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# 熱水力解析用重水蒸気表作成プログラムの開発

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# 熱水力解析用重水蒸気表作成プログラムの開発

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重水の熱的物性値の文献を基に、ニュートン法による陰関数計算を用いて、重水の蒸気表作成プログラムを作成した。このプログラムは、熱水力解析コードの中で圧力とエンタルピを独立変数とする蒸気表が必要とされるため、圧力とエンタルピで表が出力される。同時に、実用的に簡単な熱計算でも使用できるように温度と圧力を独立変数とする蒸気表を出力できるようにしている。

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# Program for Steam Table of Heavy Water for Thermohydrodynamic Analysis

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On the basis of open literatures about thermal properties of heavy water, a computer code has been developed for steam tables of heavy water by means of the multi-dimensional Newton's method.

Two independent variables of the tables are settled to be pressure and enthalpy as well as pressure and temperature in order to apply the code to the Thermohydrodynamic Analysis and order simple thermal calculations.

Keywords : Heavy Water, Thermal Property Value, Newton's Method, Thermohydrodynamic Analysis Code, Steam Table

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## 1．まえがき

重水（$D_2O$）は、水素の同位体であり、重水炉、新型転換炉や、さらには核融合炉において冷却材などとして重要な物質である。Urey によって重水が発見されたのが 1932 年のことであるから、半世紀以上がたったことになる。重水の熱物性値の研究は 1970 年代に入ってから急激に進み、広い範囲にわたってデータがそろってきた。国際蒸気物性協会（The International Association for the Properties of Steam, IAPS と略す）でも、重水についての推奨値の必要性を考え、情報量の増え方もあわせて検討した結果、重水の諸性質についても推奨値を定めていくことになった[1]。

本報告書は、軽水炉を対象とする事故解析コードを重水炉であるＪＲＲ－２の安全解析に使用するため、軽水の蒸気表を重水に置換することを目的として作成した。

また、使用した重水の蒸気表は文献[2]を基に整理し、ニュートン法による陰関数計算を用いて重水の基本蒸気表作成プログラムを作成した。解析コードによっては、圧力とエンタルピを独立変数とする蒸気表を必要とする。本プログラムが作成する蒸気表の独立変数として、圧力とエンタルピを選ぶことも圧力と温度を選ぶことも可能である。

## 2．重水の状態式

重水基本蒸気表作成上、ベースとなっている重水の状態式について述べる。

### 2．1 重水の基礎状態式[2]

重水の熱力学的性質に関する量が次式のようにわかりやすい形で表わせる。

$$\varphi = \varphi(\rho,\ T) \qquad (2.1)$$

ただし、$\varphi$：ヘルムホルツの自由エネルギ

$\rho$：密度

T：絶対温度

この式は、圧力に関しては、約 100MPa まで、温度に関しては、約 800℃までの液体もしくは蒸気について、その単相状態を表現することができる。また、式（2.1）によって、飽和状態を含む熱力学的状態量を実験精度内で求めることができる。

蒸気圧に関しては、データに基づいて、その実験的不確かさは、低温領域で 0.1%以内を期待できるようになってきている。また、液相における圧力、比容積、温度のデータも、比較的豊富であるが、同位体の含有量の不確かさのために低温領域においてさえ液体の比容積の不確定幅は、一般に 0.01%程度である。

実験的に決定されたビリアル係数は、臨界領域はもちろん、超臨界領域の PVT データにも利用できる。利用できる実験データの参考資料は、文献（３）に示されている。

基礎式の公式化の利点は、PVT とエネルギ、エンタルピ、エントロピ計算の完全な整合性を保証することにある。さらにそれは、二相平衡条件と一緒に用いられた時、蒸気も含む形となる。また、この式はビリアル係数、ジュールトムソン係数、等温圧縮率、音速を含む他の全ての熱力学的変数も与えることができる。原則として、これらの変数に関する全てのデータは、定式化できる。

定式化にあたって、高速計算を導入することにより、現在使用しうるすべてのデータに基づいて、液相及び気相を包括する単一の式を決定することが期待できる。また、定式化に先立って、飽和水比容積（$V_f$）、飽和蒸気比容積（$V_g$）、飽和水エンタルピ（$h_f$）、飽和蒸気エンタルピ（$h_g$）及び飽和圧力を決定し、文献（４）と（５）は、重水の蒸気圧と飽和状態量の定式化について示している。

その式の形は、以下の様になる。

$$\varphi = \varphi_0(T) + RT[\ln\rho + \rho Q(\rho,\ T)] \quad \text{----------(2.2)}$$

$$Q = (\tau - \tau_c)\sum_{j=1}^{7}(\tau - \tau_{aj})^{j-2} \times \left[\sum_{i=1}^{8} A_{ij}(\rho - \rho_{aj})^{i-1} + e^{-E\rho}\sum_{i=9}^{10} A_{ij}\rho^{i-9}\right] \quad \text{----------(2.3)}$$

$$\varphi_0(T) = \sum_{i=1}^{6} C_i\left(\frac{T}{1000}\right)^{i-1} + C_7 \ln T + \frac{C_8 T \ln T}{1000} \quad \text{----------(2.4)}$$

ここで、単位は以下に示す通りである。

$\varphi, \varphi_0$　　ヘルムホルツの自由エネルギ kJ/kg･K

T　　絶対温度 K

$\tau$　　1000/T　$K^{-1}$

$\rho$　　密度　$10^3$ $kg/m^3$

R＝0.41515 kJ/(kg･K) ----------(2.5)

また、(2.3)式における定数を以下に示す。

$\tau_c$＝1.553　　E＝4.3

$\tau_{aj}$＝1.553　(j＝1)　　$\rho_{aj}$＝0.7　(j＝1)

$\tau_{aj}$＝2.53　(j＞1)　　$\rho_{aj}$＝1.1　(j＞1)

(2.4)式の係数$C_i$は、次の様に与えられる。

$C_1$＝1866.73　　$C_5$＝100.1333

$C_2$＝4661.9　　$C_6$＝－13.135

$C_3$＝64.605　　$C_7$＝0.32684

$C_4$＝－284.8833　　$C_8$＝－1211.253

係数 Aij の値は、Table. 2. 1に示す。

係数$C_1$と$C_2$は、液相の三重点において、内部エネルギとヘルムホルツの自由エネルギの両方がゼロになるように決定した。

基礎式から、微分法によって次の量が得られる。

圧力[MPa]

$$P = \rho^2\left(\frac{\partial\varphi}{\partial\rho}\right)_\tau$$

$$= \rho RT\left[1+\rho Q+\rho^2\left(\frac{\partial Q}{\partial\rho}\right)_\tau\right] \quad \text{----------(2.5)}$$

内部エネルギ[kJ/kg]

$$u = \left[\frac{\partial(\varphi,\tau)}{\partial\tau}\right]_\rho$$

$$= \frac{d}{d\tau}(\varphi_0,\tau)+RT\rho\tau\left(\frac{\partial Q}{\partial\tau}\right)_\rho \quad \text{----------(2.6)}$$

エントロピ[kJ/kg・K]

$$s = -\left(\frac{\partial\varphi}{\partial T}\right)_\rho$$

$$= -R\left[\ln\rho+\rho Q+\rho T\frac{\partial Q}{\partial T}\right]-\frac{d\varphi_0}{dT} \quad \text{----------(2.7)}$$

エンタルピ[KJ/kg]

$$h = u+P/\rho$$

$$= RT\left[1+\rho Q-\rho T\frac{\partial Q}{\partial T}+\rho^2\frac{\partial Q}{\partial\rho}\right]+\frac{d(\varphi_0,\tau)}{d\tau} \quad \text{----------(2.8)}$$

比熱[kJ/kg・K]

$$C_P = \left(\frac{\partial h}{\partial T}\right)_\rho$$

$$= \left(\frac{\partial h}{\partial T}\right)_\rho - \frac{\left(\frac{\partial h}{\partial\rho}\right)_T\left(\frac{\partial P}{\partial T}\right)_\rho}{\left(\frac{\partial\rho}{\partial\rho}\right)_T} \quad \text{----------(2.9)}$$

$$C_V = \left(\frac{\partial u}{\partial T}\right)_\rho \quad \text{----------(2.10)}$$

第2ビリアル係数[$(10^3 kg/m^3)^{-1}$]

$$B = Q \quad \text{----------(2.11)}$$

第3ビリアル係数[$(10^3 kg/m^3)^{-2}$]

$$C = \left(\frac{\partial Q}{\partial\rho}\right)_\tau \quad \text{----------(2.12)}$$

ジュールトムソン係数[K/MPa]

$$\mu = \left(\frac{\partial T}{\partial P}\right)_h$$

$$= \left(\frac{\partial h}{\partial P}\right)_T \frac{1}{C_P} = \frac{1}{\rho C_P}\left[\frac{T\left(\frac{\partial P}{\partial T}\right)_\rho}{\rho\left(\frac{\partial P}{\partial \rho}\right)_T} - 1\right] \quad \text{---------- (2. 13)}$$

等温圧縮率[$(MPa)^{-1}$]

$$K_T = \left[\rho\left(\frac{\partial P}{\partial \rho}\right)_T^{-1}\right] \quad \text{---------- (2. 14)}$$

音速[m/s]

$$a = \left[\frac{10^3}{\left(\frac{\partial P}{\partial \rho}\right)_T} - \frac{10^3 T}{C_P \rho^2}\frac{\left(\frac{\partial P}{\partial T}\right)_\rho^2}{\left(\frac{\partial P}{\partial \rho}\right)_T^2}\right]^{-\frac{1}{2}} \quad \text{---------- (2. 15)}$$

蒸気圧は、次の条件を満足する状態式から得られる。

$$(\varphi + \frac{P}{\rho})_f = (\varphi + \frac{P}{\rho})_g \quad \text{---------- (2. 16)}$$

ここで、f は飽和水、g は飽和蒸気相を示す。

臨界条件

臨界条件は以下の様に表わされる。

$P_c$=21.66MPa

$T_c$=370.66℃(IPTS 48)

=370.74℃(IPTS 68)

$\rho_c$=358kg/m$^3$

三重点

三重点は、次の様に定義される。

$\theta$ =3.8℃$_{48}$=3.8℃$_{68}$

$\rho_f$=1105.4kg/m$^3$

この状態において、$\mu_f$=0、$\varphi_f$ =0 となる。

重水の蒸気圧

(2.16)式と(2.2)式は、三重点から臨界点までのすべての温度範囲における蒸気圧を規定しているが、より使用性にすぐれた式として、文献(5)は、(2.17)式を提案している。(2.17)式によれば、先の $\phi$ の式から得られる蒸気圧と 0.02%の精度で一致する値を得ることができる。

$$\ln\frac{P}{P_C}=\frac{T_C}{T}(\alpha\tau+\alpha_2\tau^{1.9}+\alpha_4\tau^2+\alpha_{11}\tau^{5.5}+\alpha_{20}\tau^{10}) \quad \text{---------- (2.17)}$$

$$\tau=1-\frac{T}{T_c}$$

Tc=643.89K(IPTS68)

Pc=21.66MPa

$\alpha_1=-7.81583$　　$\alpha_{11}=-3.92488$

$\alpha_2=17.6012$　　$\alpha_{20}=4.19174$

$\alpha_4=-18.1747$

## 2．2 重水データの作成のための誘導式

重水データ作成のためには、2．1節で説明した重水の熱力学的状態式を変形する必要があるので、ここではその誘導式について述べる。

### 2．2．1 熱力学的状態量

下線の引いてある微分量については、後の（4）で述べる。

ヘルムホルツの自由エネルギ

$$\varphi=\varphi_0(T)+RT[\ln\rho+\rho Q(\rho,T)]$$

$$Q=(\tau-\tau_C)\sum_{j=1}^{7}(\tau-\tau_{aj})^{j-2}\times\left[\sum_{i=1}^{8}A_{ij}(\rho-\rho_{aj})^{i-1}+e^{-E\rho}\sum_{i=9}^{10}A_{ij}\rho^{i-9}\right]$$

$$\varphi_0(T)=\sum_{i=1}^{6}Ci\left(\frac{T}{1000}\right)^{i-1}+C_7\ln T+\frac{C_8T\ln T}{1000}$$

圧力

$$P=\rho RT\left[1+\rho Q+\rho^2\underline{\left(\frac{\partial Q}{\partial\rho}\right)_\tau}\right]$$

内部エネルギ

$$u=\frac{d}{d\tau}(\varphi_0\tau)+RT\rho T\tau\left(\frac{\partial Q}{\partial\tau}\right)_\rho$$

$$=\varphi_0+\tau\underline{\frac{d\varphi_0}{d\tau}}+1000R\rho\underline{\left(\frac{\partial Q}{\partial\tau}\right)_\rho}$$

エントロピ

$$S=-R\left[\ln\rho+\rho Q+\rho T\left(\frac{\partial Q}{\partial T}\right)_\rho\right]-\frac{d\varphi_0}{d\tau}$$

$$=-R\left[\ln\rho+\rho Q-\rho\tau\underline{\left(\frac{\partial Q}{\partial\tau}\right)_\rho}\right]-\underline{\frac{d\varphi_0}{d\tau}}$$

エンタルピ

$$h = RT\left[1 + \rho Q + \rho T\left(\frac{\partial Q}{\partial \tau}\right)_{\rho} + \rho^2\left(\frac{\partial Q}{\partial \rho}\right)_{\tau}\right] + \frac{d(\varphi_0 \tau)}{d\tau}$$

$$= RT\left[1 + \rho Q + \rho T\left(\frac{\partial Q}{\partial \tau}\right)_{\rho} + \rho^2\left(\frac{\partial Q}{\partial \rho}\right)_{\tau}\right] + \varphi_0 + \tau\frac{d\varphi_0}{d\tau}$$

定圧比熱

$$C_P = \left(\frac{\partial h}{\partial T}\right)_P$$

$$= \left(\frac{\partial h}{\partial T}\right)_{\rho} + \left(\frac{\partial h}{\partial \rho}\right)_T \left(\frac{\partial P}{\partial T}\right)_P$$

$$= \left(\frac{\partial h}{\partial T}\right)_{\rho} - \frac{\left(\frac{\partial h}{\partial \rho}\right)_T \left(\frac{\partial P}{\partial T}\right)_{\rho}}{\left(\frac{\partial P}{\partial \rho}\right)_T}$$

定容比熱

$$C_v = \left(\frac{\partial u}{\partial T}\right)_{\rho}$$

$$= -\frac{\tau^2}{1000}\left(\frac{\partial u}{\partial \tau}\right)_P$$

$$= -\frac{\tau^2}{1000}\left[2\left(\frac{d\varphi_0}{d\tau}\right)_{\rho} + \tau\left(\frac{d^2\varphi_0}{d\tau^2}\right)_{\rho} + 1000R\rho\left(\frac{\partial^2 Q}{\partial \tau^2}\right)_{\rho}\right]$$

第２ビリアル係数

$$B = Q$$

$$= (\tau - \tau_C)\sum_{j=1}^{7}(\tau - \tau_{aj})^{j-z}\sum_{i=1}^{8}A_{ij}(\rho - \rho_{aj})^{i-1}$$

第３ビリアル係数

$$C = \left(\frac{\partial Q}{\partial \rho}\right)_{\tau}$$

$$= (\tau - \tau_C)\sum_{j=1}^{7}(\tau - \tau_{aj})^{j-z}\sum_{i=1}^{8}(i-1)A_{ij}(\rho - \rho_{aj})^{i-2}$$

ジュールトムソン係数

$$\mu = \left(\frac{\partial h}{\partial \rho}\right)_h$$

$$= -\frac{\left(\frac{\partial h}{\partial P}\right)_T}{\left(\frac{\partial h}{\partial T}\right)_P} = \frac{1}{\rho C_P}\left[\frac{T\left(\frac{\partial P}{\partial T}\right)_\rho}{\rho\left(\frac{\partial P}{\partial \rho}\right)_T} - 1\right]$$

等温圧縮率

$$K_T = \left[\rho\left(\frac{\partial P}{\partial \rho}\right)_T\right]^{-1}$$

音速

$$a = \left[\frac{10^3}{\left(\frac{\partial P}{\partial \rho}\right)_T} - \frac{10^3 T}{C_P \rho^2}\frac{\left(\frac{\partial P}{\partial T}\right)_\rho^2}{\left(\frac{\partial P}{\partial \rho}\right)_T^2}\right]^{-\frac{1}{2}}$$

2．2．2 圧力とエンタルピを独立変数とする表を作成するときに使用する微分量

$$\left(\frac{\partial V}{\partial h}\right)_P = -\frac{1}{\rho^2\left(\frac{\partial h}{\partial \rho}\right)_P}$$

$$\left(\frac{\partial h}{\partial \rho}\right)_\rho = \left(\frac{\partial h}{\partial \rho}\right)_T - \frac{\left(\frac{\partial h}{\partial T}\right)_\rho\left(\frac{\partial P}{\partial \rho}\right)_T}{\left(\frac{\partial P}{\partial T}\right)_\rho}$$

$$\left(\frac{\partial h}{\partial T}\right)_\rho = -\frac{\tau^2}{1000}\left(\frac{\partial h}{\partial \tau}\right)_\rho$$

$$\left(\frac{\partial V}{\partial P}\right)_h = -\frac{1}{\rho^2\left(\frac{\partial P}{\partial \rho}\right)_h}$$

$$\left(\frac{\partial P}{\partial \rho}\right)_h = \underline{\left(\frac{\partial P}{\partial \rho}\right)_T} - \frac{\left(\frac{\partial P}{\partial T}\right)_\rho \underline{\left(\frac{\partial h}{\partial \rho}\right)_T}}{\underline{\left(\frac{\partial h}{\partial T}\right)_\rho}}$$

2．2．3 ニュートン法のための誘導式

作成プログラムにおいてニュートン法による計算過程に使用した変数 $f_1$、$f_2$ を（第3章を参照のこと）に関する微分式を以下に示す。

まず $\underline{f_1 = P(\rho, T) - P_{in}}$ について述べる。ただし、$P_{in}$ は入力データとする。

$$\left(\frac{\partial f_1}{\partial \rho}\right)_h = \left(\frac{\partial f_1}{\partial \rho}\right)_T + \left(\frac{\partial f_1}{\partial T}\right)_\partial \left(\frac{\partial T}{\partial \rho}\right)_h$$

$$= \underline{\left(\frac{\partial f_1}{\partial \rho}\right)_T} - \frac{\left(\frac{\partial f_1}{\partial T}\right)_\rho \left(\frac{\partial h}{\partial \rho}\right)_T}{\underline{\left(\frac{\partial h}{\partial T}\right)_\rho}}$$

$$\left(\frac{\partial f_1}{\partial T}\right)_h = \left(\frac{\partial f_1}{\partial \rho}\right)_T \left(\frac{\partial \rho}{\partial T}\right)_h + \left(\frac{\partial f_1}{\partial T}\right)_\rho$$

$$= \left(\frac{\partial f_1}{\partial T}\right)_\rho - \frac{\left(\frac{\partial f_1}{\partial \rho}\right)_T \left(\frac{\partial h}{\partial T}\right)_\rho}{\underline{\left(\frac{\partial h}{\partial \rho}\right)_T}}$$

$$\left(\frac{\partial f_1}{\partial \rho}\right)_T = RT\left[1 + 2\rho Q + 4\rho^2 \underline{\left(\frac{\partial Q}{\partial \rho}\right)_\tau} + \rho^3 \underline{\left(\frac{\partial^2 Q}{\partial \rho^2}\right)_\tau}\right]$$

$$\left(\frac{\partial f_1}{\partial T}\right)_\rho = \rho R\left[1 + \rho Q + \rho^2 \underline{\left(\frac{\partial Q}{\partial \rho}\right)_\tau} - \rho\tau \underline{\left(\frac{\partial Q}{\partial \tau}\right)_\rho} - \rho^2 \tau \underline{\frac{\partial}{\partial \tau}\left(\frac{\partial Q}{\partial \rho}\right)_\tau}\right]$$

つぎに $\underline{f_2 = h(\rho, T) - h_{in}}$ に関する式について述べる。ただし、$h_{in}$ は入力データとする。

$$\left(\frac{\partial f_2}{\partial \rho}\right)_P = \left(\frac{\partial f_2}{\partial \rho}\right)_T + \left(\frac{\partial f_2}{\partial T}\right)_\rho \left(\frac{\partial T}{\partial \rho}\right)_P$$

$$= \underline{\left(\frac{\partial f_2}{\partial \rho}\right)_T} - \frac{\left(\frac{\partial f_2}{\partial T}\right)_\rho \left(\frac{\partial P}{\partial \rho}\right)_T}{\underline{\left(\frac{\partial P}{\partial T}\right)_\rho}}$$

$$\left(\frac{\partial f_2}{\partial T}\right)_P = \left(\frac{\partial f_2}{\partial T}\right)_\rho \left(\frac{\partial \rho}{\partial T}\right)_P + \left(\frac{\partial f_2}{\partial T}\right)_\rho$$

$$= \underline{\left(\frac{\partial f_2}{\partial T}\right)_\rho} - \frac{\left(\frac{\partial f_2}{\partial \rho}\right)_T \left(\frac{\partial P}{\partial T}\right)_\rho}{\underline{\left(\frac{\partial P}{\partial \rho}\right)_T}}$$

変数 $f_1$、$f_2$については第３章に示す。

## ２．２．４ 熱力学的基礎式に関する微分量

1) $$\left(\frac{\partial Q}{\partial \tau}\right)_\rho = \left[\sum_{j=1}^{7}(\tau-\tau_{aj})^{j-2} + (\tau-\tau_c)\sum_{j=1}^{7}(j-2)(\tau-\tau_{aj})^{j-3}\right] \times \left[\sum_{i=1}^{8} A_{ij}(\rho-\rho_{aj})^{i-1} + e^{-E\rho}\sum_{i=9}^{10} A_{ij}\rho^{i-9}\right]$$

2) $$\left(\frac{\partial^2 Q}{\partial \tau^2}\right)_\rho = \left[2\sum_{j=1}^{7}(j-2)(\tau-\tau_{aj})^{j-3} + (\tau-\tau_c)\sum_{j=1}^{7}(j-2)(j-3)(\tau-\tau_{aj})^{j-4}\right] \times \left[\sum_{i=1}^{8} A_{ij}(\rho-\rho_{aj})^{i-1} + e^{-E\rho}\sum_{i=9}^{10} A_{ij}\rho^{i-9}\right]$$

3) $$\left(\frac{\partial Q}{\partial \rho}\right)_\tau = (\tau-\tau_c)\sum_{j=1}^{7}(\tau-\tau_{aj})^{j-2} \times \left[\sum_{i=1}^{8}(i-1)A_{ij}(\rho-\rho_{aj})^{i-2} - Ee^{-E\rho}\sum_{i=9}^{10} A^{ij}\rho^{i-9} + e^{-E\rho}\sum_{i=9}^{10}(i-9)A_{ij}\rho^{i-10}\right]$$

4) $$\left(\frac{\partial^2 Q}{\partial \rho^2}\right)_\tau = (\tau-\tau_c)\sum_{j=1}^{7}(\tau-\tau_{aj})^{j-2} \times \left[\sum_{i=1}^{8}(i-1)(i-2)A_{ij}(\rho-\rho_{aj})^{i-3} + E^2e^{-E\rho}\sum_{i=9}^{10} A_{ij}\rho^{i-9} - 2Ee^{-E\rho}\sum_{i=9}^{10}(i-9)A_{ij}\rho^{i-10} + Ee^{-E\rho}\sum_{i=9}^{10}(i-9)(i-10)A_{ij}\rho^{i-11}\right]$$

5) $$\frac{\partial}{\partial \tau}\left(\frac{\partial Q}{\partial \rho}\right)_\tau = \left[\sum_{i=1}^{7}(\tau-\tau_{aj})^{j-2} + (\tau-\tau_c)\sum_{j=1}^{7}(j-2)(\tau-\tau_{aj})^{j-3}\right]$$

$$\times\left[\sum_{i=1}^{8}(i-1)A_{ij}(\rho-\rho_{aj})^{i-2}-Ee^{-E\rho}\sum_{i=9}^{10}A_{ij}\rho^{i-9}+e^{-E\rho}\sum_{i=9}^{10}(i-9)A_{ij}\rho^{i-10}\right]$$

6) $$\frac{\partial}{\partial\rho}\left(\frac{\partial Q}{\partial\tau}\right)_{\rho}=\left[\sum_{i=1}^{7}(\tau-\tau_{aj})^{j-2}+(\tau-\tau_c)\sum_{j=1}^{7}(j-2)(\tau-\tau_{aj})^{j-3}\right]$$

$$\times\left[\sum_{i=1}^{8}(i-1)A_{ij}(\rho-\rho_{aj})^{i-2}-Ee^{-E\rho}\sum_{i=9}^{10}A_{ij}\rho^{i-9}+e^{-E\rho}\sum_{i=9}^{10}(i-9)A_{ij}\rho^{i-10}\right]$$

7) $$\left(\frac{\partial\varphi}{\partial\rho}\right)_{\tau}=RT\left[\frac{1}{\rho}+(\tau-\tau_c)\sum_{j=1}^{7}(\tau-\tau_{aj})^{j-2}\times\left\{\sum_{i=1}^{8}A_{ij}(\rho-\rho_{aj})^{i-1}\right.\right.$$

$$+\rho\sum_{i=1}^{8}A_{ij}(i-1)A_{ij}(\rho-\rho_{aj})^{i-2}-Ee^{-E\rho}\sum_{i=9}^{10}A_{ij}\rho^{i-8}$$

$$\left.\left.+e^{-E\rho}\sum_{i=9}^{10}A_{ij}\rho^{i-9}+e^{-E\rho}\sum_{i=9}^{10}(i-9)A_{ij}\rho^{i-9}\right\}\right]$$

8) $$\left(\frac{\partial\varphi}{\partial\rho^2}\right)=RT\left[-\frac{1}{\rho^2}+(\tau-\tau_c)\sum_{j=1}^{7}(\tau-\tau_{aj})^{j-2}\times\left\{2\sum_{i=1}^{8}(i-1)A_{ij}(\rho-\rho_{aj})^{i-2}\right.\right.$$

$$+\rho\sum_{i=1}^{8}(i-1)(i-2)A_{ij}(\rho-\rho_{aj})^{i-3}+E^2e^{-E\rho}\sum_{i=9}^{10}A_{ij}\rho^{i-8}-Ee^{-E\rho}\sum_{i=9}^{10}A_{ij}\rho^{i-9}$$

$$-Ee^{-E\rho}\sum_{i=9}^{10}(i-8)A_{ij}\rho^{i-9}-Ee^{-E\rho}\sum_{i=9}^{10}(i-9)A_{ij}\rho^{i-9}+e^{-E\rho}\sum_{i=9}^{10}(i-9)A_{ij}\rho^{i-10}$$

$$\left.\left.+e^{-E\rho}\sum_{i=9}^{10}(i-9)A_{ij}\rho^{i-10}\right\}\right]$$

9) $$\left(\frac{\partial^3\varphi}{\partial\rho^3}\right)_{\tau}=RT\left[\frac{2}{\rho^3}+(\tau-\tau_c)\sum_{j=1}^{7}(\tau-\tau_{aj})^{j-2}\times\left\{3\sum_{i=1}^{8}(i-1)(i-2)A_{ij}(\rho-\rho_{aj})^{i-3}\right.\right.$$

$$-E^3e^{-E\rho}\sum_{i=9}^{10}A_{ij}\rho^{i-8}+\rho\sum_{i=1}^{8}(i-1)(i-2)(i-3)A_{ij}(\rho-\rho_{aj})^{i-4}+E^2e^{-E\rho}\sum_{i=9}^{10}A_{ij}\rho^{i-9}$$

$$+2E^2e^{-E\rho}\sum_{i=9}^{10}(i-8)A_{ij}\rho^{i-9}+E^2e^{-E\rho}\sum_{i=9}^{10}(i-9)A_{ij}\rho^{i-9}$$

$$-2Ee^{-E\rho}\sum_{i=9}^{10}(i-9)A_{ij}\rho^{i-10}-Ee^{-E\rho}\sum_{i=9}^{10}(i-8)(i-9)A_{ij}\rho^{i-10}-2Ee^{-E\rho}\sum_{i=9}^{10}(i-9)^2A_{ij}\rho^{i-10}$$

$$\left.\left.+e^{-E\rho}\sum_{i=9}^{10}(i-9)(i-10)A_{ij}\rho^{i-11}+e^{-E\rho}\sum_{i=9}^{10}(i-9)^2(i-10)A_{ij}\rho^{i-11}\right\}\right]$$

10) $$\left(\frac{d\varphi_0}{dT}\right)=(i-1)\sum_{i=1}^{6}C_i\frac{T^{i-2}}{(1000)^{i-1}}+\frac{C_7}{T}+\frac{C_8}{1000}\ln T+\frac{C_8}{1000}$$

11) $$\left(\frac{d\varphi_0}{d\tau}\right)=-\frac{T^2}{1000}\left(\frac{d\varphi_0}{dT}\right)$$

12) $$\left(\frac{d^2\varphi_0}{dT^2}\right)=\sum_{i=1}^{6}(i-1)(i-2)C_i\frac{T^{i-3}}{(1000)^{i-1}}-\frac{C_7}{T^2}+\frac{C_8}{1000}\frac{1}{T}$$

13) $$\left(\frac{d^2\varphi_0}{d\tau^2}\right)=\frac{T^3}{10^6}\left\{2\left(\frac{d\varphi_0}{dT}\right)+T\left(\frac{d^2\varphi_0}{dT^2}\right)\right\}$$

14) $$\left(\frac{\partial h}{\partial\tau}\right)_\rho=-\frac{1000}{T^2}R\left[1+\rho Q+\rho\tau\left(\frac{\partial Q}{\partial\tau}\right)_\rho+\rho^2\left(\frac{\partial Q}{\partial\rho}\right)_\tau\right]+RT\left[2\rho\left(\frac{\partial Q}{\partial\tau}\right)_\rho+\rho\tau\left(\frac{\partial^2 Q}{\partial\tau^2}\right)_\rho+\rho^2\frac{\partial}{\partial\tau}\left(\frac{\partial Q}{\partial\rho}\right)_\tau\right]+2\left(\frac{d\varphi_0}{d\tau}\right)_\rho+\tau\left(\frac{d^2\varphi_0}{d\tau^2}\right)_\rho$$

15) $$\left(\frac{\partial h}{\partial\rho}\right)_T=RT\left[Q+3\rho\left(\frac{\partial Q}{\partial\rho}\right)_\tau+\tau\left(\frac{\partial Q}{\partial\tau}\right)_\rho+\rho\tau\frac{\partial}{\partial\rho}\left(\frac{\partial Q}{\partial\tau}\right)_\rho+\rho^2\left(\frac{\partial^2 Q}{\partial\rho^2}\right)\right]$$

16) $$\left(\frac{\partial\rho}{\partial T}\right)_\rho=\rho R\left[1+\rho Q+\rho^2\left(\frac{\partial Q}{\partial\rho}\right)_\tau-\rho\tau\left(\frac{\partial Q}{\partial\tau}\right)_\rho-\rho^2\tau\frac{\partial}{\partial\tau}\left(\frac{\partial Q}{\partial\rho}\right)_\tau\right]$$

17) $$\left(\frac{\partial P}{\partial\rho}\right)_T=RT\left[1+2\rho Q+4\rho^2\left(\frac{\partial Q}{\partial\rho}\right)_\tau+\rho^3\left(\frac{\partial^2 Q}{\partial\tau^2}\right)_\rho\right]$$

18) $$\left(\frac{\partial u}{\partial\tau}\right)_\rho=2RT\left(\frac{d\varphi_0}{d\tau}\right)_\rho+\tau\left(\frac{d^2\varphi_0}{d\tau^2}\right)_\rho+1000R\rho\left(\frac{\partial^2 Q}{\partial\tau^2}\right)_\rho$$

## 3．ニュートン法による陰関数計算

一般にn個の独立変数を含むn個の関数を

$$\mathrm{X}=\begin{pmatrix}x_1\\x_2\\\mathrm{M}\\x_n\end{pmatrix}、\quad \mathrm{F}=\begin{pmatrix}f_1\\f_2\\\mathrm{M}\\f_n\end{pmatrix}$$

と定義すると

$$\mathrm{F}(\mathrm{X})=0$$

が成立する、Xの値は、

$$F(X^K)+J(X^K)\Delta X^{K+1}=0$$

を解くことにより求まる。

ここでKはK回目のIterative Valueを示し、$J(X^K)$は、関数F(X)のJacobianである。

$$J(X^K)=J\left(\frac{\partial F}{\partial X}\right)^K$$

$$\Delta X^{K+1}=X^{K+1}-X^K$$

収束判定は、

$$\sum_{i=1}^{h}\left|\frac{\Delta X_i^{K+1}}{X_i^K}\right|<\varepsilon$$

により行う。

本計算では、次の2項目に関してニュートン法を適用した。

(1) 2.1節で示した圧力式（2.5）と蒸気圧の式（2.17）から該当温度における飽和蒸気の密度を求める。これは1次元問題である。(n=1)

$$f_1=P(\rho,T)-P_S(T)$$

初期値
- 飽和水　$\rho_{fs}^0=1105.460977D-3\left(10^3\,\mathrm{kg/m^3}\right)$
- 飽和蒸気　$\rho_{gs}^0=5.7447162\quad D-6\left(10^3\,\mathrm{kg/m^3}\right)$

(2) 2.1節で示した圧力の式（2.5）とエンタルピの式（2.8）から、圧力、エンタルピを独立変数として、密度、温度を求める。これは2次元問題である。(n=2)

$$f_1=P(\rho,T)-P_{in}$$
$$f_2=h(\rho,T)-h_{in}$$

初期値
- 未飽和水　$\rho^0=1105.460977D-3\left(10^3\,\mathrm{kg/m^3}\right)$
  $T^0=276.95(\mathrm{K})$
- 過熱蒸気　$\rho^0=5.7447162\quad D-6\left(10^3\,\mathrm{kg/m^3}\right)$
  $T^0=276.95(\mathrm{K})$

## 4．圧力と温度を独立変数とする重水の基本蒸気表作成プログラムの説明

重水の状態式から温度と圧力を独立変数とする蒸気表を出力するプログラム（Appendix 1）を作成した。

1）プログラムの概要

重水の基本蒸気表作成プログラムの概要は、以下の通りである。

(1) 入力データ（温度、圧力）を読み込む。

(2) 入力データ数に応じて、領域の割り当てを行う。

(3) 入力データの単位変換を行う。

(4) 温度基準飽和量を求める。

(5) 圧力基準飽和量を求める。

(6) 単相状態の熱力学的状態量を求める。

(7) (4)、(5)、(6)で求めた状態量の単位変換を行う。

(8) ファイル出力、リスト出力を行う。

2）入力データの説明

(1) Card1、カウントカード、Format(6I6)

| カラム | 内　　容 | 記号 |
|---|---|---|
| 1～6 | 未飽和水及び過熱蒸気の温度代表点数* | NT |
| 7～12 | 未飽和水及び過熱蒸気の圧力代表点数* | NP |
| 13～18 | 温度基準飽和量代表点数（NS≦NT） | NS |
| 19～24 | 圧力基準飽和量代表点数（NS2≦NP） | NS2 |
| 25～30 | 温度、圧力単位選択フラグ<br>iOPT=0 ; TEMP[℃], PRES[At]<br>iOPT≠0 ; TEMP[K], PRES[kPa] | iOPT |
| 31～36 | ＝0（必ず0を入力する） | iFLG |

(2) Card2、etc、温度カード、Format(6D12.5)

| カラム | 内　　容 | 記号 |
|---|---|---|
| 1～12 | 代表点温度（3.8℃≦T（I）≦800℃） | T（1） |
| ------- | T（I）を順に入力して行く。（I＝1～NT） | ------- |

(3) Card3、etc、圧力カード、Format(6D12.5)

| カラム | 内　　容 | 記号 |
|---|---|---|
| 1～12 | 代表点圧力（0.MPa＜P（J）≦100 MPa） | P（1） |
| ------- | P（J）を順に入力して行く。（I＝1～NP） | ------- |

＊） NT、NPは、未飽和水及び過熱蒸気の代表点の温度、圧力値ばかりでなく、温度基準飽和量、圧力基準飽和量の代表点温度であり、圧力である。

4）入力データの例

入力データの例をTable. 4.1に示す。

3）出力ファイルの内容

重水の基本蒸気表作成プログラムの出力は、1番ファイルに行われるが、Record1、2 のデータは、Format なしの Write 文で記録されるので、出力ファイルは、バイナリである。

その内容は、以下の通りである。

(1) Record1

| | 変数名 | 内　　容 |
|---|---|---|
| 1 | NT | 未飽和水及び過熱蒸気の温度代表点数 |
| 2 | NP | 未飽和水及び過熱蒸気の圧力代表点数 |
| 3 | NS | 温度基準飽和量代表点数 |
| 4 | NS2 | 圧力基準飽和量代表点数 |

(2) Record2

| | 変数名 | 内　　容 | |
|---|---|---|---|
| 1 | T(I)<br>(I=1～NT) | 代表点温度 | K |
| 2 | P(J)<br>(J=1～NP) | 代表点圧力 | kPa |
| 3 | *B(1, I) | 温度基準飽和圧力 | kPa |
| 4 | *B(2, I) | 温度基準飽和水比容積 | $m^3/kg$ |
| 5 | B(3, I) | 温度基準飽和水ヘルツホルムの自由エネルギ | kJ/kg･K |
| 6 | *B(4, I) | 温度基準飽和水内部エネルギ | kJ/kg |
| 7 | *B(5, I) | 温度基準飽和水エントロピ | kJ/kg･K |
| 8 | *B(6, I) | 温度基準飽和水エンタルピ | kJ/kg |
| 9 | B(7, I) | 温度基準飽和水定圧比熱 | kJ/kg･K |
| 10 | B(8, I) | 温度基準飽和水定容比熱 | kJ/kg･K |
| 11 | B(9, I) | 温度基準飽和水ジュールトムソン係数 | K/MPa |
| 12 | B(10, I) | 温度基準飽和水等温圧縮率 | 1/MPa |
| 13 | B(11, I) | 温度基準飽和水第２ビリアル係数 | $(10^3kg/m^3)^{-1}$ |
| 14 | B(12, I) | 温度基準飽和水第３ビリアル係数 | $(10^3kg/m^3)^{-2}$ |
| 15 | B(13, I) | 温度基準飽和水音速 | m/s |

| | | | |
|---|---|---|---|
| １６ | *B(14, I) | 温度基準飽和蒸気比容積 | $m^3/kg$ |
| １７ | B(15, I) | 温度基準飽和蒸気ヘルムホルツ自由エネルギ | kJ/kg･K |
| １８ | *B(16, I) | 温度基準飽和蒸気内部エネルギ | kJ/kg |
| １９ | *B(17, I) | 温度基準飽和蒸気エントロピ | kJ/kg･K |
| ２０ | *B(18, I) | 温度基準飽和蒸気エンタルピ | kJ/kg |
| ２１ | B(19, I) | 温度基準飽和蒸気定圧比熱 | kJ/kg･K |
| ２２ | B(20, I) | 温度基準飽和蒸気定容比熱 | kJ/kg･K |
| ２３ | B(21, I) | 温度基準飽和蒸気ジュールトムソン係数 | K/MPa |
| ２４ | B(22, I) | 温度基準飽和蒸気等温圧縮率 | 1/MPa |
| ２５ | B(23, I) | 温度基準飽和蒸気第２ビリアル係数 | $(10^3kg/m^3)^{-1}$ |
| ２６ | B(24, I) | 温度基準飽和蒸気第３ビリアル係数 | $(10^3kg/m^3)^{-2}$ |
| ２７ | B(25, I) | 温度基準飽和蒸気音速 | m/s |
| ２８ | *C(1, J) | 圧力基準飽和温度 | K |
| ２９ | *C(2, J) | 圧力基準飽和水比容積 | $m^3/kg$ |
| ３０ | C(3, J) | 圧力基準飽和水ヘルムホルツの自由エネルギ | kJ/kg･K |
| ３１ | *C(4, J) | 圧力基準飽和水内部エネルギ | kJ/kg |
| ３２ | *C(5, J) | 圧力基準飽和水エントロピ | kJ/kg･K |
| ３３ | *C(6, J) | 圧力基準飽和水エンタルピ | kJ/kg |
| ３４ | C(7, J) | 圧力基準飽和水定圧比熱 | kJ/kg･K |
| ３５ | C(8, J) | 圧力基準飽和水定容比熱 | kJ/kg･K |
| ３６ | C(9, J) | 圧力基準飽和水ジュールトムソン係数 | K/MPa |
| ３７ | C(10, J) | 圧力基準飽和水等温圧縮率 | 1/MPa |
| ３８ | C(11, J) | 圧力基準飽和水第２ビリアル係数 | $(10^3kg/m^3)^{-1}$ |
| ３９ | C(12, J) | 圧力基準飽和水第３ビリアル係数 | $(10^3kg/m^3)^{-2}$ |
| ４０ | C(13, J) | 圧力基準飽和水音速 | m/s |
| ４１ | *C(14, J) | 圧力基準飽和蒸気比容積 | $m^3/kg$ |

| | | | |
|---|---|---|---|
| 42 | C(15,J) | 圧力基準飽和蒸気ヘルムホルツの自由エネルギ | kJ/kg･K |
| 43 | *C(16,J) | 圧力基準飽和蒸気内部エネルギ | kJ/kg |
| 44 | *C(17,J) | 圧力基準飽和蒸気エントロピ | kJ/kg･K |
| 45 | *C(18,J) | 圧力基準飽和蒸気エンタルピ | kJ/kg |
| 46 | C(19,J) | 圧力基準飽和蒸気定圧比熱 | kJ/kg･K |
| 47 | C(20,J) | 圧力基準飽和蒸気定容比熱 | kJ/kg･K |
| 48 | C(21,J) | 圧力基準飽和蒸気ジュールトムソン係数 | K/MPa |
| 49 | C(22,J) | 圧力基準飽和蒸気等温圧縮率 | 1/MPa |
| 50 | C(23,J) | 圧力基準飽和蒸気第２ビリアル係数 | $(10^3 kg/m^3)^{-1}$ |
| 51 | C(24,J) | 圧力基準飽和蒸気第３ビリアル係数 | $(10^3 kg/m^3)^{-2}$ |
| 52 | C(25,J) | 圧力基準飽和蒸気音速 | m/s |
| 53 | *D(1,K,L) | 未飽和水及び過熱蒸気の比容積 | $m^3/kg$ |
| 54 | D(2,K,L) | 未飽和水及び過熱蒸気ヘルムホルツの自由エネルギ | kJ/kg･K |
| 55 | *D(3,K,L) | 未飽和水及び過熱蒸気内部エネルギ | kJ/kg |
| 56 | *D(4,K,L) | 未飽和水及び過熱蒸気エントロピ | kJ/kg･K |
| 57 | *D(5,K,L) | 未飽和水及び過熱蒸気エンタルピ | kJ/kg |
| 58 | *D(6,K,L) | 未飽和水及び過熱蒸気定圧比熱 | kJ/kg･K |
| 59 | D(7,K,L) | 未飽和水及び過熱蒸気定容比熱 | kJ/kg･K |
| 60 | D(8,K,L) | 未飽和水及び過熱蒸気ジュールトムソン係数 | K/MPa |
| 61 | D(9,K,L) | 未飽和水及び過熱蒸気等温圧縮率 | 1/MPa |
| 62 | D(10,K,L) | 未飽和水及び過熱蒸気第２ビリアル係数 | $(10^3 kg/m^3)^{-1}$ |
| 63 | D(11,K,L) | 未飽和水及び過熱蒸気第３ビリアル係数 | $(10^3 kg/m^3)^{-2}$ |
| 64 | D(12,K,L) | 未飽和水及び過熱蒸気音速 | m/s |

＊　リスト出力されるもの

（以上　I=1.～NS
　　J=1.～NS2
　　K=1.～NT
　　L=1.～NP）

4）出力の例

入力データ（Table 4.1）で実行した結果を Appendix2 に示す。

## 5．圧力とエンタルピを独立変数とする重水蒸気表作成プログラムの説明

一般に解析コードの蒸気表は、圧力とエンタルピを独立変数とする重水の蒸気表を必要とする。従って、圧力とエンタルピを独立変数とする重水の蒸気表を作成するプログラムを作成した。プログラムの構成、使用ファイル、入力データ、出力ファイルの内容は、以下の通りである。

1）プログラムの概要

解析コード用の重水蒸気表作成プログラムの概要は、以下の通りである。

(1) 入力データ（圧力、エンタルピ）を読み込む。
(2) 入力データ数に応じて、領域の割り当てを行う。
(3) 入力データの単位変換を行う。
(4) 圧力基準飽和量を求める。
(5) 未飽和水の熱力学的状態量を求める。
(6) 過熱蒸気の熱力学的状態量を求める。
(7) (4)、(5)、(6)で求めた状態量の単位変換を行う。
(8) ファイル出力、リスト出力を行う。

2) 入力データの説明

(1) Card1 カウントカード Format (3I6,12X,I6)

| カラム | 内　　容 | 記　号 |
|---|---|---|
| 1～6 | 圧力代表点数 | iPMAX |
| 7～12 | 未飽和水エンタルピ代表点数 | iLMAX |
| 13～18 | 過熱蒸気エンタルピ代表点数 | iGMAX |
| 31～36 | ＝1（必ず 1 を入力する） | iFLG |

(2) Card2, etc 圧力カード Format (6D 12.5)

| カラム | 内　　容 | 記　号 |
|---|---|---|
| 1～12 | 代表点圧力 | PS (I) |
| ------- | PS (I) を順に入力していく。(I=1～iPMAX) | ------- |

(3) Card3, etc エンタルピカード Format (6D 12.5)

| カラム | 内　　容 | 記　号 |
|---|---|---|
| 1～12 | 未飽和水代表点エンタルピ[kcal/kg] | PHL (1,J) |
| ------- | PHL (1,J) を順に入力していく。(J=1～iLMAX) | ------- |

(4) Card4, etc エンタルピカード2 Format (6D 12.5)

| カラム | 内　　容 | 記　号 |
|---|---|---|
| 1～12 | 過熱蒸気代表点エンタルピ[kcal/kg] | PHG (1,K) |
| ------- | PHG (1,K) を順に入力していく。(K=1～iGMAX) | ------- |

(5) 入力データの例

入力データの例を Table 5.1 に示す。

3) 出力ファイルの内容

解析コード用の重水蒸気表作成プログラムの出力は、2番ファイルに行われるが、Format なしの Write 文で記録されるので、出力ファイルはバイナリである。

その内容は、以下の通りである。

| | 変数名 | 内　　容 | |
|---|---|---|---|
| 1 | PS(I, 1) | P　圧力 | kg/m² |
| 2 | PS(I, 4) | $T_s$　飽和温度 | ℃ |
| 3 | PS(I, 5) | $h_{fs}$　飽和水エンタルピ | kcal/kg |
| 4 | PS(I, 6) | $V_{fs}$　飽和水比容積 | m³/kg |
| 5 | PS(I, 7) | $h_{gs}$　飽和蒸気エンタルピ | kcal/kg |
| 6 | PS(I, 8) | $V_{gs}$　飽和蒸気比容積 | m³/kg |
| 7 | PS(I, 9) | $\alpha V_{fs}/\alpha P$ | |
| 8 | PS(I, 10) | $\alpha h_{fs}/\alpha P$ | |
| 9 | PS(I, 11) | $\alpha V_{fs}/\alpha P$ | |
| 10 | PS(I, 12) | $\alpha h_{fs}/\alpha P$ | |
| 11 | CPFS(I) | $C_{pf}$　飽和水定圧比熱 | kcal/kg·k |

| | | | |
|---|---|---|---|
| 12 | CPGS(I) | $C_{pgs}$ 飽和蒸気定圧比熱 | kcal/kg·k |
| 13 | PHL(I,J) | $H_f$ 未飽和水エンタルピ | kcal/kg |
| 14 | PTL(I,J) | $T_f$ 未飽和水温度 | ℃ |
| 15 | PD(I,J) | $V_f$ 未飽和水比容積 | $m^3$/kg |
| 16 | PDD(I,J) | $(\delta V_f/\delta h)_P$ | |
| 17 | PDP(I,J) | $(\delta V_f/\delta P)_h$ | |
| 18 | CPF(I,J) | $C_{Pf}$ 未飽和水定圧比熱 | kcal/kg·k |
| 19 | PHG(I,K) | $h_g$ 過熱蒸気エンタルピ | kcal/kg |
| 20 | PTG(I,K) | $T_g$ 加熱蒸気温度 | ℃ |
| 21 | PV(I,K) | $V_g$ 加熱蒸気比容積 | $m^3$/kg |
| 22 | PGD(I,K) | $(\delta V_g/\delta h)_P$ | |
| 23 | PGP(I,K) | $(\delta V_g/\delta P)_h$ | |
| 24 | CPG(I,K) | $C_{Pg}$ 過熱蒸気定圧比熱 | kcal/kg·k |

以上 I=1～iPMAX
J=1～iLMAX
K=1～iGMAX

4）出力の例

本プログラム（Appendix 1 を参照のこと）を用いて作成した、解析コード用重水蒸気表を出力したものを Appendix 3 に示す。

## 6．あとがき

軽水と重水の熱水力学的物性値の比較を Fig. 6.1～Fig. 6.5 に示す。図に示す通り、軽水と重水物性値は異なる。このため、重水を用いた原子力施設等の設計、安全評価等を行う場合、重水の蒸気表が必要となる。このため、熱水力解析用重水蒸気表作成プログラムを作成することとなった。重水の熱物性値として昭和 58 年 8 月に日本機械学会の「技術資料　流体の熱物性値集」[6]という出版物も出され、重水という特殊性もあって用途がないと考えていたが、最近、高圧の重水の蒸気表を熱水力解析用コードに組み込む必要があるとの観点から、公開文献として欲しいという要求があり、執筆した。

