	5.589	5.619	5.649	5.677	5.705	5.732	5.758	5.783
11.5	A	13650	13738	13837	13944	14061	14187	14322	14465	14618	14780	14951	15130	15318	15514	15719	15932
	B	5.305	5.342	5.378	5.413	5.447	5.480	5.513	5.545	5.576	5.606	5.635	5.664	5.692	5.719	5.745	5.771
12.0	A	13535	13623	13720	13827	13943	14068	14202	14345	14497	14658	14827	15006	15193	15388	15592	15804
	B	5.290	5.327	5.363	5.398	5.433	5.466	5.499	5.531	5.562	5.592	5.622	5.651	5.679	5.706	5.732	5.758
12.5	A	13421	13508	13604	13710	13825	13949	14082	14225	14376	14536	14705	14882	15068	15263	15466	15677
	B	5.275	5.312	5.348	5.384	5.418	5.452	5.485	5.517	5.548	5.579	5.609	5.638	5.666	5.693	5.720	5.746
13.0	A	13307	13393	13489	13594	13708	13831	13963	14105	14255	14414	14582	14759	14944	15137	15340	15550
	B	5.260	5.297	5.334	5.369	5.404	5.438	5.471	5.503	5.535	5.565	5.595	5.624	5.653	5.680	5.707	5.733
13.5	A	13194	13279	13373	13477	13591	13713	13845	13985	14135	14293	14460	14636	14820	15013	15214	15424
	B	5.245	5.283	5.319	5.355	5.390	5.424	5.457	5.489	5.521	5.552	5.582	5.611	5.640	5.667	5.694	5.720

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
		RELATIVE DENSITY (60/60 DEG F)															
TEMP DEG F		0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
14.0	A	13080	13165	13259	13362	13474	13596	13726	13866	14015	14172	14338	14513	14696	14888	15089	15297
	B	5.230	5.268	5.304	5.340	5.375	5.409	5.443	5.475	5.507	5.538	5.568	5.598	5.627	5.654	5.682	5.708
14.5	A	12968	13051	13144	13246	13358	13479	13608	13747	13895	14051	14217	14391	14573	14764	14964	15172
	B	5.215	5.253	5.290	5.325	5.361	5.395	5.429	5.461	5.493	5.525	5.555	5.585	5.613	5.642	5.669	5.695
15.0	A	12855	12938	13030	13131	13242	13362	13491	13629	13776	13931	14096	14269	14451	14641	14839	15046
	B	5.200	5.238	5.275	5.311	5.346	5.381	5.414	5.447	5.480	5.511	5.542	5.571	5.600	5.628	5.656	5.683
15.5	A	12743	12825	12916	13017	13127	13246	13374	13511	13657	13812	13975	14147	14328	14518	14715	14921
	B	5.185	5.223	5.260	5.296	5.332	5.366	5.400	5.433	5.466	5.497	5.528	5.558	5.587	5.615	5.643	5.670
16.0	A	12631	12712	12803	12903	13012	13130	13257	13393	13538	13692	13855	14026	14206	14395	14592	14797
	B	5.170	5.208	5.245	5.282	5.317	5.352	5.386	5.419	5.452	5.484	5.514	5.545	5.574	5.602	5.630	5.657
16.5	A	12520	12600	12690	12789	12897	13014	13140	13276	13420	13573	13735	13906	14085	14272	14468	14673
	B	5.155	5.193	5.230	5.267	5.303	5.338	5.372	5.405	5.438	5.470	5.501	5.531	5.561	5.589	5.617	5.644
17.0	A	12409	12488	12577	12675	12782	12899	13024	13159	13302	13455	13616	13785	13963	14150	14345	14549
	B	5.139	5.178	5.215	5.252	5.288	5.323	5.358	5.391	5.424	5.456	5.487	5.518	5.547	5.576	5.604	5.632
17.5	A	12298	12377	12465	12562	12668	12784	12909	13042	13185	13336	13497	13665	13843	14029	14223	14425
	B	5.124	5.163	5.200	5.237	5.273	5.309	5.343	5.377	5.410	5.442	5.474	5.504	5.534	5.563	5.591	5.619
18.0	A	12188	12266	12353	12449	12555	12670	12793	12926	13068	13219	13378	13546	13722	13907	14101	14302
	B	5.109	5.148	5.185	5.222	5.259	5.294	5.329	5.363	5.396	5.428	5.460	5.491	5.521	5.550	5.578	5.606
18.5	A	12078	12155	12241	12337	12442	12556	12679	12811	12951	13101	13260	13427	13602	13786	13979	14180
	B	5.094	5.132	5.170	5.208	5.244	5.280	5.315	5.349	5.382	5.414	5.446	5.477	5.507	5.537	5.565	5.593
19.0	A	11969	12045	12130	12225	12329	12442	12564	12695	12835	12984	13142	13308	13483	13666	13858	14058
	B	5.078	5.117	5.155	5.193	5.229	5.265	5.300	5.334	5.368	5.401	5.432	5.464	5.494	5.523	5.552	5.580
19.5	A	11859	11935	12019	12113	12216	12328	12450	12580	12719	12867	13024	13189	13363	13546	13737	13936
	B	5.063	5.102	5.140	5.178	5.215	5.251	5.286	5.320	5.354	5.387	5.419	5.450	5.480	5.510	5.539	5.567
20.0	A	11751	11825	11909	12002	12104	12215	12336	12466	12604	12751	12907	13071	13245	13426	13616	13814
	B	5.048	5.087	5.125	5.163	5.200	5.236	5.271	5.306	5.340	5.373	5.405	5.436	5.467	5.497	5.526	5.554
20.5	A	11642	11716	11799	11891	11992	12103	12223	12351	12489	12635	12790	12954	13126	13307	13496	13693
	B	5.032	5.072	5.110	5.148	5.185	5.221	5.257	5.292	5.326	5.359	5.391	5.423	5.453	5.483	5.513	5.541
21.0	A	11534	11607	11689	11780	11881	11991	12110	12237	12374	12520	12674	12837	13008	13188	13376	13573
	B	5.017	5.056	5.095	5.133	5.170	5.207	5.242	5.277	5.311	5.345	5.377	5.409	5.440	5.470	5.499	5.528
21.5	A	11426	11498	11579	11670	11770	11879	11997	12124	12260	12404	12558	12720	12890	13069	13257	13452
	B	5.001	5.041	5.080	5.118	5.155	5.192	5.228	5.263	5.297	5.331	5.363	5.395	5.426	5.457	5.486	5.515

TEMP DEG F		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH RELATIVE DENSITY (60/60 DEG F)										F=1/(A+DP*B)					
		0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
22.0	A	11319	11390	11470	11560	11659	11767	11885	12011	12146	12290	12442	12603	12773	12951	13138	13333
	B	4.986	5.026	5.065	5.103	5.140	5.177	5.213	5.248	5.283	5.316	5.349	5.381	5.413	5.443	5.473	5.502
22.5	A	11212	11282	11362	11451	11549	11656	11773	11898	12032	12175	12327	12487	12656	12834	13019	13213
	B	4.970	5.010	5.049	5.088	5.126	5.162	5.199	5.234	5.269	5.302	5.335	5.368	5.399	5.430	5.460	5.489
23.0	A	11105	11175	11253	11342	11439	11546	11661	11786	11919	12061	12212	12372	12540	12716	12901	13094
	B	4.955	4.995	5.034	5.073	5.111	5.148	5.184	5.220	5.254	5.288	5.321	5.354	5.385	5.416	5.446	5.476
23.5	A	10999	11068	11146	11233	11330	11435	11550	11674	11806	11948	12098	12256	12424	12599	12783	12976
	B	4.939	4.979	5.019	5.058	5.096	5.133	5.169	5.205	5.240	5.274	5.307	5.340	5.372	5.403	5.433	5.462
24.0	A	10893	10961	11038	11125	11220	11325	11439	11562	11694	11835	11984	12142	12308	12483	12666	12857
	B	4.923	4.964	5.004	5.042	5.081	5.118	5.155	5.190	5.226	5.260	5.293	5.326	5.358	5.389	5.420	5.449
24.5	A	10787	10854	10931	11017	11112	11216	11329	11451	11582	11722	11870	12027	12193	12367	12549	12740
	B	4.908	4.948	4.988	5.027	5.066	5.103	5.140	5.176	5.211	5.246	5.279	5.312	5.344	5.376	5.406	5.436
25.0	A	10682	10748	10824	10909	11003	11107	11219	11340	11470	11609	11757	11913	12078	12251	12432	12622
	B	4.892	4.933	4.973	5.012	5.051	5.088	5.125	5.161	5.197	5.231	5.265	5.298	5.331	5.362	5.393	5.423
25.5	A	10577	10643	10718	10802	10895	10998	11109	11230	11359	11497	11644	11799	11963	12136	12316	12505
	B	4.876	4.917	4.957	4.997	5.035	5.073	5.110	5.147	5.182	5.217	5.251	5.284	5.317	5.348	5.379	5.409
26.0	A	10473	10538	10612	10695	10788	10889	11000	11120	11248	11386	11531	11686	11849	12021	12200	12388
	B	4.860	4.902	4.942	4.981	5.020	5.058	5.096	5.132	5.168	5.203	5.237	5.270	5.303	5.335	5.366	5.396
26.5	A	10369	10433	10506	10588	10680	10781	10891	11010	11138	11274	11419	11573	11735	11906	12085	12272
	B	4.845	4.886	4.926	4.966	5.005	5.043	5.081	5.117	5.153	5.188	5.223	5.256	5.289	5.321	5.352	5.383
27.0	A	10265	10328	10401	10482	10573	10674	10783	10901	11028	11163	11308	11461	11622	11792	11970	12156
	B	4.829	4.870	4.911	4.951	4.990	5.028	5.066	5.103	5.139	5.174	5.208	5.242	5.275	5.307	5.339	5.369
27.5	A	10162	10224	10296	10377	10467	10566	10675	10792	10918	11053	11196	11349	11509	11678	11855	12041
	B	4.813	4.855	4.895	4.935	4.975	5.013	5.051	5.088	5.124	5.160	5.194	5.228	5.261	5.294	5.325	5.356
28.0	A	10059	10120	10191	10271	10361	10459	10567	10683	10809	10943	11085	11237	11397	11565	11741	11926
	B	4.797	4.839	4.880	4.920	4.959	4.998	5.036	5.073	5.110	5.145	5.180	5.214	5.247	5.280	5.311	5.342
28.5	A	9956	10017	10087	10166	10255	10353	10460	10575	10700	10833	10975	11125	11284	11452	11628	11811
	B	4.781	4.823	4.864	4.905	4.944	4.983	5.021	5.058	5.095	5.131	5.166	5.200	5.233	5.266	5.298	5.329
29.0	A	9854	9914	9983	10062	10150	10247	10353	10467	10591	10724	10865	11015	11173	11339	11514	11697
	B	4.765	4.807	4.849	4.889	4.929	4.968	5.006	5.044	5.080	5.116	5.151	5.186	5.219	5.252	5.284	5.315
29.5	A	9752	9811	9880	9958	10045	10141	10246	10360	10483	10615	10755	10904	11061	11227	11401	11583
	B	4.749	4.792	4.833	4.874	4.914	4.953	4.991	5.029	5.066	5.102	5.137	5.171	5.205	5.238	5.270	5.302

