MITNE - 166

COMMENTS ON THE CALCULATION OF THERMODYNAMIC

AND TRANSPORT PROPERTIES OF HELIUM

by

Thomas E. Eaton

Prepared for the

General Atomic Company

P.O. Box 81608, San Diego, California 92138

Submitted to GAC - November 1974

Department of Nuclear Engineering

Massachusetts Institute of Technology

138 Albany Street

Cambridge, Massachusetts 02139

COMMENTS ON THE CALCULATION OF THERMODYNAMIC
AND TRANSPORT PROPERTIES OF HELIUM

by

Thomas E. Eaton

Prepared for the

General Atomic Company

P.O. Box 81608, San Diego, California 92138

Submitted to GAC - November 1974

Department of Nuclear Engineering
Massachusetts Institute of Technology
138 Albany Street
Cambridge, Massachusetts 02139

Prepared by _Thomas E. Eaton_
Thomas E. Eaton

Reviewed by _Neil E. Todreas_
Neil E. Todreas

Project Supervised by: Professor D. D. Lanning
Professor N. E. Todreas

Table of Contents

1.0 Introduction and Summary

During recent years, helium thermodynamic and transport property calculations have become of interest at temperatures as high as 2000°F (1038°C) and at pressures as high as 1500 psia (104 bar). The temperature range and pressure range of interest have increased significantly in the last decade due to developments in HTGR core design which permit higher coolant temperatures and due to developments in PCRV design which permit operation of higher pressures.

Helium properties are of interest in GCFR design and analysis at the higher pressures, primarily, because of economic incentives for higher coolant densities. Properties are of interest in HTGR design and analysis at the higher temperatures because of interest in nuclear gas turbine and process heat applications.

Based on currently available techniques, a review of helium property calculational equations is in order with particular interest regarding validity in the pressure range of 1000-1500 psia (69.0-104 bar) and in the temperature range of 1000-2500°F (540-1370°C).

The purpose of this report is not to provide a detailed report on the various methods for calculating helium properties but rather to note several items of interest related to the problem. This report does provide a comparison of results calculated using several commonly used references, a lengthy list of references, a tabulation of helium properties with detail given at the HTGR and GCFR average operating pressures, and summaries of three of the methods reported for calculating helium properties.

It is hoped that the comments, calculations and comparisons given in this report may be of some value to persons concerned with evaluating helium thermodynamic and transport properties during the thermal-hydraulic and safety analysis of HTGR and GCFR plants. Those persons desiring details not found in this report may consult the references listed in section 5.0.

2.0 Literature Sources

Section 5.0 gives a listing of numerous references relating
to the calculation of helium thermodynamic and transport properties.
Although not all of the references listed have been reviewed by the
author, the equations of Petersen (P2, P3, P4), Pierce (P5),
Varadi (V1), and Wilson (W2) are all convenient for reactor design
and analysis; further, each of the authors includes a tabulation
of properties in the temperature and pressure ranges of design
interest.

Reports which have not been reviewed by the author which appear
to be of interest are Akin (A1, A2, A3, A4), Mann (M1), McCarty
(M2, M3), NBS Circular 564 (N1) and Simmons (S1).

For convenience, the equations from Varadi (V1) have been
summarized in Table 1, those from Wilson (W2) in Table 2, and those
from Petersen (P3) in Table 3. English to metric conversion factors
are given in Table 4.

Details concerning the commonly-used Beattie-Bridgeman equation
of state are given in Table 5.

Table 1   Page 1 of 5

A SUMMARY OF EQUATIONS SUGGESTED FOR CALCULATING HELIUM THERMAL-PHYSICAL PROPERTIES BY VARADI (EIR TM-IN-410) (VI)

ENGLISH UNITS $

$T = {}^\circ R$ $T_o = 491.67\ {}^\circ R$

$P = psia$ $P_o = 14.504\ psia$

$R = 0.4965\ BTU/lbm\text{-}{}^\circ R$

$Z = 1.0 + (0.1850)\ \dfrac{BP}{RT}$

$B = B(T) = C_1 + \dfrac{C_2}{1-C_3 T} + \dfrac{C_4}{1+C_5 T}$ (ft^3/lbm)

$C_1 = 1.520017 \times 10^{-2}\ ft^3/lbm$

$C_2 = 1.526208 \times 10^{-2}\ ft^3/lbm$

$C_3 = 1.900378 \times 10^{-2}\ {}^\circ R^{-1}$

$C_4 = 4.388083 \times 10^{-2}\ ft^3/lbm$

$C_5 = 5.227289 \times 10^{-4}\ {}^\circ R^{-1}$

$B' = \dfrac{\partial B(T)}{\partial T} = \dfrac{+C_2 C_3}{(1-C_3 T)^2} - \dfrac{C_4 C_5}{(1+C_5 T)^2}$ $(ft^3/lbm\,{}^\circ R)$

$B'' = \dfrac{\partial^2 B(T)}{\partial T^2} = \dfrac{2C_2 C_3{}^2}{(1-C_3 T)^3} + \dfrac{2C_4 C_5{}^2}{(1+C_5 T)^3}$ $(ft^3/lbm\text{-}{}^\circ R^2)$

$\rho = \dfrac{P}{(5.4054)RT + BP}$ (lbm/ft^3)

$C_{po} = 1.242\ BTU/lbm\text{-}{}^\circ F$

$C_p = C_{po} - (0.1850)\ TB''P$ $(BTU/lbm\text{-}{}^\circ F)$

$C_{vo} = 0.7456\ BTU/lbm\text{-}{}^\circ F$

Table 1 continued

Page 2 of 5

4

$$C_v = C_{vo} - (0.1850)P[TB'' + B'(2.0+(0.1850)B'P/R] \quad (BTU/lbm^\circ F)$$

$$H_o = 2.390 \ BTU/lbm$$

$$H = H_o + C_{po}T + (0.1850)P[B - B'T] \quad (BTU/lbm)$$

$$S_o = 6.6930 \ BTU/lbm\text{-}^\circ F$$

$$S = S_o + C_{po}\ln(T/T_o) - R\ln(P/P_o) - 0.1850 \ B'P \quad (BTU/lbm\text{-}^\circ F)$$

$$V_s = (158.29) \ Z\sqrt{RT \ C_p/C_v} \quad (ft/sec)$$

$$\mu = 0.04488 \ (T/T_o)^{0.68} \quad (lbm/hr\text{-}ft)$$

$$k(P,T) = 0.08368(T/T_o)^{0.68}[1.0+(1.665 \times 10^{-4})(P/P_o)^{1.17}/(T/T_o)^{1.85}]$$

$$(BTU/hr\text{-}ft\text{-}^\circ F)$$

$$Pr = 0.666[1.0+(1.665 \times 10^{-4})(P/P_o)^{1.17}/(T/T_o)^{1.85}]^{-1}$$

Table 1 continued   Page 3 of 5

METRIC UNITS $

$T = °R$

$T_o = 273.15 °K$

$P = N/m^2$

$P_o = 10^5 N/m^2$

$R = 2077.1 J/kg°K$

$Z = 1.0 + \dfrac{BP}{RT}$

$$B = B(T) = C_1 + \frac{C_2}{1-C_3 T} + \frac{C_4}{1+C_5 T} \qquad (m^3/kg)$$

$C_1 = 9.489433 \times 10^{-4} \; m^3/kg$

$C_2 = 9.528079 \times 10^{-4} \; m^3/kg$

$C_3 = 3.420680 \times 10^{-2} \; °K^{-1}$

$C_4 = 2.739470 \times 10^{-3} \; m^3/kg$

$C_5 = 9.409120 \times 10^{-4} \; °K^{-1}$

$$B' = \frac{\partial B(T)}{\partial T} = \frac{+C_2 C_3}{(1-C_3 T)^2} - \frac{C_4 C_5}{(1+C_5 T)^2} \qquad (m^3/kg°K)$$

$$B'' = \frac{\partial^2 B(T)}{\partial T^2} = \frac{+2C_2 C_3^2}{(1-C_3 T)^3} + \frac{2C_4 C_5^2}{(1+C_5 T)^3} \qquad (m^3/kg°K^2)$$

$$\rho = \frac{P}{RT + BP} \qquad (kg/m^3)$$

$C_{po} = 5198 \; J/kg - °K$

$C_p = C_{po} - TB''P \qquad (J/kg-°K)$

Table 1 continued

$$C_{vo} = 3121 \text{ J/kg-}^\circ K$$

$$C_v = C_{vo} - P[TB''+B'(2.0+\frac{B'P}{R})] \quad (\text{J/kg-}^\circ K)$$

$$H_o = 5557 \text{ J/kg}$$

$$H = H_o + C_{po}T + P(B-B'T) \quad (\text{J/kg})$$

$$S_o = 28016. \text{ J/Kg}$$

$$S = S_o + C_{po}\ln(T/T_o) - R\ln(P/P_o)-B'P \quad (\text{J/kg-}^\circ K)$$

$$V_s = Z\sqrt{RT\ C_p/C_v} \quad (\text{m/sec})$$

$$\mu = 1.855 \times 10^{-5}(T/T_o)^{0.68} \quad (\text{kg/m-sec})$$

$$k(P,T) = 0.1448(T/T_o)^{0.68}[1.0+1.665\times10^{-4}(P/P_o)^{1.17}/(T/T_o)^{1.85}]$$

$$(\text{W/m-}^\circ C)$$

$$Pr = 0.666[1.0 + 1.665 \times 10^{-4}(P/P_o)^{1.17}/(T/T_o)^{1.85}]-1$$

Table 1 concluded.

$ Nomenclature

B = Second Viral Coefficient - ft^3/lbm (m^3/kg)*

B' = $\partial B/\partial T$ - $ft^3/lbm-°F$ $(m^3/kg-°K)$

B" = $\partial^2 B/\partial T^2$ - $ft^3/lbm-°F$ $(m^3/kg-°K^2)$

C_p = Specific Heat at Constant Pressure - $BTU/lbm-°F$ $(J/kg-°K)$

C_v = Specific Heat at Constant Volume - $BTU/lbm-°F$ $(J/kg-°K)$

H = Enthalpy - BTU/lbm (J/kg)

k = Thermal Conductivity - $BTU/hr-ft-°F$ $(J/hr-m-°K)$

P = Pressure - $psia$ (N/m^2)

P_o = 14.504 psia = 10^5 N/m^2

R = Gas Constant for Helium - $BTU/lbm-°R$ $(J/kg-°K)$

S = Entropy - $BTU/lbm-°F$ $(J/kg-°K)$

T = Absolute Temperature - $°R$ $(°K)$

T_o = 491.67°R = 273.15°K

V_s = Sonic Velocity - ft/sec (m/sec)

Z = Compressibility Factor

ρ = Fluid Density - lbm/ft^3 (kg/m^3)

μ = Dynamic Viscosity - $lbm/hr-ft$ $(kg/sec-m)$

* (metric equation units)

Table 2

HELIUM THERMODYNAMIC AND TRANSPORT
PROPERTIES ACCORDING TO WILSON (W1:GA-1355)*

$g_c = 32.174$ lbm-ft/lbf-sec^2

$M = 4.002603$ lbm/lbm-Mole $= 4.002603$ lbm/lbm M

$R_G = 1545.$ ft-lbf/lbm M-°R

$R_H = 386.0$ ft-lbf/lbm-°R $= R_G/M$

$J = 778.26$ ft-lbf/BTU

THE BEATTIE-BRIDGEMAN EQUATION OF STATE

$$P = \left[\frac{R_H T(1.0-\varepsilon)(v+B) - A}{144\ v^2}\right] \quad \text{(psia)}$$

where

$A = A_o\left(1.0 - \dfrac{a}{v}\right) \quad$ (lbf-ft^4/lbm^2)

$B = B_o\left(1.0 - \dfrac{b}{v}\right) \quad$ (ft^3/lbm)

$\varepsilon = \dfrac{C}{vT^3} \quad (-)$

$A_o = 734.04$ lbf-ft^4/lbm^2

$a = 0.2397$ ft^3/lbm

$B_o = 0.05609$ ft^3/lbm

$b = 0.0$ ft^3/lbm

$C = 934.57$ °R^3-ft^3/lbm

$$C_{vo} = 0.7455 \quad BTU/lbm\text{-}^\circ F$$

$$C_v = \frac{6R_H C}{JT^3}\left(\frac{1}{v} + \frac{B_o}{2v^2}\right) + C_{vo} \qquad (BTU/lbm\text{-}^\circ F)$$

$$C_p = C_v + \frac{\frac{T}{J}\left[\left(\frac{2R_H C}{vT^3} + R_H\right)(v+B_o)\right]^2}{288Pv^3 - \frac{R_H C}{T^2}(v+B_o) - R_H T\left(1.0 - \frac{C}{vT^3}\right)v^2 + aA_o} \qquad (BTU/lbm\text{-}^\circ F)$$

$$U'' = 11.4992 \quad BTU/lbm$$

$$U = U'' + \frac{1}{J}\left[\frac{A_o}{v}\left(\frac{a}{2v} - 1\right) - \frac{3R_H C}{vT^2}\left(1.0 + \frac{B_o}{2v}\right)\right] + C_{vo}T \qquad (BTU/lbm)$$

$$H = U + 0.1850 \, Pv \qquad (BTU/lbm)$$

$$S'' = -0.85032 \quad BTU/lbm\text{-}^\circ F$$

$$S = S'' + \frac{R_H}{J}\left[\ln(Mv) - \frac{B_o}{v} - \frac{2C}{vT^3}\left(1 - \frac{B_o}{2v}\right)\right] + C_{vo}\ln(T) \qquad (BTU/lbm\text{-}^\circ F)$$

$$Z = 144.Pv/R_H T \qquad (-)$$

$$\mu = 0.00067 \, T^{0.68} \qquad (lbm/hr\text{-}ft)$$

$$K = 0.001675 \ T^{0.68}[\frac{6R_H C}{JT^3}(\frac{1}{v}+\frac{B_o}{2v^2})+C_{vo}] + 0.0008147(P-14.696)^{0.28}$$

$$(BTU/lbm-{}^{\circ}F)$$

$$V_s = \sqrt{\psi + \phi} \qquad (ft/sec)$$

where

$$\phi = g_c[R_H T - (\frac{R_H C}{T^2} - R_H TB_o + A_o)\frac{2}{v} - (\frac{R_H CB_o}{T^2} - A_o a)\frac{3}{v^2}] \quad (ft^2/sec^2)$$

$$\psi = \frac{g_c Tv^2}{JC_v}[\frac{R_H(v+B_o)(1+\frac{2C}{vT^3})}{v^2}]^2 \quad (ft^2/sec^2)$$

*NOMENCLATURE

a = constant in the Beattie-Bridgeman Equation of State (=) ft^3/lbm

$A = A_0(1.0 - a/v)$ (=) $lbf\text{-}ft^4/lbm^2$

A_0 = constant in the Beattie-Bridgeman Equation of State (=) $lbf\text{-}ft^4/lbm^2$

b = constant in the Beattie-Bridgeman Equation of State (=) ft^3/lbm

$B = B_0(1.0 - b/v)$ (=) ft^3/lbm

B_0 = constant in the Beattie-Bridgeman Equation of State (=) ft^3/lbm

C = constant in the Beattie-Bridgeman Equation of State (=) $°R^3 - ft^3/lbm$

C_p = specific heat at constant pressure (=) $BTU/lbm\text{-}°F$

C_v = specific heat at constant volume (=) $BTU/lbm\text{-}°F$

g_c = gravity constant = 32.174 $lbm\text{-}ft/lbf\text{-}sec^2$

H = Enthalpy (=) BTU/lbm

J = Mechanical Equivalent of Heat = 778.26 ft-lbf/BTU

K = Thermal Conductivity (=) $BTU/hr\text{-}ft\text{-}°F$

M = Molecular Weight of Helium = 4.0026 lbm/lbm M

P = Pressure (=) psia

R_G = Universal gas constant = 1545 ft-lbf/lbmM-R

R_H = Gas constant of helium = R_G/M (=) ft-lbf/lbm-R

S = Entropy (=) $BTU/lbm\text{-}°R$

T = Temperature (=) $°R$

U = Internal Energy (=) BTU/lbm

v = specific volume (=) ft^3/lbm

Z = Compressibility factor = PV/RT (=) -

ε = Term in the Beattie-Bridgeman Equation of State
     = $C/_v T^3$ (=) -

ρ = Density (=) lbm/ft^3

μ = Dynamic viscosity (=) lbm/hr-ft

Table 3

A SUMMARY OF EQUATIONS SUGGESTED FOR
CALCULATING HELIUM THERMAL-PHYSICAL
PROPERTIES BY PETERSON
(P3, RISO-224)

ENGLISH UNITS

$$\rho = 0.3730 \frac{P}{T} \left[1.0 + 0.06206 \frac{P}{T^{1.2}} \right]^{-1.0}$$

$$\mu = 0.0005890 \; T^{0.7}$$

$$k = 0.001550 \left[1.0 + 7.743 \times 10^{-5} \, P \right]$$

$$x \; (T/1.8)^{(0.71(1.0 - 1.38 \times 10^{-5} P))}$$

$$Pr = \frac{0.7117 \; (T/1.8)^{-(0.01 - 9.79 \times 10^{-6} P)}}{(1.0 + 7.74 \times 10^{-5} \, P)}$$

$$Cp = 1.241$$

where

ρ = mass density: lbm/ft^3

μ = dynamic viscosity: lbm/hr-ft

k = thermal conductivity: Btu/hr-ft-°F

Cp = specific heat at constant pressure: Btu/lbm-°F

T = temperature: °R

P = pressure: psia

Table 3 Concluded   Page 2 of 2

METRIC UNITS

$$\rho = 48.14 \; \frac{P}{T} \left[1.0 + 0.4446 \; \frac{P}{T^{1.2}} \right]^{-1.0}$$

$$\mu = 3.674 \times 10^{-7} \; T^{0.7}$$

$$k = 2.682 \times 10^{-3} \left[1.0 + 1.123 \times 10^{-3} \; P \right]$$
$$\times \; T^{[0.71 \, (1.0 - 0.0002P)]}$$

$$Pr = \frac{0.7117 \; T^{-[0.01 - 0.000142 \; P]}}{[1.0 + 0.001123 \; P]}$$

$$Cp = 5195.$$

where

ρ = mass density: kg/m^3

μ = dynamic viscosity: kg/m-s

k = thermal conductivity: W/m-K

Cp = specific heat at constant pressure: J/kg-K

T = temperature: °K

P = pressure: bars (= 0.98692 atm)

TABLE 4

CONVERSION FACTORS

1.0 kgm = 2.2046 lbm

1.0 m   = 3.2808 ft

1.0 ^{o}K = 1.8 ^{o}R

1.0 kgf = 9.8067 kgm-m/sec^{2} = 9.8067 Newton (N)

1.0 lbf = 32.174 lbm-ft/sec^{2}

1.0 J   = 0.000948 BTU

1.0 BTU = 778.26 lbf-ft

1.0 bar = 10^{5} N/m^{2} = 14.504 psia = 0.98692 atm = 10^{5} Pascal

1.0 m/sec = 3.2808 ft/sec = 2.237 mi/hr

1.0 kgm/m^{3} = 0.06243 lbm/ft^{3}

1.0 m^{3}/kgm = 16.018 ft^{3}/lbm

1.0 J/kgm = 0.000430 BTU/lbm

1.0 J/kgm-^{o}K = 0.0002389 BTU/lbm-^{o}F

1.0 kgm/m-sec = 0.6720 lbm/ft-sec = 2419.1 lbm/ft-hr

1.0 W/m-^{o}C = 0.5779 BTU/hr-ft-^{o}F

TABLE 5

THE BEATTIE – BRIDGEMAN EQUATION
OF STATE FOR HELIUM

ENGLISH UNITS[$]

With Mass in Pounds (lbm):

$$P = \frac{RT(1-\epsilon)(V + B)}{V^2} - \frac{A}{V^2}$$ (lbf/ft^2)

$$A = A_o \ (1 - a/V)$$ (lbf-ft^4/lbm^2)

$$B = B_o \ (1 - b/V)$$ (lbm/ft^3)

$$\epsilon = C/(VT^3)$$ (-)

With Mass in Pound-Moles (lbmM):

$$P = \frac{\overline{RT} \ (1-\overline{\epsilon}) \ (\overline{V} + \overline{B})}{\overline{V}^2} - \frac{\overline{A}}{\overline{V}^2}$$ (lbf/ft^2)

$$\overline{A} = \overline{A}_o \ (1 - \overline{a}/\overline{V})$$ (lbf-ft^4/lbmM^2)

$$\overline{B} = \overline{B}_o \ (1 - \overline{b}/\overline{V})$$ (lbmM/ft^3)

$$\overline{\epsilon} = \overline{C}/(\overline{V}T^3)$$ (-)

METRIC UNITS

With Mass in Grams (gm):

$$P = \frac{RT \ (1 - \epsilon) \ (V + B)}{V^2} - \frac{A}{V^2}$$ (atm)

Cont'd.

$$A = A_o \ (1 - a/V) \qquad\qquad (atm\text{-}l^2/gm^2)$$

$$B = B_o \ (1 - b/V) \qquad\qquad (1/gm)$$

$$\epsilon = C/VT^3 \qquad\qquad (-)$$

With Mass in Gram-Moles (gmM):

$$P = \frac{\overline{R}T \ (1 - \overline{\epsilon}) \ (\overline{V} + \overline{B})}{\overline{V}^2} - \frac{\overline{A}}{\overline{V}^2} \qquad\qquad (atm)$$

$$\overline{A} = \overline{A}_o \ (1 - \overline{a}/V) \qquad\qquad (atm\text{-}l^2/gmM^2)$$

$$\overline{B} = \overline{B}_o \ (1 - \overline{b}/V) \qquad\qquad (1/gmM)$$

$$\overline{\epsilon} = \overline{C}/VT^3 \qquad\qquad (-)$$

UNITS AND CONSTANTS

ENGLISH UNITS

Mass in Pounds (lbm)				Mass in Pound-Moles (lbmM)			
SOURCE[+]	UNITS	[1]*	[2]	SOURCE[+]	UNITS	[1]*	[2]
P	lbf/ft^2	–	–	P	lbf/ft^2	1545.4	–
R	$ft\text{-}lbf/lbm\text{-}°R$	386.11	386.0	$\overline{R}$	$ft\text{-}lbf/lbmM\text{-}°R$		1544.
T	$°R$	–	–	T	$°R$	–	–
V	ft^3/lbm	–	–	$\overline{V}$	$ft^3/lbmM$	–	–
a	ft^3/lbm	0.23949	0.2397	$\overline{a}$	$ft^3/lbmM$	0.9586	0.9596
A_o	$lbf\text{-}ft^4/lbm^2$	732.15	734.04	$\overline{A}_o$	$lbf\text{-}ft^4/lbmM^2$	11730.	11760.
b	ft^3/lbm	0.0	0.0	$\overline{b}$	$ft^3/lbmM$	0.0	0.0
B_o	ft^3/lbm	0.05603	0.05609	$\overline{B}_o$	$ft^3/lbmM$	0.2243	0.2245
C	$°R^3\text{-}ft^3/lbm$	933.62	934.57	$\overline{C}$	$°R^3\text{-}ft^3/lbmM$	3740.7	3737.
				M	$lbm/lbmM$	4.0026	4.003

METRIC UNITS

	Mass in Grams (gm)				Mass in Gram-Moles (gmM)		
SOURCE[+]	UNITS	[1]*	[2]	SOURCE[+]	UNITS	[1]*	[2]
P	atm	-	-	P	atm	-	-
R	atm-1/gm-$^{\circ}$K	0.02050	0.02050	$\overline{R}$	atm-1/gmM-$^{\circ}$K	0.08206	0.03204
T	$^{\circ}$K	-	-	T	$^{\circ}$K	-	-
V	1/gm	-	-	$\overline{V}$	1/gmM	-	-
a	1/gm	0.01495	0.01496	$\overline{a}$	1/gmM	0.05984	0.05988
A_o	atm-1^2/gm^2	0.001348	0.001352	$\overline{A}_o$	atm-1^2/gmM^2	0.02160	0.02166
b	1/gm	0.0	0.0	$\overline{b}$	1/gmM	0.0	0.0
B_o	1/gm	0.003500	0.003501	$\overline{B}_o$	1/gmM	0.01400	0.01401
C	$^{\circ}$K^3-1/gm	9.9935	10.00	$\overline{C}$	$^{\circ}$K^3-1/gmM	40.0	40.0
				M	gm/gmM	4.0026	4.003

P = Pressure, T = Temperature, R = Gas Constant, V = Specific Volume, A, B, ϵ = Terms in the State Equation, a, A_o, b, B_o, C = Constants in the State Equation.

[+]Sources: [1]* Van Wylen, G. J. and R. E. Sonntag, Elements of Classical Thermodynamics (N.Y., Wiley, 1968), p. 47.

   [2] Wilson, M. P., "Thermodynamic and Transport Properties of Helium," USAEC Report GA-1355, 1960.

*Recommended Set of Constants

2.1 A Comparison of Tabulated Results

Results tabulated in Wilson (W2), Varadi (V1), Petersen (P3) and Pierce (P5) are compared in Table 6 for the pressure and temperature range of interest, i.e., $p = 14.7 - 1500$ psia $(1.0 - 103$ bar$)$, $T = 100 - 2000^{\circ}F$ $(37.8 - 1093^{\circ}C)$.

The results from the four sources above may be seen to be in relatively good agreement, particularly the thermodynamic properties. The widest differences in the comparison tables are in the transport properties: thermal conductivity, dynamic viscosity and Prandtl number.

Table 6

A COMPARISON OF RESULTS OF HELIUM PROPERTY CALCULATIONS*

$P = 14.696$ psia   (1.03 bar)

T	SOURCE[+]	ρ	H	S	μ	k	c_p	P_r
100F	W2	0.0098	706.4	6.849	0.0495	0.0923	1.2415	0.6658
	V1	0.0098	697.6	6.847	0.0490	0.0914	1.2420	0.6659
	P3	0.0098	-	-	0.0494	0.0913	1.2410	0.6718
	P5	0.0098	698.9	-	0.0495	0.0900	1.2404	0.6829
500F	W2	0.0057	1203.0	7.518	0.0714	0.1331	1.2415	0.6660
	V1	0.0057	1194.4	7.517	0.0707	0.1319	1.2420	0.6660
	P3	0.0057	-	-	0.0720	0.1338	1.2410	0.6682
	P5	0.0057	1195.0	-	0.0715	0.1298	1.2404	0.6829
1000F	W2	0.0038	1823.7	8.039	0.0950	0.1771	1.2415	0.6660
	V1	0.0038	1815.4	8.038	0.0941	0.1754	1.2420	0.6660
	P3	0.0038	-	-	0.0966	0.1802	1.2410	0.6655
	P5	0.0038	1815.2	-	0.0950	0.1726	1.2404	0.6829
1500F	W2	0.0028	2444.4	8.405	0.1161	0.2163	1.2415	0.6664
	V1	0.0028	2436.4	8.404	0.1149	0.2143	1.2420	0.6660
	P3	0.0028	-	-	0.1187	0.2222	1.2410	0.6636
	P5	0.0028	2435.4	-	0.1161	0.2109	1.2404	0.6828

T	SOURCE*	ρ	H	S	μ	k	C_p	P_r
2000F	W2	0.0022	3065.1	8.687	0.1355	0.2525	1.2415	0.6662
	V1	0.0022	3057.4	8.686	0.1341	0.2501	1.2420	0.6660
	P3	0.0022	-	-	0.1392	0.2611	1.2410	0.6621
	P5	0.0022	3055.6	-	0.1355	0.2461	1.2404	0.6829

$$P = 500 \text{ psia} \quad (34.5 \text{ bar})$$

T	SOURCE*	ρ	H	S	μ	k	C_p	P_r
100F	W2	0.3277	710.7	5.099	0.0495	0.0969	1.2429	0.6349
	V1	0.3277	702.4	5.097	0.0490	0.0921	1.2421	0.6606
	P3	0.3281	-	-	0.0494	0.0921	1.2410	0.6654
	P5	0.3278	702.9	-	0.0497	0.0908	1.2404	0.6737
500F	W2	0.1924	1207.6	5.769	0.0714	0.1377	1.2420	0.6440
	V1	0.1925	1199.1	5.767	0.0707	0.1323	1.2416	0.6640
	P3	0.1927	-	-	0.0720	0.1348	1.2410	0.6636
	P5	0.1925	1198.0	-	0.0716	0.1305	1.2404	0.6806
1000F	W2	0.1269	1828.4	6.290	0.0950	0.1817	1.2417	0.6492
	V1	0.1270	1819.9	6.287	0.0941	0.1756	1.2415	0.6651
	P3	0.1271	-	-	0.0966	0.1812	1.2410	0.6621
	P5	0.1269	1819.2	-	0.0951	0.1732	1.2404	0.6811
1500F	W2	0.0947	2449.2	6.655	0.1161	0.2209	1.2416	0.6526
	V1	0.0947	2440.6	6.653	0.1149	0.2144	1.2415	0.6655
	P3	0.0948	-	-	0.1187	0.2230	1.2410	0.6612
	P5	0.0947	2439.4	-	0.1162	0.2114	1.2404	0.6818

cont'd.

T	SOURCE*	ρ	H	S	μ	k	C_p	P_r
2000F	W2	0.0755	3069.9	6.937	0.1355	0.2571	1.2416	0.6544
	V1	0.0755	3061.4	6.935	0.1341	0.2502	1.2416	0.6657
	P3	0.0759	–	–	0.1392	0.2617	1.2410	0.6604
	P5	0.0755	3059.6	–	0.1356	0.2466	1.2404	0.6821

P = 1000 psia   (68.9 bar)

T	SOURCE*	ρ	H	S	μ	k	C_p	P_r
100F	W2	0.6452	714.9	4.754	0.0495	0.0979	1.2449	0.6294
	V1	0.6453	707.4	4.754	0.0490	0.0931	1.2421	0.6539
	P3	0.6462	–	–	0.0494	0.0929	1.2410	0.6598
	P5	0.6455	707.2	–	0.0498	0.0915	1.2404	0.6752
500F	W2	0.3810	1212.1	5.425	0.0714	0.1388	1.2428	0.6393
	V1	0.3818	1204.0	5.423	0.0707	0.1318	1.2411	0.6615
	P3	0.3824	–	–	0.0720	0.1356	1.2410	0.6597
	P5	0.3814	1203.4	–	0.0717	0.1312	1.2404	0.6779
1000F	W2	0.2521	1833.2	5.946	0.0950	0.1827	1.2421	0.6459
	V1	0.2527	1824.5	5.944	0.0941	0.1759	1.2410	0.6639
	P3	0.2530	–	–	0.0966	0.1818	1.2410	0.6596
	P5	0.2523	1823.6	–	0.0952	0.1738	1.2404	0.6794
1500F	W2	0.1884	2454.1	6.311	0.1161	0.2220	1.2418	0.6494
	V1	0.1888	2445.0	6.309	0.1149	0.2147	1.2410	0.6648
	P3	0.1890	–	–	0.1187	0.2235	1.2410	0.6596
	P5	0.1885	2443.8	–	0.1163	0.2120	1.2404	0.6805

cont'd.

T	SOURCE*	ρ	H	S	μ	K	C_p	P_r
2000F	W2	0.1504	3074.9	6.594	0.1355	0.2581	1.2417	0.6519
	V1	0.1507	3065.5	6.592	0.1341	0.2504	1.2411	0.6652
	P3	0.1508	-	-	0.1392	0.2620	1.2410	0.6596
	P5	0.1505	3063.9	-	0.1357	0.2471	1.2404	0.6812

P = 1500 psia   (103.4 bar)

T	SOURCE*	ρ	H	S	μ	K	C_p	P_r
100F	W2	0.9540	718.8	4.551	0.0495	0.0986	1.2473	0.6262
	V1	0.9534	712.3	4.554	0.0490	0.0941	1.2422	0.6467
	P3	0.9548	-	-	0.0494	0.0936	1.2410	0.6550
	P5	0.9533	711.6	-	0.0500	0.0926	1.2404	0.6698
500F	W2	0.5663	1216.5	5.223	0.0714	0.1394	1.2438	0.6371
	V1	0.5680	1208.8	5.223	0.0707	0.1333	1.2407	0.6588
	P3	0.5690	-	-	0.0720	0.1362	1.2410	0.6567
	P5	0.5669	1207.8	-	0.0719	0.1319	1.2404	0.6762
1000F	W2	0.3758	1837.8	5.744	0.0950	0.1834	1.2425	0.6436
	V1	0.3772	1829.1	5.743	0.0941	0.1763	1.2405	0.6627
	P3	0.3777	-	-	0.0966	0.1823	1.2410	0.6580
	P5	0.3762	1828.0	-	0.0954	0.1744	1.2404	0.6785
1500F	W2	0.2813	2458.8	6.110	0.1161	0.2226	1.2421	0.6478
	V1	0.2823	2449.3	6.109	0.1149	0.2149	1.2406	0.6641
	P3	0.2825	-	-	0.1187	0.2237	1.2410	0.6589
	P5	0.2815	2452.6	-	0.1165	0.2131	1.2404	0.6781

cont'd.

T	SOURCE*	ρ	H	S	μ	k	C_p	P_r
2000F	W2	0.2247	3079.7	6.392	0.1355	0.2588	1.2419	0.6502
	V1	0.2255	3069.7	6.391	0.1341	0.2506	1.2407	0.6647
	P3	0.2257	-	-	0.1392	0.2620	1.2410	0.6596
	P5	0.2249	3068.3	-	0.1358	0.2477	1.2404	0.6800

*Property Units: ρ = DENSITY (lbm/ft^3)

H = ENTHALPY (BTU/lbm)

S = ENTROPY (BTU/lbm-F)

μ = DYNAMIC VISCOSITY (lbm/Hr-ft)

k = THERMAL CONDUCTIVITY (BTU/Hr-Ft-F)

C_p = SPECIFIC HEAT AT CONSTANT PRESSURE (BTU/lbm-F)

P_r = PRANDTL NUMBER (-)

[+]SOURCES

(W2)[$] - Wilson, GA-1355

(V1)[$] - Varadi EIR TM-IN-410

(P3)[$] - Petersen, RISÖ - 224

(P5) - Pierce, WANL-TME-1753

[$]The numbers given in this table were taken from the HELIUM code output which used the equations given in the source noted to calculate the results.

3.0 Other Complications

An additional point of concern though not totally germane, should be mentioned; this point relates to the variation of fluid properties which occurs through the convection film on a heated surface. Such variations are common in gas reactor engineering.

With gaseous coolants, convection film temperature rises are characteristically high, typically $150^\circ F$ to $300^\circ F$ ($65.6^\circ C$ to $149^\circ C$). A $200^\circ F$ ($93.3^\circ C$) film temperature difference at an average coolant temperature of $900^\circ F$ ($482^\circ C$) results in a 15% difference in density and a 10% difference in both dynamic viscosity and thermal conductivity. These differences in coolant properties between the heated surface and the fluid bulk should not be over-looked in thermal-hydraulic analyses. The friction factor and the convection coefficient should be corrected for variations in coolant properties; also property variations should be considered in the evaluation of dimensionless groups such as the Reynolds number and Prandtl number.

References on this subject are given in Section 5.1; property variation effects are influenced by such items as coolant type, surface heat flux, flow regime and flow geometry.

4.0 The HELIUM Code

The equations of Petersen (P2, P3, P4), Varadi (V1) and Wilson (W2) for calculating helium properties were programmed for the IBM computer in a small code called HELIUM. HELIUM produces either English or metric tables of properties over a specified temperature range for a specified, fixed pressure.

A listing of the HELIUM code has been included in Appendix 1. A typical output of the code is given in Appendices 2 and 3 as described in the next section.

4.1 Tabulated Results

Tables of helium thermodynamic and transport properties have
been given in Appendices 2 and 3. Both appendices present results
using the equations of Varadi (V1: EIR TM-IN-410).

Appendix 2 gives helium property tables in English units at
pressures of 14.7, 500, 1000 and 1500 psia for a temperature range
of 50°F-2000°F in 50°F increments. Tables are also given for
pressures of 720 psia (the average HTGR pressure) and 1230 psia
(the average GCFR pressure) for a temperature range of 50°F-2000°F
in 10°F increments.

Appendix 3 gives helium property tables in metric units at
pressures of 1.03 bar (14.7 psia), 34.5 bar (500 psia), 68.9 bar
(1000 psia) and 103.4 bar (1500 psia) for a temperature range from
0°C to 1000°C in 20°C increments. Metric property tables are also
given at pressures of 49.6 bar (720 psia) and 84.8 bar (1230 psia)
over the temperature range 0°C-1000°C in 5°C increments.

The reader will recall that the results using various methods
have been compared briefly in section 2 with a comparative tabulation
in Table 6.

5.0 References Regarding Helium Thermodynamic and Transport Properties

T. E. Eaton, MIT GA Project.
Dept. of Nuclear Eng; April 1974
Revised August 1974.

A1. Akin, S. W., "Thermodynamic Properties of Helium at High Pressures and Temperatures," General Electric Company: Schnectady Works, Report NP-124, May 1947.

A2. Akin, S. W., "Thermodynamic Properties of Helium," Transactions of the ASME, August 1950.

A3. Akin, S. W., "Thermodynamic Properties of Helium at High Pressures and Temperatures," General Electric Company, Report GE-55141.

A4. Akin, S. W., "Thermal Conductivity and Viscosity of Helium," General Electric Company, Report GE-55141 (Supplement), May 1955.

B1. Blais, N. C. and J. B. Mann, "Thermal Conductivity of Helium and Hydrogen at High Temperatures," Journal of Chemical Physics, V32 N5, 1960, p. 1459, (Also USAEC Report LA-2316, September 1959).

C1. Coates, N. H. and A. F. Galli, "Film Coefficients of Heat Transfer for Helium at 2000° to $2500^{\circ}F$ in Turbulent Flow," U. S. Bureau of Mines, Report of Investigation ROI-6856, 1966.

C2. Compressed Gas Handbook, National Aeronautics and Space Administration Report NASA SP-3045, Ed. by J. S. Kundle, S. D. Wilson and R. A. Cota, 1970.

D1. Dorman, D. R., "High Temperature Thermodynamic Properties of Helium," USAEC, Report HW-78724, December 1963.

F1. Freudiger, F. and L. Meyer, "Heat Transfer and Friction Coefficients for Helium at Elevated Temperatures," General Atomic Company Report GAMD-2954, 16 December 1961.

G1. Guevara, F. A. and W. E. Wageman, "Measurement of Helium and Hydrogen Viscosities to $2340^{\circ}K$," USAEC, Report LA-3319, September 1965.

H1. Hilsenrath, W. I. and Y. S. Touloukian, "The Viscosity, Thermal Conductivity, and Prandtl Number for Air, O_2, N_2, NO, H_2, CO, CO_2, H_2O, He and A," Transactions of the ASME, August 1954.

H2. Hirschfelder, J. O., C. F. Curtiss and R. B. Bird, <u>Molecular Theory of Gases and Liquids</u>, John Wiley and Sons, 1954.

I1. Ibele, W., "Thermophysical Properties," Section 2, <u>Handbook of Heat Transfer</u>, edited by W. M. Rohsenow and J. P. Harnett, McGraw-Hill, 1973, pp. 2.1 - 2.145.

J1. Johnston, H. L. and E. R. Grilly, "Viscosity of Carbon Monoxide, Helium, Neon and Argon between 80° and 300°K - Coefficients of Viscosity," <u>Journal of Physical Chemistry</u>, V46, 1942, p. 948.

J2. Johnston, H. L. and E. R. Grilly, "The Thermal Conductivity of Eight Common Gases Between 80° and 380°K, "<u>Journal of Chemical Physics</u>, <u>V14</u>, 1946, p.233.

K1. Kestin, J. and W. Leidenfrost, "The Viscosity of Helium," <u>Physica</u>, <u>V25</u>, 1959, p. 537.

K2. Keyes, F. G., "A Summary of Viscosity and Heat Conduction Data for He, A, H_2, O_2, N_2, CO, CO_2, H_2O, and Air," <u>Transactions of the ASME</u>, <u>V73</u>, 1951, p. 589.

L1. Lick, W. I. and H. W. Emmons, <u>Transport Properties of Helium from</u> 200 to 50000°K, Harvard University Press, Cambridge, Mass. 1965.

M1. Mann, B. D., "The Thermodynamic Properties of Helium from $3-3000^{\circ}$K Between 0.5 and 1000 Atmospheres," National Bureau of Standards, Report NBS - TN- 154, January 1962.

M2. McCarty, R. D., "Thermodynamic Properties of Helium-4 from 2 to 1500K at Pressures to 10^8 Pa (14,500 psia)," Journal of Physical and Chemical Reference Data, <u>V2</u>, N4, 1973, pp. 923 - 1042.

M3. McCarty, R. D., "Thermophysical Properties of Helium-4 from 4 to 3000 R with Pressures to 15000 psia," National Bureau of Standards Technical Note 622, September 1972.

N1. National Bureau of Standards, "Tables of Thermal Properties of Gases," Circular 564, 1955.

N2. Newman, B. O., "Physical Properties of Heat Transfer Fluids," General Electric Company, Schnectady Works, Project Genie Report, G1-401, 10 November 1947.

N3. Le Neindre, B. R. Tufeu, P. Bury, P. Johannin and B. Vodar, "Comparison of Experimental Data on the Thermal Conductivity of Some Gases with Theory," Ninth Conference on Thermal Conductivity, edited by H. R. Shanks, USAEC Report CONF-691002, March 1970, pp. 105-138.

P1. Perry, J. H., editor, Chemical Engineer's Handbook, 4th Edition, New York, McGraw-Hill, 1963.

P2. Petersen, Helge, "Estimation of the Properties of Helium: Density, Specific Heats, Viscosity and Thermal Conductivity at a Pressure From 1 to about 80 Atmosphere and from Room Temperature to About 1000 Degree Celsius," Danish Atomic Energy Commission, Report RISO-M-622, SET Rep. No. 40, February 1968.

P3. Petersen, Helge, "The Properties of Helium: Density, Specific Heats, Viscosity, and Thermal Conductivity from 1 to 100 bar and from Room Temperature to about 1800K," Danish Atomic Energy Commission, RISO Report No. 224, September 1970.

P4. Petersen, Helge, "Tables of Thermophysical Properties of Helium," AEE Report, D. P. Report 734, January 1971.

P5. Pierce, B. L., "The Thermodynamic and Transport Properties of Helium and Nitrogen," USAEC, Report WANL-TME-1753, May 1968.

R1. Reid, R. C. and T. K. Sherwood, The Properties of Gases and Liquids: Their Estimation and Correlation, Second Edition, New York, McGraw-Hill, 1966.

R2. Rohsenow, W. M., and H. Y. Choi, Heat, Mass and Momentum Transfer, Chapter 20, "Kinetic Theory of Transport Properties," Prentice-Hall, 1961.

S1. Simmons, J. T., "The Physical and Thermodynamic Properties of Helium, Wm. R. Whittaker Co., Ltd., Technical Report D-9027, 1957 (Same as W1?)

S2. Sullivan, J. A. and C. R. King, "Measurements of Convective Heat-Transfer Coefficients for the Subsonic Flow of Hydrogen and Helium in Smooth Tubes at Moderate Surface and Fluid Temperatures," USAEC Report, LA-4882, March 1972.

S3. Svehla, R. A., "Estimated Viscosities and Thermal Conductivities of Gases at High Temperatures," NASA-TR-R-132, 1962.

T1. Tsederberg, N. V., Thermal Conductivity of Gases and Liquids, MIT Press, Cambridge 1965.

T2. Tsederberg, N. V., V. N. Popov, and N. A. Morozova, Thermodynamics and Thermophysical Properties of Helium, Moscow, 1969, Translated by the Israel Program for Scientific Translations.

V1. Varadi, G., "Thermodynamische Stoffwerte von Helium," Swiss Federal Institute for Reactor Research Report EIR-IN-410, Wurenlingen, March 1969 (In German).