## 謝辞

本レポートを作成する上で、レポートの編集を全面的にご協力いただいた安全試験部安全試験業務課臨時職員の荒川和子氏には、その労に対し深く感謝致します。

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Table.2.1 $A_{ij}$の値

| i | j | $A_{ij}$ | i | j | $A_{ij}$ |
|---|---|---|---|---|---|
| 1 | 1 | 73.13848592 | 1 | 5 | -6.73408249 |
| 2 | 1 | -285.20415917 | 2 | 5 | 24.03602093 |
| 3 | 1 | 535.71659288 | 3 | 5 | -41.08079830 |
| 4 | 1 | -649.81000614 | 4 | 5 | 45.39111005 |
| 5 | 1 | 574.63280680 | 9 | 5 | 139.21659329 |
| 6 | 1 | -387.92157774 | 10 | 5 | 566.02305152 |
| 7 | 1 | 206.34569512 | 1 | 6 | -5.24802962 |
| 8 | 1 | -79.89428513 | 2 | 6 | 18.52690633 |
| 9 | 1 | -996.36169097 | 3 | 6 | -31.42397369 |
| 10 | 1 | -766.27290006 | 4 | 6 | 26.43208802 |
| 1 | 2 | 24.74108348 | 9 | 6 | 96.31411481 |
| 2 | 2 | -105.57317181 | 10 | 6 | 453.20280933 |
| 3 | 2 | 200.87302906 | 1 | 7 | -1.17583447 |
| 4 | 2 | -235.18776440 | 2 | 7 | 4.13816432 |
| 5 | 2 | 224.56976938 | 3 | 7 | -6.55842224 |
| 6 | 2 | -40.09924297 | 4 | 7 | 4.75774631 |
| 7 | 2 | 128.77154771 | 9 | 7 | 19.39184297 |
| 8 | 2 | -28.40907978 | 10 | 7 | 103.56819758 |
| 9 | 2 | -1389.08003142 | | | |
| 10 | 2 | -1672.09705556 | | | |
| 1 | 3 | 11.64775625 | | | |
| 2 | 3 | -42.51820251 | | | |
| 3 | 3 | 72.45541064 | | | |
| 4 | 3 | -82.55391089 | | | |
| 9 | 3 | -267.85482520 | | | |
| 10 | 3 | -998.64982710 | | | |
| 1 | 4 | 2.66566642 | | | |
| 2 | 4 | -9.19657655 | | | |
| 3 | 4 | 15.13096920 | | | |
| 4 | 4 | -7.24860975 | | | |
| 9 | 4 | -46.83904320 | | | |
| 10 | 4 | -227.34793319 | | | |

Table.4.1 重水の基本蒸気表作成プログラム入力データ

```
47    30    40    30     1
276.95D0    283.15D0    293.15D0    303.15D0    313.15D0    323.15D0
333.15D0    343.15D0    353.15D0    363.15D0    373.15D0    383.15D0
393.15D0    403.15D0    413.15D0    423.15D0    433.15D0    443.15D0
453.15D0    463.15D0    473.15D0    483.15D0    493.15D0    503.15D0
513.15D0    523.15D0    533.15D0    543.15D0    553.15D0    563.15D0
573.15D0    583.15D0    593.15D0    603.15D0    613.15D0    623.15D0
633.15D0    638.15D0    643.15D0    643.89D0    653.15D0    663.15D0
673.15D0    773.15D0    873.15D0    973.15D0   1073.15D0
    1.D0        2.D0        3.D0        4.D0        5.D0        6.D0
    7.D0        8.D0        9.D0       10.D0       20.D0       30.D0
   40.D0       50.D0       60.D0       70.D0       80.D0       90.D0
  100.D0      200.D0      300.D0      400.D0      500.D0      600.D0
  700.D0      800.D0      900.D0     1000.D0     1500.D0     2000.D0
```

Table 5.1 熱水力解析用コード（例えばTHYDE-P）
の重水蒸気表作成プログラム入力データ

```
30    20    30                1
  0.01D4      0.02D4      0.03D4      0.04D4      0.05D4      0.06D4
  0.07D4      0.08D4      0.09D4       0.1D4       0.2D4       0.3D4
   0.4D4       0.5D4       0.6D4       0.7D4       0.8D4       0.9D4
   1.0D4       2.0D4       3.0D4       4.0D4       5.0D4       6.0D4
   7.0D4       8.0D4       9.0D4      10.0D4      15.0D4      20.0D4
   10.D0       20.D0       30.D0       40.D0       50.D0       60.D0
   70.D0       80.D0       90.D0      100.D0      110.D0      120.D0
  130.D0      140.D0      150.D0      160.D0      170.D0      180.D0
  190.D0      200.D0
  537.D0      540.D0      555.D0      570.D0      585.D0      600.D0
  605.D0      610.D0      615.D0      620.D0      625.D0      630.D0
  645.D0      660.D0      675.D0      690.D0      705.D0      720.D0
  735.D0      750.D0      765.D0      780.D0      795.D0      810.D0
  825.D0      840.D0      855.D0      870.D0      885.D0      900.D0
```