TEMP DEG F	COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH RELATIVE DENSITY (60/60 DEG F)															
	0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
30.0 A	9650	9709	9777	9854	9940	10035	10140	10253	10375	10506	10646	10794	10950	11115	11289	11470
B	4.733	4.776	4.817	4.858	4.898	4.937	4.976	5.014	5.051	5.087	5.122	5.157	5.191	5.224	5.257	5.288
30.5 A	9549	9607	9674	9750	9836	9930	10034	10147	10268	10398	10537	10684	10840	11004	11176	11357
B	4.717	4.760	4.802	4.843	4.883	4.922	4.961	4.999	5.036	5.072	5.108	5.143	5.177	5.210	5.243	5.275
31.0 A	9448	9505	9572	9647	9732	9826	9929	10040	10161	10290	10428	10575	10730	10893	11065	11245
B	4.701	4.744	4.786	4.827	4.867	4.907	4.946	4.984	5.021	5.058	5.094	5.129	5.163	5.196	5.229	5.261
31.5 A	9348	9404	9470	9544	9628	9722	9824	9935	10054	10183	10320	10466	10620	10783	10953	11132
B	4.685	4.728	4.770	4.811	4.852	4.892	4.931	4.969	5.006	5.043	5.079	5.114	5.149	5.182	5.215	5.247
32.0 A	9248	9303	9368	9442	9525	9618	9719	9829	9948	10076	10212	10357	10511	10672	10842	11021
B	4.669	4.712	4.754	4.796	4.836	4.876	4.915	4.954	4.992	5.028	5.065	5.100	5.135	5.168	5.201	5.234
32.5 A	9148	9203	9267	9340	9423	9514	9615	9724	9842	9969	10105	10249	10402	10563	10732	10909
B	4.653	4.696	4.738	4.780	4.821	4.861	4.900	4.939	4.977	5.014	5.050	5.086	5.120	5.154	5.188	5.220
33.0 A	9049	9103	9166	9239	9320	9411	9511	9620	9737	9863	9998	10141	10293	10453	10622	10798
B	4.637	4.680	4.723	4.764	4.805	4.846	4.885	4.924	4.962	4.999	5.035	5.071	5.106	5.140	5.174	5.206
33.5 A	8950	9003	9066	9137	9218	9308	9407	9515	9632	9757	9892	10034	10185	10344	10512	10688
B	4.620	4.664	4.707	4.749	4.790	4.830	4.870	4.909	4.947	4.984	5.021	5.057	5.092	5.126	5.160	5.192
34.0 A	8851	8904	8966	9037	9117	9206	9304	9411	9527	9652	9785	9927	10077	10236	10403	10578
B	4.604	4.648	4.691	4.733	4.774	4.815	4.854	4.894	4.932	4.969	5.006	5.042	5.077	5.112	5.146	5.179
34.5 A	8753	8805	8866	8936	9016	9104	9202	9308	9423	9547	9680	9821	9970	10128	10294	10468
B	4.588	4.632	4.675	4.717	4.758	4.799	4.839	4.878	4.917	4.955	4.991	5.028	5.063	5.098	5.132	5.165
35.0 A	8655	8706	8767	8836	8915	9003	9099	9205	9319	9443	9574	9714	9863	10020	10185	10359
B	4.572	4.616	4.659	4.701	4.743	4.784	4.824	4.863	4.902	4.940	4.977	5.013	5.049	5.084	5.118	5.151
35.5 A	8558	8608	8668	8736	8814	8901	8997	9102	9216	9338	9469	9609	9757	9913	10077	10250
B	4.555	4.599	4.643	4.685	4.727	4.768	4.808	4.848	4.887	4.925	4.962	4.999	5.034	5.069	5.104	5.137
36.0 A	8461	8510	8569	8637	8714	8801	8896	9000	9113	9235	9365	9503	9650	9806	9970	10141
B	4.539	4.583	4.627	4.669	4.711	4.753	4.793	4.833	4.872	4.910	4.947	4.984	5.020	5.055	5.089	5.123
36.5 A	8364	8413	8471	8538	8615	8700	8795	8898	9010	9131	9261	9398	9545	9699	9862	10033
B	4.523	4.567	4.611	4.653	4.696	4.737	4.778	4.817	4.857	4.895	4.932	4.969	5.005	5.041	5.075	5.109
37.0 A	8268	8316	8373	8440	8515	8600	8694	8797	8908	9028	9157	9294	9439	9593	9755	9926
B	4.506	4.551	4.594	4.638	4.680	4.721	4.762	4.802	4.841	4.880	4.918	4.955	4.991	5.026	5.061	5.095
37.5 A	8172	8219	8276	8342	8417	8501	8594	8696	8806	8926	9053	9190	9335	9488	9649	9818
B	4.490	4.534	4.578	4.622	4.664	4.706	4.747	4.787	4.826	4.865	4.903	4.940	4.976	5.012	5.047	5.081

TEMP DEG F	COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH RELATIVE DENSITY (60/60 DEG F)															
	0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
38.0 A	8076	8123	8179	8244	8318	8401	8494	8595	8705	8823	8950	9086	9230	9382	9543	9712
B	4.473	4.518	4.562	4.606	4.648	4.690	4.731	4.771	4.811	4.850	4.888	4.925	4.962	4.998	5.033	5.067
38.5 A	7981	8027	8082	8146	8220	8303	8394	8495	8604	8722	8848	8983	9126	9278	9437	9605
B	4.457	4.502	4.546	4.589	4.632	4.674	4.715	4.756	4.796	4.835	4.873	4.910	4.947	4.983	5.018	5.053
39.0 A	7886	7931	7986	8049	8122	8204	8295	8395	8503	8620	8746	8880	9022	9173	9332	9499
B	4.440	4.485	4.530	4.573	4.616	4.658	4.700	4.741	4.780	4.820	4.858	4.896	4.933	4.969	5.004	5.039
39.5 A	7792	7836	7890	7953	8025	8106	8196	8295	8403	8519	8644	8777	8919	9069	9227	9394
B	4.424	4.469	4.513	4.557	4.600	4.643	4.684	4.725	4.765	4.804	4.843	4.881	4.918	4.954	4.990	5.025
40.0 A	7698	7741	7794	7857	7928	8008	8098	8196	8303	8418	8543	8675	8816	8965	9123	9288
B	4.407	4.452	4.497	4.541	4.584	4.627	4.669	4.710	4.750	4.789	4.828	4.866	4.903	4.940	4.975	5.010
40.5 A	7604	7647	7699	7761	7831	7911	8000	8097	8203	8318	8442	8574	8714	8862	9019	9184
B	4.390	4.436	4.481	4.525	4.568	4.611	4.653	4.694	4.734	4.774	4.813	4.851	4.889	4.925	4.961	4.996
41.0 A	7511	7553	7605	7665	7735	7814	7902	7999	8104	8218	8341	8472	8612	8759	8915	9079
B	4.374	4.419	4.465	4.509	4.552	4.595	4.637	4.678	4.719	4.759	4.798	4.836	4.874	4.911	4.947	4.982
41.5 A	7418	7459	7510	7570	7640	7718	7805	7901	8006	8119	8241	8371	8510	8657	8812	8975
B	4.357	4.403	4.448	4.493	4.536	4.579	4.621	4.663	4.704	4.744	4.783	4.821	4.859	4.896	4.932	4.968
42.0 A	7325	7366	7416	7476	7544	7622	7708	7803	7907	8020	8141	8271	8409	8555	8709	8872
B	4.340	4.386	4.432	4.476	4.520	4.563	4.606	4.647	4.688	4.728	4.768	4.806	4.844	4.881	4.918	4.953
42.5 A	7233	7273	7323	7381	7449	7526	7612	7706	7810	7921	8042	8171	8308	8453	8607	8769
B	4.324	4.370	4.415	4.460	4.504	4.547	4.590	4.632	4.673	4.713	4.753	4.791	4.829	4.867	4.903	4.939
43.0 A	7141	7181	7229	7287	7355	7431	7516	7610	7712	7823	7943	8071	8208	8352	8505	8666
B	4.307	4.353	4.399	4.444	4.488	4.531	4.574	4.616	4.657	4.698	4.737	4.776	4.815	4.852	4.889	4.925
43.5 A	7050	7089	7137	7194	7260	7336	7420	7513	7615	7725	7844	7972	8108	8252	8404	8564
B	4.290	4.337	4.382	4.427	4.472	4.515	4.558	4.600	4.642	4.682	4.722	4.761	4.800	4.837	4.874	4.910
44.0 A	6959	6997	7044	7101	7167	7241	7325	7417	7518	7628	7746	7873	8008	8151	8303	8462
B	4.273	4.320	4.366	4.411	4.456	4.499	4.542	4.585	4.626	4.667	4.707	4.746	4.785	4.823	4.860	4.896
44.5 A	6868	6906	6952	7008	7073	7147	7230	7322	7422	7531	7649	7775	7909	8051	8202	8360
B	4.256	4.303	4.349	4.395	4.439	4.483	4.526	4.569	4.610	4.651	4.692	4.731	4.770	4.808	4.845	4.881
45.0 A	6778	6815	6861	6916	6980	7053	7136	7227	7326	7435	7551	7677	7810	7952	8102	8259
B	4.239	4.286	4.333	4.378	4.423	4.467	4.510	4.553	4.595	4.636	4.676	4.716	4.755	4.793	4.830	4.867
45.5 A	6688	6724	6769	6824	6887	6960	7041	7132	7231	7338	7454	7579	7712	7853	8002	8159
B	4.222	4.270	4.316	4.362	4.407	4.451	4.494	4.537	4.579	4.620	4.661	4.701	4.740	4.778	4.816	4.852

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
		RELATIVE DENSITY (60/60 DEG F)															
TEMP DEG F		0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
46.0	A	6599	6634	6678	6732	6795	6867	6948	7037	7136	7243	7358	7482	7614	7754	7902	8059
	B	4.205	4.253	4.299	4.345	4.390	4.435	4.478	4.521	4.563	4.605	4.646	4.686	4.725	4.763	4.801	4.838
46.5	A	6509	6544	6588	6641	6703	6775	6855	6943	7041	7147	7262	7385	7516	7656	7803	7959
	B	4.188	4.236	4.283	4.329	4.374	4.419	4.462	4.505	4.548	4.589	4.630	4.670	4.710	4.748	4.786	4.823
47.0	A	6421	6455	6498	6550	6612	6682	6762	6850	6947	7052	7166	7288	7419	7558	7705	7860
	B	4.171	4.219	4.266	4.312	4.358	4.402	4.446	4.489	4.532	4.574	4.615	4.655	4.695	4.733	4.771	4.809
47.5	A	6332	6366	6408	6460	6521	6591	6669	6757	6853	6958	7071	7192	7322	7460	7607	7761
	B	4.154	4.202	4.249	4.296	4.341	4.386	4.430	4.474	4.516	4.558	4.599	4.640	4.679	4.718	4.757	4.794
48.0	A	6244	6277	6319	6370	6430	6499	6577	6664	6760	6864	6976	7097	7226	7363	7509	7662
	B	4.137	4.185	4.232	4.279	4.325	4.370	4.414	4.458	4.500	4.542	4.584	4.624	4.664	4.703	4.742	4.779
48.5	A	6157	6189	6230	6280	6340	6408	6486	6572	6666	6770	6882	7002	7130	7267	7411	7564
	B	4.120	4.168	4.216	4.262	4.308	4.353	4.398	4.442	4.484	4.527	4.568	4.609	4.649	4.688	4.727	4.765
49.0	A	6070	6101	6141	6191	6250	6318	6394	6480	6574	6676	6788	6907	7035	7171	7315	7466
	B	4.103	4.151	4.199	4.246	4.292	4.337	4.382	4.425	4.469	4.511	4.553	4.594	4.634	4.673	4.712	4.750
49.5	A	5983	6013	6053	6102	6160	6228	6304	6388	6482	6584	6694	6813	6940	7075	7218	7369
	B	4.086	4.134	4.182	4.229	4.275	4.321	4.365	4.409	4.453	4.495	4.537	4.578	4.619	4.658	4.697	4.735
50.0	A	5896	5926	5965	6014	6071	6138	6213	6297	6390	6491	6601	6719	6845	6979	7122	7272
	B	4.069	4.117	4.165	4.212	4.259	4.304	4.349	4.393	4.437	4.479	4.521	4.563	4.603	4.643	4.682	4.721
50.5	A	5810	5839	5878	5926	5983	6048	6123	6206	6298	6399	6508	6625	6751	6885	7026	7176
	B	4.051	4.100	4.148	4.195	4.242	4.288	4.333	4.377	4.421	4.464	4.506	4.547	4.588	4.628	4.667	4.706
51.0	A	5725	5753	5791	5838	5894	5959	6033	6116	6207	6307	6416	6532	6657	6790	6931	7080
	B	4.034	4.083	4.131	4.179	4.225	4.271	4.317	4.361	4.405	4.448	4.490	4.532	4.573	4.613	4.652	4.691
51.5	A	5639	5667	5704	5751	5806	5871	5944	6026	6117	6216	6324	6440	6564	6696	6836	6985
	B	4.017	4.066	4.114	4.162	4.209	4.255	4.300	4.345	4.389	4.432	4.474	4.516	4.557	4.598	4.637	4.676
52.0	A	5554	5582	5618	5664	5719	5783	5855	5937	6027	6125	6232	6347	6471	6602	6742	6889
	B	4.000	4.049	4.097	4.145	4.192	4.238	4.284	4.329	4.373	4.416	4.459	4.501	4.542	4.582	4.622	4.661
52.5	A	5470	5497	5532	5578	5632	5695	5767	5848	5937	6035	6141	6255	6378	6509	6648	6795
	B	3.982	4.032	4.080	4.128	4.175	4.222	4.267	4.312	4.357	4.400	4.443	4.485	4.526	4.567	4.607	4.646
53.0	A	5386	5412	5447	5492	5545	5608	5679	5759	5847	5945	6050	6164	6286	6416	6554	6701
	B	3.965	4.014	4.063	4.111	4.158	4.205	4.251	4.296	4.341	4.384	4.427	4.469	4.511	4.552	4.592	4.631
53.5	A	5302	5327	5362	5406	5459	5521	5591	5671	5758	5855	5960	6073	6194	6324	6461	6607
	B	3.947	3.997	4.046	4.094	4.142	4.188	4.234	4.280	4.324	4.368	4.411	4.454	4.495	4.536	4.577	4.616