W1. Whittaker Controls, "The Physical and Thermodynamic Properties of Helium," The Whittaker Corporation, Los Angeles, September 1960.

W2. Wilson, M. P., "Thermodynamic and Transport Properties of Helium," USAEC Report MGCR-PR-59-224, General Dynamics Corp., March 1959, also USAEC Report GA-1355, January 1960.

W3. Wood, R. E., "Thermodynamic Properties of Helium, Nitrogen, and Helium-Nitrogen Mixtures from $240^\circ - 950^\circ R$ for Pressures between 14.696 and 3,000 psia," U. S. Dept. of the Interior, Bureau of Mines Report of Investigations ROI-7190, October 1968.

5.1 References Relating to the Influence of Property Variations on Thermal-Hydraulic Analysis

Bonilla, C. F., "Heat Transfer," Section 2.6: "Gaseous Heat Transfer," Reactor Handbook, Vol. IV-Engineering, Ed. by S. McLain and J. H. Mertens (New York, Interscience, 1964), pp. 61-65.

El-Wakil, M. M., Chapter 9, Nuclear Heat Transport (Scranton, International, 1971), pp. 243-248.

Kays, W. M. and H. C. Perkins, "Forced Convection, Internal Flow in Ducts," Section 7-H, "Effects of Temperature Varying Properties," Handbook of Heat Transfer, Ed. by W. M. Rohsenow and J. P. Hartnett (New York, McGraw-Hill, 1973), pp. 7-155 to 7-167.

Kays, W. M., "The Influence of Temperature - Dependent Fluid Properties," Chapter 12, Convective Heat and Mass Transfer (New York, McGraw-Hill, 1966), pp. 256-270.

5.2 Acknowledgements

The author is grateful to the following persons for their assistance during the preparation of this report: Messrs. G. Melese-d'Hospital, W. I. Thompson, H. J. Snyder, Jr., D. W. McEachren, J. Goodman and Mrs. T. Ward of GAC and Mr. A. G. Croff of ORNL.

The preparation of the final manuscript of this report by Mrs A. MacDonald is also gratefully acknowledged.

xc: A.G. Croff (ORNL)
        GCFR Distribution
        GCFR Files
        J. Goodman
        Nuclear Engineering Library (MIT)

```
      $*          EATON, THOMAS E.        25 SEPTEMBER 1974
      C           ***************************************
      C           *****             HELIUM           *****
      C           ***************************************
      C           HELIUM = HELIUM THERMODYNAMIC AND TRANSPORT PROPERTY TABLES,
      C           ======
1                 DIMENSION PRESS(50),NEQN(20)
      C
      C           THIS CODE PRODUCES EITHER ENGLISH OR METRIC UNIT TABLES OF HELIUM
      C              THERMODYNAMIC AND TRANSPORT PROPERTIES.  HETABL WAS WRITTEN BY T.E.
      C              EATON AS PART OF THE MIT NUCLEAR ENGR, DEPT, THERMAL-HYDRAULIC
      C              PROJECT FOR THE GENERAL ATOMIC COMPANY.  THE UNITS FOR THE RESULTS
      C              AND THE CALCULATIONS ARE SPECIFIED IN THE OUTPUT.
      C
      C
      C           VARIABLES  --  NTABLE = NUMBER OF TABLES TO BE GENERATED, METRIC =
      C              OUTPUT UNIT CONTROL, NPRESS = NUMBER OF PRESSURES IN TABLES, NTEMP =
      C              NUMBER OF TEMPERATURES IN EACH TABLE, TEMPI = INITIAL TEMPERATURE IN
      C              EACH TABLE (F - FOR ENGLISH UNITS, C - FOR METRIC UNITS), DELTAT =
      C              TEMPERATURE INCREMENT INTABLE (F - FOR ENGLISH UNITS, C - FOR METRIC
      C              UNITS), PRESS = PRESSURE FOR WHICH TABLE APPLIES (PSIA - FOR ENGLISH
      C              UNITS, BAR - FOR METRIC UNITS), NEQNST = TOTAL NUMBER OF EQUATION SETS
      C              TO BE USED, NEQN = NUMBER OF THE SPECIFIC SET OF EQUATIONS TO BE USED
      C              FOR A GIVEN SERIES OF TABLES, OTHER VARIABLES ARE DESCRIBED IN THE
      C              OUTPUT.
      C           SUBROUTINES REQUIRED EIR,PETER,WILSON,VFIND,MISC
2                 READ(5,109)NTIMES
3                 DO 10 IRMP=1,NTIMES
      C           SPECIFY - THE UNITS OF THE OUTPUT, METRIC = 1 GIVES METRIC RESULTS,
      C              METRIC = 0 GIVES ENGLISH RESULTS.  SPECIFY THE NUMBER OF TEMPERATURE
      C              INCREMENTS, THE INITIAL TEMPERATURE AND THE TEMPERATURE INCREMENT.
      C              FORMAT(3I10,2F10.4)
4                 READ(5,100)METRIC,NPRESS,NTEMP,TEMPI,DELTAT
      C           READ NPRESS VALUES OF PRESS FOR TABULAR OUTPUT - UNITS = PSIA FOR ENGLISH
      C              UNITS, UNITS = BAR FOR METRIC (1 BAR = 14.504 PSIA = 100000 N/M2).
      C              FORMAT(8F10.2)
5                 READ(5,101)(PRESS(I),I=1,NPRESS)
      C           SPECIFY THE NUMBER OF EQUATION SETS TO BE USED, SPECIFY THE CALCULATION
      C              EQUATIONS TO BE USED - NEQNS = 1 FOR EIR (VARADI), NEQNS = 2 FOR
      C                 PETER (PETERSEN), NEQNS = 3 FOR WILSON, NEQNS = 4 FOR MISC
      C              (MISCELLANEOUS), FORMAT(7I5),
6                 READ(5,109)NEQNST,(NEQN(I),I=1,NEQNST)
      C
      C           COMPUTATIONS ARE DONE IN ENGLISH UNITS
7                 IF(METRIC.NE.1)GO TO 200
8                 TEMPI= TEMPI * 9./5. + 32.0
9                 DELTAT = DELTAT * 9./5.
10                DO 202 I=1,NPRESS
11     202        PRESS(I) = PRESS(I)*14.504
12     200        DO 10 INE=1,NEQNST
13                NEQNS=NEQN(INE)
14                IF(METRIC.EQ.1)WRITE(6,305)
15                IF(METRIC.EQ.1)WRITE(6,306)NEQNS
16                IF(METRIC.NE.1)WRITE(6,300)
17                IF(METRIC.NE.1)WRITE(6,301)NEQNS
```

APPENDIX I

```
18    210    DO 10 I=1,NPRESS
19           P = PRESS(I)
20           T = TEMPI-DELTAT
21           PM = P / 14.504
22           IF(METRIC.EQ.1)WRITE(6,320)PM
23           IF(METRIC.NE.1)WRITE(6,315)P
24           ICOUNT = 1
25           ISKIP = 1
26           DO 10 IT=1,NTEMP
27           T=T+DELTAT
28           GO TO (400,401,402,403,404),NEQNS
29    400    CALL EIR(P,T,R,Z,RHO,V,CP,CV,GAMMA,H,S,VISCD,VISCK,COND,PR,VS)
30           GO TO 410
31    401    CALL    PETER(P,T,R,Z,RHO,V,CP,CV,GAMMA,H,S,VISCD,VISCK,COND,PR,VS)
32           GO TO 410
33    402    CALL WILSON(P,T,R,Z,RHO,V,CP,CV,GAMMA,H,S,VISCD,VISCK,COND,PR,VS)
34           GO TO 410
35    403    CALL    MISC(P,T,R,Z,RHO,V,CP,CV,GAMMA,H,S,VISCD,VISCK,COND,PR,VS)
36    404    CONTINUE
37    410    IF(METRIC.EQ.1)CALL ETOMET(P,T,R,Z,RHO,V,CP,CV,GAMMA,H,S,VISCD,
             1VISCK,COND,PR,VS)
38           IF(METRIC.NE.1)WRITE(6,325)T,RHO,V,Z,H,S,CP,CV,GAMMA,VISCD, VISCK,
             1COND,PR,VS,T
39           IF(METRIC.EQ.1)WRITE(6,330)T,RHO,V,Z,H,S,CP,CV,GAMMA,VISCD, VISCK,
             1COND,PR,VS,T
40           IF(METRIC.EQ.1)T=T*9./5. + 32.
41           IF(ICOUNT.GE.9)GO TO 12
42           ICOUNT = ICOUNT + 1
43           GO TO 10
44    12     ICOUNT = 1
45           WRITE(6,370)
46           IF(IT.EQ.NTEMP)GO TO 10
47           IF(ISKIP.GE.5)GO TO 13
48           ISKIP = ISKIP + 1
49           GO TO 10
50    13     IF(METRIC.EQ.1)WRITE(6,320)PM
51           IF(METRIC.NE.1)WRITE(6,315)P
52           ISKIP = 1
53    10     CONTINUE
54    100    FORMAT(3I10, 2F10.4)
55    101    FORMAT(8F10.2)
56    109    FORMAT(7I5)
57    300    FORMAT('1',5X,'TABLES OF HELIUM THERMODYNAMIC AND TRANSPORT PROPER
             1TIES IN ENGLISH UNITS',//10X,      'EACH TABLE GIVES PROPERTIES  O
             2VER THE TEMPERATURE RANGE OF INTEREST FOR THE PRESSURE SPECIFIED',
             3///,10X,'THE UNITS FOR THE OUTPUT ARE SPECIFIED BELOW - - ',
             4///,25X, 'P = PRESSURE (PSIA)',
             4/,25X,'T = TEMPERAUTRE (F)',
             6/,25X,'R = HELIUM GAS CONSTANT (BTU/LBM-F)',
             7/,25X,'Z = COMPRESSIBILITY FACTOR (-)',
             8/,23X,'RHO = DENSITY (LBM/FT3)',
             9/,25X,'V = SPECIFIC VOLUME (FT3/LBM)',
             1/,24X,'CP = SPECIFIC HEAT AT CONSTANT PRESSURE (BTU/LBM-F)',
             1/,24X,'CV = SPECIFIC HEAT AT CONSTANT VOLUME (BTU/LBM-F)',
             2/,21X,'CP/CV = RATIO OF SPECIFIC HEATS (-)',
             3/,25X,'H = ENTHALPY (BTU/LBM)'  ,
```

```
        5/,25X,'S = ENTROPY (BTU/LBM-F)',
        6 /,21X,'VISCD = DYNAMIC VISCOSITY (LBM/HR-FT)',
        7/,21X,'VISCK = KINEMATIC VISCOSITY (FT2/HR)',
        8/,25X,'K = THERMAL CONDUCTIVITY (BTU/HR-FT2-F)',
        9/,24X,'PR = PRANDTL NUMBER (-)')
58  301 FORMAT(24X,'C* = SONIC VELOCITY (FT/SEC',
        1///,10X, 'THE EQUATIONS USED ARE IDENTIFIED BY ',I3,3X,'WHERE',
        2/,15X,'1 = EIR TM-IN-410, VARADI,'
        3,/,15X,'2 = RISO - 224, PETERSEN,',
        3/,15X,'3 = GA-1355, WILSON,',
        4/,15X,'4 = MISCELLANEOUS, SEE TEXT IN SUBROUTINE MISC.')
59  305 FORMAT('1',5X,'TABLES OF HELIUM THERMODYNAMIC AND TRANSPORT PROPER
        1TIES GIVEN IN METRIC UNITS',// ,10X,'EACH TABLE GIVES PROPERITES OV
        1VER THE TEMPERATURE RANGE OF INTEREST FOR THE PRESSURE SPECIFIED',
        3///10X,'THE UNITS FOR THE OUTPUT ARE SPECIFIED BELOW - ',//,25X,
        4'P = PRESSURE (PAR)',
        5/,25X,'T = TEMPERATURE (C)',
        6/,25X,'R = HELIUM GAS CONSTANT = RG/M (J/KG-C)',
        7/,23X,'RHO = FLUID DENSITY (KG/M3)',
        7/,25X,'V = SPECIFIC FLUID VOLUME (M3/KG)',
        8/,24X,'CP = SPECIFIC HEAT AT CONSTANT PRESSURE (J/KG-C)',
        9/,24X,'CV = SPECIFIC HEAT AT CONSTANT VOLUME (J/KG-C)',
        1/,21X,'CP/CV = RATIO OF SPECIFIC HEATS (-)',
        1/,25X,'H = ENTHALPY (J/KG)',
        2/,25X,'S = ENTROPY (J/KG-C)',
        3/,21X,'VISCD = DYNAMIC VISCOSITY (KGM/HR-M)',
        4/,21X,'VISCK = KINEMATIC VISCOSITY (KGF/M2)',
        5/,25X,'K = THERMAL CONDUCTIVITY (W/M-SEC)',
        7/,24X,'PR = PRANDTL NUMBER (-)')
60  306 FORMAT(24X,'C* = SONIC VELOCITY (M/SEC)',
        9/,24X,'C* = SONIC VELOCITY (M/SEC)',
        1///,10X, 'THE EQUATIONS USED ARE IDENTIFIED BY ',I3,3X,'WHERE',
        2/,15X,'1 = EIR TM-IN-410, VARADI,'
        3,/,15X,'2 = RISO - 224, PETERSEN,',
        3/,15X,'3 = GA-1355, WILSON,',
        4/,15X,'4 = MISCELLANEOUS, SEE TEXT IN SUBROUTINE MISC.')
61  315 FORMAT('1',// ,5X,'PRESSURE = ',F7.1,2X,'PSIA', //,
        1  6X,        'T',    5X,      'RHO',       6X,
        1 'V', 7X, 'Z', 8X, 'H', 6X, 'S', 7X, 'CP', 7X, 'CV', 5X, 'CP/CV',
        23X, 'VISCD',4X,'VISCK', 6X, 'K',6X,'PR', 6X, 'C*',7X,'T',/)
62  320 FORMAT('1',//,5X, 'PRESSURE = ', F9.3, 2X, 'BAR', //,
        1        6X,'T', 5X, 'RHO',7X,'V',6X, 'Z', 7X,'H', 9X,'S',
        17X,'CP', 6X, 'CV', 3X,'CP/CV',3X, 'VISCD', 7X,'VISCK', 7X,'K',5X,
        2'PR', 4X,'C*', 6X, 'T',/ )
63  325 FORMAT( 3X, F6.1, 2X, F6.4, 2X, F6.2, 2X, F6.4, 2X, F6.1, 2X, F6.3
        2,2X, F6.4, 2X, F6.4, 2X, F7.5, 2X, F7.4, 2X, F7.4,2X,F6.4,2X,F7.5
        3,2X,F6.1,2X,F6.1))
64  330 FORMAT(3X,F6.1,1X,F7.3,1X, F7.4,1X, F6.4, 1X, E10.4, 1X, F7.1, 1X,
        1F7.1, 1X, F7.1,1X,F6.4,1X, E10.4, 1X, E10.4, 1X, F6.4, 1X, F6.4,1X,
        2F6.1, 1X, F6.1)
65  370 FORMAT(10X)
66      STOP
67      END
```

```fortran
  68          SUBROUTINE WILSON(P,T,R,Z,RHO,V,CP,CV,GAMMA,H,S,VISCD,VISCK,COND,
             1PR,VS)
      C       EQUATIONS FROM WILSON,  GA - 1355
  69          REAL M,J
  70          T = T + 459.67
  71          GC = 32.174
  72          J=778.26
  73          M = 4.002603
  74          RG = 1545.
      C       IN THIS SUBROUTINE R IS THE GAS CONSTANT FOR HELIUM.
  75          R = RG/M
  76          CVO=0.7455
      C       SOLVE FOR THE SPECIFIC VOLUME -V- ITERATIVELY USING THE BEATTIE -
      C           BRIDGEMAN EQUATION OF STATE.
  77          V = R*T/P/144.
  78          CALL VFIND(V,P,T)
  79          RHO = 1./V
  80          Z = 144.*P*V/R/T
  81          AO=734.04
  82          A=0.2397
  83          BO = 0.05609
  84          C = 934.57
  85          CV = 6.*R*C/J/T/T/T* (1./V+BO/2./V/V) + CVO
  86          CP = CV + T/J*((2.*R*C/V/T/T/T+R) * (V+BO))**2./ (288.*P*V*V*V
             1 - R*C/T/T*(V+BO)- R*T*V*V*(1.-C/V/T/T/T)+A*AO )
  87          SX = -0.85032
  88          S = SX+R /J*(ALOG(M*V)-BO/V-2.*C/(V*T*T*T)*(1.-BO/2./V)) +
             1 CVO * ALOG(T)
  89          UX = 11.4992
  90          U = UX + 1./J*(AO/V*(A/2./V-1.)-3.*R*C/V/T/T* (1.+BO/2./V))+CVO*T
  91          H = U + 0.1850*P*V
  92          VS1 = GC*(R*T -(R*C/T/T -R*T*BO+AO)*2./V-(R*C*BO/T/T-AO*A)*3./V/V)
  93          VS2 = GC*T*V*V/J/CV*(R*(V+BO) *(1.+2.*C/V/T/T/T)/V/V)**2.
  94          VISCD = 0.00067*T**0.68
  95          COND=0.001675*T**0.68*(6.*R*C/J/T/T/T*(1./V+BO/2./V/V)+CVO)+
             10.0008147*(P-14.696) ** 0.28
  96          VS = ABS(VS1+VS2)**0.5
  97          VISCK = VISCD/RHO
  98          GAMMA = CP/CV
  99          PR = VISCD*CP/COND
 100          T=T-459.67
 101          RETURN
 102          END
```

```
103          SUBROUTINE VFIND(V,P,T)
104          R = 386.00
105          AO = 734.04
106          A = 0.2397
107          B = 0.05609
108          C = 934.57
109          AE = AO *(1.-A/V)
110          E = C/(V*T**3.)
111          CONVER = 0.0001
112          VPLUS = -0.004
113          P1=R*T*(1.-E)*(V+B)/(144.*V*V) - AE/(144.*V*V)
114          V2 = V
115          V = V + VPLUS
116    100   CONTINUE
117          P2 = P1
118          P1=R*T*(1.-E)*(V+B)/(144.*V*V) - AE/(144.*V*V)
119          V = V2 + ( P - P2)/(P1-P2) * (V - V2)
120          DEL = ABS(V-V2)
121          V2 = V
122          IF(DEL.LE.CONVER)GO TO 102
123          GO TO 100
124    102   RETURN
125          END
```

```
126        SUBROUTINE PETER (P,T,R,Z,RHO,V,CP,CV,GAMMA,H,S,VISCD,VISCK,COND,
          1PR,VS)
       C   PETERSEN CORRELATIONS, RISO - 224
       C
127        CV = 3117.*0.00023889
128        PG = 8314.5
129        P=PG/4.002603*0.00023889
130        TK = (T+459.67)*5./9.
131        CP = 5195. * 0.00023889
132        PBAR = P / 14.696/0.98692
133        RHO = 48.14 * PBAR / TK * ((1. + 0.4446 * PBAR/ TK ** 1.2) **(-1.)
          1) * 0.062428
134        VISCD = 3.674E-07*TK**0.7*2415.1
135        VISCK = VISCD / RHO
136        PR = 0.7117*TK**(-1.*(0.01-0.000142*PBAR))/(1.+0.001123 *
          1 PBAR)
137        COND = 0.002682 * (1. + 0.001123 * PBAR) * (TK **(( 0.71 * (1. -
          1 0.0002 * PBAR )))) * 0.57803
138        V = 1./RHO
139        Z = 1.0 + 0.4446*PBAR/TK**1.2
140        GAMMA = CP/CV
141        VS = Z * (778.26*32.196*GAMMA * R * TK *9./5.)**0.5
142        S = 0.0
143        H = 0.0
144        RETURN
145        END
```

```
146        SUBROUTINE MISC(P,T,R,Z,RHO,V,CP,CV,GAMMA,H,S,VISCD,VISCK,COND,PR,
           1VS)
      C
      C        TSEDERBERG CORRELATIONS, THERMAL CONDUCTIVITY OF GASES AND LIQUIDS.
147        T = T + 459.67
148        TK = T * 5./9.
149        CP=1.242
150        CV = 0.745
151        H = CP * T + 21.8
152        U = H - P * V * 144./778.26
153        RSH = RHO * 16.018
154        AF = 2.70
155        ADF = 0.312
156        CSF = 97.6
157        F = AF / (1. + ADF * CSF / TK)
158        CONDO = 0.1226 * (TK / 273.16) ** 0.73
159        COND = CONDO + 0.000158 * RSH ** 1.17
160        COND = COND * 0.6722
161        VISCD = COND / CV/ F
162        PR = VISCD * CP / COND
163        VISCK = VISCD / RHO
      C        CONDUCTIVITY CORRELATION FROM BLAIS AND MANN
      C        VISCOSITY CORRELATION FROM KESTIN AND LEIDENFROST
      C
164        VISCD = 0.0011554 * TK ** 0.6567
165        COND = 0.0429 + 0.0000911 * T + 0.001729*(P/14.696 -1.0)**0.28
166        PR = VISCD * CP / COND
167        VISCK = VISCD / RHO
168        T = T -459.67
169        RETURN
170        END
```

```
171        SUBROUTINE    EIR(P,T,R,Z,RHO,V,CP,CV,GAMMA,H,S,VISCD,VISCK,COND,
          1PR,VS)
      C
      C        HELIUM PROPERTY EQUATIONS FROM VARADI  (EIR TM-IN-410).
      C            EQUATIONS FOR ENGLISH UNITS BY T.E. EATON, MIT.
      C        NOMENCLATURE (ENGLISH UNITS) AS FOLLOWS - P = PRESSURE (PSIA),
      C            T = TEMPERATURE (F), R = HELIUM GAS CONSTANT (BTU/LBM-F),
      C            Z = COMPRESSIBILITY FACTOR (-), B = SECOND VIRAL COEFFICIENT
      C            (FT3/LBM), DB = DB/DT (FT3/LBM-F), DDB = D2B/DT2 (FT3/LBM-F2),
      C            CI (I=1,5) = CONSTANTS IN THE EQUATION FOR B - C1 (FT3/LBM),
      C            C2 (FT3/LBM), C3 (1/F), C4 (FT3/LBM), C5 (1/F),
      C            RHO = DENSITY (LBM/FT3), CP = SPECIFIC HEAT AT CONSTANT PRESSURE
      C            (BTU/LBM-F), CV = SPECIFIC HEAT AT CONSTANT VOLUME (BTU/LBM-F),
      C            H = ENTHALPY (BTU/LBM), S = ENTROPY (BTU/LBM-F), VS = SONIC VELOCITY
      C            (FT/SEC), VISCD = DYNAMIC VISCOSITY (LBM/HR-FT), COND = THERMAL
      C            CONDUCTIVITY (BTU/HR-FT-F), PR = PRANDTL NUMBER (-).
172        TO = 459.67 + 32.0
173        PO = 14.504
174        T = T + 459.67
175        R = 0.4965
176        C1 = 1.520017E-02
177        C2 = 1.526208E-02
178        C3 = 1.500378E-02
179        C4 = 4.388083E-02
180        C5 = 5.227289E-04
181        B = C1 + C2/(1.0 - C3* T) + C4/(1.0 + C5 * T)
182        DB = C2*C3/((1.0-C3*T)*(1.0-C3*T))-C4*C5/(1.0+C5*T)**2.0
183        DDB = 2.0*C2*C3*C3/((1.0-C3*T)*(1.0-C3*T)*(1.0-C3*T)) +
          1 2.0*C4*C5*C5/(1.0+C5*T)**3.0
184        Z = 1.0 + 0.1850 * B * P / (R*T)
185        RHO = P/(5.4054*R*T + B*P)
186        CPO = 1.242
187        CP = CPO - 0.1850 * T * DDB * P
188        CVO = 0.7456
189        CV = CVO - 0.1850*P*(T*DDB + DB*(2.0 + 0.1850*DB*P/R))
190        HO = 2.390
191        H = HO + CPO*T + 0.1850*P*(B - DB*T)
192        SO = 6.6930
193        S = SO + CPO*ALOG(T/TO) - R*ALOG(P/PO) - 0.1850*DB*P
194        VS = 158.29*Z*(R*T*CP/CV)**0.5
195        VISCD = 0.04488 * (T/TO)**0.68
196        COND = 0.08368*(T/TO)**0.68 *(1.0+1.665E-04*(P/PO)**1.17/((T/TO)
          1**1.85))
197        PR = 0.666 / (1.0 + 1.665E-04*(P/PO)**1.17 / ((T/TO)**1.85) )
198        V = 1./RHO
199        GAMMA = CP/CV
200        VISCK = VISCD/RHO
201        T = T - 459.67
202        GO TO 300
      C
      C        HELIUM PROPERTY EQUATIONS FROM VARADI (EIR TM-IN-410).
      C        NOMENCLATURE (METRIC UNITS) AS FOLLOWS - P = PRESSURE (N/M2),
      C            T = TEMPERATURE (K), R = HELIUM GAS CONSTANT (J/KG-K),
      C            Z = COMPRESSIBILITY FACTOR (-), B = SECOND VIRAL COEFFICIENT (M3/KG),
      C            DB = DB/DT (M3/KG-K), DDB = D2B/DT2 (M3/KG-K2), CI (I=1,5) =
      C            CONSTANTS IN THE EQUATION FOR B - C1 (M3/KG), C2 (M3/KG), C3 (1/K),
```

```
      C          C4 (M3/KG), C5 (1/K), RHO = DENSITY (KG/M3), CP = SPECIFIC HEAT AT
      C          CONSTANT PRESSURE (J/KG-K), CV = SPECIFIC HEAT AT CONSTANT VOLUME
      C          (J/KG-K), H = ENTHALPY (J/KG), S = ENTROPY (J/KG-K), VS = SONIC
      C          VELOCITY (M/SEC), VISCD = DYNAMIC VISCOSITY (KG/M-SEC), COND =
      C          THERMAL CONDUCTIVITY (W/M-C), PR = PRANDTL NUMBER (-).
203              TO = 273.15
204              PO = 100000.0
205              T = T + 273.15
206              P = P*100000.0 /14.504
207              R = 2077.1
208              C1 = 9.489433E-04
209              C2 = 9.528079E-04
210              C3 = 3.420680E-02
211              C4 = 2.739470E-03
212              C5 = 9.409120E-04
213              B = C1 + C2/(1.0-C3*T) + C4/(1.0+C5*T)
214              DB = C2*C3/((1.0-C3*T)*(1.0-C3*T))-C4*C5/(1.0+C5*T)**2.0
215              DDB = 2.0*C2*C3*C3/((1.0-C3*T)*(1.0-C3*T)*(1.0-C3*T)) +
     1 2.0*C4*C5*C5/(1.0+C5*T)**3.0
216              Z = 1.0 + B*P / (R*T)
217              RHO = P / (R*T + B*P)
218              CPO = 5198.
219              CP = CPO - T * DDB * P
220              CVO = 3121.
221              CV = CVO - P*(T*DDB + DB * (2.0 + DB *P/R))
222              HO = 5557.
223              H = HO + CPO*T + P *(B-DB*T)
224              SO = 28016.
225              S = SO + CPO*ALOG(T/TO) - R*ALOG(P/PO) - DB*T
226              VS = Z * (R*T*CP/CV)**0.5
227              VISCD = 1.855E-05 * (T/TO) ** 0.68
228              COND = 0.1448 * (T/TO) ** 0.68 * (1.0 + 1.665E-04 * (P/PO)**1.17/
     1 ((T/TO) ** 1.85))
229              PR = 0.666/ (1.0+1.665E-04*(P/PO)**1.17/((T/TO)**1.85))
230              T = T - 273.15
231              P = P *14.504 / 100000.
232     300      RETURN
233              END
```

```
234        SUBROUTINE ETOMET (P,T,R,Z,RHO,V,CP,CV,GAMMA,H,S,VISCD,VISCK,COND,
          1PR,VS)
     C     THIS SUBROUTINE PERFORMS THE FOLLOWING ENGLISH TO METRIC CONVERSIONS -
     C         P (PSIA - N/M2), T (F - C ), H (BTU/LBM - J/KGM),
     C         COND (BTU/HR-FT-F - W/M-C), VISCD (LBM/HR-FT - KGM/M-SEC),
     C         RHO (LBM/FT3 - KGM/M3), V (FT3/LBM - M3/KGM), R (BTU/LBM-F -
     C         J/KGM-K), CP (BTU/LBM-F - J/KGM-C), VISCK (FT2/HR - M2/HR),
     C         S (BTU/LBM-F - J/KGM-C), VS (FT/SEC - M/SEC)
235        T = (T-32.0) *5./9.
236        H = H / 0.000430
237        COND = COND / 0.5779
238        VISCD = VISCD / 2419.1
239        RHO = RHO / 0.06243
240        V = V/16.018
241        R = R / 0.0002389
242        CP = CP/0.0002389
243        CV = CV / 0.0002389
244        S = S / 0.0002389
245        VS = VS / 3.2808
246        VISCK = VISCK / 3.2808/3.2808
247        RETURN
248        END
```

APPENDIX 2

TABLES OF HELIUM THERMODYNAMIC AND TRANSPORT PROPERTIES IN ENGLISH UNITS

EACH TABLE GIVES PROPERTIES OVER THE TEMPERATURE RANGE OF INTEREST FOR THE PRESSURE SPECIFIED

THE UNITS FOR THE OUTPUT ARE SPECIFIED BELOW - -

```
            P  = PRESSURE (PSIA)
            T  = TEMPERAUTRE (F)
            R  = HELIUM GAS CONSTANT (BTU/LBM-F)
            Z  = COMPRESSIBILITY FACTOR (-)
          RHO  = DENSITY (LBM/FT3)
            V  = SPECIFIC VOLUME (FT3/LBM)
           CP  = SPECIFIC HEAT AT CONSTANT PRESSURE (BTU/LBM-F)
           CV  = SPECIFIC HEAT AT CONSTANT VOLUME (BTU/LBM-F)
        CP/CV  = RATIO OF SPECIFIC HEATS (-)
            H  = ENTHALPY (BTU/LBM)
            S  = ENTROPY (BTU/LBM-F)
        VISCD  = DYNAMIC VISCOSITY (LBM/HR-FT)
        VISCK  = KINEMATIC VISCOSITY (FT2/HR)
            K  = THERMAL CONDUCTIVITY (BTU/HR-FT2-F)
           PR  = PRANDTL NUMBER (-)
           C*  = SONIC VELOCITY (FT/SEC
```

THE EQUATIONS USED ARE IDENTIFIED BY   1   WHERE
      1 = EIR TM-IN-410, VARADI,
      2 = RISO - 224, PETERSEN,
      3 = GA-1355, WILSON,
      4 = MISCELLANEOUS, SEE TEXT IN SUBROUTINE MISC.

PRESSURE =   14.7 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
0.0	0.0119	83.59	1.0006	573.4	6.603	1.2420	0.7457	1.66564	0.0429	3.6010	0.0800	0.66587	3088.0	0.0
20.0	0.0114	87.65	1.0006	598.3	6.656	1.2420	0.7457	1.66564	0.0441	3.8680	0.0823	0.66588	3154.4	20.0
40.0	0.0110	91.30	1.0005	623.1	6.707	1.2420	0.7457	1.66564	0.0454	4.1427	0.0846	0.66589	3219.4	40.0
60.0	0.0105	94.95	1.0005	648.0	6.755	1.2420	0.7457	1.66564	0.0466	4.4249	0.0869	0.66590	3283.1	60.0
80.0	0.0101	98.60	1.0005	672.8	6.802	1.2420	0.7457	1.66564	0.0478	4.7146	0.0892	0.66591	3345.6	80.0
100.0	0.0098	102.25	1.0005	697.6	6.847	1.2420	0.7457	1.66564	0.0490	5.0118	0.0914	0.66591	3407.0	100.0
120.0	0.0094	105.91	1.0004	722.5	6.891	1.2420	0.7457	1.66564	0.0502	5.3162	0.0936	0.66592	3467.3	120.0
140.0	0.0091	109.56	1.0004	747.3	6.933	1.2420	0.7457	1.66564	0.0514	5.6278	0.0958	0.66592	3526.5	140.0
160.0	0.0088	113.21	1.0004	772.2	6.974	1.2420	0.7457	1.66564	0.0525	5.9466	0.0979	0.66593	3584.8	160.0
180.0	0.0086	116.86	1.0004	797.0	7.013	1.2420	0.7457	1.66565	0.0537	6.2725	0.1001	0.66593	3642.1	180.0
200.0	0.0083	120.52	1.0004	821.8	7.052	1.2420	0.7457	1.66565	0.0548	6.6054	0.1022	0.66594	3698.6	200.0
220.0	0.0081	124.17	1.0004	846.7	7.089	1.2420	0.7457	1.66565	0.0559	6.9452	0.1043	0.66594	3754.2	220.0
240.0	0.0078	127.82	1.0004	871.5	7.125	1.2420	0.7456	1.66565	0.0570	7.2919	0.1064	0.66594	3809.0	240.0
260.0	0.0076	131.47	1.0003	896.4	7.160	1.2420	0.7456	1.66565	0.0582	7.6454	0.1084	0.66594	3863.0	260.0
280.0	0.0074	135.12	1.0003	921.2	7.194	1.2420	0.7456	1.66565	0.0592	8.0056	0.1105	0.66595	3916.3	280.0
300.0	0.0072	138.78	1.0003	946.0	7.227	1.2420	0.7456	1.66566	0.0603	8.3725	0.1125	0.66595	3968.8	300.0
320.0	0.0070	142.43	1.0003	970.9	7.259	1.2420	0.7456	1.66566	0.0614	8.7460	0.1145	0.66595	4020.7	320.0
340.0	0.0068	146.08	1.0003	995.7	7.291	1.2420	0.7456	1.66566	0.0625	9.1261	0.1165	0.66595	4071.9	340.0
360.0	0.0067	149.73	1.0003	1020.6	7.321	1.2420	0.7456	1.66566	0.0635	9.5127	0.1185	0.66596	4122.4	360.0
380.0	0.0065	153.39	1.0003	1045.4	7.351	1.2420	0.7456	1.66566	0.0646	9.9058	0.1204	0.66596	4172.4	380.0
400.0	0.0064	157.04	1.0003	1070.2	7.380	1.2420	0.7456	1.66566	0.0656	10.3053	0.1224	0.66596	4221.8	400.0
420.0	0.0062	160.69	1.0003	1095.1	7.409	1.2420	0.7456	1.66566	0.0667	10.7112	0.1243	0.66596	4270.6	420.0
440.0	0.0061	164.34	1.0003	1119.9	7.437	1.2420	0.7456	1.66567	0.0677	11.1234	0.1262	0.66596	4318.8	440.0
460.0	0.0060	167.99	1.0003	1144.8	7.464	1.2420	0.7456	1.66567	0.0687	11.5419	0.1281	0.66597	4366.5	460.0
480.0	0.0058	171.65	1.0003	1169.6	7.491	1.2420	0.7456	1.66567	0.0697	11.9666	0.1300	0.66597	4413.7	480.0
500.0	0.0057	175.30	1.0002	1194.4	7.517	1.2420	0.7456	1.66567	0.0707	12.3975	0.1319	0.66597	4460.4	500.0
520.0	0.0056	178.95	1.0002	1219.3	7.543	1.2420	0.7456	1.66567	0.0717	12.8346	0.1337	0.66597	4506.6	520.0
540.0	0.0055	182.60	1.0002	1244.1	7.568	1.2420	0.7456	1.66567	0.0727	13.2777	0.1356	0.66597	4552.4	540.0
560.0	0.0054	186.25	1.0002	1269.0	7.592	1.2420	0.7456	1.66567	0.0737	13.7270	0.1374	0.66597	4597.7	560.0
580.0	0.0053	189.91	1.0002	1293.8	7.617	1.2420	0.7456	1.66568	0.0747	14.1822	0.1392	0.66597	4642.5	580.0
600.0	0.0052	193.56	1.0002	1318.6	7.640	1.2420	0.7456	1.66568	0.0757	14.6435	0.1411	0.66597	4686.9	600.0
620.0	0.0051	197.21	1.0002	1343.5	7.663	1.2420	0.7456	1.66568	0.0766	15.1107	0.1429	0.66597	4730.9	620.0
640.0	0.0050	200.86	1.0002	1368.3	7.686	1.2420	0.7456	1.66568	0.0776	15.5838	0.1447	0.66598	4774.5	640.0
660.0	0.0049	204.52	1.0002	1393.2	7.709	1.2420	0.7456	1.66568	0.0785	16.0629	0.1464	0.66598	4817.7	660.0
680.0	0.0048	208.17	1.0002	1418.0	7.731	1.2420	0.7456	1.66568	0.0795	16.5477	0.1482	0.66598	4860.6	680.0
700.0	0.0047	211.82	1.0002	1442.8	7.752	1.2420	0.7456	1.66568	0.0804	17.0384	0.1500	0.66598	4903.0	700.0
720.0	0.0046	215.47	1.0002	1467.7	7.773	1.2420	0.7456	1.66568	0.0814	17.5349	0.1517	0.66598	4945.1	720.0
740.0	0.0046	219.13	1.0002	1492.5	7.794	1.2420	0.7456	1.66569	0.0823	18.0372	0.1535	0.66598	4986.8	740.0
760.0	0.0045	222.78	1.0002	1517.4	7.815	1.2420	0.7456	1.66569	0.0832	18.5451	0.1552	0.66598	5028.2	760.0
780.0	0.0044	226.43	1.0002	1542.2	7.835	1.2420	0.7456	1.66569	0.0842	19.0588	0.1569	0.66598	5069.2	780.0
800.0	0.0043	230.08	1.0002	1567.0	7.855	1.2420	0.7456	1.66569	0.0851	19.5781	0.1587	0.66598	5109.9	800.0
820.0	0.0043	233.73	1.0002	1591.9	7.875	1.2420	0.7456	1.66569	0.0860	20.1031	0.1604	0.66598	5150.3	820.0
840.0	0.0042	237.39	1.0002	1616.7	7.894	1.2420	0.7456	1.66569	0.0869	20.6337	0.1621	0.66598	5190.4	840.0
860.0	0.0041	241.04	1.0002	1641.6	7.913	1.2420	0.7456	1.66569	0.0878	21.1698	0.1638	0.66598	5230.2	860.0
880.0	0.0041	244.69	1.0002	1666.4	7.931	1.2420	0.7456	1.66569	0.0887	21.7115	0.1654	0.66598	5269.6	880.0

PRESSURE =   14.7   PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
900.0	0.0040	248.34	1.0002	1691.2	7.950	1.2420	0.7456	1.66570	0.0896	22.2588	0.1671	0.66598	5308.8	900.0
920.0	0.0040	252.00	1.0002	1716.1	7.968	1.2420	0.7456	1.66570	0.0905	22.8115	0.1688	0.66598	5347.7	920.0
940.0	0.0039	255.65	1.0002	1740.9	7.986	1.2420	0.7456	1.66570	0.0914	23.3697	0.1704	0.66598	5386.3	940.0
960.0	0.0039	259.30	1.0002	1765.8	8.003	1.2420	0.7456	1.66570	0.0923	23.9334	0.1721	0.66598	5424.6	960.0
980.0	0.0038	262.95	1.0002	1790.6	8.021	1.2420	0.7456	1.66570	0.0932	24.5024	0.1737	0.66598	5462.7	980.0
1000.0	0.0038	266.60	1.0001	1815.4	8.038	1.2420	0.7456	1.66570	0.0941	25.0769	0.1754	0.66599	5500.5	1000.0
1020.0	0.0037	270.26	1.0001	1840.3	8.055	1.2420	0.7456	1.66570	0.0949	25.6568	0.1770	0.66599	5538.0	1020.0
1040.0	0.0037	273.91	1.0001	1865.1	8.072	1.2420	0.7456	1.66570	0.0958	26.2420	0.1786	0.66599	5575.3	1040.0
1060.0	0.0036	277.56	1.0001	1890.0	8.088	1.2420	0.7456	1.66570	0.0967	26.8326	0.1803	0.66599	5612.4	1060.0
1080.0	0.0036	281.21	1.0001	1914.8	8.104	1.2420	0.7456	1.66570	0.0975	27.4284	0.1819	0.66599	5649.2	1080.0
1100.0	0.0035	284.86	1.0001	1939.6	8.120	1.2420	0.7456	1.66570	0.0984	28.0296	0.1835	0.66599	5685.7	1100.0
1120.0	0.0035	288.52	1.0001	1964.5	8.136	1.2420	0.7456	1.66571	0.0993	28.6359	0.1851	0.66599	5722.1	1120.0
1140.0	0.0034	292.17	1.0001	1989.3	8.152	1.2420	0.7456	1.66571	0.1001	29.2476	0.1867	0.66599	5758.2	1140.0
1160.0	0.0034	295.82	1.0001	2014.2	8.167	1.2420	0.7456	1.66571	0.1010	29.8645	0.1882	0.66599	5794.0	1160.0
1180.0	0.0033	299.47	1.0001	2039.0	8.182	1.2420	0.7456	1.66571	0.1018	30.4866	0.1898	0.66599	5829.7	1180.0
1200.0	0.0033	303.13	1.0001	2063.8	8.197	1.2420	0.7456	1.66571	0.1026	31.1138	0.1914	0.66599	5865.1	1200.0
1220.0	0.0033	306.78	1.0001	2088.7	8.212	1.2420	0.7456	1.66571	0.1035	31.7462	0.1929	0.66599	5900.4	1220.0
1240.0	0.0032	310.43	1.0001	2113.5	8.227	1.2420	0.7456	1.66571	0.1043	32.3838	0.1945	0.66599	5935.4	1240.0
1260.0	0.0032	314.08	1.0001	2138.4	8.242	1.2420	0.7456	1.66571	0.1052	33.0265	0.1961	0.66599	5970.2	1260.0
1280.0	0.0031	317.74	1.0001	2163.2	8.256	1.2420	0.7456	1.66571	0.1060	33.6742	0.1976	0.66599	6004.8	1280.0
1300.0	0.0031	321.39	1.0001	2188.0	8.270	1.2420	0.7456	1.66571	0.1068	34.3271	0.1992	0.66599	6039.2	1300.0
1320.0	0.0031	325.04	1.0001	2212.9	8.284	1.2420	0.7456	1.66571	0.1076	34.9850	0.2007	0.66599	6073.4	1320.0
1340.0	0.0030	328.69	1.0001	2237.7	8.298	1.2420	0.7456	1.66571	0.1085	35.6480	0.2022	0.66599	6107.4	1340.0
1360.0	0.0030	332.34	1.0001	2262.5	8.312	1.2420	0.7456	1.66571	0.1093	36.3160	0.2037	0.66599	6141.3	1360.0
1380.0	0.0030	336.00	1.0001	2287.4	8.325	1.2420	0.7456	1.66571	0.1101	36.9890	0.2053	0.66599	6174.9	1380.0
1400.0	0.0029	339.65	1.0001	2312.2	8.339	1.2420	0.7456	1.66572	0.1109	37.6671	0.2068	0.66599	6208.4	1400.0
1420.0	0.0029	343.30	1.0001	2337.1	8.352	1.2420	0.7456	1.66572	0.1117	38.3500	0.2083	0.66599	6241.7	1420.0
1440.0	0.0029	346.95	1.0001	2361.9	8.365	1.2420	0.7456	1.66572	0.1125	39.0380	0.2098	0.66599	6274.8	1440.0
1460.0	0.0029	350.61	1.0001	2386.7	8.378	1.2420	0.7456	1.66572	0.1133	39.7309	0.2113	0.66599	6307.7	1460.0
1480.0	0.0028	354.26	1.0001	2411.6	8.391	1.2420	0.7456	1.66572	0.1141	40.4287	0.2128	0.66599	6340.5	1480.0
1500.0	0.0028	357.91	1.0001	2436.4	8.404	1.2420	0.7456	1.66572	0.1149	41.1314	0.2143	0.66599	6373.1	1500.0
1520.0	0.0028	361.56	1.0001	2461.3	8.416	1.2420	0.7456	1.66572	0.1157	41.8390	0.2158	0.66599	6405.5	1520.0
1540.0	0.0027	365.22	1.0001	2486.1	8.429	1.2420	0.7456	1.66572	0.1165	42.5515	0.2172	0.66599	6437.8	1540.0
1560.0	0.0027	368.87	1.0001	2510.9	8.441	1.2420	0.7456	1.66572	0.1173	43.2689	0.2187	0.66599	6469.9	1560.0
1580.0	0.0027	372.52	1.0001	2535.8	8.454	1.2420	0.7456	1.66572	0.1181	43.9911	0.2202	0.66599	6501.8	1580.0
1600.0	0.0027	376.17	1.0001	2560.6	8.466	1.2420	0.7456	1.66572	0.1189	44.7181	0.2217	0.66599	6533.6	1600.0
1620.0	0.0026	379.82	1.0001	2585.5	8.478	1.2420	0.7456	1.66572	0.1197	45.4499	0.2231	0.66599	6565.3	1620.0
1640.0	0.0026	383.48	1.0001	2610.3	8.490	1.2420	0.7456	1.66572	0.1204	46.1866	0.2246	0.66599	6596.7	1640.0
1660.0	0.0026	387.13	1.0001	2635.1	8.501	1.2420	0.7456	1.66572	0.1212	46.9281	0.2260	0.66599	6628.1	1660.0
1680.0	0.0026	390.78	1.0001	2660.0	8.513	1.2420	0.7456	1.66572	0.1220	47.6743	0.2275	0.66599	6659.3	1680.0
1700.0	0.0025	394.43	1.0001	2684.8	8.525	1.2420	0.7456	1.66572	0.1228	48.4253	0.2289	0.66599	6690.3	1700.0
1720.0	0.0025	398.09	1.0001	2709.7	8.536	1.2420	0.7456	1.66572	0.1235	49.1810	0.2304	0.66599	6721.2	1720.0
1740.0	0.0025	401.74	1.0001	2734.5	8.547	1.2420	0.7456	1.66572	0.1243	49.9414	0.2318	0.66599	6752.0	1740.0
1760.0	0.0025	405.39	1.0001	2759.3	8.559	1.2420	0.7456	1.66573	0.1251	50.7066	0.2332	0.66599	6782.6	1760.0
1780.0	0.0024	409.04	1.0001	2784.2	8.570	1.2420	0.7456	1.66573	0.1258	51.4764	0.2346	0.66599	6813.1	1780.0