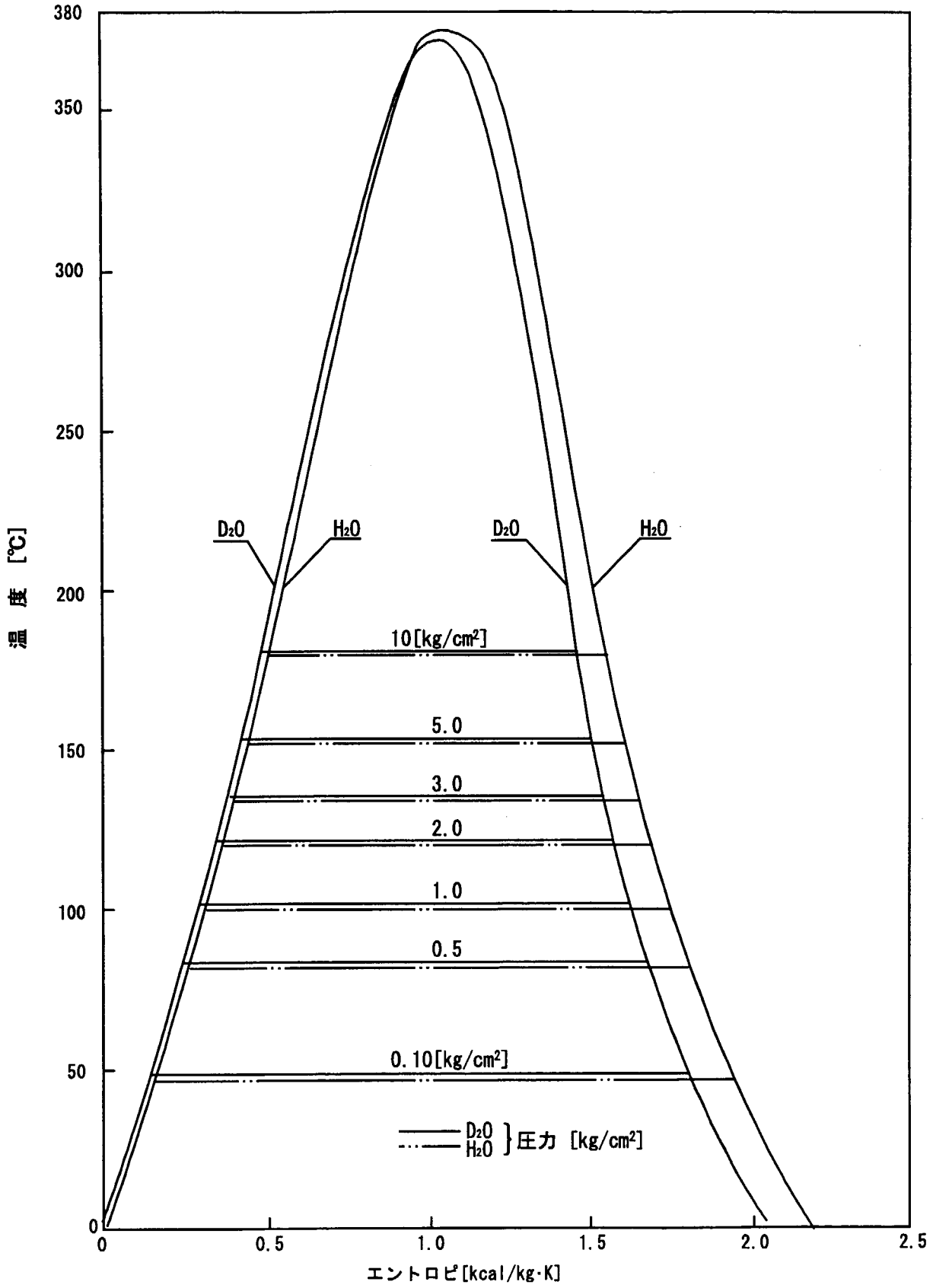


Fig. 6.1 エントロピー温度曲線

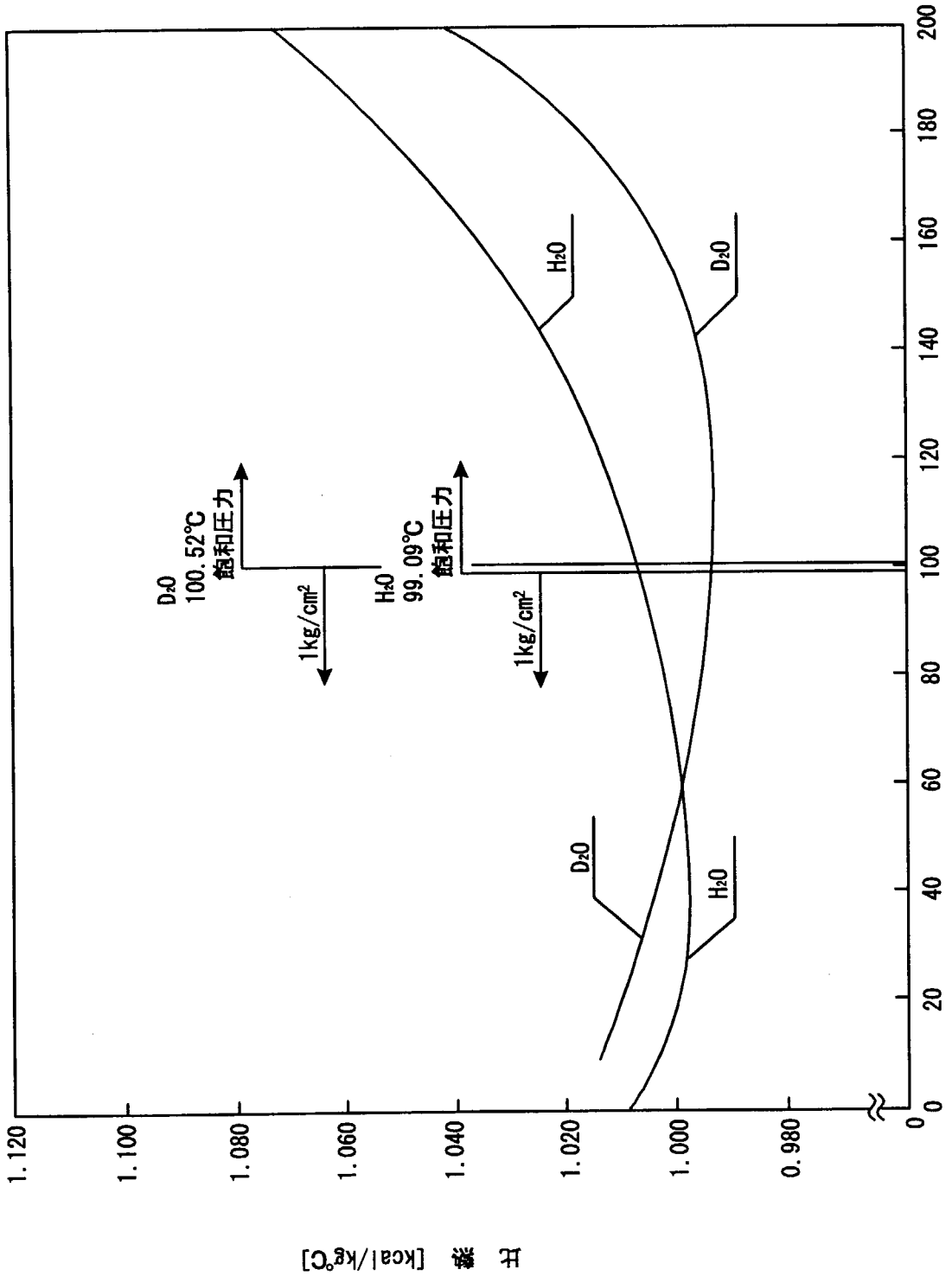


Fig. 6.2 比熱－温度曲線

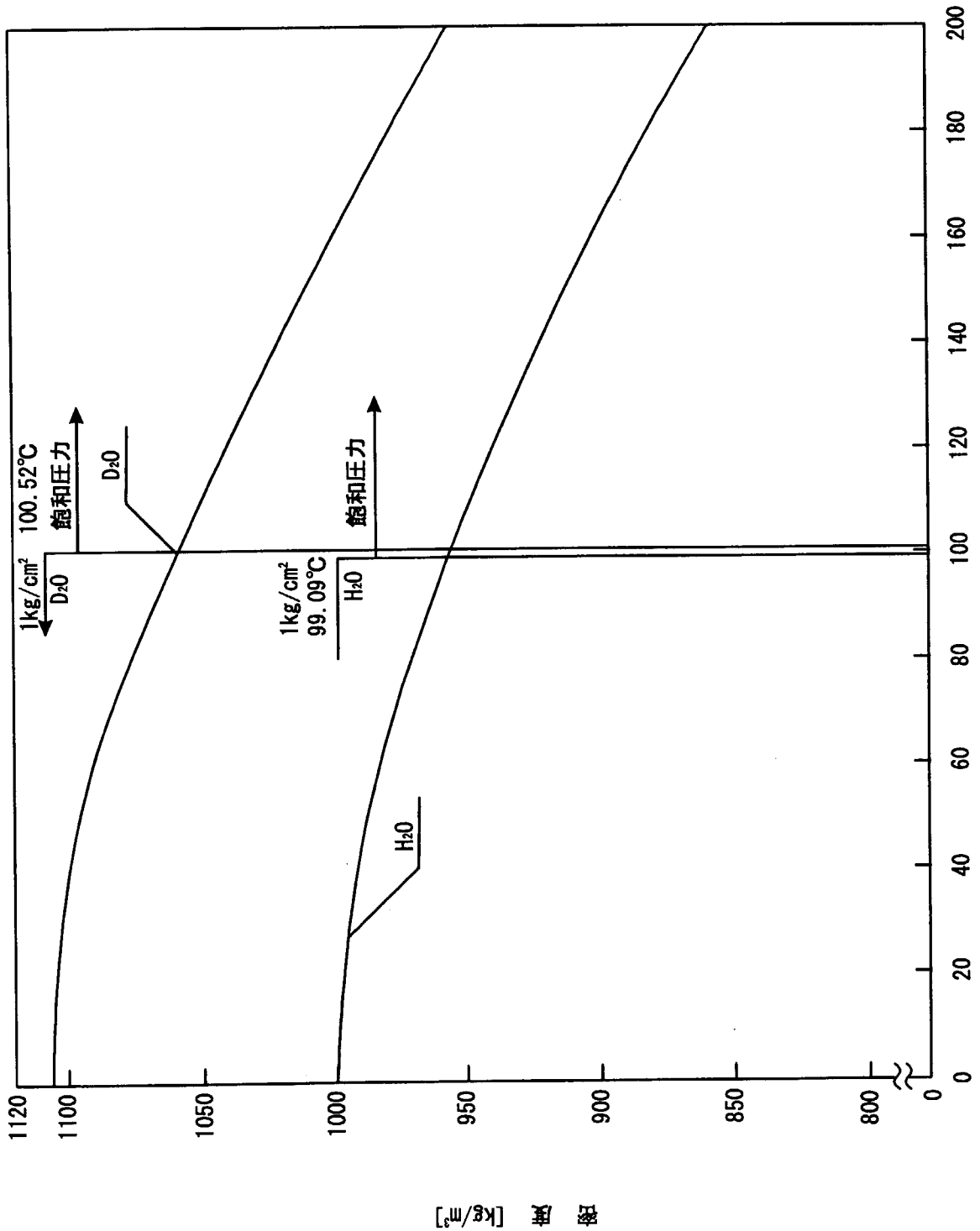


Fig. 6.3 密度－温度曲線

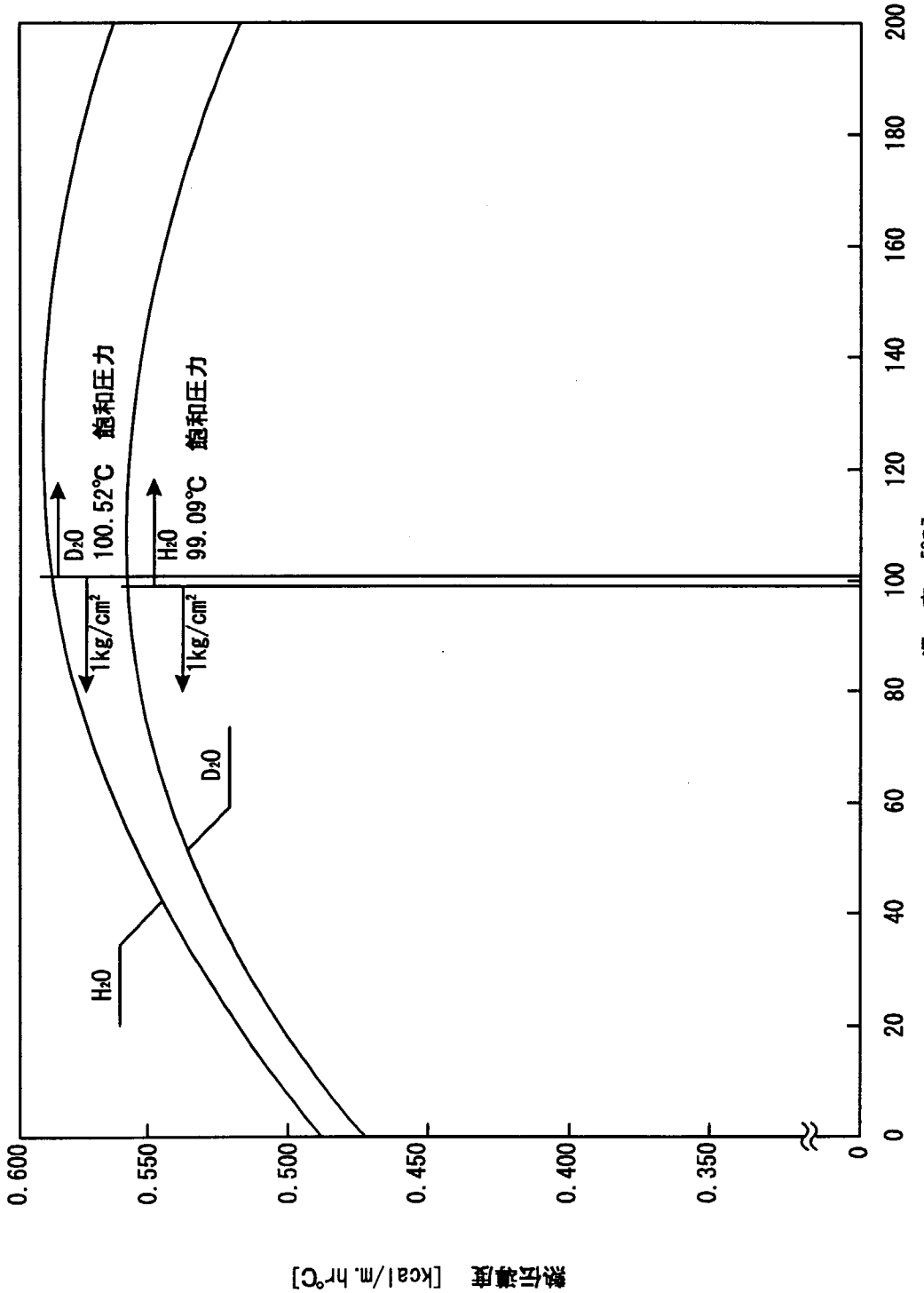


Fig. 6.4 熱伝導度—温度曲線

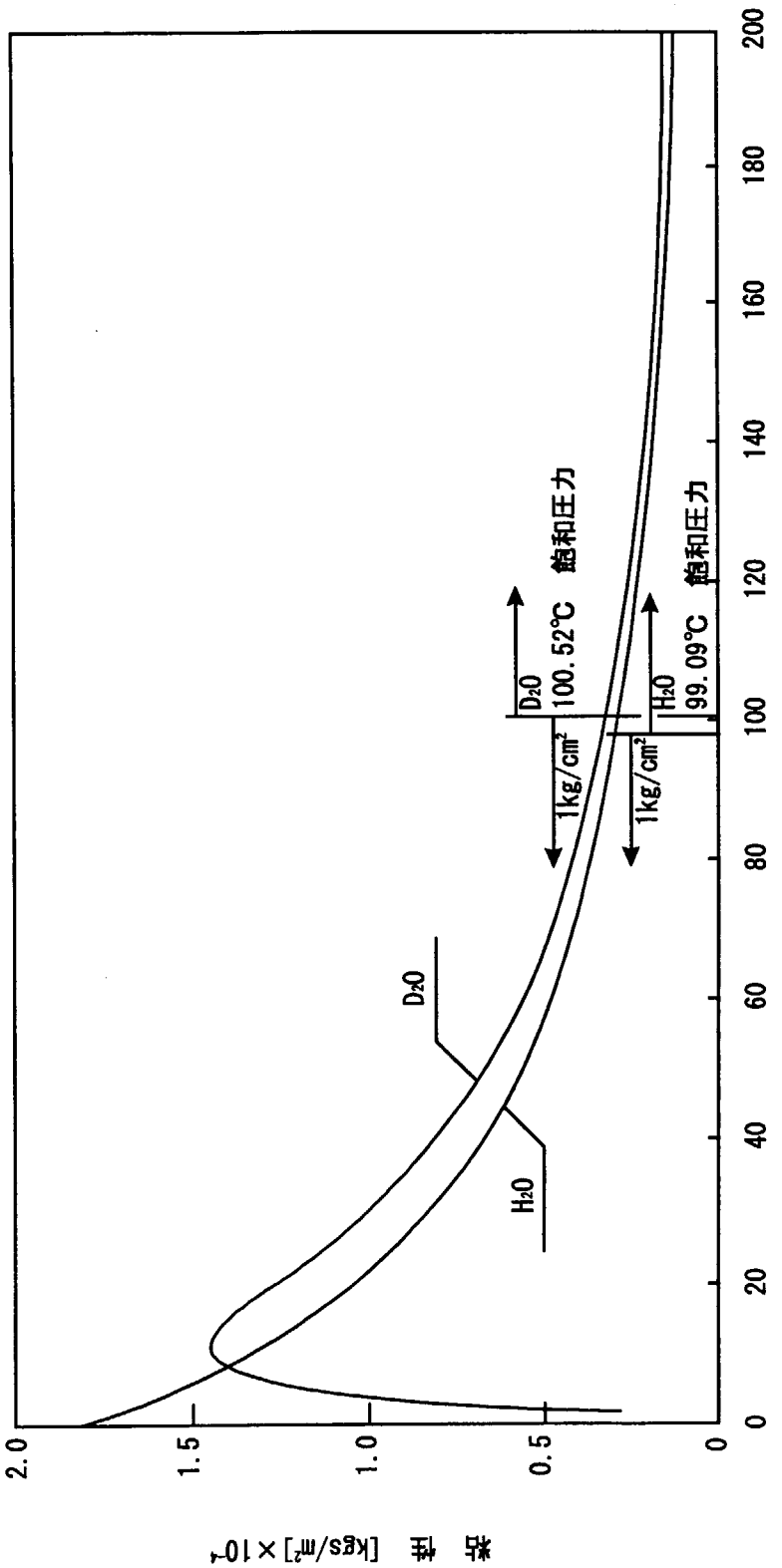


Fig. 6.5 粘性—温度曲線

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# Appendix 1

## 重水蒸気表作成プログラム

```
      SUBROUTINE CLEAR( AF , N )                                        00010000
C                                                                       00020000
C     CLEAR OF VARIABLES                                                00030000
C                                                                       00040000
      REAL*8 AF , ZERO                                                  00050000
      DIMENSION AF(N)                                                   00060000
      DATA ZERO / 0.D0 /                                                00070000
C                                                                       00080000
      DO 10 I = 1 , N                                                   00090000
      AF(I) = ZERO                                                      00100000
   10 CONTINUE                                                          00110000
C                                                                       00120000
      RETURN                                                            00130000
      END                                                               00140000
      SUBROUTINE DVDH( P , V , H , FVP , FHP , K )                      00010000
C*****************************************                              00020000
C*                                       *                             00030000
C*    THIS SUBROUTINE CALCULATE          *                             00040000
C*                                       *                             00050000
C*         VALUE OF DV/DP AND DH/DP      *                             00060000
C*                                       *                             00070000
C*         AT SATURATED STATES           *                             00080000
C*                                       *                             00090000
C*****************************************                              00100000
C                                                                       00110000
C     P   : PRESSURE                                                    00120000
C     V   : SPECIFIC VOLUME                                             00130000
C     H   : ENTHALPY                                                    00140000
C     FVP : DV / DP                                                     00150000
C     FHP : DH / DP                                                     00160000
C                                                                       00170000
C                                                                       00180000
      IMPLICIT REAL*8 (A-H,O-Z)                                         00190000
      DIMENSION FD(25) , FS(12)                                         00200000
      DATA  EPS / 1.D-10 /                                              00210000
      DATA  ZERO / 0.D0 /                                               00220000
      DATA  DP / 0.0980665D-7 /                                         00230000
C                                                                       00240000
C                                                                       00250000
C     NEWTON METHOD                                                     00260000
C                                                                       00270000
      PP = P + DP                                                       00280000
C                                                                       00290000
      N = 500                                                           00300000
C                                                                       00310000
      IF( K .EQ. 1 )  X0 = 1105.460977D-3                               00320000
      IF( K .EQ. 2 )  X0 = 5.7447162D-6                                 00330000
      T0 = ZERO                                                         00340000
C                                                                       00350000
      DO 100 I = 1 , N                                                  00360000
      S = ZERO                                                          00370000
      T = ZERO                                                          00380000
C                                                                       00390000
      CALL SET( T0 , X0 , PP , FD , 2 )                                 00400000
C                                                                       00410000
      S = FD(24)                                                        00420000
      T = FD(25)                                                        00430000
      X1 = X0 - S / T                                                   00440000
      DDE = ( X1 - X0 ) / X0                                            00450000
      IF( DABS(DDE) .LT. EPS )  GO TO 200                               00460000
      X0 = X1                                                           00470000
      IF( I .EQ. N )  WRITE( 6 , 9100 )  K                              00480000
C                                                                       00490000
  100 CONTINUE                                                          00500000
      GO TO 300                                                         00510000
C                                                                       00520000
```

```
  200 CONTINUE                                                          00530000
C                                                                       00540000
      CALL STEAM( TO , XO , FD , FS )                                   00550000
C                                                                       00560000
      DV = FS(11) - V                                                   00570000
      DH = FS( 4) - H                                                   00580000
      FVP = DV / DP                                                     00590000
      FHP = DH / DP                                                     00600000
C                                                                       00610000
  300 CONTINUE                                                          00620000
C                                                                       00630000
 9100 FORMAT(1H ,10X,'ITERATION STOP (SUB. DVDH ) K= ')                 00640000
C                                                                       00650000
      RETURN                                                            00660000
      END                                                               00670000
C ************************************************                      00010000
C *                                              *                      00020000
C *     BASIC STEAM TABLE GENERATION PROGRAM     *                      00030000
C *                                              *                      00040000
C *            FOR HEAVY WATER                   *                      00050000
C *                                              *                      00060000
C *                                              *                      00070000
C ************************************************                      00080000
C                                                                       00090000
C    IFLG = 0   GENERATION OF BASIC STEAM TABLE ( P , T )               00100000
C                                                                       00110000
C       NT  : NUMBER OF TEMPERATURES                                    00120000
C       NP  : NUMBER OF PRESSURES                                       00130000
C       NS  : NUMBER OF TEMPERATURES AT SATURATED STATE                 00140000
C       NS2 : NUMBER OF PRESSURE AT SATURATED STATE                     00150000
C                                                                       00160000
C    IFLG = 1   GENERATION OF STEAM TABLE ( P , H )                     00170000
C                                                                       00180000
C       IPMAX : NUMBER OF PRESSURES                                     00190000
C       ILMAX : NUMBER OF COMRESSED WATER ENTHALPY                      00200000
C       IGMAX : NUMBER OF SUPERHEATED STEAM ENTALPY                     00210000
C                                                                       00220000
C                                                                       00230000
      IMPLICIT REAL*8 (A-H,O-Z)                                         00240000
      DIMENSION AA(50000)                                               00250000
      MTOT=50000                                                        00260000
C                                                                       00270000
C     TEMPERATURE AND PRESSURE COUNT CARD                               00280000
C                                                                       00290000
      READ( 5 , 1100 )  NT , NP , NS , NS2 , IOPT , IFLG                00300000
C                                                                       00310000
      IF( IFLG .EQ. 0 )  GO TO 100                                      00320000
      IPMAX = NT                                                        00330000
      ILMAX = NP                                                        00340000
      IGMAX = NS                                                        00350000
      GO TO 200                                                         00360000
  100 CONTINUE                                                          00370000
C                                                                       00380000
C     ASSIGN DIMENSION ADRESS                                           00390000
C                                                                       00400000
      N1 = 1                                                            00410000
      N2 = N1 + NT * 2                                                  00420000
      N3 = N2 + NP * 2                                                  00430000
      N4 = N3 + NS * 25 * 2                                             00440000
      N5 = N4 + NS2 * 25 * 2                                            00450000
      N6 = N5 + NT * NP * 12 * 2                                        00460000
C                                                                       00470000
      MUSE = N6                                                         00480000
      GO TO 300                                                         00490000
C                                                                       00500000
  200 CONTINUE                                                          00510000
```

```
      IPL = IPMAX * ILMAX                                               00520000
      IPG = IPMAX * IGMAX                                               00530000
      N1 = 1                                                            00540000
      N2 = N1 + IPMAX * 12 * 2                                          00550000
      N3 = N2 + IPMAX * 2                                               00560000
      N4 = N3 + IPMAX * 2                                               00570000
      N5 = N4 + IPL * 2                                                 00580000
      N6 = N5 + IPL * 2                                                 00590000
      N7 = N6 + IPL * 2                                                 00600000
      N8 = N7 + IPL * 2                                                 00610000
      N9 = N8 + IPL * 2                                                 00620000
      N10 = N9 + IPL * 2                                                00630000
      N11 = N10 + IPG * 2                                               00640000
      N12 = N11 + IPG * 2                                               00650000
      N13 = N12 + IPG * 2                                               00660000
      N14 = N13 + IPG * 2                                               00670000
      N15 = N14 + IPG * 2                                               00680000
      N16 = N15 + IPG * 2                                               00690000
C                                                                       00700000
      MUSE = N16                                                        00710000
      GO TO 500                                                         00720000
C                                                                       00730000
  300 CONTINUE                                                          00740000
C                                                                       00750000
C     TITLE OUTPUT ( IFLG = 0 )                                         00760000
C                                                                       00770000
      WRITE( 6 , 2100 )                                                 00780000
      WRITE( 6 , 2200 )  NT , NP , NS , NS2                             00790000
C                                                                       00800000
      IF( MUSE .LE. MTOT )  GO TO 400                                   00810000
      WRITE( 6 , 2300 )                                                 00820000
      STOP                                                              00830000
C                                                                       00840000
  400 CONTINUE                                                          00850000
      NNS = NS * 25                                                     00860000
      NNS2 = NS2 * 25                                                   00870000
      NNTP = NT * NP * 12                                               00880000
      CALL CLEAR ( AA(N1) , NT )                                        00890000
      CALL CLEAR ( AA(N2) , NP )                                        00900000
      CALL CLEAR ( AA(N3) , NNS )                                       00910000
      CALL CLEAR ( AA(N4) , NNS2 )                                      00920000
      CALL CLEAR ( AA(N5) , NNTP )                                      00930000
C                                                                       00940000
C     GENERATION OF STEAM TABLE ( IFLG = 0 )                            00950000
C                                                                       00960000
      CALL MAIN1 ( AA(N1) , AA(N2) , AA(N3) , AA(N4) , AA(N5) ,         00970000
     *            NT , NP , NS , NS2 , IOPT )                           00980000
      GO TO 700                                                         00990000
  500 CONTINUE                                                          01000000
C                                                                       01010000
C     TITLE OUTPUT ( IFLG = 1 )                                         01020000
C                                                                       01030000
      WRITE( 6 , 2400 )                                                 01040000
      WRITE( 6 , 2500 )  IPMAX , ILMAX , IGMAX                          01050000
C                                                                       01060000
      IF( MUSE .LE. MTOT )  GO TO 600                                   01070000
      WRITE( 6 , 2300 )                                                 01080000
      STOP                                                              01090000
C                                                                       01100000
  600 CONTINUE                                                          01110000
      IPP = IPMAX * 12                                                  01120000
      CALL CLEAR ( AA( N1 ) , IPP )                                     01130000
      CALL CLEAR ( AA( N2 ) , IPMAX )                                   01140000
      CALL CLEAR ( AA( N3 ) , IPMAX )                                   01150000
      CALL CLEAR ( AA( N4 ) , IPL )                                     01160000
      CALL CLEAR ( AA( N5 ) , IPL )                                     01170000
```

```
      CALL CLEAR ( AA(  N6 ) , IPL )                                    01180000
      CALL CLEAR ( AA(  N7 ) , IPL )                                    01190000
      CALL CLEAR ( AA(  N8 ) , IPL )                                    01200000
      CALL CLEAR ( AA(  N9 ) , IPL )                                    01210000
      CALL CLEAR ( AA( N10 ) , IPG )                                    01220000
      CALL CLEAR ( AA( N11 ) , IPG )                                    01230000
      CALL CLEAR ( AA( N12 ) , IPG )                                    01240000
      CALL CLEAR ( AA( N13 ) , IPG )                                    01250000
      CALL CLEAR ( AA( N14 ) , IPG )                                    01260000
      CALL CLEAR ( AA( N15 ) , IPG )                                    01270000
C                                                                       01280000
C     GENERATION OF STEAM TABLE ( IFLG = 1 )                            01290000
C                                                                       01300000
      CALL MAIN2 ( AA(N1) , AA(N2) , AA(N3) , AA(N4) , AA(N5) ,         01310000
     *             AA(N6) , AA(N7) , AA(N8) , AA(N9) , AA(N10) ,        01320000
     *             AA(N11) , AA(N12) , AA(N13) , AA(N14) , AA(N15) ,    01330000
     *             IPMAX , ILMAX , IGMAX )                              01340000
  700 CONTINUE                                                          01350000
C                                                                       01360000
C     FORMAT STATEMENT                                                  01370000
C                                                                       01380000
 1100 FORMAT( 6I6 )                                                     01390000
 2100 FORMAT( 1H1///11X,50('*')/11X,'*',48X,'*'/                        01400000
     *        11X,'*     BASIC STEAM TABLE GENERATION PROGRAM',         01410000
     *        7X,'*'/                                                   01420000
     *        11X,'*',48X,'*'/11X,50('*')//                             01430000
     *        /1HO,14X,'**** INPUT DATA INFORMATION ****'               01440000
     *        //1HO,20X,'NT  : NUMBER OF TEMPERATURES'                  01450000
     *        /1HO,20X,'NP  : NUMBER OF PRESSURES'                      01460000
     *        /1HO,20X,'NS  : NUMBER OF TEMPERATURES AT',               01470000
     *        ' SATURATED STATE'                                        01480000
     *        /1HO,20X,'NS2 : NUMBER OF PRESSURES AT',                  01490000
     *        ' SATURATED STATE'//)                                     01500000
 2200 FORMAT(1H ,20X,'NT , NP , NS , NS2 =',4I5)                        01510000
 2300 FORMAT(1HO,5X,'*****  USED AREA OVER *****')                      01520000
 2400 FORMAT( 1H1///11X,50('*')/11X,'*',48X,'*'/                        01530000
     *        11X,'*        STEAM TABLE GENERATION PROGRAM',           01540000
     *        10X,'*'/                                                  01550000
     *        11X,'*',48X,'*'/11X,50('*')//                             01560000
     *        /1HO,14X,'**** INPUT DATA INFORMATION ****'               01570000
     *        //1HO,20X,'IPMAX : NUMBER OF TEMPERATURES'                01580000
     *        /1HO,20X,'ILMAX : NUMBER OF COMPRESED WATER ENTALPY'      01590000
     *        /1HO,20X,'IGMAX : NUMBER OF SUPERHEATED STEAM ENTALPY'//) 01600000
 2500 FORMAT(1HO,20X,'IPMAX , ILMAX , IGMAX =',3I5)                     01610000
C                                                                       01620000
      STOP                                                              01630000
      END                                                               01640000
      SUBROUTINE MAIN1( T , P , B , C , D ,                             00010000
     *                  NT , NP , NS , NS2 , IOPT )                     00020000
C*************************************************                      00030000
C*    PROGRAM CONTROL OF BASIC STEAM TABLE       *                     00040000
C*                                               *                     00050000
C*          FOR HEAVY WATER                      *                     00060000
C*                                               *                     00070000
C*                                               *                     00080000
C*                                               *                     00090000
C*                                               *                     00100000
C*************************************************                      00110000
C                                                                       00120000
      IMPLICIT REAL*8 (A-H,O-Z)                                         00130000
      DIMENSION FD( 25 ) , FS( 12 )                                     00140000
      DIMENSION T( NT ) , P( NP ) , B( 25 , NS ) , C( 25 , NS2 )        00150000
      DIMENSION D( 12 , NT , NP )                                       00160000
      DATA CK1 , CK2 , CK3 , CK4 / 1.D3 , 1.D-3 , 273.15D0 ,            00170000
     *                             0.0980665D0 /                      00180000
C                                                                       00190000
```

```
      IF( NT .NE. 0 )  READ( 5 , 9100 )  ( T(KK) , KK = 1 , NT )      00200000
      IF( NP .NE. 0 )  READ( 5 , 9100 )  ( P(KK) , KK = 1 , NP )      00210000
C                                                                      00220000
C     UNIT CONVERSION OF TEMPERATURE AND PRESSURE                      00230000
C                                                                      00240000
      IF( IOPT .NE. 0 )  GO TO 300                                     00250000
C                                                                      00260000
      DO 100 I = 1 , NT                                                00270000
      T(I) = T(I) + CK3                                                00280000
  100 CONTINUE                                                         00290000
      DO 200 I = 1 , NP                                                00300000
      P(I) = P(I) * CK4                                                00310000
  200 CONTINUE                                                         00320000
      GO TO 500                                                        00330000
  300 CONTINUE                                                         00340000
      DO 400 I = 1 , NP                                                00350000
      P(I) = P(I) * CK2                                                00360000
  400 CONTINUE                                                         00370000
  500 CONTINUE                                                         00380000
C                                                                      00390000
C     THE THERMODYNAMIC PROPERTIES                                     00400000
C         OF SATURATED STATES                                          00410000
C         BASED ON TEMPERATURE                                         00420000
C                                                                      00430000
C                                                                      00440000
      IF( NS .EQ. 0 )  GO TO 750                                       00450000
      CALL NEWTON ( T , P , B , C , D ,                                00460000
     *              NT , NP , NS , NS2 , 1 )                           00470000
C                                                                      00480000
      DO 700 I = 1 , NS                                                00490000
      DO 600 K = 1 , 2                                                 00500000
      NB = 12 * K - 10                                                 00510000
      CALL SET( T(I) , B(NB,I) , B(1,I) , FD , 4 )                     00520000
      CALL STEAM(  T(I) , B(NB,I) , FD , FS )                          00530000
      B(12*K-10,I) = FS(11)                                            00540000
      B(12*K- 9,I) = FD(14)                                            00550000
      B(12*K- 8,I) = FS( 2)                                            00560000
      B(12*K- 7,I) = FS( 3)                                            00570000
      B(12*K- 6,I) = FS( 4)                                            00580000
      B(12*K- 5,I) = FS( 5)                                            00590000
      B(12*K- 4,I) = FS( 6)                                            00600000
      B(12*K- 3,I) = FS( 9)                                            00610000
      B(12*K- 2,I) = FS(10)                                            00620000
      B(12*K- 1,I) = FS( 7)                                            00630000
      B(12*K   ,I) = FS( 8)                                            00640000
      B(12*K+ 1,I) = FS(12)                                            00650000
  600 CONTINUE                                                         00660000
  700 CONTINUE                                                         00670000
  750 CONTINUE                                                         00680000
C                                                                      00690000
C     THE THERMODYNAMIC PROPERTIES                                     00700000
C         OF SATURATED STATES                                          00710000
C         BASED ON PRESSURE                                            00720000
C                                                                      00730000
C                                                                      00740000
      IF( NS2 .EQ. 0 )  GO TO 950                                      00750000
      CALL NEWTON ( T , P , B , C , D ,                                00760000
     *              NT , NP , NS , NS2 , 2 )                           00770000
C                                                                      00780000
      DO 900 I = 1 , NS2                                               00790000
      DO 800 K = 1 , 2                                                 00800000
      NC = 12 * K - 10                                                 00810000
      CALL SET( C(1,I) , C(NC,I) , P(I) , FD , 4 )                     00820000
      CALL STEAM( C(1,I) , C(NC,I) , FD , FS )                         00830000
      C(12*K-10,I) = FS(11)                                            00840000
      C(12*K- 9,I) = FD(14)                                            00850000
```

```
      C(12*K- 8,I) = FS( 2)                                          00860000
      C(12*K- 7,I) = FS( 3)                                          00870000
      C(12*K- 6,I) = FS( 4)                                          00880000
      C(12*K- 5,I) = FS( 5)                                          00890000
      C(12*K- 4,I) = FS( 6)                                          00900000
      C(12*K- 3,I) = FS( 9)                                          00910000
      C(12*K- 2,I) = FS(10)                                          00920000
      C(12*K- 1,I) = FS( 7)                                          00930000
      C(12*K   ,I) = FS( 8)                                          00940000
      C(12*K+ 1,I) = FS(12)                                          00950000
  800 CONTINUE                                                       00960000
  900 CONTINUE                                                       00970000
  950 CONTINUE                                                       00980000
C                                                                    00990000
C     THE TERMODYNAMIC PROPERTIES                                    01000000
C         OF SINGLE PHASE                                            01010000
C                                                                    01020000
C                                                                    01030000
      NNNN = NT * NP                                                 01040000
      IF( NNNN .EQ. 0 )  GO TO 1200                                  01050000
      CALL NEWTON( T , P , B , C , D ,                               01060000
     *             NT , NP , NS , NS2 , 3 )                          01070000
C                                                                    01080000
      DO 1100 J = 1 , NP                                             01090000
      DO 1000 I = 1 , NT                                             01100000
      CALL SET( T(I) , D(1,I,J) , P(J) , FD , 4 )                    01110000
      CALL STEAM( T(I) , D(1,I,J) , FD , FS )                        01120000
      D( 1,I,J) = FS(11)                                             01130000
      D( 2,I,J) = FD(14)                                             01140000
      D( 3,I,J) = FS( 2)                                             01150000
      D( 4,I,J) = FS( 3)                                             01160000
      D( 5,I,J) = FS( 4)                                             01170000
      D( 6,I,J) = FS( 5)                                             01180000
      D( 7,I,J) = FS( 6)                                             01190000
      D( 8,I,J) = FS( 9)                                             01200000
      D( 9,I,J) = FS(10)                                             01210000
      D(10,I,J) = FS( 7)                                             01220000
      D(11,I,J) = FS( 8)                                             01230000
      D(12,I,J) = FS(12)                                             01240000
 1000 CONTINUE                                                       01250000
 1100 CONTINUE                                                       01260000
 1200 CONTINUE                                                       01270000
C                                                                    01280000
C     UNIT CONVERSION                                                01290000
C                                                                    01300000
      DO 1300 I = 1 , NT                                             01310000
      T(I) = T(I) - CK3                                              01320000
      IF( I .GT. NS )  GO TO 1300                                    01330000
      B(1,I) = B(1,I) * CK1                                          01340000
      B(2,I) = B(2,I) * CK2                                          01350000
      B(14,I) = B(14,I) * CK2                                        01360000
 1300 CONTINUE                                                       01370000
C                                                                    01380000
      DO 1400 J = 1, NP                                              01390000
      P(J) = P(J) * CK1                                              01400000
      IF( J .GT. NS2 )  GO TO 1400                                   01410000
      C(1,J) = C(1,J) - CK3                                          01420000
      C(2,J) = C(2,J) * CK2                                          01430000
      C(14,J) = C(14,J) * CK2                                        01440000
 1400 CONTINUE                                                       01450000
C                                                                    01460000
      DO 1500 J = 1 , NP                                             01470000
      DO 1500 I = 1 , NT                                             01480000
      D(1,I,J) = D(1,I,J) * CK2                                      01490000
 1500 CONTINUE                                                       01500000
C                                                                    01510000
```

```
C     OUTPUT                                                            01520000
C                                                                       01530000
      CALL TABLE( T , P , B , C , D ,                                   01540000
     *            NT , NP , NS , NS2 , 3 )                             01550000
C                                                                       01560000
      DO 1600 I = 1 , NT                                                01570000
      T(I) = T(I) + CK3                                                 01580000
 1600 CONTINUE                                                          01590000
C                                                                       01600000
      DO 1700 J = 1 , NP                                                01610000
      C(1,J) = C(1,J) + CK3                                             01620000
 1700 CONTINUE                                                          01630000
C                                                                       01640000
      WRITE(1) NT , NP , NS , NS2 , IOPT                                01650000
      WRITE(1) ( T(I) , I = 1 , NT ) , ( P(J) , J = 1 , NP ) ,          01660000
     *         (( B(K,I) , I = 1 , NS ) , K = 1 , 25 ) ,                01670000
     *         (( C(K,J) , J = 1 , NS2 ) , K = 1 , 25 ) ,               01680000
     *         ((( D(K,I,J) , I = 1 , NT ) , J = 1 , NP ) , K = 1 , 12 )01690000
 9100 FORMAT( 6D12.5 )                                                  01700000
C                                                                       01710000
      RETURN                                                            01720000
      END                                                               01730000
      SUBROUTINE MAIN2( PS , CPFS , CPGS , PHL , PTL , PD , PDD ,       00010000
     *                  PDP , CPF , PHG , PTG , PV , PGD , PGP ,        00020000
     *                  CPG , IPMAX , ILMAX , IGMAX )                   00030000
C**************************************                                 00040000
C*                                    *                                00050000
C*    PROGRAM CONTROL OF STEAM TABLE  *                                00060000
C*                                    *                                00070000
C*           FOR HEAVY WATER          *                                00080000
C*                                    *                                00090000
C**************************************                                 00100000
C                                                                       00110000
      IMPLICIT REAL*8 (A-H,O-Z)                                         00120000
      DIMENSION FD(25) , FS(12)                                         00130000
      DIMENSION PS(IPMAX,12) , CPFS(IPMAX) , CPGS(IPMAX)                00140000
      DIMENSION PHL(IPMAX,ILMAX) , PTL(IPMAX,ILMAX) , PD(IPMAX,ILMAX)   00150000
      DIMENSION PDD(IPMAX,ILMAX) , PDP(IPMAX,ILMAX) , CPF(IPMAX,ILMAX)  00160000
      DIMENSION PHG(IPMAX,IGMAX) , PTG(IPMAX,IGMAX) , PV(IPMAX,IGMAX)   00170000
      DIMENSION PGD(IPMAX,IGMAX) , PGP(IPMAX,IGMAX) , CPG(IPMAX,IGMAX)  00180000
      DATA  CV1 , CV2 , CV3 / 0.0980665D-4 , 4.1868D0 , 273.15D0 /      00190000
      DATA ZERO /0.D0 /                                                 00200000
C                                                                       00210000
      IF( IPMAX .NE. 0 )  READ( 5 , 9100 )                              00220000
     *                       ( PS(KK,1)  , KK = 1 , IPMAX )             00230000
      IF( ILMAX .NE. 0 )  READ( 5 , 9100 )                              00240000
     *                       ( PHL(1,KK) , KK = 1 , ILMAX )             00250000
      IF( IGMAX .NE. 0 )  READ( 5 , 9100 )                              00260000
     *                       ( PHG(1,KK) , KK = 1 , IGMAX )             00270000
C                                                                       00280000
C     UNIT CONVERSION OF PRESSURE AND ENTALPY                           00290000
C                                                                       00300000
      DO 100 I = 1 , IPMAX                                              00310000
      PS(I,1) = PS(I,1) * CV1                                           00320000
  100 CONTINUE                                                          00330000
C                                                                       00340000
      DO 200 I = 1 , ILMAX                                              00350000
      PHL(1,I) = PHL(1,I) * CV2                                         00360000
  200 CONTINUE                                                          00370000
C                                                                       00380000
      DO 300 I = 1 , IGMAX                                              00390000
      PHG(1,I) = PHG(1,I) * CV2                                         00400000
  300 CONTINUE                                                          00410000
C                                                                       00420000
C     THE THERMODYNAMIC PROPERTIES                                      00430000
C        OF SATURATED STATES                                            00440000
```

```
C         BASED ON PRESSURE                                              00450000
C                                                                        00460000
      CALL VCONV( PS , CPFS , CPGS , PHL , PTL , PD , PDD , PDP ,        00470000
     *            CPF , PHG , PTG , PV , PGD , PGP , CPG ,              00480000
     *            IPMAX , ILMAX , IGMAX , 1 )                           00490000
C                                                                        00500000
C     THE THERMODYNAMIC PROPERTIES                                       00510000
C         OF COMPRESSED WATER STATES                                     00520000
C                                                                        00530000
      IF( ILMAX .EQ. 0 )  GO TO 400                                      00540000
      CALL VCONV( PS , CPFS , CPGS , PHL , PTL , PD , PDD , PDP ,        00550000
     *            CPF , PHG , PTG , PV , PGD , PGP , CPG ,              00560000
     *            IPMAX , ILMAX , IGMAX , 2 )                           00570000
  400 CONTINUE                                                           00580000
C                                                                        00590000
C     THE THERMODYNAMIC PROPERTIES                                       00600000
C         OF SUPERHEATED STEAM STATES                                    00610000
C                                                                        00620000
      IF( IGMAX .EQ. 0 )  GO TO 500                                      00630000
      CALL VCONV( PS , CPFS , CPGS , PHL , PTL , PD , PDD , PDP ,        00640000
     *            CPF , PHG , PTG , PV , PGD , PGP , CPG ,              00650000
     *            IPMAX , ILMAX , IGMAX , 3 )                           00660000
  500 CONTINUE                                                           00670000
C                                                                        00680000
C     UNIT CONVERSION                                                    00690000
C                                                                        00700000
      DO 1200 I = 1 , IPMAX                                              00710000
      PS(I, 1) = PS(I, 1) / CV1                                          00720000
      PS(I, 4) = PS(I, 4) - CV3                                          00730000
      PS(I, 5) = PS(I, 5) / CV2                                          00740000
      PS(I, 6) = PS(I, 6) * 1.D-3                                        00750000
      PS(I, 7) = PS(I, 7) / CV2                                          00760000
      PS(I, 8) = PS(I, 8) * 1.D-3                                        00770000
      PS(I, 9) = PS(I, 9) * CV1 * 1.D-3                                  00780000
      PS(I,10) = PS(I,10) * CV1 / CV2                                    00790000
      PS(I,11) = PS(I,11) * CV1 * 1.D-3                                  00800000
      PS(I,12) = PS(I,12) * CV1 / CV2                                    00810000
      CPFS(I) = CPFS(I) / CV2                                            00820000
      CPGS(I) = CPGS(I) / CV2                                            00830000
C                                                                        00840000
      ILM = 0                                                            00850000
      DO 800 J = 1 , ILMAX                                               00860000
      IF( ILM .EQ. 1 )  GO TO 700                                        00870000
      PHL(I,J) = PHL(I,J) / CV2                                          00880000
      IF( PHL(I,J) .GT. PS(I,5) )  GO TO 600                             00890000
      PTL(I,J) = PTL(I,J) - CV3                                          00900000
      PD(I,J)  = PD(I,J) * 1.D-3                                         00910000
      PDD(I,J) = PDD(I,J) * CV2 * 1.D-3                                  00920000
      PDP(I,J) = PDP(I,J) * CV1 * 1.D-3                                  00930000
      CPF(I,J) = CPF(I,J) /CV2                                           00940000
      GO TO 800                                                          00950000
C                                                                        00960000
  600 CONTINUE                                                           00970000
      PP = PS(I,1) * CV1                                                 00980000
      TT = PS(I,4) + CV3                                                 00990000
      XX = 1.D0 / PS(I,6) * 1.D-3                                        01000000
      CALL SET( TT , XX , PP , FD , 4 )                                  01010000
      CALL STEAM( TT , XX , FD , FS )                                    01020000
      CALL THSET( PS , CPFS , CPGS , PHL , PTL , PD , PDD ,              01030000
     *            PDP , CPF , PHG , PTG , PV , PGD , PGP ,               01040000
     *            CPG , FD , FS , TT , XX , IPMAX , ILMAX , IGMAX ,      01050000
     *            2 , I , J , 1 )                                        01060000
      PHL(I,J) = PHL(I,J) / CV2                                          01070000
      PTL(I,J) = PTL(I,J) - CV3                                          01080000
      PD(I,J)  = PD(I,J) * 1.D-3                                         01090000
      PDD(I,J) = PDD(I,J) * CV2 * 1.D-3                                  01100000
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      PDP(I,J) = PDP(I,J) * CV1 * 1.D-3                                 01110000
      CPF(I,J) = CPF(I,J) / CV2                                         01120000
      ILM = 1                                                           01130000
      GO TO 800                                                         01140000
C                                                                       01150000
  700 CONTINUE                                                          01160000
      PHL(I,J) = ZERO                                                   01170000
      PTL(I,J) = ZERO                                                   01180000
      PD(I,J) = ZERO                                                    01190000
      PDD(I,J) = ZERO                                                   01200000
      PDP(I,J) = ZERO                                                   01210000
      CPF(I,J) = ZERO                                                   01220000
  800 CONTINUE                                                          01230000
C                                                                       01240000
      ILM = 0                                                           01250000
      DO 1100 K = 1 , IGMAX                                             01260000
      PHG(I,K) = PHG(I,K) / CV2                                         01270000
      IF( PHG(I,K) .LT. PS(I,7) )  GO TO 900                            01280000
      PTG(I,K) = PTG(I,K) - CV3                                         01290000
      PV(I,K)  = PV(I,K) * 1.D-3                                        01300000
      PGD(I,K) = PGD(I,K) * CV2 * 1.D-3                                 01310000
      PGP(I,K) = PGP(I,K) * CV1 * 1.D-3                                 01320000
      CPG(I,K) = CPG(I,K) /CV2                                          01330000
      GO TO 1100                                                        01340000
C                                                                       01350000
  900 CONTINUE                                                          01360000
      PP = PS(I,1) * CV1                                                01370000
      TT = PS(I,4) + CV3                                                01380000
      XX = 1.D0 / PS(I,8) * 1.D-3                                       01390000
      CALL SET( TT , XX , PP , FD , 4 )                                 01400000
      CALL STEAM( TT , XX , FD , FS )                                   01410000
      CALL THSET( PS , CPFS , CPGS , PHL , PTL , PD , PDD ,             01420000
     *            PDP , CPF , PHG , PTG , PV , PGD , PGP ,              01430000
     *            CPG , FD , FS , TT , XX , IPMAX , ILMAX , IGMAX ,     01440000
     *            3 , I , K , 1 )                                       01450000
      PHG(I,K) = PHG(I,K) / CV2                                         01460000
      PTG(I,K) = PTG(I,K) - CV3                                         01470000
      PV(I,K)  = PV(I,K) * 1.D-3                                        01480000
      PGD(I,K) = PGD(I,K) * CV2 * 1.D-3                                 01490000
      PGP(I,K) = PGP(I,K) * CV1 * 1.D-3                                 01500000
      CPG(I,K) = CPG(I,K) / CV2                                         01510000
      IF( ILM .EQ. 1 )  GO TO 1000                                      01520000
      ILM = 1                                                           01530000
      GO TO 1100                                                        01540000
C                                                                       01550000
 1000 CONTINUE                                                          01560000
      PHG(I,K-1) = ZERO                                                 01570000
      PTG(I,K-1) = ZERO                                                 01580000
      PV(I,K-1)  = ZERO                                                 01590000
      PGD(I,K-1) = ZERO                                                 01600000
      PGP(I,K-1) = ZERO                                                 01610000
      CPG(I,K-1) = ZERO                                                 01620000
 1100 CONTINUE                                                          01630000
 1200 CONTINUE                                                          01640000
C                                                                       01650000
C     OUTPUT                                                            01660000
C                                                                       01670000
      CALL TABLE2( PS , CPFS , CPGS , PHL , PTL , PD , PDD ,            01680000
     *             PDP , CPF , PHG , PTG , PV , PGD , PGP ,             01690000
     *             CPG , IPMAX , ILMAX , IGMAX )                        01700000
C                                                                       01710000
      WRITE(2) PS , PTL , PHL , PD , PDD , PDP , PTG , PHG , PV ,       01720000
     *         PGD , PGP , CPGS , CPFS , CPG , CPF                      01730000
 9100 FORMAT( 6D12.5 )                                                  01740000
C                                                                       01750000
      RETURN                                                            01760000
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```
      END                                                               01770000
      SUBROUTINE NEWTON( T , P , B , C , D ,                            00010000
     *                   NT , NP , NS , NS2 , NV )                      00020000
C************************************                                   00030000
C                                   *                                   00040000
C     THIS PROGRAM CALCULATE        *                                   00050000
C                                   *                                   00060000
C          TEMPERATURE OR PRESSURE  *                                   00070000
C                                   *                                   00080000
C          BY NEWTON METHOD         *                                   00090000
C                                   *                                   00100000
C************************************                                   00110000
C                                                                       00120000
C                                                                       00130000
      IMPLICIT REAL*8 (A-H,O-Z)                                         00140000
      DIMENSION T(NT) , P(NP) , B(25,NS) , C(25,NS2)                    00150000
      DIMENSION D(12,NT,NP) , FD(25)                                    00160000
      DATA ZERO / 0.D0 /                                                00170000
      DATA EPS  / 1.D-10 /                                              00180000
      DATA PC   / 21.66D0 /                                             00190000
      DATA TC   / 643.89D0 /                                            00200000
C                                                                       00210000
C     WRITE( 6 , 9000 ) NV                                              00220000
      GO TO ( 100 , 200 , 300 ) , NV                                    00230000
C                                                                       00240000
  100 CONTINUE                                                          00250000
      N1 = 1                                                            00260000
      N2 = NS                                                           00270000
      N3 = 2                                                            00280000
      GO TO 400                                                         00290000
C                                                                       00300000
  200 CONTINUE                                                          00310000
      N1 = 1                                                            00320000
      N2 = NS2                                                          00330000
      N3 = 2                                                            00340000
      GO TO 400                                                         00350000
C                                                                       00360000
  300 CONTINUE                                                          00370000
      N1 = NP                                                           00380000
      N2 = NT                                                           00390000
      N3 = 1                                                            00400000
  400 CONTINUE                                                          00410000
C                                                                       00420000
C     NEWTON METHOD                                                     00430000
C                                                                       00440000
      CTS = ZERO                                                        00450000
      DO 1300 JJ = 1 , N1                                               00460000
      IF( NV .EQ. 3 )  PP = P(JJ)                                       00470000
      IF( NV .NE. 3 )   GO TO 500                                       00480000
      IF( PP .GT. PC )  GO TO 500                                       00490000
      CTS = C(1,JJ)                                                     00500000
      IF( CTS .GE. 1.D-20 )  GO TO 500                                  00510000
      CALL TEMP( TT , PP )                                              00520000
      CTS = TT                                                          00530000
  500 CONTINUE                                                          00540000
      DO 1200 J = 1 , N2                                                00550000
      IF( NV .EQ. 1 .OR. NV .EQ. 3 )  TT = T(J)                         00560000
      IF( NV .EQ. 2 )  PP = P(J)                                        00570000
      DO 1100 K = 1 , N3                                                00580000
      IF( K .EQ. 1 )  X0 = 1105.460977D-3                               00590000
      IF( NV .EQ. 3 .AND. TT .GT. CTS                                   00600000
     *    .AND. PP .LE. PC )   X0 = 5.7447162D-6                        00610000
      IF( K .EQ. 2 )  X0 = 5.7447162D-6                                 00620000
      N = 500                                                           00630000
      DO 900 I = 1 , N                                                  00640000
      IF( NV .EQ. 1 )  PP = ZERO                                        00650000
```

```
      IF( NV .EQ. 2 )  TT = ZERO                                        00660000
      S = ZERO                                                          00670000
      ST = ZERO                                                         00680000
      CALL SET( TT , X0 , PP , FD , NV )                                00690000
      S=FD(24)                                                          00700000
      ST=FD(25)                                                         00710000
      IF( NV .EQ. 1 )  B(1,J) =  PP                                     00720000
      IF( NV .EQ. 2 )  C(1,J) =  TT                                     00730000
      X1 = X0 - S / ST                                                  00740000
      DDE = ( X1 - X0 ) / X0                                            00750000
C     IF( NV .EQ. 1 )  WRITE(  6 , 9100 ) J , K , I , X0 , S , PP      00760000
C     IF( NV .EQ. 2 )  WRITE(  6 , 9200 ) J , K , I , X0 , S , TT      00770000
C     IF( NV .EQ. 3 )  WRITE(  6 , 9300 ) JJ , J , I , X0 , S          00780000
      IF( DABS(DDE) .LT. EPS )  GO TO 1000                              00790000
      IF( I .EQ. N )  WRITE( 6 , 9400 ) J , K                           00800000
      X0 = X1                                                           00810000
  900 CONTINUE                                                          00820000
      GO TO 1100                                                        00830000
 1000 CONTINUE                                                          00840000
      IF( NV .EQ. 1 .AND. K .EQ. 1 )  B( 2,J) = X0                      00850000
      IF( NV .EQ. 1 .AND. K .EQ. 2 )  B(14,J) = X0                      00860000
      IF( NV .EQ. 2 .AND. K .EQ. 1 )  C( 2,J) = X0                      00870000
      IF( NV .EQ. 2 .AND. K .EQ. 2 )  C(14,J) = X0                      00880000
      IF( NV .EQ. 3 )  D(1,J,JJ) = X0                                   00890000
 1100 CONTINUE                                                          00900000
 1200 CONTINUE                                                          00910000
 1300 CONTINUE                                                          00920000
C                                                                       00930000
C     FORMAT STATEMENT                                                  00940000
C                                                                       00950000
 9000 FORMAT(1H1,10X,'RESULT OF NEWTON METHOD (SUB. NEWTON) NO.=',      00960000
     *       I5//)                                                      00970000
 9100 FORMAT(1H ,7X,'J',9X,'K',9X,'I',16X,'X0',23X,'S',24X,'PP'/        00980000
     *       3(5X,I5),3(5X,D20.12))                                     00990000
 9200 FORMAT(1H ,7X,'J',9X,'K',9X,'I',16X,'X0',23X,'S',24X,'TT'/        01000000
     *       3(5X,I5),3(5X,D20.12))                                     01010000
 9300 FORMAT(1H ,6X,'JJ',9X,'J',9X,'I',16X,'X0',23X,'S'/                01020000
     *       3(5X,I5),2(5X,D20.12))                                     01030000
 9400 FORMAT(1H ,10X,'ITERATION STOP',                                  01040000
     *           'J=',I5,5X,'K=',I5)                                    01050000
C                                                                       01060000
      RETURN                                                            01070000
      END                                                               01080000
      SUBROUTINE PRES( TT , PP )                                        00010000
C                                                                       00020000
C     THIS SUBROUTINE IS CALCULATION                                    00030000
C          OF PRES PP( TT )                                             00040000
C                                                                       00050000
C                                                                       00060000
      IMPLICIT REAL*8 (A-H,O-Z)                                         00070000
      DIMENSION C(4)                                                    00080000
      DATA A1 , A2 , A4 , A11 , A20                                     00090000
     *    / -7.81583D0 , 17.6012D0 , -18.1747D0 ,                       00100000
     *      -3.92488D0 , 4.19174D0 /                                    00110000
      DATA C / 1.9D0 , 2.D0 , 5.5D0 , 10.D0 /                           00120000
      DATA TC / 643.89D0 /                                              00130000
      DATA PC / 21.66D0 /                                               00140000
C                                                                       00150000
C     TA CONVERSION                                                     00160000
C                                                                       00170000
      TA=1.D0-TT/TC                                                     00180000
C                                                                       00190000
C     PRESSURE ( PP )  CALCULATION                                      00200000
C                                                                       00210000
      FP=(A1*TA+A2*TA**C(1)+A4*TA**C(2)                                 00220000
     *       +A11*TA**C(3)+A20*TA**C(4))                                00230000
```

```
      FPP=TC*FP/TT                                                      00240000
      PP=DEXP(FPP+DLOG(PC))                                             00250000
C                                                                       00260000
      RETURN                                                            00270000
      END                                                               00280000
      SUBROUTINE SET( TT , RA , PP , FD , ICN )                         00010000
C*************************************                                  00020000
C     THIS PROGRAM CALCULATE VALUE        *                             00030000
C          OF THERMODYNAMIC PROPERTIES    *                           00040000
C*************************************                                  00050000
C                                                                       00060000
C       TT  : TEMPERATURE          ( K )            INPUT               00070000
C       RA  : DENSITY              ( 10**3*KG/M**3 ) INPUT              00080000
C       PP  : PRESSURE             ( MPA )          INPUT               00090000
C       FD  : PROPERTIES                            OUTPUT              00100000
C       ICN : = 1     SATURATED STATES ( T=CONST. )                     00110000
C             = 2     SATURATED STATES ( P=CONST. )                     00120000
C             = 3     SINGLE PHASE STATES                               00130000
C             = 4     THERMODYNAMIC PROPERTIES                          00140000
C                                                                       00150000
      IMPLICIT REAL*8 ( A-H,O-Z )                                       00160000
      COMMON / COEF / E , R                                             00170000
      DIMENSION FD(25) , F(22)                                          00180000
C                                                                       00190000
      CALL CLEAR ( FD , 25 )                                            00200000
C                                                                       00210000
      CALL SET2( TT , RA , PP , FD , F , ICN )                          00220000
C                                                                       00230000
      TA = 1.D3 / TT                                                    00240000
  100 CONTINUE                                                          00250000
      FD(24) = RA * R * TT * ( 1.D0 + RA * FD(15) + RA ** 2 * FD(3) )   00260000
     *         - PP                                                     00270000
      FD(25) = R * TT * ( 1.D0 + 2.D0 * RA * FD(15)                     00280000
     *          + 4.D0 * RA ** 2 * FD(3) + RA ** 3 * FD(4) )            00290000
C     IF( ICN .EQ. 4 )  GO TO 200                                       00300000
C                                                                       00310000
C     RETURN                                                            00320000
C                                                                       00330000
  200 CONTINUE                                                          00340000
      FF1 = 1.D0 + RA * FD(15) + RA * TA * FD(1) + RA ** 2 * FD(3)      00350000
      FF2 = 2.D0 * RA * FD(1) + RA * TA * FD(2) + RA ** 2 * FD(5)       00360000
      FD(17) = -1.D3 * R / ( TA ** 2 ) * FF1                            00370000
     *         + R * TT * FF2 + 2.D0 * FD(11) + TA * FD(13)             00380000
      FD(18) = R * TT * ( FD(15) + TA * FD(1)                           00390000
     *         + RA * TA * FD(6) + 3.D0 * RA * FD(3)                    00400000
     *         + RA ** 2 * FD(4)  )                                     00410000
      FD(19) = RA * R * ( 1.D0 + RA * FD(15) + RA ** 2* FD(3)           00420000
     *         - RA * TA * FD(1) - RA ** 2 * TA * FD(5) )               00430000
      FD(20) = R * TT * ( 1.D0 + 2.D0 * RA * FD(15)                     00440000
     *         + 4.D0 * RA ** 2 * FD(3) + RA ** 3 * FD(4) )             00450000
      FD(21) = 2.D0 * FD(11) + TA * FD(13)                              00460000
     *         + 1.D3 * R * RA * FD(2)                                  00470000
C                                                                       00480000
      RETURN                                                            00490000
      END                                                               00500000
      SUBROUTINE SET2(TT, RA, PP, FD, F, ICN)                           00000100
C                                                                       00000200
C                                                                       00000300
C                                                                       00000400
C                                                                       00000500
C                                                                       00000600
      IMPLICIT REAL*8 (A-H,O-Z)                                         00000700
      COMMON / COEF / E , R                                             00000800
      DIMENSION FD(25) , F(22) , C(8) , A(10,7)                         00000900
      DATA ZERO,ONE /0.D0 ,1.D0 /                                       00001000
      DATA A(1,1) , A(2,1) , A(3,1) , A(4,1) , A(5,1) ,                 00001100
```

```
*     A(6,1) , A(7,1) , A(8,1) , A(9,1) , A(10,1)                    00001200
*     / 73.13848592D0 , -285.20415917D0 , 535.71659288D0 ,           00001300
*       -649.81000614D0 , 574.63280680D0 , -387.92157774D0 ,         00001400
*       206.34569512D0 , -79.89428513D0 , -996.36169097D0 ,          00001500
*       -766.27290006D0 /                                            00001600
      DATA A(1,2) , A(2,2) , A(3,2) , A(4,2) , A(5,2) ,              00001700
*     A(6,2) , A(7,2) , A(8,2) , A(9,2) , A(10,2)                    00001800
*     / 24.74108348D0 , -105.57317181D0 , 200.87302906D0 ,           00001900
*       -235.18776440D0 , 224.56976938D0 , -40.09924297D0 ,          00002000
*       128.77154771D0 , -28.40907978D0 , -1389.08003142D0 ,         00002100
*       -1672.09705556D0 /                                           00002200
      DATA A(1,3) , A(2,3) , A(3,3) , A(4,3) , A(5,3),               00002300
*     A(6,3) , A(7,3) , A(8,3) , A(9,3) , A(10,3)                    00002400
*     / 11.64775625D0 , -42.51820251D0 , 72.45541064D0 ,             00002500
*       -82.55391089D0 , 0.D0 , 0.D0 , 0.D0 , 0.D0 ,                00002600
*       -267.85482520D0 , -998.64982710D0 /                          00002700
      DATA A(1,4) , A(2,4) , A(3,4) , A(4,4) , A(5,4),               00002800
*     A(6,4) , A(7,4) , A(8,4) , A(9,4) , A(10,4)                    00002900
*     / 2.66566642D0 , -9.19657655D0 , 15.13096920D0 ,               00003000
*       -7.24860975D0 , 0.D0 , 0.D0 , 0.D0 , 0.D0 ,                 00003100
*       -46.83904320D0 , -227.34793319D0 /                           00003200
      DATA A(1,5) , A(2,5) , A(3,5) , A(4,5) , A(5,5),               00003300
*     A(6,5) , A(7,5) , A(8,5) , A(9,5) , A(10,5)                    00003400
*     / -6.73408249D0 , 24.03602093D0 , -41.08079830D0 ,             00003500
*       45.39111005D0 , 0.D0 , 0.D0 , 0.D0 , 0.D0 ,                 00003600
*       139.21659329D0 , 566.02305152D0 /                            00003700
      DATA A(1,6) , A(2,6) , A(3,6) , A(4,6) , A(5,6),               00003800
*     A(6,6) , A(7,6) , A(8,6) , A(9,6) , A(10,6)                    00003900
*     / -5.24802962D0 , 18.52690633D0 , -31.42397369D0 ,             00004000
*       26.43208802D0 , 0.D0 , 0.D0 , 0.D0 , 0.D0 ,                 00004100
*       96.31411481D0 , 453.20280933D0 /                             00004200
      DATA A(1,7) , A(2,7) , A(3,7) , A(4,7) , A(5,7),               00004300
*     A(6,7) , A(7,7) , A(8,7) , A(9,7) , A(10,7)                    00004400
*     / -1.17583447D0 , 4.13816432D0 , -6.55842224D0 ,               00004500
*       4.75774631D0 , 0.D0 , 0.D0 , 0.D0 , 0.D0 ,                  00004600
*       19.39184297D0 , 103.56819758D0 /                             00004700
C                                                                    00004800
      DATA C / 1866.73D0 , 4661.90D0 , 64.605D0 , -284.8833D0 ,      00004900
*       100.1333D0 , -13.135D0 , 0.32684D0 , -1211.253D0 /           00005000
C                                                                    00005100
      R=0.41515D0                                                    00005200
      E=4.3D0                                                        00005300
C                                                                    00005400
      FF1=ZERO                                                       00005500
      FF2=ZERO                                                       00005600
      FF3=ZERO                                                       00005700
C                                                                    00005800
      IF( ICN .EQ. 1 )  CALL PRES( TT , PP )                         00005900
      IF( ICN .EQ. 2 )  CALL TEMP( TT , PP )                         00006000
C                                                                    00006100
      TA=1000.D0/TT                                                  00006200
      F(1)=TA-1.553D0                                                00006300
      F(2)=DEXP(-E*RA)                                               00006400
      F(3)=ONE/RA                                                    00006500
C                                                                    00006600
C     CALCULATION OF                                                 00006700
C                                                                    00006800
      FK1=ZERO                                                       00006900
      FK2=ZERO                                                       00007000
      FK3=ZERO                                                       00007100
      DO 100 I = 1 , 6                                               00007200
      FK1=FK1+C(I)*(TT/1.D3)**(I-1)                                  00007300
      FK2=FK2+(I-1)*C(I)*(TT/1.D3)**(I-1)/TT                         00007400
      FK3=FK3+(I-1)*(I-2)*C(I)*(TT/1.D3)**(I-1)/(TT**2)              00007500
  100 CONTINUE                                                       00007600
C                                                                    00007700
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      FD(16)=FK1+C(7)*DLOG(TT)+C(8)*TT*DLOG(TT)/1.D3                    00007800
      FD(10)=FK2+C(7)/TT+C(8)/1.D3*DLOG(TT)+C(8)/1.D3                   00007900
      FD(11)=-TT**2*FD(10)/1.D3                                         00008000
      FD(12)=FK3-C(7)/(TT**2)+C(8)/(1.D3*TT)                            00008100
      FD(13)=TT**3/1.D6*(2.D0*FD(10)+TT*FD(12))                         00008200
C                                                                       00008300
C                                                                       00008400
      DO 400 J=1,7                                                      00008500
      DO 10 KK=4,22                                                     00008600
      F(KK)=ZERO                                                        00008700
   10 CONTINUE                                                          00008800
C                                                                       00008900
      IF( J .EQ. 1 )  TAJ=1.553D0                                       00009000
      IF( J .GT. 1 )  TAJ=2.53D0                                        00009100
      IF( J .EQ. 1 )  RAJ=0.7D0                                         00009200
      IF( J .GT. 1 )  RAJ=1.1D0                                         00009300
C                                                                       00009400
      F(4)=(TA-TAJ)**(J-2)                                              00009500
      F(19)=DFLOAT(J-2)*(TA-TAJ)**(J-3)                                 00009600
      F(20)=DFLOAT(J-2)*DFLOAT(J-3)*(TA-TAJ)**(J-4)                     00009700
C                                                                       00009800
      DO 200 I=1,8                                                      00009900
      B1=A(I,J)*(RA-RAJ)**(I-1)                                         00010000
      B2=DFLOAT(I-1)*B1/(RA-RAJ)                                        00010100
      B3=DFLOAT(I-2)*B2/(RA-RAJ)                                        00010200
      B4=DFLOAT(I-3)*B3/(RA-RAJ)                                        00010300
      F(5)=F(5)+B1                                                      00010400
      F(6)=F(6)+B2                                                      00010500
      F(7)=F(7)+B3                                                      00010600
      F(8)=F(8)+B4                                                      00010700
      F(21)=F(21)+A(I,J)*(-RAJ)**(I-1)                                  00010800
      F(22)=F(22)+DFLOAT(I-1)*A(I,J)*(-RAJ)**(I-2)                      00010900
  200 CONTINUE                                                          00011000
C                                                                       00011100
      DO 300 I=9,10                                                     00011200
      B5=A(I,J)*RA**(I-9)                                               00011300
      B6=DFLOAT(I-9)*B5*F(3)                                            00011400
      B7=DFLOAT(I-10)*B6*F(3)                                           00011500
      B8=DFLOAT(I-9)*B7                                                 00011600
      B9=DFLOAT(I-8)*B5                                                 00011700
      B10=DFLOAT(I-9)*B5                                                00011800
      F(9)=F(9)+B5                                                      00011900
      F(10)=F(10)+B6                                                    00012000
      F(11)=F(11)+B7                                                    00012100
      F(12)=F(12)+B8                                                    00012200
      F(14)=F(14)+B5*RA                                                 00012300
      F(15)=F(15)+B9                                                    00012400
      F(16)=F(16)+B10                                                   00012500
      F(17)=F(17)+B6*DFLOAT(I-8)                                        00012600
      F(18)=F(18)+B6*DFLOAT(I-9)                                        00012700
  300 CONTINUE                                                          00012800
C                                                                       00012900
      FD(1)=FD(1)+(F(4)+F(1)*F(19))*(F(5)+F(2)*F(9))                    00013000
      FD(2)=FD(2)+(2.D0*F(19)+F(1)*F(20))*(F(5)+F(2)*F(9))              00013100
      FD(3)=FD(3)+F(1)*F(4)*(F(6)-E*F(2)*F(9)+F(2)*F(10))               00013200
      FD(4)=FD(4)+F(1)*F(4)*(F(7)+E**2*F(2)*F(9)                        00013300
     *           -2.D0*E*F(2)*F(10)+F(2)*F(11))                         00013400
      FD(5)=FD(5)+(F(4)+F(1)*F(19))*(F(6)-E*F(2)*F(9)                   00013500
     *           +F(2)*F(10))                                           00013600
      FD(6)=FD(6)+(F(4)+F(1)*F(19))*(F(6)-E*F(2)*F(9)+F(2)*F(10))       00013700
      FF1=FF1+F(4)*(F(5)+F(2)*F(9)+RA*F(6)                              00013800
     *       -E*F(2)*F(14)+F(2)*F(16))                                  00013900
      FF2=FF2+F(4)*(2.D0*F(6)-E*F(2)*F(9)+F(2)*F(10)                    00014000
     *       +RA*F(7)+E**2*F(2)*F(14)-E*F(2)*F(15)                      00014100
     *       -E*F(2)*F(16)+F(2)*F(18))                                  00014200
      FF3=FF3+F(4)*(3.D0*F(7)+RA*F(8)+E**2*F(2)*F(9)                    00014300
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     *        +2.D0*E**2*F(2)*F(15)+E**2*F(2)*F(16)                    00014400
     *        -2.D0*E*F(2)*F(10)-E*F(2)*F(17)                          00014500
     *        -2.D0*E*F(2)*F(18)+F(2)*F(11)                            00014600
     *        +F(2)*F(12)-E**3*F(2)*F(14))                             00014700
       FD(15)=FD(15)+F(1)*F(4)*(F(5)+F(2)*F(9))                       00014800
       FD(22)=FD(22)+F(1)*F(4)*F(21)                                  00014900
       FD(23)=FD(23)+F(1)*F(4)*F(22)                                  00015000
   400 CONTINUE                                                       00015100
C                                                                     00015200
       IF( ICN .LE. 3 )  GO TO 500                                    00015300
       B11=-F(3)/RA                                                   00015400
       B12=-B11/RA                                                    00015500
C                                                                     00015600
       FD(7)=R*TT*(F(3)+F(1)*FF1)                                     00015700
       FD(8)=R*TT*(B11+F(1)*FF2)                                      00015800
       FD(9)=R*TT*(2.D0*B12+F(1)*FF3)                                 00015900
       FD(14)=FD(16)+R*TT*(DLOG(RA)+RA*FD(15))                        00016000
C                                                                     00016100
   500 CONTINUE                                                       00016200
C                                                                     00016300
       RETURN                                                         00016400
       END                                                            00016500
       SUBROUTINE STEAM( TT , RA , FD , FS )                          00010000
C                                                                     00020000
C      THIS SUBROUTINE SET                                            00030000
C                                                                     00040000
C           THERMODYNAMIC PROPERTIES                                  00050000
C                                                                     00060000
C                                                                     00070000
C        RA      : DENSITY                    ( 10**3*KG/M**3 )       00080000
C        TT      : TEMPERATURE                ( K )                   00090000
C        PP      : PRESSURE                   ( MPA )                 00100000
C        FS( 1) : PRESSURE                    ( MPA )                 00110000
C        FS( 2) : INTERNAL ENERGY             ( KJ/KG)                00120000
C        FS( 3) : ENTROPY                     ( KJ/KG*K )             00130000
C        FS( 4) : ENTALPY                     ( KJ/KG)                00140000
C        FS( 5) : SPECIFIC HEATS CP           ( KJ/KG*K )             00150000
C        FS( 6) : SPECIFIC HEATS CV           ( KJ/KG*K )             00160000
C        FS( 7) : SECOND VIRIAL COEFICIENT    ( M**3/10**3*KG )       00170000
C        FS( 8) : THIRD  VIRIAL COEFICIENT    ( (M**3/10**3*KG)**2 )  00180000
C        FS( 9) : JOULE-THOMSON COEFICIENT    ( K/MPA )               00190000
C        FS(10) : COMPRESSIBILITY             ( 1./MPA )              00200000
C        FS(11) : SPECIFIC VOLUME             ( (M**3/10**3)*KG )     00210000
C        FS(12) : SPEED OF SOUND              ( M/S )                 00220000
C                                                                     00230000
       IMPLICIT REAL*8 ( A-H , O-Z )                                  00240000
       COMMON / COEF / E , R                                          00250000
       DIMENSION FD(25) , FS(12)                                      00260000
       DATA CK / 1.D3 /                                               00270000
C                                                                     00280000
       TA = 1.D3 / TT                                                 00290000
C                                                                     00300000
C ***   PRESSURE   ***                                                00310000
       FF1 = 1.D0 + RA * FD(15) + RA ** 2 * FD(3)                     00320000
       FS(1) = RA * R * TT * FF1                                      00330000
C                                                                     00340000
C                                                                     00350000
C ***   INTERNAL ENERGY   ***                                         00360000
C                                                                     00370000
       FS(2) = FD(16) + TA * FD(11) + 1.D3 * R * RA * FD(1)           00380000
C                                                                     00390000
C ***   ENTROPY   ***                                                 00400000
C                                                                     00410000
       FF3 = DLOG(RA) + RA * FD(15) - RA * TA * FD(1)                 00420000
       FS(3) = -R * FF3 - FD(10)                                      00430000
C                                                                     00440000
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C  ***   ENTALPY   ***                                                  00450000
C                                                                       00460000
      FF4 = 1.D0 + RA * FD(15) + RA * TA * FD(1) + RA ** 2 * FD(3)      00470000
      FS(4) = R * TT * FF4 + FD(16) + TA * FD(11)                       00480000
C                                                                       00490000
C  ***   SPECIFIC HEATS   ***                                           00500000
C                                                                       00510000
      FS(5) = -TA ** 2 * FD(17) / 1.D3 - FD(18) * FD(19) / FD(20)       00520000
C                                                                       00530000
C  ***   SPECIFIC HEATS   ***                                           00540000
C                                                                       00550000
      FS(6) = -TA ** 2 * FD(21) / 1.D3                                  00560000
C                                                                       00570000
C  ***   SECOND VIRIAL COEFICIENT   ***                                 00580000
C                                                                       00590000
      FS(7) = FD(15)                                                    00600000
C                                                                       00610000
C  ***   THIRD VIRIAL COEFICIENT   ***                                  00620000
C                                                                       00630000
      FS(8) = FD(3)                                                     00640000
C                                                                       00650000
C  ***   JOULE-THOMSON COEFICIENT   ***                                 00660000
C                                                                       00670000
      FF9 = TT * FD(19) / ( RA * FD(20) )                               00680000
      FS(9) = ( FF9 - 1.D0 ) / ( RA * FS(5) )                           00690000
C                                                                       00700000
C  ***   COMPRESSIBILITY   ***                                          00710000
C                                                                       00720000
      FF10 = RA * FD(20)                                                00730000
      FS(10) = 1.D0 / FF10                                              00740000
C                                                                       00750000
C  ***   SPECIFIC VOLUME   ***                                          00760000
C                                                                       00770000
      FS(11) = 1.D0 / RA                                                00780000
C                                                                       00790000
C  ***   SPEED OF SOUND   ***                                           00800000
C                                                                       00810000
      FF12 = 1.D0 / FD(20) - TT * FD(19) ** 2 /                         00820000
     *            ( FS(5) * RA ** 2 * FD(20) ** 2 )                    00830000
      FS(12) = 1.D0 / DSQRT( FF12 )                                     00840000
      FS(12) = FS(12) * DSQRT( CK )                                     00850000
C                                                                       00860000
      RETURN                                                            00870000
      END                                                               00880000
      SUBROUTINE TABLE( T , P , B , C , D ,                             00010000
     *                  NT , NP , NS , NS2 )                            00020000
C*****************************************                              00030000
C     THIS SUBROUTINE OUTPUT THERMODYNAMIC   *                          00040000
C                                            *                          00050000
C         PROPERTIES                         *                          00060000
C *****************************************                             00070000
C                                                                       00080000
      IMPLICIT REAL*8 ( A-H , O-Z )                                     00090000
      DIMENSION T(NT) , P(NP) , B(25,NS) , C(25,NS2)                    00100000
      DIMENSION D(12,NT,NP)                                             00110000
C                                                                       00120000
C     THE THERMODYNAMIC PROPERTIES                                      00130000
C        OF SATURATED STATES                                            00140000
C        BASED ON TEMPERATURE                                           00150000
C                                                                       00160000
      LINE=0                                                            00170000
      WRITE( 6 , 1100 )                                                 00180000
      DO 100 I = 1 , NS                                                 00190000
      WRITE( 6 , 1200 )  T(I) , B(1,I) , B(2,I) , B(14,I) , B(6,I) ,    00200000
     *                   B(18,I) , B(4,I) , B(16,I) , B(5,I) , B(17,I)  00210000
      LINE = LINE + 1                                                   00220000
```

```
      IF( LINE .LE. 30 )  GO TO 100                                     00230000
      LINE = 0                                                          00240000
      WRITE( 6 , 1100 )                                                 00250000
  100 CONTINUE                                                          00260000
C                                                                       00270000
C     THE THERMODYNAMIC PROPERTIES                                      00280000
C         OF SATURATED STATES                                           00290000
C        BASED ON PRESSURE                                              00300000
C                                                                       00310000
      LINE = 0                                                          00320000
      WRITE( 6 , 1300 )                                                 00330000
      DO 200 J = 1 , NS2                                                00340000
      WRITE( 6 , 1400 )  P(J) , C(1,J) , C(2,J) , C(14,J) , C(6,J) ,    00350000
     *                   C(18,J) , C(4,J) , C(16,J) , C(5,J) , C(17,J)  00360000
      LINE = LINE + 1                                                   00370000
      IF( LINE .LE. 30 )  GO TO 200                                     00380000
      LINE = 0                                                          00390000
      WRITE( 6 , 1300 )                                                 00400000
  200 CONTINUE                                                          00410000
C                                                                       00420000
C     THE THERMODYNAMIC PROPERTIES                                      00430000
C         OF SINGLE PHASE                                               00440000
C                                                                       00450000
      DO 300 J = 1 , NP                                                 00460000
      LINE = 0                                                          00470000
      WRITE( 6 , 1500 )  P(J)                                           00480000
      DO 300 I = 1 , NT                                                 00490000
      WRITE( 6 , 1600 ) T(I) , D(1,I,J) , D(5,I,J) , D(3,I,J) ,         00500000
     *                   D(4,I,J) , D(6,I,J) , D(12,I,J)                00510000
      LINE = LINE + 1                                                   00520000
      IF( LINE .LE. 30 )  GO TO 300                                     00530000
      LINE = 0                                                          00540000
      WRITE( 6 , 1500 )  P(J)                                           00550000
  300 CONTINUE                                                          00560000
C                                                                       00570000
C     FORMAT STATEMENT                                                  00580000
C                                                                       00590000
 1100 FORMAT( 1H1///5X,'SATURATION : TEMPERATURES'///                   00600000
     *        2X,'TEMP.',5X,'PRESS.',8X,'VOLUME, M**3/KG',             00610000
     *        12X,'ENTHALPY, KJ/KG',12X,'ENERGY, KJ/KG',               00620000
     *        14X,'ENTROPY, KJ/KG*K'/                                  00630000
     *        3X,'C',10X,'KPA',11X,'LIQUID',7X,'VAPOUR',               00640000
     *        8X,'LIQUID',7X,'VAPOUR',8X,'LIQUID',7X,                  00650000
     *        'VAPOUR',8X,'LIQUID',7X,'VAPOUR'///)                     00660000
 1200 FORMAT( 1H ,1X,F7.2,2X,D12.5,2X,4(D12.5,1X,D12.5,2X))             00670000
 1300 FORMAT( 1H1///5X,'SATURATION : PRESSURE'///                       00680000
     *        3X,'PRESS.',8X,'TEMP.',4X,'VOLUME, M**3/KG',             00690000
     *        12X,'ENTHALPY, KJ/KG',12X,'ENERGY, KJ/KG',               00700000
     *        14X,'ENTROPY, KJ/KG*K'/                                  00710000
     *        4X,'KPA',11X,'C',9X,'LIQUID',7X,'VAPOUR',                00720000
     *        8X,'LIQUID',7X,'VAPOUR',8X,'LIQUID',7X,                  00730000
     *        'VAPOUR',8X,'LIQUID',7X,'VAPOUR'///)                     00740000
 1400 FORMAT( 1H ,1X,D12.5,2X,F7.2,2X,4(D12.5,1X,D12.5,2X))             00750000
 1500 FORMAT( 1H1///5X,'LIQUID AND VAPOUR'//                            00760000
     *        1H , 8X, 'P (KPA) =',1X,D12.5///                         00770000
     *        2X,'TEMP.',5X,'VOLUME',8X,'ENTHALPY',6X,                 00780000
     *        'ENERGY',8X,'ENTROPY',6X,'SPECIFIC HEATS',               00790000
     *        2X,'SPEED OF SOUND'/                                     00800000
     *        3X,'C',9X,'M**3/KG',7X,'KJ/KG',10X,                      00810000
     *        'KJ/KG',9X,'KJ/KG*K',7X,'KJ/KG*K',7X,'M/S'///)           00820000
 1600 FORMAT( 1H ,1X,F7.2,2X,6(D12.5,2X))                               00830000
C                                                                       00840000
      RETURN                                                            00850000
      END                                                               00860000
      SUBROUTINE TABLE2( PS , CPFS , CPGS , PHL , PTL , PD , PDD ,      00010000
     *                   PDP , CPF , PHG , PTG , PV , PGD , PGP ,       00020000
```

```
     *                 CPG , IPMAX , ILMAX , IGMAX )                  00030000
C*****************************************                            00040000
C*                                       *                           00050000
C*    THIS SUBROUTINE OUTPUT             *                           00060000
C*                                       *                           00070000
C*         THERMODYNAMIC PROPERTIES      *                           00080000
C*                                       *                           00090000
C*****************************************                            00100000
C                                                                     00110000
      IMPLICIT REAL*8 (A-H,O-Z)                                       00120000
      DIMENSION PS(IPMAX,12) , CPFS(IPMAX) , CPGS(IPMAX)              00130000
      DIMENSION PHL(IPMAX,ILMAX) , PTL(IPMAX,ILMAX) , PD(IPMAX,ILMAX) 00140000
      DIMENSION PDD(IPMAX,ILMAX) , PDP(IPMAX,ILMAX) , CPF(IPMAX,ILMAX)00150000
      DIMENSION PHG(IPMAX,IGMAX) , PTG(IPMAX,IGMAX) , PV(IPMAX,IGMAX) 00160000
      DIMENSION PGD(IPMAX,IGMAX) , PGP(IPMAX,IGMAX) , CPG(IPMAX,IGMAX)00170000
C                                                                     00180000
C     THE TERMODYNAMIC PROPERTIES                                     00190000
C         OF SATURATED WATER                                          00200000
C                                                                     00210000
      WRITE( 6 , 1100 )                                               00220000
      DO 100 I = 1 , IPMAX                                            00230000
      WRITE( 6 , 1200 )  PS(I,1) , PS(I,4) , PS(I,5) , PS(I,6) ,      00240000
     *                   PS(I,9) , PS(I,10) , CPFS(I)                 00250000
  100 CONTINUE                                                        00260000
C                                                                     00270000
C     THE THERMODYNAMIC PROPERTIES                                    00280000
C         OF SATURATED STEAM                                          00290000
C                                                                     00300000
      WRITE( 6 , 1300 )                                               00310000
      DO 200 I = 1 , IPMAX                                            00320000
      WRITE( 6 , 1200 )  PS(I,1) , PS(I,4) , PS(I,7) , PS(I,8) ,      00330000
     *                   PS(I,11) , PS(I,12) , CPGS(I)                00340000
  200 CONTINUE                                                        00350000
C                                                                     00360000
C     THE TERMODYNAMIC PROPERTIES                                     00370000
C         OF SUBCOOLED WATER                                          00380000
C                                                                     00390000
      DO 300 I = 1 , IPMAX                                            00400000
      WRITE( 6 , 1400 )  PS(I,1)                                      00410000
      DO 300 J = 1 , ILMAX                                            00420000
      WRITE( 6 , 1500 )  PHL(I,J) , PTL(I,J) , PD(I,J) ,              00430000
     *                   PDD(I,J) , PDP(I,J) , CPF(I,J)               00440000
  300 CONTINUE                                                        00450000
C                                                                     00460000
C     THE THERMODYNAMIC PROPERTIES                                    00470000
C         OF SUPERHEATED STEAM                                        00480000
C                                                                     00490000
      DO 400 I = 1 , IPMAX                                            00500000
      WRITE( 6 , 1600 )  PS(I,1)                                      00510000
      DO 400 K = 1 , IGMAX                                            00520000
      WRITE( 6 , 1500 )  PHG(I,K) , PTG(I,K) , PV(I,K) ,              00530000
     *                   PGD(I,K) , PGP(I,K) , CPG(I,K)               00540000
  400 CONTINUE                                                        00550000
C                                                                     00560000
C     FORMAT STATEMENT                                                00570000
C                                                                     00580000
 1100 FORMAT(1H1///5X,'SATURATED WATER PROPERTIES'///                 00590000
     *       2X,'PRESS.',8X,'TEMP.',4X,'ENTHALPY',5X,'VOLUME',8X,     00600000
     *       'DVDP',10X,'DHDP',10X,'SPECIFIC HEATS'/                  00610000
     *       3X,'KG/M**2',7X,'C',8X,'KCAL/KG',7X,'M**3/KG',           00620000
     *       35X,'KCAL/KG*K'///)                                      00630000
 1200 FORMAT(1H ,1X,D12.5,2X,F7.2,2X,5(D12.5,2X))                     00640000
 1300 FORMAT(1H1///5X,'SATURATED STEAM PROPERTIES'///                 00650000
     *       2X,'PRESS.',8X,'TEMP.',4X,'ENTHALPY',5X,'VOLUME',8X,     00660000
     *       'DVDP',10X,'DHDP',10X,'SPECIFIC HEATS'/                  00670000
     *       3X,'KG/M**2',7X,'C',8X,'KCAL/KG',7X,'M**3/KG',           00680000
```

```
     *       35X,'KCAL/KG*K'///)
 1400 FORMAT(1H1///5X,'SUBCOOLED WATER'//
     *       1H ,8X,'P (KG/M**2) =',1X,D12.5///
     *       2X,'ENTHALPY',6X,'TEMP.',5X,'VOLUME',8X,
     *       'DVDH',10X,'DVDP',10X,'SPECIFIC HEAT'/
     *       3X,'KCAL/KG',7X,'C',9X,'M**3/KG',35X,
     *       'KCAL/KG*K'///)
 1500 FORMAT(1H ,1X,D12.5,2X,F7.2,2X,4(D12.5,2X))
 1600 FORMAT(1H1///5X,'SUPERHEATED STEAM'//
     *       1H ,8X,'P (KG/M**2) =',1X,D12.5///
     *       2X,'ENTHALPY',6X,'TEMP.',5X,'VOLUME',8X,
     *       'DVDH',10X,'DVDP',10X,'SPECIFIC HEAT'/
     *       3X,'KCAL/KG',7X,'C',9X,'M**3/KG',35X,
     *       'KCAL/KG*K'///)
C
      RETURN
      END
      SUBROUTINE TEMP( TT , PP )
C*************************************
C     THIS SUBROUTINE IS CALCULATION    *
C          OF TEMPERATURE TT ( PP )     *
C          BY NEWTON METHOD             *
C                                       *
C*************************************
      IMPLICIT REAL*8 ( A-H , O-Z )
      DIMENSION E(7)
      DATA  A1 , A2 , A4 , A11 , A20
     *      / -7.81583D0 , 17.6012D0 , -18.1747D0 ,
     *        -3.92488D0 , 4.19174D0 /
      DATA  E / 0.9D0 , 1.9D0 , 2.D0 , 4.5D0 ,
     *          5.5D0 , 9.D0 , 10.D0 /
      DATA  TC / 643.89D0 /
      DATA  PC / 21.66D0 /
      DATA  EPS / 1.D-10 /
      DATA  ZERO / 0.D0 /
C
C     NEWTON METHOD
C
C     WRITE( 6 , 9100 )
      TT = ZERO
      T0 = 276.95D0
      TA0 = 1.D0 - T0 / TC
      N = 500
      DO 100 I = 1 , N
      FT1 = A1 * TA0 + A2 * TA0 ** E(2) + A4 * TA0 ** E(3)
     *      + A11 * TA0 ** E(5) + A20 * TA0 ** E(7)
      FT2 = PP / PC
      FT3 = A1 + E(2) * A2 * TA0 ** E(1) + E(3) * A4 * TA0
     *      + E(5) * A11 * TA0 ** E(4)
     *      + E(7) * A20 * TA0 ** E(6)
      FT4 = 1.D0 / ( 1.D0 - TA0 )
      S = FT4 * FT1 - DLOG( FT2 )
      T = FT4 * ( FT4 * FT1 + FT3 )
      TA1 = TA0 - S / T
      DELT = ( TA1 - TA0 ) / TA0
      IF( DABS( DELT) .LT. EPS )  GO TO 200
C     WRITE( 6 , 9200 )  I , TA0 , S , T , DELT
      IF( I .EQ. N )  WRITE( 6 , 9300 )
      TA0 = TA1
  100 CONTINUE
      GO TO 300
  200 CONTINUE
C     WRITE( 6 , 9200 )  I , TA0 , S , T
      TT = TC * ( 1.D0 - TA0 )
  300 CONTINUE
      IF( TT .LT. EPS )  STOP
```

```
C                                                                       00500000
C     FORMAT STATEMENT                                                  00510000
C                                                                       00520000
 9100 FORMAT( 1H1///10X,'RESULT OF NEWTON METHOD (SUB. TEMP)' //        00530000
     *        10X,'I , TA0 , S , T '/ )                                 00540000
 9200 FORMAT( 1H ,5X,I5,4(5X,D20.12))                                   00550000
 9300 FORMAT( 1H ,5X,'ITERATION STOP' )                                 00560000
C                                                                       00570000
      RETURN                                                            00580000
      END                                                               00590000
      SUBROUTINE THSET( PS , CPFS , CPGS , PHL , PTL , PD , PDD ,       00010000
     *                  PDP , CPF , PHG , PTG , PV , PGD , PGP ,        00020000
     *                  CPG , FD , FS , TT , RA ,                       00030000
     *                  IPMAX , ILMAX , IGMAX , NV , J , JJ , K )       00040000
C*****************************************                              00050000
C*                                       *                             00060000
C*    THIS SUBROUTINE SET OUTPUT VARIABLE    *                         00070000
C*                                       *                             00080000
C*         OF STEAM TABLE                *                             00090000
C*                                       *                             00100000
C*****************************************                              00110000
C                                                                       00120000
      IMPLICIT REAL*8 (A-H,O-Z)                                         00130000
      DIMENSION FD(25) , FS(12)                                         00140000
      DIMENSION PS(IPMAX,12) , CPFS(IPMAX) , CPGS(IPMAX)                00150000
      DIMENSION PHL(IPMAX,ILMAX) , PTL(IPMAX,ILMAX) , PD(IPMAX,ILMAX)   00160000
      DIMENSION PDD(IPMAX,ILMAX) , PDP(IPMAX,ILMAX) , CPF(IPMAX,ILMAX)  00170000
      DIMENSION PHG(IPMAX,IGMAX) , PTG(IPMAX,IGMAX) , PV(IPMAX,IGMAX)   00180000
      DIMENSION PGD(IPMAX,IGMAX) , PGP(IPMAX,IGMAX) , CPG(IPMAX,IGMAX)  00190000
C                                                                       00200000
      TA = 1.D3 / TT                                                    00210000
      TAK = -TA ** 2 / 1.D3                                             00220000
C                                                                       00230000
      GO TO ( 100 , 200 , 200 ) , NV                                    00240000
C                                                                       00250000
  100 CONTINUE                                                          00260000
      IF( K .EQ. 1 )  PS(J,4) = TT                                      00270000
      PS(J,2*K+3) = FS( 4)                                              00280000
      PS(J,2*K+4) = FS(11)                                              00290000
C                                                                       00300000
      CALL DVDH( PS(J,1) , PS(J,2*K+4) , PS(J,2*K+3) ,                  00310000
     *           FF1 , FF2 , K )                                        00320000
C                                                                       00330000
      IF( K .EQ. 1 )  PS(J, 9) = FF1                                    00340000
      IF( K .EQ. 2 )  PS(J,11) = FF1                                    00350000
      IF( K .EQ. 1 )  PS(J,10) = FF2                                    00360000
      IF( K .EQ. 2 )  PS(J,12) = FF2                                    00370000
      IF( K .EQ. 1 )  CPFS(J) = FS(5)                                   00380000
      IF( K .EQ. 2 )  CPGS(J) = FS(5)                                   00390000
      GO TO 400                                                         00400000
C                                                                       00410000
  200 CONTINUE                                                          00420000
      FF4 = FD(18) - TAK * FD(17) * FD(20) / FD(19)                     00430000
      FF5 = -RA ** 2 * FF4                                              00440000
      FF6 = FD(20) - FD(19) * FD(18) / ( TAK * FD(17) )                 00450000
      FF7 = -RA ** 2 * FF6                                              00460000
C                                                                       00470000
      IF( NV .EQ. 3 )  GO TO 300                                        00480000
      PHL(J,JJ) = FS( 4)                                                00490000
      PTL(J,JJ) = TT                                                    00500000
      PD (J,JJ) = FS(11)                                                00510000
      PDD(J,JJ) = 1.D0 / FF5                                            00520000
      PDP(J,JJ) = 1.D0 / FF7                                            00530000
      CPF(J,JJ) = FS( 5)                                                00540000
      GO TO 400                                                         00550000
C                                                                       00560000
```

```
  300 CONTINUE                                                          00570000
      PHG(J,JJ) = FS( 4)                                                00580000
      PTG(J,JJ) = TT                                                    00590000
      PV (J,JJ) = FS(11)                                                00600000
      PGD(J,JJ) = 1.D0 / FF5                                            00610000
      PGP(J,JJ) = 1.D0 / FF7                                            00620000
      CPG(J,JJ) = FS( 5)                                                00630000
  400 CONTINUE                                                          00640000
C                                                                       00650000
      RETURN                                                            00660000
      END                                                               00670000
      SUBROUTINE VCONV( PS , CPFS , CPGS , PHL , PTL , PD , PDD ,       00010000
     *                  PDP , CPF , PHG , PTG , PV , PGD , PGP ,        00020000
     *                  CPG , IPMAX , ILMAX , IGMAX , NV )              00030000
C*****************************************                              00040000
C*                                       *                             00050000
C*    THIS SUBROUTINE CONVERT VALUE OF   *                             00060000
C*                                       *                             00070000
C*         THERMODYNAMIC PROPERTIES      *                             00080000
C*                                       *                             00090000
C*****************************************                              00100000
C                                                                       00110000
      IMPLICIT REAL*8 (A-H,O-Z)                                         00120000
      COMMON  / COEF / E , R                                            00130000
      DIMENSION FD(25) , FS(12)                                         00140000
      DIMENSION PS(IPMAX,12) , CPFS(IPMAX) , CPGS(IPMAX)                00150000
      DIMENSION PHL(IPMAX,ILMAX) , PTL(IPMAX,ILMAX) , PD(IPMAX,ILMAX)   00160000
      DIMENSION PDD(IPMAX,ILMAX) , PDP(IPMAX,ILMAX) , CPF(IPMAX,ILMAX)  00170000
      DIMENSION PHG(IPMAX,IGMAX) , PTG(IPMAX,IGMAX) , PV(IPMAX,IGMAX)   00180000
      DIMENSION PGD(IPMAX,IGMAX) , PGP(IPMAX,IGMAX) , CPG(IPMAX,IGMAX)  00190000
      DATA  EPS / 1.D-10 /                                              00200000
      DATA  ZERO / 0.D0 /                                               00210000
C                                                                       00220000
      WRITE( 6 , 9000 )  NV                                             00230000
      GO TO ( 100 , 200 , 300 ) , NV                                    00240000
C                                                                       00250000
  100 CONTINUE                                                          00260000
      N1 = 2                                                            00270000
      N2 = 1                                                            00280000
      GO TO 400                                                         00290000
C                                                                       00300000
  200 CONTINUE                                                          00310000
      N1 = 1                                                            00320000
      N2 = ILMAX                                                        00330000
      GO TO 400                                                         00340000
C                                                                       00350000
  300 CONTINUE                                                          00360000
      N1 = 1                                                            00370000
      N2 = IGMAX                                                        00380000
C                                                                       00390000
  400 CONTINUE                                                          00400000
C                                                                       00410000
C     NEWTON METHOD                                                     00420000
C                                                                       00430000
      DO 1100 K = 1 , N1                                                00440000
      DO 1000 JJ = 1 , N2                                               00450000
      HH = ZERO                                                         00460000
      IF( NV .EQ. 2 )  HH = PHL(1,JJ)                                   00470000
      IF( NV .EQ. 3 )  HH = PHG(1,JJ)                                   00480000
C                                                                       00490000
      DO 900 J = 1 , IPMAX                                              00500000
      PP = PS(J,1)                                                      00510000
      IF( NV .EQ. 1 .AND. K .EQ. 1 )  X0 = 1105.460977D-3               00520000
      IF( NV .EQ. 1 .AND. K .EQ. 2 )  X0 = 5.7447162D-6                 00530000
      IF( NV .EQ. 2 )  X0 = 1105.460977D-3                              00540000
      IF( NV .EQ. 3 )  X0 = 5.7447162D-6                                00550000
```

```
      T0 = 276.95D0                                                    00560000
      NCNT = 0                                                         00570000
C                                                                      00580000
  450 CONTINUE                                                         00590000
      N = 500                                                          00600000
C                                                                      00610000
      DO 700 I = 1 , N                                                 00620000
      IF( NV .EQ. 1 )  T0 = ZERO                                       00630000
      S1 = ZERO                                                        00640000
      S2 = ZERO                                                        00650000
      STR1 = ZERO                                                      00660000
      STT1 = ZERO                                                      00670000
      STR2 = ZERO                                                      00680000
      STT2 = ZERO                                                      00690000
      IF( NV .EQ. 1 ) CALL SET( T0 , X0 , PP , FD , 2 )                00700000
      IF( NV .NE. 1 ) CALL SET( T0 , X0 , PP , FD , 4 )                00710000
      S1 = FD(24)                                                      00720000
      IF( NV .NE. 1 )  GO TO 500                                       00730000
C                                                                      00740000
      STR1 = FD(25)                                                    00750000
      X1 = X0 - S1 / STR1                                              00760000
      DDE = ( X1 - X0 ) / X0                                           00770000
C     WRITE( 6 , 9100 )  J , JJ , K , I , X0 , T0 , DDE               00780000
      IF( DABS(DDE) .LT. EPS )  GO TO 800                              00790000
      X0 = X1                                                          00800000
      GO TO 600                                                        00810000
C                                                                      00820000
  500 CONTINUE                                                         00830000
      TA0 = 1.D3 / T0                                                  00840000
      RA = X0                                                          00850000
      FFK = -TA0 ** 2 / 1.D3 * FD(17)                                  00860000
      STR1 = FD(25) - FD(19) * FD(18) / FFK                            00870000
      STT1 = FD(19) - FD(25) * FFK / FD(18)                            00880000
      X1 = X0 - S1 / STR1                                              00890000
      T1 = T0 - S1 / STT1                                              00900000
      DDE1X = ( X1 - X0 ) / X0                                         00910000
      DDE1T = ( T1 - T0 ) / T0                                         00920000
      DDE1 = DABS(DDE1X) + DABS(DDE1T)                                 00930000
C     WRITE( 6 , 9200 )  J , JJ , K , I , X0 , T0 , DDE1              00940000
      IF( DABS(DDE1) .LT. EPS )  GO TO 550                             00950000
      X0 = X1                                                          00960000
      T0 = T1                                                          00970000
      GO TO 600                                                        00980000
  550 CONTINUE                                                         00990000
      IF( NCNT .EQ. 0 )  GO TO 570                                     01000000
      DDE3X = ( X0 - XX ) / XX                                         01010000
      DDE3T = ( T0 - TT ) / TT                                         01020000
      DDE3  = DABS(DDE3X) + DABS(DDE3T)                                01030000
      IF( DABS(DDE3) .LT. EPS )  GO TO 800                             01040000
C                                                                      01050000
  570 CONTINUE                                                         01060000
      XX = X0                                                          01070000
      TT = T0                                                          01080000
      NCNT = 1                                                         01090000
      DO 580 II = 1 , N                                                01100000
      S2 = ZERO                                                        01110000
      CALL SET( T0 , X0 , PP , FD , 4 )                                01120000
      TA0 = 1.D3 / T0                                                  01130000
      RA = X0                                                          01140000
      FFK = -TA0 ** 2 / 1.D3 * FD(17)                                  01150000
      S2 = R * T0 * ( 1.D0 + RA * FD(15) + RA * TA0 * FD(1)            01160000
     *               + RA ** 2 * FD(3) ) + FD(16)                      01170000
     *               + TA0 * FD(11) - HH                               01180000
      STR2 = FD(18) - FFK * FD(25) / FD(19)                            01190000
      STT2 = FFK - FD(18) * FD(19) / FD(25)                            01200000
      X2 = X0 - S2 / STR2                                              01210000
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      T2 = T0 - S2 / STT2                                              01220000
      DDE2X = ( X2 - X0 ) / X0                                         01230000
      DDE2T = ( T2 - T0 ) / T0                                         01240000
      DDE2 = DABS(DDE2X) + DABS(DDE2T)                                 01250000
C     WRITE( 6 , 9200 )  J , JJ , K , II , X0 , T0 , DDE2             01260000
      IF( DABS(DDE2) .LT. EPS )  GO TO 650                             01270000
      X0 = DABS(X2)                                                    01280000
      T0 = DABS(T2)                                                    01290000
      IF( II .EQ. N )  WRITE( 6 , 9300 )  J , JJ , K , II             01300000
  580 CONTINUE                                                         01310000
  600 CONTINUE                                                         01320000
      IF( I .EQ. N )  WRITE( 6 , 9300 )  J , JJ , K , I               01330000
      GO TO 700                                                        01340000
  650 CONTINUE                                                         01350000
      DDE3X = ( X0 - XX ) / XX                                         01360000
      DDE3T = ( T0 - TT ) / TT                                         01370000
      DDE3  = DABS(DDE3X) + DABS(DDE3T)                                01380000
      IF( DABS(DDE3) .LT. EPS )  GO TO 800                             01390000
      XX = X0                                                          01400000
      TT = T0                                                          01410000
      GO TO 450                                                        01420000
  700 CONTINUE                                                         01430000
C                                                                      01440000
      GO TO 900                                                        01450000
C                                                                      01460000
  800 CONTINUE                                                         01470000
C                                                                      01480000
      CALL STEAM( T0 , X0 , FD , FS )                                  01490000
C                                                                      01500000
      CALL THSET( PS , CPFS , CPGS , PHL , PTL , PD , PDD ,            01510000
     *            PDP , CPF , PHG , PTG , PV , PGD , PGP ,             01520000
     *            CPG , FD , FS , T0 , X0 , IPMAX , ILMAX , IGMAX ,    01530000
     *            NV , J , JJ , K )                                    01540000
C                                                                      01550000
  900 CONTINUE                                                         01560000
 1000 CONTINUE                                                         01570000
 1100 CONTINUE                                                         01580000
C                                                                      01590000
C     FORMAT STATEMENT                                                 01600000
C                                                                      01610000
 9000 FORMAT(1H1,10X,'RESULT OF NEWTON METHOD (SUB. VCONV) NO.=',I5)   01620000
 9100 FORMAT(1H ,7X,'J',9X,'JJ',8X,'K',9X,'I',                         01630000
     *       16X,'X0',18X,'T0',18X,'DDE'/                             01640000
     *       4(5X,I5),3(5X,D15.8))                                    01650000
 9200 FORMAT(1H ,7X,'J',9X,'JJ',8X,'K',9X,'I',                         01660000
     *       16X,'X0',18X,'T0',18X,'DDE1',16X,'DDE2'/                 01670000
     *       4(5X,I5),4(5X,D15.8))                                    01680000
 9300 FORMAT(1H ,10X,'ITERATION STOP',                                 01690000
     *       'J=',I5,5X,'K=',I5)                                      01700000
C                                                                      01710000
      RETURN                                                           01720000
      END                                                              01730000
```