TEMP DEG F	COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH RELATIVE DENSITY (60/60 DEG F)										F=1/(A+DP*B)					
	0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380
54.0 A	5219	5243	5277	5321	5373	5434	5504	5583	5670	5766	5870	5982	6103	6232	6369	6513
B	3.930	3.980	4.029	4.077	4.125	4.172	4.218	4.263	4.308	4.352	4.396	4.438	4.480	4.521	4.561	4.601
54.5 A	5136	5160	5193	5236	5287	5348	5417	5495	5582	5677	5780	5892	6012	6140	6276	6420
B	3.912	3.962	4.012	4.060	4.108	4.155	4.201	4.247	4.292	4.336	4.380	4.422	4.464	4.506	4.546	4.586
55.0 A	5053	5077	5109	5151	5202	5262	5331	5408	5494	5588	5691	5802	5922	6049	6184	6328
B	3.895	3.945	3.994	4.043	4.091	4.138	4.185	4.231	4.276	4.320	4.364	4.407	4.449	4.490	4.531	4.571
55.5 A	4971	4994	5026	5067	5118	5177	5245	5321	5407	5500	5603	5713	5832	5958	6093	6236
B	3.877	3.928	3.977	4.026	4.074	4.122	4.168	4.214	4.259	4.304	4.348	4.391	4.433	4.475	4.516	4.556
56.0 A	4889	4911	4943	4984	5033	5092	5159	5235	5320	5413	5514	5624	5742	5868	6002	6144
B	3.860	3.910	3.960	4.009	4.057	4.105	4.152	4.198	4.243	4.288	4.332	4.375	4.418	4.459	4.500	4.541
56.5 A	4808	4829	4860	4900	4949	5007	5074	5149	5233	5326	5427	5536	5653	5778	5911	6053
B	3.842	3.893	3.943	3.992	4.040	4.088	4.135	4.181	4.227	4.272	4.316	4.359	4.402	4.444	4.485	4.526
57.0 A	4727	4748	4778	4817	4866	4923	4989	5064	5147	5239	5339	5448	5564	5689	5821	5962
B	3.825	3.875	3.925	3.975	4.023	4.071	4.118	4.165	4.210	4.255	4.300	4.343	4.386	4.428	4.470	4.510
57.5 A	4646	4666	4696	4735	4783	4839	4905	4979	5062	5153	5252	5360	5476	5600	5732	5871
B	3.807	3.858	3.908	3.957	4.006	4.054	4.102	4.148	4.194	4.239	4.284	4.327	4.370	4.413	4.454	4.495
58.0 A	4566	4586	4615	4653	4700	4756	4821	4894	4976	5067	5166	5273	5388	5511	5642	5781
B	3.789	3.840	3.891	3.940	3.989	4.037	4.085	4.132	4.178	4.223	4.268	4.311	4.355	4.397	4.439	4.480
58.5 A	4486	4505	4534	4571	4618	4673	4737	4810	4891	4981	5079	5186	5300	5423	5553	5692
B	3.772	3.823	3.873	3.923	3.972	4.020	4.068	4.115	4.161	4.207	4.251	4.296	4.339	4.381	4.423	4.465
59.0 A	4407	4425	4453	4490	4536	4591	4654	4726	4807	4896	4994	5099	5213	5335	5465	5603
B	3.754	3.805	3.856	3.906	3.955	4.003	4.051	4.098	4.145	4.190	4.235	4.280	4.323	4.366	4.408	4.449
59.5 A	4328	4345	4373	4409	4454	4508	4571	4643	4723	4811	4908	5013	5127	5248	5377	5514
B	3.736	3.788	3.838	3.888	3.938	3.986	4.034	4.082	4.128	4.174	4.219	4.263	4.307	4.350	4.392	4.434
60.0 A	4249	4266	4293	4329	4373	4427	4489	4560	4639	4727	4823	4928	5040	5161	5289	5426
B	3.718	3.770	3.821	3.871	3.921	3.969	4.018	4.065	4.112	4.158	4.203	4.247	4.291	4.334	4.377	4.419
60.5 A	4171	4187	4213	4248	4292	4345	4407	4477	4556	4643	4739	4843	4955	5074	5202	5338
B	3.700	3.752	3.803	3.854	3.903	3.952	4.001	4.048	4.095	4.141	4.187	4.231	4.275	4.319	4.361	4.403
61.0 A	4093	4109	4134	4169	4212	4264	4326	4395	4473	4560	4655	4758	4869	4988	5116	5250
B	3.682	3.734	3.786	3.836	3.886	3.935	3.984	4.031	4.078	4.125	4.170	4.215	4.259	4.303	4.346	4.388
61.5 A	4015	4031	4056	4089	4132	4184	4244	4313	4391	4477	4571	4674	4784	4903	5029	5163
B	3.665	3.717	3.768	3.819	3.869	3.918	3.967	4.015	4.062	4.108	4.154	4.199	4.243	4.287	4.330	4.372

TEMP DEG F	COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH RELATIVE DENSITY (60/60 DEG F)															
	0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	F=1/(A+DP*B)					
62.0 A	3938	3953	3977	4011	4053	4104	4164	4232	4309	4394	4488	4590	4700	4818	4943	5077
B	3.647	3.699	3.751	3.801	3.852	3.901	3.950	3.998	4.045	4.092	4.138	4.183	4.227	4.271	4.314	4.357
62.5 A	3861	3876	3899	3932	3974	4024	4083	4151	4228	4312	4405	4506	4616	4733	4858	4991
B	3.629	3.681	3.733	3.784	3.834	3.884	3.933	3.981	4.028	4.075	4.121	4.167	4.211	4.255	4.299	4.341
63.0 A	3785	3799	3822	3854	3895	3945	4004	4071	4146	4231	4323	4423	4532	4649	4773	4905
B	3.611	3.663	3.715	3.766	3.817	3.867	3.916	3.964	4.012	4.059	4.105	4.150	4.195	4.239	4.283	4.326
63.5 A	3709	3723	3745	3776	3817	3866	3924	3991	4066	4149	4241	4341	4449	4565	4688	4820
B	3.593	3.645	3.698	3.749	3.800	3.849	3.899	3.947	3.995	4.042	4.089	4.134	4.179	4.224	4.267	4.310
64.0 A	3634	3646	3668	3699	3739	3788	3845	3911	3985	4068	4159	4259	4366	4481	4604	4735
B	3.575	3.628	3.680	3.731	3.782	3.832	3.882	3.930	3.978	4.026	4.072	4.118	4.163	4.208	4.251	4.294
64.5 A	3559	3571	3592	3622	3662	3710	3766	3832	3906	3988	4078	4177	4284	4398	4521	4651
B	3.557	3.610	3.662	3.714	3.765	3.815	3.864	3.913	3.961	4.009	4.056	4.102	4.147	4.192	4.235	4.279
65.0 A		3495	3516	3546	3585	3632	3688	3753	3826	3908	3998	4096	4202	4316	4437	4567
B		3.592	3.644	3.696	3.747	3.798	3.847	3.896	3.945	3.992	4.039	4.085	4.131	4.176	4.220	4.263
65.5 A		3421	3441	3470	3508	3555	3610	3675	3747	3828	3917	4015	4120	4233	4354	4483
B		3.574	3.626	3.678	3.730	3.780	3.830	3.879	3.928	3.975	4.023	4.069	4.115	4.159	4.204	4.247
66.0 A			3366	3394	3432	3478	3533	3597	3669	3749	3837	3934	4039	4152	4272	4400
B			3.609	3.661	3.712	3.763	3.813	3.862	3.911	3.959	4.006	4.052	4.098	4.143	4.188	4.232
66.5 A				3319	3356	3402	3456	3519	3590	3670	3758	3854	3958	4070	4190	4318
B				3.643	3.695	3.745	3.796	3.845	3.894	3.942	3.989	4.036	4.082	4.127	4.172	4.216
67.0 A				3244	3281	3326	3379	3442	3513	3592	3679	3775	3878	3989	4109	4235
B				3.625	3.677	3.728	3.778	3.828	3.877	3.925	3.973	4.020	4.066	4.111	4.156	4.200
67.5 A					3206	3250	3303	3365	3435	3514	3600	3695	3798	3909	4027	4154
B					3.659	3.710	3.761	3.811	3.860	3.908	3.956	4.003	4.049	4.095	4.140	4.184
68.0 A						3175	3228	3289	3358	3436	3522	3617	3719	3829	3947	4072
B						3.693	3.744	3.794	3.843	3.891	3.939	3.986	4.033	4.079	4.124	4.168
68.5 A						3100	3152	3213	3282	3359	3445	3538	3640	3749	3867	3991
B						3.675	3.726	3.776	3.826	3.875	3.923	3.970	4.017	4.063	4.108	4.152
69.0 A							3077	3137	3206	3282	3367	3460	3561	3670	3787	3911
B							3.709	3.759	3.809	3.858	3.906	3.953	4.000	4.046	4.092	4.136
69.5 A							3003	3062	3130	3206	3290	3383	3483	3591	3707	3831
B							3.691	3.742	3.792	3.841	3.889	3.937	3.984	4.030	4.076	4.120

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP•B)								
		RELATIVE DENSITY (60/60 DEG F)																		
TEMP		0.350	0.352	0.354	0.356	0.358	0.360	0.362	0.364	0.366	0.368	0.370	0.372	0.374	0.376	0.378	0.380			
DEG F																				
70.0	A											2988	3055	3130	3214	3306	3406	3513	3629	3751
	B											3.725	3.774	3.824	3.872	3.920	3.967	4.014	4.059	4.104
70.5	A											2980	3055	3138	3229	3328	3435	3550	3672	
	B											3.757	3.807	3.855	3.903	3.951	3.997	4.043	4.088	
71.0	A											2906	2980	3062	3153	3252	3358	3472	3594	
	B											3.740	3.790	3.838	3.887	3.934	3.981	4.027	4.072	
71.5	A											2905	2987	3077	3175	3281	3394	3515		
	B											3.773	3.822	3.870	3.918	3.964	4.011	4.056		
72.0	A											2831	2913	3002	3099	3204	3317	3438		
	B											3.755	3.805	3.853	3.901	3.948	3.994	4.040		
72.5	A											2838	2927	3024	3128	3240	3360			
	B											3.788	3.836	3.884	3.932	3.978	4.024			
73.0	A											2764	2853	2949	3053	3164	3283			
	B											3.771	3.819	3.868	3.915	3.962	4.008			
73.5	A											2779	2874	2977	3088	3207				
	B											3.803	3.851	3.899	3.945	3.992				
74.0	A											2800	2903	3013	3131					
	B											3.834	3.882	3.929	3.975					
74.5	A											2726	2828	2938	3055					
	B											3.817	3.865	3.913	3.959					
75.0	A											2754	2863	2980						
	B											3.849	3.896	3.943						
75.5	A											2681	2789	2905						
	B											3.832	3.880	3.927						
76.0	A											2716	2831							
	B											3.863	3.910							
76.5	A											2643	2757							
	B											3.847	3.894							
77.0	A											2684								
	B											3.877								
77.5	A											2611								
	B											3.861								

NOTE: FOR 0.350 TO 0.380 HIGHER TEMPERATURES ARE ABOVE THE NEAR CRITICAL LIMIT

TEMP DEG F	COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
	RELATIVE DENSITY (60/60 DEG F)										0.402	0.404	0.406	0.408	0.410	0.412
-50.0 A	0.382	0.384	0.386	0.388	0.390	0.392	0.394	0.396	0.398	0.400						
	34839	35195	35560	35932	36314	36703	37101	37506	37920	38342	38772	39210	39656	40110	40572	41042
-49.5 A	7.081	7.084	7.086	7.087	7.087	7.087	7.085	7.083	7.079	7.075	7.070	7.064	7.057	7.049	7.040	7.031
	7.081	7.084	7.086	7.087	7.087	7.087	7.085	7.083	7.079	7.075	7.070	7.064	7.057	7.049	7.040	7.031
-49.0 A	34665	35020	35384	35755	36135	36523	36920	37325	37737	38158	38587	39024	39469	39922	40382	40851
	7.072	7.075	7.077	7.079	7.079	7.079	7.078	7.075	7.072	7.068	7.063	7.057	7.050	7.043	7.034	7.025
-48.5 A	34492	34846	35208	35578	35957	36344	36740	37143	37555	37974	38402	38838	39282	39733	40193	40660
	7.063	7.067	7.069	7.071	7.071	7.071	7.070	7.068	7.065	7.061	7.056	7.050	7.044	7.036	7.028	7.019
-48.0 A	34319	34671	35032	35402	35780	36166	36560	36962	37373	37791	38218	38652	39095	39545	40004	40470
	7.055	7.058	7.061	7.063	7.063	7.063	7.062	7.060	7.058	7.054	7.049	7.044	7.037	7.030	7.022	7.012
-47.5 A	34146	34498	34857	35226	35602	35987	36380	36781	37191	37608	38034	38467	38908	39358	39815	40280
	7.046	7.050	7.053	7.054	7.055	7.055	7.055	7.053	7.050	7.047	7.042	7.037	7.031	7.023	7.015	7.006
-47.0 A	33974	34324	34683	35050	35425	35809	36201	36601	37009	37425	37850	38282	38722	39170	39627	40090
	7.037	7.041	7.044	7.046	7.047	7.048	7.047	7.045	7.043	7.039	7.035	7.030	7.024	7.017	7.009	7.000
-46.5 A	33802	34151	34508	34874	35249	35631	36022	36421	36828	37243	37666	38097	38537	38984	39439	39901
	7.029	7.033	7.036	7.038	7.039	7.040	7.039	7.038	7.035	7.032	7.028	7.023	7.017	7.010	7.003	6.994
-46.0 A	33630	33978	34334	34699	35072	35454	35844	36241	36647	37061	37483	37913	38351	38797	39251	39713
	7.020	7.024	7.027	7.030	7.031	7.032	7.031	7.030	7.028	7.025	7.021	7.016	7.011	7.004	6.996	6.988
-45.5 A	33458	33805	34161	34525	34897	35277	35665	36062	36467	36880	37301	37729	38166	38611	39064	39524
	7.011	7.015	7.019	7.021	7.023	7.024	7.024	7.023	7.021	7.018	7.014	7.009	7.004	6.997	6.990	6.982
-45.0 A	33287	33633	33988	34350	34721	35100	35488	35883	36287	36698	37118	37546	37982	38425	38877	39336
	7.002	7.007	7.010	7.013	7.015	7.016	7.016	7.015	7.013	7.010	7.007	7.002	6.997	6.991	6.984	6.976
-44.5 A	33117	33461	33815	34176	34546	34924	35310	35704	36107	36518	36936	37363	37797	38240	38690	39148
	6.993	6.998	7.002	7.005	7.007	7.008	7.008	7.007	7.006	7.003	7.000	6.996	6.990	6.984	6.977	6.969
-44.0 A	32946	33290	33642	34002	34371	34748	35133	35526	35928	36337	36755	37180	37614	38055	38504	38961
	6.984	6.989	6.993	6.996	6.998	7.000	7.000	7.000	6.998	6.996	6.993	6.989	6.983	6.978	6.971	6.963
-43.5 A	32776	33119	33470	33829	34196	34572	34956	35348	35749	36157	36573	36998	37430	37870	38318	38774
	6.975	6.980	6.985	6.988	6.990	6.992	6.992	6.992	6.991	6.988	6.985	6.981	6.977	6.971	6.964	6.957
-43.0 A	32607	32948	33298	33656	34022	34397	34780	35171	35570	35977	36392	36816	37247	37686	38133	38588
	6.966	6.972	6.976	6.979	6.982	6.983	6.984	6.984	6.983	6.981	6.978	6.974	6.970	6.964	6.958	6.950
-42.5 A	32437	32778	33126	33483	33849	34222	34604	34994	35392	35798	36212	36634	37064	37502	37948	38402
	6.957	6.963	6.967	6.971	6.974	6.975	6.976	6.976	6.975	6.974	6.971	6.967	6.963	6.957	6.951	6.944
-42.0 A	32268	32608	32955	33311	33675	34048	34428	34817	35214	35619	36032	36453	36882	37319	37763	38216
	6.948	6.954	6.959	6.962	6.965	6.967	6.968	6.968	6.968	6.966	6.964	6.960	6.956	6.951	6.945	6.938