PRESSURE = 500.0 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
0.0	0.3975	2.52	1.0197	578.2	4.853	1.2425	0.7479	1.66120	0.0429	0.1079	0.0809	0.65819	3142.8	0.0
20.0	0.3812	2.62	1.0188	603.1	4.906	1.2424	0.7479	1.66122	0.0441	0.1158	0.0832	0.65878	3207.6	20.0
40.0	0.3663	2.73	1.0180	627.9	4.956	1.2423	0.7478	1.66124	0.0454	0.1239	0.0855	0.65930	3271.2	40.0
60.0	0.3524	2.84	1.0172	652.8	5.005	1.2422	0.7477	1.66127	0.0466	0.1322	0.0877	0.65976	3333.5	60.0
80.0	0.3396	2.94	1.0165	677.6	5.052	1.2421	0.7477	1.66131	0.0478	0.1408	0.0899	0.66018	3394.7	80.0
100.0	0.3277	3.05	1.0158	702.4	5.097	1.2421	0.7476	1.66135	0.0490	0.1496	0.0921	0.66055	3454.9	100.0
120.0	0.3166	3.16	1.0152	727.3	5.141	1.2420	0.7476	1.66139	0.0502	0.1586	0.0943	0.66089	3514.0	120.0
140.0	0.3062	3.27	1.0146	752.1	5.183	1.2420	0.7475	1.66144	0.0514	0.1678	0.0965	0.66120	3572.1	140.0
160.0	0.2965	3.37	1.0141	777.0	5.224	1.2419	0.7475	1.66149	0.0525	0.1772	0.0986	0.66148	3629.3	160.0
180.0	0.2873	3.48	1.0136	801.8	5.263	1.2419	0.7474	1.66154	0.0537	0.1868	0.1007	0.66174	3685.7	180.0
200.0	0.2788	3.59	1.0131	826.6	5.301	1.2418	0.7474	1.66159	0.0548	0.1966	0.1028	0.66197	3741.1	200.0
220.0	0.2707	3.69	1.0127	851.5	5.338	1.2418	0.7473	1.66164	0.0559	0.2066	0.1049	0.66219	3795.8	220.0
240.0	0.2630	3.80	1.0123	876.3	5.374	1.2418	0.7473	1.66170	0.0570	0.2169	0.1069	0.66239	3849.7	240.0
260.0	0.2558	3.91	1.0119	901.1	5.409	1.2417	0.7473	1.66175	0.0582	0.2273	0.1090	0.66257	3902.9	260.0
280.0	0.2490	4.02	1.0115	926.0	5.443	1.2417	0.7472	1.66180	0.0592	0.2379	0.1110	0.66274	3955.4	280.0
300.0	0.2425	4.12	1.0112	950.8	5.477	1.2417	0.7472	1.66186	0.0603	0.2487	0.1130	0.66289	4007.2	300.0
320.0	0.2364	4.23	1.0108	975.7	5.509	1.2417	0.7471	1.66191	0.0614	0.2598	0.1150	0.66304	4058.3	320.0
340.0	0.2306	4.34	1.0105	1000.5	5.540	1.2417	0.7471	1.66196	0.0625	0.2710	0.1170	0.66317	4108.8	340.0
360.0	0.2250	4.44	1.0102	1025.3	5.571	1.2416	0.7471	1.66202	0.0635	0.2824	0.1189	0.66330	4158.7	360.0
380.0	0.2197	4.55	1.0099	1050.2	5.601	1.2416	0.7470	1.66207	0.0646	0.2940	0.1209	0.66342	4208.0	380.0
400.0	0.2146	4.66	1.0096	1075.0	5.630	1.2416	0.7470	1.66212	0.0656	0.3057	0.1228	0.66353	4256.7	400.0
420.0	0.2098	4.77	1.0094	1099.8	5.659	1.2416	0.7470	1.66217	0.0667	0.3177	0.1247	0.66363	4304.9	420.0
440.0	0.2052	4.87	1.0091	1124.6	5.687	1.2416	0.7469	1.66222	0.0677	0.3298	0.1266	0.66373	4352.6	440.0
460.0	0.2008	4.98	1.0089	1149.5	5.714	1.2416	0.7469	1.66227	0.0687	0.3422	0.1285	0.66382	4399.7	460.0
480.0	0.1966	5.09	1.0087	1174.3	5.741	1.2416	0.7469	1.66232	0.0697	0.3547	0.1304	0.66390	4446.4	480.0
500.0	0.1925	5.19	1.0085	1199.1	5.767	1.2416	0.7469	1.66237	0.0707	0.3674	0.1323	0.66398	4492.5	500.0
520.0	0.1886	5.30	1.0082	1224.0	5.792	1.2416	0.7468	1.66242	0.0717	0.3803	0.1341	0.66406	4538.3	520.0
540.0	0.1849	5.41	1.0080	1248.8	5.817	1.2415	0.7468	1.66247	0.0727	0.3933	0.1360	0.66413	4583.5	540.0
560.0	0.1813	5.52	1.0079	1273.6	5.842	1.2415	0.7468	1.66251	0.0737	0.4065	0.1378	0.66420	4628.3	560.0
580.0	0.1778	5.62	1.0077	1298.5	5.866	1.2415	0.7468	1.66256	0.0747	0.4199	0.1396	0.66426	4672.7	580.0
600.0	0.1745	5.73	1.0075	1323.3	5.890	1.2415	0.7467	1.66260	0.0757	0.4335	0.1414	0.66432	4716.7	600.0
620.0	0.1713	5.84	1.0073	1348.1	5.913	1.2415	0.7467	1.66265	0.0766	0.4473	0.1432	0.66438	4760.2	620.0
640.0	0.1682	5.94	1.0072	1373.0	5.936	1.2415	0.7467	1.66269	0.0776	0.4612	0.1450	0.66443	4803.4	640.0
660.0	0.1652	6.05	1.0070	1397.8	5.958	1.2415	0.7467	1.66273	0.0785	0.4753	0.1468	0.66448	4846.2	660.0
680.0	0.1624	6.16	1.0069	1422.6	5.980	1.2415	0.7466	1.66277	0.0795	0.4896	0.1485	0.66453	4888.6	680.0
700.0	0.1596	6.27	1.0067	1447.4	6.002	1.2415	0.7466	1.66282	0.0804	0.5041	0.1503	0.66458	4930.7	700.0
720.0	0.1569	6.37	1.0066	1472.3	6.023	1.2415	0.7466	1.66286	0.0814	0.5187	0.1520	0.66462	4972.4	720.0
740.0	0.1543	6.48	1.0064	1497.1	6.044	1.2415	0.7466	1.66290	0.0823	0.5335	0.1538	0.66466	5013.8	740.0
760.0	0.1518	6.59	1.0063	1521.9	6.064	1.2415	0.7466	1.66293	0.0832	0.5484	0.1555	0.66470	5054.8	760.0
780.0	0.1494	6.70	1.0062	1546.8	6.085	1.2415	0.7466	1.66297	0.0842	0.5635	0.1572	0.66474	5095.5	780.0
800.0	0.1470	6.80	1.0061	1571.6	6.104	1.2415	0.7465	1.66301	0.0851	0.5788	0.1589	0.66478	5135.9	800.0
820.0	0.1447	6.91	1.0059	1596.4	6.124	1.2415	0.7465	1.66305	0.0860	0.5943	0.1607	0.66481	5175.9	820.0
840.0	0.1425	7.02	1.0058	1621.3	6.143	1.2415	0.7465	1.66308	0.0869	0.6099	0.1623	0.66485	5215.7	840.0
860.0	0.1404	7.12	1.0057	1646.1	6.162	1.2415	0.7465	1.66312	0.0878	0.6257	0.1640	0.66488	5255.1	860.0
880.0	0.1383	7.23	1.0056	1670.9	6.181	1.2415	0.7465	1.66315	0.0887	0.6416	0.1657	0.66491	5294.3	880.0

PRESSURE =   500.0   PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
900.0	0.1363	7.34	1.0055	1695.7	6.199	1.2415	0.7465	1.66319	0.0896	0.6577	0.1674	0.66494	5333.2	900.0
920.0	0.1343	7.45	1.0054	1720.6	6.217	1.2415	0.7464	1.66322	0.0905	0.6740	0.1690	0.66497	5371.8	920.0
940.0	0.1324	7.55	1.0053	1745.4	6.235	1.2415	0.7464	1.66326	0.0914	0.6904	0.1707	0.66499	5410.1	940.0
960.0	0.1305	7.66	1.0052	1770.2	6.253	1.2415	0.7464	1.66329	0.0923	0.7070	0.1723	0.66502	5448.2	960.0
980.0	0.1287	7.77	1.0051	1795.1	6.270	1.2415	0.7464	1.66332	0.0932	0.7238	0.1740	0.66505	5486.0	980.0
1000.0	0.1270	7.87	1.0050	1819.9	6.287	1.2415	0.7464	1.66335	0.0941	0.7407	0.1756	0.66507	5523.5	1000.0
1020.0	0.1253	7.98	1.0050	1844.7	6.304	1.2415	0.7464	1.66338	0.0949	0.7577	0.1773	0.66509	5560.8	1020.0
1040.0	0.1236	8.09	1.0049	1869.6	6.321	1.2415	0.7463	1.66341	0.0958	0.7750	0.1789	0.66512	5597.9	1040.0
1060.0	0.1220	8.20	1.0048	1894.4	6.337	1.2415	0.7463	1.66344	0.0967	0.7923	0.1805	0.66514	5634.7	1060.0
1080.0	0.1204	8.30	1.0047	1919.2	6.354	1.2415	0.7463	1.66347	0.0975	0.8099	0.1821	0.66516	5671.2	1080.0
1100.0	0.1189	8.41	1.0046	1944.0	6.370	1.2415	0.7463	1.66350	0.0984	0.8276	0.1837	0.66518	5707.6	1100.0
1120.0	0.1174	8.52	1.0046	1968.9	6.386	1.2415	0.7463	1.66353	0.0993	0.8454	0.1853	0.66520	5743.7	1120.0
1140.0	0.1159	8.62	1.0045	1993.7	6.401	1.2415	0.7463	1.66356	0.1001	0.8634	0.1869	0.66521	5779.5	1140.0
1160.0	0.1145	8.73	1.0044	2018.5	6.417	1.2415	0.7463	1.66358	0.1010	0.8815	0.1884	0.66523	5815.2	1160.0
1180.0	0.1131	8.84	1.0044	2043.4	6.432	1.2415	0.7463	1.66361	0.1018	0.8998	0.1900	0.66525	5850.6	1180.0
1200.0	0.1118	8.95	1.0043	2068.2	6.447	1.2415	0.7463	1.66364	0.1026	0.9183	0.1916	0.66527	5885.9	1200.0
1220.0	0.1105	9.05	1.0042	2093.0	6.462	1.2415	0.7462	1.66366	0.1035	0.9369	0.1932	0.66528	5920.9	1220.0
1240.0	0.1092	9.16	1.0042	2117.9	6.476	1.2415	0.7462	1.66369	0.1043	0.9557	0.1947	0.66530	5955.7	1240.0
1260.0	0.1079	9.27	1.0041	2142.7	6.491	1.2415	0.7462	1.66371	0.1052	0.9746	0.1963	0.66531	5990.3	1260.0
1280.0	0.1067	9.38	1.0040	2167.5	6.505	1.2415	0.7462	1.66374	0.1060	0.9936	0.1978	0.66533	6024.7	1280.0
1300.0	0.1055	9.48	1.0040	2192.3	6.519	1.2415	0.7462	1.66376	0.1068	1.0128	0.1993	0.66534	6059.0	1300.0
1320.0	0.1043	9.59	1.0039	2217.2	6.534	1.2415	0.7462	1.66378	0.1076	1.0322	0.2009	0.66535	6093.0	1320.0
1340.0	0.1031	9.70	1.0039	2242.0	6.547	1.2415	0.7462	1.66381	0.1085	1.0517	0.2024	0.66537	6126.8	1340.0
1360.0	0.1020	9.80	1.0038	2266.8	6.561	1.2415	0.7462	1.66383	0.1093	1.0714	0.2039	0.66538	6160.5	1360.0
1380.0	0.1009	9.91	1.0038	2291.7	6.575	1.2415	0.7462	1.66385	0.1101	1.0911	0.2054	0.66539	6194.0	1380.0
1400.0	0.0998	10.02	1.0037	2316.5	6.588	1.2415	0.7462	1.66388	0.1109	1.1111	0.2070	0.66541	6227.3	1400.0
1420.0	0.0988	10.13	1.0037	2341.3	6.601	1.2415	0.7461	1.66390	0.1117	1.1312	0.2085	0.66542	6260.4	1420.0
1440.0	0.0977	10.23	1.0036	2366.2	6.615	1.2415	0.7461	1.66392	0.1125	1.1514	0.2100	0.66543	6293.3	1440.0
1460.0	0.0967	10.34	1.0036	2391.0	6.628	1.2415	0.7461	1.66394	0.1133	1.1718	0.2115	0.66544	6326.1	1460.0
1480.0	0.0957	10.45	1.0035	2415.8	6.640	1.2415	0.7461	1.66396	0.1141	1.1923	0.2130	0.66545	6358.7	1480.0
1500.0	0.0947	10.56	1.0035	2440.6	6.653	1.2415	0.7461	1.66398	0.1149	1.2130	0.2144	0.66546	6391.2	1500.0
1520.0	0.0938	10.66	1.0034	2465.5	6.666	1.2415	0.7461	1.66400	0.1157	1.2338	0.2159	0.66547	6423.5	1520.0
1540.0	0.0929	10.77	1.0034	2490.3	6.678	1.2415	0.7461	1.66402	0.1165	1.2548	0.2174	0.66548	6455.6	1540.0
1560.0	0.0919	10.88	1.0033	2515.1	6.691	1.2415	0.7461	1.66404	0.1173	1.2759	0.2189	0.66549	6487.6	1560.0
1580.0	0.0910	10.98	1.0033	2540.0	6.703	1.2415	0.7461	1.66406	0.1181	1.2971	0.2203	0.66550	6519.4	1580.0
1600.0	0.0902	11.09	1.0032	2564.8	6.715	1.2415	0.7461	1.66408	0.1189	1.3185	0.2218	0.66551	6551.0	1600.0
1620.0	0.0893	11.20	1.0032	2589.6	6.727	1.2415	0.7461	1.66410	0.1197	1.3400	0.2233	0.66552	6582.5	1620.0
1640.0	0.0884	11.31	1.0032	2614.5	6.739	1.2415	0.7461	1.66412	0.1204	1.3617	0.2247	0.66552	6613.9	1640.0
1660.0	0.0876	11.41	1.0031	2639.3	6.751	1.2415	0.7461	1.66413	0.1212	1.3835	0.2262	0.66553	6645.1	1660.0
1680.0	0.0868	11.52	1.0031	2664.1	6.762	1.2415	0.7460	1.66415	0.1220	1.4054	0.2276	0.66554	6676.1	1680.0
1700.0	0.0860	11.63	1.0031	2689.0	6.774	1.2415	0.7460	1.66417	0.1228	1.4275	0.2291	0.66555	6707.0	1700.0
1720.0	0.0852	11.73	1.0030	2713.8	6.785	1.2415	0.7460	1.66419	0.1235	1.4498	0.2305	0.66556	6737.8	1720.0
1740.0	0.0844	11.84	1.0030	2738.6	6.797	1.2415	0.7460	1.66420	0.1243	1.4721	0.2319	0.66557	6768.4	1740.0
1760.0	0.0837	11.95	1.0029	2763.4	6.808	1.2415	0.7460	1.66422	0.1251	1.4946	0.2334	0.66557	6798.9	1760.0
1780.0	0.0829	12.06	1.0029	2788.3	6.819	1.2415	0.7460	1.66424	0.1258	1.5173	0.2348	0.66558	6829.3	1780.0

PRESSURE =   720.0   PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
0.0	0.5675	1.76	1.0284	580.4	4.672	1.2427	0.7490	1.65920	0.0429	0.0755	0.0814	0.65411	3167.6	0.0
10.0	0.5558	1.80	1.0277	592.8	4.699	1.2426	0.7489	1.65921	0.0435	0.0783	0.0825	0.65456	3199.8	10.0
20.0	0.5446	1.84	1.0271	605.2	4.725	1.2425	0.7489	1.65922	0.0441	0.0810	0.0837	0.65499	3231.7	20.0
30.0	0.5338	1.87	1.0265	617.7	4.751	1.2425	0.7488	1.65924	0.0448	0.0839	0.0848	0.65540	3263.3	30.0
40.0	0.5234	1.91	1.0259	630.1	4.776	1.2424	0.7488	1.65926	0.0454	0.0867	0.0859	0.65578	3294.6	40.0
50.0	0.5134	1.95	1.0253	642.5	4.800	1.2423	0.7487	1.65928	0.0460	0.0896	0.0870	0.65615	3325.6	50.0
60.0	0.5038	1.99	1.0248	654.9	4.824	1.2423	0.7487	1.65930	0.0466	0.0925	0.0882	0.65649	3356.3	60.0
70.0	0.4945	2.02	1.0243	667.4	4.848	1.2422	0.7486	1.65933	0.0472	0.0955	0.0893	0.65681	3386.8	70.0
80.0	0.4856	2.06	1.0238	679.8	4.871	1.2422	0.7486	1.65935	0.0478	0.0985	0.0904	0.65712	3417.0	80.0
90.0	0.4770	2.10	1.0233	692.2	4.894	1.2421	0.7486	1.65938	0.0484	0.1015	0.0915	0.65741	3446.9	90.0
100.0	0.4687	2.13	1.0228	704.6	4.917	1.2421	0.7485	1.65941	0.0490	0.1046	0.0925	0.65769	3476.5	100.0
110.0	0.4606	2.17	1.0223	717.0	4.939	1.2420	0.7485	1.65944	0.0496	0.1077	0.0936	0.65796	3505.9	110.0
120.0	0.4529	2.21	1.0219	729.5	4.960	1.2420	0.7484	1.65947	0.0502	0.1108	0.0947	0.65821	3535.1	120.0
130.0	0.4454	2.25	1.0215	741.9	4.981	1.2420	0.7484	1.65951	0.0508	0.1140	0.0958	0.65845	3564.0	130.0
140.0	0.4381	2.28	1.0211	754.3	5.002	1.2419	0.7484	1.65954	0.0514	0.1172	0.0968	0.65858	3592.7	140.0
150.0	0.4311	2.32	1.0207	766.7	5.023	1.2419	0.7483	1.65958	0.0519	0.1205	0.0979	0.65890	3621.2	150.0
160.0	0.4243	2.36	1.0203	779.1	5.043	1.2419	0.7483	1.65961	0.0525	0.1238	0.0990	0.65910	3649.5	160.0
170.0	0.4177	2.39	1.0199	791.6	5.063	1.2418	0.7483	1.65965	0.0531	0.1271	0.1000	0.65930	3677.5	170.0
180.0	0.4113	2.43	1.0196	804.0	5.082	1.2418	0.7482	1.65969	0.0537	0.1305	0.1011	0.65949	3705.4	180.0
190.0	0.4051	2.47	1.0192	816.4	5.102	1.2418	0.7482	1.65972	0.0542	0.1339	0.1021	0.65968	3733.0	190.0
200.0	0.3991	2.51	1.0189	828.8	5.121	1.2418	0.7482	1.65976	0.0548	0.1373	0.1031	0.65985	3760.4	200.0
210.0	0.3933	2.54	1.0186	841.2	5.139	1.2417	0.7481	1.65980	0.0554	0.1408	0.1042	0.66002	3787.6	210.0
220.0	0.3876	2.58	1.0183	853.7	5.158	1.2417	0.7481	1.65984	0.0559	0.1443	0.1052	0.66018	3814.7	220.0
230.0	0.3821	2.62	1.0180	866.1	5.176	1.2417	0.7481	1.65987	0.0565	0.1478	0.1062	0.66033	3841.5	230.0
240.0	0.3768	2.65	1.0177	878.5	5.194	1.2417	0.7480	1.65991	0.0570	0.1514	0.1073	0.66048	3868.2	240.0
250.0	0.3716	2.69	1.0174	890.9	5.211	1.2417	0.7480	1.65995	0.0576	0.1550	0.1083	0.66062	3894.7	250.0
260.0	0.3665	2.73	1.0171	903.3	5.229	1.2416	0.7480	1.65999	0.0582	0.1587	0.1093	0.66076	3921.0	260.0
270.0	0.3616	2.77	1.0168	915.7	5.246	1.2416	0.7480	1.66003	0.0587	0.1623	0.1103	0.66089	3947.1	270.0
280.0	0.3568	2.80	1.0166	928.2	5.263	1.2416	0.7479	1.66007	0.0592	0.1661	0.1113	0.66102	3973.1	280.0
290.0	0.3521	2.84	1.0163	940.6	5.280	1.2416	0.7479	1.66010	0.0598	0.1698	0.1123	0.66114	3998.9	290.0
300.0	0.3476	2.88	1.0161	953.0	5.296	1.2416	0.7479	1.66014	0.0603	0.1736	0.1133	0.66125	4024.5	300.0
310.0	0.3431	2.91	1.0158	965.4	5.312	1.2416	0.7478	1.66018	0.0609	0.1774	0.1143	0.66137	4050.0	310.0
320.0	0.3388	2.95	1.0156	977.8	5.328	1.2415	0.7478	1.66022	0.0614	0.1812	0.1153	0.66148	4075.3	320.0
330.0	0.3346	2.99	1.0153	990.2	5.344	1.2415	0.7478	1.66026	0.0619	0.1851	0.1163	0.66158	4100.5	330.0
340.0	0.3305	3.03	1.0151	1002.6	5.360	1.2415	0.7478	1.66029	0.0625	0.1890	0.1172	0.66168	4125.5	340.0
350.0	0.3265	3.06	1.0149	1015.1	5.375	1.2415	0.7477	1.66033	0.0630	0.1930	0.1182	0.66178	4150.4	350.0
360.0	0.3226	3.10	1.0147	1027.5	5.390	1.2415	0.7477	1.66037	0.0635	0.1970	0.1192	0.66187	4175.1	360.0
370.0	0.3187	3.14	1.0145	1039.9	5.405	1.2415	0.7477	1.66041	0.0641	0.2010	0.1202	0.66196	4199.7	370.0
380.0	0.3150	3.17	1.0143	1052.3	5.420	1.2415	0.7477	1.66045	0.0646	0.2050	0.1211	0.66205	4224.1	380.0
390.0	0.3114	3.21	1.0141	1064.7	5.435	1.2415	0.7476	1.66048	0.0651	0.2091	0.1221	0.66214	4248.4	390.0
400.0	0.3078	3.25	1.0139	1077.1	5.449	1.2414	0.7476	1.66052	0.0656	0.2132	0.1231	0.66222	4272.6	400.0
410.0	0.3043	3.29	1.0137	1089.5	5.464	1.2414	0.7476	1.66056	0.0661	0.2173	0.1240	0.66230	4296.6	410.0
420.0	0.3009	3.32	1.0135	1102.0	5.478	1.2414	0.7476	1.66059	0.0667	0.2215	0.1250	0.66238	4320.5	420.0
430.0	0.2976	3.36	1.0133	1114.4	5.492	1.2414	0.7476	1.66063	0.0672	0.2257	0.1259	0.66245	4344.2	430.0
440.0	0.2943	3.40	1.0131	1126.8	5.506	1.2414	0.7475	1.66067	0.0677	0.2300	0.1269	0.66252	4367.9	440.0

PRESSURE = 720.0 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
450.0	0.2911	3.43	1.0130	1139.2	5.520	1.2414	0.7475	1.66070	0.0682	0.2342	0.1278	0.66259	4391.4	450.0
460.0	0.2880	3.47	1.0128	1151.6	5.533	1.2414	0.7475	1.66074	0.0687	0.2385	0.1287	0.66266	4414.8	460.0
470.0	0.2850	3.51	1.0126	1164.0	5.547	1.2414	0.7475	1.66077	0.0692	0.2429	0.1297	0.66273	4438.0	470.0
480.0	0.2820	3.55	1.0125	1176.4	5.560	1.2414	0.7475	1.66081	0.0697	0.2472	0.1306	0.66285	4461.2	480.0
490.0	0.2791	3.58	1.0123	1188.9	5.573	1.2414	0.7474	1.66084	0.0702	0.2516	0.1315	0.66291	4507.1	500.0
500.0	0.2762	3.62	1.0122	1201.3	5.586	1.2414	0.7474	1.66088	0.0707	0.2561	0.1325	0.66297	4529.9	510.0
510.0	0.2734	3.66	1.0120	1213.7	5.599	1.2414	0.7474	1.66091	0.0712	0.2605	0.1334	0.66303	4552.6	520.0
520.0	0.2706	3.70	1.0119	1226.1	5.612	1.2414	0.7474	1.66095	0.0717	0.2650	0.1343	0.66308	4575.1	530.0
530.0	0.2679	3.73	1.0117	1238.5	5.624	1.2414	0.7474	1.66098	0.0722	0.2695	0.1352			
540.0	0.2653	3.77	1.0116	1250.9	5.637	1.2413	0.7473	1.66102	0.0727	0.2741	0.1362	0.66314	4597.6	540.0
550.0	0.2627	3.81	1.0114	1263.3	5.649	1.2413	0.7473	1.66105	0.0732	0.2787	0.1371	0.66319	4619.9	550.0
560.0	0.2602	3.84	1.0113	1275.8	5.661	1.2413	0.7473	1.66108	0.0737	0.2833	0.1380	0.66324	4642.2	560.0
570.0	0.2577	3.88	1.0112	1288.2	5.674	1.2413	0.7473	1.66112	0.0742	0.2879	0.1389	0.66329	4664.3	570.0
580.0	0.2552	3.92	1.0110	1300.6	5.685	1.2413	0.7473	1.66115	0.0747	0.2926	0.1398	0.66338	4686.4	580.0
590.0	0.2528	3.96	1.0109	1313.0	5.697	1.2413	0.7473	1.66118	0.0752	0.2973	0.1407	0.66343	4708.3	590.0
600.0	0.2505	3.99	1.0108	1325.4	5.709	1.2413	0.7472	1.66121	0.0757	0.3020	0.1416	0.66347	4751.9	610.0
610.0	0.2482	4.03	1.0107	1337.8	5.721	1.2413	0.7472	1.66124	0.0761	0.3068	0.1425	0.66352	4773.5	620.0
620.0	0.2459	4.07	1.0106	1350.2	5.732	1.2413	0.7472	1.66128	0.0766	0.3116	0.1434			
630.0	0.2437	4.10	1.0104	1362.6	5.744	1.2413	0.7472	1.66131	0.0771	0.3164	0.1443	0.66356	4795.1	630.0
640.0	0.2415	4.14	1.0103	1375.1	5.755	1.2413	0.7472	1.66134	0.0776	0.3213	0.1452	0.66360	4816.5	640.0
650.0	0.2393	4.18	1.0102	1387.5	5.766	1.2413	0.7472	1.66137	0.0781	0.3262	0.1461	0.66364	4837.8	650.0
660.0	0.2372	4.22	1.0101	1399.9	5.778	1.2413	0.7471	1.66140	0.0785	0.3311	0.1470	0.66368	4859.1	660.0
670.0	0.2351	4.25	1.0100	1412.3	5.789	1.2413	0.7471	1.66143	0.0790	0.3360	0.1478	0.66371	4880.3	670.0
680.0	0.2331	4.29	1.0099	1424.7	5.799	1.2413	0.7471	1.66146	0.0795	0.3410	0.1487	0.66375	4901.3	680.0
690.0	0.2311	4.33	1.0098	1437.1	5.810	1.2413	0.7471	1.66149	0.0800	0.3460	0.1496	0.66379	4922.3	690.0
700.0	0.2291	4.36	1.0097	1449.5	5.821	1.2413	0.7471	1.66152	0.0804	0.3511	0.1505	0.66382	4943.2	700.0
710.0	0.2272	4.40	1.0096	1462.0	5.832	1.2413	0.7471	1.66155	0.0809	0.3561	0.1513	0.66386	4964.0	710.0
720.0	0.2253	4.44	1.0095	1474.4	5.842	1.2413	0.7471	1.66158	0.0814	0.3612	0.1522	0.66389	4984.8	720.0
730.0	0.2234	4.48	1.0094	1486.8	5.853	1.2413	0.7470	1.66160	0.0818	0.3663	0.1531	0.66392	5005.4	730.0
740.0	0.2216	4.51	1.0093	1499.2	5.863	1.2413	0.7470	1.66163	0.0823	0.3715	0.1540	0.66395	5026.0	740.0
750.0	0.2198	4.55	1.0092	1511.6	5.873	1.2413	0.7470	1.66166	0.0828	0.3767	0.1548	0.66399	5046.4	750.0
760.0	0.2180	4.59	1.0091	1524.0	5.884	1.2413	0.7470	1.66169	0.0832	0.3819	0.1557	0.66402	5066.8	760.0
770.0	0.2162	4.62	1.0090	1536.4	5.894	1.2413	0.7470	1.66172	0.0837	0.3871	0.1565	0.66405	5087.1	770.0
780.0	0.2145	4.66	1.0089	1548.8	5.904	1.2413	0.7470	1.66174	0.0842	0.3924	0.1574	0.66407	5107.4	780.0
790.0	0.2128	4.70	1.0088	1561.3	5.914	1.2413	0.7470	1.66177	0.0846	0.3977	0.1582	0.66410	5127.5	790.0
800.0	0.2111	4.74	1.0087	1573.7	5.924	1.2413	0.7469	1.66180	0.0851	0.4030	0.1591	0.66413	5147.6	800.0
810.0	0.2095	4.77	1.0086	1586.1	5.934	1.2413	0.7469	1.66183	0.0856	0.4084	0.1600	0.66416	5167.6	810.0
820.0	0.2079	4.81	1.0086	1598.5	5.943	1.2413	0.7469	1.66185	0.0860	0.4138	0.1608	0.66418	5187.5	820.0
830.0	0.2063	4.85	1.0085	1610.9	5.953	1.2413	0.7469	1.66188	0.0865	0.4192	0.1617	0.66421	5207.4	830.0
840.0	0.2047	4.89	1.0084	1623.3	5.963	1.2413	0.7469	1.66190	0.0869	0.4246	0.1625	0.66423	5227.1	840.0
850.0	0.2032	4.92	1.0083	1635.7	5.972	1.2413	0.7469	1.66193	0.0874	0.4301	0.1633	0.66426	5246.8	850.0
860.0	0.2016	4.96	1.0082	1648.1	5.982	1.2413	0.7469	1.66195	0.0878	0.4356	0.1642	0.66428	5266.5	860.0
870.0	0.2001	5.00	1.0082	1660.6	5.991	1.2413	0.7469	1.66198	0.0883	0.4411	0.1650	0.66431	5286.0	870.0
880.0	0.1987	5.03	1.0081	1673.0	6.000	1.2413	0.7468	1.66201	0.0887	0.4467	0.1659	0.66433	5305.5	880.0
890.0	0.1972	5.07	1.0080	1685.4	6.009	1.2413	0.7468	1.66203	0.0892	0.4522	0.1667	0.66435	5324.9	890.0

PRESSURE = 720.0 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
900.0	0.1958	5.11	1.0079	1697.8	6.019	1.2413	0.7468	1.66206	0.0896	0.4579	0.1675	0.66438	5344.2	900.0
910.0	0.1943	5.15	1.0079	1710.2	6.028	1.2413	0.7468	1.66208	0.0901	0.4635	0.1684	0.66440	5363.5	910.0
920.0	0.1929	5.18	1.0078	1722.6	6.037	1.2413	0.7468	1.66210	0.0905	0.4692	0.1692	0.66442	5382.7	920.0
930.0	0.1916	5.22	1.0077	1735.0	6.046	1.2413	0.7468	1.66213	0.0910	0.4749	0.1700	0.66444	5401.9	930.0
940.0	0.1902	5.26	1.0077	1747.4	6.055	1.2413	0.7468	1.66215	0.0914	0.4806	0.1708	0.66446	5420.9	940.0
950.0	0.1889	5.29	1.0076	1759.9	6.063	1.2413	0.7468	1.66217	0.0919	0.4863	0.1717	0.66448	5439.9	950.0
960.0	0.1876	5.33	1.0075	1772.3	6.072	1.2413	0.7468	1.66220	0.0923	0.4921	0.1725	0.66450	5458.9	960.0
970.0	0.1863	5.37	1.0075	1784.7	6.081	1.2413	0.7467	1.66222	0.0927	0.4979	0.1733	0.66452	5477.7	970.0
980.0	0.1850	5.41	1.0074	1797.1	6.090	1.2413	0.7467	1.66224	0.0932	0.5037	0.1741	0.66454	5496.5	980.0
990.0	0.1837	5.44	1.0073	1809.5	6.098	1.2413	0.7467	1.66227	0.0936	0.5096	0.1749	0.66456	5515.3	990.0
1000.0	0.1825	5.48	1.0073	1821.9	6.107	1.2413	0.7467	1.66229	0.0941	0.5155	0.1758	0.66458	5534.0	1000.0
1010.0	0.1812	5.52	1.0072	1834.3	6.115	1.2413	0.7467	1.66231	0.0945	0.5214	0.1766	0.66459	5552.6	1010.0
1020.0	0.1800	5.55	1.0071	1846.7	6.124	1.2413	0.7467	1.66233	0.0949	0.5273	0.1774	0.66461	5571.1	1020.0
1030.0	0.1788	5.59	1.0071	1859.2	6.132	1.2413	0.7467	1.66236	0.0954	0.5333	0.1782	0.66463	5589.6	1030.0
1040.0	0.1776	5.63	1.0070	1871.6	6.140	1.2413	0.7467	1.66238	0.0958	0.5393	0.1790	0.66464	5608.1	1040.0
1050.0	0.1765	5.67	1.0070	1884.0	6.148	1.2413	0.7467	1.66240	0.0962	0.5453	0.1798	0.66466	5626.4	1050.0
1060.0	0.1753	5.70	1.0069	1896.4	6.157	1.2413	0.7467	1.66242	0.0967	0.5514	0.1806	0.66468	5644.8	1060.0
1070.0	0.1742	5.74	1.0068	1908.8	6.165	1.2413	0.7467	1.66244	0.0971	0.5575	0.1814	0.66469	5663.0	1070.0
1080.0	0.1731	5.78	1.0068	1921.2	6.173	1.2413	0.7466	1.66246	0.0975	0.5636	0.1822	0.66471	5681.2	1080.0
1090.0	0.1720	5.82	1.0067	1933.6	6.181	1.2413	0.7466	1.66248	0.0980	0.5697	0.1830	0.66472	5699.4	1090.0
1100.0	0.1709	5.85	1.0067	1946.0	6.189	1.2413	0.7466	1.66250	0.0984	0.5759	0.1838	0.66474	5717.4	1100.0
1110.0	0.1698	5.89	1.0066	1958.5	6.197	1.2413	0.7466	1.66252	0.0988	0.5820	0.1846	0.66475	5735.5	1110.0
1120.0	0.1687	5.93	1.0066	1970.9	6.205	1.2413	0.7466	1.66254	0.0993	0.5883	0.1854	0.66477	5753.4	1120.0
1130.0	0.1677	5.96	1.0065	1983.3	6.213	1.2413	0.7466	1.66256	0.0997	0.5945	0.1862	0.66478	5771.4	1130.0
1140.0	0.1666	6.00	1.0065	1995.7	6.220	1.2413	0.7466	1.66258	0.1001	0.6008	0.1870	0.66480	5789.2	1140.0
1150.0	0.1656	6.04	1.0064	2008.1	6.228	1.2413	0.7466	1.66260	0.1005	0.6071	0.1878	0.66481	5807.0	1150.0
1160.0	0.1645	6.08	1.0064	2020.5	6.236	1.2413	0.7466	1.66262	0.1010	0.6134	0.1886	0.66482	5824.8	1160.0
1170.0	0.1636	6.11	1.0063	2032.9	6.243	1.2413	0.7466	1.66264	0.1014	0.6197	0.1894	0.66484	5842.5	1170.0
1180.0	0.1626	6.15	1.0063	2045.3	6.251	1.2413	0.7466	1.66266	0.1018	0.6261	0.1901	0.66485	5860.1	1180.0
1190.0	0.1616	6.19	1.0062	2057.8	6.259	1.2413	0.7465	1.66268	0.1022	0.6325	0.1909	0.66486	5877.7	1190.0
1200.0	0.1607	6.22	1.0062	2070.2	6.266	1.2413	0.7465	1.66270	0.1026	0.6389	0.1917	0.66488	5895.3	1200.0
1210.0	0.1597	6.26	1.0061	2082.6	6.274	1.2413	0.7465	1.66272	0.1031	0.6454	0.1925	0.66489	5912.8	1210.0
1220.0	0.1588	6.30	1.0061	2095.0	6.281	1.2413	0.7465	1.66274	0.1035	0.6518	0.1933	0.66490	5930.2	1220.0
1230.0	0.1578	6.34	1.0060	2107.4	6.288	1.2413	0.7465	1.66276	0.1039	0.6583	0.1940	0.66491	5947.6	1230.0
1240.0	0.1569	6.37	1.0060	2119.8	6.296	1.2413	0.7465	1.66277	0.1043	0.6649	0.1948	0.66492	5964.9	1240.0
1250.0	0.1560	6.41	1.0059	2132.2	6.303	1.2413	0.7465	1.66279	0.1047	0.6714	0.1956	0.66494	5982.2	1250.0
1260.0	0.1551	6.45	1.0059	2144.6	6.310	1.2413	0.7465	1.66281	0.1052	0.6780	0.1964	0.66495	5999.4	1260.0
1270.0	0.1542	6.49	1.0059	2157.1	6.317	1.2413	0.7465	1.66283	0.1056	0.6846	0.1971	0.66496	6016.6	1270.0
1280.0	0.1533	6.52	1.0058	2169.5	6.324	1.2413	0.7465	1.66284	0.1060	0.6912	0.1979	0.66497	6033.8	1280.0
1290.0	0.1525	6.56	1.0058	2181.9	6.332	1.2413	0.7465	1.66286	0.1064	0.6979	0.1987	0.66498	6050.9	1290.0
1300.0	0.1516	6.60	1.0057	2194.3	6.339	1.2413	0.7465	1.66288	0.1068	0.7046	0.1995	0.66499	6067.9	1300.0
1310.0	0.1507	6.63	1.0057	2206.7	6.346	1.2413	0.7465	1.66290	0.1072	0.7113	0.2002	0.66500	6084.9	1310.0
1320.0	0.1499	6.67	1.0056	2219.1	6.353	1.2413	0.7465	1.66291	0.1076	0.7180	0.2010	0.66501	6101.9	1320.0
1330.0	0.1491	6.71	1.0056	2231.5	6.360	1.2413	0.7464	1.66293	0.1080	0.7248	0.2017	0.66502	6118.8	1330.0
1340.0	0.1482	6.75	1.0056	2244.0	6.367	1.2413	0.7464	1.66295	0.1085	0.7316	0.2025	0.66503	6135.6	1340.0