# Appendix 2

# 重水の基本蒸気表作成プログラム実行結果

```
************************************************
*                                              *
*     BASIC STEAM TABLE GENERATION PROGRAM     *
*                                              *
************************************************


    **** INPUT DATA INFORMATION ****

         NT  : NUMBER OF TEMPERATURES

         NP  : NUMBER OF PRESSURES

         NS  : NUMBER OF TEMPERATURES AT SATURATED STATE

         NS2 : NUMBER OF PRESSURES AT SATURATED STATE

         NT , NP , NS , NS2 =   47   30   40   30
```

SATURATION : TEMPERATURES

| TEMP. C | PRESS. KPA | VOLUME, M**3/KG LIQUID | VOLUME, M**3/KG VAPOUR | ENTHALPY, KJ/KG LIQUID | ENTHALPY, KJ/KG VAPOUR | ENERGY, KJ/KG LIQUID | ENERGY, KJ/KG VAPOUR | ENTROPY, KJ/KG*K LIQUID | ENTROPY, KJ/KG*K VAPOUR |
|---|---|---|---|---|---|---|---|---|---|
| 3.80 | 0.66011D+00 | 0.90459D-03 | 0.17408D+03 | -0.13549D-01 | 0.23237D+04 | -0.14146D-01 | 0.22088D+04 | -0.40133D-04 | 0.83903D+01 |
| 10.00 | 0.10263D+01 | 0.90419D-03 | 0.11445D+03 | 0.26166D+02 | 0.23341D+04 | 0.26165D+02 | 0.22166D+04 | 0.93443D-01 | 0.82443D+01 |
| 20.00 | 0.19991D+01 | 0.90471D-03 | 0.60809D+02 | 0.68553D+02 | 0.23508D+04 | 0.68551D+02 | 0.22293D+04 | 0.24055D+00 | 0.80259D+01 |
| 30.00 | 0.37014D+01 | 0.90642D-03 | 0.33943D+02 | 0.11098D+03 | 0.23675D+04 | 0.11097D+03 | 0.22419D+04 | 0.38285D+00 | 0.78265D+01 |
| 40.00 | 0.65486D+01 | 0.90914D-03 | 0.19803D+02 | 0.15334D+03 | 0.23841D+04 | 0.15334D+03 | 0.22544D+04 | 0.52035D+00 | 0.76440D+01 |
| 50.00 | 0.11121D+02 | 0.91269D-03 | 0.12021D+02 | 0.19561D+03 | 0.24006D+04 | 0.19560D+03 | 0.22669D+04 | 0.65320D+00 | 0.74766D+01 |
| 60.00 | 0.18199D+02 | 0.91699D-03 | 0.75621D+01 | 0.23775D+03 | 0.24169D+04 | 0.23774D+03 | 0.22793D+04 | 0.78162D+00 | 0.73227D+01 |
| 70.00 | 0.28804D+02 | 0.92195D-03 | 0.49126D+01 | 0.27977D+03 | 0.24330D+04 | 0.27974D+03 | 0.22915D+04 | 0.90584D+00 | 0.71807D+01 |
| 80.00 | 0.44228D+02 | 0.92752D-03 | 0.32852D+01 | 0.32165D+03 | 0.24488D+04 | 0.32161D+03 | 0.23035D+04 | 0.10261D+01 | 0.70495D+01 |
| 90.00 | 0.66067D+02 | 0.93369D-03 | 0.22552D+01 | 0.36342D+03 | 0.24643D+04 | 0.36336D+03 | 0.23153D+04 | 0.11427D+01 | 0.69278D+01 |
| 100.00 | 0.96251D+02 | 0.94042D-03 | 0.15852D+01 | 0.40510D+03 | 0.24793D+04 | 0.40501D+03 | 0.23267D+04 | 0.12558D+01 | 0.68145D+01 |
| 110.00 | 0.13706D+03 | 0.94773D-03 | 0.11384D+01 | 0.44670D+03 | 0.24939D+04 | 0.44657D+03 | 0.23379D+04 | 0.13658D+01 | 0.67088D+01 |
| 120.00 | 0.19115D+03 | 0.95563D-03 | 0.83350D+00 | 0.48828D+03 | 0.25079D+04 | 0.48809D+03 | 0.23486D+04 | 0.14727D+01 | 0.66098D+01 |
| 130.00 | 0.26154D+03 | 0.96412D-03 | 0.62109D+00 | 0.52986D+03 | 0.25212D+04 | 0.52960D+03 | 0.23588D+04 | 0.15770D+01 | 0.65166D+01 |
| 140.00 | 0.35167D+03 | 0.97325D-03 | 0.47023D+00 | 0.57149D+03 | 0.25338D+04 | 0.57115D+03 | 0.23685D+04 | 0.16788D+01 | 0.64286D+01 |
| 150.00 | 0.46532D+03 | 0.98303D-03 | 0.36120D+00 | 0.61323D+03 | 0.25456D+04 | 0.61277D+03 | 0.23776D+04 | 0.17784D+01 | 0.63451D+01 |
| 160.00 | 0.60669D+03 | 0.99352D-03 | 0.28110D+00 | 0.65512D+03 | 0.25565D+04 | 0.65452D+03 | 0.23859D+04 | 0.18759D+01 | 0.62655D+01 |
| 170.00 | 0.78034D+03 | 0.10048D-02 | 0.22138D+00 | 0.69722D+03 | 0.25663D+04 | 0.69643D+03 | 0.23936D+04 | 0.19716D+01 | 0.61893D+01 |
| 180.00 | 0.99119D+03 | 0.10168D-02 | 0.17623D+00 | 0.73957D+03 | 0.25750D+04 | 0.73856D+03 | 0.24004D+04 | 0.20656D+01 | 0.61161D+01 |
| 190.00 | 0.12445D+04 | 0.10297D-02 | 0.14165D+00 | 0.78224D+03 | 0.25826D+04 | 0.78096D+03 | 0.24063D+04 | 0.21582D+01 | 0.60453D+01 |
| 200.00 | 0.15460D+04 | 0.10436D-02 | 0.11487D+00 | 0.82528D+03 | 0.25888D+04 | 0.82367D+03 | 0.24112D+04 | 0.22494D+01 | 0.59767D+01 |
| 210.00 | 0.19015D+04 | 0.10585D-02 | 0.93878D-01 | 0.86875D+03 | 0.25937D+04 | 0.86674D+03 | 0.24151D+04 | 0.23396D+01 | 0.59097D+01 |
| 220.00 | 0.23174D+04 | 0.10746D-02 | 0.77266D-01 | 0.91272D+03 | 0.25970D+04 | 0.91023D+03 | 0.24179D+04 | 0.24287D+01 | 0.58441D+01 |
| 230.00 | 0.28003D+04 | 0.10920D-02 | 0.63990D-01 | 0.95727D+03 | 0.25987D+04 | 0.95421D+03 | 0.24195D+04 | 0.25171D+01 | 0.57795D+01 |
| 240.00 | 0.33572D+04 | 0.11109D-02 | 0.53283D-01 | 0.10025D+04 | 0.25987D+04 | 0.99874D+03 | 0.24198D+04 | 0.26049D+01 | 0.57155D+01 |
| 250.00 | 0.39953D+04 | 0.11315D-02 | 0.44574D-01 | 0.10484D+04 | 0.25968D+04 | 0.10439D+04 | 0.24187D+04 | 0.26922D+01 | 0.56518D+01 |
| 260.00 | 0.47223D+04 | 0.11541D-02 | 0.37432D-01 | 0.10953D+04 | 0.25927D+04 | 0.10899D+04 | 0.24159D+04 | 0.27794D+01 | 0.55880D+01 |
| 270.00 | 0.55463D+04 | 0.11791D-02 | 0.31529D-01 | 0.11432D+04 | 0.25863D+04 | 0.11367D+04 | 0.24114D+04 | 0.28666D+01 | 0.55235D+01 |
| 280.00 | 0.64758D+04 | 0.12070D-02 | 0.26612D-01 | 0.11923D+04 | 0.25772D+04 | 0.11845D+04 | 0.24049D+04 | 0.29542D+01 | 0.54578D+01 |
| 290.00 | 0.75199D+04 | 0.12383D-02 | 0.22486D-01 | 0.12429D+04 | 0.25651D+04 | 0.12336D+04 | 0.23960D+04 | 0.30425D+01 | 0.53903D+01 |
| 300.00 | 0.86885D+04 | 0.12741D-02 | 0.18997D-01 | 0.12953D+04 | 0.25493D+04 | 0.12842D+04 | 0.23842D+04 | 0.31321D+01 | 0.53201D+01 |
| 310.00 | 0.99921D+04 | 0.13155D-02 | 0.16023D-01 | 0.13498D+04 | 0.25292D+04 | 0.13367D+04 | 0.23691D+04 | 0.32235D+01 | 0.52459D+01 |
| 320.00 | 0.11442D+05 | 0.13646D-02 | 0.13465D-01 | 0.14071D+04 | 0.25036D+04 | 0.13915D+04 | 0.23496D+04 | 0.33176D+01 | 0.51663D+01 |
| 330.00 | 0.13053D+05 | 0.14243D-02 | 0.11241D-01 | 0.14681D+04 | 0.24712D+04 | 0.14495D+04 | 0.23245D+04 | 0.34158D+01 | 0.50789D+01 |
| 340.00 | 0.14839D+05 | 0.15001D-02 | 0.92787D-02 | 0.15341D+04 | 0.24292D+04 | 0.15119D+04 | 0.22915D+04 | 0.35201D+01 | 0.49799D+01 |
| 350.00 | 0.16818D+05 | 0.16036D-02 | 0.75015D-02 | 0.16082D+04 | 0.23726D+04 | 0.15813D+04 | 0.22464D+04 | 0.36350D+01 | 0.48616D+01 |
| 360.00 | 0.19015D+05 | 0.17678D-02 | 0.57929D-02 | 0.16982D+04 | 0.22882D+04 | 0.16646D+04 | 0.21780D+04 | 0.37723D+01 | 0.47041D+01 |
| 365.00 | 0.20206D+05 | 0.19121D-02 | 0.48654D-02 | 0.17580D+04 | 0.22210D+04 | 0.17194D+04 | 0.21227D+04 | 0.38629D+01 | 0.45884D+01 |
| 370.00 | 0.21467D+05 | 0.22995D-02 | 0.34889D-02 | 0.18689D+04 | 0.20725D+04 | 0.18195D+04 | 0.19976D+04 | 0.40319D+01 | 0.43485D+01 |
| 370.74 | 0.21660D+05 | 0.27137D-02 | 0.27137D-02 | 0.19517D+04 | 0.19517D+04 | 0.18929D+04 | 0.18929D+04 | 0.41598D+01 | 0.41598D+01 |

SATURATION : PRESSURE

| PRESS. KPA | TEMP. C | VOLUME, M**3/KG LIQUID | VOLUME, M**3/KG VAPOUR | ENTHALPY, KJ/KG LIQUID | ENTHALPY, KJ/KG VAPOUR | ENERGY, KJ/KG LIQUID | ENERGY, KJ/KG VAPOUR | ENTROPY, KJ/KG*K LIQUID | ENTROPY, KJ/KG*K VAPOUR |
|---|---|---|---|---|---|---|---|---|---|
| 0.10000D+01 | 9.63 | 0.90420D-03 | 0.11731D+03 | 0.24583D+02 | 0.23335D+04 | 0.24583D+02 | 0.22162D+04 | 0.87851D-01 | 0.82529D+01 |
| 0.20000D+01 | 20.01 | 0.90471D-03 | 0.60783D+02 | 0.68584D+02 | 0.23509D+04 | 0.68582D+02 | 0.22293D+04 | 0.24066D+00 | 0.80258D+01 |
| 0.30000D+01 | 26.50 | 0.90570D-03 | 0.41405D+02 | 0.96137D+02 | 0.23617D+04 | 0.96135D+02 | 0.22375D+04 | 0.33362D+00 | 0.78942D+01 |
| 0.40000D+01 | 31.32 | 0.90673D-03 | 0.31543D+02 | 0.11656D+03 | 0.23697D+04 | 0.11655D+03 | 0.22435D+04 | 0.40122D+00 | 0.78016D+01 |
| 0.50000D+01 | 35.18 | 0.90771D-03 | 0.25547D+02 | 0.13292D+03 | 0.23761D+04 | 0.13292D+03 | 0.22484D+04 | 0.45462D+00 | 0.77300D+01 |
| 0.60000D+01 | 38.42 | 0.90865D-03 | 0.21507D+02 | 0.14664D+03 | 0.23815D+04 | 0.14664D+03 | 0.22525D+04 | 0.49890D+00 | 0.76719D+01 |
| 0.70000D+01 | 41.22 | 0.90953D-03 | 0.18596D+02 | 0.15850D+03 | 0.23861D+04 | 0.15850D+03 | 0.22560D+04 | 0.53679D+00 | 0.76228D+01 |
| 0.80000D+01 | 43.69 | 0.91036D-03 | 0.16395D+02 | 0.16897D+03 | 0.23902D+04 | 0.16897D+03 | 0.22591D+04 | 0.56996D+00 | 0.75805D+01 |
| 0.90000D+01 | 45.92 | 0.91115D-03 | 0.14672D+02 | 0.17836D+03 | 0.23939D+04 | 0.17836D+03 | 0.22618D+04 | 0.59949D+00 | 0.75433D+01 |
| 0.10000D+02 | 47.93 | 0.91190D-03 | 0.13286D+02 | 0.18689D+03 | 0.23972D+04 | 0.18688D+03 | 0.22643D+04 | 0.62613D+00 | 0.75100D+01 |
| 0.20000D+02 | 62.00 | 0.91793D-03 | 0.69203D+01 | 0.24616D+03 | 0.24201D+04 | 0.24614D+03 | 0.22817D+04 | 0.80678D+00 | 0.72934D+01 |
| 0.30000D+02 | 70.92 | 0.92244D-03 | 0.47285D+01 | 0.28363D+03 | 0.24344D+04 | 0.28360D+03 | 0.22926D+04 | 0.91707D+00 | 0.71682D+01 |
| 0.40000D+02 | 77.60 | 0.92613D-03 | 0.36099D+01 | 0.31159D+03 | 0.24450D+04 | 0.31156D+03 | 0.23006D+04 | 0.99755D+00 | 0.70801D+01 |
| 0.50000D+02 | 82.99 | 0.92930D-03 | 0.29283D+01 | 0.33414D+03 | 0.24534D+04 | 0.33410D+03 | 0.23070D+04 | 0.10613D+01 | 0.70122D+01 |
| 0.60000D+02 | 87.54 | 0.93212D-03 | 0.24683D+01 | 0.35315D+03 | 0.24605D+04 | 0.35310D+03 | 0.23124D+04 | 0.11143D+01 | 0.69569D+01 |
| 0.70000D+02 | 91.50 | 0.93466D-03 | 0.21363D+01 | 0.36966D+03 | 0.24665D+04 | 0.36960D+03 | 0.23170D+04 | 0.11598D+01 | 0.69103D+01 |
| 0.80000D+02 | 95.01 | 0.93699D-03 | 0.18851D+01 | 0.38429D+03 | 0.24719D+04 | 0.38422D+03 | 0.23210D+04 | 0.11997D+01 | 0.68701D+01 |
| 0.90000D+02 | 98.17 | 0.93915D-03 | 0.16881D+01 | 0.39747D+03 | 0.24766D+04 | 0.39738D+03 | 0.23247D+04 | 0.12353D+01 | 0.68347D+01 |
| 0.10000D+03 | 101.05 | 0.94116D-03 | 0.15295D+01 | 0.40947D+03 | 0.24809D+04 | 0.40938D+03 | 0.23279D+04 | 0.12675D+01 | 0.68031D+01 |
| 0.20000D+03 | 121.41 | 0.95678D-03 | 0.79886D+00 | 0.49413D+03 | 0.25098D+04 | 0.49394D+03 | 0.23500D+04 | 0.14876D+01 | 0.65963D+01 |
| 0.30000D+03 | 134.56 | 0.96821D-03 | 0.54600D+00 | 0.54885D+03 | 0.25271D+04 | 0.54856D+03 | 0.23633D+04 | 0.16238D+01 | 0.64758D+01 |
| 0.40000D+03 | 144.53 | 0.97760D-03 | 0.41655D+00 | 0.59039D+03 | 0.25393D+04 | 0.59000D+03 | 0.23727D+04 | 0.17242D+01 | 0.63902D+01 |
| 0.50000D+03 | 152.66 | 0.98575D-03 | 0.33750D+00 | 0.62434D+03 | 0.25486D+04 | 0.62385D+03 | 0.23798D+04 | 0.18045D+01 | 0.63236D+01 |
| 0.60000D+03 | 159.57 | 0.99306D-03 | 0.28407D+00 | 0.65332D+03 | 0.25560D+04 | 0.65273D+03 | 0.23856D+04 | 0.18717D+01 | 0.62688D+01 |
| 0.70000D+03 | 165.62 | 0.99975D-03 | 0.24545D+00 | 0.67875D+03 | 0.25621D+04 | 0.67805D+03 | 0.23903D+04 | 0.19299D+01 | 0.62223D+01 |
| 0.80000D+03 | 171.02 | 0.10060D-02 | 0.21620D+00 | 0.70151D+03 | 0.25673D+04 | 0.70071D+03 | 0.23943D+04 | 0.19812D+01 | 0.61818D+01 |
| 0.90000D+03 | 175.90 | 0.10118D-02 | 0.19325D+00 | 0.72219D+03 | 0.25716D+04 | 0.72128D+03 | 0.23977D+04 | 0.20273D+01 | 0.61458D+01 |
| 0.10000D+04 | 180.38 | 0.10173D-02 | 0.17474D+00 | 0.74118D+03 | 0.25754D+04 | 0.74017D+03 | 0.24006D+04 | 0.20691D+01 | 0.61134D+01 |
| 0.15000D+04 | 198.58 | 0.10416D-02 | 0.11828D+00 | 0.81914D+03 | 0.25880D+04 | 0.81758D+03 | 0.24106D+04 | 0.22365D+01 | 0.59863D+01 |
| 0.20000D+04 | 212.51 | 0.10625D-02 | 0.89344D-01 | 0.87974D+03 | 0.25946D+04 | 0.87761D+03 | 0.24160D+04 | 0.23620D+01 | 0.58931D+01 |

LIQUID AND VAPOUR

P (KPA) = 0.10000D+01

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90459D-03 | -0.13231D-01 | -0.14136D-01 | -0.40095D-04 | 0.42108D+01 | 0.13243D+04 |
| 10.00 | 0.11747D+03 | 0.23341D+04 | 0.22166D+04 | 0.82552D+01 | 0.17172D+01 | 0.39398D+03 |
| 20.00 | 0.12163D+03 | 0.23513D+04 | 0.22297D+04 | 0.83148D+01 | 0.17189D+01 | 0.40074D+03 |
| 30.00 | 0.12579D+03 | 0.23685D+04 | 0.22427D+04 | 0.83725D+01 | 0.17220D+01 | 0.40735D+03 |
| 40.00 | 0.12995D+03 | 0.23857D+04 | 0.22558D+04 | 0.84284D+01 | 0.17261D+01 | 0.41382D+03 |
| 50.00 | 0.13411D+03 | 0.24030D+04 | 0.22689D+04 | 0.84828D+01 | 0.17309D+01 | 0.42016D+03 |
| 60.00 | 0.13827D+03 | 0.24204D+04 | 0.22821D+04 | 0.85356D+01 | 0.17362D+01 | 0.42639D+03 |
| 70.00 | 0.14243D+03 | 0.24377D+04 | 0.22953D+04 | 0.85870D+01 | 0.17420D+01 | 0.43250D+03 |
| 80.00 | 0.14658D+03 | 0.24552D+04 | 0.23086D+04 | 0.86372D+01 | 0.17481D+01 | 0.43851D+03 |
| 90.00 | 0.15074D+03 | 0.24727D+04 | 0.23220D+04 | 0.86861D+01 | 0.17545D+01 | 0.44442D+03 |
| 100.00 | 0.15489D+03 | 0.24903D+04 | 0.23354D+04 | 0.87338D+01 | 0.17611D+01 | 0.45023D+03 |
| 110.00 | 0.15904D+03 | 0.25079D+04 | 0.23489D+04 | 0.87805D+01 | 0.17679D+01 | 0.45595D+03 |
| 120.00 | 0.16320D+03 | 0.25256D+04 | 0.23624D+04 | 0.88261D+01 | 0.17748D+01 | 0.46158D+03 |
| 130.00 | 0.16735D+03 | 0.25434D+04 | 0.23761D+04 | 0.88708D+01 | 0.17820D+01 | 0.46713D+03 |
| 140.00 | 0.17150D+03 | 0.25613D+04 | 0.23898D+04 | 0.89145D+01 | 0.17892D+01 | 0.47259D+03 |
| 150.00 | 0.17566D+03 | 0.25792D+04 | 0.24036D+04 | 0.89574D+01 | 0.17965D+01 | 0.47798D+03 |
| 160.00 | 0.17981D+03 | 0.25972D+04 | 0.24174D+04 | 0.89995D+01 | 0.18040D+01 | 0.48329D+03 |
| 170.00 | 0.18396D+03 | 0.26153D+04 | 0.24313D+04 | 0.90407D+01 | 0.18116D+01 | 0.48854D+03 |
| 180.00 | 0.18811D+03 | 0.26334D+04 | 0.24453D+04 | 0.90812D+01 | 0.18192D+01 | 0.49371D+03 |
| 190.00 | 0.19227D+03 | 0.26517D+04 | 0.24594D+04 | 0.91210D+01 | 0.18270D+01 | 0.49881D+03 |
| 200.00 | 0.19642D+03 | 0.26700D+04 | 0.24736D+04 | 0.91601D+01 | 0.18348D+01 | 0.50385D+03 |
| 210.00 | 0.20057D+03 | 0.26884D+04 | 0.24878D+04 | 0.91986D+01 | 0.18428D+01 | 0.50883D+03 |
| 220.00 | 0.20472D+03 | 0.27068D+04 | 0.25021D+04 | 0.92364D+01 | 0.18507D+01 | 0.51375D+03 |
| 230.00 | 0.20887D+03 | 0.27254D+04 | 0.25165D+04 | 0.92737D+01 | 0.18588D+01 | 0.51860D+03 |
| 240.00 | 0.21303D+03 | 0.27440D+04 | 0.25310D+04 | 0.93103D+01 | 0.18669D+01 | 0.52340D+03 |
| 250.00 | 0.21718D+03 | 0.27627D+04 | 0.25455D+04 | 0.93464D+01 | 0.18751D+01 | 0.52815D+03 |
| 260.00 | 0.22133D+03 | 0.27815D+04 | 0.25602D+04 | 0.93820D+01 | 0.18833D+01 | 0.53284D+03 |
| 270.00 | 0.22548D+03 | 0.28004D+04 | 0.25749D+04 | 0.94171D+01 | 0.18916D+01 | 0.53748D+03 |
| 280.00 | 0.22963D+03 | 0.28193D+04 | 0.25897D+04 | 0.94517D+01 | 0.18999D+01 | 0.54208D+03 |
| 290.00 | 0.23379D+03 | 0.28384D+04 | 0.26046D+04 | 0.94858D+01 | 0.19083D+01 | 0.54662D+03 |
| 300.00 | 0.23794D+03 | 0.28575D+04 | 0.26196D+04 | 0.95194D+01 | 0.19167D+01 | 0.55112D+03 |
| 310.00 | 0.24209D+03 | 0.28767D+04 | 0.26346D+04 | 0.95527D+01 | 0.19251D+01 | 0.55557D+03 |
| 320.00 | 0.24624D+03 | 0.28960D+04 | 0.26498D+04 | 0.95855D+01 | 0.19336D+01 | 0.55997D+03 |
| 330.00 | 0.25039D+03 | 0.29154D+04 | 0.26650D+04 | 0.96179D+01 | 0.19421D+01 | 0.56434D+03 |
| 340.00 | 0.25454D+03 | 0.29349D+04 | 0.26803D+04 | 0.96499D+01 | 0.19506D+01 | 0.56866D+03 |
| 350.00 | 0.25870D+03 | 0.29544D+04 | 0.26957D+04 | 0.96815D+01 | 0.19591D+01 | 0.57294D+03 |
| 360.00 | 0.26285D+03 | 0.29740D+04 | 0.27112D+04 | 0.97128D+01 | 0.19676D+01 | 0.57718D+03 |
| 365.00 | 0.26492D+03 | 0.29839D+04 | 0.27190D+04 | 0.97282D+01 | 0.19719D+01 | 0.57929D+03 |
| 370.00 | 0.26700D+03 | 0.29938D+04 | 0.27268D+04 | 0.97437D+01 | 0.19762D+01 | 0.58138D+03 |
| 370.74 | 0.26731D+03 | 0.29952D+04 | 0.27279D+04 | 0.97459D+01 | 0.19768D+01 | 0.58169D+03 |
| 380.00 | 0.27115D+03 | 0.30136D+04 | 0.27424D+04 | 0.97742D+01 | 0.19848D+01 | 0.58555D+03 |
| 390.00 | 0.27530D+03 | 0.30335D+04 | 0.27582D+04 | 0.98044D+01 | 0.19933D+01 | 0.58968D+03 |
| 400.00 | 0.27945D+03 | 0.30534D+04 | 0.27740D+04 | 0.98343D+01 | 0.20019D+01 | 0.59378D+03 |
| 500.00 | 0.32097D+03 | 0.32579D+04 | 0.29369D+04 | 0.10117D+02 | 0.20872D+01 | 0.63298D+03 |
| 600.00 | 0.36249D+03 | 0.34708D+04 | 0.31083D+04 | 0.10376D+02 | 0.21699D+01 | 0.66951D+03 |
| 700.00 | 0.40400D+03 | 0.36917D+04 | 0.32877D+04 | 0.10616D+02 | 0.22480D+01 | 0.70393D+03 |
| 800.00 | 0.44552D+03 | 0.39202D+04 | 0.34747D+04 | 0.10839D+02 | 0.23199D+01 | 0.73663D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.20000D+01

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90459D-03 | -0.12295D-01 | -0.14105D-01 | -0.39983D-04 | 0.42108D+01 | 0.13243D+04 |
| 10.00 | 0.90419D-03 | 0.26167D+02 | 0.26165D+02 | 0.93443D-01 | 0.42315D+01 | 0.13428D+04 |
| 20.00 | 0.90471D-03 | 0.68553D+02 | 0.68551D+02 | 0.24055D+00 | 0.42426D+01 | 0.13751D+04 |
| 30.00 | 0.62868D+02 | 0.23681D+04 | 0.22424D+04 | 0.80837D+01 | 0.17298D+01 | 0.40717D+03 |
| 40.00 | 0.64953D+02 | 0.23854D+04 | 0.22555D+04 | 0.81399D+01 | 0.17319D+01 | 0.41368D+03 |
| 50.00 | 0.67035D+02 | 0.24028D+04 | 0.22687D+04 | 0.81944D+01 | 0.17353D+01 | 0.42005D+03 |
| 60.00 | 0.69116D+02 | 0.24202D+04 | 0.22819D+04 | 0.82473D+01 | 0.17396D+01 | 0.42630D+03 |
| 70.00 | 0.71197D+02 | 0.24376D+04 | 0.22952D+04 | 0.82989D+01 | 0.17447D+01 | 0.43243D+03 |
| 80.00 | 0.73276D+02 | 0.24550D+04 | 0.23085D+04 | 0.83491D+01 | 0.17502D+01 | 0.43845D+03 |
| 90.00 | 0.75355D+02 | 0.24726D+04 | 0.23219D+04 | 0.83980D+01 | 0.17562D+01 | 0.44437D+03 |
| 100.00 | 0.77433D+02 | 0.24902D+04 | 0.23353D+04 | 0.84458D+01 | 0.17625D+01 | 0.45018D+03 |
| 110.00 | 0.79511D+02 | 0.25078D+04 | 0.23488D+04 | 0.84925D+01 | 0.17690D+01 | 0.45591D+03 |
| 120.00 | 0.81589D+02 | 0.25256D+04 | 0.23624D+04 | 0.85382D+01 | 0.17758D+01 | 0.46155D+03 |
| 130.00 | 0.83666D+02 | 0.25433D+04 | 0.23760D+04 | 0.85829D+01 | 0.17828D+01 | 0.46710D+03 |
| 140.00 | 0.85743D+02 | 0.25612D+04 | 0.23897D+04 | 0.86266D+01 | 0.17899D+01 | 0.47257D+03 |
| 150.00 | 0.87820D+02 | 0.25791D+04 | 0.24035D+04 | 0.86695D+01 | 0.17972D+01 | 0.47796D+03 |
| 160.00 | 0.89897D+02 | 0.25972D+04 | 0.24174D+04 | 0.87116D+01 | 0.18045D+01 | 0.48327D+03 |
| 170.00 | 0.91974D+02 | 0.26152D+04 | 0.24313D+04 | 0.87529D+01 | 0.18121D+01 | 0.48852D+03 |
| 180.00 | 0.94051D+02 | 0.26334D+04 | 0.24453D+04 | 0.87934D+01 | 0.18197D+01 | 0.49369D+03 |
| 190.00 | 0.96127D+02 | 0.26516D+04 | 0.24594D+04 | 0.88332D+01 | 0.18274D+01 | 0.49880D+03 |
| 200.00 | 0.98204D+02 | 0.26699D+04 | 0.24735D+04 | 0.88723D+01 | 0.18352D+01 | 0.50384D+03 |
| 210.00 | 0.10028D+03 | 0.26883D+04 | 0.24878D+04 | 0.89108D+01 | 0.18431D+01 | 0.50881D+03 |
| 220.00 | 0.10236D+03 | 0.27068D+04 | 0.25021D+04 | 0.89486D+01 | 0.18510D+01 | 0.51373D+03 |
| 230.00 | 0.10443D+03 | 0.27254D+04 | 0.25165D+04 | 0.89858D+01 | 0.18590D+01 | 0.51859D+03 |
| 240.00 | 0.10651D+03 | 0.27440D+04 | 0.25310D+04 | 0.90225D+01 | 0.18671D+01 | 0.52339D+03 |
| 250.00 | 0.10859D+03 | 0.27627D+04 | 0.25455D+04 | 0.90586D+01 | 0.18753D+01 | 0.52814D+03 |
| 260.00 | 0.11066D+03 | 0.27815D+04 | 0.25602D+04 | 0.90942D+01 | 0.18835D+01 | 0.53283D+03 |
| 270.00 | 0.11274D+03 | 0.28004D+04 | 0.25749D+04 | 0.91293D+01 | 0.18917D+01 | 0.53748D+03 |
| 280.00 | 0.11481D+03 | 0.28193D+04 | 0.25897D+04 | 0.91639D+01 | 0.19001D+01 | 0.54207D+03 |
| 290.00 | 0.11689D+03 | 0.28384D+04 | 0.26046D+04 | 0.91980D+01 | 0.19084D+01 | 0.54661D+03 |
| 300.00 | 0.11897D+03 | 0.28575D+04 | 0.26196D+04 | 0.92317D+01 | 0.19168D+01 | 0.55111D+03 |
| 310.00 | 0.12104D+03 | 0.28767D+04 | 0.26346D+04 | 0.92649D+01 | 0.19252D+01 | 0.55556D+03 |
| 320.00 | 0.12312D+03 | 0.28960D+04 | 0.26498D+04 | 0.92977D+01 | 0.19337D+01 | 0.55997D+03 |
| 330.00 | 0.12519D+03 | 0.29154D+04 | 0.26650D+04 | 0.93301D+01 | 0.19422D+01 | 0.56433D+03 |
| 340.00 | 0.12727D+03 | 0.29348D+04 | 0.26803D+04 | 0.93621D+01 | 0.19507D+01 | 0.56865D+03 |
| 350.00 | 0.12935D+03 | 0.29544D+04 | 0.26957D+04 | 0.93937D+01 | 0.19592D+01 | 0.57293D+03 |
| 360.00 | 0.13142D+03 | 0.29740D+04 | 0.27112D+04 | 0.94250D+01 | 0.19677D+01 | 0.57718D+03 |
| 365.00 | 0.13246D+03 | 0.29839D+04 | 0.27190D+04 | 0.94405D+01 | 0.19720D+01 | 0.57928D+03 |
| 370.00 | 0.13350D+03 | 0.29937D+04 | 0.27267D+04 | 0.94559D+01 | 0.19763D+01 | 0.58138D+03 |
| 370.74 | 0.13365D+03 | 0.29952D+04 | 0.27279D+04 | 0.94581D+01 | 0.19769D+01 | 0.58169D+03 |
| 380.00 | 0.13557D+03 | 0.30135D+04 | 0.27424D+04 | 0.94864D+01 | 0.19848D+01 | 0.58555D+03 |
| 390.00 | 0.13765D+03 | 0.30334D+04 | 0.27581D+04 | 0.95167D+01 | 0.19934D+01 | 0.58968D+03 |
| 400.00 | 0.13973D+03 | 0.30534D+04 | 0.27740D+04 | 0.95466D+01 | 0.20020D+01 | 0.59377D+03 |
| 500.00 | 0.16048D+03 | 0.32579D+04 | 0.29369D+04 | 0.98296D+01 | 0.20873D+01 | 0.63298D+03 |
| 600.00 | 0.18124D+03 | 0.34708D+04 | 0.31083D+04 | 0.10088D+02 | 0.21700D+01 | 0.66951D+03 |
| 700.00 | 0.20200D+03 | 0.36917D+04 | 0.32877D+04 | 0.10328D+02 | 0.22480D+01 | 0.70393D+03 |
| 800.00 | 0.22276D+03 | 0.39202D+04 | 0.34747D+04 | 0.10551D+02 | 0.23200D+01 | 0.73663D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.30000D+01

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90459D-03 | -0.11360D-01 | -0.14073D-01 | -0.39871D-04 | 0.42108D+01 | 0.13243D+04 |
| 10.00 | 0.90419D-03 | 0.26168D+02 | 0.26165D+02 | 0.93443D-01 | 0.42315D+01 | 0.13428D+04 |
| 20.00 | 0.90471D-03 | 0.68554D+02 | 0.68551D+02 | 0.24055D+00 | 0.42426D+01 | 0.13751D+04 |
| 30.00 | 0.41893D+02 | 0.23678D+04 | 0.22421D+04 | 0.79144D+01 | 0.17377D+01 | 0.40699D+03 |
| 40.00 | 0.43285D+02 | 0.23852D+04 | 0.22553D+04 | 0.79708D+01 | 0.17377D+01 | 0.41354D+03 |
| 50.00 | 0.44676D+02 | 0.24025D+04 | 0.22685D+04 | 0.80255D+01 | 0.17397D+01 | 0.41994D+03 |
| 60.00 | 0.46065D+02 | 0.24200D+04 | 0.22818D+04 | 0.80785D+01 | 0.17430D+01 | 0.42621D+03 |
| 70.00 | 0.47453D+02 | 0.24374D+04 | 0.22950D+04 | 0.81301D+01 | 0.17473D+01 | 0.43236D+03 |
| 80.00 | 0.48841D+02 | 0.24549D+04 | 0.23084D+04 | 0.81804D+01 | 0.17523D+01 | 0.43839D+03 |
| 90.00 | 0.50228D+02 | 0.24725D+04 | 0.23218D+04 | 0.82294D+01 | 0.17579D+01 | 0.44431D+03 |
| 100.00 | 0.51614D+02 | 0.24901D+04 | 0.23352D+04 | 0.82772D+01 | 0.17639D+01 | 0.45014D+03 |
| 110.00 | 0.53000D+02 | 0.25077D+04 | 0.23487D+04 | 0.83240D+01 | 0.17702D+01 | 0.45587D+03 |
| 120.00 | 0.54386D+02 | 0.25255D+04 | 0.23623D+04 | 0.83697D+01 | 0.17768D+01 | 0.46151D+03 |
| 130.00 | 0.55771D+02 | 0.25433D+04 | 0.23760D+04 | 0.84144D+01 | 0.17836D+01 | 0.46707D+03 |
| 140.00 | 0.57157D+02 | 0.25611D+04 | 0.23897D+04 | 0.84582D+01 | 0.17906D+01 | 0.47254D+03 |
| 150.00 | 0.58542D+02 | 0.25791D+04 | 0.24035D+04 | 0.85011D+01 | 0.17978D+01 | 0.47793D+03 |
| 160.00 | 0.59927D+02 | 0.25971D+04 | 0.24173D+04 | 0.85431D+01 | 0.18051D+01 | 0.48325D+03 |
| 170.00 | 0.61312D+02 | 0.26152D+04 | 0.24312D+04 | 0.85844D+01 | 0.18125D+01 | 0.48850D+03 |
| 180.00 | 0.62696D+02 | 0.26333D+04 | 0.24453D+04 | 0.86250D+01 | 0.18201D+01 | 0.49367D+03 |
| 190.00 | 0.64081D+02 | 0.26516D+04 | 0.24593D+04 | 0.86648D+01 | 0.18277D+01 | 0.49878D+03 |
| 200.00 | 0.65466D+02 | 0.26699D+04 | 0.24735D+04 | 0.87039D+01 | 0.18355D+01 | 0.50382D+03 |
| 210.00 | 0.66850D+02 | 0.26883D+04 | 0.24877D+04 | 0.87424D+01 | 0.18433D+01 | 0.50880D+03 |
| 220.00 | 0.68235D+02 | 0.27068D+04 | 0.25021D+04 | 0.87802D+01 | 0.18513D+01 | 0.51372D+03 |
| 230.00 | 0.69619D+02 | 0.27253D+04 | 0.25165D+04 | 0.88175D+01 | 0.18593D+01 | 0.51858D+03 |
| 240.00 | 0.71003D+02 | 0.27440D+04 | 0.25309D+04 | 0.88541D+01 | 0.18673D+01 | 0.52338D+03 |
| 250.00 | 0.72388D+02 | 0.27627D+04 | 0.25455D+04 | 0.88902D+01 | 0.18755D+01 | 0.52813D+03 |
| 260.00 | 0.73772D+02 | 0.27815D+04 | 0.25601D+04 | 0.89258D+01 | 0.18837D+01 | 0.53282D+03 |
| 270.00 | 0.75156D+02 | 0.28003D+04 | 0.25749D+04 | 0.89609D+01 | 0.18919D+01 | 0.53747D+03 |
| 280.00 | 0.76540D+02 | 0.28193D+04 | 0.25897D+04 | 0.89955D+01 | 0.19002D+01 | 0.54206D+03 |
| 290.00 | 0.77924D+02 | 0.28383D+04 | 0.26046D+04 | 0.90296D+01 | 0.19085D+01 | 0.54660D+03 |
| 300.00 | 0.79309D+02 | 0.28575D+04 | 0.26195D+04 | 0.90633D+01 | 0.19169D+01 | 0.55110D+03 |
| 310.00 | 0.80693D+02 | 0.28767D+04 | 0.26346D+04 | 0.90965D+01 | 0.19253D+01 | 0.55555D+03 |
| 320.00 | 0.82077D+02 | 0.28960D+04 | 0.26497D+04 | 0.91293D+01 | 0.19338D+01 | 0.55996D+03 |
| 330.00 | 0.83461D+02 | 0.29154D+04 | 0.26650D+04 | 0.91617D+01 | 0.19423D+01 | 0.56432D+03 |
| 340.00 | 0.84845D+02 | 0.29348D+04 | 0.26803D+04 | 0.91937D+01 | 0.19507D+01 | 0.56865D+03 |
| 350.00 | 0.86229D+02 | 0.29544D+04 | 0.26957D+04 | 0.92254D+01 | 0.19593D+01 | 0.57293D+03 |
| 360.00 | 0.87613D+02 | 0.29740D+04 | 0.27112D+04 | 0.92566D+01 | 0.19678D+01 | 0.57717D+03 |
| 365.00 | 0.88305D+02 | 0.29839D+04 | 0.27189D+04 | 0.92721D+01 | 0.19721D+01 | 0.57928D+03 |
| 370.00 | 0.88997D+02 | 0.29937D+04 | 0.27267D+04 | 0.92875D+01 | 0.19764D+01 | 0.58137D+03 |
| 370.74 | 0.89099D+02 | 0.29952D+04 | 0.27279D+04 | 0.92898D+01 | 0.19770D+01 | 0.58168D+03 |
| 380.00 | 0.90381D+02 | 0.30135D+04 | 0.27424D+04 | 0.93181D+01 | 0.19849D+01 | 0.58554D+03 |
| 390.00 | 0.91765D+02 | 0.30334D+04 | 0.27581D+04 | 0.93483D+01 | 0.19935D+01 | 0.58967D+03 |
| 400.00 | 0.93149D+02 | 0.30534D+04 | 0.27740D+04 | 0.93782D+01 | 0.20020D+01 | 0.59377D+03 |
| 500.00 | 0.10699D+03 | 0.32579D+04 | 0.29369D+04 | 0.96613D+01 | 0.20873D+01 | 0.63297D+03 |
| 600.00 | 0.12083D+03 | 0.34708D+04 | 0.31083D+04 | 0.99201D+01 | 0.21700D+01 | 0.66951D+03 |
| 700.00 | 0.13467D+03 | 0.36917D+04 | 0.32877D+04 | 0.10160D+02 | 0.22480D+01 | 0.70392D+03 |
| 800.00 | 0.14851D+03 | 0.39202D+04 | 0.34747D+04 | 0.10383D+02 | 0.23200D+01 | 0.73663D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.40000D+01