TEMP DEG F		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
		0.382	0.384	0.386	0.388	0.390	0.392	0.394	0.396	0.398	0.400	0.402	0.404	0.406	0.408	0.410	0.412
-42.0	A	32100	32438	32784	33139	33502	33873	34253	34640	35036	35440	35852	36272	36700	37135	37579	38030
	B	6.939	6.945	6.950	6.954	6.957	6.959	6.960	6.961	6.960	6.959	6.956	6.953	6.949	6.944	6.938	6.931
-41.5	A	31932	32268	32614	32967	33329	33699	34078	34464	34859	35262	35673	36091	36518	36953	37395	37845
	B	6.930	6.936	6.941	6.945	6.948	6.951	6.952	6.953	6.952	6.951	6.949	6.946	6.942	6.937	6.931	6.925
-41.0	A	31764	32099	32444	32796	33157	33526	33903	34289	34682	35084	35493	35911	36337	36770	37211	37661
	B	6.921	6.927	6.932	6.937	6.940	6.942	6.944	6.945	6.945	6.943	6.942	6.939	6.935	6.930	6.925	6.918
-40.5	A	31596	31931	32274	32625	32985	33353	33729	34113	34506	34906	35315	35731	36156	36588	37028	37476
	B	6.912	6.918	6.923	6.928	6.931	6.934	6.936	6.937	6.937	6.936	6.934	6.931	6.928	6.923	6.918	6.912
-40.0	A	31429	31762	32104	32455	32813	33180	33555	33938	34330	34729	35136	35552	35975	36406	36845	37292
	B	6.903	6.909	6.915	6.919	6.923	6.926	6.928	6.929	6.929	6.928	6.927	6.924	6.921	6.916	6.911	6.905
-39.5	A	31262	31594	31935	32284	32642	33008	33382	33764	34154	34552	34958	35373	35795	36225	36663	37109
	B	6.894	6.900	6.906	6.911	6.914	6.917	6.920	6.921	6.921	6.921	6.919	6.917	6.914	6.910	6.905	6.899
-39.0	A	31096	31427	31767	32115	32471	32836	33208	33589	33979	34376	34781	35194	35615	36044	36481	36926
	B	6.884	6.891	6.897	6.902	6.906	6.909	6.911	6.913	6.913	6.913	6.912	6.910	6.906	6.903	6.898	6.892
-38.5	A	30929	31260	31598	31945	32300	32664	33036	33416	33804	34200	34604	35016	35436	35863	36299	36743
	B	6.875	6.882	6.888	6.893	6.897	6.901	6.903	6.905	6.905	6.905	6.904	6.902	6.899	6.896	6.891	6.885
-38.0	A	30764	31093	31430	31776	32130	32493	32863	33242	33629	34024	34427	34838	35257	35683	36118	36560
	B	6.866	6.873	6.879	6.884	6.889	6.892	6.895	6.897	6.897	6.897	6.897	6.895	6.892	6.889	6.884	6.879
-37.5	A	30598	30926	31263	31607	31960	32322	32691	33069	33455	33848	34250	34660	35078	35503	35937	36378
	B	6.856	6.864	6.870	6.875	6.880	6.884	6.887	6.888	6.890	6.890	6.889	6.887	6.885	6.881	6.877	6.872
-37.0	A	30433	30760	31095	31439	31791	32151	32519	32896	33281	33673	34074	34483	34899	35324	35756	36196
	B	6.847	6.854	6.861	6.867	6.871	6.875	6.878	6.880	6.882	6.882	6.881	6.880	6.878	6.874	6.870	6.865
-36.5	A	30268	30594	30928	31271	31622	31981	32348	32724	33107	33499	33898	34306	34721	35145	35576	36015
	B	6.838	6.845	6.852	6.858	6.863	6.867	6.870	6.872	6.874	6.874	6.874	6.872	6.870	6.867	6.863	6.859
-36.0	A	30104	30429	30762	31103	31453	31811	32177	32552	32934	33324	33723	34129	34544	34966	35396	35834
	B	6.828	6.836	6.843	6.849	6.854	6.858	6.861	6.864	6.865	6.866	6.866	6.865	6.863	6.860	6.856	6.852
-35.5	A	29940	30263	30595	30936	31284	31641	32007	32380	32761	33151	33548	33953	34367	34788	35217	35654
	B	6.819	6.827	6.834	6.840	6.845	6.850	6.853	6.856	6.857	6.858	6.858	6.857	6.856	6.853	6.849	6.845
-35.0	A	29776	30099	30430	30769	31116	31472	31836	32208	32589	32977	33373	33778	34190	34610	35038	35473
	B	6.809	6.817	6.825	6.831	6.836	6.841	6.845	6.847	6.849	6.850	6.850	6.850	6.848	6.846	6.842	6.838
-34.5	A	29613	29934	30264	30602	30949	31303	31666	32037	32417	32804	33199	33602	34013	34432	34859	35294
	B	6.800	6.808	6.815	6.822	6.827	6.832	6.836	6.839	6.841	6.842	6.843	6.842	6.841	6.838	6.835	6.831

TEMP DEG F	COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH RELATIVE DENSITY (60/60 DEG F)															
	0.382	0.384	0.386	0.388	0.390	0.392	0.394	0.396	0.398	0.400	0.402	0.404	0.406	0.408	0.410	0.412
-34.0 A	29450	29770	30099	30436	30781	31135	31497	31867	32245	32631	33025	33427	33837	34255	34681	35114
B	6.790	6.799	6.806	6.813	6.819	6.824	6.828	6.831	6.833	6.834	6.835	6.835	6.833	6.831	6.828	6.824
-33.5 A	29287	29606	29934	30270	30614	30967	31328	31697	32074	32459	32852	33253	33661	34078	34503	34935
B	6.781	6.789	6.797	6.804	6.810	6.815	6.819	6.822	6.825	6.826	6.827	6.827	6.826	6.824	6.821	6.817
-33.0 A	29125	29443	29770	30105	30448	30799	31159	31527	31903	32287	32678	33078	33486	33902	34325	34757
B	6.771	6.780	6.788	6.795	6.801	6.806	6.810	6.814	6.817	6.818	6.819	6.819	6.818	6.817	6.814	6.810
-32.5 A	28963	29280	29605	29939	30282	30632	30990	31357	31732	32115	32506	32904	33311	33726	34148	34578
B	6.761	6.770	6.778	6.786	6.792	6.797	6.802	6.806	6.808	6.810	6.811	6.811	6.811	6.809	6.807	6.803
-32.0 A	28801	29117	29442	29775	30116	30465	30822	31188	31562	31943	32333	32731	33137	33550	33971	34400
B	6.752	6.761	6.769	6.776	6.783	6.788	6.793	6.797	6.800	6.802	6.803	6.804	6.803	6.802	6.799	6.796
-31.5 A	28640	28955	29278	29610	29950	30298	30655	31019	31392	31773	32161	32558	32962	33375	33795	34223
B	6.742	6.751	6.760	6.767	6.774	6.780	6.785	6.789	6.792	6.794	6.795	6.796	6.796	6.794	6.792	6.789
-31.0 A	28479	28793	29115	29446	29785	30132	30487	30851	31222	31602	31990	32385	32788	33200	33619	34046
B	6.732	6.742	6.750	6.758	6.765	6.771	6.776	6.780	6.783	6.786	6.787	6.788	6.788	6.787	6.785	6.782
-30.5 A	28319	28631	28953	29282	29620	29966	30320	30683	31053	31432	31818	32213	32615	33025	33443	33869
B	6.723	6.732	6.741	6.749	6.756	6.762	6.767	6.771	6.775	6.778	6.779	6.780	6.780	6.779	6.778	6.775
-30.0 A	28158	28470	28790	29119	29456	29801	30154	30515	30885	31262	31647	32041	32442	32851	33268	33692
B	6.713	6.723	6.731	6.739	6.747	6.753	6.758	6.763	6.767	6.769	6.771	6.772	6.773	6.772	6.770	6.768
-29.5 A	27999	28309	28628	28956	29292	29636	29988	30348	30716	31092	31477	31869	32269	32677	33093	33516
B	6.703	6.713	6.722	6.730	6.737	6.744	6.750	6.754	6.758	6.761	6.763	6.764	6.765	6.764	6.763	6.761
-29.0 A	27839	28149	28467	28793	29128	29471	29822	30181	30548	30923	31307	31698	32097	32504	32918	33341
B	6.693	6.703	6.712	6.721	6.728	6.735	6.741	6.746	6.750	6.753	6.755	6.757	6.757	6.757	6.756	6.754
-28.5 A	27680	27989	28306	28631	28965	29306	29656	30014	30381	30755	31137	31527	31925	32331	32744	33166
B	6.683	6.693	6.703	6.711	6.719	6.726	6.732	6.737	6.741	6.745	6.747	6.749	6.749	6.749	6.748	6.746
-28.0 A	27521	27829	28145	28469	28802	29142	29491	29848	30213	30586	30967	31356	31753	32158	32571	32991
B	6.673	6.684	6.693	6.702	6.710	6.717	6.723	6.728	6.733	6.736	6.739	6.741	6.741	6.742	6.741	6.739
-27.5 A	27363	27670	27984	28308	28639	28979	29326	29682	30046	30418	30798	31186	31582	31986	32397	32816
B	6.663	6.674	6.684	6.693	6.701	6.708	6.714	6.720	6.724	6.728	6.731	6.733	6.734	6.734	6.733	6.732
-27.0 A	27205	27511	27824	28146	28477	28815	29162	29517	29880	30251	30630	31017	31411	31814	32224	32642
B	6.653	6.664	6.674	6.683	6.691	6.699	6.705	6.711	6.715	6.719	6.722	6.724	6.726	6.726	6.726	6.724
-26.5 A	27047	27352	27665	27986	28315	28652	28998	29352	29714	30084	30461	30847	31241	31642	32052	32469
B	6.643	6.654	6.664	6.674	6.682	6.690	6.696	6.702	6.707	6.711	6.714	6.716	6.718	6.718	6.718	6.717