PRESSURE =   720.0 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
1350.0	0.1474	6.78	1.0055	2256.4	6.373	1.2413	0.7464	1.66296	0.1089	0.7384	0.2033	0.66504	6152.5	1350.0
1360.0	0.1466	6.82	1.0055	2268.8	6.380	1.2413	0.7464	1.66298	0.1093	0.7452	0.2040	0.66505	6169.2	1360.0
1370.0	0.1458	6.86	1.0055	2281.2	6.387	1.2413	0.7464	1.66300	0.1097	0.7521	0.2048	0.66506	6185.9	1370.0
1380.0	0.1450	6.89	1.0054	2293.6	6.394	1.2413	0.7464	1.66301	0.1101	0.7590	0.2055	0.66507	6202.6	1380.0
1390.0	0.1443	6.93	1.0054	2306.0	6.401	1.2413	0.7464	1.66303	0.1105	0.7659	0.2063	0.66508	6219.2	1390.0
1400.0	0.1435	6.97	1.0053	2318.4	6.407	1.2413	0.7464	1.66304	0.1109	0.7728	0.2071	0.66509	6235.8	1400.0
1410.0	0.1427	7.01	1.0053	2330.8	6.414	1.2413	0.7464	1.66306	0.1113	0.7798	0.2078	0.66510	6252.4	1410.0
1420.0	0.1420	7.04	1.0053	2343.3	6.421	1.2413	0.7464	1.66308	0.1117	0.7868	0.2086	0.66511	6268.9	1420.0
1430.0	0.1412	7.08	1.0052	2355.7	6.427	1.2413	0.7464	1.66309	0.1121	0.7938	0.2093	0.66512	6285.3	1430.0
1440.0	0.1405	7.12	1.0052	2368.1	6.434	1.2413	0.7464	1.66311	0.1125	0.8009	0.2101	0.66512	6301.8	1440.0
1450.0	0.1398	7.15	1.0052	2380.5	6.440	1.2413	0.7464	1.66312	0.1129	0.8079	0.2108	0.66513	6318.1	1450.0
1460.0	0.1390	7.19	1.0051	2392.9	6.447	1.2413	0.7464	1.66314	0.1133	0.8150	0.2116	0.66514	6334.5	1460.0
1470.0	0.1383	7.23	1.0051	2405.3	6.453	1.2413	0.7464	1.66315	0.1137	0.8221	0.2123	0.66515	6350.8	1470.0
1480.0	0.1376	7.27	1.0051	2417.7	6.460	1.2413	0.7463	1.66317	0.1141	0.8293	0.2131	0.66516	6367.0	1480.0
1490.0	0.1369	7.30	1.0050	2430.1	6.466	1.2413	0.7463	1.66318	0.1145	0.8364	0.2138	0.66517	6383.2	1490.0
1500.0	0.1362	7.34	1.0050	2442.6	6.472	1.2413	0.7463	1.66320	0.1149	0.8436	0.2145	0.66517	6399.4	1500.0
1510.0	0.1355	7.38	1.0050	2455.0	6.479	1.2413	0.7463	1.66321	0.1153	0.8509	0.2153	0.66518	6415.5	1510.0
1520.0	0.1349	7.42	1.0049	2467.4	6.485	1.2413	0.7463	1.66323	0.1157	0.8581	0.2160	0.66519	6431.6	1520.0
1530.0	0.1342	7.45	1.0049	2479.8	6.491	1.2413	0.7463	1.66324	0.1161	0.8654	0.2168	0.66520	6447.6	1530.0
1540.0	0.1335	7.49	1.0049	2492.2	6.497	1.2413	0.7463	1.66325	0.1165	0.8727	0.2175	0.66520	6463.6	1540.0
1550.0	0.1329	7.53	1.0048	2504.6	6.504	1.2413	0.7463	1.66327	0.1169	0.8800	0.2182	0.66521	6479.6	1550.0
1560.0	0.1322	7.56	1.0048	2517.0	6.510	1.2413	0.7463	1.66328	0.1173	0.8873	0.2190	0.66522	6495.5	1560.0
1570.0	0.1316	7.60	1.0048	2529.4	6.516	1.2413	0.7463	1.66329	0.1177	0.8947	0.2197	0.66523	6511.4	1570.0
1580.0	0.1309	7.64	1.0047	2541.9	6.522	1.2413	0.7463	1.66331	0.1181	0.9021	0.2204	0.66523	6527.3	1580.0
1590.0	0.1303	7.68	1.0047	2554.3	6.528	1.2413	0.7463	1.66332	0.1185	0.9095	0.2212	0.66524	6543.1	1590.0
1600.0	0.1296	7.71	1.0047	2566.7	6.534	1.2413	0.7463	1.66333	0.1189	0.9169	0.2219	0.66525	6558.9	1600.0
1610.0	0.1290	7.75	1.0047	2579.1	6.540	1.2413	0.7463	1.66335	0.1193	0.9244	0.2226	0.66525	6574.6	1610.0
1620.0	0.1284	7.79	1.0046	2591.5	6.546	1.2413	0.7463	1.66336	0.1197	0.9319	0.2234	0.66526	6590.3	1620.0
1630.0	0.1278	7.82	1.0046	2603.9	6.552	1.2413	0.7463	1.66338	0.1201	0.9394	0.2241	0.66527	6606.0	1630.0
1640.0	0.1272	7.86	1.0046	2616.3	6.558	1.2413	0.7463	1.66339	0.1204	0.9469	0.2248	0.66527	6621.6	1640.0
1650.0	0.1266	7.90	1.0045	2628.8	6.564	1.2413	0.7463	1.66340	0.1208	0.9545	0.2255	0.66528	6637.2	1650.0
1660.0	0.1260	7.94	1.0045	2641.2	6.570	1.2413	0.7463	1.66341	0.1212	0.9621	0.2263	0.66528	6652.8	1660.0
1670.0	0.1254	7.97	1.0045	2653.6	6.576	1.2413	0.7462	1.66343	0.1216	0.9697	0.2270	0.66529	6668.3	1670.0
1680.0	0.1248	8.01	1.0045	2666.0	6.581	1.2413	0.7462	1.66344	0.1220	0.9773	0.2277	0.66530	6683.8	1680.0
1690.0	0.1242	8.05	1.0044	2678.4	6.587	1.2413	0.7462	1.66345	0.1224	0.9850	0.2284	0.66530	6699.2	1690.0
1700.0	0.1237	8.09	1.0044	2690.8	6.593	1.2413	0.7462	1.66347	0.1228	0.9927	0.2291	0.66531	6714.6	1700.0
1710.0	0.1231	8.12	1.0044	2703.2	6.599	1.2413	0.7462	1.66348	0.1232	1.0004	0.2299	0.66532	6730.0	1710.0
1720.0	0.1225	8.16	1.0043	2715.6	6.604	1.2413	0.7462	1.66349	0.1235	1.0081	0.2306	0.66532	6745.3	1720.0
1730.0	0.1220	8.20	1.0043	2728.1	6.610	1.2413	0.7462	1.66350	0.1239	1.0159	0.2313	0.66533	6760.6	1730.0
1740.0	0.1214	8.23	1.0043	2740.5	6.616	1.2413	0.7462	1.66351	0.1243	1.0237	0.2320	0.66533	6775.9	1740.0
1750.0	0.1209	8.27	1.0043	2752.9	6.621	1.2413	0.7462	1.66352	0.1247	1.0315	0.2327	0.66534	6791.1	1750.0
1760.0	0.1204	8.31	1.0042	2765.3	6.627	1.2413	0.7462	1.66354	0.1251	1.0393	0.2334	0.66534	6806.3	1760.0
1770.0	0.1198	8.35	1.0042	2777.7	6.633	1.2413	0.7462	1.66355	0.1255	1.0471	0.2342	0.66535	6821.5	1770.0
1780.0	0.1193	8.38	1.0042	2790.1	6.638	1.2413	0.7462	1.66356	0.1258	1.0550	0.2349	0.66535	6836.7	1780.0
1790.0	0.1188	8.42	1.0042	2802.5	6.644	1.2413	0.7462	1.66357	0.1262	1.0629	0.2356	0.66536	6851.8	1790.0

PRESSURE =   720.0 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
1800.0	0.1182	8.46	1.0041	2815.0	6.649	1.2413	0.7462	1.66358	0.1266	1.0708	0.2363	0.66536	6866.8	1800.0
1810.0	0.1177	8.50	1.0041	2827.4	6.655	1.2414	0.7462	1.66360	0.1270	1.0788	0.2370	0.66537	6881.9	1810.0
1820.0	0.1172	8.53	1.0041	2839.8	6.660	1.2414	0.7462	1.66361	0.1274	1.0868	0.2377	0.66537	6896.9	1820.0
1830.0	0.1167	8.57	1.0041	2852.2	6.666	1.2414	0.7462	1.66362	0.1277	1.0948	0.2384	0.66538	6911.8	1830.0
1840.0	0.1162	8.61	1.0041	2864.6	6.671	1.2414	0.7462	1.66363	0.1281	1.1028	0.2391	0.66539	6926.8	1840.0
1850.0	0.1157	8.64	1.0040	2877.0	6.676	1.2414	0.7462	1.66364	0.1285	1.1108	0.2398	0.66539	6941.7	1850.0
1860.0	0.1152	8.68	1.0040	2889.4	6.682	1.2414	0.7462	1.66365	0.1289	1.1189	0.2405	0.66539	6956.6	1860.0
1870.0	0.1147	8.72	1.0040	2901.9	6.687	1.2414	0.7462	1.66366	0.1293	1.1270	0.2412	0.66540	6971.4	1870.0
1880.0	0.1142	8.76	1.0040	2914.3	6.692	1.2414	0.7462	1.66367	0.1296	1.1351	0.2419	0.66540	6986.2	1880.0
1890.0	0.1137	8.79	1.0039	2926.7	6.698	1.2414	0.7462	1.66368	0.1300	1.1432	0.2426	0.66541	7001.0	1890.0
1900.0	0.1132	8.83	1.0039	2939.1	6.703	1.2414	0.7461	1.66369	0.1304	1.1514	0.2433	0.66541	7015.8	1900.0
1910.0	0.1128	8.87	1.0039	2951.5	6.708	1.2414	0.7461	1.66371	0.1308	1.1596	0.2440	0.66542	7030.5	1910.0
1920.0	0.1123	8.90	1.0039	2963.9	6.713	1.2414	0.7461	1.66372	0.1311	1.1678	0.2447	0.66542	7045.2	1920.0
1930.0	0.1118	8.94	1.0039	2976.3	6.719	1.2414	0.7461	1.66373	0.1315	1.1760	0.2454	0.66543	7059.8	1930.0
1940.0	0.1114	8.98	1.0038	2988.7	6.724	1.2414	0.7461	1.66374	0.1319	1.1843	0.2461	0.66543	7074.5	1940.0
1950.0	0.1109	9.02	1.0038	3001.2	6.729	1.2414	0.7461	1.66375	0.1323	1.1925	0.2468	0.66544	7089.1	1950.0
1960.0	0.1105	9.05	1.0038	3013.6	6.734	1.2414	0.7461	1.66376	0.1326	1.2008	0.2475	0.66544	7103.6	1960.0
1970.0	0.1100	9.09	1.0038	3026.0	6.739	1.2414	0.7461	1.66377	0.1330	1.2092	0.2482	0.66544	7118.2	1970.0
1980.0	0.1096	9.13	1.0038	3038.4	6.744	1.2414	0.7461	1.66378	0.1334	1.2175	0.2489	0.66545	7132.7	1980.0
1990.0	0.1091	9.17	1.0037	3050.8	6.749	1.2414	0.7461	1.66379	0.1338	1.2259	0.2496	0.66545	7147.2	1990.0

PRESSURE = 1000.0 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
0.0	0.7799	1.28	1.0394	583.1	4.509	1.2430	0.7503	1.65667	0.0429	0.0550	0.0821	0.64868	3199.2	0.0
20.0	0.7487	1.34	1.0376	608.0	4.562	1.2427	0.7501	1.65670	0.0441	0.0589	0.0843	0.64996	3262.4	20.0
40.0	0.7198	1.39	1.0359	632.9	4.613	1.2426	0.7500	1.65674	0.0454	0.0630	0.0865	0.65110	3324.4	40.0
60.0	0.6932	1.44	1.0344	657.7	4.662	1.2424	0.7499	1.65681	0.0466	0.0672	0.0887	0.65212	3385.4	60.0
80.0	0.6684	1.50	1.0330	682.6	4.709	1.2423	0.7498	1.65688	0.0478	0.0715	0.0909	0.65304	3445.2	80.0
100.0	0.6453	1.55	1.0317	707.4	4.754	1.2421	0.7496	1.65696	0.0490	0.0759	0.0931	0.65387	3504.1	100.0
120.0	0.6238	1.60	1.0304	732.2	4.798	1.2420	0.7495	1.65704	0.0502	0.0805	0.0952	0.65462	3562.0	120.0
140.0	0.6037	1.66	1.0293	757.1	4.840	1.2419	0.7494	1.65714	0.0514	0.0851	0.0973	0.65530	3619.0	140.0
160.0	0.5848	1.71	1.0282	781.9	4.880	1.2418	0.7493	1.65723	0.0525	0.0898	0.0994	0.65592	3675.1	160.0
180.0	0.5671	1.76	1.0272	806.8	4.920	1.2417	0.7492	1.65733	0.0537	0.0947	0.1015	0.65649	3730.4	180.0
200.0	0.5504	1.82	1.0263	831.6	4.958	1.2417	0.7492	1.65744	0.0548	0.0996	0.1036	0.65701	3784.9	200.0
220.0	0.5347	1.87	1.0254	856.4	4.995	1.2416	0.7491	1.65754	0.0559	0.1046	0.1056	0.65748	3838.7	220.0
240.0	0.5198	1.92	1.0245	881.2	5.031	1.2415	0.7490	1.65765	0.0570	0.1098	0.1077	0.65792	3891.7	240.0
260.0	0.5057	1.98	1.0238	906.1	5.066	1.2415	0.7489	1.65775	0.0582	0.1150	0.1097	0.65833	3944.0	260.0
280.0	0.4924	2.03	1.0230	930.9	5.100	1.2414	0.7488	1.65786	0.0592	0.1203	0.1117	0.65870	3995.6	280.0
300.0	0.4798	2.08	1.0223	955.7	5.133	1.2414	0.7487	1.65797	0.0603	0.1257	0.1137	0.65905	4046.6	300.0
320.0	0.4678	2.14	1.0216	980.6	5.166	1.2414	0.7487	1.65807	0.0614	0.1313	0.1156	0.65938	4097.0	320.0
340.0	0.4564	2.19	1.0210	1005.4	5.197	1.2413	0.7486	1.65818	0.0625	0.1369	0.1176	0.65968	4146.8	340.0
360.0	0.4455	2.24	1.0204	1030.2	5.228	1.2413	0.7485	1.65828	0.0635	0.1426	0.1195	0.65996	4196.0	360.0
380.0	0.4351	2.30	1.0198	1055.0	5.258	1.2413	0.7485	1.65839	0.0646	0.1484	0.1215	0.66022	4244.6	380.0
400.0	0.4252	2.35	1.0193	1079.9	5.287	1.2412	0.7484	1.65849	0.0656	0.1543	0.1234	0.66046	4292.7	400.0
420.0	0.4158	2.41	1.0188	1104.7	5.315	1.2412	0.7483	1.65859	0.0667	0.1603	0.1253	0.66069	4340.2	420.0
440.0	0.4067	2.46	1.0183	1129.5	5.343	1.2412	0.7483	1.65869	0.0677	0.1664	0.1272	0.66091	4387.3	440.0
460.0	0.3981	2.51	1.0178	1154.3	5.371	1.2412	0.7482	1.65879	0.0687	0.1726	0.1290	0.66111	4433.9	460.0
480.0	0.3898	2.57	1.0173	1179.2	5.397	1.2411	0.7482	1.65889	0.0697	0.1789	0.1309	0.66130	4480.0	480.0
500.0	0.3818	2.62	1.0169	1204.0	5.423	1.2411	0.7481	1.65899	0.0707	0.1852	0.1328	0.66148	4525.6	500.0
520.0	0.3742	2.67	1.0165	1228.8	5.449	1.2411	0.7481	1.65908	0.0717	0.1917	0.1346	0.66164	4570.8	520.0
540.0	0.3668	2.73	1.0161	1253.6	5.474	1.2411	0.7480	1.65918	0.0727	0.1982	0.1364	0.66180	4615.5	540.0
560.0	0.3599	2.78	1.0157	1278.5	5.499	1.2411	0.7480	1.65927	0.0737	0.2049	0.1383	0.66195	4659.8	560.0
580.0	0.3530	2.83	1.0153	1303.3	5.523	1.2411	0.7479	1.65936	0.0747	0.2116	0.1401	0.66209	4703.7	580.0
600.0	0.3464	2.89	1.0150	1328.1	5.547	1.2411	0.7479	1.65945	0.0757	0.2184	0.1419	0.66223	4747.3	600.0
620.0	0.3401	2.94	1.0147	1352.9	5.570	1.2410	0.7478	1.65954	0.0766	0.2253	0.1436	0.66236	4790.4	620.0
640.0	0.3340	2.99	1.0143	1377.7	5.592	1.2410	0.7478	1.65962	0.0776	0.2323	0.1454	0.66248	4833.1	640.0
660.0	0.3282	3.05	1.0140	1402.6	5.615	1.2410	0.7477	1.65971	0.0785	0.2393	0.1472	0.66259	4875.5	660.0
680.0	0.3225	3.10	1.0137	1427.4	5.637	1.2410	0.7477	1.65979	0.0795	0.2465	0.1490	0.66270	4917.5	680.0
700.0	0.3170	3.15	1.0134	1452.2	5.658	1.2410	0.7477	1.65987	0.0804	0.2537	0.1507	0.66281	4959.2	700.0
720.0	0.3118	3.21	1.0131	1477.0	5.680	1.2410	0.7476	1.65995	0.0814	0.2610	0.1524	0.66290	5000.5	720.0
740.0	0.3066	3.26	1.0129	1501.8	5.700	1.2410	0.7476	1.66003	0.0823	0.2684	0.1542	0.66300	5041.5	740.0
760.0	0.3017	3.31	1.0126	1526.7	5.721	1.2410	0.7475	1.66011	0.0832	0.2759	0.1559	0.66309	5082.2	760.0
780.0	0.2969	3.37	1.0124	1551.5	5.741	1.2410	0.7475	1.66018	0.0842	0.2835	0.1576	0.66317	5122.5	780.0
800.0	0.2923	3.42	1.0121	1576.3	5.761	1.2410	0.7475	1.66026	0.0851	0.2912	0.1593	0.66326	5162.5	800.0
820.0	0.2878	3.48	1.0119	1601.1	5.781	1.2410	0.7474	1.66033	0.0860	0.2989	0.1610	0.66334	5202.3	820.0
840.0	0.2834	3.53	1.0117	1625.9	5.800	1.2410	0.7474	1.66041	0.0869	0.3067	0.1627	0.66341	5241.7	840.0
860.0	0.2792	3.58	1.0114	1650.8	5.819	1.2410	0.7474	1.66048	0.0878	0.3146	0.1644	0.66348	5280.8	860.0
880.0	0.2750	3.64	1.0112	1675.6	5.837	1.2410	0.7473	1.66055	0.0887	0.3226	0.1661	0.66355	5319.7	880.0

PRESSURE = 1000.0 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCO	VISCK	K	PR	C*	T
900.0	0.2711	3.69	1.0110	1700.4	5.856	1.2410	0.7473	1.66061	0.0896	0.3307	0.1677	0.66362	5358.3	900.0
920.0	0.2672	3.74	1.0108	1725.2	5.874	1.2410	0.7473	1.66068	0.0905	0.3388	0.1694	0.66368	5396.6	920.0
940.0	0.2634	3.80	1.0106	1750.0	5.892	1.2410	0.7472	1.66075	0.0914	0.3470	0.1710	0.66374	5434.6	940.0
960.0	0.2597	3.85	1.0104	1774.9	5.909	1.2410	0.7472	1.66081	0.0923	0.3553	0.1727	0.66380	5472.4	960.0
980.0	0.2562	3.90	1.0103	1799.7	5.927	1.2410	0.7472	1.66088	0.0932	0.3637	0.1743	0.66386	5510.0	980.0
1000.0	0.2527	3.96	1.0101	1824.5	5.944	1.2410	0.7472	1.66094	0.0941	0.3722	0.1759	0.66391	5547.2	1000.0
1020.0	0.2493	4.01	1.0099	1849.3	5.961	1.2410	0.7471	1.66100	0.0949	0.3807	0.1776	0.66396	5584.3	1020.0
1040.0	0.2461	4.06	1.0097	1874.1	5.977	1.2410	0.7471	1.66106	0.0958	0.3894	0.1792	0.66401	5621.0	1040.0
1060.0	0.2429	4.12	1.0096	1899.0	5.994	1.2410	0.7471	1.66112	0.0967	0.3981	0.1808	0.66406	5657.6	1060.0
1080.0	0.2397	4.17	1.0094	1923.8	6.010	1.2410	0.7470	1.66118	0.0975	0.4068	0.1824	0.66411	5693.9	1080.0
1100.0	0.2367	4.22	1.0093	1948.6	6.026	1.2410	0.7470	1.66124	0.0984	0.4157	0.1840	0.66415	5730.0	1100.0
1120.0	0.2337	4.28	1.0091	1973.4	6.042	1.2410	0.7470	1.66129	0.0993	0.4246	0.1856	0.66419	5765.9	1120.0
1140.0	0.2309	4.33	1.0090	1998.2	6.058	1.2410	0.7470	1.66135	0.1001	0.4336	0.1871	0.66423	5801.5	1140.0
1160.0	0.2280	4.39	1.0088	2023.1	6.073	1.2410	0.7469	1.66140	0.1010	0.4427	0.1887	0.66427	5837.0	1160.0
1180.0	0.2253	4.44	1.0087	2047.9	6.088	1.2410	0.7469	1.66146	0.1018	0.4519	0.1903	0.66431	5872.2	1180.0
1200.0	0.2226	4.49	1.0086	2072.7	6.103	1.2410	0.7469	1.66151	0.1026	0.4611	0.1919	0.66435	5907.2	1200.0
1220.0	0.2200	4.55	1.0084	2097.5	6.118	1.2410	0.7469	1.66156	0.1035	0.4704	0.1934	0.66439	5942.0	1220.0
1240.0	0.2174	4.60	1.0083	2122.3	6.133	1.2410	0.7469	1.66161	0.1043	0.4798	0.1950	0.66442	5976.6	1240.0
1260.0	0.2149	4.65	1.0082	2147.1	6.147	1.2410	0.7468	1.66166	0.1052	0.4893	0.1965	0.66446	6011.1	1260.0
1280.0	0.2125	4.71	1.0081	2172.0	6.162	1.2410	0.7468	1.66171	0.1060	0.4988	0.1981	0.66449	6045.3	1280.0
1300.0	0.2101	4.76	1.0080	2196.8	6.176	1.2410	0.7468	1.66176	0.1068	0.5084	0.1996	0.66452	6079.3	1300.0
1320.0	0.2077	4.81	1.0078	2221.6	6.190	1.2410	0.7468	1.66181	0.1076	0.5181	0.2011	0.66455	6113.2	1320.0
1340.0	0.2055	4.87	1.0077	2246.4	6.204	1.2410	0.7468	1.66185	0.1085	0.5279	0.2026	0.66458	6146.8	1340.0
1360.0	0.2032	4.92	1.0076	2271.2	6.218	1.2410	0.7467	1.66190	0.1093	0.5377	0.2042	0.66461	6180.3	1360.0
1380.0	0.2010	4.97	1.0075	2296.1	6.231	1.2410	0.7467	1.66194	0.1101	0.5476	0.2057	0.66466	6213.6	1380.0
1400.0	0.1989	5.03	1.0074	2320.9	6.244	1.2410	0.7467	1.66199	0.1109	0.5576	0.2072	0.66469	6246.7	1400.0
1420.0	0.1968	5.08	1.0073	2345.7	6.258	1.2410	0.7467	1.66203	0.1117	0.5677	0.2087	0.66469	6279.7	1420.0
1440.0	0.1947	5.14	1.0072	2370.5	6.271	1.2410	0.7467	1.66207	0.1125	0.5778	0.2102	0.66471	6312.5	1440.0
1460.0	0.1927	5.19	1.0071	2395.4	6.284	1.2410	0.7467	1.66212	0.1133	0.5880	0.2117	0.66474	6345.1	1460.0
1480.0	0.1908	5.24	1.0070	2420.2	6.297	1.2410	0.7466	1.66216	0.1141	0.5983	0.2132	0.66476	6377.5	1480.0
1500.0	0.1888	5.30	1.0069	2445.0	6.309	1.2410	0.7466	1.66220	0.1149	0.6086	0.2147	0.66479	6409.8	1500.0
1520.0	0.1869	5.35	1.0068	2469.8	6.322	1.2410	0.7466	1.66224	0.1157	0.6190	0.2161	0.66481	6441.9	1520.0
1540.0	0.1851	5.40	1.0068	2494.6	6.335	1.2410	0.7466	1.66228	0.1165	0.6295	0.2176	0.66483	6473.9	1540.0
1560.0	0.1833	5.46	1.0067	2519.5	6.347	1.2410	0.7466	1.66232	0.1173	0.6401	0.2191	0.66485	6505.7	1560.0
1580.0	0.1815	5.51	1.0066	2544.3	6.359	1.2411	0.7466	1.66235	0.1181	0.6507	0.2206	0.66487	6537.4	1580.0
1600.0	0.1797	5.56	1.0065	2569.1	6.371	1.2411	0.7465	1.66239	0.1189	0.6614	0.2220	0.66489	6568.9	1600.0
1620.0	0.1780	5.62	1.0064	2593.9	6.383	1.2411	0.7465	1.66243	0.1197	0.6722	0.2235	0.66491	6600.3	1620.0
1640.0	0.1763	5.67	1.0063	2618.7	6.395	1.2411	0.7465	1.66246	0.1204	0.6830	0.2249	0.66493	6631.5	1640.0
1660.0	0.1747	5.72	1.0063	2643.6	6.407	1.2411	0.7465	1.66250	0.1212	0.6939	0.2264	0.66495	6662.5	1660.0
1680.0	0.1731	5.78	1.0062	2668.4	6.419	1.2411	0.7465	1.66254	0.1220	0.7049	0.2278	0.66497	6693.5	1680.0
1700.0	0.1715	5.83	1.0061	2693.2	6.430	1.2411	0.7465	1.66257	0.1228	0.7159	0.2293	0.66500	6724.2	1700.0
1720.0	0.1699	5.89	1.0060	2718.0	6.442	1.2411	0.7465	1.66260	0.1235	0.7271	0.2307	0.66502	6785.4	1720.0
1740.0	0.1684	5.94	1.0060	2742.8	6.453	1.2411	0.7465	1.66264	0.1243	0.7383	0.2321	0.66502	6815.8	1740.0
1760.0	0.1669	5.99	1.0059	2767.7	6.464	1.2411	0.7464	1.66267	0.1251	0.7495	0.2336	0.66504	6815.8	1760.0
1780.0	0.1654	6.05	1.0058	2792.5	6.475	1.2411	0.7464	1.66270	0.1258	0.7608	0.2350	0.66505	6846.0	1780.0

PRESSURE = 1230.0 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
0.0	0.9510	1.05	1.0485	585.4	4.407	1.2432	0.7513	1.65460	0.0429	0.0451	0.0827	0.64409	3225.0	0.0
10.0	0.9317	1.07	1.0473	597.8	4.434	1.2430	0.7513	1.65461	0.0435	0.0467	0.0838	0.64492	3256.4	10.0
20.0	0.9132	1.10	1.0462	610.3	4.460	1.2429	0.7512	1.65463	0.0441	0.0483	0.0849	0.64570	3287.5	20.0
30.0	0.8955	1.12	1.0452	622.7	4.486	1.2428	0.7511	1.65466	0.0448	0.0500	0.0860	0.64644	3318.3	30.0
40.0	0.8784	1.14	1.0442	635.1	4.511	1.2427	0.7510	1.65469	0.0454	0.0517	0.0871	0.64713	3348.9	40.0
50.0	0.8620	1.16	1.0432	647.6	4.535	1.2426	0.7509	1.65472	0.0460	0.0534	0.0882	0.64779	3379.1	50.0
60.0	0.8461	1.18	1.0423	660.0	4.560	1.2425	0.7509	1.65476	0.0466	0.0551	0.0892	0.64842	3409.1	60.0
70.0	0.8308	1.20	1.0414	672.4	4.583	1.2424	0.7508	1.65481	0.0472	0.0568	0.0903	0.64901	3438.9	70.0
80.0	0.8161	1.23	1.0406	684.8	4.606	1.2423	0.7507	1.65485	0.0478	0.0586	0.0914	0.64958	3468.4	80.0
90.0	0.8019	1.25	1.0397	697.3	4.629	1.2422	0.7506	1.65490	0.0484	0.0604	0.0925	0.65011	3497.7	90.0
100.0	0.7882	1.27	1.0389	709.7	4.652	1.2422	0.7506	1.65495	0.0490	0.0622	0.0935	0.65062	3526.7	100.0
110.0	0.7749	1.29	1.0382	722.1	4.674	1.2421	0.7505	1.65500	0.0496	0.0640	0.0946	0.65111	3555.5	110.0
120.0	0.7621	1.31	1.0374	734.5	4.695	1.2420	0.7504	1.65506	0.0502	0.0659	0.0957	0.65157	3584.0	120.0
130.0	0.7497	1.33	1.0367	746.9	4.717	1.2420	0.7504	1.65511	0.0508	0.0677	0.0967	0.65201	3612.4	130.0
140.0	0.7377	1.36	1.0360	759.4	4.737	1.2419	0.7503	1.65517	0.0514	0.0696	0.0978	0.65243	3640.5	140.0
150.0	0.7261	1.38	1.0354	771.8	4.758	1.2418	0.7503	1.65523	0.0519	0.0715	0.0988	0.65283	3668.4	150.0
160.0	0.7143	1.40	1.0347	784.2	4.778	1.2418	0.7502	1.65529	0.0525	0.0735	0.0999	0.65321	3696.1	160.0
170.0	0.7039	1.42	1.0341	796.6	4.798	1.2417	0.7501	1.65535	0.0531	0.0754	0.1009	0.65358	3723.6	170.0
180.0	0.6933	1.44	1.0335	809.0	4.818	1.2417	0.7501	1.65541	0.0537	0.0774	0.1019	0.65393	3751.0	180.0
190.0	0.6830	1.46	1.0329	821.4	4.837	1.2416	0.7500	1.65547	0.0542	0.0794	0.1030	0.65426	3778.1	190.0
200.0	0.6730	1.49	1.0323	833.9	4.856	1.2416	0.7500	1.65554	0.0548	0.0814	0.1040	0.65459	3805.0	200.0
210.0	0.6633	1.51	1.0318	846.3	4.875	1.2416	0.7499	1.65560	0.0554	0.0835	0.1050	0.65489	3831.8	210.0
220.0	0.6539	1.53	1.0312	858.7	4.893	1.2415	0.7499	1.65566	0.0559	0.0855	0.1060	0.65519	3858.3	220.0
230.0	0.6447	1.55	1.0307	871.1	4.911	1.2415	0.7498	1.65573	0.0565	0.0876	0.1070	0.65547	3884.7	230.0
240.0	0.6358	1.57	1.0302	883.5	4.929	1.2414	0.7498	1.65579	0.0570	0.0897	0.1080	0.65575	3910.9	240.0
250.0	0.6272	1.59	1.0297	895.9	4.947	1.2414	0.7497	1.65586	0.0576	0.0918	0.1090	0.65601	3937.0	250.0
260.0	0.6188	1.62	1.0292	908.3	4.964	1.2414	0.7497	1.65592	0.0582	0.0940	0.1100	0.65626	3962.8	260.0
270.0	0.6105	1.64	1.0288	920.8	4.981	1.2413	0.7496	1.65599	0.0587	0.0961	0.1110	0.65650	3988.6	270.0
280.0	0.6026	1.66	1.0283	933.2	4.998	1.2413	0.7496	1.65605	0.0592	0.0983	0.1120	0.65673	4014.1	280.0
290.0	0.5948	1.68	1.0279	945.6	5.015	1.2413	0.7495	1.65612	0.0598	0.1005	0.1130	0.65696	4039.5	290.0
300.0	0.5872	1.70	1.0274	958.0	5.031	1.2413	0.7495	1.65619	0.0603	0.1027	0.1140	0.65717	4064.7	300.0
310.0	0.5798	1.72	1.0270	970.4	5.047	1.2412	0.7494	1.65625	0.0609	0.1050	0.1150	0.65738	4089.8	310.0
320.0	0.5726	1.75	1.0266	982.8	5.063	1.2412	0.7494	1.65632	0.0614	0.1072	0.1160	0.65758	4114.8	320.0
330.0	0.5656	1.77	1.0262	995.2	5.079	1.2412	0.7493	1.65638	0.0619	0.1095	0.1169	0.65778	4139.6	330.0
340.0	0.5587	1.79	1.0258	1007.6	5.095	1.2412	0.7493	1.65645	0.0625	0.1118	0.1179	0.65796	4164.2	340.0
350.0	0.5520	1.81	1.0255	1020.1	5.110	1.2411	0.7493	1.65651	0.0630	0.1141	0.1189	0.65814	4188.7	350.0
360.0	0.5455	1.83	1.0251	1032.5	5.125	1.2411	0.7492	1.65657	0.0635	0.1165	0.1198	0.65832	4213.1	360.0
370.0	0.5391	1.86	1.0247	1044.9	5.140	1.2411	0.7492	1.65664	0.0641	0.1188	0.1208	0.65849	4237.3	370.0
380.0	0.5328	1.88	1.0244	1057.3	5.155	1.2411	0.7491	1.65670	0.0646	0.1212	0.1218	0.65865	4261.4	380.0
390.0	0.5267	1.90	1.0240	1069.7	5.170	1.2411	0.7491	1.65676	0.0651	0.1236	0.1227	0.65881	4285.4	390.0
400.0	0.5208	1.92	1.0237	1082.1	5.185	1.2411	0.7491	1.65683	0.0656	0.1260	0.1237	0.65896	4309.2	400.0
410.0	0.5149	1.94	1.0234	1094.5	5.199	1.2410	0.7490	1.65689	0.0661	0.1284	0.1246	0.65911	4332.9	410.0
420.0	0.5093	1.96	1.0231	1106.9	5.213	1.2410	0.7490	1.65695	0.0667	0.1309	0.1256	0.65925	4356.5	420.0
430.0	0.5037	1.99	1.0228	1119.3	5.227	1.2410	0.7489	1.65701	0.0672	0.1334	0.1265	0.65939	4379.9	430.0
440.0	0.4982	2.01	1.0225	1131.8	5.241	1.2410	0.7489	1.65708	0.0677	0.1359	0.1274	0.65952	4403.3	440.0

PRESSURE = 1230.0 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
450.0	0.4929	2.03	1.0222	1144.2	5.255	1.2410	0.7489	1.65714	0.0682	0.1384	0.1284	0.65965	4426.5	450.0
460.0	0.4877	2.05	1.0219	1156.6	5.268	1.2410	0.7488	1.65720	0.0687	0.1409	0.1293	0.65978	4449.6	460.0
470.0	0.4826	2.07	1.0216	1169.0	5.282	1.2410	0.7488	1.65726	0.0692	0.1434	0.1302	0.65990	4472.5	470.0
480.0	0.4776	2.09	1.0213	1181.4	5.295	1.2409	0.7488	1.65732	0.0697	0.1460	0.1312	0.66002	4495.4	480.0
490.0	0.4726	2.12	1.0211	1193.8	5.308	1.2409	0.7487	1.65738	0.0702	0.1486	0.1321	0.66013	4518.1	490.0
500.0	0.4678	2.14	1.0208	1206.2	5.321	1.2409	0.7487	1.65744	0.0707	0.1512	0.1330	0.66025	4540.8	500.0
510.0	0.4631	2.16	1.0205	1218.6	5.334	1.2409	0.7487	1.65750	0.0712	0.1538	0.1339	0.66035	4563.3	510.0
520.0	0.4585	2.18	1.0203	1231.0	5.347	1.2409	0.7486	1.65755	0.0717	0.1564	0.1348	0.66046	4585.7	520.0
530.0	0.4540	2.20	1.0200	1243.4	5.359	1.2409	0.7486	1.65761	0.0722	0.1591	0.1358	0.66056	4608.0	530.0
540.0	0.4496	2.22	1.0198	1255.9	5.372	1.2409	0.7486	1.65767	0.0727	0.1617	0.1367	0.66066	4630.2	540.0
550.0	0.4452	2.25	1.0196	1268.3	5.384	1.2409	0.7485	1.65773	0.0732	0.1644	0.1376	0.66076	4652.3	550.0
560.0	0.4409	2.27	1.0193	1280.7	5.396	1.2409	0.7485	1.65778	0.0737	0.1671	0.1385	0.66085	4674.3	560.0
570.0	0.4368	2.29	1.0191	1293.1	5.408	1.2409	0.7485	1.65784	0.0742	0.1699	0.1394	0.66094	4696.2	570.0
580.0	0.4327	2.31	1.0189	1305.5	5.420	1.2409	0.7485	1.65789	0.0747	0.1726	0.1403	0.66103	4718.0	580.0
590.0	0.4286	2.33	1.0187	1317.9	5.432	1.2408	0.7484	1.65795	0.0752	0.1754	0.1412	0.66112	4739.7	590.0
600.0	0.4247	2.35	1.0184	1330.3	5.444	1.2408	0.7484	1.65800	0.0757	0.1781	0.1421	0.66120	4761.3	600.0
610.0	0.4208	2.38	1.0182	1342.7	5.456	1.2408	0.7484	1.65806	0.0761	0.1809	0.1430	0.66128	4782.8	610.0
620.0	0.4170	2.40	1.0180	1355.1	5.467	1.2408	0.7483	1.65811	0.0766	0.1838	0.1439	0.66136	4804.2	620.0
630.0	0.4132	2.42	1.0178	1367.5	5.479	1.2408	0.7483	1.65816	0.0771	0.1866	0.1448	0.66144	4825.6	630.0
640.0	0.4095	2.44	1.0176	1379.9	5.490	1.2408	0.7483	1.65822	0.0776	0.1894	0.1456	0.66152	4846.8	640.0
650.0	0.4059	2.46	1.0174	1392.3	5.501	1.2408	0.7483	1.65827	0.0781	0.1923	0.1465	0.66159	4867.9	650.0
660.0	0.4024	2.49	1.0172	1404.8	5.512	1.2408	0.7482	1.65832	0.0785	0.1952	0.1474	0.66166	4889.0	660.0
670.0	0.3989	2.51	1.0171	1417.2	5.523	1.2408	0.7482	1.65837	0.0790	0.1981	0.1483	0.66173	4909.9	670.0
680.0	0.3955	2.53	1.0169	1429.6	5.534	1.2408	0.7482	1.65842	0.0795	0.2010	0.1492	0.66180	4930.8	680.0
690.0	0.3921	2.55	1.0167	1442.0	5.545	1.2408	0.7482	1.65847	0.0800	0.2039	0.1500	0.66187	4951.6	690.0
700.0	0.3888	2.57	1.0165	1454.4	5.556	1.2408	0.7481	1.65852	0.0804	0.2069	0.1509	0.66194	4972.3	700.0
710.0	0.3855	2.59	1.0163	1466.8	5.567	1.2408	0.7481	1.65857	0.0809	0.2099	0.1518	0.66200	4992.9	710.0
720.0	0.3823	2.62	1.0162	1479.2	5.577	1.2408	0.7481	1.65862	0.0814	0.2129	0.1526	0.66206	5013.4	720.0
730.0	0.3792	2.64	1.0160	1491.6	5.588	1.2408	0.7481	1.65867	0.0818	0.2159	0.1535	0.66212	5033.9	730.0
740.0	0.3761	2.66	1.0158	1504.0	5.598	1.2408	0.7480	1.65872	0.0823	0.2189	0.1544	0.66218	5054.2	740.0
750.0	0.3730	2.68	1.0157	1516.4	5.608	1.2408	0.7480	1.65877	0.0828	0.2219	0.1552	0.66224	5074.5	750.0
760.0	0.3700	2.70	1.0155	1528.8	5.619	1.2408	0.7480	1.65881	0.0832	0.2250	0.1561	0.66230	5094.7	760.0
770.0	0.3671	2.72	1.0154	1541.2	5.629	1.2408	0.7480	1.65886	0.0837	0.2280	0.1569	0.66235	5114.9	770.0
780.0	0.3642	2.75	1.0152	1553.6	5.639	1.2408	0.7479	1.65891	0.0842	0.2311	0.1578	0.66240	5134.9	780.0
790.0	0.3613	2.77	1.0151	1566.1	5.649	1.2408	0.7479	1.65895	0.0846	0.2342	0.1586	0.66246	5154.9	790.0
800.0	0.3585	2.79	1.0149	1578.5	5.659	1.2408	0.7479	1.65900	0.0851	0.2374	0.1595	0.66251	5174.8	800.0
810.0	0.3557	2.81	1.0148	1590.9	5.668	1.2408	0.7479	1.65904	0.0856	0.2405	0.1603	0.66256	5194.6	810.0
820.0	0.3530	2.83	1.0146	1603.3	5.678	1.2408	0.7478	1.65909	0.0860	0.2437	0.1612	0.66261	5214.4	820.0
830.0	0.3503	2.85	1.0145	1615.7	5.688	1.2407	0.7478	1.65913	0.0865	0.2468	0.1620	0.66266	5234.1	830.0
840.0	0.3476	2.88	1.0143	1628.1	5.697	1.2407	0.7478	1.65918	0.0869	0.2500	0.1629	0.66275	5253.7	840.0
850.0	0.3450	2.90	1.0142	1640.5	5.707	1.2407	0.7478	1.65922	0.0874	0.2532	0.1637	0.66280	5273.2	850.0
860.0	0.3425	2.92	1.0141	1652.9	5.716	1.2407	0.7478	1.65926	0.0878	0.2565	0.1645	0.66280	5292.7	860.0
870.0	0.3399	2.94	1.0139	1665.3	5.726	1.2407	0.7477	1.65931	0.0883	0.2597	0.1654	0.66284	5312.1	870.0
880.0	0.3374	2.96	1.0138	1677.7	5.735	1.2407	0.7477	1.65935	0.0887	0.2629	0.1662	0.66288	5331.4	880.0
890.0	0.3350	2.99	1.0137	1690.1	5.744	1.2407	0.7477	1.65939	0.0892	0.2662	0.1671	0.66293	5350.6	890.0