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90459D-03 | -0.10424D-01 | -0.14042D-01 | -0.39759D-04 | 0.42108D+01 | 0.13243D+04 |
| 10.00 | 0.90419D-03 | 0.26168D+02 | 0.26165D+02 | 0.93443D-01 | 0.42315D+01 | 0.13428D+04 |
| 20.00 | 0.90470D-03 | 0.68555D+02 | 0.68551D+02 | 0.24055D+00 | 0.42426D+01 | 0.13751D+04 |
| 30.00 | 0.90642D-03 | 0.11098D+03 | 0.11097D+03 | 0.38285D+00 | 0.42404D+01 | 0.14032D+04 |
| 40.00 | 0.32452D+02 | 0.23849D+04 | 0.22551D+04 | 0.78506D+01 | 0.17436D+01 | 0.41341D+03 |
| 50.00 | 0.33496D+02 | 0.24023D+04 | 0.22683D+04 | 0.79054D+01 | 0.17441D+01 | 0.41983D+03 |
| 60.00 | 0.34540D+02 | 0.24198D+04 | 0.22816D+04 | 0.79586D+01 | 0.17464D+01 | 0.42612D+03 |
| 70.00 | 0.35582D+02 | 0.24372D+04 | 0.22949D+04 | 0.80103D+01 | 0.17500D+01 | 0.43228D+03 |
| 80.00 | 0.36623D+02 | 0.24548D+04 | 0.23083D+04 | 0.80606D+01 | 0.17544D+01 | 0.43833D+03 |
| 90.00 | 0.37664D+02 | 0.24723D+04 | 0.23217D+04 | 0.81097D+01 | 0.17596D+01 | 0.44426D+03 |
| 100.00 | 0.38705D+02 | 0.24899D+04 | 0.23351D+04 | 0.81576D+01 | 0.17652D+01 | 0.45010D+03 |
| 110.00 | 0.39745D+02 | 0.25076D+04 | 0.23486D+04 | 0.82043D+01 | 0.17713D+01 | 0.45583D+03 |
| 120.00 | 0.40785D+02 | 0.25254D+04 | 0.23622D+04 | 0.82501D+01 | 0.17777D+01 | 0.46148D+03 |
| 130.00 | 0.41824D+02 | 0.25432D+04 | 0.23759D+04 | 0.82948D+01 | 0.17844D+01 | 0.46704D+03 |
| 140.00 | 0.42863D+02 | 0.25611D+04 | 0.23896D+04 | 0.83386D+01 | 0.17913D+01 | 0.47251D+03 |
| 150.00 | 0.43903D+02 | 0.25790D+04 | 0.24034D+04 | 0.83815D+01 | 0.17984D+01 | 0.47791D+03 |
| 160.00 | 0.44942D+02 | 0.25970D+04 | 0.24173D+04 | 0.84236D+01 | 0.18056D+01 | 0.48323D+03 |
| 170.00 | 0.45981D+02 | 0.26151D+04 | 0.24312D+04 | 0.84649D+01 | 0.18130D+01 | 0.48848D+03 |
| 180.00 | 0.47019D+02 | 0.26333D+04 | 0.24452D+04 | 0.85054D+01 | 0.18205D+01 | 0.49365D+03 |
| 190.00 | 0.48058D+02 | 0.26515D+04 | 0.24593D+04 | 0.85453D+01 | 0.18281D+01 | 0.49876D+03 |
| 200.00 | 0.49097D+02 | 0.26699D+04 | 0.24735D+04 | 0.85844D+01 | 0.18358D+01 | 0.50381D+03 |
| 210.00 | 0.50135D+02 | 0.26883D+04 | 0.24877D+04 | 0.86229D+01 | 0.18436D+01 | 0.50879D+03 |
| 220.00 | 0.51174D+02 | 0.27067D+04 | 0.25020D+04 | 0.86607D+01 | 0.18515D+01 | 0.51371D+03 |
| 230.00 | 0.52212D+02 | 0.27253D+04 | 0.25164D+04 | 0.86980D+01 | 0.18595D+01 | 0.51857D+03 |
| 240.00 | 0.53250D+02 | 0.27439D+04 | 0.25309D+04 | 0.87346D+01 | 0.18676D+01 | 0.52337D+03 |
| 250.00 | 0.54289D+02 | 0.27626D+04 | 0.25455D+04 | 0.87708D+01 | 0.18757D+01 | 0.52812D+03 |
| 260.00 | 0.55327D+02 | 0.27814D+04 | 0.25601D+04 | 0.88064D+01 | 0.18839D+01 | 0.53281D+03 |
| 270.00 | 0.56365D+02 | 0.28003D+04 | 0.25748D+04 | 0.88414D+01 | 0.18921D+01 | 0.53746D+03 |
| 280.00 | 0.57404D+02 | 0.28193D+04 | 0.25897D+04 | 0.88760D+01 | 0.19004D+01 | 0.54205D+03 |
| 290.00 | 0.58442D+02 | 0.28383D+04 | 0.26046D+04 | 0.89102D+01 | 0.19087D+01 | 0.54659D+03 |
| 300.00 | 0.59480D+02 | 0.28574D+04 | 0.26195D+04 | 0.89438D+01 | 0.19171D+01 | 0.55109D+03 |
| 310.00 | 0.60518D+02 | 0.28767D+04 | 0.26346D+04 | 0.89771D+01 | 0.19255D+01 | 0.55554D+03 |
| 320.00 | 0.61556D+02 | 0.28960D+04 | 0.26497D+04 | 0.90099D+01 | 0.19339D+01 | 0.55995D+03 |
| 330.00 | 0.62594D+02 | 0.29153D+04 | 0.26650D+04 | 0.90423D+01 | 0.19424D+01 | 0.56432D+03 |
| 340.00 | 0.63633D+02 | 0.29348D+04 | 0.26803D+04 | 0.90743D+01 | 0.19508D+01 | 0.56864D+03 |
| 350.00 | 0.64671D+02 | 0.29544D+04 | 0.26957D+04 | 0.91059D+01 | 0.19594D+01 | 0.57292D+03 |
| 360.00 | 0.65709D+02 | 0.29740D+04 | 0.27112D+04 | 0.91372D+01 | 0.19679D+01 | 0.57716D+03 |
| 365.00 | 0.66228D+02 | 0.29838D+04 | 0.27189D+04 | 0.91527D+01 | 0.19722D+01 | 0.57927D+03 |
| 370.00 | 0.66747D+02 | 0.29937D+04 | 0.27267D+04 | 0.91681D+01 | 0.19764D+01 | 0.58137D+03 |
| 370.74 | 0.66824D+02 | 0.29952D+04 | 0.27279D+04 | 0.91704D+01 | 0.19771D+01 | 0.58168D+03 |
| 380.00 | 0.67785D+02 | 0.30135D+04 | 0.27424D+04 | 0.91986D+01 | 0.19850D+01 | 0.58554D+03 |
| 390.00 | 0.68823D+02 | 0.30334D+04 | 0.27581D+04 | 0.92289D+01 | 0.19935D+01 | 0.58967D+03 |
| 400.00 | 0.69861D+02 | 0.30534D+04 | 0.27739D+04 | 0.92588D+01 | 0.20021D+01 | 0.59376D+03 |
| 500.00 | 0.80241D+02 | 0.32579D+04 | 0.29369D+04 | 0.95418D+01 | 0.20873D+01 | 0.63297D+03 |
| 600.00 | 0.90620D+02 | 0.34708D+04 | 0.31083D+04 | 0.98007D+01 | 0.21700D+01 | 0.66951D+03 |
| 700.00 | 0.10100D+03 | 0.36917D+04 | 0.32877D+04 | 0.10040D+02 | 0.22480D+01 | 0.70392D+03 |
| 800.00 | 0.11138D+03 | 0.39202D+04 | 0.34747D+04 | 0.10264D+02 | 0.23200D+01 | 0.73663D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.50000D+01

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90459D-03 | -0.94884D-02 | -0.14011D-01 | -0.39647D-04 | 0.42108D+01 | 0.13243D+04 |
| 10.00 | 0.90419D-03 | 0.26169D+02 | 0.26165D+02 | 0.93443D-01 | 0.42314D+01 | 0.13429D+04 |
| 20.00 | 0.90470D-03 | 0.68555D+02 | 0.68551D+02 | 0.24055D+00 | 0.42426D+01 | 0.13751D+04 |
| 30.00 | 0.90642D-03 | 0.11098D+03 | 0.11097D+03 | 0.38285D+00 | 0.42404D+01 | 0.14032D+04 |
| 40.00 | 0.25951D+02 | 0.23846D+04 | 0.22548D+04 | 0.77572D+01 | 0.17495D+01 | 0.41327D+03 |
| 50.00 | 0.26788D+02 | 0.24021D+04 | 0.22681D+04 | 0.78122D+01 | 0.17486D+01 | 0.41972D+03 |
| 60.00 | 0.27624D+02 | 0.24196D+04 | 0.22814D+04 | 0.78655D+01 | 0.17498D+01 | 0.42603D+03 |
| 70.00 | 0.28459D+02 | 0.24371D+04 | 0.22948D+04 | 0.79173D+01 | 0.17526D+01 | 0.43221D+03 |
| 80.00 | 0.29293D+02 | 0.24546D+04 | 0.23081D+04 | 0.79677D+01 | 0.17565D+01 | 0.43827D+03 |
| 90.00 | 0.30126D+02 | 0.24722D+04 | 0.23216D+04 | 0.80168D+01 | 0.17613D+01 | 0.44421D+03 |
| 100.00 | 0.30959D+02 | 0.24898D+04 | 0.23350D+04 | 0.80647D+01 | 0.17666D+01 | 0.45005D+03 |
| 110.00 | 0.31792D+02 | 0.25075D+04 | 0.23486D+04 | 0.81115D+01 | 0.17725D+01 | 0.45580D+03 |
| 120.00 | 0.32624D+02 | 0.25253D+04 | 0.23622D+04 | 0.81572D+01 | 0.17787D+01 | 0.46145D+03 |
| 130.00 | 0.33456D+02 | 0.25431D+04 | 0.23758D+04 | 0.82020D+01 | 0.17852D+01 | 0.46701D+03 |
| 140.00 | 0.34287D+02 | 0.25610D+04 | 0.23896D+04 | 0.82458D+01 | 0.17920D+01 | 0.47249D+03 |
| 150.00 | 0.35119D+02 | 0.25789D+04 | 0.24033D+04 | 0.82888D+01 | 0.17990D+01 | 0.47789D+03 |
| 160.00 | 0.35951D+02 | 0.25970D+04 | 0.24172D+04 | 0.83309D+01 | 0.18061D+01 | 0.48321D+03 |
| 170.00 | 0.36782D+02 | 0.26151D+04 | 0.24312D+04 | 0.83722D+01 | 0.18135D+01 | 0.48846D+03 |
| 180.00 | 0.37613D+02 | 0.26332D+04 | 0.24452D+04 | 0.84127D+01 | 0.18209D+01 | 0.49364D+03 |
| 190.00 | 0.38444D+02 | 0.26515D+04 | 0.24593D+04 | 0.84525D+01 | 0.18285D+01 | 0.49875D+03 |
| 200.00 | 0.39275D+02 | 0.26698D+04 | 0.24734D+04 | 0.84917D+01 | 0.18362D+01 | 0.50379D+03 |
| 210.00 | 0.40106D+02 | 0.26882D+04 | 0.24877D+04 | 0.85302D+01 | 0.18439D+01 | 0.50877D+03 |
| 220.00 | 0.40937D+02 | 0.27067D+04 | 0.25020D+04 | 0.85680D+01 | 0.18518D+01 | 0.51369D+03 |
| 230.00 | 0.41768D+02 | 0.27252D+04 | 0.25164D+04 | 0.86053D+01 | 0.18598D+01 | 0.51855D+03 |
| 240.00 | 0.42599D+02 | 0.27439D+04 | 0.25309D+04 | 0.86420D+01 | 0.18678D+01 | 0.52336D+03 |
| 250.00 | 0.43430D+02 | 0.27626D+04 | 0.25455D+04 | 0.86781D+01 | 0.18759D+01 | 0.52811D+03 |
| 260.00 | 0.44260D+02 | 0.27814D+04 | 0.25601D+04 | 0.87137D+01 | 0.18840D+01 | 0.53280D+03 |
| 270.00 | 0.45091D+02 | 0.28003D+04 | 0.25748D+04 | 0.87488D+01 | 0.18923D+01 | 0.53745D+03 |
| 280.00 | 0.45922D+02 | 0.28192D+04 | 0.25896D+04 | 0.87834D+01 | 0.19005D+01 | 0.54204D+03 |
| 290.00 | 0.46752D+02 | 0.28383D+04 | 0.26045D+04 | 0.88175D+01 | 0.19088D+01 | 0.54659D+03 |
| 300.00 | 0.47583D+02 | 0.28574D+04 | 0.26195D+04 | 0.88512D+01 | 0.19172D+01 | 0.55108D+03 |
| 310.00 | 0.48413D+02 | 0.28766D+04 | 0.26346D+04 | 0.88844D+01 | 0.19256D+01 | 0.55554D+03 |
| 320.00 | 0.49244D+02 | 0.28959D+04 | 0.26497D+04 | 0.89172D+01 | 0.19340D+01 | 0.55995D+03 |
| 330.00 | 0.50075D+02 | 0.29153D+04 | 0.26649D+04 | 0.89496D+01 | 0.19425D+01 | 0.56431D+03 |
| 340.00 | 0.50905D+02 | 0.29348D+04 | 0.26803D+04 | 0.89816D+01 | 0.19509D+01 | 0.56863D+03 |
| 350.00 | 0.51736D+02 | 0.29543D+04 | 0.26957D+04 | 0.90133D+01 | 0.19594D+01 | 0.57292D+03 |
| 360.00 | 0.52566D+02 | 0.29740D+04 | 0.27111D+04 | 0.90445D+01 | 0.19680D+01 | 0.57716D+03 |
| 365.00 | 0.52981D+02 | 0.29838D+04 | 0.27189D+04 | 0.90600D+01 | 0.19722D+01 | 0.57927D+03 |
| 370.00 | 0.53397D+02 | 0.29937D+04 | 0.27267D+04 | 0.90754D+01 | 0.19765D+01 | 0.58136D+03 |
| 370.74 | 0.53458D+02 | 0.29952D+04 | 0.27279D+04 | 0.90777D+01 | 0.19771D+01 | 0.58167D+03 |
| 380.00 | 0.54227D+02 | 0.30135D+04 | 0.27424D+04 | 0.91060D+01 | 0.19850D+01 | 0.58553D+03 |
| 390.00 | 0.55057D+02 | 0.30334D+04 | 0.27581D+04 | 0.91362D+01 | 0.19936D+01 | 0.58966D+03 |
| 400.00 | 0.55888D+02 | 0.30534D+04 | 0.27739D+04 | 0.91661D+01 | 0.20022D+01 | 0.59376D+03 |
| 500.00 | 0.64192D+02 | 0.32579D+04 | 0.29369D+04 | 0.94492D+01 | 0.20874D+01 | 0.63297D+03 |
| 600.00 | 0.72496D+02 | 0.34708D+04 | 0.31083D+04 | 0.97081D+01 | 0.21700D+01 | 0.66950D+03 |
| 700.00 | 0.80799D+02 | 0.36917D+04 | 0.32877D+04 | 0.99476D+01 | 0.22480D+01 | 0.70392D+03 |
| 800.00 | 0.89103D+02 | 0.39202D+04 | 0.34747D+04 | 0.10171D+02 | 0.23200D+01 | 0.73662D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.60000D+01

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90459D-03 | -0.85527D-02 | -0.13980D-01 | -0.39535D-04 | 0.42108D+01 | 0.13243D+04 |
| 10.00 | 0.90419D-03 | 0.26170D+02 | 0.26165D+02 | 0.93443D-01 | 0.42314D+01 | 0.13429D+04 |
| 20.00 | 0.90470D-03 | 0.68556D+02 | 0.68551D+02 | 0.24055D+00 | 0.42426D+01 | 0.13751D+04 |
| 30.00 | 0.90642D-03 | 0.11098D+03 | 0.11097D+03 | 0.38285D+00 | 0.42404D+01 | 0.14032D+04 |
| 40.00 | 0.21618D+02 | 0.23843D+04 | 0.22546D+04 | 0.76808D+01 | 0.17553D+01 | 0.41313D+03 |
| 50.00 | 0.22317D+02 | 0.24018D+04 | 0.22679D+04 | 0.77359D+01 | 0.17530D+01 | 0.41962D+03 |
| 60.00 | 0.23014D+02 | 0.24194D+04 | 0.22813D+04 | 0.77893D+01 | 0.17532D+01 | 0.42595D+03 |
| 70.00 | 0.23710D+02 | 0.24369D+04 | 0.22946D+04 | 0.78412D+01 | 0.17553D+01 | 0.43214D+03 |
| 80.00 | 0.24406D+02 | 0.24545D+04 | 0.23080D+04 | 0.78916D+01 | 0.17586D+01 | 0.43821D+03 |
| 90.00 | 0.25101D+02 | 0.24721D+04 | 0.23215D+04 | 0.79408D+01 | 0.17629D+01 | 0.44416D+03 |
| 100.00 | 0.25795D+02 | 0.24897D+04 | 0.23350D+04 | 0.79888D+01 | 0.17680D+01 | 0.45001D+03 |
| 110.00 | 0.26489D+02 | 0.25074D+04 | 0.23485D+04 | 0.80356D+01 | 0.17736D+01 | 0.45576D+03 |
| 120.00 | 0.27183D+02 | 0.25252D+04 | 0.23621D+04 | 0.80814D+01 | 0.17796D+01 | 0.46141D+03 |
| 130.00 | 0.27877D+02 | 0.25430D+04 | 0.23758D+04 | 0.81262D+01 | 0.17860D+01 | 0.46698D+03 |
| 140.00 | 0.28570D+02 | 0.25609D+04 | 0.23895D+04 | 0.81700D+01 | 0.17927D+01 | 0.47246D+03 |
| 150.00 | 0.29263D+02 | 0.25789D+04 | 0.24033D+04 | 0.82129D+01 | 0.17996D+01 | 0.47786D+03 |
| 160.00 | 0.29956D+02 | 0.25969D+04 | 0.24172D+04 | 0.82551D+01 | 0.18067D+01 | 0.48319D+03 |
| 170.00 | 0.30649D+02 | 0.26150D+04 | 0.24311D+04 | 0.82964D+01 | 0.18139D+01 | 0.48844D+03 |
| 180.00 | 0.31342D+02 | 0.26332D+04 | 0.24451D+04 | 0.83369D+01 | 0.18213D+01 | 0.49362D+03 |
| 190.00 | 0.32035D+02 | 0.26514D+04 | 0.24592D+04 | 0.83768D+01 | 0.18289D+01 | 0.49873D+03 |
| 200.00 | 0.32728D+02 | 0.26698D+04 | 0.24734D+04 | 0.84159D+01 | 0.18365D+01 | 0.50378D+03 |
| 210.00 | 0.33420D+02 | 0.26882D+04 | 0.24876D+04 | 0.84544D+01 | 0.18442D+01 | 0.50876D+03 |
| 220.00 | 0.34113D+02 | 0.27067D+04 | 0.25020D+04 | 0.84923D+01 | 0.18521D+01 | 0.51368D+03 |
| 230.00 | 0.34805D+02 | 0.27252D+04 | 0.25164D+04 | 0.85295D+01 | 0.18600D+01 | 0.51854D+03 |
| 240.00 | 0.35498D+02 | 0.27439D+04 | 0.25309D+04 | 0.85662D+01 | 0.18680D+01 | 0.52335D+03 |
| 250.00 | 0.36190D+02 | 0.27626D+04 | 0.25454D+04 | 0.86024D+01 | 0.18761D+01 | 0.52810D+03 |
| 260.00 | 0.36882D+02 | 0.27814D+04 | 0.25601D+04 | 0.86380D+01 | 0.18842D+01 | 0.53279D+03 |
| 270.00 | 0.37575D+02 | 0.28003D+04 | 0.25748D+04 | 0.86730D+01 | 0.18924D+01 | 0.53744D+03 |
| 280.00 | 0.38267D+02 | 0.28192D+04 | 0.25896D+04 | 0.87076D+01 | 0.19007D+01 | 0.54203D+03 |
| 290.00 | 0.38959D+02 | 0.28383D+04 | 0.26045D+04 | 0.87418D+01 | 0.19090D+01 | 0.54658D+03 |
| 300.00 | 0.39651D+02 | 0.28574D+04 | 0.26195D+04 | 0.87754D+01 | 0.19173D+01 | 0.55108D+03 |
| 310.00 | 0.40344D+02 | 0.28766D+04 | 0.26346D+04 | 0.88087D+01 | 0.19257D+01 | 0.55553D+03 |
| 320.00 | 0.41036D+02 | 0.28959D+04 | 0.26497D+04 | 0.88415D+01 | 0.19341D+01 | 0.55994D+03 |
| 330.00 | 0.41728D+02 | 0.29153D+04 | 0.26649D+04 | 0.88739D+01 | 0.19426D+01 | 0.56430D+03 |
| 340.00 | 0.42420D+02 | 0.29348D+04 | 0.26802D+04 | 0.89059D+01 | 0.19510D+01 | 0.56863D+03 |
| 350.00 | 0.43112D+02 | 0.29543D+04 | 0.26956D+04 | 0.89375D+01 | 0.19595D+01 | 0.57291D+03 |
| 360.00 | 0.43804D+02 | 0.29740D+04 | 0.27111D+04 | 0.89688D+01 | 0.19680D+01 | 0.57715D+03 |
| 365.00 | 0.44150D+02 | 0.29838D+04 | 0.27189D+04 | 0.89843D+01 | 0.19723D+01 | 0.57926D+03 |
| 370.00 | 0.44496D+02 | 0.29937D+04 | 0.27267D+04 | 0.89997D+01 | 0.19766D+01 | 0.58136D+03 |
| 370.74 | 0.44548D+02 | 0.29951D+04 | 0.27279D+04 | 0.90020D+01 | 0.19772D+01 | 0.58167D+03 |
| 380.00 | 0.45189D+02 | 0.30135D+04 | 0.27424D+04 | 0.90303D+01 | 0.19851D+01 | 0.58553D+03 |
| 390.00 | 0.45881D+02 | 0.30334D+04 | 0.27581D+04 | 0.90605D+01 | 0.19937D+01 | 0.58966D+03 |
| 400.00 | 0.46573D+02 | 0.30534D+04 | 0.27739D+04 | 0.90904D+01 | 0.20022D+01 | 0.59375D+03 |
| 500.00 | 0.53493D+02 | 0.32579D+04 | 0.29369D+04 | 0.93735D+01 | 0.20874D+01 | 0.63297D+03 |
| 600.00 | 0.60413D+02 | 0.34708D+04 | 0.31083D+04 | 0.96324D+01 | 0.21700D+01 | 0.66950D+03 |
| 700.00 | 0.67333D+02 | 0.36917D+04 | 0.32877D+04 | 0.98719D+01 | 0.22480D+01 | 0.70392D+03 |
| 800.00 | 0.74252D+02 | 0.39202D+04 | 0.34746D+04 | 0.10095D+02 | 0.23200D+01 | 0.73662D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.70000D+01

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90459D-03 | -0.76171D-02 | -0.13949D-01 | -0.39422D-04 | 0.42108D+01 | 0.13243D+04 |
| 10.00 | 0.90419D-03 | 0.26171D+02 | 0.26165D+02 | 0.93443D-01 | 0.42314D+01 | 0.13429D+04 |
| 20.00 | 0.90470D-03 | 0.68557D+02 | 0.68551D+02 | 0.24055D+00 | 0.42426D+01 | 0.13751D+04 |
| 30.00 | 0.90642D-03 | 0.11098D+03 | 0.11097D+03 | 0.38285D+00 | 0.42404D+01 | 0.14032D+04 |
| 40.00 | 0.90914D-03 | 0.15335D+03 | 0.15334D+03 | 0.52035D+00 | 0.42319D+01 | 0.14251D+04 |
| 50.00 | 0.19122D+02 | 0.24016D+04 | 0.22677D+04 | 0.76713D+01 | 0.17574D+01 | 0.41951D+03 |
| 60.00 | 0.19721D+02 | 0.24192D+04 | 0.22811D+04 | 0.77248D+01 | 0.17566D+01 | 0.42586D+03 |
| 70.00 | 0.20318D+02 | 0.24367D+04 | 0.22945D+04 | 0.77768D+01 | 0.17579D+01 | 0.43207D+03 |
| 80.00 | 0.20915D+02 | 0.24543D+04 | 0.23079D+04 | 0.78273D+01 | 0.17607D+01 | 0.43815D+03 |
| 90.00 | 0.21511D+02 | 0.24719D+04 | 0.23214D+04 | 0.78765D+01 | 0.17646D+01 | 0.44411D+03 |
| 100.00 | 0.22107D+02 | 0.24896D+04 | 0.23349D+04 | 0.79245D+01 | 0.17694D+01 | 0.44997D+03 |
| 110.00 | 0.22702D+02 | 0.25073D+04 | 0.23484D+04 | 0.79714D+01 | 0.17747D+01 | 0.45572D+03 |
| 120.00 | 0.23297D+02 | 0.25251D+04 | 0.23620D+04 | 0.80172D+01 | 0.17806D+01 | 0.46138D+03 |
| 130.00 | 0.23892D+02 | 0.25429D+04 | 0.23757D+04 | 0.80620D+01 | 0.17868D+01 | 0.46695D+03 |
| 140.00 | 0.24486D+02 | 0.25608D+04 | 0.23894D+04 | 0.81059D+01 | 0.17934D+01 | 0.47244D+03 |
| 150.00 | 0.25081D+02 | 0.25788D+04 | 0.24032D+04 | 0.81488D+01 | 0.18002D+01 | 0.47784D+03 |
| 160.00 | 0.25675D+02 | 0.25968D+04 | 0.24171D+04 | 0.81910D+01 | 0.18072D+01 | 0.48317D+03 |
| 170.00 | 0.26269D+02 | 0.26150D+04 | 0.24311D+04 | 0.82323D+01 | 0.18144D+01 | 0.48842D+03 |
| 180.00 | 0.26863D+02 | 0.26331D+04 | 0.24451D+04 | 0.82729D+01 | 0.18217D+01 | 0.49360D+03 |
| 190.00 | 0.27457D+02 | 0.26514D+04 | 0.24592D+04 | 0.83127D+01 | 0.18292D+01 | 0.49871D+03 |
| 200.00 | 0.28051D+02 | 0.26697D+04 | 0.24734D+04 | 0.83519D+01 | 0.18368D+01 | 0.50376D+03 |
| 210.00 | 0.28644D+02 | 0.26881D+04 | 0.24876D+04 | 0.83904D+01 | 0.18445D+01 | 0.50875D+03 |
| 220.00 | 0.29238D+02 | 0.27066D+04 | 0.25019D+04 | 0.84282D+01 | 0.18524D+01 | 0.51367D+03 |
| 230.00 | 0.29832D+02 | 0.27252D+04 | 0.25164D+04 | 0.84655D+01 | 0.18603D+01 | 0.51853D+03 |
| 240.00 | 0.30425D+02 | 0.27438D+04 | 0.25308D+04 | 0.85022D+01 | 0.18682D+01 | 0.52334D+03 |
| 250.00 | 0.31019D+02 | 0.27625D+04 | 0.25454D+04 | 0.85383D+01 | 0.18763D+01 | 0.52809D+03 |
| 260.00 | 0.31612D+02 | 0.27813D+04 | 0.25601D+04 | 0.85739D+01 | 0.18844D+01 | 0.53278D+03 |
| 270.00 | 0.32206D+02 | 0.28002D+04 | 0.25748D+04 | 0.86090D+01 | 0.18926D+01 | 0.53743D+03 |
| 280.00 | 0.32799D+02 | 0.28192D+04 | 0.25896D+04 | 0.86436D+01 | 0.19008D+01 | 0.54202D+03 |
| 290.00 | 0.33393D+02 | 0.28382D+04 | 0.26045D+04 | 0.86777D+01 | 0.19091D+01 | 0.54657D+03 |
| 300.00 | 0.33986D+02 | 0.28574D+04 | 0.26195D+04 | 0.87114D+01 | 0.19174D+01 | 0.55107D+03 |
| 310.00 | 0.34579D+02 | 0.28766D+04 | 0.26345D+04 | 0.87447D+01 | 0.19258D+01 | 0.55552D+03 |
| 320.00 | 0.35173D+02 | 0.28959D+04 | 0.26497D+04 | 0.87775D+01 | 0.19342D+01 | 0.55993D+03 |
| 330.00 | 0.35766D+02 | 0.29153D+04 | 0.26649D+04 | 0.88099D+01 | 0.19427D+01 | 0.56430D+03 |
| 340.00 | 0.36359D+02 | 0.29347D+04 | 0.26802D+04 | 0.88419D+01 | 0.19511D+01 | 0.56862D+03 |
| 350.00 | 0.36953D+02 | 0.29543D+04 | 0.26956D+04 | 0.88735D+01 | 0.19596D+01 | 0.57290D+03 |
| 360.00 | 0.37546D+02 | 0.29739D+04 | 0.27111D+04 | 0.89048D+01 | 0.19681D+01 | 0.57715D+03 |
| 365.00 | 0.37843D+02 | 0.29838D+04 | 0.27189D+04 | 0.89203D+01 | 0.19724D+01 | 0.57926D+03 |
| 370.00 | 0.38139D+02 | 0.29937D+04 | 0.27267D+04 | 0.89357D+01 | 0.19766D+01 | 0.58135D+03 |
| 370.74 | 0.38183D+02 | 0.29951D+04 | 0.27278D+04 | 0.89380D+01 | 0.19773D+01 | 0.58166D+03 |
| 380.00 | 0.38732D+02 | 0.30135D+04 | 0.27423D+04 | 0.89663D+01 | 0.19852D+01 | 0.58552D+03 |
| 390.00 | 0.39326D+02 | 0.30334D+04 | 0.27581D+04 | 0.89965D+01 | 0.19937D+01 | 0.58965D+03 |
| 400.00 | 0.39919D+02 | 0.30533D+04 | 0.27739D+04 | 0.90264D+01 | 0.20023D+01 | 0.59375D+03 |
| 500.00 | 0.45851D+02 | 0.32578D+04 | 0.29369D+04 | 0.93095D+01 | 0.20874D+01 | 0.63296D+03 |
| 600.00 | 0.51782D+02 | 0.34707D+04 | 0.31083D+04 | 0.95684D+01 | 0.21700D+01 | 0.66950D+03 |
| 700.00 | 0.57713D+02 | 0.36917D+04 | 0.32877D+04 | 0.98079D+01 | 0.22480D+01 | 0.70392D+03 |
| 800.00 | 0.63645D+02 | 0.39202D+04 | 0.34746D+04 | 0.10031D+02 | 0.23200D+01 | 0.73662D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.80000D+01

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90459D-03 | -0.66815D-02 | -0.13918D-01 | -0.39310D-04 | 0.42108D+01 | 0.13243D+04 |
| 10.00 | 0.90419D-03 | 0.26172D+02 | 0.26165D+02 | 0.93443D-01 | 0.42314D+01 | 0.13429D+04 |
| 20.00 | 0.90470D-03 | 0.68558D+02 | 0.68551D+02 | 0.24055D+00 | 0.42426D+01 | 0.13751D+04 |
| 30.00 | 0.90642D-03 | 0.11098D+03 | 0.11097D+03 | 0.38285D+00 | 0.42404D+01 | 0.14032D+04 |
| 40.00 | 0.90914D-03 | 0.15335D+03 | 0.15334D+03 | 0.52035D+00 | 0.42319D+01 | 0.14251D+04 |
| 50.00 | 0.16727D+02 | 0.24013D+04 | 0.22675D+04 | 0.76152D+01 | 0.17619D+01 | 0.41940D+03 |
| 60.00 | 0.17251D+02 | 0.24190D+04 | 0.22809D+04 | 0.76689D+01 | 0.17600D+01 | 0.42577D+03 |
| 70.00 | 0.17774D+02 | 0.24366D+04 | 0.22944D+04 | 0.77210D+01 | 0.17606D+01 | 0.43200D+03 |
| 80.00 | 0.18297D+02 | 0.24542D+04 | 0.23078D+04 | 0.77716D+01 | 0.17628D+01 | 0.43809D+03 |
| 90.00 | 0.18819D+02 | 0.24718D+04 | 0.23213D+04 | 0.78208D+01 | 0.17663D+01 | 0.44406D+03 |
| 100.00 | 0.19341D+02 | 0.24895D+04 | 0.23348D+04 | 0.78689D+01 | 0.17708D+01 | 0.44992D+03 |
| 110.00 | 0.19862D+02 | 0.25072D+04 | 0.23483D+04 | 0.79158D+01 | 0.17759D+01 | 0.45568D+03 |
| 120.00 | 0.20383D+02 | 0.25250D+04 | 0.23620D+04 | 0.79616D+01 | 0.17816D+01 | 0.46135D+03 |
| 130.00 | 0.20903D+02 | 0.25429D+04 | 0.23756D+04 | 0.80064D+01 | 0.17877D+01 | 0.46692D+03 |
| 140.00 | 0.21424D+02 | 0.25608D+04 | 0.23894D+04 | 0.80503D+01 | 0.17941D+01 | 0.47241D+03 |
| 150.00 | 0.21944D+02 | 0.25787D+04 | 0.24032D+04 | 0.80933D+01 | 0.18008D+01 | 0.47782D+03 |
| 160.00 | 0.22464D+02 | 0.25968D+04 | 0.24171D+04 | 0.81354D+01 | 0.18077D+01 | 0.48315D+03 |
| 170.00 | 0.22984D+02 | 0.26149D+04 | 0.24310D+04 | 0.81768D+01 | 0.18149D+01 | 0.48840D+03 |
| 180.00 | 0.23504D+02 | 0.26331D+04 | 0.24451D+04 | 0.82173D+01 | 0.18222D+01 | 0.49358D+03 |
| 190.00 | 0.24023D+02 | 0.26513D+04 | 0.24592D+04 | 0.82572D+01 | 0.18296D+01 | 0.49870D+03 |
| 200.00 | 0.24543D+02 | 0.26697D+04 | 0.24733D+04 | 0.82964D+01 | 0.18372D+01 | 0.50375D+03 |
| 210.00 | 0.25063D+02 | 0.26881D+04 | 0.24876D+04 | 0.83349D+01 | 0.18448D+01 | 0.50873D+03 |
| 220.00 | 0.25582D+02 | 0.27066D+04 | 0.25019D+04 | 0.83727D+01 | 0.18526D+01 | 0.51365D+03 |
| 230.00 | 0.26102D+02 | 0.27251D+04 | 0.25163D+04 | 0.84100D+01 | 0.18605D+01 | 0.51852D+03 |
| 240.00 | 0.26621D+02 | 0.27438D+04 | 0.25308D+04 | 0.84467D+01 | 0.18685D+01 | 0.52333D+03 |
| 250.00 | 0.27141D+02 | 0.27625D+04 | 0.25454D+04 | 0.84828D+01 | 0.18765D+01 | 0.52808D+03 |
| 260.00 | 0.27660D+02 | 0.27813D+04 | 0.25600D+04 | 0.85184D+01 | 0.18846D+01 | 0.53277D+03 |
| 270.00 | 0.28179D+02 | 0.28002D+04 | 0.25748D+04 | 0.85535D+01 | 0.18928D+01 | 0.53742D+03 |
| 280.00 | 0.28699D+02 | 0.28192D+04 | 0.25896D+04 | 0.85881D+01 | 0.19010D+01 | 0.54202D+03 |
| 290.00 | 0.29218D+02 | 0.28382D+04 | 0.26045D+04 | 0.86223D+01 | 0.19093D+01 | 0.54656D+03 |
| 300.00 | 0.29737D+02 | 0.28574D+04 | 0.26195D+04 | 0.86560D+01 | 0.19176D+01 | 0.55106D+03 |
| 310.00 | 0.30256D+02 | 0.28766D+04 | 0.26345D+04 | 0.86892D+01 | 0.19259D+01 | 0.55551D+03 |
| 320.00 | 0.30776D+02 | 0.28959D+04 | 0.26497D+04 | 0.87220D+01 | 0.19343D+01 | 0.55992D+03 |
| 330.00 | 0.31295D+02 | 0.29153D+04 | 0.26649D+04 | 0.87544D+01 | 0.19428D+01 | 0.56429D+03 |
| 340.00 | 0.31814D+02 | 0.29347D+04 | 0.26802D+04 | 0.87864D+01 | 0.19512D+01 | 0.56861D+03 |
| 350.00 | 0.32333D+02 | 0.29543D+04 | 0.26956D+04 | 0.88181D+01 | 0.19597D+01 | 0.57290D+03 |
| 360.00 | 0.32852D+02 | 0.29739D+04 | 0.27111D+04 | 0.88493D+01 | 0.19682D+01 | 0.57714D+03 |
| 365.00 | 0.33112D+02 | 0.29838D+04 | 0.27189D+04 | 0.88648D+01 | 0.19725D+01 | 0.57925D+03 |
| 370.00 | 0.33371D+02 | 0.29936D+04 | 0.27267D+04 | 0.88802D+01 | 0.19767D+01 | 0.58135D+03 |
| 370.74 | 0.33410D+02 | 0.29951D+04 | 0.27278D+04 | 0.88825D+01 | 0.19774D+01 | 0.58166D+03 |
| 380.00 | 0.33890D+02 | 0.30135D+04 | 0.27423D+04 | 0.89108D+01 | 0.19853D+01 | 0.58552D+03 |
| 390.00 | 0.34409D+02 | 0.30334D+04 | 0.27581D+04 | 0.89410D+01 | 0.19938D+01 | 0.58965D+03 |
| 400.00 | 0.34929D+02 | 0.30533D+04 | 0.27739D+04 | 0.89709D+01 | 0.20023D+01 | 0.59374D+03 |
| 500.00 | 0.40119D+02 | 0.32578D+04 | 0.29369D+04 | 0.92541D+01 | 0.20875D+01 | 0.63296D+03 |
| 600.00 | 0.45309D+02 | 0.34707D+04 | 0.31083D+04 | 0.95129D+01 | 0.21701D+01 | 0.66950D+03 |
| 700.00 | 0.50499D+02 | 0.36917D+04 | 0.32877D+04 | 0.97524D+01 | 0.22481D+01 | 0.70392D+03 |
| 800.00 | 0.55689D+02 | 0.39202D+04 | 0.34746D+04 | 0.99758D+01 | 0.23200D+01 | 0.73662D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.90000D+01

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90459D-03 | -0.57458D-02 | -0.13887D-01 | -0.39198D-04 | 0.42108D+01 | 0.13243D+04 |
| 10.00 | 0.90419D-03 | 0.26173D+02 | 0.26165D+02 | 0.93443D-01 | 0.42314D+01 | 0.13429D+04 |
| 20.00 | 0.90470D-03 | 0.68559D+02 | 0.68551D+02 | 0.24055D+00 | 0.42426D+01 | 0.13751D+04 |
| 30.00 | 0.90642D-03 | 0.11098D+03 | 0.11097D+03 | 0.38285D+00 | 0.42404D+01 | 0.14032D+04 |
| 40.00 | 0.90914D-03 | 0.15335D+03 | 0.15334D+03 | 0.52035D+00 | 0.42319D+01 | 0.14251D+04 |
| 50.00 | 0.14863D+02 | 0.24011D+04 | 0.22673D+04 | 0.75657D+01 | 0.17663D+01 | 0.41929D+03 |
| 60.00 | 0.15330D+02 | 0.24187D+04 | 0.22808D+04 | 0.76195D+01 | 0.17634D+01 | 0.42568D+03 |
| 70.00 | 0.15796D+02 | 0.24364D+04 | 0.22942D+04 | 0.76717D+01 | 0.17632D+01 | 0.43192D+03 |
| 80.00 | 0.16261D+02 | 0.24540D+04 | 0.23077D+04 | 0.77223D+01 | 0.17649D+01 | 0.43803D+03 |
| 90.00 | 0.16725D+02 | 0.24717D+04 | 0.23212D+04 | 0.77716D+01 | 0.17680D+01 | 0.44401D+03 |
| 100.00 | 0.17189D+02 | 0.24894D+04 | 0.23347D+04 | 0.78197D+01 | 0.17721D+01 | 0.44988D+03 |
| 110.00 | 0.17652D+02 | 0.25071D+04 | 0.23483D+04 | 0.78667D+01 | 0.17770D+01 | 0.45565D+03 |
| 120.00 | 0.18116D+02 | 0.25249D+04 | 0.23619D+04 | 0.79125D+01 | 0.17825D+01 | 0.46132D+03 |
| 130.00 | 0.18579D+02 | 0.25428D+04 | 0.23756D+04 | 0.79574D+01 | 0.17885D+01 | 0.46689D+03 |
| 140.00 | 0.19041D+02 | 0.25607D+04 | 0.23893D+04 | 0.80013D+01 | 0.17948D+01 | 0.47238D+03 |
| 150.00 | 0.19504D+02 | 0.25787D+04 | 0.24031D+04 | 0.80443D+01 | 0.18014D+01 | 0.47779D+03 |
| 160.00 | 0.19966D+02 | 0.25967D+04 | 0.24170D+04 | 0.80864D+01 | 0.18083D+01 | 0.48313D+03 |
| 170.00 | 0.20429D+02 | 0.26148D+04 | 0.24310D+04 | 0.81278D+01 | 0.18153D+01 | 0.48838D+03 |
| 180.00 | 0.20891D+02 | 0.26330D+04 | 0.24450D+04 | 0.81684D+01 | 0.18226D+01 | 0.49357D+03 |
| 190.00 | 0.21353D+02 | 0.26513D+04 | 0.24591D+04 | 0.82082D+01 | 0.18300D+01 | 0.49868D+03 |
| 200.00 | 0.21815D+02 | 0.26696D+04 | 0.24733D+04 | 0.82474D+01 | 0.18375D+01 | 0.50373D+03 |
| 210.00 | 0.22277D+02 | 0.26880D+04 | 0.24876D+04 | 0.82859D+01 | 0.18451D+01 | 0.50872D+03 |
| 220.00 | 0.22739D+02 | 0.27065D+04 | 0.25019D+04 | 0.83238D+01 | 0.18529D+01 | 0.51364D+03 |
| 230.00 | 0.23201D+02 | 0.27251D+04 | 0.25163D+04 | 0.83611D+01 | 0.18607D+01 | 0.51851D+03 |
| 240.00 | 0.23662D+02 | 0.27438D+04 | 0.25308D+04 | 0.83977D+01 | 0.18687D+01 | 0.52331D+03 |
| 250.00 | 0.24124D+02 | 0.27625D+04 | 0.25454D+04 | 0.84339D+01 | 0.18767D+01 | 0.52807D+03 |
| 260.00 | 0.24586D+02 | 0.27813D+04 | 0.25600D+04 | 0.84695D+01 | 0.18848D+01 | 0.53276D+03 |
| 270.00 | 0.25048D+02 | 0.28002D+04 | 0.25747D+04 | 0.85046D+01 | 0.18929D+01 | 0.53741D+03 |
| 280.00 | 0.25509D+02 | 0.28191D+04 | 0.25896D+04 | 0.85392D+01 | 0.19011D+01 | 0.54201D+03 |
| 290.00 | 0.25971D+02 | 0.28382D+04 | 0.26045D+04 | 0.85733D+01 | 0.19094D+01 | 0.54655D+03 |
| 300.00 | 0.26432D+02 | 0.28573D+04 | 0.26194D+04 | 0.86070D+01 | 0.19177D+01 | 0.55105D+03 |
| 310.00 | 0.26894D+02 | 0.28766D+04 | 0.26345D+04 | 0.86403D+01 | 0.19261D+01 | 0.55551D+03 |
| 320.00 | 0.27355D+02 | 0.28959D+04 | 0.26497D+04 | 0.86731D+01 | 0.19344D+01 | 0.55992D+03 |
| 330.00 | 0.27817D+02 | 0.29152D+04 | 0.26649D+04 | 0.87055D+01 | 0.19429D+01 | 0.56428D+03 |
| 340.00 | 0.28278D+02 | 0.29347D+04 | 0.26802D+04 | 0.87375D+01 | 0.19513D+01 | 0.56861D+03 |
| 350.00 | 0.28740D+02 | 0.29543D+04 | 0.26956D+04 | 0.87692D+01 | 0.19598D+01 | 0.57289D+03 |
| 360.00 | 0.29201D+02 | 0.29739D+04 | 0.27111D+04 | 0.88004D+01 | 0.19683D+01 | 0.57714D+03 |
| 365.00 | 0.29432D+02 | 0.29838D+04 | 0.27189D+04 | 0.88159D+01 | 0.19725D+01 | 0.57924D+03 |
| 370.00 | 0.29663D+02 | 0.29936D+04 | 0.27267D+04 | 0.88313D+01 | 0.19768D+01 | 0.58134D+03 |
| 370.74 | 0.29697D+02 | 0.29951D+04 | 0.27278D+04 | 0.88336D+01 | 0.19774D+01 | 0.58165D+03 |
| 380.00 | 0.30124D+02 | 0.30134D+04 | 0.27423D+04 | 0.88619D+01 | 0.19853D+01 | 0.58551D+03 |
| 390.00 | 0.30586D+02 | 0.30333D+04 | 0.27581D+04 | 0.88921D+01 | 0.19939D+01 | 0.58964D+03 |
| 400.00 | 0.31047D+02 | 0.30533D+04 | 0.27739D+04 | 0.89220D+01 | 0.20024D+01 | 0.59374D+03 |
| 500.00 | 0.35661D+02 | 0.32578D+04 | 0.29369D+04 | 0.92051D+01 | 0.20875D+01 | 0.63296D+03 |
| 600.00 | 0.40275D+02 | 0.34707D+04 | 0.31083D+04 | 0.94640D+01 | 0.21701D+01 | 0.66950D+03 |
| 700.00 | 0.44888D+02 | 0.36917D+04 | 0.32877D+04 | 0.97035D+01 | 0.22481D+01 | 0.70392D+03 |
| 800.00 | 0.49501D+02 | 0.39201D+04 | 0.34746D+04 | 0.99269D+01 | 0.23200D+01 | 0.73662D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.10000D+02