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
		RELATIVE DENSITY (60/60 DEG F)															
TEMP		0.382	0.384	0.386	0.388	0.390	0.392	0.394	0.396	0.398	0.400	0.402	0.404	0.406	0.408	0.410	0.412
DEG F																	
-26.0	A	26890	27193	27505	27825	28153	28490	28834	29187	29548	29917	30294	30678	31071	31471	31879	32295
	B	6.633	6.644	6.655	6.664	6.673	6.680	6.687	6.693	6.698	6.702	6.706	6.708	6.710	6.711	6.711	6.710
-25.5	A	26733	27036	27346	27665	27992	28328	28671	29023	29383	29750	30126	30510	30901	31300	31707	32122
	B	6.623	6.635	6.645	6.655	6.663	6.671	6.678	6.684	6.690	6.694	6.697	6.700	6.702	6.703	6.703	6.702
-25.0	A	26577	26878	27187	27505	27831	28166	28508	28859	29218	29584	29959	30341	30732	31130	31536	31950
	B	6.613	6.625	6.635	6.645	6.654	6.662	6.669	6.675	6.681	6.685	6.689	6.692	6.694	6.695	6.695	6.695
-24.5	A	26421	26721	27029	27346	27671	28004	28346	28695	29053	29419	29792	30174	30563	30960	31365	31778
	B	6.603	6.615	6.626	6.635	6.644	6.653	6.660	6.666	6.672	6.677	6.681	6.684	6.686	6.687	6.688	6.687
-24.0	A	26265	26564	26871	27187	27511	27843	28184	28532	28889	29253	29626	30006	30394	30790	31194	31606
	B	6.593	6.605	6.616	6.626	6.635	6.643	6.651	6.658	6.663	6.668	6.672	6.676	6.678	6.679	6.680	6.680
-23.5	A	26109	26407	26714	27028	27351	27683	28022	28369	28725	29088	29460	29839	30226	30621	31024	31434
	B	6.583	6.595	6.606	6.616	6.626	6.634	6.642	6.649	6.655	6.660	6.664	6.667	6.670	6.671	6.672	6.672
-23.0	A	25954	26251	26557	26870	27192	27522	27861	28207	28561	28924	29294	29672	30058	30452	30854	31263
	B	6.573	6.585	6.596	6.606	6.616	6.625	6.633	6.640	6.646	6.651	6.655	6.659	6.662	6.664	6.664	6.665
-22.5	A	25799	26095	26400	26712	27033	27362	27699	28045	28398	28760	29129	29506	29891	30284	30685	31093
	B	6.562	6.575	6.586	6.597	6.606	6.615	6.623	6.631	6.637	6.642	6.647	6.651	6.654	6.656	6.657	6.657
-22.0	A	25645	25940	26243	26555	26875	27203	27539	27883	28235	28596	28964	29340	29724	30116	30515	30923
	B	6.552	6.565	6.576	6.587	6.597	6.606	6.614	6.621	6.628	6.634	6.638	6.642	6.645	6.648	6.649	6.649
-21.5	A	25491	25785	26087	26398	26716	27043	27379	27722	28073	28432	28799	29175	29557	29948	30347	30753
	B	6.542	6.554	6.566	6.577	6.587	6.596	6.605	6.612	6.619	6.625	6.630	6.634	6.637	6.640	6.641	6.642
-21.0	A	25337	25630	25931	26241	26559	26885	27219	27561	27911	28269	28635	29009	29391	29781	30178	30583
	B	6.531	6.544	6.556	6.567	6.578	6.587	6.596	6.603	6.610	6.616	6.621	6.625	6.629	6.631	6.633	6.634
-20.5	A	25184	25476	25776	26085	26401	26726	27059	27400	27749	28107	28472	28845	29225	29614	30010	30414
	B	6.521	6.534	6.546	6.557	6.568	6.577	6.586	6.594	6.601	6.607	6.613	6.617	6.621	6.623	6.625	6.626
-20.0	A	25031	25322	25621	25929	26244	26568	26900	27240	27588	27944	28308	28680	29060	29448	29843	30246
	B	6.511	6.524	6.536	6.548	6.558	6.568	6.577	6.585	6.592	6.598	6.604	6.609	6.612	6.615	6.617	6.619
-19.5	A	24879	25168	25467	25773	26088	26410	26741	27080	27427	27782	28145	28516	28895	29281	29676	30077
	B	6.500	6.514	6.526	6.538	6.548	6.558	6.567	6.576	6.583	6.590	6.595	6.600	6.604	6.607	6.609	6.611
-19.0	A	24727	25015	25312	25618	25931	26253	26583	26921	27267	27621	27983	28353	28730	29116	29509	29910
	B	6.490	6.503	6.516	6.528	6.539	6.549	6.558	6.566	6.574	6.581	6.587	6.591	6.596	6.599	6.601	6.603
-18.5	A	24575	24862	25158	25463	25775	26096	26425	26762	27107	27460	27821	28189	28566	28950	29342	29742
	B	6.479	6.493	6.506	6.518	6.529	6.539	6.549	6.557	6.565	6.572	6.578	6.583	6.587	6.591	6.593	6.595

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH RELATIVE DENSITY (60/60 DEG F)										F=1/(A+DP*B)					
TEMP DEG F		0.382	0.384	0.386	0.388	0.390	0.392	0.394	0.396	0.398	0.400	0.402	0.404	0.406	0.408	0.410	0.412
-18.0	A	24423	24710	25005	25308	25620	25939	26267	26603	26947	27299	27659	28027	28402	28785	29176	29575
	B	6.469	6.483	6.496	6.508	6.519	6.530	6.539	6.548	6.556	6.563	6.569	6.574	6.579	6.582	6.585	6.587
-17.5	A	24272	24558	24852	25154	25465	25783	26110	26445	26788	27139	27497	27864	28239	28621	29011	29408
	B	6.458	6.472	6.485	6.498	6.509	6.520	6.530	6.539	6.547	6.554	6.560	6.566	6.570	6.574	6.577	6.579
-17.0	A	24121	24406	24699	25000	25310	25627	25953	26287	26629	26979	27336	27702	28075	28457	28846	29242
	B	6.448	6.462	6.475	6.488	6.499	6.510	6.520	6.529	6.537	6.545	6.551	6.557	6.562	6.566	6.569	6.571
-16.5	A	23971	24255	24547	24847	25155	25472	25797	26130	26470	26819	27176	27540	27913	28293	28681	29076
	B	6.437	6.451	6.465	6.478	6.489	6.500	6.510	6.520	6.528	6.536	6.542	6.548	6.553	6.558	6.561	6.563
-16.0	A	23821	24104	24395	24694	25001	25317	25641	25972	26312	26660	27016	27379	27750	28129	28516	28911
	B	6.426	6.441	6.455	6.467	6.479	6.491	6.501	6.510	6.519	6.527	6.534	6.540	6.545	6.549	6.553	6.555
-15.5	A	23672	23953	24243	24541	24848	25162	25485	25816	26154	26501	26856	27218	27588	27966	28352	28746
	B	6.416	6.430	6.444	6.457	6.469	6.481	6.491	6.501	6.510	6.518	6.525	6.531	6.536	6.541	6.545	6.547
-15.0	A	23522	23803	24092	24389	24694	25008	25330	25659	25997	26343	26696	27058	27427	27804	28188	28581
	B	6.405	6.420	6.434	6.447	6.459	6.471	6.482	6.491	6.500	6.508	6.516	6.522	6.528	6.532	6.536	6.539
-14.5	A	23373	23653	23941	24237	24541	24854	25175	25503	25840	26185	26537	26898	27266	27642	28025	28417
	B	6.394	6.409	6.424	6.437	6.449	6.461	6.472	6.482	6.491	6.499	6.507	6.513	6.519	6.524	6.528	6.531
-14.0	A	23225	23504	23790	24086	24389	24700	25020	25348	25683	26027	26378	26738	27105	27480	27862	28253
	B	6.384	6.399	6.413	6.427	6.439	6.451	6.462	6.472	6.482	6.490	6.498	6.504	6.510	6.515	6.520	6.523
-13.5	A	23077	23354	23640	23934	24237	24547	24866	25192	25527	25870	26220	26578	26945	27318	27700	28089
	B	6.373	6.388	6.403	6.416	6.429	6.441	6.452	6.463	6.472	6.481	6.489	6.496	6.502	6.507	6.511	6.515
-13.0	A	22929	23206	23490	23784	24085	24394	24712	25038	25371	25713	26062	26420	26785	27157	27538	27926
	B	6.362	6.378	6.392	6.406	6.419	6.431	6.443	6.453	6.463	6.472	6.480	6.487	6.493	6.498	6.503	6.507
-12.5	A	22782	23057	23341	23633	23934	24242	24559	24883	25216	25556	25905	26261	26625	26997	27376	27763
	B	6.351	6.367	6.382	6.396	6.409	6.421	6.433	6.443	6.453	6.462	6.470	6.478	6.484	6.490	6.495	6.499
-12.0	A	22635	22909	23192	23483	23783	24090	24406	24729	25061	25400	25748	26103	26466	26836	27215	27601
	B	6.340	6.356	6.371	6.385	6.399	6.411	6.423	6.434	6.444	6.453	6.461	6.469	6.475	6.481	6.486	6.490
-11.5	A	22488	22762	23043	23334	23632	23938	24253	24575	24906	25245	25591	25945	26307	26677	27054	27439
	B	6.329	6.345	6.361	6.375	6.389	6.401	6.413	6.424	6.434	6.444	6.452	6.460	6.467	6.473	6.478	6.482
-11.0	A	22342	22614	22895	23184	23482	23787	24101	24422	24752	25089	25434	25788	26149	26517	26893	27277
	B	6.318	6.335	6.350	6.365	6.378	6.391	6.403	6.414	6.425	6.434	6.443	6.451	6.458	6.464	6.469	6.474
-10.5	A	22196	22468	22747	23035	23332	23636	23949	24269	24598	24934	25279	25631	25991	26358	26733	27116
	B	6.308	6.324	6.339	6.354	6.368	6.381	6.393	6.405	6.415	6.425	6.434	6.442	6.449	6.455	6.461	6.465

TEMP DEG F		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
		RELATIVE DENSITY (60/60 DEG F)															
		0.382	0.384	0.386	0.388	0.390	0.392	0.394	0.396	0.398	0.400	0.402	0.404	0.406	0.408	0.410	0.412
-10.0	A	22050	22321	22600	22887	23182	23486	23797	24117	24444	24780	25123	25474	25833	26199	26574	26955
	B	6.297	6.313	6.329	6.344	6.358	6.371	6.383	6.395	6.406	6.415	6.424	6.433	6.440	6.447	6.452	6.457
-9.5	A	21905	22175	22453	22739	23033	23336	23646	23965	24291	24626	24968	25318	25676	26041	26414	26795
	B	6.285	6.302	6.318	6.333	6.347	6.361	6.373	6.385	6.396	6.406	6.415	6.424	6.431	6.438	6.444	6.449
-9.0	A	21761	22029	22306	22591	22884	23186	23495	23813	24138	24472	24813	25162	25519	25883	26255	26635
	B	6.274	6.291	6.307	6.323	6.337	6.351	6.363	6.375	6.386	6.396	6.406	6.414	6.422	6.429	6.435	6.440
-8.5	A	21616	21884	22160	22444	22736	23037	23345	23662	23986	24318	24659	25007	25362	25726	26097	26476
	B	6.263	6.280	6.297	6.312	6.327	6.340	6.353	6.365	6.377	6.387	6.396	6.405	6.413	6.420	6.426	6.432
-8.0	A	21472	21739	22014	22297	22588	22888	23195	23511	23834	24165	24505	24852	25206	25569	25939	26317
	B	6.252	6.269	6.286	6.301	6.316	6.330	6.343	6.355	6.367	6.377	6.387	6.396	6.404	6.411	6.418	6.423
-7.5	A	21329	21594	21868	22150	22441	22739	23046	23360	23682	24013	24351	24697	25051	25412	25781	26158
	B	6.241	6.258	6.275	6.291	6.306	6.320	6.333	6.345	6.357	6.368	6.378	6.387	6.395	6.402	6.409	6.415
-7.0	A	21185	21450	21723	22004	22293	22591	22896	23210	23531	23861	24198	24543	24895	25256	25624	25999
	B	6.230	6.247	6.264	6.280	6.295	6.309	6.323	6.335	6.347	6.358	6.368	6.378	6.386	6.394	6.400	6.406
-6.5	A	21042	21306	21578	21858	22147	22443	22748	23060	23381	23709	24045	24389	24741	25100	25467	25841
	B	6.219	6.236	6.253	6.269	6.285	6.299	6.313	6.325	6.337	6.349	6.359	6.368	6.377	6.385	6.392	6.398
-6.0	A	20900	21163	21434	21713	22000	22296	22599	22911	23230	23557	23893	24236	24586	24944	25310	25684
	B	6.207	6.225	6.242	6.259	6.274	6.289	6.303	6.315	6.328	6.339	6.349	6.359	6.368	6.376	6.383	6.389
-5.5	A	20758	21020	21290	21568	21854	22149	22451	22762	23080	23406	23741	24082	24432	24789	25154	25527
	B	6.196	6.214	6.232	6.248	6.264	6.278	6.292	6.305	6.318	6.329	6.340	6.350	6.359	6.367	6.374	6.380
-5.0	A	20616	20877	21146	21423	21708	22002	22303	22613	22930	23256	23589	23930	24278	24635	24999	25370
	B	6.185	6.203	6.221	6.237	6.253	6.268	6.282	6.295	6.308	6.319	6.330	6.340	6.349	6.358	6.365	6.372
-4.5	A	20475	20734	21003	21279	21563	21856	22156	22465	22781	23106	23438	23778	24125	24480	24843	25214
	B	6.174	6.192	6.210	6.226	6.242	6.257	6.272	6.285	6.298	6.310	6.321	6.331	6.340	6.349	6.356	6.363
-4.0	A	20334	20593	20860	21135	21418	21710	22009	22317	22632	22956	23287	23626	23972	24327	24688	25058
	B	6.162	6.181	6.199	6.216	6.232	6.247	6.261	6.275	6.288	6.300	6.311	6.321	6.331	6.339	6.347	6.354
-3.5	A	20193	20451	20717	20991	21274	21564	21863	22170	22484	22806	23136	23474	23820	24173	24534	24902
	B	6.151	6.170	6.188	6.205	6.221	6.236	6.251	6.265	6.278	6.290	6.301	6.312	6.322	6.330	6.338	6.346
-3.0	A	20053	20310	20575	20848	21130	21419	21717	22022	22336	22657	22986	23323	23668	24020	24380	24747
	B	6.139	6.158	6.176	6.194	6.210	6.226	6.241	6.255	6.268	6.280	6.292	6.302	6.312	6.321	6.329	6.337
-2.5	A	19913	20169	20433	20705	20986	21275	21571	21876	22188	22509	22837	23173	23516	23867	24226	24593
	B	6.128	6.147	6.165	6.183	6.199	6.215	6.230	6.244	6.258	6.270	6.282	6.293	6.303	6.312	6.320	6.328