PRESSURE = 1230.0 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
900.0	0.3326	3.01	1.0136	1702.5	5.753	1.2407	0.7477	1.65944	0.0896	0.2695	0.1679	0.66297	5369.8	900.0
910.0	0.3302	3.03	1.0134	1714.9	5.762	1.2407	0.7477	1.65948	0.0901	0.2728	0.1687	0.66301	5388.9	910.0
920.0	0.3278	3.05	1.0133	1727.3	5.772	1.2407	0.7476	1.65952	0.0905	0.2761	0.1695	0.66305	5408.0	920.0
930.0	0.3255	3.07	1.0132	1739.8	5.780	1.2407	0.7476	1.65956	0.0910	0.2795	0.1704	0.66309	5427.0	930.0
940.0	0.3232	3.09	1.0131	1752.2	5.789	1.2407	0.7476	1.65960	0.0914	0.2828	0.1712	0.66313	5445.9	940.0
950.0	0.3210	3.12	1.0130	1764.6	5.798	1.2407	0.7476	1.65964	0.0919	0.2862	0.1720	0.66316	5464.8	950.0
960.0	0.3187	3.14	1.0128	1777.0	5.807	1.2407	0.7476	1.65968	0.0923	0.2896	0.1728	0.66320	5483.6	960.0
970.C	0.3165	3.16	1.0127	1789.4	5.816	1.2407	0.7476	1.65972	0.0927	0.2930	0.1736	0.66324	5502.3	970.0
980.0	0.3144	3.18	1.0126	1801.8	5.824	1.2407	0.7475	1.65976	0.0932	0.2964	0.1745	0.66327	5521.0	980.0
990.0	0.3122	3.20	1.0125	1814.2	5.833	1.2407	0.7475	1.65979	0.0936	0.2998	0.1753	0.66331	5539.6	990.0
1000.0	0.3101	3.22	1.0124	1826.6	5.841	1.2407	0.7475	1.65983	0.0941	0.3033	0.1761	0.66334	5558.1	1000.0
1010.0	0.3081	3.25	1.0123	1839.0	5.850	1.2407	0.7475	1.65987	0.0945	0.3068	0.1769	0.66337	5576.6	1010.0
1020.0	0.3060	3.27	1.0122	1851.4	5.858	1.2407	0.7475	1.65991	0.0949	0.3102	0.1777	0.66340	5595.0	1020.0
1030.0	0.3040	3.29	1.0121	1863.8	5.867	1.2407	0.7475	1.65995	0.0954	0.3137	0.1785	0.66344	5613.4	1030.0
1040.0	0.3020	3.31	1.0120	1876.2	5.875	1.2407	0.7474	1.65998	0.0958	0.3173	0.1793	0.66347	5631.7	1040.0
1050.0	0.3000	3.33	1.0119	1888.6	5.883	1.2407	0.7474	1.66002	0.0962	0.3208	0.1801	0.66350	5650.0	1050.0
1060.0	0.2981	3.35	1.0118	1901.1	5.891	1.2407	0.7474	1.66006	0.0967	0.3243	0.1809	0.66353	5668.1	1060.0
1070.0	0.2961	3.38	1.0117	1913.5	5.900	1.2407	0.7474	1.66009	0.0971	0.3279	0.1817	0.66356	5686.3	1070.0
1080.0	0.2943	3.40	1.0116	1925.9	5.908	1.2407	0.7474	1.66013	0.0975	0.3315	0.1825	0.66359	5704.4	1080.0
1090.0	0.2924	3.42	1.0115	1938.3	5.916	1.2407	0.7474	1.66016	0.0980	0.3351	0.1833	0.66362	5722.4	1090.0
1100.0	0.2905	3.44	1.0114	1950.7	5.924	1.2407	0.7473	1.66020	0.0984	0.3387	0.1841	0.66364	5740.3	1100.0
1110.0	0.2887	3.46	1.0113	1963.1	5.932	1.2407	0.7473	1.66023	0.0988	0.3423	0.1849	0.66367	5758.3	1110.0
1120.0	0.2869	3.49	1.0112	1975.5	5.939	1.2407	0.7473	1.66027	0.0993	0.3459	0.1857	0.66370	5776.1	1120.0
1130.0	0.2851	3.51	1.0111	1987.9	5.947	1.2407	0.7473	1.66030	0.0997	0.3496	0.1865	0.66373	5793.9	1130.0
1140.0	0.2834	3.53	1.0111	2000.3	5.955	1.2407	0.7473	1.66034	0.1001	0.3533	0.1873	0.66375	5811.6	1140.0
1150.0	0.2816	3.55	1.0110	2012.7	5.963	1.2407	0.7473	1.66037	0.1005	0.3570	0.1881	0.66378	5829.3	1150.0
1160.0	0.2799	3.57	1.0109	2025.1	5.970	1.2407	0.7473	1.66040	0.1010	0.3607	0.1889	0.66380	5847.0	1160.0
1170.0	0.2782	3.59	1.0108	2037.5	5.978	1.2408	0.7472	1.66044	0.1014	0.3644	0.1896	0.66383	5864.6	1170.0
1180.0	0.2766	3.62	1.0107	2049.9	5.986	1.2408	0.7472	1.66047	0.1018	0.3681	0.1904	0.66385	5882.1	1180.0
1190.0	0.2749	3.64	1.0106	2062.3	5.993	1.2408	0.7472	1.66050	0.1022	0.3719	0.1912	0.66388	5899.6	1190.0
1200.0	0.2733	3.66	1.0105	2074.8	6.001	1.2408	0.7472	1.66053	0.1026	0.3756	0.1920	0.66390	5917.0	1200.0
1210.0	0.2716	3.68	1.0105	2087.2	6.008	1.2408	0.7472	1.66056	0.1031	0.3794	0.1928	0.66392	5934.4	1210.0
1220.0	0.2701	3.70	1.0104	2099.6	6.015	1.2408	0.7472	1.66059	0.1035	0.3832	0.1935	0.66395	5951.8	1220.0
1230.0	0.2685	3.72	1.0103	2112.0	6.023	1.2408	0.7472	1.66063	0.1039	0.3870	0.1943	0.66397	5969.0	1230.0
1240.0	0.2669	3.75	1.0102	2124.4	6.030	1.2408	0.7472	1.66066	0.1043	0.3908	0.1951	0.66399	5986.3	1240.0
1250.0	0.2654	3.77	1.0102	2136.8	6.038	1.2408	0.7471	1.66069	0.1047	0.3947	0.1959	0.66401	6003.5	1250.0
1260.0	0.2639	3.79	1.0101	2149.2	6.045	1.2408	0.7471	1.66072	0.1052	0.3985	0.1966	0.66403	6020.6	1260.0
1270.0	0.2623	3.81	1.0100	2161.6	6.052	1.2408	0.7471	1.66075	0.1056	0.4024	0.1974	0.66405	6037.7	1270.0
1280.0	0.2609	3.83	1.0099	2174.0	6.059	1.2408	0.7471	1.66078	0.1060	0.4063	0.1982	0.66407	6054.7	1280.0
1290.0	0.2594	3.86	1.0099	2186.4	6.066	1.2408	0.7471	1.66081	0.1064	0.4102	0.1989	0.66409	6071.7	1290.0
1300.0	0.2579	3.88	1.0098	2198.8	6.073	1.2408	0.7471	1.66084	0.1068	0.4141	0.1997	0.66411	6088.7	1300.0
1310.0	0.2565	3.90	1.0097	2211.2	6.080	1.2408	0.7471	1.66087	0.1072	0.4180	0.2005	0.66413	6105.6	1310.0
1320.0	0.2551	3.92	1.0096	2223.6	6.087	1.2408	0.7471	1.66090	0.1076	0.4220	0.2012	0.66415	6122.4	1320.0
1330.0	0.2537	3.94	1.0096	2236.1	6.094	1.2408	0.7470	1.66092	0.1080	0.4259	0.2020	0.66417	6139.2	1330.0
1340.0	0.2523	3.96	1.0095	2248.5	6.101	1.2408	0.7470	1.66095	0.1085	0.4299	0.2028	0.66419	6156.0	1340.0

PRESSURE = 1230.0 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
1350.0	0.2509	3.99	1.0094	2260.9	6.108	1.2408	0.7470	1.66098	0.1089	0.4339	0.2035	0.66421	6172.7	1350.0
1360.0	0.2495	4.01	1.0094	2273.3	6.115	1.2408	0.7470	1.66101	0.1093	0.4379	0.2043	0.66423	6189.4	1360.0
1370.0	0.2482	4.03	1.0093	2285.7	6.122	1.2408	0.7470	1.66104	0.1097	0.4419	0.2050	0.66425	6206.0	1370.0
1380.0	0.2468	4.05	1.0092	2298.1	6.129	1.2408	0.7470	1.66107	0.1101	0.4460	0.2058	0.66426	6222.6	1380.0
1390.0	0.2455	4.07	1.0092	2310.5	6.135	1.2408	0.7470	1.66109	0.1105	0.4500	0.2066	0.66428	6239.2	1390.0
1400.0	0.2442	4.09	1.0091	2322.9	6.142	1.2408	0.7470	1.66112	0.1109	0.4541	0.2073	0.66430	6255.7	1400.0
1410.0	0.2429	4.12	1.0091	2335.3	6.149	1.2408	0.7470	1.66115	0.1113	0.4582	0.2081	0.66431	6272.1	1410.0
1420.0	0.2417	4.14	1.0090	2347.7	6.155	1.2408	0.7469	1.66117	0.1117	0.4623	0.2088	0.66433	6288.5	1420.0
1430.0	0.2404	4.16	1.0089	2360.1	6.162	1.2408	0.7469	1.66120	0.1121	0.4664	0.2096	0.66435	6304.9	1430.0
1440.0	0.2391	4.18	1.0089	2372.5	6.168	1.2408	0.7469	1.66123	0.1125	0.4705	0.2103	0.66436	6321.3	1440.0
1450.0	0.2379	4.20	1.0088	2385.0	6.175	1.2408	0.7469	1.66125	0.1129	0.4747	0.2111	0.66438	6337.5	1450.0
1460.0	0.2367	4.23	1.0088	2397.4	6.181	1.2408	0.7469	1.66128	0.1133	0.4788	0.2118	0.66439	6353.8	1460.0
1470.0	0.2355	4.25	1.0087	2409.8	6.188	1.2408	0.7469	1.66130	0.1137	0.4830	0.2125	0.66441	6370.0	1470.0
1480.0	0.2343	4.27	1.0086	2422.2	6.194	1.2408	0.7469	1.66133	0.1141	0.4872	0.2133	0.66442	6386.2	1480.0
1490.0	0.2331	4.29	1.0086	2434.6	6.201	1.2408	0.7469	1.66135	0.1145	0.4914	0.2140	0.66444	6402.3	1490.0
1500.0	0.2319	4.31	1.0085	2447.0	6.207	1.2408	0.7469	1.66138	0.1149	0.4956	0.2148	0.66445	6418.4	1500.0
1510.0	0.2307	4.33	1.0085	2459.4	6.213	1.2408	0.7468	1.66140	0.1153	0.4998	0.2155	0.66447	6434.4	1510.0
1520.0	0.2296	4.36	1.0084	2471.8	6.220	1.2408	0.7468	1.66143	0.1157	0.5040	0.2163	0.66448	6450.4	1520.0
1530.0	0.2284	4.38	1.0084	2484.2	6.226	1.2408	0.7468	1.66145	0.1161	0.5083	0.2170	0.66450	6466.4	1530.0
1540.0	0.2273	4.40	1.0083	2496.6	6.232	1.2408	0.7468	1.66148	0.1165	0.5126	0.2177	0.66451	6482.3	1540.0
1550.0	0.2262	4.42	1.0083	2509.0	6.238	1.2408	0.7468	1.66150	0.1169	0.5169	0.2185	0.66452	6498.2	1550.0
1560.0	0.2251	4.44	1.0082	2521.4	6.244	1.2408	0.7468	1.66152	0.1173	0.5212	0.2192	0.66454	6514.1	1560.0
1570.0	0.2240	4.46	1.0081	2533.8	6.250	1.2408	0.7468	1.66155	0.1177	0.5255	0.2199	0.66455	6529.9	1570.0
1580.0	0.2229	4.49	1.0081	2546.3	6.257	1.2408	0.7468	1.66157	0.1181	0.5298	0.2207	0.66456	6545.7	1580.0
1590.0	0.2218	4.51	1.0080	2558.7	6.263	1.2408	0.7468	1.66159	0.1185	0.5342	0.2214	0.66458	6561.4	1590.0
1600.0	0.2208	4.53	1.0080	2571.1	6.269	1.2408	0.7468	1.66162	0.1189	0.5385	0.2221	0.66459	6577.1	1600.0
1610.0	0.2197	4.55	1.0079	2583.5	6.275	1.2408	0.7468	1.66164	0.1193	0.5429	0.2228	0.66460	6592.8	1610.0
1620.0	0.2186	4.57	1.0079	2595.9	6.281	1.2408	0.7467	1.66166	0.1197	0.5473	0.2236	0.66462	6608.4	1620.0
1630.0	0.2176	4.60	1.0078	2608.3	6.287	1.2408	0.7467	1.66168	0.1201	0.5517	0.2243	0.66463	6624.0	1630.0
1640.0	0.2166	4.62	1.0078	2620.7	6.293	1.2408	0.7467	1.66171	0.1204	0.5561	0.2250	0.66464	6639.6	1640.0
1650.0	0.2156	4.64	1.0078	2633.1	6.298	1.2408	0.7467	1.66173	0.1208	0.5605	0.2258	0.66465	6655.1	1650.0
1660.0	0.2146	4.66	1.0077	2645.5	6.304	1.2409	0.7467	1.66175	0.1212	0.5650	0.2265	0.66466	6670.6	1660.0
1670.0	0.2136	4.68	1.0077	2657.9	6.310	1.2409	0.7467	1.66177	0.1216	0.5694	0.2272	0.66467	6686.0	1670.0
1680.0	0.2126	4.70	1.0076	2670.3	6.316	1.2409	0.7467	1.66179	0.1220	0.5739	0.2279	0.66469	6701.4	1680.0
1690.0	0.2116	4.73	1.0076	2682.8	6.322	1.2409	0.7467	1.66181	0.1224	0.5784	0.2286	0.66470	6716.8	1690.0
1700.0	0.2106	4.75	1.0075	2695.2	6.328	1.2409	0.7467	1.66184	0.1228	0.5829	0.2294	0.66471	6732.1	1700.0
1710.0	0.2097	4.77	1.0075	2707.6	6.333	1.2409	0.7467	1.66186	0.1232	0.5874	0.2301	0.66472	6747.5	1710.0
1720.0	0.2087	4.79	1.0074	2720.0	6.339	1.2409	0.7467	1.66188	0.1235	0.5919	0.2308	0.66473	6762.7	1720.0
1730.0	0.2078	4.81	1.0074	2732.4	6.345	1.2409	0.7467	1.66190	0.1239	0.5965	0.2315	0.66474	6778.0	1730.0
1740.0	0.2068	4.83	1.0073	2744.8	6.350	1.2409	0.7467	1.66192	0.1243	0.6010	0.2322	0.66475	6793.2	1740.0
1750.0	0.2059	4.86	1.0073	2757.2	6.356	1.2409	0.7466	1.66194	0.1247	0.6056	0.2329	0.66476	6808.4	1750.0
1760.0	0.2050	4.88	1.0073	2769.6	6.362	1.2409	0.7466	1.66196	0.1251	0.6102	0.2336	0.66477	6823.5	1760.0
1770.0	0.2041	4.90	1.0072	2782.0	6.367	1.2409	0.7466	1.66198	0.1255	0.6148	0.2344	0.66478	6838.6	1770.0
1780.0	0.2032	4.92	1.0072	2794.4	6.373	1.2409	0.7466	1.66200	0.1258	0.6194	0.2351	0.66479	6853.7	1780.0
1790.0	0.2023	4.94	1.0071	2806.8	6.378	1.2409	0.7466	1.66202	0.1262	0.6240	0.2358	0.66480	6868.7	1790.0

PRESSURE = 1230.0 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
1800.0	0.2014	4.97	1.0071	2819.2	6.384	1.2409	0.7466	1.66204	0.1266	0.6287	0.2365	0.66481	6883.7	1800.0
1810.0	0.2005	4.99	1.0070	2831.7	6.389	1.2409	0.7466	1.66206	0.1270	0.6333	0.2372	0.66482	6898.7	1810.0
1820.0	0.1996	5.01	1.0070	2844.1	6.395	1.2409	0.7466	1.66208	0.1274	0.6380	0.2379	0.66483	6913.7	1820.0
1830.0	0.1988	5.03	1.0070	2856.5	6.400	1.2409	0.7466	1.66210	0.1277	0.6427	0.2386	0.66484	6928.6	1830.0
1840.0	0.1979	5.05	1.0069	2868.9	6.405	1.2409	0.7466	1.66212	0.1281	0.6474	0.2393	0.66485	6943.4	1840.0
1850.0	0.1971	5.07	1.0069	2881.3	6.411	1.2409	0.7466	1.66214	0.1285	0.6521	0.2400	0.66486	6958.3	1850.0
1860.0	0.1962	5.10	1.0069	2893.7	6.416	1.2409	0.7466	1.66215	0.1289	0.6568	0.2407	0.66487	6973.1	1860.0
1870.0	0.1954	5.12	1.0068	2906.1	6.422	1.2409	0.7466	1.66217	0.1293	0.6615	0.2414	0.66488	6987.9	1870.0
1880.0	0.1946	5.14	1.0068	2918.5	6.427	1.2409	0.7465	1.66219	0.1296	0.6663	0.2421	0.66489	7002.7	1880.0
1890.0	0.1937	5.16	1.0067	2930.9	6.432	1.2409	0.7465	1.66221	0.1300	0.6711	0.2428	0.66489	7017.4	1890.0
1900.0	0.1929	5.18	1.0067	2943.3	6.437	1.2409	0.7465	1.66223	0.1304	0.6758	0.2435	0.66490	7032.1	1900.0
1910.0	0.1921	5.20	1.0067	2955.7	6.443	1.2409	0.7465	1.66225	0.1308	0.6806	0.2442	0.66491	7046.7	1910.0
1920.0	0.1913	5.23	1.0066	2968.2	6.448	1.2409	0.7465	1.66226	0.1311	0.6854	0.2449	0.66492	7061.4	1920.0
1930.0	0.1905	5.25	1.0066	2980.6	6.453	1.2409	0.7465	1.66228	0.1315	0.6903	0.2456	0.66493	7076.0	1930.0
1940.0	0.1897	5.27	1.0066	2993.0	6.458	1.2409	0.7465	1.66230	0.1319	0.6951	0.2463	0.66494	7090.6	1940.0
1950.0	0.1890	5.29	1.0065	3005.4	6.463	1.2409	0.7465	1.66232	0.1323	0.7000	0.2470	0.66494	7105.1	1950.0
1960.0	0.1882	5.31	1.0065	3017.8	6.469	1.2409	0.7465	1.66233	0.1326	0.7048	0.2477	0.66495	7119.6	1960.0
1970.0	0.1874	5.34	1.0064	3030.2	6.474	1.2409	0.7465	1.66235	0.1330	0.7097	0.2484	0.66496	7134.1	1970.0
1980.0	0.1867	5.36	1.0064	3042.6	6.479	1.2409	0.7465	1.66237	0.1334	0.7146	0.2491	0.66497	7148.6	1980.0
1990.0	0.1859	5.38	1.0064	3055.0	6.484	1.2409	0.7465	1.66238	0.1338	0.7195	0.2498	0.66498	7163.0	1990.0

PRESSURE = 1500.0 PSIA

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
900.0	0.4044	2.47	1.0165	1705.0	5.655	1.2405	0.7481	1.65805	0.0896	0.2216	0.1681	0.66218	5383.4	900.0
920.0	0.3986	2.51	1.0162	1729.9	5.673	1.2405	0.7481	1.65815	0.0905	0.2271	0.1697	0.66228	5421.4	920.0
940.0	0.3930	2.54	1.0160	1754.7	5.691	1.2405	0.7481	1.65825	0.0914	0.2326	0.1714	0.66238	5459.1	940.0
960.0	0.3876	2.58	1.0157	1779.5	5.709	1.2405	0.7480	1.65835	0.0923	0.2381	0.1730	0.66247	5496.6	960.0
980.0	0.3823	2.62	1.0154	1304.3	5.726	1.2405	0.7480	1.65844	0.0932	0.2437	0.1746	0.66256	5533.9	980.0
1000.0	0.3772	2.65	1.0151	1829.1	5.743	1.2405	0.7479	1.65854	0.0941	0.2494	0.1763	0.66265	5570.9	1000.0
1020.0	0.3722	2.69	1.0149	1853.9	5.760	1.2405	0.7479	1.65863	0.0949	0.2551	0.1779	0.66273	5607.7	1020.0
1040.0	0.3673	2.72	1.0146	1878.7	5.777	1.2405	0.7478	1.65872	0.0958	0.2608	0.1795	0.66281	5644.2	1040.0
1060.0	0.3626	2.76	1.0144	1903.5	5.793	1.2405	0.7478	1.65881	0.0967	0.2666	0.1811	0.66289	5680.5	1060.0
1080.0	0.3579	2.79	1.0141	1928.3	5.809	1.2405	0.7478	1.65890	0.0975	0.2725	0.1827	0.66296	5716.6	1080.0
1100.0	0.3534	2.83	1.0139	1953.1	5.825	1.2405	0.7477	1.65898	0.0984	0.2784	0.1843	0.66303	5752.4	1100.0
1120.0	0.3490	2.87	1.0137	1977.9	5.841	1.2405	0.7477	1.65907	0.0993	0.2844	0.1859	0.66310	5788.1	1120.0
1140.0	0.3447	2.90	1.0135	2002.8	5.857	1.2405	0.7477	1.65915	0.1001	0.2904	0.1874	0.66317	5823.5	1140.0
1160.0	0.3406	2.94	1.0133	2027.6	5.872	1.2405	0.7476	1.65923	0.1010	0.2964	0.1890	0.66323	5858.7	1160.0
1180.0	0.3365	2.97	1.0131	2052.4	5.888	1.2405	0.7476	1.65931	0.1018	0.3025	0.1906	0.66335	5893.7	1180.0
1200.0	0.3325	3.01	1.0129	2077.2	5.903	1.2405	0.7476	1.65939	0.1026	0.3087	0.1921	0.66341	5928.6	1200.0
1220.0	0.3286	3.04	1.0127	2102.0	5.917	1.2405	0.7475	1.65946	0.1035	0.3149	0.1937	0.66341	5963.1	1220.0
1240.0	0.3248	3.08	1.0125	2126.8	5.932	1.2405	0.7475	1.65954	0.1043	0.3212	0.1952	0.66347	5997.6	1240.0
1260.0	0.3211	3.11	1.0123	2151.6	5.947	1.2405	0.7475	1.65962	0.1052	0.3275	0.1968	0.66352	6031.8	1260.0
1280.0	0.3174	3.15	1.0121	2176.4	5.961	1.2405	0.7474	1.65969	0.1060	0.3339	0.1983	0.66357	6065.8	1280.0
1300.0	0.3139	3.19	1.0119	2201.2	5.975	1.2405	0.7474	1.65976	0.1068	0.3403	0.1999	0.66362	6099.7	1300.0
1320.0	0.3104	3.22	1.0118	2226.0	5.989	1.2405	0.7474	1.65983	0.1076	0.3468	0.2014	0.66367	6133.3	1320.0
1340.0	0.3070	3.26	1.0116	2250.9	6.003	1.2405	0.7473	1.65990	0.1085	0.3533	0.2029	0.66372	6166.8	1340.0
1360.0	0.3037	3.29	1.0114	2275.7	6.017	1.2405	0.7473	1.65997	0.1093	0.3598	0.2044	0.66377	6200.1	1360.0
1380.0	0.3004	3.33	1.0113	2300.5	6.030	1.2405	0.7473	1.66004	0.1101	0.3664	0.2059	0.66381	6233.3	1380.0
1400.0	0.2972	3.36	1.0111	2325.3	6.044	1.2405	0.7473	1.66010	0.1109	0.3731	0.2074	0.66385	6266.2	1400.0
1420.0	0.2941	3.40	1.0110	2350.1	6.057	1.2405	0.7472	1.66017	0.1117	0.3798	0.2089	0.66390	6298.9	1420.0
1440.0	0.2911	3.44	1.0108	2374.9	6.070	1.2405	0.7472	1.66023	0.1125	0.3866	0.2104	0.66394	6331.6	1440.0
1460.0	0.2881	3.47	1.0107	2399.7	6.083	1.2405	0.7472	1.66029	0.1133	0.3934	0.2119	0.66398	6364.0	1460.0
1480.0	0.2851	3.51	1.0105	2424.5	6.096	1.2405	0.7472	1.66036	0.1141	0.4002	0.2134	0.66401	6396.3	1480.0
1500.0	0.2823	3.54	1.0104	2449.3	6.109	1.2406	0.7471	1.66042	0.1149	0.4371	0.2149	0.66405	6428.4	1500.0
1520.0	0.2795	3.58	1.0103	2474.2	6.121	1.2406	0.7471	1.66048	0.1157	0.4141	0.2164	0.66409	6460.4	1520.0
1540.0	0.2767	3.61	1.0101	2499.0	6.134	1.2406	0.7471	1.66054	0.1165	0.4211	0.2179	0.66412	6492.2	1540.0
1560.0	0.2740	3.65	1.0100	2523.8	6.146	1.2406	0.7471	1.66059	0.1173	0.4281	0.2193	0.66416	6523.9	1560.0
1580.0	0.2713	3.69	1.0099	2548.6	6.158	1.2406	0.7470	1.66065	0.1181	0.4352	0.2208	0.66419	6555.4	1580.0
1600.0	0.2687	3.72	1.0097	2573.4	6.170	1.2406	0.7470	1.66071	0.1189	0.4423	0.2222	0.66422	6586.8	1600.0
1620.0	0.2662	3.76	1.0096	2598.2	6.182	1.2406	0.7470	1.66076	0.1197	0.4495	0.2237	0.66425	6618.0	1620.0
1640.0	0.2637	3.79	1.0095	2623.0	6.194	1.2406	0.7470	1.66082	0.1204	0.4568	0.2251	0.66428	6649.1	1640.0
1660.0	0.2612	3.83	1.0094	2647.8	6.206	1.2406	0.7470	1.65087	0.1212	0.4640	0.2266	0.66431	6680.0	1660.0
1680.0	0.2588	3.86	1.0093	2672.6	6.218	1.2406	0.7469	1.66092	0.1220	0.4714	0.2280	0.66434	6710.8	1680.0
1700.0	0.2564	3.90	1.0092	2697.5	6.229	1.2406	0.7469	1.66098	0.1228	0.4787	0.2295	0.66437	6741.4	1700.0
1720.0	0.2541	3.94	1.0091	2722.3	6.241	1.2406	0.7469	1.66103	0.1235	0.4862	0.2309	0.66440	6771.9	1720.0
1740.0	0.2518	3.97	1.0090	2747.1	6.252	1.2406	0.7469	1.66108	0.1243	0.4936	0.2323	0.66443	6802.3	1740.0
1760.0	0.2496	4.01	1.0088	2771.9	6.263	1.2406	0.7469	1.66113	0.1251	0.5011	0.2338	0.66445	6832.6	1760.0
1780.0	0.2474	4.04	1.0087	2796.7	6.274	1.2406	0.7468	1.66117	0.1258	0.5087	0.2352	0.66448	6862.7	1780.0

APPENDIX 3

TABLES OF HELIUM THERMODYNAMIC AND TRANSPORT PROPERTIES GIVEN IN METRIC UNITS

EACH TABLE GIVES PROPERITES OVER THE TEMPERATURE RANGE OF INTEREST FOR THE PRESSURE SPECIFIED

THE UNITS FOR THE OUTPUT ARE SPECIFIED BELOW -

```
            P = PRESSURE (BAR)
            T = TEMPERATURE (C)
            R = HELIUM GAS CONSTANT = RG/M (J/KG-C)
          RHO = FLUID DENSITY (KG/M3)
            V = SPECIFIC FLUID VOLUME (M3/KG)
           CP = SPECIFIC HEAT AT CONSTANT PRESSURE (J/KG-C)
           CV = SPECIFIC HEAT AT CONSTANT VOLUME (J/KG-C)
        CP/CV = RATIO OF SPECIFIC HEATS (-)
            H = ENTHALPY (J/KG)
            S = ENTROPY (J/KG-C)
        VISCD = DYNAMIC VISCOSITY (KGM/HR-M)
        VISCK = KINEMATIC VISCOSITY (KGF/M2)
            K = THERMAL CONDUCTIVITY (W/M-SEC)
           PR = PRANDTL NUMBER (-)
           C* = SONIC VELOCITY (M/SEC)
```

should be sec. ROGUS

THE EQUATIONS USED ARE IDENTIFIED BY   1   WHERE
```
        1 = EIR TM-IN-410, VARADI,
        2 = RISO - 224, PETERSEN,
        3 = GA-1355, WILSON,
        4 = MISCELLANEOUS, SEE TEXT IN SUBROUTINE MISC.
```

PRESSURE =   1.013 BAR   (14.7 psia)

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
0.0	0.178	5.6098	1.0005	0.1426E 07	27989.2	5198.9	3121.2	1.6656	0.1855E-04	0.3747E 00	0.1448	0.6659	973.4	0.0
10.0	0.172	5.8151	1.0005	0.1478E 07	28176.1	5198.9	3121.2	1.6656	0.1901E-04	0.3980E 00	0.1484	0.6659	991.0	10.0
20.0	0.166	6.0203	1.0005	0.1530E 07	28356.5	5198.8	3121.2	1.6656	0.1947E-04	0.4219E 00	0.1519	0.6659	1008.4	20.0
30.0	0.161	6.2256	1.0005	0.1582E 07	28530.9	5198.8	3121.2	1.6656	0.1991E-04	0.4463E 00	0.1555	0.6659	1025.4	30.0
40.0	0.156	6.4308	1.0005	0.1634E 07	28699.7	5198.8	3121.2	1.6656	0.2036E-04	0.4713E 00	0.1589	0.6659	1042.2	40.0
50.0	0.151	6.6361	1.0004	0.1686E 07	28863.1	5198.8	3121.2	1.6656	0.2080E-04	0.4969E 00	0.1624	0.6659	1058.7	50.0
60.0	0.146	6.8413	1.0004	0.1738E 07	29021.5	5198.8	3121.2	1.6656	0.2123E-04	0.5230E 00	0.1658	0.6659	1074.9	60.0
70.0	0.142	7.0466	1.0004	0.1790E 07	29175.3	5198.8	3121.2	1.6656	0.2167E-04	0.5496E 00	0.1691	0.6659	1090.9	70.0
80.0	0.138	7.2518	1.0004	0.1842E 07	29324.6	5198.8	3121.2	1.6656	0.2209E-04	0.5768E 00	0.1725	0.6659	1106.7	80.0
90.0	0.134	7.4571	1.0004	0.1894E 07	29469.8	5198.8	3121.2	1.6656	0.2252E-04	0.6045E 00	0.1758	0.6659	1122.2	90.0
100.0	0.131	7.6623	1.0004	0.1946E 07	29611.0	5198.8	3121.2	1.6656	0.2294E-04	0.6327E 00	0.1790	0.6659	1137.5	100.0
110.0	0.127	7.8676	1.0004	0.1998E 07	29748.5	5198.8	3121.2	1.6657	0.2335E-04	0.6614E 00	0.1823	0.6659	1152.7	110.0
120.0	0.124	8.0729	1.0004	0.2050E 07	29882.4	5198.8	3121.2	1.6657	0.2377E-04	0.6907E 00	0.1855	0.6659	1167.6	120.0
130.0	0.121	8.2781	1.0003	0.2102E 07	30013.0	5198.8	3121.2	1.6657	0.2417E-04	0.7204E 00	0.1887	0.6659	1182.3	130.0
140.0	0.118	8.4834	1.0003	0.2154E 07	30140.4	5198.8	3121.2	1.6657	0.2458E-04	0.7507E 00	0.1919	0.6659	1196.9	140.0
150.0	0.115	8.6886	1.0003	0.2206E 07	30264.7	5198.8	3121.2	1.6657	0.2498E-04	0.7813E 00	0.1950	0.6660	1211.3	150.0
160.0	0.112	8.8939	1.0003	0.2258E 07	30386.2	5198.8	3121.2	1.6657	0.2538E-04	0.8127E 00	0.1981	0.6660	1225.5	160.0
170.0	0.110	9.0991	1.0003	0.2310E 07	30504.8	5198.8	3121.2	1.6657	0.2578E-04	0.8445E 00	0.2012	0.6660	1239.6	170.0
180.0	0.107	9.3044	1.0003	0.2362E 07	30620.8	5198.8	3121.2	1.6657	0.2618E-04	0.8768E 00	0.2043	0.6660	1253.5	180.0
190.0	0.105	9.5096	1.0003	0.2414E 07	30734.3	5198.8	3121.1	1.6657	0.2657E-04	0.9095E 00	0.2074	0.6660	1267.2	190.0
200.0	0.103	9.7149	1.0003	0.2466E 07	30845.4	5198.8	3121.1	1.6657	0.2696E-04	0.9427E 00	0.2104	0.6660	1280.8	200.0
210.0	0.101	9.9201	1.0003	0.2518E 07	30954.1	5198.8	3121.1	1.6657	0.2734E-04	0.9764E 00	0.2134	0.6660	1294.3	210.0
220.0	0.099	10.1254	1.0003	0.2570E 07	31060.6	5198.8	3121.1	1.6657	0.2772E-04	0.1011E 01	0.2164	0.6660	1307.6	220.0
230.0	0.097	10.3306	1.0003	0.2622E 07	31165.0	5198.8	3121.1	1.6657	0.2811E-04	0.1045E 01	0.2194	0.6660	1320.8	230.0
240.0	0.095	10.5359	1.0003	0.2674E 07	31267.3	5198.8	3121.1	1.6657	0.2848E-04	0.1080E 01	0.2223	0.6660	1333.8	240.0
250.0	0.093	10.7411	1.0003	0.2726E 07	31367.6	5198.8	3121.1	1.6657	0.2886E-04	0.1116E 01	0.2253	0.6660	1346.7	250.0
260.0	0.091	10.9464	1.0002	0.2778E 07	31466.0	5198.8	3121.1	1.6657	0.2924E-04	0.1152E 01	0.2282	0.6660	1359.6	260.0
270.0	0.090	11.1517	1.0002	0.2830E 07	31562.6	5198.8	3121.1	1.6657	0.2961E-04	0.1189E 01	0.2311	0.6660	1372.2	270.0
280.0	0.088	11.3569	1.0002	0.2882E 07	31657.5	5198.8	3121.1	1.6657	0.2998E-04	0.1226E 01	0.2340	0.6660	1384.8	280.0
290.0	0.086	11.5622	1.0002	0.2934E 07	31750.6	5198.8	3121.1	1.6657	0.3034E-04	0.1263E 01	0.2368	0.6660	1397.3	290.0
300.0	0.085	11.7674	1.0002	0.2986E 07	31842.1	5198.8	3121.1	1.6657	0.3071E-04	0.1301E 01	0.2397	0.6660	1409.6	300.0
310.0	0.084	11.9727	1.0002	0.3038E 07	31932.1	5198.8	3121.1	1.6657	0.3107E-04	0.1339E 01	0.2425	0.6660	1421.8	310.0
320.0	0.082	12.1779	1.0002	0.3090E 07	32020.5	5198.8	3121.1	1.6657	0.3143E-04	0.1378E 01	0.2453	0.6660	1434.0	320.0
330.0	0.081	12.3832	1.0002	0.3142E 07	32107.4	5198.8	3121.1	1.6657	0.3179E-04	0.1417E 01	0.2482	0.6660	1446.0	330.0
340.0	0.079	12.5884	1.0002	0.3194E 07	32192.9	5198.8	3121.1	1.6657	0.3215E-04	0.1457E 01	0.2509	0.6660	1457.9	340.0
350.0	0.078	12.7937	1.0002	0.3246E 07	32277.0	5198.8	3121.1	1.6657	0.3251E-04	0.1497E 01	0.2537	0.6660	1469.8	350.0
360.0	0.077	12.9990	1.0002	0.3298E 07	32359.7	5198.8	3121.1	1.6657	0.3286E-04	0.1538E 01	0.2565	0.6660	1481.5	360.0
370.0	0.076	13.2042	1.0002	0.3350E 07	32441.2	5198.8	3121.1	1.6657	0.3321E-04	0.1579E 01	0.2592	0.6660	1493.2	370.0
380.0	0.075	13.4095	1.0002	0.3402E 07	32521.4	5198.8	3121.1	1.6657	0.3356E-04	0.1620E 01	0.2620	0.6660	1504.7	380.0
390.0	0.073	13.6147	1.0002	0.3454E 07	32600.4	5198.8	3121.1	1.6657	0.3391E-04	0.1662E 01	0.2647	0.6660	1516.2	390.0
400.0	0.072	13.8200	1.0002	0.3506E 07	32678.2	5198.8	3121.1	1.6657	0.3426E-04	0.1704E 01	0.2674	0.6660	1527.6	400.0
410.0	0.071	14.0252	1.0002	0.3558E 07	32754.9	5198.8	3121.1	1.6657	0.3460E-04	0.1747E 01	0.2701	0.6660	1538.9	410.0
420.0	0.070	14.2305	1.0002	0.3610E 07	32830.4	5198.8	3121.1	1.6657	0.3495E-04	0.1790E 01	0.2728	0.6660	1550.1	420.0
430.0	0.069	14.4357	1.0002	0.3662E 07	32904.9	5198.8	3121.1	1.6657	0.3529E-04	0.1834E 01	0.2754	0.6660	1561.2	430.0
440.0	0.068	14.6410	1.0002	0.3714E 07	32978.3	5198.8	3121.1	1.6657	0.3563E-04	0.1878E 01	0.2781	0.6660	1572.3	440.0

PRESSURE =   1.013 BAR   (14.7 psia)

T	RHO	V	Z	H		S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
450.0	0.067	14.8462	1.0002	0.3766E	07	33050.7	5198.8	3121.1	1.6657	0.3597E-04	0.1922E 01	0.2807	0.6660	1583.3	450.0
460.0	0.066	15.0515	1.0002	0.3818E	07	33122.1	5198.8	3121.1	1.6657	0.3631E-04	0.1967E 01	0.2834	0.6660	1594.2	460.0
470.0	0.066	15.2568	1.0002	0.3870E	07	33192.5	5198.8	3121.1	1.6657	0.3664E-04	0.2013E 01	0.2860	0.6660	1605.0	470.0
480.0	0.065	15.4620	1.0002	0.3922E	07	33262.0	5198.8	3121.1	1.6657	0.3698E-04	0.2058E 01	0.2886	0.6660	1615.8	480.0
490.0	0.064	15.6673	1.0002	0.3974E	07	33330.6	5198.8	3121.1	1.6657	0.3731E-04	0.2104E 01	0.2912	0.6660	1626.5	490.0
500.0	0.063	15.8725	1.0002	0.4026E	07	33398.3	5198.8	3121.1	1.6657	0.3764E-04	0.2151E 01	0.2938	0.6660	1637.1	500.0
510.0	0.062	16.0778	1.0002	0.4078E	07	33465.1	5198.8	3121.1	1.6657	0.3797E-04	0.2198E 01	0.2964	0.6660	1647.6	510.0
520.0	0.061	16.2830	1.0002	0.4130E	07	33531.0	5198.8	3121.1	1.6657	0.3830E-04	0.2245E 01	0.2989	0.6660	1658.1	520.0
530.0	0.061	16.4883	1.0001	0.4182E	07	33596.2	5198.8	3121.1	1.6657	0.3863E-04	0.2293E 01	0.3015	0.6660	1668.5	530.0
540.0	0.060	16.6935	1.0001	0.4233E	07	33660.5	5198.8	3121.1	1.6657	0.3895E-04	0.2341E 01	0.3040	0.6660	1678.9	540.0
550.0	0.059	16.8988	1.0001	0.4285E	07	33724.1	5198.8	3121.1	1.6657	0.3928E-04	0.2390E 01	0.3066	0.6660	1689.2	550.0
560.0	0.059	17.1040	1.0001	0.4337E	07	33786.8	5198.8	3121.1	1.6657	0.3960E-04	0.2439E 01	0.3091	0.6660	1699.4	560.0
570.0	0.058	17.3093	1.0001	0.4389E	07	33848.9	5198.8	3121.1	1.6657	0.3993E-04	0.2488E 01	0.3116	0.6660	1709.5	570.0
580.0	0.057	17.5145	1.0001	0.4441E	07	33910.2	5198.8	3121.1	1.6657	0.4025E-04	0.2538E 01	0.3141	0.6660	1719.7	580.0
590.0	0.056	17.7198	1.0001	0.4493E	07	33970.7	5198.8	3121.1	1.6657	0.4057E-04	0.2588E 01	0.3166	0.6660	1729.7	590.0
600.0	0.056	17.9251	1.0001	0.4545E	07	34030.6	5198.8	3121.1	1.6657	0.4089E-04	0.2638E 01	0.3191	0.6660	1739.7	600.0
610.0	0.055	18.1303	1.0001	0.4597E	07	34089.8	5198.8	3121.1	1.6657	0.4120E-04	0.2689E 01	0.3216	0.6660	1749.6	610.0
620.0	0.055	18.3356	1.0001	0.4649E	07	34148.4	5198.8	3121.1	1.6657	0.4152E-04	0.2741E 01	0.3241	0.6660	1759.5	620.0
630.0	0.054	18.5408	1.0001	0.4701E	07	34206.2	5198.8	3121.1	1.6657	0.4184E-04	0.2793E 01	0.3265	0.6660	1769.3	630.0
640.0	0.053	18.7461	1.0001	0.4753E	07	34263.5	5198.8	3121.1	1.6657	0.4215E-04	0.2845E 01	0.3290	0.6660	1779.1	640.0
650.0	0.053	18.9514	1.0001	0.4805E	07	34320.1	5198.8	3121.1	1.6657	0.4246E-04	0.2897E 01	0.3314	0.6660	1788.8	650.0
660.0	0.052	19.1566	1.0001	0.4857E	07	34376.1	5198.8	3121.0	1.6657	0.4278E-04	0.2950E 01	0.3339	0.6660	1798.5	660.0
670.0	0.052	19.3619	1.0001	0.4909E	07	34431.5	5198.8	3121.0	1.6657	0.4309E-04	0.3003E 01	0.3363	0.6660	1808.1	670.0
680.0	0.051	19.5671	1.0001	0.4961E	07	34486.4	5198.8	3121.0	1.6657	0.4340E-04	0.3057E 01	0.3387	0.6660	1817.6	680.0
690.0	0.051	19.7724	1.0001	0.5013E	07	34540.6	5198.8	3121.0	1.6657	0.4371E-04	0.3111E 01	0.3411	0.6660	1827.1	690.0
700.0	0.050	19.9776	1.0001	0.5065E	07	34594.3	5198.8	3121.0	1.6657	0.4402E-04	0.3166E 01	0.3435	0.6660	1836.6	700.0
710.0	0.050	20.1829	1.0001	0.5117E	07	34647.5	5198.8	3121.0	1.6657	0.4432E-04	0.3220E 01	0.3459	0.6660	1846.0	710.0
720.0	0.049	20.3882	1.0001	0.5169E	07	34700.1	5198.8	3121.0	1.6657	0.4463E-04	0.3276E 01	0.3483	0.6660	1855.4	720.0
730.0	0.049	20.5934	1.0001	0.5221E	07	34752.2	5198.8	3121.0	1.6657	0.4493E-04	0.3331E 01	0.3507	0.6660	1864.7	730.0
740.0	0.048	20.7987	1.0001	0.5273E	07	34803.7	5198.8	3121.0	1.6657	0.4524E-04	0.3387E 01	0.3531	0.6660	1873.9	740.0
750.0	0.048	21.0039	1.0001	0.5325E	07	34854.8	5198.8	3121.0	1.6657	0.4554E-04	0.3444E 01	0.3555	0.6660	1883.2	750.0
760.0	0.047	21.2092	1.0001	0.5377E	07	34905.4	5198.8	3121.0	1.6657	0.4584E-04	0.3500E 01	0.3578	0.6660	1892.3	760.0
770.0	0.047	21.4144	1.0001	0.5429E	07	34955.4	5198.8	3121.0	1.6657	0.4614E-04	0.3557E 01	0.3602	0.6660	1901.5	770.0
780.0	0.046	21.6197	1.0001	0.5481E	07	35005.0	5198.8	3121.0	1.6657	0.4645E-04	0.3615E 01	0.3625	0.6660	1910.6	780.0
790.0	0.046	21.8250	1.0001	0.5533E	07	35054.2	5198.8	3121.0	1.6657	0.4674E-04	0.3673E 01	0.3648	0.6660	1919.6	790.0
800.0	0.045	22.0302	1.0001	0.5585E	07	35102.8	5198.8	3121.0	1.6657	0.4704E-04	0.3731E 01	0.3672	0.6660	1928.6	800.0
810.0	0.045	22.2355	1.0001	0.5637E	07	35151.1	5198.8	3121.0	1.6657	0.4734E-04	0.3790E 01	0.3695	0.6660	1937.6	810.0
820.0	0.045	22.4407	1.0001	0.5689E	07	35198.8	5198.8	3121.0	1.6657	0.4764E-04	0.3848E 01	0.3718	0.6660	1946.5	820.0
830.0	0.044	22.6460	1.0001	0.5741E	07	35246.2	5198.8	3121.0	1.6657	0.4793E-04	0.3908E 01	0.3741	0.6660	1955.4	830.0
840.0	0.044	22.8513	1.0001	0.5793E	07	35293.1	5198.8	3121.0	1.6657	0.4823E-04	0.3967E 01	0.3764	0.6660	1964.2	840.0
850.0	0.043	23.0565	1.0001	0.5845E	07	35339.6	5198.8	3121.0	1.6657	0.4852E-04	0.4028E 01	0.3787	0.6660	1973.0	850.0
860.0	0.043	23.2618	1.0001	0.5897E	07	35385.7	5198.8	3121.0	1.6657	0.4882E-04	0.4088E 01	0.3810	0.6660	1981.8	860.0
870.0	0.043	23.4670	1.0001	0.5949E	07	35431.3	5198.8	3121.0	1.6657	0.4911E-04	0.4149E 01	0.3833	0.6660	1990.5	870.0
880.0	0.042	23.6723	1.0001	0.6001E	07	35476.6	5198.8	3121.0	1.6657	0.4940E-04	0.4210E 01	0.3856	0.6660	1999.2	880.0
890.0	0.042	23.8776	1.0001	0.6053E	07	35521.5	5198.8	3121.0	1.6657	0.4969E-04	0.4271E 01	0.3878	0.6660	2007.8	890.0

PRESSURE =   34.473 BAR (500 psia)