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90459D-03 | -0.48102D-02 | -0.13856D-01 | -0.39086D-04 | 0.42108D+01 | 0.13243D+04 |
| 10.00 | 0.90419D-03 | 0.26174D+02 | 0.26165D+02 | 0.93443D-01 | 0.42314D+01 | 0.13429D+04 |
| 20.00 | 0.90470D-03 | 0.68560D+02 | 0.68551D+02 | 0.24055D+00 | 0.42426D+01 | 0.13751D+04 |
| 30.00 | 0.90642D-03 | 0.11098D+03 | 0.11097D+03 | 0.38285D+00 | 0.42404D+01 | 0.14032D+04 |
| 40.00 | 0.90914D-03 | 0.15335D+03 | 0.15334D+03 | 0.52035D+00 | 0.42319D+01 | 0.14251D+04 |
| 50.00 | 0.13373D+02 | 0.24009D+04 | 0.22671D+04 | 0.75214D+01 | 0.17708D+01 | 0.41918D+03 |
| 60.00 | 0.13793D+02 | 0.24185D+04 | 0.22806D+04 | 0.75753D+01 | 0.17669D+01 | 0.42559D+03 |
| 70.00 | 0.14213D+02 | 0.24362D+04 | 0.22941D+04 | 0.76275D+01 | 0.17659D+01 | 0.43185D+03 |
| 80.00 | 0.14632D+02 | 0.24539D+04 | 0.23076D+04 | 0.76782D+01 | 0.17670D+01 | 0.43797D+03 |
| 90.00 | 0.15050D+02 | 0.24716D+04 | 0.23211D+04 | 0.77276D+01 | 0.17697D+01 | 0.44396D+03 |
| 100.00 | 0.15468D+02 | 0.24893D+04 | 0.23346D+04 | 0.77757D+01 | 0.17735D+01 | 0.44984D+03 |
| 110.00 | 0.15885D+02 | 0.25070D+04 | 0.23482D+04 | 0.78227D+01 | 0.17782D+01 | 0.45561D+03 |
| 120.00 | 0.16302D+02 | 0.25248D+04 | 0.23618D+04 | 0.78686D+01 | 0.17835D+01 | 0.46128D+03 |
| 130.00 | 0.16719D+02 | 0.25427D+04 | 0.23755D+04 | 0.79135D+01 | 0.17893D+01 | 0.46686D+03 |
| 140.00 | 0.17136D+02 | 0.25606D+04 | 0.23893D+04 | 0.79574D+01 | 0.17955D+01 | 0.47236D+03 |
| 150.00 | 0.17552D+02 | 0.25786D+04 | 0.24031D+04 | 0.80004D+01 | 0.18020D+01 | 0.47777D+03 |
| 160.00 | 0.17968D+02 | 0.25967D+04 | 0.24170D+04 | 0.80426D+01 | 0.18088D+01 | 0.48310D+03 |
| 170.00 | 0.18384D+02 | 0.26148D+04 | 0.24309D+04 | 0.80839D+01 | 0.18158D+01 | 0.48836D+03 |
| 180.00 | 0.18801D+02 | 0.26330D+04 | 0.24450D+04 | 0.81245D+01 | 0.18230D+01 | 0.49355D+03 |
| 190.00 | 0.19217D+02 | 0.26512D+04 | 0.24591D+04 | 0.81644D+01 | 0.18303D+01 | 0.49867D+03 |
| 200.00 | 0.19632D+02 | 0.26696D+04 | 0.24733D+04 | 0.82036D+01 | 0.18378D+01 | 0.50372D+03 |
| 210.00 | 0.20048D+02 | 0.26880D+04 | 0.24875D+04 | 0.82421D+01 | 0.18454D+01 | 0.50870D+03 |
| 220.00 | 0.20464D+02 | 0.27065D+04 | 0.25019D+04 | 0.82800D+01 | 0.18532D+01 | 0.51363D+03 |
| 230.00 | 0.20880D+02 | 0.27251D+04 | 0.25163D+04 | 0.83173D+01 | 0.18610D+01 | 0.51849D+03 |
| 240.00 | 0.21295D+02 | 0.27437D+04 | 0.25308D+04 | 0.83540D+01 | 0.18689D+01 | 0.52330D+03 |
| 250.00 | 0.21711D+02 | 0.27624D+04 | 0.25453D+04 | 0.83901D+01 | 0.18769D+01 | 0.52806D+03 |
| 260.00 | 0.22127D+02 | 0.27813D+04 | 0.25600D+04 | 0.84257D+01 | 0.18850D+01 | 0.53275D+03 |
| 270.00 | 0.22542D+02 | 0.28001D+04 | 0.25747D+04 | 0.84608D+01 | 0.18931D+01 | 0.53740D+03 |
| 280.00 | 0.22958D+02 | 0.28191D+04 | 0.25895D+04 | 0.84954D+01 | 0.19013D+01 | 0.54200D+03 |
| 290.00 | 0.23373D+02 | 0.28382D+04 | 0.26044D+04 | 0.85296D+01 | 0.19095D+01 | 0.54655D+03 |
| 300.00 | 0.23789D+02 | 0.28573D+04 | 0.26194D+04 | 0.85633D+01 | 0.19178D+01 | 0.55105D+03 |
| 310.00 | 0.24204D+02 | 0.28765D+04 | 0.26345D+04 | 0.85965D+01 | 0.19262D+01 | 0.55550D+03 |
| 320.00 | 0.24619D+02 | 0.28958D+04 | 0.26496D+04 | 0.86293D+01 | 0.19345D+01 | 0.55991D+03 |
| 330.00 | 0.25035D+02 | 0.29152D+04 | 0.26649D+04 | 0.86617D+01 | 0.19430D+01 | 0.56428D+03 |
| 340.00 | 0.25450D+02 | 0.29347D+04 | 0.26802D+04 | 0.86938D+01 | 0.19514D+01 | 0.56860D+03 |
| 350.00 | 0.25866D+02 | 0.29543D+04 | 0.26956D+04 | 0.87254D+01 | 0.19599D+01 | 0.57289D+03 |
| 360.00 | 0.26281D+02 | 0.29739D+04 | 0.27111D+04 | 0.87567D+01 | 0.19684D+01 | 0.57713D+03 |
| 365.00 | 0.26489D+02 | 0.29837D+04 | 0.27189D+04 | 0.87722D+01 | 0.19726D+01 | 0.57924D+03 |
| 370.00 | 0.26696D+02 | 0.29936D+04 | 0.27267D+04 | 0.87876D+01 | 0.19769D+01 | 0.58134D+03 |
| 370.74 | 0.26727D+02 | 0.29951D+04 | 0.27278D+04 | 0.87898D+01 | 0.19775D+01 | 0.58165D+03 |
| 380.00 | 0.27112D+02 | 0.30134D+04 | 0.27423D+04 | 0.88181D+01 | 0.19854D+01 | 0.58551D+03 |
| 390.00 | 0.27527D+02 | 0.30333D+04 | 0.27581D+04 | 0.88484D+01 | 0.19939D+01 | 0.58964D+03 |
| 400.00 | 0.27942D+02 | 0.30533D+04 | 0.27739D+04 | 0.88783D+01 | 0.20025D+01 | 0.59374D+03 |
| 500.00 | 0.32095D+02 | 0.32578D+04 | 0.29369D+04 | 0.91614D+01 | 0.20875D+01 | 0.63295D+03 |
| 600.00 | 0.36247D+02 | 0.34707D+04 | 0.31083D+04 | 0.94203D+01 | 0.21701D+01 | 0.66950D+03 |
| 700.00 | 0.40399D+02 | 0.36917D+04 | 0.32877D+04 | 0.96598D+01 | 0.22481D+01 | 0.70392D+03 |
| 800.00 | 0.44551D+02 | 0.39201D+04 | 0.34746D+04 | 0.98832D+01 | 0.23200D+01 | 0.73662D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.20000D+02

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90458D-03 | 0.45462D-02 | -0.13545D-01 | -0.37965D-04 | 0.42107D+01 | 0.13243D+04 |
| 10.00 | 0.90419D-03 | 0.26183D+02 | 0.26165D+02 | 0.93443D-01 | 0.42314D+01 | 0.13429D+04 |
| 20.00 | 0.90470D-03 | 0.68569D+02 | 0.68550D+02 | 0.24055D+00 | 0.42425D+01 | 0.13751D+04 |
| 30.00 | 0.90642D-03 | 0.11099D+03 | 0.11097D+03 | 0.38285D+00 | 0.42404D+01 | 0.14032D+04 |
| 40.00 | 0.90913D-03 | 0.15336D+03 | 0.15334D+03 | 0.52034D+00 | 0.42319D+01 | 0.14252D+04 |
| 50.00 | 0.91269D-03 | 0.19562D+03 | 0.19560D+03 | 0.65319D+00 | 0.42202D+01 | 0.14411D+04 |
| 60.00 | 0.91699D-03 | 0.23776D+03 | 0.23774D+03 | 0.78161D+00 | 0.42072D+01 | 0.14514D+04 |
| 70.00 | 0.70899D+01 | 0.24345D+04 | 0.22927D+04 | 0.73357D+01 | 0.17927D+01 | 0.43113D+03 |
| 80.00 | 0.73011D+01 | 0.24524D+04 | 0.23064D+04 | 0.73871D+01 | 0.17883D+01 | 0.43736D+03 |
| 90.00 | 0.75118D+01 | 0.24703D+04 | 0.23200D+04 | 0.74371D+01 | 0.17868D+01 | 0.44345D+03 |
| 100.00 | 0.77220D+01 | 0.24881D+04 | 0.23337D+04 | 0.74856D+01 | 0.17875D+01 | 0.44940D+03 |
| 110.00 | 0.79318D+01 | 0.25060D+04 | 0.23474D+04 | 0.75329D+01 | 0.17897D+01 | 0.45523D+03 |
| 120.00 | 0.81413D+01 | 0.25239D+04 | 0.23611D+04 | 0.75790D+01 | 0.17932D+01 | 0.46095D+03 |
| 130.00 | 0.83505D+01 | 0.25419D+04 | 0.23749D+04 | 0.76241D+01 | 0.17975D+01 | 0.46657D+03 |
| 140.00 | 0.85596D+01 | 0.25599D+04 | 0.23887D+04 | 0.76682D+01 | 0.18025D+01 | 0.47210D+03 |
| 150.00 | 0.87684D+01 | 0.25779D+04 | 0.24026D+04 | 0.77114D+01 | 0.18081D+01 | 0.47754D+03 |
| 160.00 | 0.89772D+01 | 0.25961D+04 | 0.24165D+04 | 0.77537D+01 | 0.18141D+01 | 0.48289D+03 |
| 170.00 | 0.91858D+01 | 0.26142D+04 | 0.24305D+04 | 0.77952D+01 | 0.18205D+01 | 0.48817D+03 |
| 180.00 | 0.93943D+01 | 0.26325D+04 | 0.24446D+04 | 0.78359D+01 | 0.18272D+01 | 0.49337D+03 |
| 190.00 | 0.96027D+01 | 0.26508D+04 | 0.24587D+04 | 0.78759D+01 | 0.18341D+01 | 0.49850D+03 |
| 200.00 | 0.98110D+01 | 0.26692D+04 | 0.24729D+04 | 0.79151D+01 | 0.18412D+01 | 0.50357D+03 |
| 210.00 | 0.10019D+02 | 0.26876D+04 | 0.24872D+04 | 0.79537D+01 | 0.18484D+01 | 0.50856D+03 |
| 220.00 | 0.10227D+02 | 0.27061D+04 | 0.25016D+04 | 0.79916D+01 | 0.18559D+01 | 0.51350D+03 |
| 230.00 | 0.10436D+02 | 0.27247D+04 | 0.25160D+04 | 0.80290D+01 | 0.18634D+01 | 0.51837D+03 |
| 240.00 | 0.10644D+02 | 0.27434D+04 | 0.25305D+04 | 0.80657D+01 | 0.18711D+01 | 0.52319D+03 |
| 250.00 | 0.10852D+02 | 0.27621D+04 | 0.25451D+04 | 0.81019D+01 | 0.18789D+01 | 0.52795D+03 |
| 260.00 | 0.11060D+02 | 0.27810D+04 | 0.25598D+04 | 0.81376D+01 | 0.18868D+01 | 0.53265D+03 |
| 270.00 | 0.11268D+02 | 0.27999D+04 | 0.25745D+04 | 0.81727D+01 | 0.18948D+01 | 0.53731D+03 |
| 280.00 | 0.11476D+02 | 0.28189D+04 | 0.25894D+04 | 0.82073D+01 | 0.19028D+01 | 0.54191D+03 |
| 290.00 | 0.11683D+02 | 0.28379D+04 | 0.26043D+04 | 0.82415D+01 | 0.19110D+01 | 0.54646D+03 |
| 300.00 | 0.11891D+02 | 0.28571D+04 | 0.26193D+04 | 0.82752D+01 | 0.19191D+01 | 0.55097D+03 |
| 310.00 | 0.12099D+02 | 0.28763D+04 | 0.26343D+04 | 0.83085D+01 | 0.19274D+01 | 0.55543D+03 |
| 320.00 | 0.12307D+02 | 0.28956D+04 | 0.26495D+04 | 0.83413D+01 | 0.19357D+01 | 0.55984D+03 |
| 330.00 | 0.12515D+02 | 0.29150D+04 | 0.26647D+04 | 0.83737D+01 | 0.19440D+01 | 0.56421D+03 |
| 340.00 | 0.12723D+02 | 0.29345D+04 | 0.26801D+04 | 0.84058D+01 | 0.19523D+01 | 0.56854D+03 |
| 350.00 | 0.12930D+02 | 0.29541D+04 | 0.26955D+04 | 0.84374D+01 | 0.19607D+01 | 0.57283D+03 |
| 360.00 | 0.13138D+02 | 0.29737D+04 | 0.27110D+04 | 0.84687D+01 | 0.19692D+01 | 0.57708D+03 |
| 365.00 | 0.13242D+02 | 0.29836D+04 | 0.27187D+04 | 0.84842D+01 | 0.19734D+01 | 0.57918D+03 |
| 370.00 | 0.13346D+02 | 0.29935D+04 | 0.27265D+04 | 0.84996D+01 | 0.19776D+01 | 0.58128D+03 |
| 370.74 | 0.13361D+02 | 0.29949D+04 | 0.27277D+04 | 0.85019D+01 | 0.19782D+01 | 0.58159D+03 |
| 380.00 | 0.13554D+02 | 0.30133D+04 | 0.27422D+04 | 0.85302D+01 | 0.19861D+01 | 0.58546D+03 |
| 390.00 | 0.13761D+02 | 0.30332D+04 | 0.27580D+04 | 0.85605D+01 | 0.19946D+01 | 0.58959D+03 |
| 400.00 | 0.13969D+02 | 0.30532D+04 | 0.27738D+04 | 0.85904D+01 | 0.20030D+01 | 0.59369D+03 |
| 500.00 | 0.16046D+02 | 0.32577D+04 | 0.29368D+04 | 0.88735D+01 | 0.20878D+01 | 0.63293D+03 |
| 600.00 | 0.18123D+02 | 0.34707D+04 | 0.31082D+04 | 0.91324D+01 | 0.21703D+01 | 0.66948D+03 |
| 700.00 | 0.20199D+02 | 0.36916D+04 | 0.32876D+04 | 0.93720D+01 | 0.22482D+01 | 0.70391D+03 |
| 800.00 | 0.22275D+02 | 0.39201D+04 | 0.34746D+04 | 0.95954D+01 | 0.23201D+01 | 0.73662D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.30000D+02

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90458D-03 | 0.13902D-01 | -0.13235D-01 | -0.36844D-04 | 0.42107D+01 | 0.13243D+04 |
| 10.00 | 0.90418D-03 | 0.26192D+02 | 0.26165D+02 | 0.93443D-01 | 0.42313D+01 | 0.13429D+04 |
| 20.00 | 0.90469D-03 | 0.68577D+02 | 0.68550D+02 | 0.24055D+00 | 0.42425D+01 | 0.13751D+04 |
| 30.00 | 0.90641D-03 | 0.11100D+03 | 0.11097D+03 | 0.38285D+00 | 0.42404D+01 | 0.14032D+04 |
| 40.00 | 0.90913D-03 | 0.15336D+03 | 0.15334D+03 | 0.52034D+00 | 0.42318D+01 | 0.14252D+04 |
| 50.00 | 0.91269D-03 | 0.19563D+03 | 0.19560D+03 | 0.65319D+00 | 0.42202D+01 | 0.14411D+04 |
| 60.00 | 0.91698D-03 | 0.23776D+03 | 0.23774D+03 | 0.78161D+00 | 0.42072D+01 | 0.14514D+04 |
| 70.00 | 0.92195D-03 | 0.27977D+03 | 0.27974D+03 | 0.90584D+00 | 0.41938D+01 | 0.14567D+04 |
| 80.00 | 0.48575D+01 | 0.24509D+04 | 0.23052D+04 | 0.72154D+01 | 0.18097D+01 | 0.43676D+03 |
| 90.00 | 0.49990D+01 | 0.24690D+04 | 0.23190D+04 | 0.72659D+01 | 0.18040D+01 | 0.44294D+03 |
| 100.00 | 0.51400D+01 | 0.24870D+04 | 0.23328D+04 | 0.73149D+01 | 0.18015D+01 | 0.44896D+03 |
| 110.00 | 0.52806D+01 | 0.25050D+04 | 0.23466D+04 | 0.73625D+01 | 0.18014D+01 | 0.45485D+03 |
| 120.00 | 0.54210D+01 | 0.25230D+04 | 0.23604D+04 | 0.74089D+01 | 0.18029D+01 | 0.46062D+03 |
| 130.00 | 0.55610D+01 | 0.25411D+04 | 0.23743D+04 | 0.74542D+01 | 0.18058D+01 | 0.46628D+03 |
| 140.00 | 0.57009D+01 | 0.25592D+04 | 0.23881D+04 | 0.74985D+01 | 0.18097D+01 | 0.47184D+03 |
| 150.00 | 0.58406D+01 | 0.25773D+04 | 0.24021D+04 | 0.75419D+01 | 0.18143D+01 | 0.47730D+03 |
| 160.00 | 0.59801D+01 | 0.25954D+04 | 0.24160D+04 | 0.75843D+01 | 0.18195D+01 | 0.48268D+03 |
| 170.00 | 0.61195D+01 | 0.26137D+04 | 0.24301D+04 | 0.76259D+01 | 0.18253D+01 | 0.48798D+03 |
| 180.00 | 0.62588D+01 | 0.26320D+04 | 0.24442D+04 | 0.76667D+01 | 0.18314D+01 | 0.49319D+03 |
| 190.00 | 0.63980D+01 | 0.26503D+04 | 0.24584D+04 | 0.77067D+01 | 0.18378D+01 | 0.49834D+03 |
| 200.00 | 0.65372D+01 | 0.26687D+04 | 0.24726D+04 | 0.77461D+01 | 0.18445D+01 | 0.50342D+03 |
| 210.00 | 0.66762D+01 | 0.26872D+04 | 0.24869D+04 | 0.77847D+01 | 0.18515D+01 | 0.50842D+03 |
| 220.00 | 0.68152D+01 | 0.27057D+04 | 0.25013D+04 | 0.78227D+01 | 0.18586D+01 | 0.51337D+03 |
| 230.00 | 0.69542D+01 | 0.27244D+04 | 0.25157D+04 | 0.78601D+01 | 0.18659D+01 | 0.51825D+03 |
| 240.00 | 0.70931D+01 | 0.27431D+04 | 0.25303D+04 | 0.78969D+01 | 0.18734D+01 | 0.52308D+03 |
| 250.00 | 0.72319D+01 | 0.27618D+04 | 0.25449D+04 | 0.79331D+01 | 0.18810D+01 | 0.52784D+03 |
| 260.00 | 0.73707D+01 | 0.27807D+04 | 0.25596D+04 | 0.79688D+01 | 0.18887D+01 | 0.53256D+03 |
| 270.00 | 0.75095D+01 | 0.27996D+04 | 0.25743D+04 | 0.80040D+01 | 0.18965D+01 | 0.53721D+03 |
| 280.00 | 0.76482D+01 | 0.28186D+04 | 0.25892D+04 | 0.80387D+01 | 0.19044D+01 | 0.54182D+03 |
| 290.00 | 0.77869D+01 | 0.28377D+04 | 0.26041D+04 | 0.80728D+01 | 0.19124D+01 | 0.54638D+03 |
| 300.00 | 0.79256D+01 | 0.28569D+04 | 0.26191D+04 | 0.81066D+01 | 0.19204D+01 | 0.55089D+03 |
| 310.00 | 0.80643D+01 | 0.28761D+04 | 0.26342D+04 | 0.81399D+01 | 0.19286D+01 | 0.55535D+03 |
| 320.00 | 0.82030D+01 | 0.28954D+04 | 0.26493D+04 | 0.81727D+01 | 0.19368D+01 | 0.55977D+03 |
| 330.00 | 0.83416D+01 | 0.29148D+04 | 0.26646D+04 | 0.82052D+01 | 0.19450D+01 | 0.56415D+03 |
| 340.00 | 0.84802D+01 | 0.29343D+04 | 0.26799D+04 | 0.82372D+01 | 0.19533D+01 | 0.56848D+03 |
| 350.00 | 0.86188D+01 | 0.29539D+04 | 0.26953D+04 | 0.82689D+01 | 0.19616D+01 | 0.57277D+03 |
| 360.00 | 0.87574D+01 | 0.29736D+04 | 0.27108D+04 | 0.83002D+01 | 0.19700D+01 | 0.57702D+03 |
| 365.00 | 0.88267D+01 | 0.29834D+04 | 0.27186D+04 | 0.83157D+01 | 0.19741D+01 | 0.57913D+03 |
| 370.00 | 0.88959D+01 | 0.29933D+04 | 0.27264D+04 | 0.83311D+01 | 0.19783D+01 | 0.58123D+03 |
| 370.74 | 0.89062D+01 | 0.29948D+04 | 0.27276D+04 | 0.83334D+01 | 0.19790D+01 | 0.58154D+03 |
| 380.00 | 0.90345D+01 | 0.30131D+04 | 0.27421D+04 | 0.83617D+01 | 0.19868D+01 | 0.58541D+03 |
| 390.00 | 0.91730D+01 | 0.30330D+04 | 0.27578D+04 | 0.83920D+01 | 0.19952D+01 | 0.58954D+03 |
| 400.00 | 0.93116D+01 | 0.30530D+04 | 0.27737D+04 | 0.84219D+01 | 0.20036D+01 | 0.59364D+03 |
| 500.00 | 0.10697D+02 | 0.32576D+04 | 0.29367D+04 | 0.87051D+01 | 0.20881D+01 | 0.63290D+03 |
| 600.00 | 0.12081D+02 | 0.34706D+04 | 0.31082D+04 | 0.89641D+01 | 0.21705D+01 | 0.66946D+03 |
| 700.00 | 0.13466D+02 | 0.36916D+04 | 0.32876D+04 | 0.92036D+01 | 0.22483D+01 | 0.70390D+03 |
| 800.00 | 0.14850D+02 | 0.39201D+04 | 0.34746D+04 | 0.94270D+01 | 0.23202D+01 | 0.73661D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.40000D+02

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90457D-03 | 0.23259D-01 | -0.12924D-01 | -0.35723D-04 | 0.42106D+01 | 0.13243D+04 |
| 10.00 | 0.90418D-03 | 0.26201D+02 | 0.26165D+02 | 0.93443D-01 | 0.42313D+01 | 0.13429D+04 |
| 20.00 | 0.90469D-03 | 0.68586D+02 | 0.68550D+02 | 0.24055D+00 | 0.42425D+01 | 0.13751D+04 |
| 30.00 | 0.90641D-03 | 0.11101D+03 | 0.11097D+03 | 0.38285D+00 | 0.42403D+01 | 0.14032D+04 |
| 40.00 | 0.90912D-03 | 0.15337D+03 | 0.15334D+03 | 0.52034D+00 | 0.42318D+01 | 0.14252D+04 |
| 50.00 | 0.91268D-03 | 0.19563D+03 | 0.19560D+03 | 0.65319D+00 | 0.42202D+01 | 0.14411D+04 |
| 60.00 | 0.91698D-03 | 0.23777D+03 | 0.23773D+03 | 0.78160D+00 | 0.42071D+01 | 0.14514D+04 |
| 70.00 | 0.92194D-03 | 0.27978D+03 | 0.27974D+03 | 0.90583D+00 | 0.41938D+01 | 0.14567D+04 |
| 80.00 | 0.36357D+01 | 0.24494D+04 | 0.23040D+04 | 0.70926D+01 | 0.18313D+01 | 0.43615D+03 |
| 90.00 | 0.37426D+01 | 0.24677D+04 | 0.23180D+04 | 0.71436D+01 | 0.18214D+01 | 0.44243D+03 |
| 100.00 | 0.38490D+01 | 0.24859D+04 | 0.23319D+04 | 0.71930D+01 | 0.18157D+01 | 0.44853D+03 |
| 110.00 | 0.39550D+01 | 0.25040D+04 | 0.23458D+04 | 0.72410D+01 | 0.18131D+01 | 0.45447D+03 |
| 120.00 | 0.40608D+01 | 0.25221D+04 | 0.23597D+04 | 0.72877D+01 | 0.18128D+01 | 0.46029D+03 |
| 130.00 | 0.41663D+01 | 0.25403D+04 | 0.23736D+04 | 0.73332D+01 | 0.18142D+01 | 0.46599D+03 |
| 140.00 | 0.42715D+01 | 0.25584D+04 | 0.23876D+04 | 0.73777D+01 | 0.18168D+01 | 0.47158D+03 |
| 150.00 | 0.43766D+01 | 0.25766D+04 | 0.24015D+04 | 0.74212D+01 | 0.18205D+01 | 0.47707D+03 |
| 160.00 | 0.44816D+01 | 0.25948D+04 | 0.24156D+04 | 0.74638D+01 | 0.18250D+01 | 0.48247D+03 |
| 170.00 | 0.45864D+01 | 0.26131D+04 | 0.24297D+04 | 0.75055D+01 | 0.18300D+01 | 0.48778D+03 |
| 180.00 | 0.46911D+01 | 0.26314D+04 | 0.24438D+04 | 0.75464D+01 | 0.18356D+01 | 0.49302D+03 |
| 190.00 | 0.47957D+01 | 0.26498D+04 | 0.24580D+04 | 0.75865D+01 | 0.18416D+01 | 0.49818D+03 |
| 200.00 | 0.49003D+01 | 0.26683D+04 | 0.24723D+04 | 0.76259D+01 | 0.18479D+01 | 0.50327D+03 |
| 210.00 | 0.50047D+01 | 0.26868D+04 | 0.24866D+04 | 0.76646D+01 | 0.18545D+01 | 0.50828D+03 |
| 220.00 | 0.51091D+01 | 0.27054D+04 | 0.25010D+04 | 0.77027D+01 | 0.18613D+01 | 0.51324D+03 |
| 230.00 | 0.52135D+01 | 0.27240D+04 | 0.25155D+04 | 0.77401D+01 | 0.18684D+01 | 0.51813D+03 |
| 240.00 | 0.53178D+01 | 0.27427D+04 | 0.25300D+04 | 0.77770D+01 | 0.18756D+01 | 0.52296D+03 |
| 250.00 | 0.54220D+01 | 0.27615D+04 | 0.25446D+04 | 0.78133D+01 | 0.18830D+01 | 0.52774D+03 |
| 260.00 | 0.55262D+01 | 0.27804D+04 | 0.25593D+04 | 0.78490D+01 | 0.18905D+01 | 0.53246D+03 |
| 270.00 | 0.56304D+01 | 0.27993D+04 | 0.25741D+04 | 0.78842D+01 | 0.18982D+01 | 0.53712D+03 |
| 280.00 | 0.57346D+01 | 0.28184D+04 | 0.25890D+04 | 0.79189D+01 | 0.19059D+01 | 0.54173D+03 |
| 290.00 | 0.58387D+01 | 0.28375D+04 | 0.26039D+04 | 0.79531D+01 | 0.19138D+01 | 0.54630D+03 |
| 300.00 | 0.59428D+01 | 0.28566D+04 | 0.26189D+04 | 0.79869D+01 | 0.19217D+01 | 0.55081D+03 |
| 310.00 | 0.60468D+01 | 0.28759D+04 | 0.26340D+04 | 0.80202D+01 | 0.19298D+01 | 0.55528D+03 |
| 320.00 | 0.61509D+01 | 0.28952D+04 | 0.26492D+04 | 0.80530D+01 | 0.19379D+01 | 0.55970D+03 |
| 330.00 | 0.62549D+01 | 0.29146D+04 | 0.26644D+04 | 0.80855D+01 | 0.19460D+01 | 0.56408D+03 |
| 340.00 | 0.63589D+01 | 0.29341D+04 | 0.26798D+04 | 0.81176D+01 | 0.19542D+01 | 0.56842D+03 |
| 350.00 | 0.64629D+01 | 0.29537D+04 | 0.26952D+04 | 0.81493D+01 | 0.19625D+01 | 0.57271D+03 |
| 360.00 | 0.65669D+01 | 0.29734D+04 | 0.27107D+04 | 0.81806D+01 | 0.19708D+01 | 0.57696D+03 |
| 365.00 | 0.66189D+01 | 0.29833D+04 | 0.27185D+04 | 0.81961D+01 | 0.19749D+01 | 0.57908D+03 |
| 370.00 | 0.66709D+01 | 0.29931D+04 | 0.27263D+04 | 0.82115D+01 | 0.19791D+01 | 0.58118D+03 |
| 370.74 | 0.66786D+01 | 0.29946D+04 | 0.27275D+04 | 0.82138D+01 | 0.19797D+01 | 0.58149D+03 |
| 380.00 | 0.67749D+01 | 0.30130D+04 | 0.27420D+04 | 0.82421D+01 | 0.19874D+01 | 0.58536D+03 |
| 390.00 | 0.68788D+01 | 0.30329D+04 | 0.27577D+04 | 0.82724D+01 | 0.19958D+01 | 0.58950D+03 |
| 400.00 | 0.69828D+01 | 0.30529D+04 | 0.27736D+04 | 0.83023D+01 | 0.20042D+01 | 0.59360D+03 |
| 500.00 | 0.80218D+01 | 0.32575D+04 | 0.29367D+04 | 0.85856D+01 | 0.20884D+01 | 0.63287D+03 |
| 600.00 | 0.90604D+01 | 0.34705D+04 | 0.31081D+04 | 0.88446D+01 | 0.21707D+01 | 0.66945D+03 |
| 700.00 | 0.10099D+02 | 0.36915D+04 | 0.32876D+04 | 0.90841D+01 | 0.22485D+01 | 0.70389D+03 |
| 800.00 | 0.11137D+02 | 0.39200D+04 | 0.34745D+04 | 0.93076D+01 | 0.23203D+01 | 0.73661D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.50000D+02

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90457D-03 | 0.32615D-01 | -0.12614D-01 | -0.34603D-04 | 0.42106D+01 | 0.13243D+04 |
| 10.00 | 0.90417D-03 | 0.26210D+02 | 0.26165D+02 | 0.93443D-01 | 0.42313D+01 | 0.13429D+04 |
| 20.00 | 0.90468D-03 | 0.68595D+02 | 0.68549D+02 | 0.24055D+00 | 0.42424D+01 | 0.13752D+04 |
| 30.00 | 0.90640D-03 | 0.11102D+03 | 0.11097D+03 | 0.38284D+00 | 0.42403D+01 | 0.14033D+04 |
| 40.00 | 0.90912D-03 | 0.15338D+03 | 0.15333D+03 | 0.52033D+00 | 0.42318D+01 | 0.14252D+04 |
| 50.00 | 0.91268D-03 | 0.19564D+03 | 0.19560D+03 | 0.65318D+00 | 0.42201D+01 | 0.14411D+04 |
| 60.00 | 0.91698D-03 | 0.23778D+03 | 0.23773D+03 | 0.78160D+00 | 0.42071D+01 | 0.14515D+04 |
| 70.00 | 0.92194D-03 | 0.27978D+03 | 0.27974D+03 | 0.90583D+00 | 0.41938D+01 | 0.14567D+04 |
| 80.00 | 0.92752D-03 | 0.32166D+03 | 0.32161D+03 | 0.10261D+01 | 0.41811D+01 | 0.14575D+04 |
| 90.00 | 0.29887D+01 | 0.24664D+04 | 0.23169D+04 | 0.70481D+01 | 0.18390D+01 | 0.44191D+03 |
| 100.00 | 0.30744D+01 | 0.24847D+04 | 0.23310D+04 | 0.70979D+01 | 0.18300D+01 | 0.44809D+03 |
| 110.00 | 0.31597D+01 | 0.25030D+04 | 0.23450D+04 | 0.71463D+01 | 0.18250D+01 | 0.45409D+03 |
| 120.00 | 0.32446D+01 | 0.25212D+04 | 0.23590D+04 | 0.71932D+01 | 0.18227D+01 | 0.45996D+03 |
| 130.00 | 0.33294D+01 | 0.25394D+04 | 0.23730D+04 | 0.72390D+01 | 0.18226D+01 | 0.46569D+03 |
| 140.00 | 0.34139D+01 | 0.25577D+04 | 0.23870D+04 | 0.72837D+01 | 0.18241D+01 | 0.47131D+03 |
| 150.00 | 0.34982D+01 | 0.25759D+04 | 0.24010D+04 | 0.73273D+01 | 0.18268D+01 | 0.47683D+03 |
| 160.00 | 0.35824D+01 | 0.25942D+04 | 0.24151D+04 | 0.73700D+01 | 0.18304D+01 | 0.48225D+03 |
| 170.00 | 0.36665D+01 | 0.26125D+04 | 0.24292D+04 | 0.74119D+01 | 0.18348D+01 | 0.48759D+03 |
| 180.00 | 0.37505D+01 | 0.26309D+04 | 0.24434D+04 | 0.74529D+01 | 0.18399D+01 | 0.49284D+03 |
| 190.00 | 0.38343D+01 | 0.26493D+04 | 0.24576D+04 | 0.74931D+01 | 0.18454D+01 | 0.49801D+03 |
| 200.00 | 0.39181D+01 | 0.26678D+04 | 0.24719D+04 | 0.75326D+01 | 0.18513D+01 | 0.50311D+03 |
| 210.00 | 0.40018D+01 | 0.26864D+04 | 0.24863D+04 | 0.75714D+01 | 0.18575D+01 | 0.50814D+03 |
| 220.00 | 0.40855D+01 | 0.27050D+04 | 0.25007D+04 | 0.76095D+01 | 0.18641D+01 | 0.51311D+03 |
| 230.00 | 0.41690D+01 | 0.27237D+04 | 0.25152D+04 | 0.76470D+01 | 0.18709D+01 | 0.51801D+03 |
| 240.00 | 0.42526D+01 | 0.27424D+04 | 0.25298D+04 | 0.76839D+01 | 0.18779D+01 | 0.52285D+03 |
| 250.00 | 0.43361D+01 | 0.27612D+04 | 0.25444D+04 | 0.77202D+01 | 0.18851D+01 | 0.52763D+03 |
| 260.00 | 0.44195D+01 | 0.27801D+04 | 0.25591D+04 | 0.77559D+01 | 0.18924D+01 | 0.53236D+03 |
| 270.00 | 0.45030D+01 | 0.27991D+04 | 0.25739D+04 | 0.77912D+01 | 0.18999D+01 | 0.53703D+03 |
| 280.00 | 0.45864D+01 | 0.28181D+04 | 0.25888D+04 | 0.78259D+01 | 0.19075D+01 | 0.54165D+03 |
| 290.00 | 0.46697D+01 | 0.28372D+04 | 0.26037D+04 | 0.78601D+01 | 0.19152D+01 | 0.54621D+03 |
| 300.00 | 0.47531D+01 | 0.28564D+04 | 0.26187D+04 | 0.78939D+01 | 0.19231D+01 | 0.55073D+03 |
| 310.00 | 0.48364D+01 | 0.28757D+04 | 0.26339D+04 | 0.79273D+01 | 0.19310D+01 | 0.55521D+03 |
| 320.00 | 0.49197D+01 | 0.28950D+04 | 0.26490D+04 | 0.79601D+01 | 0.19390D+01 | 0.55963D+03 |
| 330.00 | 0.50029D+01 | 0.29145D+04 | 0.26643D+04 | 0.79926D+01 | 0.19470D+01 | 0.56401D+03 |
| 340.00 | 0.50862D+01 | 0.29340D+04 | 0.26797D+04 | 0.80247D+01 | 0.19552D+01 | 0.56835D+03 |
| 350.00 | 0.51694D+01 | 0.29536D+04 | 0.26951D+04 | 0.80564D+01 | 0.19633D+01 | 0.57265D+03 |
| 360.00 | 0.52527D+01 | 0.29732D+04 | 0.27106D+04 | 0.80877D+01 | 0.19716D+01 | 0.57691D+03 |
| 365.00 | 0.52943D+01 | 0.29831D+04 | 0.27184D+04 | 0.81033D+01 | 0.19757D+01 | 0.57902D+03 |
| 370.00 | 0.53359D+01 | 0.29930D+04 | 0.27262D+04 | 0.81187D+01 | 0.19798D+01 | 0.58112D+03 |
| 370.74 | 0.53420D+01 | 0.29945D+04 | 0.27273D+04 | 0.81210D+01 | 0.19804D+01 | 0.58144D+03 |
| 380.00 | 0.54191D+01 | 0.30128D+04 | 0.27419D+04 | 0.81493D+01 | 0.19881D+01 | 0.58530D+03 |
| 390.00 | 0.55023D+01 | 0.30327D+04 | 0.27576D+04 | 0.81796D+01 | 0.19965D+01 | 0.58945D+03 |
| 400.00 | 0.55855D+01 | 0.30528D+04 | 0.27735D+04 | 0.82095D+01 | 0.20048D+01 | 0.59355D+03 |
| 500.00 | 0.64169D+01 | 0.32574D+04 | 0.29366D+04 | 0.84929D+01 | 0.20887D+01 | 0.63285D+03 |
| 600.00 | 0.72480D+01 | 0.34704D+04 | 0.31080D+04 | 0.87519D+01 | 0.21708D+01 | 0.66943D+03 |
| 700.00 | 0.80788D+01 | 0.36915D+04 | 0.32875D+04 | 0.89914D+01 | 0.22486D+01 | 0.70388D+03 |
| 800.00 | 0.89095D+01 | 0.39200D+04 | 0.34745D+04 | 0.92149D+01 | 0.23204D+01 | 0.73660D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.60000D+02

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90456D-03 | 0.41970D-01 | -0.12303D-01 | -0.33483D-04 | 0.42106D+01 | 0.13244D+04 |
| 10.00 | 0.90417D-03 | 0.26219D+02 | 0.26165D+02 | 0.93444D-01 | 0.42312D+01 | 0.13429D+04 |
| 20.00 | 0.90468D-03 | 0.68603D+02 | 0.68549D+02 | 0.24055D+00 | 0.42424D+01 | 0.13752D+04 |
| 30.00 | 0.90640D-03 | 0.11102D+03 | 0.11097D+03 | 0.38284D+00 | 0.42403D+01 | 0.14033D+04 |
| 40.00 | 0.90911D-03 | 0.15339D+03 | 0.15333D+03 | 0.52033D+00 | 0.42318D+01 | 0.14252D+04 |
| 50.00 | 0.91267D-03 | 0.19565D+03 | 0.19559D+03 | 0.65318D+00 | 0.42201D+01 | 0.14412D+04 |
| 60.00 | 0.91697D-03 | 0.23779D+03 | 0.23773D+03 | 0.78160D+00 | 0.42071D+01 | 0.14515D+04 |
| 70.00 | 0.92194D-03 | 0.27979D+03 | 0.27973D+03 | 0.90582D+00 | 0.41938D+01 | 0.14568D+04 |
| 80.00 | 0.92752D-03 | 0.32166D+03 | 0.32161D+03 | 0.10261D+01 | 0.41811D+01 | 0.14575D+04 |
| 90.00 | 0.24860D+01 | 0.24651D+04 | 0.23159D+04 | 0.69695D+01 | 0.18567D+01 | 0.44140D+03 |
| 100.00 | 0.25579D+01 | 0.24836D+04 | 0.23301D+04 | 0.70198D+01 | 0.18445D+01 | 0.44764D+03 |
| 110.00 | 0.26294D+01 | 0.25020D+04 | 0.23442D+04 | 0.70685D+01 | 0.18369D+01 | 0.45371D+03 |
| 120.00 | 0.27005D+01 | 0.25203D+04 | 0.23583D+04 | 0.71157D+01 | 0.18327D+01 | 0.45962D+03 |
| 130.00 | 0.27714D+01 | 0.25386D+04 | 0.23723D+04 | 0.71617D+01 | 0.18311D+01 | 0.46540D+03 |
| 140.00 | 0.28421D+01 | 0.25569D+04 | 0.23864D+04 | 0.72066D+01 | 0.18314D+01 | 0.47105D+03 |
| 150.00 | 0.29126D+01 | 0.25753D+04 | 0.24005D+04 | 0.72504D+01 | 0.18331D+01 | 0.47659D+03 |
| 160.00 | 0.29830D+01 | 0.25936D+04 | 0.24146D+04 | 0.72933D+01 | 0.18359D+01 | 0.48204D+03 |
| 170.00 | 0.30532D+01 | 0.26120D+04 | 0.24288D+04 | 0.73352D+01 | 0.18397D+01 | 0.48739D+03 |
| 180.00 | 0.31234D+01 | 0.26304D+04 | 0.24430D+04 | 0.73763D+01 | 0.18441D+01 | 0.49266D+03 |
| 190.00 | 0.31934D+01 | 0.26489D+04 | 0.24573D+04 | 0.74166D+01 | 0.18492D+01 | 0.49785D+03 |
| 200.00 | 0.32633D+01 | 0.26674D+04 | 0.24716D+04 | 0.74562D+01 | 0.18547D+01 | 0.50296D+03 |
| 210.00 | 0.33332D+01 | 0.26860D+04 | 0.24860D+04 | 0.74950D+01 | 0.18606D+01 | 0.50800D+03 |
| 220.00 | 0.34030D+01 | 0.27046D+04 | 0.25004D+04 | 0.75332D+01 | 0.18668D+01 | 0.51298D+03 |
| 230.00 | 0.34728D+01 | 0.27233D+04 | 0.25149D+04 | 0.75707D+01 | 0.18734D+01 | 0.51789D+03 |
| 240.00 | 0.35425D+01 | 0.27421D+04 | 0.25295D+04 | 0.76077D+01 | 0.18801D+01 | 0.52274D+03 |
| 250.00 | 0.36121D+01 | 0.27609D+04 | 0.25442D+04 | 0.76440D+01 | 0.18871D+01 | 0.52753D+03 |
| 260.00 | 0.36818D+01 | 0.27798D+04 | 0.25589D+04 | 0.76798D+01 | 0.18943D+01 | 0.53226D+03 |
| 270.00 | 0.37513D+01 | 0.27988D+04 | 0.25737D+04 | 0.77151D+01 | 0.19016D+01 | 0.53693D+03 |
| 280.00 | 0.38209D+01 | 0.28178D+04 | 0.25886D+04 | 0.77499D+01 | 0.19091D+01 | 0.54156D+03 |
| 290.00 | 0.38904D+01 | 0.28370D+04 | 0.26035D+04 | 0.77841D+01 | 0.19167D+01 | 0.54613D+03 |
| 300.00 | 0.39599D+01 | 0.28562D+04 | 0.26186D+04 | 0.78179D+01 | 0.19244D+01 | 0.55066D+03 |
| 310.00 | 0.40294D+01 | 0.28755D+04 | 0.26337D+04 | 0.78513D+01 | 0.19322D+01 | 0.55513D+03 |
| 320.00 | 0.40988D+01 | 0.28948D+04 | 0.26489D+04 | 0.78842D+01 | 0.19401D+01 | 0.55956D+03 |
| 330.00 | 0.41683D+01 | 0.29143D+04 | 0.26642D+04 | 0.79167D+01 | 0.19480D+01 | 0.56395D+03 |
| 340.00 | 0.42377D+01 | 0.29338D+04 | 0.26795D+04 | 0.79488D+01 | 0.19561D+01 | 0.56829D+03 |
| 350.00 | 0.43071D+01 | 0.29534D+04 | 0.26950D+04 | 0.79805D+01 | 0.19642D+01 | 0.57259D+03 |
| 360.00 | 0.43765D+01 | 0.29731D+04 | 0.27105D+04 | 0.80119D+01 | 0.19724D+01 | 0.57685D+03 |
| 365.00 | 0.44112D+01 | 0.29829D+04 | 0.27183D+04 | 0.80274D+01 | 0.19765D+01 | 0.57897D+03 |
| 370.00 | 0.44459D+01 | 0.29928D+04 | 0.27261D+04 | 0.80428D+01 | 0.19806D+01 | 0.58107D+03 |
| 370.74 | 0.44510D+01 | 0.29943D+04 | 0.27272D+04 | 0.80451D+01 | 0.19812D+01 | 0.58138D+03 |
| 380.00 | 0.45152D+01 | 0.30127D+04 | 0.27418D+04 | 0.80734D+01 | 0.19888D+01 | 0.58525D+03 |
| 390.00 | 0.45846D+01 | 0.30326D+04 | 0.27575D+04 | 0.81037D+01 | 0.19971D+01 | 0.58940D+03 |
| 400.00 | 0.46539D+01 | 0.30526D+04 | 0.27734D+04 | 0.81337D+01 | 0.20054D+01 | 0.59351D+03 |
| 500.00 | 0.53470D+01 | 0.32573D+04 | 0.29365D+04 | 0.84171D+01 | 0.20890D+01 | 0.63282D+03 |
| 600.00 | 0.60397D+01 | 0.34704D+04 | 0.31080D+04 | 0.86761D+01 | 0.21710D+01 | 0.66942D+03 |
| 700.00 | 0.67321D+01 | 0.36914D+04 | 0.32875D+04 | 0.89157D+01 | 0.22487D+01 | 0.70387D+03 |
| 800.00 | 0.74244D+01 | 0.39199D+04 | 0.34745D+04 | 0.91392D+01 | 0.23205D+01 | 0.73660D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.70000D+02

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90456D-03 | 0.51326D-01 | -0.11993D-01 | -0.32363D-04 | 0.42105D+01 | 0.13244D+04 |
| 10.00 | 0.90416D-03 | 0.26228D+02 | 0.26165D+02 | 0.93444D-01 | 0.42312D+01 | 0.13430D+04 |
| 20.00 | 0.90468D-03 | 0.68612D+02 | 0.68549D+02 | 0.24055D+00 | 0.42424D+01 | 0.13752D+04 |
| 30.00 | 0.90640D-03 | 0.11103D+03 | 0.11097D+03 | 0.38284D+00 | 0.42402D+01 | 0.14033D+04 |
| 40.00 | 0.90911D-03 | 0.15340D+03 | 0.15333D+03 | 0.52033D+00 | 0.42317D+01 | 0.14253D+04 |
| 50.00 | 0.91267D-03 | 0.19566D+03 | 0.19559D+03 | 0.65317D+00 | 0.42201D+01 | 0.14412D+04 |
| 60.00 | 0.91697D-03 | 0.23779D+03 | 0.23773D+03 | 0.78159D+00 | 0.42071D+01 | 0.14515D+04 |
| 70.00 | 0.92193D-03 | 0.27980D+03 | 0.27973D+03 | 0.90582D+00 | 0.41938D+01 | 0.14568D+04 |
| 80.00 | 0.92751D-03 | 0.32167D+03 | 0.32161D+03 | 0.10261D+01 | 0.41811D+01 | 0.14575D+04 |
| 90.00 | 0.93368D-03 | 0.36342D+03 | 0.36336D+03 | 0.11427D+01 | 0.41700D+01 | 0.14541D+04 |
| 100.00 | 0.21890D+01 | 0.24824D+04 | 0.23292D+04 | 0.69533D+01 | 0.18591D+01 | 0.44720D+03 |
| 110.00 | 0.22506D+01 | 0.25009D+04 | 0.23434D+04 | 0.70023D+01 | 0.18490D+01 | 0.45333D+03 |
| 120.00 | 0.23119D+01 | 0.25194D+04 | 0.23576D+04 | 0.70499D+01 | 0.18429D+01 | 0.45929D+03 |
| 130.00 | 0.23729D+01 | 0.25378D+04 | 0.23717D+04 | 0.70961D+01 | 0.18397D+01 | 0.46510D+03 |
| 140.00 | 0.24337D+01 | 0.25562D+04 | 0.23858D+04 | 0.71412D+01 | 0.18387D+01 | 0.47079D+03 |
| 150.00 | 0.24944D+01 | 0.25746D+04 | 0.24000D+04 | 0.71852D+01 | 0.18394D+01 | 0.47636D+03 |
| 160.00 | 0.25548D+01 | 0.25930D+04 | 0.24141D+04 | 0.72282D+01 | 0.18415D+01 | 0.48182D+03 |
| 170.00 | 0.26152D+01 | 0.26114D+04 | 0.24284D+04 | 0.72702D+01 | 0.18446D+01 | 0.48720D+03 |
| 180.00 | 0.26754D+01 | 0.26299D+04 | 0.24426D+04 | 0.73114D+01 | 0.18485D+01 | 0.49248D+03 |
| 190.00 | 0.27356D+01 | 0.26484D+04 | 0.24569D+04 | 0.73518D+01 | 0.18530D+01 | 0.49768D+03 |
| 200.00 | 0.27956D+01 | 0.26669D+04 | 0.24712D+04 | 0.73915D+01 | 0.18581D+01 | 0.50281D+03 |
| 210.00 | 0.28556D+01 | 0.26855D+04 | 0.24857D+04 | 0.74304D+01 | 0.18637D+01 | 0.50786D+03 |
| 220.00 | 0.29156D+01 | 0.27042D+04 | 0.25001D+04 | 0.74686D+01 | 0.18696D+01 | 0.51285D+03 |
| 230.00 | 0.29754D+01 | 0.27229D+04 | 0.25147D+04 | 0.75062D+01 | 0.18759D+01 | 0.51777D+03 |
| 240.00 | 0.30352D+01 | 0.27417D+04 | 0.25293D+04 | 0.75432D+01 | 0.18824D+01 | 0.52262D+03 |
| 250.00 | 0.30950D+01 | 0.27606D+04 | 0.25439D+04 | 0.75796D+01 | 0.18892D+01 | 0.52742D+03 |
| 260.00 | 0.31548D+01 | 0.27795D+04 | 0.25587D+04 | 0.76154D+01 | 0.18962D+01 | 0.53216D+03 |
| 270.00 | 0.32145D+01 | 0.27985D+04 | 0.25735D+04 | 0.76507D+01 | 0.19033D+01 | 0.53684D+03 |
| 280.00 | 0.32741D+01 | 0.28176D+04 | 0.25884D+04 | 0.76855D+01 | 0.19106D+01 | 0.54147D+03 |
| 290.00 | 0.33338D+01 | 0.28367D+04 | 0.26034D+04 | 0.77198D+01 | 0.19181D+01 | 0.54605D+03 |
| 300.00 | 0.33934D+01 | 0.28559D+04 | 0.26184D+04 | 0.77536D+01 | 0.19257D+01 | 0.55058D+03 |
| 310.00 | 0.34530D+01 | 0.28752D+04 | 0.26335D+04 | 0.77870D+01 | 0.19334D+01 | 0.55506D+03 |
| 320.00 | 0.35125D+01 | 0.28946D+04 | 0.26487D+04 | 0.78200D+01 | 0.19412D+01 | 0.55949D+03 |
| 330.00 | 0.35721D+01 | 0.29141D+04 | 0.26640D+04 | 0.78525D+01 | 0.19491D+01 | 0.56388D+03 |
| 340.00 | 0.36316D+01 | 0.29336D+04 | 0.26794D+04 | 0.78846D+01 | 0.19570D+01 | 0.56823D+03 |
| 350.00 | 0.36911D+01 | 0.29532D+04 | 0.26948D+04 | 0.79163D+01 | 0.19651D+01 | 0.57253D+03 |
| 360.00 | 0.37507D+01 | 0.29729D+04 | 0.27104D+04 | 0.79477D+01 | 0.19732D+01 | 0.57680D+03 |
| 365.00 | 0.37804D+01 | 0.29828D+04 | 0.27181D+04 | 0.79632D+01 | 0.19772D+01 | 0.57891D+03 |
| 370.00 | 0.38101D+01 | 0.29927D+04 | 0.27260D+04 | 0.79786D+01 | 0.19813D+01 | 0.58102D+03 |
| 370.74 | 0.38146D+01 | 0.29941D+04 | 0.27271D+04 | 0.79809D+01 | 0.19819D+01 | 0.58133D+03 |
| 380.00 | 0.38696D+01 | 0.30125D+04 | 0.27417D+04 | 0.80093D+01 | 0.19895D+01 | 0.58520D+03 |
| 390.00 | 0.39291D+01 | 0.30325D+04 | 0.27574D+04 | 0.80396D+01 | 0.19977D+01 | 0.58935D+03 |
| 400.00 | 0.39886D+01 | 0.30525D+04 | 0.27733D+04 | 0.80695D+01 | 0.20060D+01 | 0.59346D+03 |
| 500.00 | 0.45828D+01 | 0.32572D+04 | 0.29364D+04 | 0.83530D+01 | 0.20893D+01 | 0.63279D+03 |
| 600.00 | 0.51766D+01 | 0.34703D+04 | 0.31079D+04 | 0.86121D+01 | 0.21712D+01 | 0.66940D+03 |
| 700.00 | 0.57702D+01 | 0.36913D+04 | 0.32874D+04 | 0.88517D+01 | 0.22488D+01 | 0.70386D+03 |
| 800.00 | 0.63637D+01 | 0.39199D+04 | 0.34744D+04 | 0.90751D+01 | 0.23206D+01 | 0.73659D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.80000D+02