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH RELATIVE DENSITY (60/60 DEG F)										F=1/(A+DP*B)					
TEMP DEG F		0.382	0.384	0.386	0.388	0.390	0.392	0.394	0.396	0.398	0.400	0.402	0.404	0.406	0.408	0.410	0.412
-2.0	A	19774	20029	20292	20563	20843	21130	21426	21730	22041	22360	22688	23022	23365	23715	24073	24438
	B	6.117	6.136	6.154	6.172	6.189	6.205	6.220	6.234	6.248	6.260	6.272	6.283	6.293	6.303	6.311	6.319
-1.5	A	19635	19888	20151	20421	20700	20986	21281	21584	21894	22213	22539	22873	23214	23563	23920	24284
	B	6.105	6.124	6.143	6.161	6.178	6.194	6.209	6.224	6.237	6.250	6.262	6.274	6.284	6.294	6.302	6.310
-1.0	A	19496	19749	20010	20280	20557	20843	21137	21438	21748	22065	22390	22723	23064	23412	23768	24131
	B	6.093	6.113	6.132	6.150	6.167	6.183	6.199	6.213	6.227	6.240	6.253	6.264	6.275	6.284	6.293	6.301
-0.5	A	19358	19610	19870	20138	20415	20700	20992	21293	21602	21918	22242	22574	22914	23261	23616	23978
	B	6.082	6.102	6.121	6.139	6.156	6.173	6.188	6.203	6.217	6.230	6.243	6.254	6.265	6.275	6.284	6.292
0.0	A	19220	19471	19730	19998	20273	20557	20849	21148	21456	21771	22095	22425	22764	23110	23464	23825
	B	6.070	6.090	6.109	6.128	6.145	6.162	6.178	6.193	6.207	6.220	6.233	6.245	6.256	6.266	6.275	6.284
0.5	A	19082	19332	19591	19857	20132	20415	20705	21004	21311	21625	21947	22277	22615	22960	23313	23673
	B	6.059	6.079	6.098	6.117	6.134	6.151	6.167	6.182	6.197	6.210	6.223	6.235	6.246	6.256	6.266	6.275
1.0	A	18945	19194	19452	19717	19991	20273	20563	20860	21166	21479	21801	22129	22466	22810	23162	23521
	B	6.047	6.067	6.087	6.105	6.123	6.140	6.156	6.172	6.186	6.200	6.213	6.225	6.236	6.247	6.257	6.265
1.5	A	18808	19056	19313	19578	19850	20131	20420	20717	21021	21334	21654	21982	22318	22661	23011	23370
	B	6.035	6.056	6.075	6.094	6.112	6.129	6.146	6.161	6.176	6.190	6.203	6.215	6.227	6.238	6.247	6.256
2.0	A	18672	18919	19175	19438	19710	19990	20278	20574	20877	21189	21508	21835	22170	22512	22861	23219
	B	6.024	6.044	6.064	6.083	6.101	6.119	6.135	6.151	6.166	6.180	6.193	6.206	6.217	6.228	6.238	6.247
2.5	A	18536	18782	19037	19299	19570	19849	20136	20431	20734	21044	21362	21688	22022	22363	22712	23068
	B	6.012	6.033	6.053	6.072	6.090	6.108	6.124	6.140	6.155	6.170	6.183	6.196	6.208	6.219	6.229	6.238
3.0	A	18400	18645	18899	19161	19431	19709	19995	20289	20590	20900	21217	21542	21875	22215	22563	22918
	B	6.000	6.021	6.041	6.061	6.079	6.097	6.114	6.130	6.145	6.159	6.173	6.186	6.198	6.209	6.220	6.229
3.5	A	18265	18509	18762	19023	19292	19569	19854	20147	20448	20756	21072	21396	21728	22067	22414	22768
	B	5.988	6.009	6.030	6.049	6.068	6.086	6.103	6.119	6.135	6.149	6.163	6.176	6.188	6.200	6.210	6.220
4.0	A	18130	18373	18625	18885	19153	19429	19713	20005	20305	20613	20928	21251	21582	21920	22265	22619
	B	5.976	5.998	6.018	6.038	6.057	6.075	6.092	6.108	6.124	6.139	6.153	6.166	6.178	6.190	6.201	6.211
4.5	A	17995	18238	18489	18748	19015	19290	19573	19864	20163	20470	20784	21106	21436	21773	22117	22470
	B	5.965	5.986	6.007	6.027	6.046	6.064	6.081	6.098	6.114	6.129	6.143	6.156	6.169	6.180	6.191	6.201
5.0	A	17861	18103	18353	18611	18877	19151	19433	19724	20021	20327	20640	20961	21290	21626	21970	22321
	B	5.953	5.974	5.995	6.015	6.034	6.053	6.070	6.087	6.103	6.118	6.133	6.146	6.159	6.171	6.182	6.192
5.5	A	17728	17968	18217	18475	18740	19013	19294	19583	19880	20185	20497	20817	21145	21480	21823	22173
	B	5.941	5.963	5.984	6.004	6.023	6.042	6.059	6.076	6.093	6.108	6.122	6.136	6.149	6.161	6.172	6.183

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
		RELATIVE DENSITY (60/60 DEG F)															
TEMP DEG F		0.382	0.384	0.386	0.388	0.390	0.392	0.394	0.396	0.398	0.400	0.402	0.404	0.406	0.408	0.410	0.412
6.0	A	17594	17834	18082	18338	18603	18875	19155	19443	19739	20043	20354	20673	21000	21334	21676	22025
	B	5.929	5.951	5.972	5.992	6.012	6.031	6.049	6.066	6.082	6.097	6.112	6.126	6.139	6.151	6.163	6.174
6.5	A	17461	17700	17947	18203	18466	18737	19017	19304	19599	19902	20212	20530	20856	21189	21530	21878
	B	5.917	5.939	5.960	5.981	6.001	6.019	6.038	6.055	6.071	6.087	6.102	6.116	6.129	6.142	6.153	6.164
7.0	A	17329	17567	17813	18067	18330	18600	18879	19165	19459	19761	20070	20387	20712	21044	21384	21731
	B	5.905	5.927	5.949	5.969	5.989	6.008	6.027	6.044	6.061	6.077	6.092	6.106	6.119	6.132	6.144	6.155
7.5	A	17197	17434	17679	17932	18194	18463	18741	19026	19319	19620	19928	20245	20568	20900	21238	21584
	B	5.893	5.915	5.937	5.958	5.978	5.997	6.016	6.033	6.050	6.066	6.081	6.096	6.109	6.122	6.134	6.145
8.0	A	17065	17301	17545	17798	18058	18327	18603	18888	19180	19480	19787	20102	20425	20755	21093	21438
	B	5.881	5.903	5.925	5.946	5.966	5.986	6.004	6.022	6.039	6.056	6.071	6.086	6.099	6.112	6.125	6.136
8.5	A	16934	17169	17412	17664	17923	18191	18466	18750	19041	19340	19647	19961	20283	20612	20949	21293
	B	5.869	5.891	5.913	5.935	5.955	5.975	5.993	6.011	6.029	6.045	6.061	6.075	6.089	6.103	6.115	6.126
9.0	A	16803	17037	17279	17530	17789	18055	18330	18612	18903	19201	19506	19819	20140	20469	20804	21147
	B	5.856	5.879	5.902	5.923	5.944	5.963	5.982	6.000	6.018	6.034	6.050	6.065	6.079	6.093	6.105	6.117
9.5	A	16672	16905	17147	17397	17654	17920	18194	18475	18765	19062	19366	19679	19998	20326	20660	21003
	B	5.844	5.867	5.890	5.911	5.932	5.952	5.971	5.990	6.007	6.024	6.040	6.055	6.069	6.083	6.096	6.107
10.0	A	16542	16774	17015	17264	17521	17785	18058	18339	18627	18923	19227	19538	19857	20183	20517	20858
	B	5.832	5.855	5.878	5.900	5.921	5.941	5.960	5.979	5.996	6.013	6.029	6.045	6.059	6.073	6.086	6.098
10.5	A	16412	16644	16883	17131	17387	17651	17923	18202	18490	18785	19088	19398	19716	20041	20374	20714
	B	5.820	5.843	5.866	5.888	5.909	5.929	5.949	5.967	5.985	6.002	6.019	6.034	6.049	6.063	6.076	6.088
11.0	A	16283	16513	16752	16999	17254	17517	17788	18066	18353	18647	18949	19258	19575	19900	20231	20571
	B	5.808	5.831	5.854	5.876	5.897	5.918	5.938	5.956	5.975	5.992	6.008	6.024	6.039	6.053	6.066	6.079
11.5	A	16154	16383	16621	16867	17121	17383	17653	17931	18217	18510	18811	19119	19435	19758	20089	20428
	B	5.795	5.819	5.842	5.864	5.886	5.906	5.926	5.945	5.964	5.981	5.998	6.014	6.029	6.043	6.056	6.069
12.0	A	16025	16254	16491	16736	16989	17250	17519	17796	18081	18373	18673	18980	19295	19618	19948	20285
	B	5.783	5.807	5.830	5.853	5.874	5.895	5.915	5.934	5.953	5.970	5.987	6.003	6.018	6.033	6.046	6.059
12.5	A	15897	16125	16361	16605	16857	17117	17385	17661	17945	18236	18535	18842	19156	19477	19806	20142
	B	5.771	5.795	5.818	5.841	5.862	5.883	5.904	5.923	5.942	5.959	5.976	5.993	6.008	6.023	6.037	6.050
13.0	A	15769	15996	16231	16475	16726	16985	17252	17527	17810	18100	18398	18704	19017	19337	19665	20001
	B	5.758	5.783	5.806	5.829	5.851	5.872	5.892	5.912	5.931	5.949	5.966	5.982	5.998	6.013	6.027	6.040
13.5	A	15642	15868	16102	16344	16595	16853	17119	17393	17675	17964	18261	18566	18878	19198	19525	19859
	B	5.746	5.770	5.794	5.817	5.839	5.860	5.881	5.901	5.920	5.938	5.955	5.972	5.988	6.002	6.017	6.030

TEMP DEG F	COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH RELATIVE DENSITY (60/60 DEG F)															
	0.382	0.384	0.386	0.388	0.390	0.392	0.394	0.396	0.398	0.400	0.402	0.404	0.406	0.408	0.410	0.412
14.0 A	15514	15740	15973	16215	16464	16721	16987	17260	17541	17829	18125	18429	18740	19059	19385	19718
B	5.733	5.758	5.782	5.805	5.827	5.849	5.870	5.889	5.909	5.927	5.944	5.961	5.977	5.992	6.007	6.020
14.5 A	15388	15612	15845	16085	16334	16590	16855	17127	17407	17694	17989	18292	18602	18920	19245	19577
B	5.721	5.746	5.770	5.793	5.816	5.837	5.858	5.878	5.897	5.916	5.934	5.951	5.967	5.982	5.997	6.010
15.0 A	15262	15485	15717	15956	16204	16460	16723	16994	17273	17560	17854	18156	18465	18782	19106	19437
B	5.708	5.733	5.758	5.781	5.804	5.826	5.847	5.867	5.886	5.905	5.923	5.940	5.956	5.972	5.987	6.001
15.5 A	15136	15358	15589	15828	16075	16329	16592	16862	17140	17426	17719	18020	18328	18644	18967	19297
B	5.696	5.721	5.745	5.769	5.792	5.814	5.835	5.856	5.875	5.894	5.912	5.929	5.946	5.962	5.977	5.991
16.0 A	15010	15232	15462	15700	15945	16199	16461	16730	17007	17292	17584	17884	18192	18506	18829	19158
B	5.683	5.709	5.733	5.757	5.780	5.802	5.824	5.844	5.864	5.883	5.901	5.919	5.935	5.951	5.966	5.981
16.5 A	14885	15106	15335	15572	15817	16070	16330	16599	16875	17159	17450	17749	18056	18369	18691	19019
B	5.671	5.696	5.721	5.745	5.768	5.790	5.812	5.833	5.853	5.872	5.890	5.908	5.925	5.941	5.956	5.971
17.0 A	14761	14980	15208	15445	15689	15941	16200	16468	16743	17026	17316	17614	17920	18233	18553	18880
B	5.658	5.684	5.709	5.733	5.756	5.779	5.800	5.821	5.842	5.861	5.880	5.897	5.914	5.931	5.946	5.961
17.5 A	14636	14855	15082	15318	15561	15812	16071	16337	16612	16894	17183	17480	17785	18097	18416	18742
B	5.645	5.671	5.696	5.721	5.744	5.767	5.789	5.810	5.830	5.850	5.869	5.887	5.904	5.920	5.936	5.951
18.0 A	14512	14731	14957	15191	15433	15683	15941	16207	16481	16762	17050	17346	17650	17961	18279	18605
B	5.633	5.659	5.684	5.708	5.732	5.755	5.777	5.798	5.819	5.839	5.858	5.876	5.893	5.910	5.926	5.941
18.5 A	14389	14606	14832	15065	15306	15556	15813	16077	16350	16630	16918	17213	17515	17825	18143	18467
B	5.620	5.646	5.672	5.696	5.720	5.743	5.765	5.787	5.808	5.828	5.847	5.865	5.883	5.899	5.915	5.931
19.0 A	14266	14482	14707	14939	15180	15428	15684	15948	16220	16499	16786	17080	17382	17691	18007	18331
B	5.607	5.634	5.659	5.684	5.708	5.731	5.754	5.775	5.796	5.816	5.836	5.854	5.872	5.889	5.905	5.921
19.5 A	14143	14359	14582	14814	15053	15301	15556	15819	16090	16368	16654	16947	17248	17556	17872	18194
B	5.594	5.621	5.647	5.672	5.696	5.719	5.742	5.764	5.785	5.805	5.825	5.843	5.861	5.878	5.895	5.910
20.0 A	14021	14235	14458	14689	14928	15174	15429	15691	15960	16238	16523	16815	17115	17422	17736	18058
B	5.582	5.608	5.634	5.659	5.684	5.707	5.730	5.752	5.773	5.794	5.814	5.832	5.851	5.868	5.884	5.900
20.5 A	13899	14113	14335	14564	14802	15048	15301	15563	15831	16108	16392	16683	16982	17288	17602	17923
B	5.569	5.596	5.622	5.647	5.672	5.695	5.718	5.741	5.762	5.783	5.803	5.822	5.840	5.857	5.874	5.890
21.0 A	13777	13990	14211	14440	14677	14922	15175	15435	15703	15978	16261	16552	16850	17155	17468	17787
B	5.556	5.583	5.609	5.635	5.659	5.683	5.707	5.729	5.751	5.771	5.791	5.811	5.829	5.847	5.864	5.880
21.5 A	13656	13868	14089	14317	14553	14797	15048	15308	15575	15849	16131	16421	16718	17022	17334	17653
B	5.543	5.570	5.597	5.622	5.647	5.671	5.695	5.717	5.739	5.760	5.780	5.800	5.818	5.836	5.853	5.870