T	RHC	V	Z	H		S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
0.0	5.960	0.1678	1.0183	0.1437E 07		20662.4	5200.1	3130.3	1.6612	0.1855E-04	0.1121E-01	0.1463	0.6591	989.4	0.0
10.0	5.754	0.1738	1.0176	0.1489E 07		20849.4	5199.8	3130.1	1.6613	0.1901E-04	0.1189E-01	0.1498	0.6595	1006.6	10.0
20.0	5.561	0.1798	1.0169	0.1541E 07		21029.9	5199.5	3129.8	1.6613	0.1947E-04	0.1260E-01	0.1533	0.6599	1023.6	20.0
30.0	5.381	0.1858	1.0163	0.1593E 07		21204.3	5199.3	3129.6	1.6613	0.1991E-04	0.1332E-01	0.1568	0.6603	1040.3	30.0
40.0	5.212	0.1919	1.0157	0.1645E 07		21373.0	5199.0	3129.4	1.6614	0.2036E-04	0.1406E-01	0.1602	0.6606	1056.7	40.0
50.0	5.054	0.1979	1.0152	0.1697E 07		21536.4	5198.8	3129.2	1.6614	0.2080E-04	0.1482E-01	0.1636	0.6609	1072.9	50.0
60.0	4.905	0.2039	1.0146	0.1749E 07		21694.9	5198.6	3129.0	1.6614	0.2123E-04	0.1559E-01	0.1669	0.6612	1088.8	60.0
70.0	4.764	0.2099	1.0142	0.1801E 07		21848.6	5198.5	3128.8	1.6615	0.2167E-04	0.1637E-01	0.1703	0.6615	1104.5	70.0
80.0	4.631	0.2159	1.0137	0.1853E 07		21998.0	5198.3	3128.6	1.6615	0.2209E-04	0.1717E-01	0.1736	0.6617	1120.0	80.0
90.0	4.505	0.2220	1.0133	0.1905E 07		22143.1	5198.2	3128.5	1.6616	0.2252E-04	0.1799E-01	0.1768	0.6619	1135.3	90.0
100.0	4.387	0.2280	1.0129	0.1957E 07		22284.3	5198.1	3128.3	1.6616	0.2294E-04	0.1882E-01	0.1801	0.6621	1150.3	100.0
110.0	4.274	0.2340	1.0125	0.2009E 07		22421.8	5197.9	3128.1	1.6617	0.2335E-04	0.1967E-01	0.1833	0.6623	1165.2	110.0
120.0	4.166	0.2400	1.0121	0.2061E 07		22555.7	5197.8	3128.0	1.6617	0.2377E-04	0.2053E-01	0.1865	0.6625	1179.9	120.0
130.0	4.065	0.2460	1.0118	0.2113E 07		22686.3	5197.7	3127.8	1.6618	0.2417E-04	0.2141E-01	0.1896	0.6626	1194.4	130.0
140.0	3.967	0.2521	1.0114	0.2165E 07		22813.6	5197.6	3127.7	1.6618	0.2458E-04	0.2230E-01	0.1928	0.6628	1208.8	140.0
150.0	3.875	0.2581	1.0111	0.2217E 07		22937.9	5197.6	3127.6	1.6619	0.2498E-04	0.2321E-01	0.1959	0.6629	1223.0	150.0
160.0	3.787	0.2641	1.0108	0.2269E 07		23059.3	5197.5	3127.4	1.6619	0.2538E-04	0.2413E-01	0.1990	0.6630	1237.0	160.0
170.0	3.702	0.2701	1.0105	0.2321E 07		23177.9	5197.4	3127.3	1.6620	0.2578E-04	0.2507E-01	0.2021	0.6632	1250.8	170.0
180.0	3.621	0.2761	1.0103	0.2373E 07		23293.9	5197.4	3127.2	1.6620	0.2618E-04	0.2602E-01	0.2051	0.6633	1264.6	180.0
190.0	3.544	0.2822	1.0100	0.2425E 07		23407.4	5197.3	3127.0	1.6621	0.2657E-04	0.2699E-01	0.2082	0.6634	1278.1	190.0
200.0	3.470	0.2882	1.0097	0.2477E 07		23518.4	5197.2	3126.9	1.6621	0.2696E-04	0.2796E-01	0.2112	0.6635	1291.5	200.0
210.0	3.399	0.2942	1.0095	0.2529E 07		23627.1	5197.2	3126.8	1.6621	0.2734E-04	0.2896E-01	0.2142	0.6636	1304.8	210.0
220.0	3.331	0.3002	1.0093	0.2581E 07		23733.6	5197.1	3126.7	1.6622	0.2772E-04	0.2996E-01	0.2172	0.6637	1318.0	220.0
230.0	3.265	0.3062	1.0091	0.2633E 07		23837.9	5197.1	3126.6	1.6622	0.2811E-04	0.3099E-01	0.2201	0.6638	1331.0	230.0
240.0	3.202	0.3123	1.0088	0.2685E 07		23940.2	5197.1	3126.5	1.6623	0.2848E-04	0.3202E-01	0.2230	0.6638	1343.9	240.0
250.0	3.142	0.3183	1.0086	0.2737E 07		24040.5	5197.0	3126.4	1.6623	0.2886E-04	0.3307E-01	0.2260	0.6639	1356.7	250.0
260.0	3.084	0.3243	1.0085	0.2789E 07		24138.9	5197.0	3126.3	1.6624	0.2924E-04	0.3413E-01	0.2289	0.6640	1369.3	260.0
270.0	3.027	0.3303	1.0083	0.2841E 07		24235.5	5197.0	3126.2	1.6624	0.2961E-04	0.3521E-01	0.2318	0.6640	1381.9	270.0
280.0	2.973	0.3363	1.0081	0.2893E 07		24330.3	5196.9	3126.1	1.6625	0.2998E-04	0.3630E-01	0.2346	0.6641	1394.3	280.0
290.0	2.921	0.3424	1.0079	0.2945E 07		24423.4	5196.9	3126.0	1.6625	0.3034E-04	0.3740E-01	0.2375	0.6642	1406.6	290.0
300.0	2.870	0.3484	1.0077	0.2997E 07		24514.8	5196.9	3125.9	1.6625	0.3071E-04	0.3852E-01	0.2403	0.6642	1418.9	300.0
310.0	2.822	0.3544	1.0076	0.3049E 07		24604.7	5196.9	3125.8	1.6626	0.3107E-04	0.3964E-01	0.2431	0.6643	1431.0	310.0
320.0	2.774	0.3604	1.0074	0.3101E 07		24692.1	5196.8	3125.7	1.6626	0.3143E-04	0.4079E-01	0.2460	0.6643	1443.0	320.0
330.0	2.729	0.3665	1.0073	0.3153E 07		24780.0	5196.8	3125.6	1.6627	0.3179E-04	0.4194E-01	0.2487	0.6644	1454.9	330.0
340.0	2.685	0.3725	1.0071	0.3204E 07		24865.4	5196.8	3125.5	1.6627	0.3215E-04	0.4311E-01	0.2515	0.6644	1466.7	340.0
350.0	2.642	0.3785	1.0070	0.3256E 07		24949.5	5196.8	3125.4	1.6627	0.3251E-04	0.4429E-01	0.2543	0.6645	1478.4	350.0
360.0	2.601	0.3845	1.0069	0.3308E 07		25032.2	5196.8	3125.4	1.6628	0.3286E-04	0.4549E-01	0.2570	0.6645	1490.1	360.0
370.0	2.561	0.3905	1.0067	0.3360E 07		25113.7	5196.8	3125.3	1.6628	0.3321E-04	0.4669E-01	0.2598	0.6646	1501.6	370.0
380.0	2.522	0.3966	1.0066	0.3412E 07		25193.9	5196.7	3125.2	1.6628	0.3356E-04	0.4792E-01	0.2625	0.6646	1513.1	380.0
390.0	2.484	0.4026	1.0065	0.3464E 07		25272.8	5196.7	3125.1	1.6629	0.3391E-04	0.4915E-01	0.2652	0.6647	1524.4	390.0
400.0	2.447	0.4086	1.0064	0.3516E 07		25350.6	5196.7	3125.1	1.6629	0.3426E-04	0.5039E-01	0.2679	0.6647	1535.7	400.0
410.0	2.412	0.4146	1.0062	0.3568E 07		25427.2	5196.7	3125.0	1.6630	0.3460E-04	0.5165E-01	0.2706	0.6647	1546.9	410.0
420.0	2.377	0.4207	1.0061	0.3620E 07		25502.8	5196.7	3124.9	1.6630	0.3495E-04	0.5292E-01	0.2733	0.6648	1558.1	420.0
430.0	2.344	0.4267	1.0060	0.3672E 07		25577.2	5196.7	3124.9	1.6630	0.3529E-04	0.5421E-01	0.2759	0.6648	1569.1	430.0
440.0	2.311	0.4327	1.0059	0.3724E 07		25650.6	5196.7	3124.8	1.6631	0.3563E-04	0.5550E-01	0.2786	0.6648	1580.1	440.0

PRESSURE = 34.473 BAR (500 psia)

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
450.0	2.279	0.4387	1.0058	0.3776E 07	25722.9	5196.7	3124.7	1.6631	0.3597E-04	0.5681E-01	0.2812	0.6649	1591.0	450.0
460.0	2.248	0.4447	1.0057	0.3828E 07	25794.3	5196.7	3124.7	1.6631	0.3631E-04	0.5813E-01	0.2838	0.6649	1601.8	460.0
470.0	2.218	0.4508	1.0056	0.3880E 07	25864.7	5196.7	3124.6	1.6632	0.3664E-04	0.5946E-01	0.2865	0.6649	1612.5	470.0
480.0	2.189	0.4568	1.0055	0.3932E 07	25934.2	5196.7	3124.5	1.6632	0.3698E-04	0.6081E-01	0.2891	0.6649	1623.2	480.0
490.0	2.161	0.4628	1.0054	0.3984E 07	26002.7	5196.7	3124.5	1.6632	0.3731E-04	0.6216E-01	0.2917	0.6650	1633.8	490.0
500.0	2.133	0.4688	1.0054	0.4036E 07	26070.4	5196.7	3124.4	1.6632	0.3764E-04	0.6353E-01	0.2942	0.6650	1644.4	500.0
510.0	2.106	0.4749	1.0053	0.4088E 07	26137.2	5196.7	3124.4	1.6633	0.3797E-04	0.6491E-01	0.2968	0.6650	1654.8	510.0
520.0	2.079	0.4809	1.0052	0.4140E 07	26203.1	5196.7	3124.3	1.6633	0.3830E-04	0.6631E-01	0.2994	0.6650	1665.2	520.0
530.0	2.054	0.4869	1.0051	0.4192E 07	26268.2	5196.7	3124.3	1.6633	0.3863E-04	0.6771E-01	0.3019	0.6651	1675.6	530.0
540.0	2.029	0.4929	1.0050	0.4244E 07	26332.5	5196.7	3124.2	1.6634	0.3895E-04	0.6913E-01	0.3045	0.6651	1685.9	540.0
550.0	2.004	0.4990	1.0049	0.4296E 07	26396.0	5196.7	3124.2	1.6634	0.3928E-04	0.7056E-01	0.3070	0.6651	1696.1	550.0
560.0	1.980	0.5050	1.0049	0.4348E 07	26458.8	5196.7	3124.1	1.6634	0.3960E-04	0.7200E-01	0.3095	0.6651	1706.2	560.0
570.0	1.957	0.5110	1.0048	0.4400E 07	26520.8	5196.7	3124.1	1.6634	0.3993E-04	0.7345E-01	0.3120	0.6651	1716.3	570.0
580.0	1.934	0.5170	1.0047	0.4452E 07	26582.1	5196.7	3124.0	1.6635	0.4025E-04	0.7491E-01	0.3145	0.6652	1726.4	580.0
590.0	1.912	0.5231	1.0047	0.4504E 07	26642.6	5196.7	3124.0	1.6635	0.4057E-04	0.7639E-01	0.3170	0.6652	1736.4	590.0
600.0	1.890	0.5291	1.0046	0.4556E 07	26702.5	5196.7	3123.9	1.6635	0.4089E-04	0.7788E-01	0.3195	0.6652	1746.3	600.0
610.0	1.869	0.5351	1.0045	0.4608E 07	26761.6	5196.7	3123.9	1.6635	0.4120E-04	0.7938E-01	0.3220	0.6652	1756.2	610.0
620.0	1.848	0.5411	1.0045	0.4660E 07	26820.2	5196.7	3123.8	1.6636	0.4152E-04	0.8089E-01	0.3245	0.6652	1766.0	620.0
630.0	1.828	0.5472	1.0044	0.4712E 07	26878.0	5196.7	3123.8	1.6636	0.4184E-04	0.8241E-01	0.3269	0.6652	1775.7	630.0
640.0	1.808	0.5532	1.0043	0.4764E 07	26935.2	5196.7	3123.7	1.6636	0.4215E-04	0.8394E-01	0.3294	0.6653	1785.4	640.0
650.0	1.788	0.5592	1.0043	0.4816E 07	26991.8	5196.7	3123.7	1.6636	0.4246E-04	0.8549E-01	0.3318	0.6653	1795.1	650.0
660.0	1.769	0.5652	1.0042	0.4867E 07	27047.8	5196.7	3123.7	1.6637	0.4278E-04	0.8704E-01	0.3342	0.6653	1804.7	660.0
670.0	1.751	0.5713	1.0042	0.4919E 07	27103.2	5196.7	3123.6	1.6637	0.4309E-04	0.8861E-01	0.3367	0.6653	1814.3	670.0
680.0	1.732	0.5773	1.0041	0.4971E 07	27158.0	5196.7	3123.6	1.6637	0.4340E-04	0.9019E-01	0.3391	0.6653	1823.8	680.0
690.0	1.714	0.5833	1.0041	0.5023E 07	27212.3	5196.7	3123.5	1.6638	0.4371E-04	0.9178E-01	0.3415	0.6653	1833.2	690.0
700.0	1.697	0.5893	1.0040	0.5075E 07	27265.9	5196.7	3123.5	1.6638	0.4402E-04	0.9338E-01	0.3439	0.6653	1842.6	700.0
710.0	1.680	0.5954	1.0040	0.5127E 07	27319.1	5196.7	3123.5	1.6638	0.4432E-04	0.9500E-01	0.3463	0.6653	1852.0	710.0
720.0	1.663	0.6014	1.0039	0.5179E 07	27371.7	5196.7	3123.4	1.6638	0.4463E-04	0.9662E-01	0.3487	0.6654	1861.3	720.0
730.0	1.646	0.6074	1.0038	0.5231E 07	27423.7	5196.8	3123.4	1.6638	0.4493E-04	0.9826E-01	0.3510	0.6654	1870.6	730.0
740.0	1.630	0.6134	1.0038	0.5283E 07	27475.3	5196.8	3123.4	1.6638	0.4524E-04	0.9990E-01	0.3534	0.6654	1879.8	740.0
750.0	1.614	0.6195	1.0038	0.5335E 07	27526.3	5196.8	3123.3	1.6639	0.4554E-04	0.1016E 00	0.3558	0.6654	1889.0	750.0
760.0	1.599	0.6255	1.0037	0.5387E 07	27576.9	5196.8	3123.3	1.6639	0.4584E-04	0.1032E 00	0.3581	0.6654	1898.1	760.0
770.0	1.584	0.6315	1.0037	0.5439E 07	27626.9	5196.8	3123.3	1.6639	0.4614E-04	0.1049E 00	0.3605	0.6654	1907.2	770.0
780.0	1.569	0.6375	1.0036	0.5491E 07	27676.5	5196.8	3123.2	1.6639	0.4645E-04	0.1066E 00	0.3628	0.6654	1916.2	780.0
790.0	1.554	0.6436	1.0036	0.5543E 07	27725.6	5196.8	3123.2	1.6639	0.4674E-04	0.1083E 00	0.3651	0.6654	1925.2	790.0
800.0	1.539	0.6496	1.0035	0.5595E 07	27774.3	5196.8	3123.2	1.6640	0.4704E-04	0.1100E 00	0.3675	0.6654	1934.2	800.0
810.0	1.525	0.6556	1.0035	0.5647E 07	27822.5	5196.8	3123.1	1.6640	0.4734E-04	0.1117E 00	0.3698	0.6655	1943.1	810.0
820.0	1.511	0.6616	1.0034	0.5699E 07	27870.2	5196.8	3123.1	1.6640	0.4764E-04	0.1135E 00	0.3721	0.6655	1952.0	820.0
830.0	1.498	0.6677	1.0034	0.5751E 07	27917.6	5196.8	3123.1	1.6640	0.4793E-04	0.1152E 00	0.3744	0.6655	1960.8	830.0
840.0	1.484	0.6737	1.0034	0.5803E 07	27964.5	5196.8	3123.0	1.6640	0.4823E-04	0.1170E 00	0.3767	0.6655	1969.6	840.0
850.0	1.471	0.6797	1.0033	0.5855E 07	28010.9	5196.8	3123.0	1.6640	0.4852E-04	0.1187E 00	0.3790	0.6655	1978.4	850.0
860.0	1.458	0.6857	1.0033	0.5907E 07	28057.0	5196.8	3123.0	1.6641	0.4882E-04	0.1205E 00	0.3813	0.6655	1987.1	860.0
870.0	1.446	0.6918	1.0033	0.5959E 07	28102.7	5196.8	3123.0	1.6641	0.4911E-04	0.1223E 00	0.3836	0.6655	1995.8	870.0
880.0	1.433	0.6978	1.0032	0.6011E 07	28147.9	5196.9	3122.9	1.6641	0.4940E-04	0.1241E 00	0.3858	0.6655	2004.5	880.0
890.0	1.421	0.7038	1.0032	0.6063E 07	28192.8	5196.9	3122.9	1.6641	0.4969E-04	0.1259E 00	0.3881	0.6655	2013.1	890.0

PRESSURE =   49.640 BAR   (720 psia)

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
0.0	8.516	0.1174	1.0263	0.1442E 07	19906.4	5200.7	3134.4	1.6592	0.1855E-04	0.7843E-02	0.1471	0.5555	996.6	0.0
5.0	8.367	0.1195	1.0258	0.1468E 07	20000.8	5200.5	3134.2	1.6593	0.1878E-04	0.8082E-02	0.1489	0.6558	1005.2	5.0
10.0	8.223	0.1216	1.0253	0.1494E 07	20093.4	5200.3	3134.0	1.6593	0.1901E-04	0.8323E-02	0.1506	0.6561	1013.7	10.0
15.0	8.084	0.1237	1.0248	0.1520E 07	20184.4	5200.0	3133.9	1.6593	0.1924E-04	0.8567E-02	0.1523	0.6565	1022.1	15.0
20.0	7.950	0.1258	1.0244	0.1546E 07	20273.9	5199.8	3133.7	1.6593	0.1947E-04	0.8815E-02	0.1541	0.6567	1030.5	20.0
25.0	7.820	0.1279	1.0239	0.1572E 07	20361.8	5199.6	3133.6	1.6593	0.1969E-04	0.9065E-02	0.1558	0.6570	1038.8	25.0
30.0	7.694	0.1300	1.0235	0.1598E 07	20448.3	5199.5	3133.4	1.6594	0.1991E-04	0.9317E-02	0.1575	0.6573	1047.0	30.0
35.0	7.573	0.1321	1.0230	0.1624E 07	20533.4	5199.3	3133.2	1.6594	0.2014E-04	0.9573E-02	0.1592	0.6576	1055.1	35.0
40.0	7.455	0.1341	1.0226	0.1650E 07	20617.0	5199.1	3133.1	1.6594	0.2036E-04	0.9831E-02	0.1609	0.6578	1063.3	40.0
45.0	7.341	0.1362	1.0222	0.1676E 07	20699.4	5199.0	3132.9	1.6595	0.2058E-04	0.1009E-01	0.1626	0.6580	1071.3	45.0
50.0	7.230	0.1383	1.0218	0.1702E 07	20780.5	5198.8	3132.8	1.6595	0.2080E-04	0.1036E-01	0.1642	0.6583	1079.3	50.0
55.0	7.122	0.1404	1.0215	0.1728E 07	20860.3	5198.7	3132.7	1.6595	0.2102E-04	0.1062E-01	0.1659	0.6585	1087.2	55.0
60.0	7.018	0.1425	1.0211	0.1754E 07	20938.9	5198.6	3132.5	1.6595	0.2123E-04	0.1089E-01	0.1676	0.6587	1095.1	60.0
65.0	6.916	0.1446	1.0207	0.1780E 07	21016.3	5198.4	3132.4	1.6596	0.2145E-04	0.1116E-01	0.1692	0.6589	1102.9	65.0
70.0	6.818	0.1467	1.0204	0.1806E 07	21092.7	5198.3	3132.3	1.6596	0.2167E-04	0.1144E-01	0.1709	0.6591	1110.7	70.0
75.0	6.722	0.1488	1.0201	0.1832E 07	21167.9	5198.2	3132.1	1.6596	0.2188E-04	0.1172E-01	0.1725	0.6592	1118.4	75.0
80.0	6.629	0.1508	1.0197	0.1858E 07	21242.0	5198.1	3132.0	1.6597	0.2209E-04	0.1200E-01	0.1742	0.6594	1126.0	80.0
85.0	6.539	0.1529	1.0194	0.1884E 07	21315.1	5198.0	3131.9	1.6597	0.2231E-04	0.1228E-01	0.1758	0.6596	1133.6	85.0
90.0	6.451	0.1550	1.0191	0.1910E 07	21387.1	5197.9	3131.3	1.6597	0.2252E-04	0.1257E-01	0.1774	0.6597	1141.2	90.0
95.0	6.365	0.1571	1.0188	0.1936E 07	21458.2	5197.8	3131.6	1.6598	0.2273E-04	0.1285E-01	0.1790	0.6599	1148.7	95.0
100.0	6.281	0.1592	1.0185	0.1962E 07	21528.3	5197.7	3131.5	1.6598	0.2294E-04	0.1315E-01	0.1806	0.6601	1156.1	100.0
105.0	6.200	0.1613	1.0182	0.1988E 07	21597.5	5197.6	3131.4	1.6598	0.2315E-04	0.1344E-01	0.1822	0.6602	1163.6	105.0
110.0	6.121	0.1634	1.0180	0.2014E 07	21665.8	5197.6	3131.3	1.6599	0.2335E-04	0.1374E-01	0.1838	0.6603	1170.9	110.0
115.0	6.043	0.1655	1.0177	0.2040E 07	21733.2	5197.5	3131.2	1.6599	0.2355E-04	0.1403E-01	0.1854	0.6605	1178.2	115.0
120.0	5.968	0.1676	1.0174	0.2066E 07	21799.7	5197.4	3131.1	1.6599	0.2377E-04	0.1434E-01	0.1870	0.6606	1185.5	120.0
125.0	5.895	0.1696	1.0172	0.2092E 07	21865.4	5197.3	3131.0	1.6600	0.2397E-04	0.1464E-01	0.1886	0.6607	1192.7	125.0
130.0	5.823	0.1717	1.0169	0.2118E 07	21930.2	5197.3	3130.9	1.6600	0.2417E-04	0.1495E-01	0.1902	0.6608	1199.9	130.0
135.0	5.753	0.1738	1.0167	0.2144E 07	21994.3	5197.2	3130.8	1.6600	0.2438E-04	0.1525E-01	0.1917	0.6610	1207.1	135.0
140.0	5.685	0.1759	1.0165	0.2170E 07	22057.6	5197.1	3130.6	1.6601	0.2458E-04	0.1557E-01	0.1933	0.6611	1214.2	140.0
145.0	5.618	0.1780	1.0162	0.2196E 07	22120.1	5197.1	3130.5	1.6601	0.2478E-04	0.1588E-01	0.1948	0.6612	1221.2	145.0
150.0	5.553	0.1801	1.0160	0.2222E 07	22181.9	5197.0	3130.4	1.6602	0.2498E-04	0.1620E-01	0.1964	0.6613	1228.3	150.0
155.0	5.489	0.1822	1.0158	0.2248E 07	22242.9	5197.0	3130.3	1.6602	0.2518E-04	0.1652E-01	0.1979	0.6614	1235.2	155.0
160.0	5.427	0.1843	1.0156	0.2274E 07	22303.3	5196.9	3130.3	1.6602	0.2538E-04	0.1684E-01	0.1995	0.6615	1242.2	160.0
165.0	5.366	0.1864	1.0154	0.2300E 07	22362.9	5196.8	3130.2	1.6603	0.2558E-04	0.1716E-01	0.2010	0.6616	1249.1	165.0
170.0	5.307	0.1884	1.0152	0.2326E 07	22421.9	5196.8	3130.1	1.6603	0.2578E-04	0.1749E-01	0.2025	0.6617	1256.0	170.0
175.0	5.248	0.1905	1.0150	0.2352E 07	22480.2	5196.8	3130.0	1.6603	0.2598E-04	0.1782E-01	0.2041	0.6617	1262.8	175.0
180.0	5.192	0.1926	1.0148	0.2378E 07	22537.8	5196.7	3129.9	1.6604	0.2618E-04	0.1815E-01	0.2056	0.6618	1269.6	180.0
185.0	5.136	0.1947	1.0146	0.2404E 07	22594.9	5196.7	3129.8	1.6604	0.2637E-04	0.1849E-01	0.2071	0.6619	1276.3	185.0
190.0	5.081	0.1968	1.0144	0.2430E 07	22651.3	5196.6	3129.7	1.6604	0.2657E-04	0.1882E-01	0.2086	0.6620	1283.1	190.0
195.0	5.028	0.1989	1.0142	0.2456E 07	22707.1	5196.6	3129.6	1.6605	0.2676E-04	0.1916E-01	0.2101	0.6621	1289.7	195.0
200.0	4.976	0.2010	1.0140	0.2482E 07	22762.3	5196.5	3129.5	1.6605	0.2696E-04	0.1950E-01	0.2116	0.6622	1296.4	200.0
205.0	4.925	0.2031	1.0139	0.2508E 07	22816.9	5196.5	3129.4	1.6605	0.2715E-04	0.1985E-01	0.2131	0.6622	1303.0	205.0
210.0	4.874	0.2052	1.0137	0.2534E 07	22871.0	5196.5	3129.4	1.6606	0.2734E-04	0.2019E-01	0.2146	0.6623	1309.6	210.0
215.0	4.825	0.2072	1.0135	0.2560E 07	22924.5	5196.4	3129.3	1.6606	0.2753E-04	0.2054E-01	0.2161	0.6624	1316.2	215.0
220.0	4.777	0.2093	1.0134	0.2586E 07	22977.4	5196.4	3129.2	1.6606	0.2772E-04	0.2089E-01	0.2176	0.6624	1322.7	220.0

PRESSURE =   49.640 BAR (720 psia)

T	RHO	V	Z	H		S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
225.0	4.730	0.2114	1.0132	0.2612E	07	23029.8	5196.4	3129.1	1.6607	0.2792E-04	0.2125E-01	0.2190	0.6625	1329.2	225.0
230.0	4.684	0.2135	1.0130	0.2638E	07	23081.7	5196.3	3129.0	1.6607	0.2811E-04	0.2160E-01	0.2205	0.6626	1335.6	230.0
235.0	4.638	0.2156	1.0129	0.2664E	07	23133.1	5196.3	3128.9	1.6608	0.2830E-04	0.2196E-01	0.2220	0.6626	1342.1	235.0
240.0	4.594	0.2177	1.0127	0.2690E	07	23184.0	5196.3	3128.9	1.6608	0.2848E-04	0.2232E-01	0.2234	0.6627	1348.5	240.0
245.0	4.550	0.2198	1.0126	0.2716E	07	23234.4	5196.3	3128.8	1.6608	0.2867E-04	0.2269F-01	0.2249	0.6627	1354.8	245.0
250.0	4.507	0.2219	1.0125	0.2742E	07	23284.3	5196.2	3128.7	1.6608	0.2886E-04	0.2305E-01	0.2263	0.6628	1361.2	250.0
255.0	4.465	0.2240	1.0123	0.2768E	07	23333.7	5196.2	3128.6	1.6608	0.2905E-04	0.2342E-01	0.2278	0.6629	1367.5	255.0
260.0	4.424	0.2260	1.0122	0.2794E	07	23382.7	5196.2	3128.6	1.6609	0.2924E-04	0.2379E-01	0.2292	0.6629	1373.8	260.0
265.0	4.383	0.2281	1.0120	0.2820E	07	23431.2	5196.2	3128.5	1.6609	0.2942E-04	0.2416E-01	0.2307	0.6630	1380.0	265.0
270.0	4.344	0.2302	1.0119	0.2846E	07	23479.2	5196.1	3128.4	1.6609	0.2961E-04	0.2454E-01	0.2321	0.6630	1386.3	270.0
275.0	4.305	0.2323	1.0118	0.2872E	07	23526.8	5196.1	3128.4	1.6610	0.2979E-04	0.2492E-01	0.2336	0.6631	1392.5	275.0
280.0	4.266	0.2344	1.0116	0.2898E	07	23574.0	5196.1	3128.3	1.6610	0.2998E-04	0.2530E-01	0.2350	0.6631	1398.6	280.0
285.0	4.228	0.2365	1.0115	0.2924E	07	23620.8	5196.1	3128.2	1.6610	0.3016E-04	0.2568E-01	0.2364	0.6632	1404.8	285.0
290.0	4.191	0.2386	1.0114	0.2950E	07	23667.1	5196.1	3128.2	1.6611	0.3034E-04	0.2606E-01	0.2378	0.6632	1410.9	290.0
295.0	4.155	0.2407	1.0113	0.2976E	07	23713.0	5196.0	3128.1	1.6611	0.3053E-04	0.2645E-01	0.2392	0.6633	1417.0	295.0
300.0	4.119	0.2428	1.0112	0.3002E	07	23758.6	5196.0	3128.0	1.6611	0.3071E-04	0.2684E-01	0.2407	0.6633	1423.1	300.0
305.0	4.084	0.2448	1.0110	0.3027E	07	23803.7	5196.0	3128.0	1.6612	0.3089E-04	0.2723E-01	0.2421	0.6633	1429.1	305.0
310.0	4.050	0.2469	1.0109	0.3053E	07	23848.4	5196.0	3127.9	1.6612	0.3107E-04	0.2762E-01	0.2435	0.6634	1435.1	310.0
315.0	4.016	0.2490	1.0108	0.3079E	07	23892.8	5196.0	3127.8	1.6612	0.3125E-04	0.2802E-01	0.2449	0.6634	1441.1	315.0
320.0	3.982	0.2511	1.0107	0.3105E	07	23936.8	5196.0	3127.8	1.6612	0.3143E-04	0.2842E-01	0.2463	0.6635	1447.1	320.0
325.0	3.949	0.2532	1.0106	0.3131E	07	23980.4	5195.9	3127.7	1.6613	0.3161E-04	0.2882E-01	0.2477	0.6635	1453.0	325.0
330.0	3.917	0.2553	1.0105	0.3157E	07	24023.7	5195.9	3127.6	1.6613	0.3179E-04	0.2922E-01	0.2491	0.6635	1458.9	330.0
335.0	3.885	0.2574	1.0104	0.3183E	07	24066.6	5195.9	3127.6	1.6613	0.3197E-04	0.2963E-01	0.2505	0.6636	1464.8	335.0
340.0	3.854	0.2595	1.0103	0.3209E	07	24109.1	5195.9	3127.5	1.6614	0.3215E-04	0.3003E-01	0.2518	0.6636	1470.7	340.0
345.0	3.823	0.2616	1.0102	0.3235E	07	24151.3	5195.9	3127.5	1.6614	0.3233E-04	0.3044E-01	0.2532	0.6636	1476.5	345.0
350.0	3.793	0.2637	1.0101	0.3261E	07	24193.2	5195.9	3127.4	1.6614	0.3251E-04	0.3085E-01	0.2546	0.6637	1482.4	350.0
355.0	3.763	0.2657	1.0100	0.3287E	07	24234.7	5195.9	3127.3	1.6614	0.3268E-04	0.3127E-01	0.2560	0.6637	1488.2	355.0
360.0	3.734	0.2678	1.0099	0.3313E	07	24275.9	5195.9	3127.3	1.6615	0.3286E-04	0.3168E-01	0.2573	0.6638	1493.9	360.0
365.0	3.705	0.2699	1.0098	0.3339E	07	24316.8	5195.9	3127.2	1.6615	0.3304E-04	0.3210E-01	0.2587	0.6638	1499.7	365.0
370.0	3.676	0.2720	1.0097	0.3365E	07	24357.3	5195.8	3127.2	1.6615	0.3321E-04	0.3252E-01	0.2601	0.6638	1505.4	370.0
375.0	3.648	0.2741	1.0096	0.3391E	07	24397.5	5195.8	3127.1	1.6615	0.3339E-04	0.3295E-01	0.2614	0.6638	1511.2	375.0
380.0	3.621	0.2762	1.0095	0.3417E	07	24437.5	5195.8	3127.1	1.6616	0.3356E-04	0.3337E-01	0.2628	0.6639	1516.9	380.0
385.0	3.593	0.2783	1.0094	0.3443E	07	24477.1	5195.8	3127.0	1.6616	0.3374E-04	0.3380E-01	0.2641	0.6639	1522.5	385.0
390.0	3.567	0.2804	1.0093	0.3469E	07	24516.4	5195.8	3127.0	1.6616	0.3391E-04	0.3423E-01	0.2655	0.6639	1528.2	390.0
395.0	3.540	0.2825	1.0092	0.3495E	07	24555.4	5195.8	3126.9	1.6616	0.3408E-04	0.3466E-01	0.2668	0.6640	1533.8	395.0
400.0	3.514	0.2846	1.0092	0.3521E	07	24594.2	5195.8	3126.9	1.6617	0.3426E-04	0.3509E-01	0.2682	0.6640	1539.4	400.0
405.0	3.489	0.2866	1.0091	0.3547E	07	24632.6	5195.8	3126.8	1.6617	0.3443E-04	0.3553E-01	0.2695	0.6640	1545.0	405.0
410.0	3.463	0.2887	1.0090	0.3573E	07	24670.8	5195.8	3126.8	1.6617	0.3460E-04	0.3597E-01	0.2709	0.6640	1550.6	410.0
415.0	3.439	0.2908	1.0089	0.3599E	07	24708.7	5195.8	3126.7	1.6617	0.3478E-04	0.3641E-01	0.2722	0.6641	1556.1	415.0
420.0	3.414	0.2929	1.0088	0.3625E	07	24746.3	5195.8	3126.7	1.6618	0.3495E-04	0.3685E-01	0.2735	0.6641	1561.7	420.0
425.0	3.390	0.2950	1.0088	0.3651E	07	24783.7	5195.8	3126.6	1.6618	0.3512E-04	0.3730E-01	0.2749	0.6641	1567.2	425.0
430.0	3.366	0.2971	1.0087	0.3677E	07	24820.7	5195.8	3126.6	1.6618	0.3529E-04	0.3774E-01	0.2762	0.6641	1572.7	430.0
435.0	3.342	0.2992	1.0086	0.3703E	07	24857.5	5195.8	3126.5	1.6618	0.3546E-04	0.3819E-01	0.2775	0.6642	1578.1	435.0
440.0	3.319	0.3013	1.0085	0.3729E	07	24894.1	5195.8	3126.5	1.6619	0.3563E-04	0.3864E-01	0.2788	0.6642	1583.6	440.0
445.0	3.296	0.3034	1.0085	0.3755E	07	24930.4	5195.8	3126.4	1.6619	0.3580E-04	0.3910E-01	0.2802	0.6642	1589.0	445.0

PRESSURE = 49.640 BAR (720 psia)

T	RHO	V	Z	H		S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
450.0	3.274	0.3055	1.0084	0.3781E 07	24966.5	5195.8	3126.4	1.6619	0.3597E-04	0.3955E-01	0.2815	0.6642	1594.5	450.0
455.0	3.252	0.3075	1.0083	0.3807E 07	25002.3	5195.8	3126.3	1.6619	0.3614E-04	0.4001E-01	0.2828	0.6643	1599.9	455.0
460.0	3.230	0.3096	1.0082	0.3833E 07	25037.8	5195.7	3126.3	1.6620	0.3631E-04	0.4047E-01	0.2841	0.6643	1605.2	460.0
465.0	3.208	0.3117	1.0082	0.3859E 07	25073.1	5195.7	3126.2	1.6620	0.3647E-04	0.4093E-01	0.2854	0.6643	1610.6	465.0
470.0	3.187	0.3138	1.0081	0.3885E 07	25108.2	5195.7	3126.2	1.6620	0.3664E-04	0.4140E-01	0.2867	0.6643	1615.9	470.0
475.0	3.166	0.3159	1.0080	0.3911E 07	25143.0	5195.7	3126.2	1.6620	0.3681E-04	0.4186E-01	0.2880	0.6643	1621.3	475.0
480.0	3.145	0.3180	1.0080	0.3937E 07	25177.6	5195.7	3126.1	1.6620	0.3698E-04	0.4233E-01	0.2893	0.6644	1626.6	480.0
485.0	3.124	0.3201	1.0079	0.3963E 07	25212.0	5195.7	3126.1	1.6621	0.3714E-04	0.4280E-01	0.2906	0.6644	1631.9	485.0
490.0	3.104	0.3222	1.0078	0.3989E 07	25246.2	5195.7	3126.0	1.6621	0.3731E-04	0.4327E-01	0.2919	0.6644	1637.2	490.0
495.0	3.084	0.3243	1.0078	0.4015E 07	25280.1	5195.7	3126.0	1.6621	0.3748E-04	0.4375E-01	0.2932	0.6644	1642.4	495.0
500.0	3.064	0.3264	1.0077	0.4041E 07	25313.8	5195.7	3125.9	1.6621	0.3764E-04	0.4422E-01	0.2945	0.6644	1647.7	500.0
505.0	3.045	0.3284	1.0076	0.4067E 07	25347.3	5195.7	3125.9	1.6622	0.3781E-04	0.4470E-01	0.2958	0.6645	1652.9	505.0
510.0	3.025	0.3305	1.0076	0.4093E 07	25380.6	5195.7	3125.9	1.6622	0.3797E-04	0.4518E-01	0.2970	0.6645	1658.1	510.0
515.0	3.006	0.3326	1.0075	0.4119E 07	25413.7	5195.7	3125.8	1.6622	0.3814E-04	0.4567E-01	0.2983	0.6645	1663.3	515.0
520.0	2.988	0.3347	1.0075	0.4145E 07	25446.5	5195.7	3125.8	1.6622	0.3830E-04	0.4615E-01	0.2996	0.6645	1668.5	520.0
525.0	2.969	0.3368	1.0074	0.4171E 07	25479.2	5195.7	3125.7	1.6622	0.3846E-04	0.4664E-01	0.3009	0.6645	1673.6	525.0
530.0	2.951	0.3389	1.0074	0.4197E 07	25511.6	5195.7	3125.7	1.6623	0.3863E-04	0.4713E-01	0.3022	0.6645	1678.8	530.0
535.0	2.933	0.3410	1.0073	0.4223E 07	25543.9	5195.7	3125.7	1.6623	0.3879E-04	0.4762E-01	0.3034	0.6646	1683.9	535.0
540.0	2.915	0.3431	1.0072	0.4249E 07	25575.9	5195.7	3125.6	1.6623	0.3895E-04	0.4811E-01	0.3047	0.6646	1689.0	540.0
545.0	2.897	0.3452	1.0072	0.4275E 07	25607.8	5195.7	3125.6	1.6623	0.3912E-04	0.4861E-01	0.3060	0.6646	1694.1	545.0
550.0	2.880	0.3473	1.0071	0.4301E 07	25639.4	5195.7	3125.6	1.6623	0.3928E-04	0.4911E-01	0.3072	0.6646	1699.2	550.0
555.0	2.862	0.3494	1.0071	0.4327E 07	25670.9	5195.7	3125.5	1.6624	0.3944E-04	0.4960E-01	0.3085	0.6646	1704.3	555.0
560.0	2.845	0.3514	1.0070	0.4352E 07	25702.2	5195.7	3125.5	1.6624	0.3960E-04	0.5011E-01	0.3097	0.6646	1709.4	560.0
565.0	2.829	0.3535	1.0070	0.4378E 07	25733.2	5195.7	3125.4	1.6624	0.3977E-04	0.5061E-01	0.3110	0.6647	1714.4	565.0
570.0	2.812	0.3556	1.0069	0.4404E 07	25764.1	5195.7	3125.4	1.6624	0.3993E-04	0.5112E-01	0.3122	0.6647	1719.4	570.0
575.0	2.796	0.3577	1.0069	0.4430E 07	25794.9	5195.7	3125.4	1.6625	0.4009E-04	0.5162E-01	0.3135	0.6647	1724.4	575.0
580.0	2.779	0.3598	1.0068	0.4456E 07	25825.4	5195.7	3125.3	1.6625	0.4025E-04	0.5213E-01	0.3147	0.6647	1729.4	580.0
585.0	2.763	0.3619	1.0068	0.4482E 07	25855.8	5195.7	3125.3	1.6625	0.4041E-04	0.5264E-01	0.3160	0.6647	1734.4	585.0
590.0	2.747	0.3640	1.0067	0.4508E 07	25886.0	5195.7	3125.3	1.6625	0.4057E-04	0.5316E-01	0.3172	0.6647	1739.4	590.0
595.0	2.732	0.3661	1.0067	0.4534E 07	25916.0	5195.7	3125.2	1.6625	0.4073E-04	0.5367E-01	0.3185	0.6647	1744.3	595.0
600.0	2.716	0.3682	1.0066	0.4560E 07	25945.8	5195.7	3125.2	1.6625	0.4089E-04	0.5419E-01	0.3197	0.6648	1749.3	600.0
605.0	2.701	0.3703	1.0066	0.4586E 07	25975.5	5195.8	3125.2	1.6625	0.4105E-04	0.5471E-01	0.3210	0.6648	1754.2	605.0
610.0	2.686	0.3723	1.0065	0.4612E 07	26005.0	5195.8	3125.1	1.6626	0.4120E-04	0.5523E-01	0.3222	0.6648	1759.1	610.0
615.0	2.671	0.3744	1.0065	0.4638E 07	26034.3	5195.8	3125.1	1.6626	0.4136E-04	0.5576E-01	0.3234	0.6648	1764.0	615.0
620.0	2.656	0.3765	1.0064	0.4664E 07	26063.5	5195.8	3125.1	1.6626	0.4152E-04	0.5628E-01	0.3247	0.6648	1768.9	620.0
625.0	2.641	0.3786	1.0064	0.4690E 07	26092.5	5195.8	3125.0	1.6626	0.4168E-04	0.5681E-01	0.3259	0.6648	1773.8	625.0
630.0	2.627	0.3807	1.0063	0.4716E 07	26121.3	5195.8	3125.0	1.6626	0.4184E-04	0.5734E-01	0.3271	0.6648	1778.7	630.0
635.0	2.612	0.3828	1.0063	0.4742E 07	26150.0	5195.8	3125.0	1.6627	0.4199E-04	0.5787E-01	0.3283	0.6648	1783.5	635.0
640.0	2.598	0.3849	1.0063	0.4768E 07	26178.5	5195.8	3125.0	1.6627	0.4215E-04	0.5841E-01	0.3296	0.6649	1788.3	640.0
645.0	2.584	0.3870	1.0062	0.4794E 07	26206.9	5195.8	3124.9	1.6627	0.4231E-04	0.5894E-01	0.3308	0.6649	1793.2	645.0
650.0	2.570	0.3891	1.0062	0.4820E 07	26235.1	5195.8	3124.9	1.6627	0.4246E-04	0.5948E-01	0.3320	0.6649	1798.0	650.0
655.0	2.556	0.3912	1.0061	0.4846E 07	26263.2	5195.8	3124.9	1.6627	0.4262E-04	0.6002E-01	0.3332	0.6649	1802.8	655.0
660.0	2.543	0.3933	1.0061	0.4872E 07	26291.1	5195.8	3124.8	1.6627	0.4278E-04	0.6056E-01	0.3344	0.6649	1807.5	660.0
665.0	2.529	0.3953	1.0060	0.4898E 07	26318.9	5195.8	3124.8	1.6628	0.4293E-04	0.6110E-01	0.3356	0.6649	1812.3	665.0
670.0	2.516	0.3974	1.0060	0.4924E 07	26346.5	5195.8	3124.8	1.6628	0.4309E-04	0.6165E-01	0.3368	0.6649	1817.1	670.0

PRESSURE =   49.640 BAR   (720 psia)