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90455D-03 | 0.60682D-01 | -0.11682D-01 | -0.31243D-04 | 0.42105D+01 | 0.13244D+04 |
| 10.00 | 0.90416D-03 | 0.26238D+02 | 0.26165D+02 | 0.93444D-01 | 0.42311D+01 | 0.13430D+04 |
| 20.00 | 0.90467D-03 | 0.68621D+02 | 0.68548D+02 | 0.24054D+00 | 0.42423D+01 | 0.13752D+04 |
| 30.00 | 0.90639D-03 | 0.11104D+03 | 0.11097D+03 | 0.38284D+00 | 0.42402D+01 | 0.14033D+04 |
| 40.00 | 0.90911D-03 | 0.15340D+03 | 0.15333D+03 | 0.52033D+00 | 0.42317D+01 | 0.14253D+04 |
| 50.00 | 0.91267D-03 | 0.19566D+03 | 0.19559D+03 | 0.65317D+00 | 0.42201D+01 | 0.14412D+04 |
| 60.00 | 0.91696D-03 | 0.23780D+03 | 0.23773D+03 | 0.78159D+00 | 0.42070D+01 | 0.14515D+04 |
| 70.00 | 0.92193D-03 | 0.27980D+03 | 0.27973D+03 | 0.90581D+00 | 0.41937D+01 | 0.14568D+04 |
| 80.00 | 0.92751D-03 | 0.32168D+03 | 0.32160D+03 | 0.10261D+01 | 0.41811D+01 | 0.14575D+04 |
| 90.00 | 0.93368D-03 | 0.36343D+03 | 0.36336D+03 | 0.11427D+01 | 0.41699D+01 | 0.14541D+04 |
| 100.00 | 0.19123D+01 | 0.24812D+04 | 0.23282D+04 | 0.68954D+01 | 0.18739D+01 | 0.44676D+03 |
| 110.00 | 0.19665D+01 | 0.24999D+04 | 0.23426D+04 | 0.69448D+01 | 0.18612D+01 | 0.45294D+03 |
| 120.00 | 0.20204D+01 | 0.25185D+04 | 0.23568D+04 | 0.69926D+01 | 0.18531D+01 | 0.45895D+03 |
| 130.00 | 0.20740D+01 | 0.25370D+04 | 0.23711D+04 | 0.70391D+01 | 0.18483D+01 | 0.46480D+03 |
| 140.00 | 0.21274D+01 | 0.25554D+04 | 0.23853D+04 | 0.70843D+01 | 0.18461D+01 | 0.47052D+03 |
| 150.00 | 0.21806D+01 | 0.25739D+04 | 0.23995D+04 | 0.71285D+01 | 0.18458D+01 | 0.47612D+03 |
| 160.00 | 0.22337D+01 | 0.25924D+04 | 0.24137D+04 | 0.71716D+01 | 0.18471D+01 | 0.48161D+03 |
| 170.00 | 0.22866D+01 | 0.26108D+04 | 0.24279D+04 | 0.72138D+01 | 0.18495D+01 | 0.48700D+03 |
| 180.00 | 0.23395D+01 | 0.26294D+04 | 0.24422D+04 | 0.72551D+01 | 0.18528D+01 | 0.49230D+03 |
| 190.00 | 0.23922D+01 | 0.26479D+04 | 0.24565D+04 | 0.72956D+01 | 0.18569D+01 | 0.49752D+03 |
| 200.00 | 0.24449D+01 | 0.26665D+04 | 0.24709D+04 | 0.73353D+01 | 0.18616D+01 | 0.50266D+03 |
| 210.00 | 0.24974D+01 | 0.26851D+04 | 0.24853D+04 | 0.73743D+01 | 0.18668D+01 | 0.50772D+03 |
| 220.00 | 0.25500D+01 | 0.27038D+04 | 0.24998D+04 | 0.74126D+01 | 0.18724D+01 | 0.51272D+03 |
| 230.00 | 0.26024D+01 | 0.27226D+04 | 0.25144D+04 | 0.74502D+01 | 0.18784D+01 | 0.51764D+03 |
| 240.00 | 0.26548D+01 | 0.27414D+04 | 0.25290D+04 | 0.74873D+01 | 0.18847D+01 | 0.52251D+03 |
| 250.00 | 0.27072D+01 | 0.27603D+04 | 0.25437D+04 | 0.75237D+01 | 0.18912D+01 | 0.52731D+03 |
| 260.00 | 0.27595D+01 | 0.27792D+04 | 0.25585D+04 | 0.75596D+01 | 0.18980D+01 | 0.53206D+03 |
| 270.00 | 0.28118D+01 | 0.27982D+04 | 0.25733D+04 | 0.75949D+01 | 0.19050D+01 | 0.53675D+03 |
| 280.00 | 0.28640D+01 | 0.28173D+04 | 0.25882D+04 | 0.76297D+01 | 0.19122D+01 | 0.54138D+03 |
| 290.00 | 0.29163D+01 | 0.28365D+04 | 0.26032D+04 | 0.76641D+01 | 0.19195D+01 | 0.54596D+03 |
| 300.00 | 0.29685D+01 | 0.28557D+04 | 0.26182D+04 | 0.76979D+01 | 0.19270D+01 | 0.55050D+03 |
| 310.00 | 0.30207D+01 | 0.28750D+04 | 0.26334D+04 | 0.77313D+01 | 0.19346D+01 | 0.55498D+03 |
| 320.00 | 0.30728D+01 | 0.28944D+04 | 0.26486D+04 | 0.77643D+01 | 0.19423D+01 | 0.55942D+03 |
| 330.00 | 0.31250D+01 | 0.29139D+04 | 0.26639D+04 | 0.77968D+01 | 0.19501D+01 | 0.56382D+03 |
| 340.00 | 0.31771D+01 | 0.29334D+04 | 0.26792D+04 | 0.78289D+01 | 0.19580D+01 | 0.56817D+03 |
| 350.00 | 0.32292D+01 | 0.29530D+04 | 0.26947D+04 | 0.78607D+01 | 0.19659D+01 | 0.57247D+03 |
| 360.00 | 0.32813D+01 | 0.29727D+04 | 0.27102D+04 | 0.78920D+01 | 0.19740D+01 | 0.57674D+03 |
| 365.00 | 0.33073D+01 | 0.29826D+04 | 0.27180D+04 | 0.79076D+01 | 0.19780D+01 | 0.57886D+03 |
| 370.00 | 0.33334D+01 | 0.29925D+04 | 0.27258D+04 | 0.79230D+01 | 0.19821D+01 | 0.58097D+03 |
| 370.74 | 0.33372D+01 | 0.29940D+04 | 0.27270D+04 | 0.79253D+01 | 0.19827D+01 | 0.58128D+03 |
| 380.00 | 0.33854D+01 | 0.30124D+04 | 0.27415D+04 | 0.79537D+01 | 0.19902D+01 | 0.58515D+03 |
| 390.00 | 0.34375D+01 | 0.30323D+04 | 0.27573D+04 | 0.79840D+01 | 0.19984D+01 | 0.58930D+03 |
| 400.00 | 0.34895D+01 | 0.30523D+04 | 0.27732D+04 | 0.80139D+01 | 0.20066D+01 | 0.59342D+03 |
| 500.00 | 0.40096D+01 | 0.32571D+04 | 0.29364D+04 | 0.82975D+01 | 0.20897D+01 | 0.63276D+03 |
| 600.00 | 0.45293D+01 | 0.34702D+04 | 0.31079D+04 | 0.85566D+01 | 0.21714D+01 | 0.66938D+03 |
| 700.00 | 0.50488D+01 | 0.36913D+04 | 0.32874D+04 | 0.87962D+01 | 0.22490D+01 | 0.70385D+03 |
| 800.00 | 0.55681D+01 | 0.39198D+04 | 0.34744D+04 | 0.90197D+01 | 0.23207D+01 | 0.73659D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.90000D+02

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90455D-03 | 0.70038D-01 | -0.11372D-01 | -0.30123D-04 | 0.42104D+01 | 0.13244D+04 |
| 10.00 | 0.90415D-03 | 0.26247D+02 | 0.26165D+02 | 0.93444D-01 | 0.42311D+01 | 0.13430D+04 |
| 20.00 | 0.90467D-03 | 0.68630D+02 | 0.68548D+02 | 0.24054D+00 | 0.42423D+01 | 0.13752D+04 |
| 30.00 | 0.90639D-03 | 0.11105D+03 | 0.11097D+03 | 0.38283D+00 | 0.42402D+01 | 0.14033D+04 |
| 40.00 | 0.90910D-03 | 0.15341D+03 | 0.15333D+03 | 0.52032D+00 | 0.42317D+01 | 0.14253D+04 |
| 50.00 | 0.91266D-03 | 0.19567D+03 | 0.19559D+03 | 0.65317D+00 | 0.42201D+01 | 0.14412D+04 |
| 60.00 | 0.91696D-03 | 0.23781D+03 | 0.23773D+03 | 0.78158D+00 | 0.42070D+01 | 0.14516D+04 |
| 70.00 | 0.92192D-03 | 0.27981D+03 | 0.27973D+03 | 0.90581D+00 | 0.41937D+01 | 0.14568D+04 |
| 80.00 | 0.92750D-03 | 0.32169D+03 | 0.32160D+03 | 0.10261D+01 | 0.41811D+01 | 0.14576D+04 |
| 90.00 | 0.93367D-03 | 0.36344D+03 | 0.36335D+03 | 0.11427D+01 | 0.41699D+01 | 0.14542D+04 |
| 100.00 | 0.16971D+01 | 0.24801D+04 | 0.23273D+04 | 0.68440D+01 | 0.18888D+01 | 0.44631D+03 |
| 110.00 | 0.17455D+01 | 0.24989D+04 | 0.23418D+04 | 0.68937D+01 | 0.18735D+01 | 0.45255D+03 |
| 120.00 | 0.17936D+01 | 0.25175D+04 | 0.23561D+04 | 0.69419D+01 | 0.18634D+01 | 0.45861D+03 |
| 130.00 | 0.18415D+01 | 0.25361D+04 | 0.23704D+04 | 0.69886D+01 | 0.18570D+01 | 0.46450D+03 |
| 140.00 | 0.18892D+01 | 0.25547D+04 | 0.23847D+04 | 0.70340D+01 | 0.18536D+01 | 0.47025D+03 |
| 150.00 | 0.19366D+01 | 0.25732D+04 | 0.23989D+04 | 0.70783D+01 | 0.18523D+01 | 0.47588D+03 |
| 160.00 | 0.19839D+01 | 0.25917D+04 | 0.24132D+04 | 0.71216D+01 | 0.18527D+01 | 0.48139D+03 |
| 170.00 | 0.20311D+01 | 0.26103D+04 | 0.24275D+04 | 0.71639D+01 | 0.18544D+01 | 0.48681D+03 |
| 180.00 | 0.20782D+01 | 0.26288D+04 | 0.24418D+04 | 0.72053D+01 | 0.18572D+01 | 0.49212D+03 |
| 190.00 | 0.21251D+01 | 0.26474D+04 | 0.24562D+04 | 0.72459D+01 | 0.18607D+01 | 0.49736D+03 |
| 200.00 | 0.21720D+01 | 0.26661D+04 | 0.24706D+04 | 0.72857D+01 | 0.18650D+01 | 0.50251D+03 |
| 210.00 | 0.22188D+01 | 0.26847D+04 | 0.24850D+04 | 0.73247D+01 | 0.18699D+01 | 0.50758D+03 |
| 220.00 | 0.22656D+01 | 0.27034D+04 | 0.24995D+04 | 0.73631D+01 | 0.18752D+01 | 0.51259D+03 |
| 230.00 | 0.23123D+01 | 0.27222D+04 | 0.25141D+04 | 0.74008D+01 | 0.18809D+01 | 0.51752D+03 |
| 240.00 | 0.23589D+01 | 0.27411D+04 | 0.25288D+04 | 0.74379D+01 | 0.18870D+01 | 0.52239D+03 |
| 250.00 | 0.24055D+01 | 0.27600D+04 | 0.25435D+04 | 0.74744D+01 | 0.18933D+01 | 0.52721D+03 |
| 260.00 | 0.24521D+01 | 0.27789D+04 | 0.25582D+04 | 0.75103D+01 | 0.18999D+01 | 0.53196D+03 |
| 270.00 | 0.24986D+01 | 0.27980D+04 | 0.25731D+04 | 0.75456D+01 | 0.19068D+01 | 0.53665D+03 |
| 280.00 | 0.25451D+01 | 0.28171D+04 | 0.25880D+04 | 0.75805D+01 | 0.19138D+01 | 0.54129D+03 |
| 290.00 | 0.25916D+01 | 0.28362D+04 | 0.26030D+04 | 0.76148D+01 | 0.19210D+01 | 0.54588D+03 |
| 300.00 | 0.26380D+01 | 0.28555D+04 | 0.26181D+04 | 0.76487D+01 | 0.19283D+01 | 0.55042D+03 |
| 310.00 | 0.26844D+01 | 0.28748D+04 | 0.26332D+04 | 0.76821D+01 | 0.19358D+01 | 0.55491D+03 |
| 320.00 | 0.27308D+01 | 0.28942D+04 | 0.26484D+04 | 0.77151D+01 | 0.19434D+01 | 0.55935D+03 |
| 330.00 | 0.27772D+01 | 0.29137D+04 | 0.26637D+04 | 0.77477D+01 | 0.19511D+01 | 0.56375D+03 |
| 340.00 | 0.28235D+01 | 0.29332D+04 | 0.26791D+04 | 0.77798D+01 | 0.19589D+01 | 0.56810D+03 |
| 350.00 | 0.28699D+01 | 0.29529D+04 | 0.26946D+04 | 0.78116D+01 | 0.19668D+01 | 0.57241D+03 |
| 360.00 | 0.29162D+01 | 0.29726D+04 | 0.27101D+04 | 0.78429D+01 | 0.19748D+01 | 0.57668D+03 |
| 365.00 | 0.29394D+01 | 0.29825D+04 | 0.27179D+04 | 0.78585D+01 | 0.19788D+01 | 0.57880D+03 |
| 370.00 | 0.29625D+01 | 0.29924D+04 | 0.27257D+04 | 0.78740D+01 | 0.19828D+01 | 0.58091D+03 |
| 370.74 | 0.29659D+01 | 0.29938D+04 | 0.27269D+04 | 0.78762D+01 | 0.19834D+01 | 0.58122D+03 |
| 380.00 | 0.30088D+01 | 0.30122D+04 | 0.27414D+04 | 0.79046D+01 | 0.19909D+01 | 0.58510D+03 |
| 390.00 | 0.30551D+01 | 0.30322D+04 | 0.27572D+04 | 0.79349D+01 | 0.19990D+01 | 0.58926D+03 |
| 400.00 | 0.31014D+01 | 0.30522D+04 | 0.27731D+04 | 0.79649D+01 | 0.20072D+01 | 0.59337D+03 |
| 500.00 | 0.35638D+01 | 0.32571D+04 | 0.29363D+04 | 0.82485D+01 | 0.20900D+01 | 0.63274D+03 |
| 600.00 | 0.40259D+01 | 0.34702D+04 | 0.31078D+04 | 0.85076D+01 | 0.21716D+01 | 0.66937D+03 |
| 700.00 | 0.44877D+01 | 0.36912D+04 | 0.32873D+04 | 0.87472D+01 | 0.22491D+01 | 0.70384D+03 |
| 800.00 | 0.49493D+01 | 0.39198D+04 | 0.34743D+04 | 0.89707D+01 | 0.23208D+01 | 0.73659D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.10000D+03

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90455D-03 | 0.79393D-01 | -0.11061D-01 | -0.29004D-04 | 0.42104D+01 | 0.13244D+04 |
| 10.00 | 0.90415D-03 | 0.26256D+02 | 0.26165D+02 | 0.93444D-01 | 0.42311D+01 | 0.13430D+04 |
| 20.00 | 0.90466D-03 | 0.68638D+02 | 0.68548D+02 | 0.24054D+00 | 0.42423D+01 | 0.13753D+04 |
| 30.00 | 0.90638D-03 | 0.11106D+03 | 0.11097D+03 | 0.38283D+00 | 0.42402D+01 | 0.14034D+04 |
| 40.00 | 0.90910D-03 | 0.15342D+03 | 0.15333D+03 | 0.52032D+00 | 0.42317D+01 | 0.14253D+04 |
| 50.00 | 0.91266D-03 | 0.19568D+03 | 0.19559D+03 | 0.65316D+00 | 0.42200D+01 | 0.14412D+04 |
| 60.00 | 0.91696D-03 | 0.23782D+03 | 0.23772D+03 | 0.78158D+00 | 0.42070D+01 | 0.14516D+04 |
| 70.00 | 0.92192D-03 | 0.27982D+03 | 0.27973D+03 | 0.90580D+00 | 0.41937D+01 | 0.14569D+04 |
| 80.00 | 0.92750D-03 | 0.32169D+03 | 0.32160D+03 | 0.10261D+01 | 0.41810D+01 | 0.14576D+04 |
| 90.00 | 0.93367D-03 | 0.36345D+03 | 0.36335D+03 | 0.11427D+01 | 0.41699D+01 | 0.14542D+04 |
| 100.00 | 0.94042D-03 | 0.40510D+03 | 0.40500D+03 | 0.12558D+01 | 0.41611D+01 | 0.14471D+04 |
| 110.00 | 0.15687D+01 | 0.24978D+04 | 0.23409D+04 | 0.68478D+01 | 0.18859D+01 | 0.45217D+03 |
| 120.00 | 0.16122D+01 | 0.25166D+04 | 0.23554D+04 | 0.68963D+01 | 0.18738D+01 | 0.45827D+03 |
| 130.00 | 0.16555D+01 | 0.25353D+04 | 0.23698D+04 | 0.69432D+01 | 0.18658D+01 | 0.46420D+03 |
| 140.00 | 0.16985D+01 | 0.25539D+04 | 0.23841D+04 | 0.69889D+01 | 0.18611D+01 | 0.46999D+03 |
| 150.00 | 0.17414D+01 | 0.25725D+04 | 0.23984D+04 | 0.70333D+01 | 0.18588D+01 | 0.47564D+03 |
| 160.00 | 0.17841D+01 | 0.25911D+04 | 0.24127D+04 | 0.70767D+01 | 0.18583D+01 | 0.48118D+03 |
| 170.00 | 0.18267D+01 | 0.26097D+04 | 0.24270D+04 | 0.71192D+01 | 0.18594D+01 | 0.48661D+03 |
| 180.00 | 0.18691D+01 | 0.26283D+04 | 0.24414D+04 | 0.71607D+01 | 0.18615D+01 | 0.49194D+03 |
| 190.00 | 0.19115D+01 | 0.26469D+04 | 0.24558D+04 | 0.72014D+01 | 0.18646D+01 | 0.49719D+03 |
| 200.00 | 0.19538D+01 | 0.26656D+04 | 0.24702D+04 | 0.72412D+01 | 0.18685D+01 | 0.50235D+03 |
| 210.00 | 0.19960D+01 | 0.26843D+04 | 0.24847D+04 | 0.72803D+01 | 0.18730D+01 | 0.50744D+03 |
| 220.00 | 0.20381D+01 | 0.27031D+04 | 0.24993D+04 | 0.73188D+01 | 0.18780D+01 | 0.51246D+03 |
| 230.00 | 0.20802D+01 | 0.27219D+04 | 0.25139D+04 | 0.73565D+01 | 0.18834D+01 | 0.51740D+03 |
| 240.00 | 0.21222D+01 | 0.27407D+04 | 0.25285D+04 | 0.73936D+01 | 0.18893D+01 | 0.52228D+03 |
| 250.00 | 0.21642D+01 | 0.27597D+04 | 0.25432D+04 | 0.74302D+01 | 0.18954D+01 | 0.52710D+03 |
| 260.00 | 0.22062D+01 | 0.27786D+04 | 0.25580D+04 | 0.74661D+01 | 0.19018D+01 | 0.53186D+03 |
| 270.00 | 0.22481D+01 | 0.27977D+04 | 0.25729D+04 | 0.75015D+01 | 0.19085D+01 | 0.53656D+03 |
| 280.00 | 0.22899D+01 | 0.28168D+04 | 0.25878D+04 | 0.75364D+01 | 0.19154D+01 | 0.54120D+03 |
| 290.00 | 0.23318D+01 | 0.28360D+04 | 0.26028D+04 | 0.75708D+01 | 0.19224D+01 | 0.54580D+03 |
| 300.00 | 0.23736D+01 | 0.28553D+04 | 0.26179D+04 | 0.76047D+01 | 0.19296D+01 | 0.55034D+03 |
| 310.00 | 0.24154D+01 | 0.28746D+04 | 0.26331D+04 | 0.76381D+01 | 0.19370D+01 | 0.55484D+03 |
| 320.00 | 0.24572D+01 | 0.28940D+04 | 0.26483D+04 | 0.76711D+01 | 0.19445D+01 | 0.55928D+03 |
| 330.00 | 0.24990D+01 | 0.29135D+04 | 0.26636D+04 | 0.77037D+01 | 0.19521D+01 | 0.56368D+03 |
| 340.00 | 0.25407D+01 | 0.29330D+04 | 0.26790D+04 | 0.77359D+01 | 0.19599D+01 | 0.56804D+03 |
| 350.00 | 0.25824D+01 | 0.29527D+04 | 0.26944D+04 | 0.77676D+01 | 0.19677D+01 | 0.57235D+03 |
| 360.00 | 0.26241D+01 | 0.29724D+04 | 0.27100D+04 | 0.77990D+01 | 0.19756D+01 | 0.57663D+03 |
| 365.00 | 0.26450D+01 | 0.29823D+04 | 0.27178D+04 | 0.78146D+01 | 0.19796D+01 | 0.57875D+03 |
| 370.00 | 0.26658D+01 | 0.29922D+04 | 0.27256D+04 | 0.78300D+01 | 0.19835D+01 | 0.58086D+03 |
| 370.74 | 0.26689D+01 | 0.29937D+04 | 0.27268D+04 | 0.78323D+01 | 0.19841D+01 | 0.58117D+03 |
| 380.00 | 0.27075D+01 | 0.30121D+04 | 0.27413D+04 | 0.78607D+01 | 0.19916D+01 | 0.58505D+03 |
| 390.00 | 0.27492D+01 | 0.30320D+04 | 0.27571D+04 | 0.78910D+01 | 0.19997D+01 | 0.58921D+03 |
| 400.00 | 0.27909D+01 | 0.30521D+04 | 0.27730D+04 | 0.79210D+01 | 0.20078D+01 | 0.59333D+03 |
| 500.00 | 0.32072D+01 | 0.32570D+04 | 0.29362D+04 | 0.82047D+01 | 0.20903D+01 | 0.63271D+03 |
| 600.00 | 0.36231D+01 | 0.34701D+04 | 0.31078D+04 | 0.84638D+01 | 0.21717D+01 | 0.66935D+03 |
| 700.00 | 0.40388D+01 | 0.36912D+04 | 0.32873D+04 | 0.87035D+01 | 0.22492D+01 | 0.70384D+03 |
| 800.00 | 0.44543D+01 | 0.39197D+04 | 0.34743D+04 | 0.89270D+01 | 0.23209D+01 | 0.73658D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.20000D+03

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90450D-03 | 0.17294D+00 | -0.79577D-02 | -0.17822D-04 | 0.42099D+01 | 0.13245D+04 |
| 10.00 | 0.90410D-03 | 0.26347D+02 | 0.26166D+02 | 0.93446D-01 | 0.42306D+01 | 0.13432D+04 |
| 20.00 | 0.90462D-03 | 0.68725D+02 | 0.68544D+02 | 0.24053D+00 | 0.42419D+01 | 0.13755D+04 |
| 30.00 | 0.90634D-03 | 0.11114D+03 | 0.11096D+03 | 0.38281D+00 | 0.42399D+01 | 0.14036D+04 |
| 40.00 | 0.90906D-03 | 0.15350D+03 | 0.15332D+03 | 0.52029D+00 | 0.42314D+01 | 0.14256D+04 |
| 50.00 | 0.91262D-03 | 0.19576D+03 | 0.19558D+03 | 0.65312D+00 | 0.42198D+01 | 0.14415D+04 |
| 60.00 | 0.91691D-03 | 0.23789D+03 | 0.23771D+03 | 0.78153D+00 | 0.42068D+01 | 0.14518D+04 |
| 70.00 | 0.92188D-03 | 0.27989D+03 | 0.27971D+03 | 0.90575D+00 | 0.41935D+01 | 0.14571D+04 |
| 80.00 | 0.92746D-03 | 0.32176D+03 | 0.32158D+03 | 0.10260D+01 | 0.41808D+01 | 0.14578D+04 |
| 90.00 | 0.93363D-03 | 0.36352D+03 | 0.36333D+03 | 0.11426D+01 | 0.41697D+01 | 0.14544D+04 |
| 100.00 | 0.94037D-03 | 0.40517D+03 | 0.40498D+03 | 0.12557D+01 | 0.41609D+01 | 0.14474D+04 |
| 110.00 | 0.94770D-03 | 0.44674D+03 | 0.44655D+03 | 0.13657D+01 | 0.41551D+01 | 0.14370D+04 |
| 120.00 | 0.95562D-03 | 0.48828D+03 | 0.48809D+03 | 0.14727D+01 | 0.41531D+01 | 0.14238D+04 |
| 130.00 | 0.81826D+00 | 0.25267D+04 | 0.23631D+04 | 0.66387D+01 | 0.19583D+01 | 0.46115D+03 |
| 140.00 | 0.84062D+00 | 0.25462D+04 | 0.23781D+04 | 0.66865D+01 | 0.19400D+01 | 0.46727D+03 |
| 150.00 | 0.86278D+00 | 0.25655D+04 | 0.23930D+04 | 0.67327D+01 | 0.19267D+01 | 0.47321D+03 |
| 160.00 | 0.88478D+00 | 0.25848D+04 | 0.24078D+04 | 0.67776D+01 | 0.19173D+01 | 0.47898D+03 |
| 170.00 | 0.90663D+00 | 0.26039D+04 | 0.24226D+04 | 0.68213D+01 | 0.19109D+01 | 0.48461D+03 |
| 180.00 | 0.92836D+00 | 0.26230D+04 | 0.24373D+04 | 0.68639D+01 | 0.19070D+01 | 0.49012D+03 |
| 190.00 | 0.94999D+00 | 0.26420D+04 | 0.24520D+04 | 0.69055D+01 | 0.19049D+01 | 0.49552D+03 |
| 200.00 | 0.97153D+00 | 0.26611D+04 | 0.24668D+04 | 0.69461D+01 | 0.19043D+01 | 0.50081D+03 |
| 210.00 | 0.99300D+00 | 0.26801D+04 | 0.24815D+04 | 0.69860D+01 | 0.19050D+01 | 0.50601D+03 |
| 220.00 | 0.10144D+01 | 0.26992D+04 | 0.24963D+04 | 0.70250D+01 | 0.19067D+01 | 0.51113D+03 |
| 230.00 | 0.10357D+01 | 0.27183D+04 | 0.25111D+04 | 0.70633D+01 | 0.19093D+01 | 0.51617D+03 |
| 240.00 | 0.10570D+01 | 0.27374D+04 | 0.25260D+04 | 0.71009D+01 | 0.19127D+01 | 0.52113D+03 |
| 250.00 | 0.10782D+01 | 0.27565D+04 | 0.25409D+04 | 0.71379D+01 | 0.19166D+01 | 0.52602D+03 |
| 260.00 | 0.10994D+01 | 0.27757D+04 | 0.25558D+04 | 0.71742D+01 | 0.19211D+01 | 0.53085D+03 |
| 270.00 | 0.11206D+01 | 0.27949D+04 | 0.25708D+04 | 0.72100D+01 | 0.19260D+01 | 0.53561D+03 |
| 280.00 | 0.11417D+01 | 0.28142D+04 | 0.25859D+04 | 0.72451D+01 | 0.19313D+01 | 0.54032D+03 |
| 290.00 | 0.11628D+01 | 0.28336D+04 | 0.26010D+04 | 0.72798D+01 | 0.19370D+01 | 0.54496D+03 |
| 300.00 | 0.11839D+01 | 0.28530D+04 | 0.26162D+04 | 0.73139D+01 | 0.19430D+01 | 0.54955D+03 |
| 310.00 | 0.12049D+01 | 0.28724D+04 | 0.26314D+04 | 0.73476D+01 | 0.19493D+01 | 0.55409D+03 |
| 320.00 | 0.12260D+01 | 0.28920D+04 | 0.26468D+04 | 0.73808D+01 | 0.19558D+01 | 0.55858D+03 |
| 330.00 | 0.12470D+01 | 0.29116D+04 | 0.26622D+04 | 0.74136D+01 | 0.19625D+01 | 0.56302D+03 |
| 340.00 | 0.12679D+01 | 0.29312D+04 | 0.26776D+04 | 0.74459D+01 | 0.19694D+01 | 0.56741D+03 |
| 350.00 | 0.12889D+01 | 0.29509D+04 | 0.26932D+04 | 0.74778D+01 | 0.19765D+01 | 0.57176D+03 |
| 360.00 | 0.13099D+01 | 0.29707D+04 | 0.27088D+04 | 0.75093D+01 | 0.19837D+01 | 0.57606D+03 |
| 365.00 | 0.13203D+01 | 0.29807D+04 | 0.27166D+04 | 0.75249D+01 | 0.19873D+01 | 0.57820D+03 |
| 370.00 | 0.13308D+01 | 0.29906D+04 | 0.27244D+04 | 0.75405D+01 | 0.19910D+01 | 0.58033D+03 |
| 370.74 | 0.13324D+01 | 0.29921D+04 | 0.27256D+04 | 0.75428D+01 | 0.19916D+01 | 0.58064D+03 |
| 380.00 | 0.13518D+01 | 0.30106D+04 | 0.27402D+04 | 0.75712D+01 | 0.19985D+01 | 0.58455D+03 |
| 390.00 | 0.13727D+01 | 0.30306D+04 | 0.27560D+04 | 0.76017D+01 | 0.20061D+01 | 0.58873D+03 |
| 400.00 | 0.13936D+01 | 0.30507D+04 | 0.27720D+04 | 0.76317D+01 | 0.20138D+01 | 0.59287D+03 |
| 500.00 | 0.16023D+01 | 0.32560D+04 | 0.29355D+04 | 0.79160D+01 | 0.20933D+01 | 0.63244D+03 |
| 600.00 | 0.18107D+01 | 0.34694D+04 | 0.31072D+04 | 0.81754D+01 | 0.21736D+01 | 0.66919D+03 |
| 700.00 | 0.20188D+01 | 0.36906D+04 | 0.32869D+04 | 0.84152D+01 | 0.22505D+01 | 0.70374D+03 |
| 800.00 | 0.22267D+01 | 0.39193D+04 | 0.34739D+04 | 0.86389D+01 | 0.23219D+01 | 0.73654D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.30000D+03

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90445D-03 | 0.26648D+00 | -0.48554D-02 | -0.66629D-05 | 0.42095D+01 | 0.13246D+04 |
| 10.00 | 0.90406D-03 | 0.26438D+02 | 0.26166D+02 | 0.93448D-01 | 0.42302D+01 | 0.13434D+04 |
| 20.00 | 0.90458D-03 | 0.68812D+02 | 0.68541D+02 | 0.24052D+00 | 0.42416D+01 | 0.13757D+04 |
| 30.00 | 0.90630D-03 | 0.11123D+03 | 0.11095D+03 | 0.38279D+00 | 0.42396D+01 | 0.14038D+04 |
| 40.00 | 0.90902D-03 | 0.15358D+03 | 0.15331D+03 | 0.52026D+00 | 0.42311D+01 | 0.14258D+04 |
| 50.00 | 0.91257D-03 | 0.19584D+03 | 0.19556D+03 | 0.65308D+00 | 0.42196D+01 | 0.14417D+04 |
| 60.00 | 0.91687D-03 | 0.23797D+03 | 0.23769D+03 | 0.78148D+00 | 0.42066D+01 | 0.14521D+04 |
| 70.00 | 0.92183D-03 | 0.27997D+03 | 0.27969D+03 | 0.90570D+00 | 0.41933D+01 | 0.14573D+04 |
| 80.00 | 0.92741D-03 | 0.32184D+03 | 0.32156D+03 | 0.10260D+01 | 0.41806D+01 | 0.14581D+04 |
| 90.00 | 0.93358D-03 | 0.36359D+03 | 0.36331D+03 | 0.11425D+01 | 0.41695D+01 | 0.14547D+04 |
| 100.00 | 0.94033D-03 | 0.40523D+03 | 0.40495D+03 | 0.12557D+01 | 0.41606D+01 | 0.14476D+04 |
| 110.00 | 0.94765D-03 | 0.44681D+03 | 0.44652D+03 | 0.13656D+01 | 0.41549D+01 | 0.14373D+04 |
| 120.00 | 0.95557D-03 | 0.48834D+03 | 0.48806D+03 | 0.14726D+01 | 0.41529D+01 | 0.14241D+04 |
| 130.00 | 0.96410D-03 | 0.52988D+03 | 0.52959D+03 | 0.15770D+01 | 0.41551D+01 | 0.14082D+04 |
| 140.00 | 0.55441D+00 | 0.25381D+04 | 0.23718D+04 | 0.65028D+01 | 0.20258D+01 | 0.46446D+03 |
| 150.00 | 0.56972D+00 | 0.25583D+04 | 0.23874D+04 | 0.65509D+01 | 0.20001D+01 | 0.47069D+03 |
| 160.00 | 0.58485D+00 | 0.25782D+04 | 0.24027D+04 | 0.65974D+01 | 0.19807D+01 | 0.47672D+03 |
| 170.00 | 0.59983D+00 | 0.25979D+04 | 0.24180D+04 | 0.66424D+01 | 0.19661D+01 | 0.48256D+03 |
| 180.00 | 0.61467D+00 | 0.26175D+04 | 0.24331D+04 | 0.66862D+01 | 0.19553D+01 | 0.48825D+03 |
| 190.00 | 0.62941D+00 | 0.26370D+04 | 0.24482D+04 | 0.67288D+01 | 0.19474D+01 | 0.49381D+03 |
| 200.00 | 0.64405D+00 | 0.26565D+04 | 0.24632D+04 | 0.67703D+01 | 0.19420D+01 | 0.49924D+03 |
| 210.00 | 0.65861D+00 | 0.26759D+04 | 0.24783D+04 | 0.68109D+01 | 0.19386D+01 | 0.50456D+03 |
| 220.00 | 0.67310D+00 | 0.26952D+04 | 0.24933D+04 | 0.68506D+01 | 0.19367D+01 | 0.50979D+03 |
| 230.00 | 0.68753D+00 | 0.27146D+04 | 0.25083D+04 | 0.68894D+01 | 0.19363D+01 | 0.51492D+03 |
| 240.00 | 0.70190D+00 | 0.27340D+04 | 0.25234D+04 | 0.69276D+01 | 0.19369D+01 | 0.51997D+03 |
| 250.00 | 0.71622D+00 | 0.27533D+04 | 0.25385D+04 | 0.69650D+01 | 0.19385D+01 | 0.52494D+03 |
| 260.00 | 0.73051D+00 | 0.27727D+04 | 0.25536D+04 | 0.70017D+01 | 0.19409D+01 | 0.52983D+03 |
| 270.00 | 0.74475D+00 | 0.27922D+04 | 0.25687D+04 | 0.70378D+01 | 0.19440D+01 | 0.53466D+03 |
| 280.00 | 0.75896D+00 | 0.28116D+04 | 0.25839D+04 | 0.70733D+01 | 0.19477D+01 | 0.53942D+03 |
| 290.00 | 0.77314D+00 | 0.28311D+04 | 0.25992D+04 | 0.71082D+01 | 0.19519D+01 | 0.54412D+03 |
| 300.00 | 0.78729D+00 | 0.28507D+04 | 0.26145D+04 | 0.71426D+01 | 0.19566D+01 | 0.54876D+03 |
| 310.00 | 0.80142D+00 | 0.28703D+04 | 0.26298D+04 | 0.71765D+01 | 0.19617D+01 | 0.55334D+03 |
| 320.00 | 0.81553D+00 | 0.28899D+04 | 0.26452D+04 | 0.72099D+01 | 0.19672D+01 | 0.55788D+03 |
| 330.00 | 0.82962D+00 | 0.29096D+04 | 0.26607D+04 | 0.72428D+01 | 0.19730D+01 | 0.56235D+03 |
| 340.00 | 0.84369D+00 | 0.29294D+04 | 0.26763D+04 | 0.72753D+01 | 0.19790D+01 | 0.56678D+03 |
| 350.00 | 0.85774D+00 | 0.29492D+04 | 0.26919D+04 | 0.73074D+01 | 0.19854D+01 | 0.57116D+03 |
| 360.00 | 0.87178D+00 | 0.29691D+04 | 0.27075D+04 | 0.73390D+01 | 0.19919D+01 | 0.57550D+03 |
| 365.00 | 0.87880D+00 | 0.29790D+04 | 0.27154D+04 | 0.73547D+01 | 0.19952D+01 | 0.57765D+03 |
| 370.00 | 0.88581D+00 | 0.29890D+04 | 0.27233D+04 | 0.73703D+01 | 0.19986D+01 | 0.57979D+03 |
| 370.74 | 0.88684D+00 | 0.29905D+04 | 0.27244D+04 | 0.73726D+01 | 0.19991D+01 | 0.58011D+03 |
| 380.00 | 0.89982D+00 | 0.30090D+04 | 0.27391D+04 | 0.74012D+01 | 0.20055D+01 | 0.58404D+03 |
| 390.00 | 0.91383D+00 | 0.30291D+04 | 0.27550D+04 | 0.74317D+01 | 0.20126D+01 | 0.58825D+03 |
| 400.00 | 0.92782D+00 | 0.30493D+04 | 0.27709D+04 | 0.74619D+01 | 0.20198D+01 | 0.59242D+03 |
| 500.00 | 0.10674D+01 | 0.32551D+04 | 0.29348D+04 | 0.77468D+01 | 0.20964D+01 | 0.63217D+03 |
| 600.00 | 0.12065D+01 | 0.34686D+04 | 0.31067D+04 | 0.80065D+01 | 0.21754D+01 | 0.66903D+03 |
| 700.00 | 0.13454D+01 | 0.36900D+04 | 0.32864D+04 | 0.82465D+01 | 0.22518D+01 | 0.70366D+03 |
| 800.00 | 0.14842D+01 | 0.39188D+04 | 0.34736D+04 | 0.84702D+01 | 0.23229D+01 | 0.73649D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.40000D+03

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90441D-03 | 0.36001D+00 | -0.17546D-02 | 0.44744D-05 | 0.42091D+01 | 0.13248D+04 |
| 10.00 | 0.90401D-03 | 0.26528D+02 | 0.26167D+02 | 0.93449D-01 | 0.42298D+01 | 0.13435D+04 |
| 20.00 | 0.90453D-03 | 0.68899D+02 | 0.68538D+02 | 0.24051D+00 | 0.42412D+01 | 0.13759D+04 |
| 30.00 | 0.90626D-03 | 0.11131D+03 | 0.11095D+03 | 0.38276D+00 | 0.42393D+01 | 0.14040D+04 |
| 40.00 | 0.90897D-03 | 0.15366D+03 | 0.15330D+03 | 0.52022D+00 | 0.42309D+01 | 0.14260D+04 |
| 50.00 | 0.91253D-03 | 0.19592D+03 | 0.19555D+03 | 0.65304D+00 | 0.42193D+01 | 0.14419D+04 |
| 60.00 | 0.91683D-03 | 0.23805D+03 | 0.23768D+03 | 0.78144D+00 | 0.42063D+01 | 0.14523D+04 |
| 70.00 | 0.92179D-03 | 0.28004D+03 | 0.27967D+03 | 0.90564D+00 | 0.41931D+01 | 0.14576D+04 |
| 80.00 | 0.92737D-03 | 0.32191D+03 | 0.32154D+03 | 0.10259D+01 | 0.41804D+01 | 0.14583D+04 |
| 90.00 | 0.93354D-03 | 0.36366D+03 | 0.36328D+03 | 0.11425D+01 | 0.41693D+01 | 0.14549D+04 |
| 100.00 | 0.94028D-03 | 0.40530D+03 | 0.40493D+03 | 0.12556D+01 | 0.41604D+01 | 0.14479D+04 |
| 110.00 | 0.94760D-03 | 0.44687D+03 | 0.44649D+03 | 0.13656D+01 | 0.41547D+01 | 0.14376D+04 |
| 120.00 | 0.95552D-03 | 0.48841D+03 | 0.48802D+03 | 0.14726D+01 | 0.41526D+01 | 0.14243D+04 |
| 130.00 | 0.96405D-03 | 0.52994D+03 | 0.52956D+03 | 0.15769D+01 | 0.41549D+01 | 0.14085D+04 |
| 140.00 | 0.97322D-03 | 0.57152D+03 | 0.57113D+03 | 0.16788D+01 | 0.41618D+01 | 0.13903D+04 |
| 150.00 | 0.42304D+00 | 0.25507D+04 | 0.23815D+04 | 0.64174D+01 | 0.20798D+01 | 0.46810D+03 |
| 160.00 | 0.43477D+00 | 0.25714D+04 | 0.23975D+04 | 0.64656D+01 | 0.20490D+01 | 0.47439D+03 |
| 170.00 | 0.44633D+00 | 0.25917D+04 | 0.24132D+04 | 0.65121D+01 | 0.20252D+01 | 0.48046D+03 |
| 180.00 | 0.45775D+00 | 0.26119D+04 | 0.24288D+04 | 0.65571D+01 | 0.20067D+01 | 0.48634D+03 |
| 190.00 | 0.46906D+00 | 0.26319D+04 | 0.24443D+04 | 0.66007D+01 | 0.19925D+01 | 0.49206D+03 |
| 200.00 | 0.48026D+00 | 0.26517D+04 | 0.24596D+04 | 0.66432D+01 | 0.19817D+01 | 0.49764D+03 |
| 210.00 | 0.49138D+00 | 0.26715D+04 | 0.24750D+04 | 0.66845D+01 | 0.19738D+01 | 0.50309D+03 |
| 220.00 | 0.50242D+00 | 0.26912D+04 | 0.24903D+04 | 0.67249D+01 | 0.19681D+01 | 0.50842D+03 |
| 230.00 | 0.51340D+00 | 0.27109D+04 | 0.25055D+04 | 0.67644D+01 | 0.19643D+01 | 0.51365D+03 |
| 240.00 | 0.52432D+00 | 0.27305D+04 | 0.25208D+04 | 0.68030D+01 | 0.19620D+01 | 0.51879D+03 |
| 250.00 | 0.53520D+00 | 0.27501D+04 | 0.25361D+04 | 0.68409D+01 | 0.19611D+01 | 0.52384D+03 |
| 260.00 | 0.54602D+00 | 0.27697D+04 | 0.25513D+04 | 0.68780D+01 | 0.19613D+01 | 0.52880D+03 |
| 270.00 | 0.55681D+00 | 0.27894D+04 | 0.25666D+04 | 0.69144D+01 | 0.19625D+01 | 0.53370D+03 |
| 280.00 | 0.56757D+00 | 0.28090D+04 | 0.25820D+04 | 0.69503D+01 | 0.19645D+01 | 0.53852D+03 |
| 290.00 | 0.57829D+00 | 0.28287D+04 | 0.25973D+04 | 0.69855D+01 | 0.19672D+01 | 0.54327D+03 |
| 300.00 | 0.58899D+00 | 0.28483D+04 | 0.26127D+04 | 0.70201D+01 | 0.19706D+01 | 0.54796D+03 |
| 310.00 | 0.59966D+00 | 0.28681D+04 | 0.26282D+04 | 0.70543D+01 | 0.19745D+01 | 0.55259D+03 |
| 320.00 | 0.61031D+00 | 0.28878D+04 | 0.26437D+04 | 0.70879D+01 | 0.19788D+01 | 0.55717D+03 |
| 330.00 | 0.62094D+00 | 0.29076D+04 | 0.26593D+04 | 0.71210D+01 | 0.19837D+01 | 0.56168D+03 |
| 340.00 | 0.63155D+00 | 0.29275D+04 | 0.26749D+04 | 0.71536D+01 | 0.19888D+01 | 0.56615D+03 |
| 350.00 | 0.64215D+00 | 0.29474D+04 | 0.26906D+04 | 0.71859D+01 | 0.19944D+01 | 0.57057D+03 |
| 360.00 | 0.65273D+00 | 0.29674D+04 | 0.27063D+04 | 0.72177D+01 | 0.20002D+01 | 0.57493D+03 |
| 365.00 | 0.65801D+00 | 0.29774D+04 | 0.27142D+04 | 0.72334D+01 | 0.20032D+01 | 0.57710D+03 |
| 370.00 | 0.66330D+00 | 0.29874D+04 | 0.27221D+04 | 0.72491D+01 | 0.20063D+01 | 0.57926D+03 |
| 370.74 | 0.66408D+00 | 0.29889D+04 | 0.27233D+04 | 0.72514D+01 | 0.20067D+01 | 0.57957D+03 |
| 380.00 | 0.67385D+00 | 0.30075D+04 | 0.27380D+04 | 0.72801D+01 | 0.20126D+01 | 0.58353D+03 |
| 390.00 | 0.68440D+00 | 0.30277D+04 | 0.27539D+04 | 0.73107D+01 | 0.20191D+01 | 0.58777D+03 |
| 400.00 | 0.69493D+00 | 0.30479D+04 | 0.27699D+04 | 0.73410D+01 | 0.20259D+01 | 0.59196D+03 |
| 500.00 | 0.79990D+00 | 0.32541D+04 | 0.29341D+04 | 0.76264D+01 | 0.20995D+01 | 0.63189D+03 |
| 600.00 | 0.90443D+00 | 0.34679D+04 | 0.31062D+04 | 0.78864D+01 | 0.21773D+01 | 0.66887D+03 |
| 700.00 | 0.10087D+01 | 0.36895D+04 | 0.32860D+04 | 0.81266D+01 | 0.22530D+01 | 0.70357D+03 |
| 800.00 | 0.11129D+01 | 0.39184D+04 | 0.34732D+04 | 0.83504D+01 | 0.23239D+01 | 0.73645D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.50000D+03

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90436D-03 | 0.45352D+00 | 0.13447D-02 | 0.15590D-04 | 0.42086D+01 | 0.13249D+04 |
| 10.00 | 0.90397D-03 | 0.26619D+02 | 0.26167D+02 | 0.93451D-01 | 0.42294D+01 | 0.13437D+04 |
| 20.00 | 0.90449D-03 | 0.68986D+02 | 0.68534D+02 | 0.24050D+00 | 0.42409D+01 | 0.13761D+04 |
| 30.00 | 0.90621D-03 | 0.11139D+03 | 0.11094D+03 | 0.38274D+00 | 0.42390D+01 | 0.14043D+04 |
| 40.00 | 0.90893D-03 | 0.15374D+03 | 0.15329D+03 | 0.52019D+00 | 0.42306D+01 | 0.14262D+04 |
| 50.00 | 0.91249D-03 | 0.19599D+03 | 0.19554D+03 | 0.65300D+00 | 0.42191D+01 | 0.14422D+04 |
| 60.00 | 0.91679D-03 | 0.23812D+03 | 0.23766D+03 | 0.78139D+00 | 0.42061D+01 | 0.14525D+04 |
| 70.00 | 0.92175D-03 | 0.28012D+03 | 0.27966D+03 | 0.90559D+00 | 0.41929D+01 | 0.14578D+04 |
| 80.00 | 0.92733D-03 | 0.32198D+03 | 0.32152D+03 | 0.10258D+01 | 0.41802D+01 | 0.14585D+04 |
| 90.00 | 0.93349D-03 | 0.36373D+03 | 0.36326D+03 | 0.11424D+01 | 0.41691D+01 | 0.14552D+04 |
| 100.00 | 0.94023D-03 | 0.40537D+03 | 0.40490D+03 | 0.12555D+01 | 0.41602D+01 | 0.14481D+04 |
| 110.00 | 0.94755D-03 | 0.44694D+03 | 0.44647D+03 | 0.13655D+01 | 0.41544D+01 | 0.14378D+04 |
| 120.00 | 0.95547D-03 | 0.48847D+03 | 0.48799D+03 | 0.14725D+01 | 0.41524D+01 | 0.14246D+04 |
| 130.00 | 0.96399D-03 | 0.53000D+03 | 0.52952D+03 | 0.15768D+01 | 0.41546D+01 | 0.14088D+04 |
| 140.00 | 0.97316D-03 | 0.57158D+03 | 0.57109D+03 | 0.16787D+01 | 0.41615D+01 | 0.13906D+04 |
| 150.00 | 0.98301D-03 | 0.61325D+03 | 0.61276D+03 | 0.17783D+01 | 0.41735D+01 | 0.13702D+04 |
| 160.00 | 0.34461D+00 | 0.25643D+04 | 0.23920D+04 | 0.63601D+01 | 0.21228D+01 | 0.47199D+03 |
| 170.00 | 0.35415D+00 | 0.25853D+04 | 0.24083D+04 | 0.64082D+01 | 0.20885D+01 | 0.47830D+03 |
| 180.00 | 0.36353D+00 | 0.26061D+04 | 0.24243D+04 | 0.64545D+01 | 0.20615D+01 | 0.48439D+03 |
| 190.00 | 0.37279D+00 | 0.26266D+04 | 0.24402D+04 | 0.64992D+01 | 0.20402D+01 | 0.49028D+03 |
| 200.00 | 0.38194D+00 | 0.26469D+04 | 0.24559D+04 | 0.65426D+01 | 0.20236D+01 | 0.49600D+03 |
| 210.00 | 0.39100D+00 | 0.26671D+04 | 0.24716D+04 | 0.65848D+01 | 0.20107D+01 | 0.50158D+03 |
| 220.00 | 0.39999D+00 | 0.26871D+04 | 0.24871D+04 | 0.66259D+01 | 0.20008D+01 | 0.50703D+03 |
| 230.00 | 0.40890D+00 | 0.27071D+04 | 0.25027D+04 | 0.66660D+01 | 0.19934D+01 | 0.51237D+03 |
| 240.00 | 0.41776D+00 | 0.27270D+04 | 0.25181D+04 | 0.67051D+01 | 0.19880D+01 | 0.51759D+03 |
| 250.00 | 0.42656D+00 | 0.27469D+04 | 0.25336D+04 | 0.67435D+01 | 0.19844D+01 | 0.52272D+03 |
| 260.00 | 0.43532D+00 | 0.27667D+04 | 0.25490D+04 | 0.67810D+01 | 0.19823D+01 | 0.52776D+03 |
| 270.00 | 0.44404D+00 | 0.27865D+04 | 0.25645D+04 | 0.68179D+01 | 0.19814D+01 | 0.53272D+03 |
| 280.00 | 0.45272D+00 | 0.28063D+04 | 0.25800D+04 | 0.68540D+01 | 0.19817D+01 | 0.53761D+03 |
| 290.00 | 0.46137D+00 | 0.28262D+04 | 0.25955D+04 | 0.68895D+01 | 0.19828D+01 | 0.54242D+03 |
| 300.00 | 0.47000D+00 | 0.28460D+04 | 0.26110D+04 | 0.69244D+01 | 0.19847D+01 | 0.54716D+03 |
| 310.00 | 0.47860D+00 | 0.28659D+04 | 0.26266D+04 | 0.69588D+01 | 0.19874D+01 | 0.55184D+03 |
| 320.00 | 0.48717D+00 | 0.28857D+04 | 0.26422D+04 | 0.69926D+01 | 0.19907D+01 | 0.55645D+03 |
| 330.00 | 0.49573D+00 | 0.29057D+04 | 0.26578D+04 | 0.70259D+01 | 0.19945D+01 | 0.56101D+03 |
| 340.00 | 0.50427D+00 | 0.29256D+04 | 0.26735D+04 | 0.70587D+01 | 0.19988D+01 | 0.56551D+03 |
| 350.00 | 0.51279D+00 | 0.29456D+04 | 0.26893D+04 | 0.70911D+01 | 0.20035D+01 | 0.56997D+03 |
| 360.00 | 0.52129D+00 | 0.29657D+04 | 0.27051D+04 | 0.71231D+01 | 0.20086D+01 | 0.57437D+03 |
| 365.00 | 0.52554D+00 | 0.29758D+04 | 0.27130D+04 | 0.71389D+01 | 0.20113D+01 | 0.57655D+03 |
| 370.00 | 0.52979D+00 | 0.29858D+04 | 0.27209D+04 | 0.71546D+01 | 0.20140D+01 | 0.57872D+03 |
| 370.74 | 0.53042D+00 | 0.29873D+04 | 0.27221D+04 | 0.71569D+01 | 0.20144D+01 | 0.57904D+03 |
| 380.00 | 0.53827D+00 | 0.30060D+04 | 0.27369D+04 | 0.71857D+01 | 0.20198D+01 | 0.58302D+03 |
| 390.00 | 0.54674D+00 | 0.30262D+04 | 0.27528D+04 | 0.72164D+01 | 0.20258D+01 | 0.58729D+03 |
| 400.00 | 0.55520D+00 | 0.30465D+04 | 0.27689D+04 | 0.72468D+01 | 0.20320D+01 | 0.59150D+03 |
| 500.00 | 0.63941D+00 | 0.32531D+04 | 0.29334D+04 | 0.75329D+01 | 0.21026D+01 | 0.63162D+03 |
| 600.00 | 0.72319D+00 | 0.34672D+04 | 0.31056D+04 | 0.77932D+01 | 0.21791D+01 | 0.66871D+03 |
| 700.00 | 0.80675D+00 | 0.36889D+04 | 0.32855D+04 | 0.80335D+01 | 0.22543D+01 | 0.70348D+03 |
| 800.00 | 0.89017D+00 | 0.39179D+04 | 0.34728D+04 | 0.82574D+01 | 0.23249D+01 | 0.73642D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.60000D+03