TEMP DEG F		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
		RELATIVE DENSITY (60/60 DEG F)										0.402	0.404	0.406	0.408	0.410	0.412
22.0	A	13536	13747	13966	14193	14429	14672	14922	15181	15447	15721	16002	16291	16587	16890	17201	17519
	B	5.530	5.558	5.584	5.610	5.635	5.659	5.683	5.706	5.727	5.749	5.769	5.789	5.807	5.825	5.843	5.859
22.5	A	13415	13626	13844	14070	14305	14547	14797	15054	15320	15592	15873	16160	16456	16758	17068	17385
	B	5.517	5.545	5.572	5.598	5.623	5.647	5.671	5.694	5.716	5.737	5.758	5.778	5.797	5.815	5.832	5.849
23.0	A	13296	13505	13723	13948	14181	14423	14672	14928	15193	15465	15744	16031	16325	16626	16935	17251
	B	5.504	5.532	5.559	5.585	5.610	5.635	5.659	5.682	5.704	5.726	5.747	5.766	5.786	5.804	5.822	5.839
23.5	A	13176	13385	13601	13826	14058	14299	14547	14803	15066	15337	15616	15902	16195	16495	16803	17118
	B	5.491	5.519	5.546	5.573	5.598	5.623	5.647	5.670	5.693	5.714	5.735	5.755	5.775	5.793	5.811	5.828
24.0	A	13057	13265	13481	13704	13936	14175	14423	14678	14940	15210	15488	15773	16065	16365	16672	16986
	B	5.478	5.506	5.533	5.560	5.586	5.611	5.635	5.658	5.681	5.703	5.724	5.744	5.764	5.783	5.801	5.818
24.5	A	12938	13145	13360	13583	13814	14052	14299	14553	14814	15084	15360	15644	15936	16234	16540	16854
	B	5.465	5.493	5.521	5.547	5.573	5.599	5.623	5.646	5.669	5.691	5.713	5.733	5.753	5.772	5.790	5.807
25.0	A	12820	13026	13240	13462	13692	13930	14175	14428	14689	14957	15233	15516	15807	16105	16410	16722
	B	5.452	5.480	5.508	5.535	5.561	5.586	5.611	5.635	5.658	5.680	5.701	5.722	5.742	5.761	5.779	5.797
25.5	A	12702	12907	13121	13342	13571	13808	14052	14305	14564	14832	15107	15389	15678	15975	16279	16591
	B	5.439	5.467	5.495	5.522	5.548	5.574	5.599	5.623	5.646	5.668	5.690	5.711	5.731	5.750	5.769	5.786
26.0	A	12585	12789	13001	13222	13450	13686	13930	14181	14440	14706	14980	15262	15550	15846	16149	16460
	B	5.426	5.454	5.482	5.510	5.536	5.562	5.587	5.611	5.634	5.657	5.678	5.699	5.720	5.739	5.758	5.776
26.5	A	12468	12671	12883	13102	13329	13565	13807	14058	14316	14582	14855	15135	15423	15718	16020	16329
	B	5.412	5.441	5.470	5.497	5.524	5.549	5.574	5.599	5.622	5.645	5.667	5.688	5.709	5.728	5.747	5.765
27.0	A	12351	12554	12764	12983	13209	13444	13686	13935	14192	14457	14729	15009	15296	15590	15891	16199
	B	5.399	5.428	5.457	5.484	5.511	5.537	5.562	5.587	5.610	5.633	5.655	5.677	5.697	5.717	5.736	5.755
27.5	A	12235	12437	12646	12864	13090	13323	13564	13813	14069	14333	14604	14883	15169	15462	15762	16070
	B	5.386	5.415	5.444	5.471	5.498	5.525	5.550	5.575	5.598	5.622	5.644	5.665	5.686	5.706	5.726	5.744
28.0	A	12119	12320	12529	12746	12971	13203	13443	13691	13947	14209	14480	14757	15042	15335	15634	15941
	B	5.373	5.402	5.431	5.459	5.486	5.512	5.538	5.563	5.587	5.610	5.632	5.654	5.675	5.695	5.715	5.733
28.5	A	12004	12204	12412	12628	12852	13083	13323	13570	13824	14086	14356	14632	14917	15208	15506	15812
	B	5.359	5.389	5.418	5.446	5.473	5.500	5.525	5.550	5.575	5.598	5.621	5.643	5.664	5.684	5.704	5.723
29.0	A	11889	12088	12295	12510	12733	12964	13203	13449	13702	13963	14232	14508	14791	15081	15379	15684
	B	5.346	5.376	5.405	5.433	5.460	5.487	5.513	5.538	5.563	5.586	5.609	5.631	5.653	5.673	5.693	5.712
29.5	A	11774	11972	12179	12393	12615	12845	13083	13328	13581	13841	14109	14384	14666	14955	15252	15556
	B	5.333	5.363	5.392	5.420	5.448	5.475	5.501	5.526	5.551	5.574	5.598	5.620	5.641	5.662	5.682	5.701

		COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH										F=1/(A+DP*B)					
		RELATIVE DENSITY (60/60 DEG F)															
TEMP DEG F		0.382	0.384	0.386	0.388	0.390	0.392	0.394	0.396	0.398	0.400	0.402	0.404	0.406	0.408	0.410	0.412
30.0	A	11660	11857	12063	12276	12498	12727	12964	13208	13460	13719	13986	14260	14541	14830	15126	15428
	B	5.319	5.349	5.379	5.407	5.435	5.462	5.488	5.514	5.539	5.563	5.586	5.608	5.630	5.651	5.671	5.690
30.5	A	11546	11743	11948	12160	12381	12609	12845	13088	13339	13598	13864	14137	14417	14705	15000	15301
	B	5.306	5.336	5.366	5.394	5.422	5.450	5.476	5.502	5.527	5.551	5.574	5.597	5.619	5.640	5.660	5.680
31.0	A	11433	11629	11832	12044	12264	12491	12726	12969	13219	13477	13742	14014	14293	14580	14874	15175
	B	5.292	5.323	5.352	5.381	5.410	5.437	5.464	5.489	5.514	5.539	5.562	5.585	5.607	5.629	5.649	5.669
31.5	A	11320	11515	11718	11929	12148	12374	12608	12850	13099	13356	13620	13891	14170	14456	14749	15049
	B	5.279	5.309	5.339	5.368	5.397	5.424	5.451	5.477	5.502	5.527	5.551	5.574	5.596	5.617	5.638	5.658
32.0	A	11207	11401	11604	11814	12032	12257	12491	12732	12980	13236	13499	13770	14047	14332	14624	14923
	B	5.265	5.296	5.326	5.355	5.384	5.412	5.439	5.465	5.490	5.515	5.539	5.562	5.584	5.606	5.627	5.647
32.5	A	11095	11288	11490	11699	11916	12141	12374	12614	12861	13116	13378	13648	13925	14209	14500	14798
	B	5.252	5.283	5.313	5.342	5.371	5.399	5.426	5.452	5.478	5.503	5.527	5.550	5.573	5.595	5.616	5.636
33.0	A	10983	11176	11376	11585	11801	12025	12257	12496	12743	12997	13258	13527	13803	14086	14376	14673
	B	5.238	5.269	5.300	5.329	5.358	5.386	5.413	5.440	5.466	5.491	5.515	5.539	5.561	5.583	5.605	5.625
33.5	A	10872	11064	11263	11471	11687	11910	12140	12379	12625	12878	13138	13406	13681	13963	14253	14549
	B	5.225	5.256	5.286	5.316	5.345	5.373	5.401	5.428	5.454	5.479	5.503	5.527	5.550	5.572	5.594	5.614
34.0	A	10761	10952	11151	11358	11572	11795	12025	12262	12507	12759	13019	13286	13560	13841	14130	14425
	B	5.211	5.242	5.273	5.303	5.332	5.361	5.388	5.415	5.441	5.467	5.491	5.515	5.538	5.561	5.582	5.603
34.5	A	10650	10841	11039	11245	11459	11680	11909	12146	12390	12641	12900	13166	13439	13720	14007	14302
	B	5.197	5.229	5.260	5.290	5.319	5.348	5.376	5.403	5.429	5.455	5.479	5.503	5.527	5.549	5.571	5.592
35.0	A	10540	10730	10927	11132	11345	11566	11794	12030	12273	12524	12781	13047	13319	13598	13885	14179
	B	5.183	5.215	5.246	5.277	5.306	5.335	5.363	5.390	5.417	5.442	5.467	5.492	5.515	5.538	5.560	5.581
35.5	A	10430	10619	10816	11020	11232	11452	11679	11914	12157	12406	12663	12928	13199	13478	13763	14056
	B	5.170	5.202	5.233	5.263	5.293	5.322	5.350	5.378	5.404	5.430	5.455	5.480	5.504	5.526	5.549	5.570
36.0	A	10321	10509	10705	10908	11120	11339	11565	11799	12041	12290	12546	12809	13080	13357	13642	13934
	B	5.156	5.188	5.219	5.250	5.280	5.309	5.337	5.365	5.392	5.418	5.443	5.468	5.492	5.515	5.537	5.559
36.5	A	10212	10399	10594	10797	11008	11226	11451	11685	11925	12173	12428	12691	12961	13237	13521	13812
	B	5.142	5.174	5.206	5.237	5.267	5.296	5.325	5.353	5.380	5.406	5.431	5.456	5.480	5.503	5.526	5.548
37.0	A	10104	10290	10484	10686	10896	11113	11338	11570	11810	12057	12312	12573	12842	13118	13401	13691
	B	5.128	5.161	5.193	5.224	5.254	5.283	5.312	5.340	5.367	5.394	5.419	5.444	5.468	5.492	5.514	5.536
37.5	A	9996	10181	10375	10576	10785	11001	11225	11457	11695	11942	12195	12456	12724	12999	13281	13570
	B	5.114	5.147	5.179	5.210	5.241	5.270	5.299	5.327	5.355	5.381	5.407	5.432	5.457	5.480	5.503	5.525