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
675.0	2.503	0.3995	1.0060	0.4950E 07	26374.0	5195.8	3124.8	1.6628	0.4324E-04	0.6220E-01	0.3381	0.6649	1821.8	675.0
680.0	2.490	0.4016	1.0059	0.4976E 07	26401.3	5195.8	3124.7	1.6628	0.4340E-04	0.6275E-01	0.3393	0.6649	1826.6	680.0
685.0	2.477	0.4037	1.0059	0.5002E 07	26428.5	5195.8	3124.7	1.6628	0.4355E-04	0.6330E-01	0.3405	0.6650	1831.3	685.0
690.0	2.464	0.4058	1.0058	0.5028E 07	26455.5	5195.8	3124.7	1.6628	0.4371E-04	0.6385E-01	0.3417	0.6650	1836.0	690.0
695.0	2.452	0.4079	1.0058	0.5054E 07	26482.4	5195.8	3124.6	1.6628	0.4386E-04	0.6441E-01	0.3429	0.6650	1840.7	695.0
700.0	2.439	0.4100	1.0058	0.5080E 07	26509.2	5195.8	3124.6	1.6629	0.4402E-04	0.6496E-01	0.3453	0.6650	1845.4	700.0
705.0	2.427	0.4121	1.0057	0.5106E 07	26535.8	5195.8	3124.6	1.6629	0.4417E-04	0.6552E-01	0.3465	0.6650	1850.0	705.0
710.0	2.414	0.4142	1.0057	0.5132E 07	26562.3	5195.8	3124.6	1.6629	0.4432E-04	0.6609E-01	0.3465	0.6650	1854.7	710.0
715.0	2.402	0.4163	1.0057	0.5158E 07	26588.7	5195.8	3124.5	1.6629	0.4448E-04	0.6665E-01	0.3476	0.6650	1859.4	715.0
720.0	2.390	0.4183	1.0056	0.5184E 07	26614.9	5195.8	3124.5	1.6629	0.4463E-04	0.6721E-01	0.3488	0.6650	1864.0	720.0
725.0	2.378	0.4204	1.0056	0.5210E 07	26641.0	5195.8	3124.5	1.6629	0.4478E-04	0.6778E-01	0.3500	0.6650	1868.6	725.0
730.0	2.367	0.4225	1.0055	0.5236E 07	26666.9	5195.8	3124.5	1.6630	0.4493E-04	0.6835E-01	0.3512	0.6650	1873.2	730.0
735.0	2.355	0.4246	1.0055	0.5262E 07	26692.8	5195.8	3124.4	1.6630	0.4509E-04	0.6892E-01	0.3524	0.6650	1877.8	735.0
740.0	2.343	0.4267	1.0055	0.5288E 07	26718.5	5195.8	3124.4	1.6630	0.4524E-04	0.6949E-01	0.3536	0.6651	1882.4	740.0
745.0	2.332	0.4288	1.0054	0.5314E 07	26744.1	5195.9	3124.4	1.6630	0.4539E-04	0.7007E-01	0.3548	0.6651	1887.0	745.0
750.0	2.321	0.4309	1.0054	0.5340E 07	26769.5	5195.9	3124.4	1.6630	0.4554E-04	0.7064E-01	0.3559	0.6651	1891.6	750.0
755.0	2.310	0.4330	1.0054	0.5366E 07	26794.8	5195.9	3124.3	1.6630	0.4569E-04	0.7122E-01	0.3571	0.6651	1896.2	755.0
760.0	2.298	0.4351	1.0053	0.5392E 07	26820.0	5195.9	3124.3	1.6630	0.4584E-04	0.7180E-01	0.3583	0.6651	1900.7	760.0
765.0	2.287	0.4372	1.0053	0.5418E 07	26845.1	5195.9	3124.3	1.6631	0.4599E-04	0.7239E-01	0.3595	0.6651	1905.2	765.0
770.0	2.277	0.4393	1.0053	0.5444E 07	26870.1	5195.9	3124.3	1.6631	0.4614E-04	0.7297E-01	0.3606	0.6651	1909.8	770.0
775.0	2.266	0.4414	1.0052	0.5470E 07	26894.9	5195.9	3124.2	1.6631	0.4629E-04	0.7356E-01	0.3618	0.6651	1914.3	775.0
780.0	2.255	0.4434	1.0052	0.5496E 07	26919.7	5195.9	3124.2	1.6631	0.4645E-04	0.7414E-01	0.3630	0.6651	1918.8	780.0
785.0	2.244	0.4455	1.0052	0.5522E 07	26944.3	5195.9	3124.2	1.6631	0.4659E-04	0.7473E-01	0.3641	0.6651	1923.3	785.0
790.0	2.234	0.4476	1.0051	0.5548E 07	26968.8	5195.9	3124.2	1.6631	0.4674E-04	0.7533E-01	0.3653	0.6651	1927.8	790.0
795.0	2.224	0.4497	1.0051	0.5574E 07	26993.1	5195.9	3124.1	1.6631	0.4689E-04	0.7592E-01	0.3665	0.6651	1932.3	795.0
800.0	2.213	0.4518	1.0051	0.5600E 07	27017.4	5195.9	3124.1	1.6632	0.4704E-04	0.7652E-01	0.3676	0.6652	1936.7	800.0
805.0	2.203	0.4539	1.0051	0.5626E 07	27041.6	5195.9	3124.1	1.6632	0.4719E-04	0.7711E-01	0.3688	0.6652	1941.2	805.0
810.0	2.193	0.4560	1.0050	0.5651E 07	27065.6	5195.9	3124.1	1.6632	0.4734E-04	0.7771E-01	0.3700	0.6652	1945.6	810.0
815.0	2.183	0.4581	1.0050	0.5677E 07	27089.5	5195.9	3124.1	1.6632	0.4749E-04	0.7831E-01	0.3711	0.6652	1950.1	815.0
820.0	2.173	0.4602	1.0050	0.5703E 07	27113.4	5195.9	3124.0	1.6632	0.4764E-04	0.7892E-01	0.3723	0.6652	1954.5	820.0
825.0	2.163	0.4623	1.0049	0.5729E 07	27137.1	5195.9	3124.0	1.6632	0.4779E-04	0.7952E-01	0.3734	0.6652	1958.9	825.0
830.0	2.154	0.4644	1.0049	0.5755E 07	27160.7	5195.9	3124.0	1.6632	0.4793E-04	0.8013E-01	0.3746	0.6652	1963.3	830.0
835.0	2.144	0.4664	1.0049	0.5781E 07	27184.2	5195.9	3124.0	1.6632	0.4808E-04	0.8074E-01	0.3757	0.6652	1967.7	835.0
840.0	2.134	0.4685	1.0048	0.5807E 07	27207.6	5195.9	3124.0	1.6633	0.4823E-04	0.8135E-01	0.3769	0.6652	1972.1	840.0
845.0	2.125	0.4706	1.0048	0.5833E 07	27230.9	5195.9	3123.9	1.6633	0.4838E-04	0.8196E-01	0.3780	0.6652	1976.5	845.0
850.0	2.115	0.4727	1.0048	0.5859E 07	27254.0	5196.0	3123.9	1.6633	0.4852E-04	0.8258E-01	0.3792	0.6652	1980.8	850.0
855.0	2.106	0.4748	1.0048	0.5885E 07	27277.1	5196.0	3123.9	1.6633	0.4867E-04	0.8319E-01	0.3803	0.6652	1985.2	855.0
860.0	2.097	0.4769	1.0047	0.5911E 07	27300.1	5196.0	3123.9	1.6633	0.4882E-04	0.8381E-01	0.3814	0.6652	1989.5	860.0
865.0	2.088	0.4790	1.0047	0.5937E 07	27323.0	5196.0	3123.9	1.6633	0.4896E-04	0.8443E-01	0.3826	0.6652	1993.9	865.0
870.0	2.079	0.4811	1.0047	0.5963E 07	27345.7	5196.0	3123.8	1.6633	0.4911E-04	0.8505E-01	0.3837	0.6652	1998.2	870.0
875.0	2.070	0.4832	1.0047	0.5989E 07	27368.4	5196.0	3123.8	1.6633	0.4925E-04	0.8568E-01	0.3849	0.6653	2002.5	875.0
880.0	2.061	0.4853	1.0046	0.6015E 07	27391.0	5196.0	3123.8	1.6634	0.4940E-04	0.8630E-01	0.3860	0.6653	2006.8	880.0
885.0	2.052	0.4874	1.0046	0.6041E 07	27413.5	5196.0	3123.8	1.6634	0.4955E-04	0.8693E-01	0.3871	0.6653	2011.1	885.0
890.0	2.043	0.4895	1.0046	0.6067E 07	27435.9	5196.0	3123.8	1.6634	0.4969E-04	0.8756E-01	0.3883	0.6653	2015.4	890.0
895.0	2.034	0.4915	1.0046	0.6093E 07	27458.2	5196.0	3123.7	1.6634	0.4984E-04	0.8819E-01	0.3894	0.6653	2019.7	895.0

PRESSURE = 49.640 BAR   (720 psia)

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
900.0	2.026	0.4936	1.0045	0.6119E 07	27480.3	5196.0	3123.7	1.6634	0.4998E-04	0.8882E-01	0.3905	0.6653	2024.0	900.0
905.0	2.017	0.4957	1.0045	0.6145E 07	27502.4	5196.0	3123.7	1.6634	0.5013E-04	0.8946E-01	0.3917	0.6653	2028.3	905.0
910.0	2.009	0.4978	1.0045	0.6171E 07	27524.4	5196.0	3123.7	1.6634	0.5027E-04	0.9009E-01	0.3928	0.6653	2032.5	910.0
915.0	2.000	0.4999	1.0045	0.6197E 07	27546.4	5196.0	3123.7	1.6634	0.5041E-04	0.9073E-01	0.3939	0.6653	2036.8	915.0
920.0	1.992	0.5020	1.0044	0.6223E 07	27568.2	5196.0	3123.6	1.6635	0.5056E-04	0.9137E-01	0.3950	0.6653	2041.0	920.0
925.0	1.984	0.5041	1.0044	0.6249E 07	27589.9	5196.0	3123.6	1.6635	0.5070E-04	0.9201E-01	0.3961	0.6653	2045.2	925.0
930.0	1.976	0.5062	1.0044	0.6275E 07	27611.5	5196.0	3123.6	1.6635	0.5085E-04	0.9266E-01	0.3973	0.6653	2049.5	930.0
935.0	1.967	0.5083	1.0044	0.6301E 07	27633.1	5196.0	3123.6	1.6635	0.5099E-04	0.9330E-01	0.3984	0.6653	2053.7	935.0
940.0	1.959	0.5104	1.0043	0.6327E 07	27654.6	5196.1	3123.6	1.6635	0.5113E-04	0.9395E-01	0.3995	0.6653	2057.9	940.0
945.0	1.951	0.5125	1.0043	0.6353E 07	27675.9	5196.1	3123.6	1.6635	0.5128E-04	0.9460E-01	0.4006	0.6653	2062.1	945.0
950.0	1.943	0.5146	1.0043	0.6379E 07	27697.2	5196.1	3123.5	1.6635	0.5142E-04	0.9525E-01	0.4017	0.6653	2066.2	950.0
955.0	1.936	0.5166	1.0043	0.6405E 07	27718.4	5196.1	3123.5	1.6635	0.5156E-04	0.9590E-01	0.4028	0.6653	2070.4	955.0
960.0	1.928	0.5187	1.0042	0.6431E 07	27739.5	5196.1	3123.5	1.6635	0.5171E-04	0.9656E-01	0.4040	0.6653	2074.6	960.0
965.0	1.920	0.5208	1.0042	0.6457E 07	27760.6	5196.1	3123.5	1.6635	0.5185E-04	0.9721E-01	0.4051	0.6653	2078.8	965.0
970.0	1.912	0.5229	1.0042	0.6483E 07	27781.5	5196.1	3123.5	1.6636	0.5199E-04	0.9787E-01	0.4062	0.6654	2082.9	970.0
975.0	1.905	0.5250	1.0042	0.6509E 07	27802.3	5196.1	3123.5	1.6636	0.5213E-04	0.9853E-01	0.4073	0.6654	2087.1	975.0
980.0	1.897	0.5271	1.0042	0.6535E 07	27823.1	5196.1	3123.4	1.6636	0.5227E-04	0.9919E-01	0.4084	0.6654	2091.2	980.0
985.0	1.890	0.5292	1.0041	0.6561E 07	27843.8	5196.1	3123.4	1.6636	0.5242E-04	0.9986E-01	0.4095	0.6654	2095.3	985.0
990.0	1.882	0.5313	1.0041	0.6587E 07	27864.4	5196.1	3123.4	1.6636	0.5256E-04	0.1005E 00	0.4106	0.6654	2099.4	990.0
995.0	1.875	0.5334	1.0041	0.6613E 07	27884.9	5196.1	3123.4	1.6636	0.5270E-04	0.1012E 00	0.4117	0.6654	2103.6	995.0

PRESSURE =   68.947 BAR (1000 psia)

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
0.0	11.711	0.0854	1.0366	0.1449E 07	19225.9	5201.4	3139.6	1.6567	0.1855E-04	0.5703E-02	0.1482	0.6507	1005.8	0.0
10.0	11.313	0.0884	1.0352	0.1501E 07	19412.9	5200.8	3139.1	1.6568	0.1901E-04	0.6050E-02	0.1517	0.6516	1022.6	10.0
20.0	10.941	0.0914	1.0338	0.1553E 07	19593.4	5200.2	3138.7	1.6568	0.1947E-04	0.6405E-02	0.1551	0.6525	1039.2	20.0
30.0	10.593	0.0944	1.0326	0.1605E 07	19767.8	5199.7	3138.2	1.6569	0.1991E-04	0.6768E-02	0.1585	0.6533	1055.5	30.0
40.0	10.266	0.0974	1.0314	0.1657E 07	19936.6	5199.3	3137.8	1.6570	0.2036E-04	0.7139E-02	0.1618	0.6540	1071.6	40.0
50.0	9.959	0.1004	1.0303	0.1709E 07	20100.0	5198.8	3137.4	1.6571	0.2080E-04	0.7518E-02	0.1651	0.6547	1087.5	50.0
60.0	9.670	0.1034	1.0293	0.1761E 07	20258.4	5198.5	3137.0	1.6571	0.2123E-04	0.7905E-02	0.1684	0.6553	1103.1	60.0
70.0	9.397	0.1064	1.0283	0.1813E 07	20412.2	5198.1	3136.6	1.6572	0.2167E-04	0.8300E-02	0.1717	0.6559	1118.5	70.0
80.0	9.139	0.1094	1.0274	0.1865E 07	20561.5	5197.8	3136.3	1.6573	0.2209E-04	0.8703E-02	0.1750	0.6564	1133.7	80.0
90.0	8.895	0.1124	1.0265	0.1917E 07	20706.6	5197.5	3135.9	1.6574	0.2252E-04	0.9113E-02	0.1782	0.6569	1148.7	90.0
100.0	8.663	0.1154	1.0257	0.1969E 07	20847.8	5197.3	3135.6	1.6575	0.2294E-04	0.9531E-02	0.1814	0.6573	1163.5	100.0
110.0	8.443	0.1184	1.0250	0.2021E 07	20985.2	5197.1	3135.3	1.6576	0.2335E-04	0.9957E-02	0.1846	0.6577	1178.1	110.0
120.0	8.235	0.1214	1.0242	0.2073E 07	21119.1	5196.8	3135.0	1.6577	0.2377E-04	0.1039E-01	0.1877	0.6581	1192.6	120.0
130.0	8.036	0.1244	1.0235	0.2124E 07	21249.7	5196.6	3134.7	1.6578	0.2417E-04	0.1083E-01	0.1908	0.6584	1206.9	130.0
140.0	7.846	0.1274	1.0229	0.2176E 07	21377.0	5196.5	3134.4	1.6579	0.2458E-04	0.1128E-01	0.1940	0.6588	1221.0	140.0
150.0	7.666	0.1305	1.0222	0.2228E 07	21501.3	5196.3	3134.1	1.6580	0.2498E-04	0.1173E-01	0.1970	0.6591	1235.0	150.0
160.0	7.493	0.1335	1.0216	0.2280E 07	21622.6	5196.2	3133.9	1.6581	0.2538E-04	0.1220E-01	0.2001	0.6594	1248.8	160.0
170.0	7.328	0.1365	1.0211	0.2332E 07	21741.2	5196.0	3133.6	1.6582	0.2578E-04	0.1267E-01	0.2032	0.6596	1262.4	170.0
180.0	7.170	0.1395	1.0205	0.2384E 07	21857.2	5195.9	3133.3	1.6583	0.2618E-04	0.1314E-01	0.2062	0.6599	1276.0	180.0
190.0	7.019	0.1425	1.0200	0.2436E 07	21970.6	5195.8	3133.1	1.6584	0.2657E-04	0.1363E-01	0.2092	0.6601	1289.3	190.0
200.0	6.874	0.1455	1.0195	0.2488E 07	22081.6	5195.7	3132.8	1.6584	0.2696E-04	0.1412E-01	0.2122	0.6604	1302.6	200.0
210.0	6.735	0.1485	1.0190	0.2540E 07	22190.2	5195.6	3132.6	1.6585	0.2734E-04	0.1461E-01	0.2152	0.6606	1315.7	210.0
220.0	6.601	0.1515	1.0186	0.2592E 07	22296.7	5195.5	3132.4	1.6586	0.2772E-04	0.1512E-01	0.2181	0.6608	1328.7	220.0
230.0	6.473	0.1545	1.0181	0.2644E 07	22401.0	5195.4	3132.2	1.6587	0.2811E-04	0.1563E-01	0.2210	0.6610	1341.5	230.0
240.0	6.349	0.1575	1.0177	0.2696E 07	22503.2	5195.3	3131.9	1.6588	0.2848E-04	0.1615E-01	0.2240	0.6611	1354.3	240.0
250.0	6.230	0.1605	1.0173	0.2748E 07	22603.5	5195.2	3131.7	1.6589	0.2886E-04	0.1668E-01	0.2269	0.6613	1366.9	250.0
260.0	6.116	0.1635	1.0169	0.2800E 07	22701.9	5195.2	3131.5	1.6590	0.2924E-04	0.1721E-01	0.2297	0.6615	1379.4	260.0
270.0	6.006	0.1665	1.0165	0.2852E 07	22798.4	5195.1	3131.3	1.6591	0.2961E-04	0.1775E-01	0.2326	0.6616	1391.8	270.0
280.0	5.899	0.1695	1.0162	0.2904E 07	22893.2	5195.0	3131.1	1.6592	0.2998E-04	0.1829E-01	0.2355	0.6618	1404.1	280.0
290.0	5.796	0.1725	1.0158	0.2956E 07	22986.3	5195.0	3130.9	1.6592	0.3034E-04	0.1885E-01	0.2383	0.6619	1416.3	290.0
300.0	5.697	0.1755	1.0155	0.3008E 07	23077.7	5194.9	3130.8	1.6593	0.3071E-04	0.1941E-01	0.2411	0.6620	1428.4	300.0
310.0	5.601	0.1785	1.0152	0.3060E 07	23167.6	5194.9	3130.6	1.6594	0.3107E-04	0.1997E-01	0.2439	0.6622	1440.4	310.0
320.0	5.508	0.1815	1.0149	0.3112E 07	23255.9	5194.9	3130.4	1.6595	0.3143E-04	0.2054E-01	0.2467	0.6623	1452.3	320.0
330.0	5.419	0.1845	1.0146	0.3164E 07	23342.7	5194.8	3130.2	1.6596	0.3179E-04	0.2112E-01	0.2495	0.6624	1464.0	330.0
340.0	5.332	0.1876	1.0143	0.3216E 07	23428.2	5194.8	3130.1	1.6596	0.3215E-04	0.2171E-01	0.2523	0.6625	1475.7	340.0
350.0	5.248	0.1906	1.0140	0.3268E 07	23512.2	5194.7	3129.9	1.6597	0.3251E-04	0.2230E-01	0.2550	0.6626	1487.4	350.0
360.0	5.166	0.1936	1.0137	0.3319E 07	23594.9	5194.7	3129.7	1.6598	0.3286E-04	0.2290E-01	0.2577	0.6627	1498.9	360.0
370.0	5.087	0.1966	1.0135	0.3371E 07	23676.3	5194.7	3129.6	1.6599	0.3321E-04	0.2350E-01	0.2605	0.6628	1510.3	370.0
380.0	5.010	0.1996	1.0132	0.3423E 07	23756.4	5194.7	3129.4	1.6599	0.3356E-04	0.2411E-01	0.2632	0.6629	1521.7	380.0
390.0	4.936	0.2026	1.0130	0.3475E 07	23835.4	5194.6	3129.3	1.6600	0.3391E-04	0.2473E-01	0.2659	0.6630	1532.9	390.0
400.0	4.864	0.2056	1.0127	0.3527E 07	23913.1	5194.6	3129.1	1.6601	0.3426E-04	0.2536E-01	0.2686	0.6631	1544.1	400.0
410.0	4.794	0.2086	1.0125	0.3579E 07	23989.7	5194.6	3129.0	1.6601	0.3460E-04	0.2599E-01	0.2712	0.6631	1555.2	410.0
420.0	4.726	0.2116	1.0123	0.3631E 07	24065.2	5194.6	3128.9	1.6602	0.3495E-04	0.2662E-01	0.2739	0.6632	1566.3	420.0
430.0	4.659	0.2146	1.0121	0.3683E 07	24139.6	5194.6	3128.7	1.6603	0.3529E-04	0.2726E-01	0.2766	0.6633	1577.2	430.0
440.0	4.595	0.2176	1.0118	0.3735E 07	24213.0	5194.6	3128.6	1.6603	0.3563E-04	0.2791E-01	0.2792	0.6634	1588.1	440.0

PRESSURE =   68.947 BAR   (1000 psia)

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
450.0	4.532	0.2206	1.0116	0.3787E 07	24285.3	5194.6	3128.5	1.6604	0.3597E-04	0.2857E-01	0.2818	0.6634	1598.9	450.0
460.0	4.472	0.2236	1.0114	0.3839E 07	24356.6	5194.6	3128.3	1.6605	0.3631E-04	0.2923E-01	0.2844	0.6635	1609.6	460.0
470.0	4.412	0.2266	1.0113	0.3891E 07	24427.0	5194.5	3128.2	1.6605	0.3664E-04	0.2990E-01	0.2870	0.6635	1620.3	470.0
480.0	4.354	0.2297	1.0111	0.3943E 07	24496.4	5194.5	3128.1	1.6606	0.3698E-04	0.3057E-01	0.2896	0.6636	1630.9	480.0
490.0	4.298	0.2327	1.0109	0.3995E 07	24565.0	5194.5	3128.0	1.6607	0.3731E-04	0.3125E-01	0.2922	0.6637	1641.4	490.0
500.0	4.243	0.2357	1.0107	0.4047E 07	24632.6	5194.5	3127.9	1.6607	0.3764E-04	0.3193E-01	0.2948	0.6637	1651.9	500.0
510.0	4.190	0.2387	1.0105	0.4099E 07	24699.3	5194.5	3127.8	1.6608	0.3797E-04	0.3263E-01	0.2974	0.6638	1662.3	510.0
520.0	4.138	0.2417	1.0104	0.4151E 07	24765.3	5194.5	3127.7	1.6608	0.3830E-04	0.3332E-01	0.2999	0.6638	1672.6	520.0
530.0	4.087	0.2447	1.0102	0.4203E 07	24830.3	5194.5	3127.5	1.6609	0.3863E-04	0.3403E-01	0.3025	0.6639	1682.9	530.0
540.0	4.037	0.2477	1.0101	0.4255E 07	24894.6	5194.5	3127.4	1.6610	0.3895E-04	0.3474E-01	0.3050	0.6639	1693.1	540.0
550.0	3.989	0.2507	1.0099	0.4306E 07	24958.1	5194.5	3127.3	1.6610	0.3928E-04	0.3545E-01	0.3075	0.6640	1703.2	550.0
560.0	3.941	0.2537	1.0098	0.4358E 07	25020.8	5194.5	3127.2	1.6611	0.3960E-04	0.3617E-01	0.3100	0.6640	1713.3	560.0
570.0	3.895	0.2567	1.0096	0.4410E 07	25082.8	5194.5	3127.1	1.6611	0.3993E-04	0.3690E-01	0.3125	0.6641	1723.3	570.0
580.0	3.850	0.2597	1.0095	0.4462E 07	25144.1	5194.5	3127.0	1.6612	0.4025E-04	0.3763E-01	0.3150	0.6641	1733.3	580.0
590.0	3.806	0.2627	1.0093	0.4514E 07	25204.6	5194.5	3126.9	1.6612	0.4057E-04	0.3837E-01	0.3175	0.6641	1743.2	590.0
600.0	3.763	0.2657	1.0092	0.4566E 07	25264.4	5194.6	3126.9	1.6613	0.4089E-04	0.3912E-01	0.3200	0.6642	1753.1	600.0
610.0	3.721	0.2688	1.0091	0.4618E 07	25323.6	5194.6	3126.8	1.6613	0.4120E-04	0.3987E-01	0.3225	0.6642	1762.9	610.0
620.0	3.680	0.2718	1.0089	0.4670E 07	25382.1	5194.6	3126.7	1.6614	0.4152E-04	0.4062E-01	0.3249	0.6643	1772.7	620.0
630.0	3.639	0.2748	1.0088	0.4722E 07	25439.9	5194.6	3126.6	1.6614	0.4184E-04	0.4138E-01	0.3274	0.6643	1782.4	630.0
640.0	3.600	0.2778	1.0087	0.4774E 07	25497.1	5194.6	3126.5	1.6615	0.4215E-04	0.4215E-01	0.3298	0.6643	1792.0	640.0
650.0	3.561	0.2808	1.0086	0.4826E 07	25553.7	5194.6	3126.4	1.6615	0.4246E-04	0.4293E-01	0.3323	0.6644	1801.6	650.0
660.0	3.524	0.2838	1.0084	0.4878E 07	25609.6	5194.6	3126.3	1.6616	0.4278E-04	0.4370E-01	0.3347	0.6644	1811.2	660.0
670.0	3.487	0.2868	1.0083	0.4930E 07	25665.0	5194.6	3126.3	1.6616	0.4309E-04	0.4449E-01	0.3371	0.6644	1820.7	670.0
680.0	3.450	0.2898	1.0082	0.4982E 07	25719.8	5194.6	3126.2	1.6617	0.4340E-04	0.4528E-01	0.3395	0.6644	1830.1	680.0
690.0	3.415	0.2928	1.0081	0.5034E 07	25774.0	5194.6	3126.1	1.6617	0.4371E-04	0.4608E-01	0.3419	0.6645	1839.5	690.0
700.0	3.380	0.2958	1.0080	0.5086E 07	25827.7	5194.6	3126.0	1.6617	0.4402E-04	0.4688E-01	0.3443	0.6645	1848.9	700.0
710.0	3.346	0.2988	1.0079	0.5138E 07	25880.8	5194.7	3126.0	1.6618	0.4432E-04	0.4768E-01	0.3467	0.6645	1858.2	710.0
720.0	3.313	0.3019	1.0078	0.5190E 07	25933.4	5194.7	3125.9	1.6618	0.4463E-04	0.4850E-01	0.3491	0.6646	1867.4	720.0
730.0	3.280	0.3049	1.0077	0.5242E 07	25985.4	5194.7	3125.8	1.6619	0.4493E-04	0.4932E-01	0.3515	0.6646	1876.6	730.0
740.0	3.248	0.3079	1.0076	0.5294E 07	26036.9	5194.7	3125.7	1.6619	0.4524E-04	0.5014E-01	0.3538	0.6646	1885.8	740.0
750.0	3.217	0.3109	1.0075	0.5345E 07	26087.9	5194.7	3125.7	1.6619	0.4554E-04	0.5097E-01	0.3562	0.6646	1894.9	750.0
760.0	3.186	0.3139	1.0074	0.5397E 07	26138.5	5194.7	3125.6	1.6620	0.4584E-04	0.5180E-01	0.3585	0.6647	1904.0	760.0
770.0	3.156	0.3169	1.0073	0.5449E 07	26188.5	5194.7	3125.5	1.6620	0.4614E-04	0.5264E-01	0.3609	0.6647	1913.1	770.0
780.0	3.126	0.3199	1.0072	0.5501E 07	26238.1	5194.7	3125.5	1.6621	0.4645E-04	0.5349E-01	0.3632	0.6647	1922.1	780.0
790.0	3.097	0.3229	1.0071	0.5553E 07	26287.2	5194.8	3125.4	1.6621	0.4674E-04	0.5434E-01	0.3655	0.6647	1931.0	790.0
800.0	3.068	0.3259	1.0071	0.5605E 07	26335.8	5194.8	3125.3	1.6621	0.4704E-04	0.5520E-01	0.3679	0.6648	1939.9	800.0
810.0	3.040	0.3289	1.0070	0.5657E 07	26384.0	5194.8	3125.3	1.6622	0.4734E-04	0.5606E-01	0.3702	0.6648	1948.8	810.0
820.0	3.012	0.3319	1.0069	0.5709E 07	26431.7	5194.8	3125.2	1.6622	0.4764E-04	0.5693E-01	0.3725	0.6648	1957.7	820.0
830.0	2.985	0.3350	1.0068	0.5761E 07	26479.0	5194.8	3125.2	1.6622	0.4793E-04	0.5780E-01	0.3748	0.6648	1966.5	830.0
840.0	2.959	0.3380	1.0067	0.5813E 07	26525.9	5194.8	3125.1	1.6623	0.4823E-04	0.5868E-01	0.3771	0.6648	1975.2	840.0
850.0	2.933	0.3410	1.0067	0.5865E 07	26572.4	5194.8	3125.1	1.6623	0.4852E-04	0.5956E-01	0.3794	0.6649	1983.9	850.0
860.0	2.907	0.3440	1.0066	0.5917E 07	26618.4	5194.9	3125.0	1.6624	0.4882E-04	0.6045E-01	0.3817	0.6649	1992.6	860.0
870.0	2.882	0.3470	1.0065	0.5969E 07	26664.1	5194.9	3124.9	1.6624	0.4911E-04	0.6135E-01	0.3839	0.6649	2001.3	870.0
880.0	2.857	0.3500	1.0064	0.6021E 07	26709.3	5194.9	3124.9	1.6624	0.4940E-04	0.6225E-01	0.3862	0.6649	2009.9	880.0
890.0	2.833	0.3530	1.0064	0.6073E 07	26754.2	5194.9	3124.8	1.6625	0.4969E-04	0.6315E-01	0.3885	0.6649	2018.4	890.0

PRESSURE =   84.800 BAR (1230 psia)

T	RHO	V	Z	H		S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
0.0	14.287	0.0700	1.0450	0.1454E	07	18797.6	5202.1	3143.9	1.6547	0.1855E-04	0.4675E-02	0.1491	0.6466	1013.3	0.0
5.0	14.043	0.0712	1.0441	0.1480E	07	18892.0	5201.6	3143.6	1.6547	0.1878E-04	0.4815E-02	0.1509	0.6472	1021.7	5.0
10.0	13.806	0.0724	1.0432	0.1506E	07	18984.6	5201.3	3143.3	1.6547	0.1901E-04	0.4957E-02	0.1526	0.6478	1030.0	10.0
15.0	13.577	0.0737	1.0424	0.1532E	07	19075.7	5200.9	3143.0	1.6548	0.1924E-04	0.5101E-02	0.1542	0.6484	1038.2	15.0
20.0	13.356	0.0749	1.0416	0.1558E	07	19165.1	5200.6	3142.7	1.6548	0.1947E-04	0.5247E-02	0.1559	0.6489	1046.4	20.0
25.0	13.142	0.0761	1.0408	0.1584E	07	19253.1	5200.2	3142.4	1.6548	0.1969E-04	0.5394E-02	0.1576	0.6494	1054.5	25.0
30.0	12.934	0.0773	1.0401	0.1610E	07	19339.6	5199.9	3142.2	1.6549	0.1991E-04	0.5543E-02	0.1593	0.6499	1062.5	30.0
35.0	12.734	0.0785	1.0393	0.1636E	07	19424.6	5199.6	3141.9	1.6549	0.2014E-04	0.5693E-02	0.1609	0.6504	1070.5	35.0
40.0	12.539	0.0798	1.0386	0.1662E	07	19508.3	5199.4	3141.7	1.6550	0.2036E-04	0.5845E-02	0.1626	0.6508	1078.5	40.0
45.0	12.350	0.0810	1.0380	0.1688E	07	19590.7	5199.1	3141.4	1.6550	0.2058E-04	0.5999E-02	0.1643	0.6512	1086.3	45.0
50.0	12.167	0.0822	1.0373	0.1714E	07	19671.8	5198.8	3141.2	1.6551	0.2080E-04	0.6154E-02	0.1659	0.6517	1094.2	50.0
55.0	11.989	0.0834	1.0366	0.1740E	07	19751.6	5198.6	3140.9	1.6551	0.2102E-04	0.6311E-02	0.1675	0.6521	1101.9	55.0
60.0	11.816	0.0846	1.0360	0.1766E	07	19830.2	5198.4	3140.7	1.6552	0.2123E-04	0.6470E-02	0.1692	0.6524	1109.6	60.0
65.0	11.648	0.0859	1.0354	0.1792E	07	19907.6	5198.2	3140.5	1.6552	0.2145E-04	0.6630E-02	0.1708	0.6528	1117.3	65.0
70.0	11.485	0.0871	1.0348	0.1818E	07	19983.9	5198.0	3140.2	1.6553	0.2167E-04	0.6791E-02	0.1724	0.6531	1124.9	70.0
75.0	11.326	0.0883	1.0343	0.1844E	07	20059.1	5197.8	3140.0	1.6553	0.2188E-04	0.6955E-02	0.1740	0.6535	1132.5	75.0
80.0	11.172	0.0895	1.0337	0.1870E	07	20133.2	5197.6	3139.8	1.6554	0.2209E-04	0.7119E-02	0.1757	0.6538	1140.0	80.0
85.0	11.021	0.0907	1.0332	0.1896E	07	20206.3	5197.4	3139.6	1.6554	0.2231E-04	0.7286E-02	0.1773	0.6541	1147.4	85.0
90.0	10.875	0.0920	1.0326	0.1922E	07	20278.4	5197.2	3139.4	1.6555	0.2252E-04	0.7454E-02	0.1789	0.6544	1154.9	90.0
95.0	10.733	0.0932	1.0321	0.1948E	07	20349.4	5197.1	3139.2	1.6556	0.2273E-04	0.7623E-02	0.1805	0.6547	1162.2	95.0
100.0	10.594	0.0944	1.0316	0.1974E	07	20419.5	5196.9	3139.0	1.6556	0.2294E-04	0.7794E-02	0.1820	0.6550	1169.6	100.0
105.0	10.459	0.0956	1.0312	0.2000E	07	20488.7	5196.8	3138.8	1.6557	0.2315E-04	0.7967E-02	0.1836	0.6552	1176.8	105.0
110.0	10.327	0.0968	1.0307	0.2026E	07	20557.0	5196.6	3138.6	1.6557	0.2335E-04	0.8141E-02	0.1852	0.6555	1184.1	110.0
115.0	10.198	0.0981	1.0302	0.2052E	07	20624.3	5196.5	3138.4	1.6558	0.2356E-04	0.8316E-02	0.1868	0.6557	1191.3	115.0
120.0	10.073	0.0993	1.0298	0.2078E	07	20690.9	5196.4	3138.2	1.6558	0.2377E-04	0.8493E-02	0.1883	0.6560	1198.4	120.0
125.0	9.951	0.1005	1.0294	0.2104E	07	20756.5	5196.3	3138.0	1.6559	0.2397E-04	0.8672E-02	0.1899	0.6562	1205.5	125.0
130.0	9.831	0.1017	1.0289	0.2130E	07	20821.4	5196.1	3137.8	1.6560	0.2417E-04	0.8852E-02	0.1914	0.6564	1212.6	130.0
135.0	9.715	0.1029	1.0285	0.2156E	07	20885.4	5196.0	3137.7	1.6560	0.2438E-04	0.9034E-02	0.1930	0.6566	1219.6	135.0
140.0	9.601	0.1042	1.0281	0.2182E	07	20948.7	5195.9	3137.5	1.6561	0.2458E-04	0.9217E-02	0.1945	0.6568	1226.6	140.0
145.0	9.490	0.1054	1.0277	0.2208E	07	21011.2	5195.8	3137.3	1.6561	0.2478E-04	0.9401E-02	0.1961	0.6570	1233.6	145.0
150.0	9.381	0.1066	1.0273	0.2234E	07	21073.0	5195.7	3137.1	1.6562	0.2498E-04	0.9587E-02	0.1976	0.6572	1240.5	150.0
155.0	9.275	0.1078	1.0270	0.2260E	07	21134.0	5195.6	3137.0	1.6563	0.2518E-04	0.9775E-02	0.1991	0.6574	1247.4	155.0
160.0	9.171	0.1090	1.0266	0.2286E	07	21194.3	5195.5	3136.8	1.6563	0.2538E-04	0.9964E-02	0.2007	0.6576	1254.2	160.0
165.0	9.070	0.1103	1.0263	0.2312E	07	21253.9	5195.5	3136.6	1.6564	0.2558E-04	0.1015E-01	0.2022	0.6578	1261.0	165.0
170.0	8.970	0.1115	1.0259	0.2338E	07	21312.9	5195.4	3136.5	1.6564	0.2578E-04	0.1035E-01	0.2037	0.6579	1267.8	170.0
175.0	8.873	0.1127	1.0256	0.2364E	07	21371.2	5195.3	3136.3	1.6565	0.2598E-04	0.1054E-01	0.2052	0.6581	1274.5	175.0
180.0	8.778	0.1139	1.0252	0.2390E	07	21428.8	5195.2	3136.2	1.6565	0.2618E-04	0.1073E-01	0.2067	0.6582	1281.2	180.0
185.0	8.685	0.1151	1.0249	0.2416E	07	21485.8	5195.1	3136.0	1.6566	0.2637E-04	0.1093E-01	0.2082	0.6584	1287.9	185.0
190.0	8.594	0.1164	1.0246	0.2442E	07	21542.2	5195.1	3135.9	1.6567	0.2657E-04	0.1113E-01	0.2097	0.6586	1294.5	190.0
195.0	8.505	0.1176	1.0243	0.2467E	07	21598.0	5195.0	3135.7	1.6567	0.2676E-04	0.1133E-01	0.2112	0.6587	1301.1	195.0
200.0	8.417	0.1188	1.0240	0.2493E	07	21653.2	5194.9	3135.6	1.6568	0.2696E-04	0.1153E-01	0.2127	0.6588	1307.6	200.0
205.0	8.332	0.1200	1.0237	0.2519E	07	21707.8	5194.9	3135.4	1.6568	0.2715E-04	0.1173E-01	0.2142	0.6590	1314.2	205.0
210.0	8.248	0.1212	1.0234	0.2545E	07	21761.8	5194.8	3135.3	1.6569	0.2734E-04	0.1193E-01	0.2156	0.6591	1320.7	210.0
215.0	8.166	0.1225	1.0231	0.2571E	07	21815.3	5194.8	3135.1	1.6569	0.2753E-04	0.1214E-01	0.2171	0.6592	1327.1	215.0
220.0	8.085	0.1237	1.0228	0.2597E	07	21868.3	5194.7	3135.0	1.6570	0.2772E-04	0.1234E-01	0.2186	0.6594	1333.6	220.0

PRESSURE = 84.800 BAR (1230 psia)

T	RHO	V	Z	H		S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
225.0	8.006	0.1249	1.0226	0.2623E	07	21920.7	5194.6	3134.9	1.6571	0.2792E-04	0.1255E-01	0.2200	0.6595	1340.0	225.0
230.0	7.929	0.1261	1.0223	0.2649E	07	21972.5	5194.6	3134.7	1.6571	0.2811E-04	0.1276E-01	0.2215	0.6596	1346.4	230.0
235.0	7.853	0.1273	1.0220	0.2675E	07	22023.9	5194.5	3134.6	1.6572	0.2830E-04	0.1297E-01	0.2229	0.6597	1352.7	235.0
240.0	7.778	0.1286	1.0218	0.2701E	07	22074.8	5194.5	3134.5	1.6572	0.2848E-04	0.1318E-01	0.2244	0.6598	1359.0	240.0
245.0	7.705	0.1298	1.0215	0.2727E	07	22125.1	5194.4	3134.3	1.6573	0.2867E-04	0.1340E-01	0.2258	0.6599	1365.3	245.0
250.0	7.633	0.1310	1.0213	0.2753E	07	22175.0	5194.4	3134.2	1.6573	0.2886E-04	0.1361E-01	0.2273	0.6600	1371.6	250.0
255.0	7.563	0.1322	1.0210	0.2779E	07	22224.4	5194.4	3134.1	1.6574	0.2905E-04	0.1383E-01	0.2287	0.6601	1377.8	255.0
260.0	7.493	0.1334	1.0208	0.2805E	07	22273.4	5194.3	3133.9	1.6574	0.2924E-04	0.1404E-01	0.2302	0.6602	1384.0	260.0
265.0	7.426	0.1347	1.0206	0.2831E	07	22321.9	5194.3	3133.8	1.6575	0.2942E-04	0.1426E-01	0.2316	0.6603	1390.2	265.0
270.0	7.359	0.1359	1.0203	0.2857E	07	22369.9	5194.2	3133.7	1.6575	0.2961E-04	0.1448E-01	0.2330	0.6604	1396.4	270.0
275.0	7.293	0.1371	1.0201	0.2883E	07	22417.5	5194.2	3133.6	1.6576	0.2979E-04	0.1471E-01	0.2344	0.6605	1402.5	275.0
280.0	7.229	0.1383	1.0199	0.2909E	07	22464.7	5194.2	3133.5	1.6576	0.2998E-04	0.1493E-01	0.2359	0.6606	1408.6	280.0
285.0	7.166	0.1396	1.0197	0.2935E	07	22511.4	5194.1	3133.3	1.6577	0.3016E-04	0.1515E-01	0.2373	0.6607	1414.7	285.0
290.0	7.104	0.1408	1.0195	0.2961E	07	22557.7	5194.1	3133.2	1.6577	0.3034E-04	0.1538E-01	0.2387	0.6608	1420.7	290.0
295.0	7.042	0.1420	1.0193	0.2987E	07	22603.6	5194.1	3133.1	1.6578	0.3053E-04	0.1560E-01	0.2401	0.6609	1426.8	295.0
300.0	6.982	0.1432	1.0191	0.3013E	07	22649.2	5194.0	3133.0	1.6578	0.3071E-04	0.1583E-01	0.2415	0.6610	1432.9	300.0
305.0	6.923	0.1444	1.0189	0.3039E	07	22694.3	5194.0	3132.9	1.6579	0.3089E-04	0.1606E-01	0.2429	0.6610	1438.9	305.0
310.0	6.865	0.1457	1.0187	0.3065E	07	22739.0	5194.0	3132.8	1.6579	0.3107E-04	0.1629E-01	0.2443	0.6611	1444.7	310.0
315.0	6.808	0.1469	1.0185	0.3091E	07	22783.3	5194.0	3132.7	1.6580	0.3125E-04	0.1653E-01	0.2457	0.6612	1450.6	315.0
320.0	6.752	0.1481	1.0183	0.3117E	07	22827.3	5193.9	3132.6	1.6580	0.3143E-04	0.1676E-01	0.2471	0.6613	1456.5	320.0
325.0	6.697	0.1493	1.0181	0.3143E	07	22870.9	5193.9	3132.5	1.6581	0.3161E-04	0.1699E-01	0.2485	0.6613	1462.4	325.0
330.0	6.643	0.1505	1.0179	0.3169E	07	22914.1	5193.9	3132.4	1.6581	0.3179E-04	0.1723E-01	0.2499	0.6614	1468.2	330.0
335.0	6.589	0.1518	1.0177	0.3195E	07	22957.0	5193.9	3132.3	1.6582	0.3197E-04	0.1747E-01	0.2512	0.6615	1474.1	335.0
340.0	6.537	0.1530	1.0175	0.3221E	07	22999.5	5193.8	3132.2	1.6582	0.3215E-04	0.1771E-01	0.2526	0.6615	1479.9	340.0
345.0	6.485	0.1542	1.0174	0.3247E	07	23041.7	5193.8	3132.1	1.6583	0.3233E-04	0.1795E-01	0.2540	0.6616	1485.7	345.0
350.0	6.434	0.1554	1.0172	0.3273E	07	23083.6	5193.8	3132.0	1.6583	0.3251E-04	0.1819E-01	0.2554	0.6617	1491.5	350.0
355.0	6.384	0.1566	1.0170	0.3299E	07	23125.1	5193.8	3131.9	1.6584	0.3268E-04	0.1843E-01	0.2567	0.6617	1497.2	355.0
360.0	6.334	0.1579	1.0169	0.3325E	07	23166.3	5193.8	3131.8	1.6584	0.3286E-04	0.1868E-01	0.2581	0.6618	1502.9	360.0
365.0	6.286	0.1591	1.0167	0.3351E	07	23207.1	5193.8	3131.7	1.6585	0.3304E-04	0.1892E-01	0.2595	0.6619	1508.6	365.0
370.0	6.238	0.1603	1.0166	0.3377E	07	23247.6	5193.7	3131.6	1.6585	0.3321E-04	0.1917E-01	0.2608	0.6619	1514.3	370.0
375.0	6.191	0.1615	1.0164	0.3402E	07	23287.9	5193.7	3131.5	1.6586	0.3339E-04	0.1942E-01	0.2622	0.6620	1520.0	375.0
380.0	6.144	0.1628	1.0162	0.3428E	07	23327.8	5193.7	3131.4	1.6586	0.3356E-04	0.1967E-01	0.2635	0.6620	1525.6	380.0
385.0	6.098	0.1640	1.0161	0.3454E	07	23367.4	5193.7	3131.3	1.6586	0.3374E-04	0.1992E-01	0.2649	0.6621	1531.2	385.0
390.0	6.053	0.1652	1.0159	0.3480E	07	23406.7	5193.7	3131.2	1.6587	0.3391E-04	0.2017E-01	0.2662	0.6622	1536.8	390.0
395.0	6.009	0.1664	1.0158	0.3506E	07	23445.7	5193.7	3131.1	1.6587	0.3408E-04	0.2042E-01	0.2676	0.6622	1542.4	395.0
400.0	5.965	0.1676	1.0156	0.3532E	07	23484.4	5193.7	3131.0	1.6588	0.3426E-04	0.2068E-01	0.2689	0.6623	1548.0	400.0
405.0	5.922	0.1689	1.0155	0.3558E	07	23522.9	5193.7	3130.9	1.6588	0.3443E-04	0.2093E-01	0.2702	0.6623	1553.5	405.0
410.0	5.879	0.1701	1.0154	0.3584E	07	23561.0	5193.6	3130.8	1.6589	0.3460E-04	0.2119E-01	0.2716	0.6624	1559.0	410.0
415.0	5.837	0.1713	1.0152	0.3610E	07	23598.9	5193.6	3130.8	1.6589	0.3478E-04	0.2145E-01	0.2729	0.6624	1564.5	415.0
420.0	5.796	0.1725	1.0151	0.3636E	07	23636.5	5193.6	3130.7	1.6589	0.3495E-04	0.2171E-01	0.2742	0.6624	1570.0	420.0
425.0	5.755	0.1737	1.0150	0.3662E	07	23673.8	5193.6	3130.6	1.6590	0.3512E-04	0.2197E-01	0.2755	0.6625	1575.5	425.0
430.0	5.715	0.1750	1.0148	0.3688E	07	23710.9	5193.6	3130.5	1.6590	0.3529E-04	0.2223E-01	0.2769	0.6625	1580.9	430.0
435.0	5.676	0.1762	1.0147	0.3714E	07	23747.7	5193.6	3130.4	1.6591	0.3546E-04	0.2249E-01	0.2782	0.6626	1586.4	435.0
440.0	5.636	0.1774	1.0146	0.3740E	07	23784.2	5193.6	3130.4	1.6591	0.3563E-04	0.2276E-01	0.2795	0.6626	1591.8	440.0
445.0	5.598	0.1786	1.0144	0.3766E	07	23820.5	5193.6	3130.3	1.6591	0.3580E-04	0.2302E-01	0.2808	0.6627	1597.2	445.0