TEMP DEG F	COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH RELATIVE DENSITY (60/60 DEG F)															
	F=1/(A+DP*B)															
	0.382	0.384	0.386	0.388	0.390	0.392	0.394	0.396	0.398	0.400	0.402	0.404	0.406	0.408	0.410	0.412
38.0 A	9888	10073	10265	10466	10674	10889	11113	11343	11581	11827	12079	12339	12606	12880	13162	13450
B	5.101	5.133	5.165	5.197	5.227	5.257	5.286	5.315	5.342	5.369	5.395	5.420	5.445	5.469	5.492	5.514
38.5 A	9781	9965	10157	10356	10563	10778	11000	11230	11467	11712	11964	12223	12489	12762	13043	13330
B	5.087	5.120	5.152	5.183	5.214	5.244	5.273	5.302	5.330	5.357	5.383	5.408	5.433	5.457	5.480	5.503
39.0 A	9674	9857	10048	10247	10453	10667	10889	11118	11354	11598	11849	12107	12372	12645	12924	13210
B	5.073	5.106	5.138	5.170	5.201	5.231	5.260	5.289	5.317	5.344	5.371	5.396	5.421	5.445	5.469	5.491
39.5 A	9568	9750	9940	10138	10344	10557	10778	11006	11241	11484	11734	11991	12256	12527	12806	13091
B	5.059	5.092	5.125	5.156	5.188	5.218	5.247	5.276	5.304	5.332	5.358	5.384	5.409	5.434	5.457	5.480
40.0 A	9462	9643	9833	10030	10234	10447	10667	10894	11129	11371	11620	11876	12140	12411	12688	12972
B	5.045	5.078	5.111	5.143	5.174	5.205	5.234	5.263	5.292	5.319	5.346	5.372	5.397	5.422	5.446	5.469
40.5 A	9356	9537	9726	9922	10126	10337	10556	10783	11017	11258	11506	11762	12024	12294	12571	12854
B	5.031	5.064	5.097	5.129	5.161	5.192	5.221	5.251	5.279	5.307	5.334	5.360	5.385	5.410	5.434	5.457
41.0 A	9251	9431	9619	9814	10017	10228	10446	10672	10905	11145	11393	11648	11909	12178	12454	12737
B	5.017	5.050	5.084	5.116	5.147	5.178	5.208	5.238	5.266	5.294	5.321	5.348	5.373	5.398	5.422	5.446
41.5 A	9147	9326	9513	9707	9910	10119	10337	10562	10794	11033	11280	11534	11795	12063	12338	12619
B	5.002	5.037	5.070	5.102	5.134	5.165	5.195	5.225	5.254	5.282	5.309	5.336	5.361	5.386	5.411	5.434
42.0 A	9042	9221	9407	9601	9802	10011	10228	10452	10683	10922	11168	11421	11681	11948	12222	12502
B	4.988	5.023	5.056	5.089	5.121	5.152	5.182	5.212	5.241	5.269	5.297	5.323	5.349	5.375	5.399	5.423
42.5 A	8938	9116	9301	9494	9695	9903	10119	10342	10573	10811	11056	11308	11567	11833	12106	12386
B	4.974	5.009	5.042	5.075	5.107	5.138	5.169	5.199	5.228	5.257	5.284	5.311	5.337	5.363	5.387	5.411
43.0 A	8835	9012	9196	9389	9588	9796	10011	10233	10463	10700	10944	11195	11454	11719	11991	12270
B	4.960	4.995	5.028	5.061	5.094	5.125	5.156	5.186	5.215	5.244	5.272	5.299	5.325	5.351	5.376	5.400
43.5 A	8732	8908	9092	9283	9482	9689	9903	10125	10354	10590	10833	11083	11341	11605	11876	12155
B	4.946	4.980	5.014	5.048	5.080	5.112	5.143	5.173	5.202	5.231	5.259	5.286	5.313	5.339	5.364	5.388
44.0 A	8629	8804	8987	9178	9377	9582	9796	10016	10245	10480	10722	10972	11228	11492	11762	12040
B	4.932	4.966	5.000	5.034	5.066	5.098	5.130	5.160	5.190	5.219	5.247	5.274	5.301	5.327	5.352	5.377
44.5 A	8527	8702	8884	9074	9271	9476	9689	9909	10136	10370	10612	10861	11116	11379	11649	11925
B	4.917	4.952	4.987	5.020	5.053	5.085	5.116	5.147	5.177	5.206	5.234	5.262	5.289	5.315	5.340	5.365
45.0 A	8425	8599	8780	8970	9166	9371	9582	9801	10028	10261	10502	10750	11005	11267	11535	11811
B	4.903	4.938	4.973	5.006	5.039	5.071	5.103	5.134	5.164	5.193	5.222	5.249	5.276	5.303	5.328	5.353
45.5 A	8324	8497	8678	8866	9062	9265	9476	9695	9920	10153	10393	10640	10894	11155	11422	11697
B	4.889	4.924	4.959	4.992	5.026	5.058	5.090	5.121	5.151	5.180	5.209	5.237	5.264	5.291	5.316	5.341

TEMP DEG F	COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH RELATIVE DENSITY (60/60 DEG F)															
	0.382	0.384	0.386	0.388	0.390	0.392	0.394	0.396	0.398	0.400	0.402	0.404	0.406	0.408	0.410	0.412
46.0 A	8223	8395	8575	8763	8958	9161	9371	9588	9813	10045	10284	10530	10783	11043	11310	11584
B	4.874	4.910	4.945	4.979	5.012	5.044	5.076	5.107	5.138	5.167	5.196	5.224	5.252	5.279	5.305	5.330
46.5 A	8123	8294	8473	8660	8854	9056	9265	9482	9706	9937	10175	10421	10673	10932	11198	11471
B	4.860	4.896	4.930	4.965	4.998	5.031	5.063	5.094	5.125	5.155	5.184	5.212	5.240	5.266	5.293	5.318
47.0 A	8022	8193	8371	8557	8751	8952	9161	9377	9600	9830	10067	10312	10563	10821	11087	11359
B	4.845	4.881	4.916	4.951	4.984	5.017	5.050	5.081	5.112	5.142	5.171	5.199	5.227	5.254	5.281	5.306
47.5 A	7923	8093	8270	8455	8648	8849	9056	9271	9494	9723	9960	10203	10454	10711	10976	11247
B	4.831	4.867	4.902	4.937	4.971	5.004	5.036	5.068	5.099	5.129	5.158	5.187	5.215	5.242	5.269	5.294
48.0 A	7824	7993	8169	8354	8546	8746	8952	9167	9388	9617	9853	10095	10345	10602	10865	11135
B	4.816	4.853	4.888	4.923	4.957	4.990	5.023	5.054	5.086	5.116	5.145	5.174	5.202	5.230	5.257	5.282
48.5 A	7725	7893	8069	8253	8444	8643	8849	9062	9283	9511	9746	9988	10237	10492	10755	11024
B	4.802	4.838	4.874	4.909	4.943	4.976	5.009	5.041	5.072	5.103	5.133	5.162	5.190	5.218	5.244	5.271
49.0 A	7626	7794	7969	8152	8343	8541	8746	8959	9178	9405	9640	9881	10129	10383	10645	10914
B	4.787	4.824	4.860	4.895	4.929	4.963	4.996	5.028	5.059	5.090	5.120	5.149	5.178	5.205	5.232	5.259
49.5 A	7528	7695	7870	8052	8242	8439	8643	8855	9074	9300	9534	9774	10021	10275	10536	10803
B	4.773	4.809	4.845	4.881	4.915	4.949	4.982	5.014	5.046	5.077	5.107	5.136	5.165	5.193	5.220	5.247
50.0 A	7431	7597	7771	7952	8141	8337	8541	8752	8970	9196	9428	9668	9914	10167	10427	10694
B	4.758	4.795	4.831	4.867	4.901	4.935	4.968	5.001	5.033	5.064	5.094	5.124	5.153	5.181	5.208	5.235
50.5 A	7334	7499	7672	7853	8041	8237	8440	8650	8867	9092	9323	9562	9807	10060	10319	10584
B	4.743	4.781	4.817	4.852	4.887	4.921	4.955	4.988	5.019	5.051	5.081	5.111	5.140	5.168	5.196	5.223
51.0 A	7237	7402	7574	7754	7941	8136	8338	8548	8764	8988	9219	9457	9701	9953	10211	10476
B	4.729	4.766	4.803	4.838	4.873	4.908	4.941	4.974	5.006	5.038	5.068	5.098	5.127	5.156	5.184	5.211
51.5 A	7141	7305	7476	7655	7842	8036	8237	8446	8662	8885	9115	9352	9595	9846	10103	10367
B	4.714	4.752	4.788	4.824	4.859	4.894	4.928	4.961	4.993	5.024	5.055	5.085	5.115	5.143	5.171	5.199
52.0 A	7045	7208	7379	7557	7743	7936	8137	8345	8560	8782	9011	9247	9490	9740	9996	10260
B	4.699	4.737	4.774	4.810	4.845	4.880	4.914	4.947	4.980	5.011	5.042	5.073	5.102	5.131	5.159	5.186
52.5 A	6949	7112	7282	7460	7645	7837	8037	8244	8458	8680	8908	9143	9385	9634	9890	10152
B	4.685	4.722	4.759	4.796	4.831	4.866	4.900	4.933	4.966	4.998	5.029	5.060	5.089	5.118	5.147	5.174
53.0 A	6854	7016	7185	7362	7547	7738	7938	8144	8357	8578	8805	9040	9281	9529	9784	10045
B	4.670	4.708	4.745	4.781	4.817	4.852	4.886	4.920	4.953	4.985	5.016	5.047	5.077	5.106	5.134	5.162
53.5 A	6760	6921	7089	7266	7449	7640	7838	8044	8257	8476	8703	8937	9177	9424	9678	9939
B	4.655	4.693	4.730	4.767	4.803	4.838	4.873	4.906	4.939	4.972	5.003	5.034	5.064	5.093	5.122	5.150

TEMP DEG F	COMPRESSIBILITY FACTOR PER POUNDS PER SQUARE INCH RELATIVE DENSITY (60/60 DEG F)															
	F=1/(A+DP*B)															
	0.382	0.384	0.386	0.388	0.390	0.392	0.394	0.396	0.398	0.400	0.402	0.404	0.406	0.408	0.410	0.412
54.0 A	6666	6826	6994	7169	7352	7542	7740	7945	8156	8375	8601	8834	9073	9320	9573	9833
B	4.640	4.678	4.716	4.753	4.789	4.824	4.859	4.893	4.926	4.958	4.990	5.021	5.051	5.081	5.110	5.138
54.5 A	6572	6732	6899	7073	7255	7445	7642	7846	8057	8275	8500	8732	8970	9216	9468	9727
B	4.625	4.664	4.701	4.738	4.775	4.810	4.845	4.879	4.912	4.945	4.977	5.008	5.038	5.068	5.097	5.126
55.0 A	6479	6638	6804	6978	7159	7348	7544	7747	7957	8175	8399	8630	8868	9113	9364	9622
B	4.610	4.649	4.687	4.724	4.760	4.796	4.831	4.865	4.899	4.932	4.964	4.995	5.026	5.056	5.085	5.113
55.5 A	6386	6544	6710	6883	7063	7251	7446	7649	7858	8075	8298	8529	8766	9010	9260	9517
B	4.595	4.634	4.672	4.709	4.746	4.782	4.817	4.851	4.885	4.918	4.950	4.982	5.013	5.043	5.072	5.101
56.0 A	6294	6451	6616	6788	6968	7155	7350	7551	7760	7976	8198	8428	8664	8907	9157	9413
B	4.580	4.619	4.658	4.695	4.732	4.768	4.803	4.838	4.872	4.905	4.937	4.969	5.000	5.030	5.060	5.089
56.5 A	6202	6358	6522	6694	6873	7060	7253	7454	7662	7877	8099	8327	8563	8805	9054	9309
B	4.565	4.604	4.643	4.680	4.717	4.754	4.789	4.824	4.858	4.891	4.924	4.956	4.987	5.017	5.047	5.076
57.0 A	6110	6266	6429	6600	6779	6964	7157	7357	7564	7778	8000	8227	8462	8703	8951	9206
B	4.550	4.590	4.628	4.666	4.703	4.739	4.775	4.810	4.844	4.878	4.911	4.943	4.974	5.005	5.035	5.064
57.5 A	6019	6174	6337	6507	6685	6869	7062	7261	7467	7681	7901	8128	8362	8602	8849	9103
B	4.535	4.575	4.613	4.651	4.689	4.725	4.761	4.796	4.831	4.864	4.897	4.930	4.961	4.992	5.022	5.051
58.0 A	5928	6083	6245	6414	6591	6775	6967	7165	7371	7583	7803	8029	8262	8502	8748	9001
B	4.520	4.560	4.599	4.637	4.674	4.711	4.747	4.782	4.817	4.851	4.884	4.916	4.948	4.979	5.009	5.039
58.5 A	5838	5992	6153	6322	6498	6681	6872	7070	7274	7486	7705	7930	8162	8401	8647	8899
B	4.505	4.545	4.584	4.622	4.660	4.697	4.733	4.768	4.803	4.837	4.871	4.903	4.935	4.966	4.997	5.026
59.0 A	5748	5901	6062	6230	6405	6588	6778	6975	7179	7390	7607	7832	8063	8301	8546	8797
B	4.490	4.530	4.569	4.608	4.645	4.682	4.719	4.754	4.789	4.824	4.857	4.890	4.922	4.953	4.984	5.014
59.5 A	5659	5811	5971	6138	6313	6495	6684	6880	7083	7294	7511	7734	7965	8202	8446	8696
B	4.475	4.515	4.554	4.593	4.631	4.668	4.705	4.740	4.776	4.810	4.844	4.877	4.909	4.940	4.971	5.001
60.0 A	5570	5721	5880	6047	6221	6402	6591	6786	6988	7198	7414	7637	7867	8103	8346	8596
B	4.459	4.500	4.539	4.578	4.616	4.654	4.690	4.726	4.762	4.796	4.830	4.863	4.896	4.927	4.958	4.989
60.5 A	5481	5632	5791	5956	6130	6310	6498	6692	6894	7103	7318	7540	7769	8005	8247	8496
B	4.444	4.485	4.524	4.563	4.602	4.639	4.676	4.712	4.748	4.783	4.817	4.850	4.883	4.914	4.946	4.976
61.0 A	5393	5543	5701	5866	6039	6218	6405	6599	6800	7008	7223	7444	7672	7907	8148	8396
B	4.429	4.470	4.509	4.549	4.587	4.625	4.662	4.698	4.734	4.769	4.803	4.837	4.869	4.901	4.933	4.963
61.5 A	5305	5455	5612	5776	5948	6127	6313	6506	6707	6914	7128	7348	7576	7809	8050	8297
B	4.414	4.454	4.495	4.534	4.573	4.610	4.648	4.684	4.720	4.755	4.790	4.823	4.856	4.888	4.920	4.951