PRESSURE =   84.800 BAR (1230 psia)

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
450.0	5.560	0.1799	1.0143	0.3792E 07	23856.5	5193.6	3130.2	1.6592	0.3597E-04	0.2329E-01	0.2821	0.6627	1602.5	450.0
455.0	5.522	0.1811	1.0142	0.3818E 07	23892.3	5193.6	3130.1	1.6592	0.3614E-04	0.2356E-01	0.2834	0.6628	1607.9	455.0
460.0	5.485	0.1823	1.0141	0.3844E 07	23927.9	5193.6	3130.0	1.6593	0.3631E-04	0.2383E-01	0.2847	0.6628	1613.2	460.0
465.0	5.449	0.1835	1.0140	0.3870E 07	23963.2	5193.6	3130.0	1.6593	0.3647E-04	0.2410E-01	0.2860	0.6628	1618.5	465.0
470.0	5.413	0.1847	1.0138	0.3896E 07	23998.2	5193.6	3129.9	1.6593	0.3664E-04	0.2437E-01	0.2873	0.6629	1623.8	470.0
475.0	5.377	0.1860	1.0137	0.3922E 07	24033.1	5193.6	3129.8	1.6594	0.3681E-04	0.2464E-01	0.2886	0.6629	1629.1	475.0
480.0	5.342	0.1872	1.0136	0.3948E 07	24067.6	5193.6	3129.7	1.6594	0.3698E-04	0.2492E-01	0.2899	0.6630	1634.4	480.0
485.0	5.308	0.1884	1.0135	0.3974E 07	24102.0	5193.6	3129.7	1.6595	0.3714E-04	0.2519E-01	0.2912	0.6630	1639.7	485.0
490.0	5.273	0.1896	1.0134	0.4000E 07	24136.2	5193.5	3129.6	1.6595	0.3731E-04	0.2547E-01	0.2925	0.6630	1644.9	490.0
495.0	5.240	0.1909	1.0133	0.4026E 07	24170.1	5193.5	3129.5	1.6595	0.3748E-04	0.2575E-01	0.2938	0.6631	1650.1	495.0
500.0	5.206	0.1921	1.0132	0.4052E 07	24203.8	5193.5	3129.5	1.6596	0.3764E-04	0.2603E-01	0.2951	0.6631	1655.3	500.0
505.0	5.173	0.1933	1.0131	0.4078E 07	24237.2	5193.5	3129.4	1.6596	0.3781E-04	0.2631E-01	0.2964	0.6631	1660.5	505.0
510.0	5.141	0.1945	1.0130	0.4104E 07	24270.5	5193.5	3129.3	1.6596	0.3797E-04	0.2659E-01	0.2976	0.6632	1665.7	510.0
515.0	5.109	0.1957	1.0129	0.4130E 07	24303.6	5193.5	3129.3	1.6597	0.3814E-04	0.2687E-01	0.2989	0.6632	1670.8	515.0
520.0	5.077	0.1970	1.0128	0.4156E 07	24336.4	5193.5	3129.2	1.6597	0.3830E-04	0.2716E-01	0.3002	0.6632	1676.0	520.0
525.0	5.046	0.1982	1.0127	0.4182E 07	24369.0	5193.5	3129.1	1.6597	0.3846E-04	0.2744E-01	0.3015	0.6633	1681.1	525.0
530.0	5.015	0.1994	1.0126	0.4208E 07	24401.5	5193.5	3129.1	1.6598	0.3863E-04	0.2773E-01	0.3027	0.6633	1686.2	530.0
535.0	4.984	0.2006	1.0125	0.4233E 07	24433.7	5193.5	3129.0	1.6598	0.3879E-04	0.2802E-01	0.3040	0.6633	1691.3	535.0
540.0	4.954	0.2019	1.0124	0.4259E 07	24465.7	5193.5	3128.9	1.6598	0.3895E-04	0.2831E-01	0.3053	0.6634	1696.4	540.0
545.0	4.924	0.2031	1.0123	0.4285E 07	24497.6	5193.5	3128.9	1.6599	0.3912E-04	0.2860E-01	0.3065	0.6634	1701.5	545.0
550.0	4.895	0.2043	1.0122	0.4311E 07	24529.2	5193.5	3128.8	1.6599	0.3928E-04	0.2889E-01	0.3078	0.6634	1706.5	550.0
555.0	4.866	0.2055	1.0121	0.4337E 07	24560.7	5193.5	3128.7	1.6600	0.3944E-04	0.2918E-01	0.3090	0.6634	1711.5	555.0
560.0	4.837	0.2067	1.0120	0.4363E 07	24591.9	5193.5	3128.7	1.6600	0.3960E-04	0.2948E-01	0.3103	0.6635	1716.6	560.0
565.0	4.809	0.2080	1.0119	0.4389E 07	24623.0	5193.5	3128.6	1.6600	0.3977E-04	0.2977E-01	0.3115	0.6635	1721.6	565.0
570.0	4.780	0.2092	1.0118	0.4415E 07	24653.9	5193.6	3128.6	1.6600	0.3993E-04	0.3007E-01	0.3128	0.6635	1726.6	570.0
575.0	4.753	0.2104	1.0117	0.4441E 07	24684.6	5193.6	3128.5	1.6601	0.4009E-04	0.3036E-01	0.3140	0.6636	1731.5	575.0
580.0	4.725	0.2116	1.0116	0.4467E 07	24715.1	5193.6	3128.4	1.6601	0.4025E-04	0.3066E-01	0.3153	0.6636	1736.5	580.0
585.0	4.698	0.2129	1.0116	0.4493E 07	24745.5	5193.6	3128.4	1.6601	0.4041E-04	0.3096E-01	0.3165	0.6636	1741.5	585.0
590.0	4.671	0.2141	1.0115	0.4519E 07	24775.7	5193.6	3128.3	1.6602	0.4057E-04	0.3126E-01	0.3178	0.6636	1746.4	590.0
595.0	4.645	0.2153	1.0114	0.4545E 07	24805.6	5193.6	3128.3	1.6602	0.4073E-04	0.3157E-01	0.3190	0.6637	1751.3	595.0
600.0	4.619	0.2165	1.0113	0.4571E 07	24835.5	5193.6	3128.2	1.6602	0.4089E-04	0.3187E-01	0.3202	0.6637	1756.2	600.0
605.0	4.593	0.2177	1.0112	0.4597E 07	24865.1	5193.6	3128.1	1.6603	0.4105E-04	0.3217E-01	0.3215	0.6637	1761.1	605.0
610.0	4.567	0.2190	1.0111	0.4623E 07	24894.6	5193.6	3128.1	1.6603	0.4120E-04	0.3248E-01	0.3227	0.6637	1766.0	610.0
615.0	4.542	0.2202	1.0111	0.4649E 07	24923.9	5193.6	3128.0	1.6603	0.4136E-04	0.3279E-01	0.3239	0.6637	1770.9	615.0
620.0	4.517	0.2214	1.0110	0.4675E 07	24953.1	5193.6	3128.0	1.6604	0.4152E-04	0.3310E-01	0.3252	0.6638	1775.7	620.0
625.0	4.492	0.2226	1.0109	0.4701E 07	24982.1	5193.6	3127.9	1.6604	0.4168E-04	0.3341E-01	0.3264	0.6638	1780.6	625.0
630.0	4.467	0.2239	1.0108	0.4727E 07	25010.9	5193.6	3127.9	1.6604	0.4184E-04	0.3372E-01	0.3276	0.6638	1785.4	630.0
635.0	4.443	0.2251	1.0108	0.4753E 07	25039.6	5193.6	3127.8	1.6605	0.4199E-04	0.3403E-01	0.3288	0.6638	1790.2	635.0
640.0	4.419	0.2263	1.0107	0.4779E 07	25068.1	5193.6	3127.8	1.6605	0.4215E-04	0.3434E-01	0.3301	0.6639	1795.0	640.0
645.0	4.395	0.2275	1.0106	0.4805E 07	25096.5	5193.6	3127.7	1.6605	0.4231E-04	0.3465E-01	0.3313	0.6639	1799.8	645.0
650.0	4.372	0.2287	1.0105	0.4831E 07	25124.7	5193.6	3127.7	1.6605	0.4246E-04	0.3497E-01	0.3325	0.6639	1804.6	650.0
655.0	4.348	0.2300	1.0105	0.4857E 07	25152.7	5193.6	3127.6	1.6606	0.4262E-04	0.3529E-01	0.3337	0.6639	1809.4	655.0
660.0	4.325	0.2312	1.0104	0.4883E 07	25180.6	5193.6	3127.6	1.6606	0.4278E-04	0.3560E-01	0.3349	0.6639	1814.1	660.0
665.0	4.303	0.2324	1.0103	0.4909E 07	25208.4	5193.6	3127.5	1.6606	0.4293E-04	0.3592E-01	0.3361	0.6640	1818.9	665.0
670.0	4.280	0.2336	1.0102	0.4935E 07	25236.0	5193.6	3127.5	1.6607	0.4309E-04	0.3624E-01	0.3373	0.6640	1823.6	670.0

PRESSURE =   84.800 BAR (1230 psia)

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
675.0	4.258	0.2349	1.0102	0.4961E 07	25263.5	5193.6	3127.4	1.6607	0.4324E-04	0.3656E-01	0.3385	0.6640	1828.3	675.0
680.0	4.236	0.2361	1.0101	0.4987E 07	25290.8	5193.7	3127.4	1.6607	0.4340E-04	0.3688E-01	0.3397	0.6640	1833.0	680.0
685.0	4.214	0.2373	1.0100	0.5013E 07	25318.0	5193.7	3127.3	1.6607	0.4355E-04	0.3721E-01	0.3409	0.6640	1837.7	685.0
690.0	4.192	0.2385	1.0100	0.5039E 07	25345.0	5193.7	3127.3	1.6608	0.4371E-04	0.3753E-01	0.3421	0.6641	1842.4	690.0
695.0	4.171	0.2397	1.0099	0.5065E 07	25371.9	5193.7	3127.2	1.6608	0.4386E-04	0.3786E-01	0.3433	0.6641	1847.1	695.0
700.0	4.150	0.2410	1.0098	0.5090E 07	25398.6	5193.7	3127.2	1.6608	0.4402E-04	0.3818E-01	0.3445	0.6641	1851.7	700.0
705.0	4.129	0.2422	1.0098	0.5116E 07	25425.2	5193.7	3127.1	1.6608	0.4417E-04	0.3851E-01	0.3457	0.6641	1856.4	705.0
710.0	4.108	0.2434	1.0097	0.5142E 07	25451.7	5193.7	3127.1	1.6609	0.4432E-04	0.3884E-01	0.3469	0.6641	1861.0	710.0
715.0	4.088	0.2446	1.0097	0.5168E 07	25478.1	5193.7	3127.1	1.6609	0.4448E-04	0.3917E-01	0.3481	0.6642	1865.6	715.0
720.0	4.067	0.2459	1.0096	0.5194E 07	25504.3	5193.7	3127.0	1.6609	0.4463E-04	0.3950E-01	0.3493	0.6642	1870.2	720.0
725.0	4.047	0.2471	1.0095	0.5220E 07	25530.4	5193.7	3127.0	1.6609	0.4478E-04	0.3983E-01	0.3505	0.6642	1874.8	725.0
730.0	4.027	0.2483	1.0095	0.5246E 07	25556.3	5193.7	3126.9	1.6610	0.4493E-04	0.4017E-01	0.3517	0.6642	1879.4	730.0
735.0	4.008	0.2495	1.0094	0.5272E 07	25582.1	5193.7	3126.9	1.6610	0.4509E-04	0.4050E-01	0.3528	0.6642	1884.0	735.0
740.0	3.988	0.2508	1.0094	0.5298E 07	25607.8	5193.7	3126.8	1.6610	0.4524E-04	0.4084E-01	0.3540	0.6642	1888.6	740.0
745.0	3.969	0.2520	1.0093	0.5324E 07	25633.4	5193.7	3126.8	1.6610	0.4539E-04	0.4117E-01	0.3552	0.6643	1893.1	745.0
750.0	3.949	0.2532	1.0092	0.5350E 07	25658.8	5193.8	3126.7	1.6611	0.4554E-04	0.4151E-01	0.3564	0.6643	1897.7	750.0
755.0	3.930	0.2544	1.0092	0.5376E 07	25684.2	5193.8	3126.7	1.6611	0.4569E-04	0.4185E-01	0.3575	0.6643	1902.2	755.0
760.0	3.912	0.2556	1.0091	0.5402E 07	25709.4	5193.8	3126.7	1.6611	0.4584E-04	0.4219E-01	0.3587	0.6643	1906.8	760.0
765.0	3.893	0.2569	1.0091	0.5428E 07	25734.4	5193.8	3126.6	1.6611	0.4599E-04	0.4253E-01	0.3599	0.6643	1911.3	765.0
770.0	3.875	0.2581	1.0090	0.5454E 07	25759.4	5193.8	3126.6	1.6612	0.4614E-04	0.4287E-01	0.3611	0.6643	1915.8	770.0
775.0	3.856	0.2593	1.0090	0.5480E 07	25784.2	5193.8	3126.5	1.6612	0.4629E-04	0.4322E-01	0.3622	0.6643	1920.3	775.0
780.0	3.838	0.2605	1.0089	0.5506E 07	25809.0	5193.8	3126.5	1.6612	0.4645E-04	0.4356E-01	0.3634	0.6644	1924.7	780.0
785.0	3.820	0.2618	1.0088	0.5532E 07	25833.6	5193.8	3126.5	1.6612	0.4659E-04	0.4391E-01	0.3646	0.6644	1929.2	785.0
790.0	3.803	0.2630	1.0088	0.5558E 07	25858.0	5193.8	3126.4	1.6613	0.4674E-04	0.4425E-01	0.3657	0.6644	1933.7	790.0
795.0	3.785	0.2642	1.0087	0.5584E 07	25882.4	5193.8	3126.4	1.6613	0.4689E-04	0.4460E-01	0.3669	0.6644	1938.1	795.0
800.0	3.768	0.2654	1.0087	0.5610E 07	25906.7	5193.8	3126.4	1.6613	0.4704E-04	0.4495E-01	0.3680	0.6644	1942.6	800.0
805.0	3.750	0.2666	1.0086	0.5636E 07	25930.8	5193.8	3126.3	1.6613	0.4719E-04	0.4530E-01	0.3692	0.6644	1947.0	805.0
810.0	3.733	0.2679	1.0086	0.5662E 07	25954.8	5193.9	3126.3	1.6614	0.4734E-04	0.4565E-01	0.3704	0.6644	1951.4	810.0
815.0	3.716	0.2691	1.0085	0.5688E 07	25978.8	5193.9	3126.2	1.6614	0.4749E-04	0.4600E-01	0.3715	0.6645	1955.9	815.0
820.0	3.699	0.2703	1.0085	0.5714E 07	26002.6	5193.9	3126.2	1.6614	0.4764E-04	0.4636E-01	0.3727	0.6645	1960.3	820.0
825.0	3.683	0.2715	1.0084	0.5740E 07	26026.3	5193.9	3126.2	1.6614	0.4779E-04	0.4671E-01	0.3738	0.6645	1964.7	825.0
830.0	3.666	0.2728	1.0084	0.5766E 07	26049.9	5193.9	3126.1	1.6614	0.4793E-04	0.4707E-01	0.3750	0.6645	1969.0	830.0
835.0	3.650	0.2740	1.0083	0.5792E 07	26073.4	5193.9	3126.1	1.6615	0.4808E-04	0.4742E-01	0.3761	0.6645	1973.4	835.0
840.0	3.634	0.2752	1.0083	0.5818E 07	26096.7	5193.9	3126.1	1.6615	0.4823E-04	0.4778E-01	0.3773	0.6645	1977.8	840.0
845.0	3.618	0.2764	1.0082	0.5844E 07	26120.0	5193.9	3126.0	1.6615	0.4838E-04	0.4814E-01	0.3784	0.6645	1982.1	845.0
850.0	3.602	0.2777	1.0082	0.5870E 07	26143.2	5193.9	3126.0	1.6615	0.4852E-04	0.4850E-01	0.3795	0.6645	1986.5	850.0
855.0	3.586	0.2789	1.0081	0.5896E 07	26166.3	5193.9	3126.0	1.6615	0.4867E-04	0.4886E-01	0.3807	0.6646	1990.8	855.0
860.0	3.570	0.2801	1.0081	0.5922E 07	26189.2	5193.9	3125.9	1.6616	0.4882E-04	0.4922E-01	0.3818	0.6646	1995.1	860.0
865.0	3.555	0.2813	1.0080	0.5947E 07	26212.1	5193.9	3125.9	1.6616	0.4896E-04	0.4959E-01	0.3830	0.6646	1999.5	865.0
870.0	3.539	0.2825	1.0080	0.5973E 07	26234.9	5194.0	3125.9	1.6616	0.4911E-04	0.4995E-01	0.3841	0.6646	2003.8	870.0
875.0	3.524	0.2838	1.0080	0.5999E 07	26257.5	5194.0	3125.8	1.6616	0.4925E-04	0.5032E-01	0.3852	0.6646	2008.1	875.0
880.0	3.509	0.2850	1.0079	0.6025E 07	26280.1	5194.0	3125.8	1.6617	0.4940E-04	0.5068E-01	0.3864	0.6646	2012.4	880.0
885.0	3.494	0.2862	1.0079	0.6051E 07	26302.6	5194.0	3125.8	1.6617	0.4955E-04	0.5105E-01	0.3875	0.6646	2016.6	885.0
890.0	3.479	0.2874	1.0078	0.6077E 07	26324.9	5194.0	3125.7	1.6617	0.4969E-04	0.5142E-01	0.3886	0.6646	2020.9	890.0
895.0	3.464	0.2887	1.0078	0.6103E 07	26347.2	5194.0	3125.7	1.6617	0.4984E-04	0.5179E-01	0.3898	0.6646	2025.2	895.0

PRESSURE =   84.8C0 BAR (1230 psia)

T	RHC	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
900.0	3.450	0.2899	1.0077	0.6129E 07	26369.4	5194.0	3125.7	1.6617	0.4998E-04	0.5216E-01	0.3909	0.6647	2029.4	900.0
905.0	3.435	0.2911	1.0077	0.6155E 07	26391.5	5194.0	3125.6	1.6618	0.5013E-04	0.5253E-01	0.3920	0.6647	2033.7	905.0
910.C	3.421	0.2923	1.0077	0.6181E 07	26413.5	5194.0	3125.6	1.6618	0.5027E-04	0.5290E-01	0.3931	0.6647	2037.9	910.0
915.0	3.4C6	0.2936	1.0076	0.6207E 07	26435.4	5194.0	3125.6	1.6618	0.5041E-04	0.5328E-01	0.3943	0.6647	2042.1	915.0
920.0	3.392	0.2948	1.0076	0.6233E 07	26457.2	5194.1	3125.5	1.6618	0.5056E-04	0.5365E-01	0.3954	0.6647	2046.4	920.0
925.0	3.378	0.2960	1.C075	0.6259E 07	26478.9	5194.1	3125.5	1.6618	0.5070E-04	0.5403E-01	0.3965	0.6647	2050.6	925.0
930.0	3.364	0.2972	1.0075	0.6285E 07	26500.6	5194.1	3125.5	1.6618	0.5085E-04	0.5441E-01	0.3976	0.6647	2054.8	930.0
935.0	3.351	0.2985	1.0075	0.6311E 07	26522.1	5194.1	3125.4	1.6619	0.5099E-04	0.5479E-01	0.3987	0.6647	2059.0	935.0
940.0	3.337	0.2997	1.0074	0.6337E 07	26543.6	5194.1	3125.4	1.6619	0.5113E-04	0.5516E-01	0.3999	0.6647	2063.2	940.0
945.0	3.323	0.3009	1.C074	0.6363E 07	26564.9	5194.1	3125.4	1.6619	0.5128E-04	0.5554E-01	0.4010	0.6647	2067.3	945.0
950.C	3.310	0.3021	1.C073	0.6389E 07	26586.2	5194.1	3125.4	1.6619	0.5142E-04	0.5593E-01	0.4021	0.6648	2071.5	950.0
955.0	3.297	0.3033	1.0073	0.6415E 07	26607.4	5194.1	3125.3	1.6619	0.5156E-04	0.5631E-01	0.4032	0.6648	2075.7	955.0
960.0	3.283	0.3046	1.0073	0.6441E 07	26628.5	5194.1	3125.3	1.6620	0.5171E-04	0.5669E-01	0.4043	0.6648	2079.8	960.0
965.0	3.270	0.3058	1.CC72	0.6467E 07	26649.5	5194.1	3125.3	1.6620	0.5185E-04	0.5708E-01	0.4054	0.6648	2084.0	965.0
970.0	3.257	0.3070	1.C072	0.6493E 07	26670.4	5194.1	3125.2	1.6620	0.5199E-04	0.5746E-01	0.4065	0.6648	2088.1	970.0
975.0	3.244	0.3082	1.0071	0.6519E 07	26691.3	5194.2	3125.2	1.6620	0.5213E-04	0.5785E-01	0.4076	0.6648	2092.2	975.0
980.0	3.231	0.3095	1.CC71	0.6545E 07	26712.0	5194.2	3125.2	1.6620	0.5227E-04	0.5824E-01	0.4087	0.6648	2096.4	980.0
985.0	3.219	0.3107	1.0071	0.6571E 07	26732.7	5194.2	3125.2	1.6620	0.5242E-04	0.5863E-01	0.4098	0.6648	2100.5	985.0
990.0	3.206	0.3119	1.0070	0.6597E 07	26753.3	5194.2	3125.1	1.6621	0.5256E-04	0.5902E-01	0.4109	0.6648	2104.6	990.0
995.0	3.194	0.3131	1.0070	0.6623E 07	26773.9	5194.2	3125.1	1.6621	0.5270E-04	0.5941E-01	0.4120	0.6648	2108.7	995.0

PRESSURE = 103.420 BAR (1500 psia)

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
0.0	17.261	0.0579	1.0549	0.1460E 07	18387.2	5202.8	3148.9	1.6523	0.1855E-04	0.3869E-02	0.1503	0.6417	1022.1	0.0
10.0	16.686	0.0599	1.0527	0.1512E 07	18574.3	5201.8	3148.2	1.6523	0.1901E-04	0.4102E-02	0.1536	0.6432	1038.6	10.0
20.0	16.147	0.0619	1.0507	0.1564E 07	18754.8	5200.9	3147.5	1.6524	0.1947E-04	0.4340E-02	0.1570	0.6446	1054.8	20.0
30.0	15.642	0.0639	1.0489	0.1616E 07	18929.2	5200.2	3146.8	1.6525	0.1991E-04	0.4583E-02	0.1603	0.6458	1070.8	30.0
40.0	15.168	0.0659	1.0471	0.1668E 07	19098.0	5199.5	3146.2	1.6526	0.2036E-04	0.4832E-02	0.1636	0.6470	1086.5	40.0
50.0	14.722	0.0679	1.0455	0.1720E 07	19261.4	5198.8	3145.6	1.6527	0.2080E-04	0.5086E-02	0.1668	0.6480	1102.0	50.0
60.0	14.301	0.0699	1.0439	0.1772E 07	19419.9	5198.3	3145.0	1.6529	0.2123E-04	0.5345E-02	0.1701	0.6490	1117.3	60.0
70.0	13.904	0.0719	1.0425	0.1824E 07	19573.6	5197.8	3144.5	1.6530	0.2167E-04	0.5610E-02	0.1733	0.6499	1132.4	70.0
80.0	13.528	0.0739	1.0411	0.1876E 07	19722.9	5197.3	3143.9	1.6531	0.2209E-04	0.5879E-02	0.1765	0.6507	1147.4	80.0
90.0	13.172	0.0759	1.0398	0.1928E 07	19868.0	5196.9	3143.4	1.6533	0.2252E-04	0.6154E-02	0.1797	0.6514	1162.1	90.0
100.0	12.834	0.0779	1.0386	0.1980E 07	20009.2	5196.5	3142.9	1.6534	0.2294E-04	0.6434E-02	0.1828	0.6521	1176.6	100.0
110.0	12.513	0.0799	1.0374	0.2032E 07	20146.6	5196.2	3142.4	1.6535	0.2335E-04	0.6719E-02	0.1860	0.6528	1191.0	110.0
120.0	12.207	0.0819	1.0363	0.2084E 07	20280.5	5195.9	3142.0	1.6537	0.2377E-04	0.7009E-02	0.1891	0.6534	1205.2	120.0
130.0	11.917	0.0839	1.0353	0.2136E 07	20411.0	5195.6	3141.5	1.6538	0.2417E-04	0.7303E-02	0.1922	0.6539	1219.3	130.0
140.0	11.639	0.0859	1.0343	0.2188E 07	20538.3	5195.3	3141.1	1.6540	0.2458E-04	0.7603E-02	0.1952	0.6545	1233.2	140.0
150.0	11.375	0.0879	1.0334	0.2240E 07	20662.5	5195.0	3140.7	1.6541	0.2498E-04	0.7907E-02	0.1983	0.6550	1246.9	150.0
160.0	11.122	0.0899	1.0325	0.2292E 07	20783.9	5194.8	3140.3	1.6543	0.2538E-04	0.8217E-02	0.2013	0.6554	1260.6	160.0
170.0	10.880	0.0919	1.0316	0.2344E 07	20902.4	5194.6	3139.9	1.6544	0.2578E-04	0.8531E-02	0.2043	0.6558	1274.0	170.0
180.0	10.648	0.0939	1.0308	0.2396E 07	21018.4	5194.4	3139.5	1.6545	0.2618E-04	0.8849E-02	0.2073	0.6563	1287.3	180.0
190.0	10.426	0.0959	1.0300	0.2448E 07	21131.7	5194.2	3139.1	1.6547	0.2657E-04	0.9173E-02	0.2103	0.6566	1300.5	190.0
200.0	10.213	0.0979	1.0292	0.2500E 07	21242.7	5194.1	3138.8	1.6548	0.2696E-04	0.9501E-02	0.2133	0.6570	1313.6	200.0
210.0	10.009	0.0999	1.0285	0.2552E 07	21351.3	5193.9	3138.4	1.6550	0.2734E-04	0.9834E-02	0.2162	0.6573	1326.5	210.0
220.0	9.812	0.1019	1.0278	0.2603E 07	21457.7	5193.8	3138.1	1.6551	0.2772E-04	0.1017E-01	0.2191	0.6576	1339.4	220.0
230.0	9.624	0.1039	1.0272	0.2655E 07	21562.0	5193.7	3137.7	1.6552	0.2811E-04	0.1051E-01	0.2221	0.6579	1352.0	230.0
240.0	9.442	0.1059	1.0265	0.2707E 07	21664.2	5193.5	3137.4	1.6554	0.2848E-04	0.1086E-01	0.2249	0.6582	1364.6	240.0
250.0	9.267	0.1079	1.0259	0.2759E 07	21764.4	5193.4	3137.1	1.6555	0.2886E-04	0.1121E-01	0.2278	0.6585	1377.1	250.0
260.0	9.098	0.1099	1.0254	0.2811E 07	21862.8	5193.3	3136.8	1.6556	0.2924E-04	0.1157E-01	0.2307	0.6588	1389.5	260.0
270.0	8.936	0.1119	1.0248	0.2863E 07	21959.3	5193.2	3136.5	1.6558	0.2961E-04	0.1193E-01	0.2335	0.6590	1401.7	270.0
280.0	8.779	0.1139	1.0243	0.2915E 07	22054.0	5193.1	3136.2	1.6559	0.2998E-04	0.1229E-01	0.2364	0.6592	1413.9	280.0
290.0	8.627	0.1159	1.0237	0.2967E 07	22147.1	5193.1	3135.9	1.6560	0.3034E-04	0.1266E-01	0.2392	0.6594	1425.9	290.0
300.0	8.481	0.1179	1.0232	0.3019E 07	22238.5	5193.0	3135.6	1.6561	0.3071E-04	0.1304E-01	0.2420	0.6597	1437.9	300.0
310.0	8.339	0.1199	1.0228	0.3071E 07	22328.3	5192.9	3135.4	1.6562	0.3107E-04	0.1341E-01	0.2448	0.6599	1449.7	310.0
320.0	8.202	0.1219	1.0223	0.3123E 07	22416.6	5192.9	3135.1	1.6564	0.3143E-04	0.1380E-01	0.2476	0.6600	1461.5	320.0
330.0	8.070	0.1239	1.0218	0.3175E 07	22503.4	5192.8	3134.8	1.6565	0.3179E-04	0.1418E-01	0.2503	0.6602	1473.2	330.0
340.0	7.942	0.1259	1.0214	0.3227E 07	22588.8	5192.8	3134.6	1.6566	0.3215E-04	0.1457E-01	0.2531	0.6604	1484.8	340.0
350.0	7.818	0.1279	1.0210	0.3279E 07	22672.8	5192.7	3134.4	1.6567	0.3251E-04	0.1497E-01	0.2558	0.6606	1496.3	350.0
360.0	7.697	0.1299	1.0206	0.3331E 07	22755.5	5192.7	3134.1	1.6568	0.3286E-04	0.1537E-01	0.2585	0.6607	1507.7	360.0
370.0	7.580	0.1319	1.0202	0.3382E 07	22836.8	5192.6	3133.9	1.6569	0.3321E-04	0.1577E-01	0.2612	0.6609	1519.0	370.0
380.0	7.467	0.1339	1.0198	0.3434E 07	22916.9	5192.6	3133.7	1.6570	0.3356E-04	0.1618E-01	0.2639	0.6610	1530.2	380.0
390.0	7.357	0.1359	1.0194	0.3486E 07	22995.8	5192.6	3133.4	1.6571	0.3391E-04	0.1659E-01	0.2666	0.6611	1541.4	390.0
400.0	7.250	0.1379	1.0191	0.3538E 07	23073.6	5192.5	3133.2	1.6572	0.3426E-04	0.1701E-01	0.2693	0.6613	1552.5	400.0
410.0	7.147	0.1399	1.0187	0.3590E 07	23150.1	5192.5	3133.0	1.6574	0.3460E-04	0.1743E-01	0.2720	0.6614	1563.5	410.0
420.0	7.046	0.1419	1.0184	0.3642E 07	23225.6	5192.5	3132.8	1.6575	0.3495E-04	0.1786E-01	0.2746	0.6615	1574.4	420.0
430.0	6.948	0.1439	1.0181	0.3694E 07	23300.0	5192.5	3132.6	1.6576	0.3529E-04	0.1828E-01	0.2772	0.6616	1585.3	430.0
440.0	6.853	0.1459	1.0178	0.3746E 07	23373.3	5192.4	3132.4	1.6577	0.3563E-04	0.1872E-01	0.2799	0.6618	1596.1	440.0

PRESSURE =   103.420 BAR   (1500 psia)

T	RHO	V	Z	H	S	CP	CV	CP/CV	VISCD	VISCK	K	PR	C*	T
450.0	6.760	0.1479	1.0175	0.3798E 07	23445.6	5192.4	3132.2	1.6578	0.3597E-04	0.1916E-01	0.2825	0.6619	1606.8	450.0
460.0	6.670	0.1499	1.0172	0.3850E 07	23516.9	5192.4	3132.0	1.6578	0.3631E-04	0.1960E-01	0.2851	0.6620	1617.4	460.0
470.0	6.582	0.1519	1.0169	0.3902E 07	23587.3	5192.4	3131.8	1.6579	0.3664E-04	0.2004E-01	0.2877	0.6621	1628.0	470.0
480.0	6.496	0.1539	1.0166	0.3954E 07	23656.6	5192.4	3131.7	1.6580	0.3698E-04	0.2049E-01	0.2903	0.6622	1638.5	480.0
490.0	6.413	0.1559	1.0163	0.4006E 07	23725.1	5192.4	3131.5	1.6581	0.3731E-04	0.2095E-01	0.2928	0.6623	1649.0	490.0
500.0	6.331	0.1579	1.0161	0.4058E 07	23792.7	5192.4	3131.3	1.6582	0.3764E-04	0.2140E-01	0.2954	0.6623	1659.4	500.0
510.0	6.252	0.1599	1.0158	0.4109E 07	23859.5	5192.4	3131.1	1.6583	0.3797E-04	0.2186E-01	0.2980	0.6624	1669.7	510.0
520.0	6.175	0.1619	1.0156	0.4161E 07	23925.3	5192.4	3131.0	1.6584	0.3830E-04	0.2233E-01	0.3005	0.6625	1679.9	520.0
530.0	6.099	0.1640	1.0153	0.4213E 07	23990.4	5192.4	3130.8	1.6585	0.3863E-04	0.2280E-01	0.3030	0.6626	1690.1	530.0
540.0	6.026	0.1660	1.0151	0.4265E 07	24054.6	5192.4	3130.7	1.6586	0.3895E-04	0.2327E-01	0.3056	0.6627	1700.3	540.0
550.0	5.954	0.1680	1.0148	0.4317E 07	24118.1	5192.4	3130.5	1.6586	0.3928E-04	0.2375E-01	0.3081	0.6627	1710.4	550.0
560.0	5.884	0.1700	1.0146	0.4369E 07	24180.8	5192.4	3130.4	1.6587	0.3960E-04	0.2423E-01	0.3106	0.6628	1720.4	560.0
570.0	5.815	0.1720	1.0144	0.4421E 07	24242.8	5192.4	3130.2	1.6588	0.3993E-04	0.2472E-01	0.3131	0.6629	1730.3	570.0
580.0	5.748	0.1740	1.0142	0.4473E 07	24304.0	5192.4	3130.1	1.6589	0.4025E-04	0.2521E-01	0.3156	0.6629	1740.2	580.0
590.0	5.683	0.1760	1.0140	0.4525E 07	24364.5	5192.4	3129.9	1.6590	0.4057E-04	0.2570E-01	0.3181	0.6630	1750.1	590.0
600.0	5.619	0.1780	1.0138	0.4577E 07	24424.3	5192.4	3129.8	1.6590	0.4089E-04	0.2620E-01	0.3205	0.6631	1759.9	600.0
610.0	5.556	0.1800	1.0136	0.4629E 07	24483.4	5192.4	3129.7	1.6591	0.4120E-04	0.2670E-01	0.3230	0.6631	1769.6	610.0
620.0	5.495	0.1820	1.0134	0.4681E 07	24541.9	5192.4	3129.5	1.6592	0.4152E-04	0.2720E-01	0.3254	0.6632	1779.3	620.0
630.0	5.435	0.1840	1.0132	0.4733E 07	24599.7	5192.4	3129.4	1.6593	0.4184E-04	0.2771E-01	0.3279	0.6633	1789.0	630.0
640.0	5.377	0.1860	1.0130	0.4785E 07	24656.9	5192.5	3129.3	1.6593	0.4215E-04	0.2822E-01	0.3303	0.6633	1798.6	640.0
650.0	5.319	0.1880	1.0128	0.4836E 07	24713.4	5192.5	3129.1	1.6594	0.4246E-04	0.2874E-01	0.3328	0.6634	1808.1	650.0
660.0	5.263	0.1900	1.0127	0.4888E 07	24769.4	5192.5	3129.0	1.6595	0.4278E-04	0.2926E-01	0.3352	0.6634	1817.6	660.0
670.0	5.208	0.1920	1.0125	0.4940E 07	24824.7	5192.5	3128.9	1.6595	0.4309E-04	0.2978E-01	0.3376	0.6635	1827.0	670.0
680.0	5.155	0.1940	1.0123	0.4992E 07	24879.5	5192.5	3128.8	1.6596	0.4340E-04	0.3031E-01	0.3400	0.6635	1836.4	680.0
690.0	5.102	0.1960	1.0122	0.5044E 07	24933.7	5192.5	3128.7	1.6597	0.4371E-04	0.3084E-01	0.3424	0.6636	1845.8	690.0
700.0	5.050	0.1980	1.0120	0.5096E 07	24987.3	5192.6	3128.5	1.6597	0.4402E-04	0.3138E-01	0.3448	0.6636	1855.1	700.0
710.0	5.000	0.2000	1.0119	0.5148E 07	25040.4	5192.6	3128.4	1.6598	0.4432E-04	0.3191E-01	0.3472	0.6636	1864.3	710.0
720.0	4.950	0.2020	1.0117	0.5200E 07	25093.0	5192.6	3128.3	1.6599	0.4463E-04	0.3246E-01	0.3495	0.6637	1873.5	720.0
730.0	4.901	0.2040	1.0115	0.5252E 07	25145.0	5192.6	3128.2	1.6599	0.4493E-04	0.3300E-01	0.3519	0.6637	1882.7	730.0
740.0	4.854	0.2060	1.0114	0.5304E 07	25196.5	5192.6	3128.1	1.6600	0.4524E-04	0.3355E-01	0.3543	0.6638	1891.8	740.0
750.0	4.807	0.2080	1.0113	0.5356E 07	25247.5	5192.6	3128.0	1.6600	0.4554E-04	0.3411E-01	0.3566	0.6638	1900.9	750.0
760.0	4.761	0.2100	1.0111	0.5408E 07	25298.0	5192.7	3127.9	1.6601	0.4584E-04	0.3466E-01	0.3590	0.6639	1909.9	760.0
770.0	4.716	0.2120	1.0110	0.5460E 07	25348.0	5192.7	3127.8	1.6602	0.4614E-04	0.3522E-01	0.3613	0.6639	1918.9	770.0
780.0	4.672	0.2140	1.0109	0.5511E 07	25397.6	5192.7	3127.7	1.6602	0.4645E-04	0.3579E-01	0.3636	0.6639	1927.9	780.0
790.0	4.629	0.2160	1.0107	0.5563E 07	25446.6	5192.7	3127.6	1.6603	0.4674E-04	0.3636E-01	0.3660	0.6640	1936.8	790.0
800.0	4.586	0.2180	1.0106	0.5615E 07	25495.3	5192.7	3127.5	1.6603	0.4704E-04	0.3693E-01	0.3683	0.6640	1945.7	800.0
810.0	4.544	0.2201	1.0105	0.5667E 07	25543.4	5192.8	3127.4	1.6604	0.4734E-04	0.3750E-01	0.3706	0.6640	1954.5	810.0
820.0	4.503	0.2221	1.0103	0.5719E 07	25591.1	5192.8	3127.3	1.6604	0.4764E-04	0.3808E-01	0.3729	0.6641	1963.3	820.0
830.0	4.463	0.2241	1.0102	0.5771E 07	25638.4	5192.8	3127.3	1.6605	0.4793E-04	0.3866E-01	0.3752	0.6641	1972.1	830.0
840.0	4.423	0.2261	1.0101	0.5823E 07	25685.3	5192.8	3127.2	1.6605	0.4823E-04	0.3925E-01	0.3775	0.6641	1980.8	840.0
850.0	4.385	0.2281	1.0100	0.5875E 07	25731.7	5192.8	3127.1	1.6606	0.4852E-04	0.3984E-01	0.3798	0.6642	1989.5	850.0
860.0	4.346	0.2301	1.0099	0.5927E 07	25777.8	5192.9	3127.0	1.6607	0.4882E-04	0.4043E-01	0.3820	0.6642	1998.1	860.0
870.0	4.309	0.2321	1.0098	0.5979E 07	25823.4	5192.9	3126.9	1.6607	0.4911E-04	0.4103E-01	0.3843	0.6642	2006.7	870.0
880.0	4.272	0.2341	1.0097	0.6031E 07	25868.6	5192.9	3126.8	1.6608	0.4940E-04	0.4163E-01	0.3866	0.6642	2015.3	880.0
890.0	4.236	0.2361	1.0095	0.6083E 07	25913.5	5192.9	3126.8	1.6608	0.4969E-04	0.4223E-01	0.3888	0.6643	2023.8	890.0