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90431D-03 | 0.54703D+00 | 0.44426D-02 | 0.26682D-04 | 0.42082D+01 | 0.13250D+04 |
| 10.00 | 0.90392D-03 | 0.26710D+02 | 0.26168D+02 | 0.93453D-01 | 0.42290D+01 | 0.13439D+04 |
| 20.00 | 0.90445D-03 | 0.69073D+02 | 0.68531D+02 | 0.24048D+00 | 0.42405D+01 | 0.13763D+04 |
| 30.00 | 0.90617D-03 | 0.11148D+03 | 0.11093D+03 | 0.38272D+00 | 0.42387D+01 | 0.14045D+04 |
| 40.00 | 0.90889D-03 | 0.15383D+03 | 0.15328D+03 | 0.52016D+00 | 0.42303D+01 | 0.14265D+04 |
| 50.00 | 0.91245D-03 | 0.19607D+03 | 0.19553D+03 | 0.65296D+00 | 0.42188D+01 | 0.14424D+04 |
| 60.00 | 0.91675D-03 | 0.23820D+03 | 0.23765D+03 | 0.78135D+00 | 0.42059D+01 | 0.14528D+04 |
| 70.00 | 0.92171D-03 | 0.28019D+03 | 0.27964D+03 | 0.90554D+00 | 0.41926D+01 | 0.14581D+04 |
| 80.00 | 0.92728D-03 | 0.32205D+03 | 0.32150D+03 | 0.10258D+01 | 0.41800D+01 | 0.14588D+04 |
| 90.00 | 0.93345D-03 | 0.36380D+03 | 0.36324D+03 | 0.11423D+01 | 0.41688D+01 | 0.14554D+04 |
| 100.00 | 0.94019D-03 | 0.40544D+03 | 0.40487D+03 | 0.12555D+01 | 0.41600D+01 | 0.14484D+04 |
| 110.00 | 0.94751D-03 | 0.44701D+03 | 0.44644D+03 | 0.13654D+01 | 0.41542D+01 | 0.14381D+04 |
| 120.00 | 0.95542D-03 | 0.48853D+03 | 0.48796D+03 | 0.14724D+01 | 0.41522D+01 | 0.14249D+04 |
| 130.00 | 0.96394D-03 | 0.53006D+03 | 0.52948D+03 | 0.15767D+01 | 0.41544D+01 | 0.14091D+04 |
| 140.00 | 0.97310D-03 | 0.57164D+03 | 0.57105D+03 | 0.16786D+01 | 0.41613D+01 | 0.13909D+04 |
| 150.00 | 0.98295D-03 | 0.61330D+03 | 0.61271D+03 | 0.17782D+01 | 0.41732D+01 | 0.13705D+04 |
| 160.00 | 0.28442D+00 | 0.25570D+04 | 0.23863D+04 | 0.62710D+01 | 0.22025D+01 | 0.46952D+03 |
| 170.00 | 0.29262D+00 | 0.25788D+04 | 0.24032D+04 | 0.63208D+01 | 0.21564D+01 | 0.47608D+03 |
| 180.00 | 0.30066D+00 | 0.26001D+04 | 0.24197D+04 | 0.63684D+01 | 0.21199D+01 | 0.48238D+03 |
| 190.00 | 0.30857D+00 | 0.26212D+04 | 0.24360D+04 | 0.64144D+01 | 0.20908D+01 | 0.48845D+03 |
| 200.00 | 0.31636D+00 | 0.26420D+04 | 0.24522D+04 | 0.64588D+01 | 0.20677D+01 | 0.49434D+03 |
| 210.00 | 0.32406D+00 | 0.26626D+04 | 0.24681D+04 | 0.65018D+01 | 0.20494D+01 | 0.50005D+03 |
| 220.00 | 0.33167D+00 | 0.26830D+04 | 0.24840D+04 | 0.65437D+01 | 0.20349D+01 | 0.50562D+03 |
| 230.00 | 0.33921D+00 | 0.27033D+04 | 0.24997D+04 | 0.65844D+01 | 0.20237D+01 | 0.51106D+03 |
| 240.00 | 0.34670D+00 | 0.27235D+04 | 0.25154D+04 | 0.66241D+01 | 0.20150D+01 | 0.51638D+03 |
| 250.00 | 0.35412D+00 | 0.27436D+04 | 0.25311D+04 | 0.66630D+01 | 0.20086D+01 | 0.52160D+03 |
| 260.00 | 0.36151D+00 | 0.27636D+04 | 0.25467D+04 | 0.67010D+01 | 0.20040D+01 | 0.52671D+03 |
| 270.00 | 0.36885D+00 | 0.27837D+04 | 0.25623D+04 | 0.67382D+01 | 0.20009D+01 | 0.53174D+03 |
| 280.00 | 0.37615D+00 | 0.28037D+04 | 0.25780D+04 | 0.67747D+01 | 0.19992D+01 | 0.53669D+03 |
| 290.00 | 0.38342D+00 | 0.28236D+04 | 0.25936D+04 | 0.68105D+01 | 0.19987D+01 | 0.54155D+03 |
| 300.00 | 0.39066D+00 | 0.28436D+04 | 0.26092D+04 | 0.68457D+01 | 0.19992D+01 | 0.54635D+03 |
| 310.00 | 0.39788D+00 | 0.28636D+04 | 0.26249D+04 | 0.68802D+01 | 0.20006D+01 | 0.55107D+03 |
| 320.00 | 0.40508D+00 | 0.28836D+04 | 0.26406D+04 | 0.69143D+01 | 0.20027D+01 | 0.55573D+03 |
| 330.00 | 0.41225D+00 | 0.29037D+04 | 0.26563D+04 | 0.69478D+01 | 0.20055D+01 | 0.56033D+03 |
| 340.00 | 0.41941D+00 | 0.29238D+04 | 0.26721D+04 | 0.69808D+01 | 0.20088D+01 | 0.56488D+03 |
| 350.00 | 0.42655D+00 | 0.29439D+04 | 0.26879D+04 | 0.70133D+01 | 0.20127D+01 | 0.56936D+03 |
| 360.00 | 0.43367D+00 | 0.29640D+04 | 0.27038D+04 | 0.70454D+01 | 0.20171D+01 | 0.57380D+03 |
| 365.00 | 0.43723D+00 | 0.29741D+04 | 0.27118D+04 | 0.70613D+01 | 0.20194D+01 | 0.57599D+03 |
| 370.00 | 0.44078D+00 | 0.29842D+04 | 0.27197D+04 | 0.70770D+01 | 0.20219D+01 | 0.57818D+03 |
| 370.74 | 0.44131D+00 | 0.29857D+04 | 0.27209D+04 | 0.70794D+01 | 0.20222D+01 | 0.57850D+03 |
| 380.00 | 0.44788D+00 | 0.30045D+04 | 0.27357D+04 | 0.71083D+01 | 0.20270D+01 | 0.58251D+03 |
| 390.00 | 0.45497D+00 | 0.30247D+04 | 0.27518D+04 | 0.71391D+01 | 0.20324D+01 | 0.58680D+03 |
| 400.00 | 0.46204D+00 | 0.30451D+04 | 0.27679D+04 | 0.71696D+01 | 0.20382D+01 | 0.59105D+03 |
| 500.00 | 0.53242D+00 | 0.32522D+04 | 0.29327D+04 | 0.74563D+01 | 0.21057D+01 | 0.63135D+03 |
| 600.00 | 0.60236D+00 | 0.34665D+04 | 0.31051D+04 | 0.77169D+01 | 0.21809D+01 | 0.66855D+03 |
| 700.00 | 0.67208D+00 | 0.36883D+04 | 0.32851D+04 | 0.79573D+01 | 0.22556D+01 | 0.70340D+03 |
| 800.00 | 0.74167D+00 | 0.39175D+04 | 0.34725D+04 | 0.81814D+01 | 0.23259D+01 | 0.73638D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.70000D+03

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90427D-03 | 0.64052D+00 | 0.75389D-02 | 0.37753D-04 | 0.42077D+01 | 0.13251D+04 |
| 10.00 | 0.90388D-03 | 0.26801D+02 | 0.26168D+02 | 0.93454D-01 | 0.42286D+01 | 0.13440D+04 |
| 20.00 | 0.90440D-03 | 0.69161D+02 | 0.68527D+02 | 0.24047D+00 | 0.42402D+01 | 0.13765D+04 |
| 30.00 | 0.90613D-03 | 0.11156D+03 | 0.11093D+03 | 0.38270D+00 | 0.42384D+01 | 0.14047D+04 |
| 40.00 | 0.90885D-03 | 0.15391D+03 | 0.15327D+03 | 0.52013D+00 | 0.42301D+01 | 0.14267D+04 |
| 50.00 | 0.91241D-03 | 0.19615D+03 | 0.19551D+03 | 0.65293D+00 | 0.42186D+01 | 0.14426D+04 |
| 60.00 | 0.91671D-03 | 0.23827D+03 | 0.23763D+03 | 0.78130D+00 | 0.42057D+01 | 0.14530D+04 |
| 70.00 | 0.92166D-03 | 0.28026D+03 | 0.27962D+03 | 0.90549D+00 | 0.41924D+01 | 0.14583D+04 |
| 80.00 | 0.92724D-03 | 0.32212D+03 | 0.32148D+03 | 0.10257D+01 | 0.41798D+01 | 0.14590D+04 |
| 90.00 | 0.93340D-03 | 0.36386D+03 | 0.36321D+03 | 0.11423D+01 | 0.41686D+01 | 0.14557D+04 |
| 100.00 | 0.94014D-03 | 0.40550D+03 | 0.40485D+03 | 0.12554D+01 | 0.41598D+01 | 0.14486D+04 |
| 110.00 | 0.94746D-03 | 0.44707D+03 | 0.44641D+03 | 0.13653D+01 | 0.41540D+01 | 0.14383D+04 |
| 120.00 | 0.95536D-03 | 0.48860D+03 | 0.48793D+03 | 0.14723D+01 | 0.41519D+01 | 0.14251D+04 |
| 130.00 | 0.96388D-03 | 0.53012D+03 | 0.52945D+03 | 0.15766D+01 | 0.41541D+01 | 0.14094D+04 |
| 140.00 | 0.97304D-03 | 0.57169D+03 | 0.57101D+03 | 0.16785D+01 | 0.41610D+01 | 0.13912D+04 |
| 150.00 | 0.98289D-03 | 0.61336D+03 | 0.61267D+03 | 0.17781D+01 | 0.41729D+01 | 0.13708D+04 |
| 160.00 | 0.99346D-03 | 0.65517D+03 | 0.65447D+03 | 0.18758D+01 | 0.41900D+01 | 0.13484D+04 |
| 170.00 | 0.24861D+00 | 0.25720D+04 | 0.23979D+04 | 0.62446D+01 | 0.22295D+01 | 0.47379D+03 |
| 180.00 | 0.25570D+00 | 0.25940D+04 | 0.24150D+04 | 0.62938D+01 | 0.21822D+01 | 0.48032D+03 |
| 190.00 | 0.26265D+00 | 0.26156D+04 | 0.24318D+04 | 0.63410D+01 | 0.21445D+01 | 0.48659D+03 |
| 200.00 | 0.26948D+00 | 0.26369D+04 | 0.24483D+04 | 0.63865D+01 | 0.21142D+01 | 0.49263D+03 |
| 210.00 | 0.27621D+00 | 0.26579D+04 | 0.24646D+04 | 0.64304D+01 | 0.20900D+01 | 0.49849D+03 |
| 220.00 | 0.28285D+00 | 0.26787D+04 | 0.24807D+04 | 0.64730D+01 | 0.20706D+01 | 0.50419D+03 |
| 230.00 | 0.28942D+00 | 0.26994D+04 | 0.24968D+04 | 0.65144D+01 | 0.20551D+01 | 0.50973D+03 |
| 240.00 | 0.29592D+00 | 0.27198D+04 | 0.25127D+04 | 0.65548D+01 | 0.20429D+01 | 0.51515D+03 |
| 250.00 | 0.30237D+00 | 0.27402D+04 | 0.25286D+04 | 0.65941D+01 | 0.20334D+01 | 0.52046D+03 |
| 260.00 | 0.30877D+00 | 0.27605D+04 | 0.25444D+04 | 0.66325D+01 | 0.20262D+01 | 0.52565D+03 |
| 270.00 | 0.31513D+00 | 0.27808D+04 | 0.25602D+04 | 0.66701D+01 | 0.20209D+01 | 0.53075D+03 |
| 280.00 | 0.32145D+00 | 0.28009D+04 | 0.25759D+04 | 0.67070D+01 | 0.20173D+01 | 0.53576D+03 |
| 290.00 | 0.32773D+00 | 0.28211D+04 | 0.25917D+04 | 0.67431D+01 | 0.20150D+01 | 0.54068D+03 |
| 300.00 | 0.33399D+00 | 0.28413D+04 | 0.26075D+04 | 0.67785D+01 | 0.20140D+01 | 0.54553D+03 |
| 310.00 | 0.34022D+00 | 0.28614D+04 | 0.26232D+04 | 0.68134D+01 | 0.20140D+01 | 0.55031D+03 |
| 320.00 | 0.34643D+00 | 0.28815D+04 | 0.26390D+04 | 0.68476D+01 | 0.20149D+01 | 0.55501D+03 |
| 330.00 | 0.35262D+00 | 0.29017D+04 | 0.26549D+04 | 0.68813D+01 | 0.20166D+01 | 0.55965D+03 |
| 340.00 | 0.35879D+00 | 0.29219D+04 | 0.26707D+04 | 0.69145D+01 | 0.20190D+01 | 0.56423D+03 |
| 350.00 | 0.36494D+00 | 0.29421D+04 | 0.26866D+04 | 0.69472D+01 | 0.20221D+01 | 0.56876D+03 |
| 360.00 | 0.37108D+00 | 0.29623D+04 | 0.27026D+04 | 0.69794D+01 | 0.20257D+01 | 0.57322D+03 |
| 365.00 | 0.37414D+00 | 0.29724D+04 | 0.27105D+04 | 0.69953D+01 | 0.20277D+01 | 0.57544D+03 |
| 370.00 | 0.37720D+00 | 0.29826D+04 | 0.27186D+04 | 0.70112D+01 | 0.20298D+01 | 0.57764D+03 |
| 370.74 | 0.37765D+00 | 0.29841D+04 | 0.27197D+04 | 0.70135D+01 | 0.20301D+01 | 0.57796D+03 |
| 380.00 | 0.38331D+00 | 0.30029D+04 | 0.27346D+04 | 0.70425D+01 | 0.20343D+01 | 0.58200D+03 |
| 390.00 | 0.38941D+00 | 0.30233D+04 | 0.27507D+04 | 0.70735D+01 | 0.20392D+01 | 0.58632D+03 |
| 400.00 | 0.39550D+00 | 0.30437D+04 | 0.27668D+04 | 0.71040D+01 | 0.20444D+01 | 0.59059D+03 |
| 500.00 | 0.45599D+00 | 0.32512D+04 | 0.29320D+04 | 0.73914D+01 | 0.21089D+01 | 0.63108D+03 |
| 600.00 | 0.51605D+00 | 0.34658D+04 | 0.31045D+04 | 0.76522D+01 | 0.21828D+01 | 0.66839D+03 |
| 700.00 | 0.57589D+00 | 0.36878D+04 | 0.32846D+04 | 0.78929D+01 | 0.22569D+01 | 0.70331D+03 |
| 800.00 | 0.63560D+00 | 0.39170D+04 | 0.34721D+04 | 0.81171D+01 | 0.23268D+01 | 0.73635D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.80000D+03

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90422D-03 | 0.73401D+00 | 0.10634D-01 | 0.48801D-04 | 0.42073D+01 | 0.13252D+04 |
| 10.00 | 0.90383D-03 | 0.26892D+02 | 0.26169D+02 | 0.93456D-01 | 0.42282D+01 | 0.13442D+04 |
| 20.00 | 0.90436D-03 | 0.69248D+02 | 0.68524D+02 | 0.24046D+00 | 0.42398D+01 | 0.13767D+04 |
| 30.00 | 0.90609D-03 | 0.11164D+03 | 0.11092D+03 | 0.38267D+00 | 0.42381D+01 | 0.14049D+04 |
| 40.00 | 0.90881D-03 | 0.15399D+03 | 0.15326D+03 | 0.52010D+00 | 0.42298D+01 | 0.14269D+04 |
| 50.00 | 0.91237D-03 | 0.19623D+03 | 0.19550D+03 | 0.65289D+00 | 0.42184D+01 | 0.14429D+04 |
| 60.00 | 0.91666D-03 | 0.23835D+03 | 0.23762D+03 | 0.78125D+00 | 0.42055D+01 | 0.14532D+04 |
| 70.00 | 0.92162D-03 | 0.28034D+03 | 0.27960D+03 | 0.90543D+00 | 0.41922D+01 | 0.14585D+04 |
| 80.00 | 0.92720D-03 | 0.32220D+03 | 0.32145D+03 | 0.10257D+01 | 0.41796D+01 | 0.14593D+04 |
| 90.00 | 0.93336D-03 | 0.36393D+03 | 0.36319D+03 | 0.11422D+01 | 0.41684D+01 | 0.14559D+04 |
| 100.00 | 0.94009D-03 | 0.40557D+03 | 0.40482D+03 | 0.12553D+01 | 0.41596D+01 | 0.14489D+04 |
| 110.00 | 0.94741D-03 | 0.44714D+03 | 0.44638D+03 | 0.13652D+01 | 0.41538D+01 | 0.14386D+04 |
| 120.00 | 0.95531D-03 | 0.48866D+03 | 0.48790D+03 | 0.14722D+01 | 0.41517D+01 | 0.14254D+04 |
| 130.00 | 0.96383D-03 | 0.53018D+03 | 0.52941D+03 | 0.15765D+01 | 0.41538D+01 | 0.14096D+04 |
| 140.00 | 0.97299D-03 | 0.57175D+03 | 0.57097D+03 | 0.16784D+01 | 0.41607D+01 | 0.13915D+04 |
| 150.00 | 0.98283D-03 | 0.61341D+03 | 0.61263D+03 | 0.17780D+01 | 0.41725D+01 | 0.13712D+04 |
| 160.00 | 0.99339D-03 | 0.65522D+03 | 0.65443D+03 | 0.18757D+01 | 0.41897D+01 | 0.13487D+04 |
| 170.00 | 0.10047D-02 | 0.69723D+03 | 0.69642D+03 | 0.19715D+01 | 0.42123D+01 | 0.13243D+04 |
| 180.00 | 0.22193D+00 | 0.25877D+04 | 0.24101D+04 | 0.62273D+01 | 0.22488D+01 | 0.47820D+03 |
| 190.00 | 0.22818D+00 | 0.26099D+04 | 0.24274D+04 | 0.62759D+01 | 0.22014D+01 | 0.48467D+03 |
| 200.00 | 0.23429D+00 | 0.26317D+04 | 0.24443D+04 | 0.63225D+01 | 0.21633D+01 | 0.49089D+03 |
| 210.00 | 0.24030D+00 | 0.26532D+04 | 0.24610D+04 | 0.63674D+01 | 0.21326D+01 | 0.49690D+03 |
| 220.00 | 0.24622D+00 | 0.26744D+04 | 0.24774D+04 | 0.64108D+01 | 0.21079D+01 | 0.50273D+03 |
| 230.00 | 0.25206D+00 | 0.26954D+04 | 0.24937D+04 | 0.64529D+01 | 0.20879D+01 | 0.50839D+03 |
| 240.00 | 0.25783D+00 | 0.27162D+04 | 0.25099D+04 | 0.64938D+01 | 0.20719D+01 | 0.51391D+03 |
| 250.00 | 0.26354D+00 | 0.27368D+04 | 0.25260D+04 | 0.65337D+01 | 0.20592D+01 | 0.51930D+03 |
| 260.00 | 0.26921D+00 | 0.27574D+04 | 0.25420D+04 | 0.65726D+01 | 0.20492D+01 | 0.52458D+03 |
| 270.00 | 0.27483D+00 | 0.27778D+04 | 0.25580D+04 | 0.66106D+01 | 0.20415D+01 | 0.52975D+03 |
| 280.00 | 0.28041D+00 | 0.27982D+04 | 0.25739D+04 | 0.66478D+01 | 0.20357D+01 | 0.53482D+03 |
| 290.00 | 0.28596D+00 | 0.28186D+04 | 0.25898D+04 | 0.66842D+01 | 0.20317D+01 | 0.53981D+03 |
| 300.00 | 0.29148D+00 | 0.28389D+04 | 0.26057D+04 | 0.67200D+01 | 0.20290D+01 | 0.54471D+03 |
| 310.00 | 0.29698D+00 | 0.28591D+04 | 0.26216D+04 | 0.67550D+01 | 0.20276D+01 | 0.54953D+03 |
| 320.00 | 0.30245D+00 | 0.28794D+04 | 0.26375D+04 | 0.67895D+01 | 0.20273D+01 | 0.55429D+03 |
| 330.00 | 0.30789D+00 | 0.28997D+04 | 0.26534D+04 | 0.68234D+01 | 0.20279D+01 | 0.55897D+03 |
| 340.00 | 0.31332D+00 | 0.29200D+04 | 0.26693D+04 | 0.68568D+01 | 0.20294D+01 | 0.56359D+03 |
| 350.00 | 0.31873D+00 | 0.29403D+04 | 0.26853D+04 | 0.68896D+01 | 0.20316D+01 | 0.56815D+03 |
| 360.00 | 0.32413D+00 | 0.29606D+04 | 0.27013D+04 | 0.69220D+01 | 0.20344D+01 | 0.57265D+03 |
| 365.00 | 0.32682D+00 | 0.29708D+04 | 0.27093D+04 | 0.69380D+01 | 0.20360D+01 | 0.57488D+03 |
| 370.00 | 0.32951D+00 | 0.29810D+04 | 0.27174D+04 | 0.69539D+01 | 0.20378D+01 | 0.57710D+03 |
| 370.74 | 0.32991D+00 | 0.29825D+04 | 0.27185D+04 | 0.69562D+01 | 0.20380D+01 | 0.57742D+03 |
| 380.00 | 0.33489D+00 | 0.30014D+04 | 0.27335D+04 | 0.69853D+01 | 0.20416D+01 | 0.58149D+03 |
| 390.00 | 0.34024D+00 | 0.30218D+04 | 0.27496D+04 | 0.70164D+01 | 0.20460D+01 | 0.58583D+03 |
| 400.00 | 0.34559D+00 | 0.30423D+04 | 0.27658D+04 | 0.70471D+01 | 0.20507D+01 | 0.59013D+03 |
| 500.00 | 0.39868D+00 | 0.32503D+04 | 0.29313D+04 | 0.73350D+01 | 0.21120D+01 | 0.63081D+03 |
| 600.00 | 0.45132D+00 | 0.34650D+04 | 0.31040D+04 | 0.75962D+01 | 0.21847D+01 | 0.66824D+03 |
| 700.00 | 0.50375D+00 | 0.36872D+04 | 0.32842D+04 | 0.78370D+01 | 0.22581D+01 | 0.70323D+03 |
| 800.00 | 0.55604D+00 | 0.39165D+04 | 0.34717D+04 | 0.80613D+01 | 0.23278D+01 | 0.73632D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.90000D+03

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90417D-03 | 0.82748D+00 | 0.13727D-01 | 0.59827D-04 | 0.42069D+01 | 0.13253D+04 |
| 10.00 | 0.90379D-03 | 0.26983D+02 | 0.26169D+02 | 0.93457D-01 | 0.42278D+01 | 0.13444D+04 |
| 20.00 | 0.90432D-03 | 0.69335D+02 | 0.68521D+02 | 0.24045D+00 | 0.42395D+01 | 0.13769D+04 |
| 30.00 | 0.90605D-03 | 0.11173D+03 | 0.11091D+03 | 0.38265D+00 | 0.42378D+01 | 0.14051D+04 |
| 40.00 | 0.90877D-03 | 0.15407D+03 | 0.15325D+03 | 0.52007D+00 | 0.42296D+01 | 0.14271D+04 |
| 50.00 | 0.91233D-03 | 0.19631D+03 | 0.19549D+03 | 0.65285D+00 | 0.42181D+01 | 0.14431D+04 |
| 60.00 | 0.91662D-03 | 0.23843D+03 | 0.23760D+03 | 0.78121D+00 | 0.42052D+01 | 0.14534D+04 |
| 70.00 | 0.92158D-03 | 0.28041D+03 | 0.27958D+03 | 0.90538D+00 | 0.41920D+01 | 0.14588D+04 |
| 80.00 | 0.92715D-03 | 0.32227D+03 | 0.32143D+03 | 0.10256D+01 | 0.41794D+01 | 0.14595D+04 |
| 90.00 | 0.93331D-03 | 0.36400D+03 | 0.36316D+03 | 0.11422D+01 | 0.41682D+01 | 0.14562D+04 |
| 100.00 | 0.94005D-03 | 0.40564D+03 | 0.40479D+03 | 0.12553D+01 | 0.41593D+01 | 0.14491D+04 |
| 110.00 | 0.94736D-03 | 0.44720D+03 | 0.44635D+03 | 0.13652D+01 | 0.41535D+01 | 0.14389D+04 |
| 120.00 | 0.95526D-03 | 0.48872D+03 | 0.48786D+03 | 0.14721D+01 | 0.41514D+01 | 0.14257D+04 |
| 130.00 | 0.96377D-03 | 0.53024D+03 | 0.52938D+03 | 0.15764D+01 | 0.41536D+01 | 0.14099D+04 |
| 140.00 | 0.97293D-03 | 0.57181D+03 | 0.57094D+03 | 0.16783D+01 | 0.41604D+01 | 0.13918D+04 |
| 150.00 | 0.98276D-03 | 0.61347D+03 | 0.61259D+03 | 0.17779D+01 | 0.41722D+01 | 0.13715D+04 |
| 160.00 | 0.99333D-03 | 0.65527D+03 | 0.65438D+03 | 0.18756D+01 | 0.41893D+01 | 0.13490D+04 |
| 170.00 | 0.10047D-02 | 0.69727D+03 | 0.69637D+03 | 0.19714D+01 | 0.42119D+01 | 0.13246D+04 |
| 180.00 | 0.19563D+00 | 0.25812D+04 | 0.24051D+04 | 0.61670D+01 | 0.23202D+01 | 0.47603D+03 |
| 190.00 | 0.20133D+00 | 0.26041D+04 | 0.24229D+04 | 0.62170D+01 | 0.22620D+01 | 0.48271D+03 |
| 200.00 | 0.20689D+00 | 0.26264D+04 | 0.24402D+04 | 0.62648D+01 | 0.22152D+01 | 0.48912D+03 |
| 210.00 | 0.21235D+00 | 0.26484D+04 | 0.24573D+04 | 0.63107D+01 | 0.21774D+01 | 0.49528D+03 |
| 220.00 | 0.21770D+00 | 0.26700D+04 | 0.24741D+04 | 0.63550D+01 | 0.21468D+01 | 0.50124D+03 |
| 230.00 | 0.22298D+00 | 0.26914D+04 | 0.24907D+04 | 0.63978D+01 | 0.21220D+01 | 0.50702D+03 |
| 240.00 | 0.22819D+00 | 0.27125D+04 | 0.25071D+04 | 0.64394D+01 | 0.21019D+01 | 0.51265D+03 |
| 250.00 | 0.23334D+00 | 0.27334D+04 | 0.25234D+04 | 0.64798D+01 | 0.20857D+01 | 0.51813D+03 |
| 260.00 | 0.23843D+00 | 0.27542D+04 | 0.25396D+04 | 0.65191D+01 | 0.20728D+01 | 0.52349D+03 |
| 270.00 | 0.24348D+00 | 0.27749D+04 | 0.25557D+04 | 0.65575D+01 | 0.20626D+01 | 0.52874D+03 |
| 280.00 | 0.24849D+00 | 0.27955D+04 | 0.25718D+04 | 0.65951D+01 | 0.20546D+01 | 0.53388D+03 |
| 290.00 | 0.25347D+00 | 0.28160D+04 | 0.25879D+04 | 0.66319D+01 | 0.20487D+01 | 0.53892D+03 |
| 300.00 | 0.25842D+00 | 0.28364D+04 | 0.26039D+04 | 0.66679D+01 | 0.20444D+01 | 0.54388D+03 |
| 310.00 | 0.26334D+00 | 0.28569D+04 | 0.26199D+04 | 0.67032D+01 | 0.20415D+01 | 0.54876D+03 |
| 320.00 | 0.26823D+00 | 0.28773D+04 | 0.26359D+04 | 0.67379D+01 | 0.20399D+01 | 0.55356D+03 |
| 330.00 | 0.27310D+00 | 0.28977D+04 | 0.26519D+04 | 0.67720D+01 | 0.20394D+01 | 0.55828D+03 |
| 340.00 | 0.27796D+00 | 0.29181D+04 | 0.26679D+04 | 0.68055D+01 | 0.20399D+01 | 0.56294D+03 |
| 350.00 | 0.28280D+00 | 0.29385D+04 | 0.26840D+04 | 0.68386D+01 | 0.20412D+01 | 0.56754D+03 |
| 360.00 | 0.28762D+00 | 0.29589D+04 | 0.27000D+04 | 0.68711D+01 | 0.20432D+01 | 0.57207D+03 |
| 365.00 | 0.29002D+00 | 0.29691D+04 | 0.27081D+04 | 0.68871D+01 | 0.20444D+01 | 0.57432D+03 |
| 370.00 | 0.29242D+00 | 0.29793D+04 | 0.27162D+04 | 0.69031D+01 | 0.20459D+01 | 0.57655D+03 |
| 370.74 | 0.29278D+00 | 0.29808D+04 | 0.27173D+04 | 0.69055D+01 | 0.20461D+01 | 0.57688D+03 |
| 380.00 | 0.29722D+00 | 0.29998D+04 | 0.27323D+04 | 0.69347D+01 | 0.20491D+01 | 0.58097D+03 |
| 390.00 | 0.30200D+00 | 0.30203D+04 | 0.27485D+04 | 0.69659D+01 | 0.20528D+01 | 0.58535D+03 |
| 400.00 | 0.30677D+00 | 0.30409D+04 | 0.27648D+04 | 0.69966D+01 | 0.20570D+01 | 0.58967D+03 |
| 500.00 | 0.35410D+00 | 0.32493D+04 | 0.29306D+04 | 0.72852D+01 | 0.21152D+01 | 0.63054D+03 |
| 600.00 | 0.40098D+00 | 0.34643D+04 | 0.31034D+04 | 0.75467D+01 | 0.21865D+01 | 0.66808D+03 |
| 700.00 | 0.44764D+00 | 0.36866D+04 | 0.32838D+04 | 0.77876D+01 | 0.22594D+01 | 0.70315D+03 |
| 800.00 | 0.49417D+00 | 0.39161D+04 | 0.34713D+04 | 0.80120D+01 | 0.23288D+01 | 0.73629D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.10000D+04

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90413D-03 | 0.92094D+00 | 0.16818D-01 | 0.70830D-04 | 0.42064D+01 | 0.13255D+04 |
| 10.00 | 0.90374D-03 | 0.27073D+02 | 0.26170D+02 | 0.93459D-01 | 0.42273D+01 | 0.13446D+04 |
| 20.00 | 0.90427D-03 | 0.69422D+02 | 0.68517D+02 | 0.24044D+00 | 0.42391D+01 | 0.13771D+04 |
| 30.00 | 0.90600D-03 | 0.11181D+03 | 0.11091D+03 | 0.38263D+00 | 0.42375D+01 | 0.14054D+04 |
| 40.00 | 0.90873D-03 | 0.15415D+03 | 0.15324D+03 | 0.52003D+00 | 0.42293D+01 | 0.14274D+04 |
| 50.00 | 0.91229D-03 | 0.19639D+03 | 0.19547D+03 | 0.65281D+00 | 0.42179D+01 | 0.14433D+04 |
| 60.00 | 0.91658D-03 | 0.23850D+03 | 0.23759D+03 | 0.78116D+00 | 0.42050D+01 | 0.14537D+04 |
| 70.00 | 0.92154D-03 | 0.28049D+03 | 0.27956D+03 | 0.90533D+00 | 0.41918D+01 | 0.14590D+04 |
| 80.00 | 0.92711D-03 | 0.32234D+03 | 0.32141D+03 | 0.10256D+01 | 0.41792D+01 | 0.14598D+04 |
| 90.00 | 0.93327D-03 | 0.36407D+03 | 0.36314D+03 | 0.11421D+01 | 0.41680D+01 | 0.14564D+04 |
| 100.00 | 0.94000D-03 | 0.40571D+03 | 0.40477D+03 | 0.12552D+01 | 0.41591D+01 | 0.14494D+04 |
| 110.00 | 0.94731D-03 | 0.44727D+03 | 0.44632D+03 | 0.13651D+01 | 0.41533D+01 | 0.14391D+04 |
| 120.00 | 0.95521D-03 | 0.48879D+03 | 0.48783D+03 | 0.14721D+01 | 0.41512D+01 | 0.14260D+04 |
| 130.00 | 0.96372D-03 | 0.53031D+03 | 0.52934D+03 | 0.15764D+01 | 0.41533D+01 | 0.14102D+04 |
| 140.00 | 0.97287D-03 | 0.57187D+03 | 0.57090D+03 | 0.16782D+01 | 0.41601D+01 | 0.13921D+04 |
| 150.00 | 0.98270D-03 | 0.61352D+03 | 0.61254D+03 | 0.17778D+01 | 0.41719D+01 | 0.13718D+04 |
| 160.00 | 0.99326D-03 | 0.65532D+03 | 0.65433D+03 | 0.18754D+01 | 0.41890D+01 | 0.13494D+04 |
| 170.00 | 0.10046D-02 | 0.69732D+03 | 0.69632D+03 | 0.19713D+01 | 0.42115D+01 | 0.13249D+04 |
| 180.00 | 0.10168D-02 | 0.73958D+03 | 0.73856D+03 | 0.20656D+01 | 0.42399D+01 | 0.12984D+04 |
| 190.00 | 0.17982D+00 | 0.25980D+04 | 0.24182D+04 | 0.61629D+01 | 0.23264D+01 | 0.48071D+03 |
| 200.00 | 0.18495D+00 | 0.26210D+04 | 0.24361D+04 | 0.62120D+01 | 0.22700D+01 | 0.48730D+03 |
| 210.00 | 0.18996D+00 | 0.26435D+04 | 0.24535D+04 | 0.62589D+01 | 0.22244D+01 | 0.49363D+03 |
| 220.00 | 0.19488D+00 | 0.26655D+04 | 0.24707D+04 | 0.63041D+01 | 0.21875D+01 | 0.49973D+03 |
| 230.00 | 0.19971D+00 | 0.26873D+04 | 0.24875D+04 | 0.63477D+01 | 0.21575D+01 | 0.50564D+03 |
| 240.00 | 0.20446D+00 | 0.27087D+04 | 0.25042D+04 | 0.63899D+01 | 0.21330D+01 | 0.51137D+03 |
| 250.00 | 0.20916D+00 | 0.27299D+04 | 0.25208D+04 | 0.64309D+01 | 0.21132D+01 | 0.51695D+03 |
| 260.00 | 0.21380D+00 | 0.27510D+04 | 0.25372D+04 | 0.64708D+01 | 0.20971D+01 | 0.52239D+03 |
| 270.00 | 0.21840D+00 | 0.27719D+04 | 0.25535D+04 | 0.65096D+01 | 0.20842D+01 | 0.52771D+03 |
| 280.00 | 0.22295D+00 | 0.27927D+04 | 0.25697D+04 | 0.65475D+01 | 0.20740D+01 | 0.53292D+03 |
| 290.00 | 0.22747D+00 | 0.28134D+04 | 0.25859D+04 | 0.65846D+01 | 0.20661D+01 | 0.53803D+03 |
| 300.00 | 0.23196D+00 | 0.28340D+04 | 0.26020D+04 | 0.66209D+01 | 0.20601D+01 | 0.54305D+03 |
| 310.00 | 0.23642D+00 | 0.28546D+04 | 0.26182D+04 | 0.66565D+01 | 0.20557D+01 | 0.54798D+03 |
| 320.00 | 0.24086D+00 | 0.28751D+04 | 0.26343D+04 | 0.66914D+01 | 0.20528D+01 | 0.55282D+03 |
| 330.00 | 0.24527D+00 | 0.28956D+04 | 0.26504D+04 | 0.67258D+01 | 0.20511D+01 | 0.55759D+03 |
| 340.00 | 0.24966D+00 | 0.29161D+04 | 0.26665D+04 | 0.67595D+01 | 0.20505D+01 | 0.56229D+03 |
| 350.00 | 0.25404D+00 | 0.29367D+04 | 0.26826D+04 | 0.67926D+01 | 0.20509D+01 | 0.56693D+03 |
| 360.00 | 0.25840D+00 | 0.29572D+04 | 0.26988D+04 | 0.68253D+01 | 0.20521D+01 | 0.57150D+03 |
| 365.00 | 0.26058D+00 | 0.29674D+04 | 0.27069D+04 | 0.68415D+01 | 0.20530D+01 | 0.57376D+03 |
| 370.00 | 0.26275D+00 | 0.29777D+04 | 0.27149D+04 | 0.68575D+01 | 0.20540D+01 | 0.57601D+03 |
| 370.74 | 0.26307D+00 | 0.29792D+04 | 0.27161D+04 | 0.68598D+01 | 0.20542D+01 | 0.57634D+03 |
| 380.00 | 0.26708D+00 | 0.29982D+04 | 0.27312D+04 | 0.68892D+01 | 0.20566D+01 | 0.58046D+03 |
| 390.00 | 0.27141D+00 | 0.30188D+04 | 0.27474D+04 | 0.69205D+01 | 0.20598D+01 | 0.58486D+03 |
| 400.00 | 0.27572D+00 | 0.30394D+04 | 0.27637D+04 | 0.69513D+01 | 0.20635D+01 | 0.58921D+03 |
| 500.00 | 0.31843D+00 | 0.32483D+04 | 0.29299D+04 | 0.72405D+01 | 0.21184D+01 | 0.63027D+03 |
| 600.00 | 0.36070D+00 | 0.34636D+04 | 0.31029D+04 | 0.75023D+01 | 0.21884D+01 | 0.66793D+03 |
| 700.00 | 0.40275D+00 | 0.36861D+04 | 0.32833D+04 | 0.77434D+01 | 0.22606D+01 | 0.70307D+03 |
| 800.00 | 0.44467D+00 | 0.39156D+04 | 0.34710D+04 | 0.79679D+01 | 0.23297D+01 | 0.73626D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.15000D+04

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90389D-03 | 0.13881D+01 | 0.32252D-01 | 0.12551D-03 | 0.42042D+01 | 0.13261D+04 |
| 10.00 | 0.90352D-03 | 0.27527D+02 | 0.26172D+02 | 0.93466D-01 | 0.42253D+01 | 0.13454D+04 |
| 20.00 | 0.90406D-03 | 0.69856D+02 | 0.68500D+02 | 0.24038D+00 | 0.42374D+01 | 0.13782D+04 |
| 30.00 | 0.90580D-03 | 0.11223D+03 | 0.11087D+03 | 0.38252D+00 | 0.42360D+01 | 0.14065D+04 |
| 40.00 | 0.90852D-03 | 0.15455D+03 | 0.15319D+03 | 0.51988D+00 | 0.42280D+01 | 0.14285D+04 |
| 50.00 | 0.91208D-03 | 0.19678D+03 | 0.19541D+03 | 0.65261D+00 | 0.42167D+01 | 0.14444D+04 |
| 60.00 | 0.91637D-03 | 0.23888D+03 | 0.23751D+03 | 0.78093D+00 | 0.42039D+01 | 0.14548D+04 |
| 70.00 | 0.92133D-03 | 0.28086D+03 | 0.27947D+03 | 0.90506D+00 | 0.41907D+01 | 0.14602D+04 |
| 80.00 | 0.92689D-03 | 0.32270D+03 | 0.32131D+03 | 0.10253D+01 | 0.41781D+01 | 0.14610D+04 |
| 90.00 | 0.93304D-03 | 0.36442D+03 | 0.36302D+03 | 0.11418D+01 | 0.41670D+01 | 0.14576D+04 |
| 100.00 | 0.93977D-03 | 0.40605D+03 | 0.40464D+03 | 0.12548D+01 | 0.41581D+01 | 0.14507D+04 |
| 110.00 | 0.94707D-03 | 0.44760D+03 | 0.44618D+03 | 0.13647D+01 | 0.41522D+01 | 0.14404D+04 |
| 120.00 | 0.95495D-03 | 0.48910D+03 | 0.48767D+03 | 0.14717D+01 | 0.41500D+01 | 0.14273D+04 |
| 130.00 | 0.96345D-03 | 0.53061D+03 | 0.52916D+03 | 0.15759D+01 | 0.41520D+01 | 0.14116D+04 |
| 140.00 | 0.97258D-03 | 0.57216D+03 | 0.57070D+03 | 0.16777D+01 | 0.41587D+01 | 0.13935D+04 |
| 150.00 | 0.98239D-03 | 0.61380D+03 | 0.61233D+03 | 0.17773D+01 | 0.41704D+01 | 0.13733D+04 |
| 160.00 | 0.99293D-03 | 0.65558D+03 | 0.65410D+03 | 0.18749D+01 | 0.41873D+01 | 0.13509D+04 |
| 170.00 | 0.10042D-02 | 0.69756D+03 | 0.69606D+03 | 0.19707D+01 | 0.42097D+01 | 0.13266D+04 |
| 180.00 | 0.10164D-02 | 0.73980D+03 | 0.73827D+03 | 0.20650D+01 | 0.42378D+01 | 0.13002D+04 |
| 190.00 | 0.10295D-02 | 0.78234D+03 | 0.78080D+03 | 0.21578D+01 | 0.42721D+01 | 0.12717D+04 |
| 200.00 | 0.11883D+00 | 0.25917D+04 | 0.24135D+04 | 0.59942D+01 | 0.25969D+01 | 0.47756D+03 |
| 210.00 | 0.12259D+00 | 0.26172D+04 | 0.24333D+04 | 0.60474D+01 | 0.24994D+01 | 0.48484D+03 |
| 220.00 | 0.12622D+00 | 0.26418D+04 | 0.24524D+04 | 0.60978D+01 | 0.24213D+01 | 0.49175D+03 |
| 230.00 | 0.12974D+00 | 0.26657D+04 | 0.24710D+04 | 0.61457D+01 | 0.23582D+01 | 0.49835D+03 |
| 240.00 | 0.13317D+00 | 0.26890D+04 | 0.24892D+04 | 0.61916D+01 | 0.23068D+01 | 0.50469D+03 |
| 250.00 | 0.13653D+00 | 0.27118D+04 | 0.25070D+04 | 0.62357D+01 | 0.22647D+01 | 0.51080D+03 |
| 260.00 | 0.13983D+00 | 0.27343D+04 | 0.25245D+04 | 0.62783D+01 | 0.22301D+01 | 0.51671D+03 |
| 270.00 | 0.14307D+00 | 0.27564D+04 | 0.25418D+04 | 0.63194D+01 | 0.22017D+01 | 0.52244D+03 |
| 280.00 | 0.14627D+00 | 0.27783D+04 | 0.25589D+04 | 0.63594D+01 | 0.21782D+01 | 0.52802D+03 |
| 290.00 | 0.14942D+00 | 0.28000D+04 | 0.25759D+04 | 0.63982D+01 | 0.21590D+01 | 0.53347D+03 |
| 300.00 | 0.15255D+00 | 0.28215D+04 | 0.25927D+04 | 0.64361D+01 | 0.21432D+01 | 0.53878D+03 |
| 310.00 | 0.15564D+00 | 0.28429D+04 | 0.26094D+04 | 0.64731D+01 | 0.21305D+01 | 0.54399D+03 |
| 320.00 | 0.15870D+00 | 0.28641D+04 | 0.26261D+04 | 0.65092D+01 | 0.21203D+01 | 0.54908D+03 |
| 330.00 | 0.16174D+00 | 0.28853D+04 | 0.26427D+04 | 0.65446D+01 | 0.21122D+01 | 0.55408D+03 |
| 340.00 | 0.16476D+00 | 0.29064D+04 | 0.26593D+04 | 0.65793D+01 | 0.21060D+01 | 0.55900D+03 |
| 350.00 | 0.16776D+00 | 0.29274D+04 | 0.26758D+04 | 0.66133D+01 | 0.21014D+01 | 0.56382D+03 |
| 360.00 | 0.17074D+00 | 0.29484D+04 | 0.26923D+04 | 0.66467D+01 | 0.20982D+01 | 0.56857D+03 |
| 365.00 | 0.17223D+00 | 0.29589D+04 | 0.27006D+04 | 0.66632D+01 | 0.20971D+01 | 0.57092D+03 |
| 370.00 | 0.17371D+00 | 0.29694D+04 | 0.27088D+04 | 0.66796D+01 | 0.20963D+01 | 0.57325D+03 |
| 370.74 | 0.17393D+00 | 0.29710D+04 | 0.27101D+04 | 0.66820D+01 | 0.20962D+01 | 0.57359D+03 |
| 380.00 | 0.17667D+00 | 0.29904D+04 | 0.27254D+04 | 0.67119D+01 | 0.20954D+01 | 0.57786D+03 |
| 390.00 | 0.17961D+00 | 0.30113D+04 | 0.27419D+04 | 0.67437D+01 | 0.20954D+01 | 0.58240D+03 |
| 400.00 | 0.18254D+00 | 0.30323D+04 | 0.27585D+04 | 0.67751D+01 | 0.20963D+01 | 0.58688D+03 |
| 500.00 | 0.21143D+00 | 0.32435D+04 | 0.29263D+04 | 0.70676D+01 | 0.21345D+01 | 0.62893D+03 |
| 600.00 | 0.23987D+00 | 0.34600D+04 | 0.31002D+04 | 0.73308D+01 | 0.21977D+01 | 0.66717D+03 |
| 700.00 | 0.26809D+00 | 0.36832D+04 | 0.32811D+04 | 0.75728D+01 | 0.22669D+01 | 0.70270D+03 |
| 800.00 | 0.29617D+00 | 0.39133D+04 | 0.34690D+04 | 0.77978D+01 | 0.23345D+01 | 0.73616D+03 |

LIQUID AND VAPOUR

P (KPA) = 0.20000D+04

| TEMP. C | VOLUME M**3/KG | ENTHALPY KJ/KG | ENERGY KJ/KG | ENTROPY KJ/KG*K | SPECIFIC HEATS KJ/KG*K | SPEED OF SOUND M/S |
|---|---|---|---|---|---|---|
| 3.80 | 0.90366D-03 | 0.18550D+01 | 0.47643D-01 | 0.17961D-03 | 0.42020D+01 | 0.13267D+04 |
| 10.00 | 0.90329D-03 | 0.27981D+02 | 0.26174D+02 | 0.93473D-01 | 0.42232D+01 | 0.13463D+04 |
| 20.00 | 0.90384D-03 | 0.70291D+02 | 0.68483D+02 | 0.24032D+00 | 0.42356D+01 | 0.13792D+04 |
| 30.00 | 0.90559D-03 | 0.11265D+03 | 0.11084D+03 | 0.38240D+00 | 0.42345D+01 | 0.14076D+04 |
| 40.00 | 0.90831D-03 | 0.15496D+03 | 0.15314D+03 | 0.51972D+00 | 0.42267D+01 | 0.14296D+04 |
| 50.00 | 0.91188D-03 | 0.19717D+03 | 0.19535D+03 | 0.65241D+00 | 0.42155D+01 | 0.14456D+04 |
| 60.00 | 0.91617D-03 | 0.23926D+03 | 0.23743D+03 | 0.78070D+00 | 0.42028D+01 | 0.14560D+04 |
| 70.00 | 0.92112D-03 | 0.28123D+03 | 0.27938D+03 | 0.90480D+00 | 0.41897D+01 | 0.14613D+04 |
| 80.00 | 0.92668D-03 | 0.32306D+03 | 0.32121D+03 | 0.10250D+01 | 0.41771D+01 | 0.14621D+04 |
| 90.00 | 0.93282D-03 | 0.36477D+03 | 0.36291D+03 | 0.11414D+01 | 0.41659D+01 | 0.14589D+04 |
| 100.00 | 0.93954D-03 | 0.40639D+03 | 0.40451D+03 | 0.12545D+01 | 0.41570D+01 | 0.14519D+04 |
| 110.00 | 0.94683D-03 | 0.44792D+03 | 0.44603D+03 | 0.13643D+01 | 0.41511D+01 | 0.14417D+04 |
| 120.00 | 0.95470D-03 | 0.48942D+03 | 0.48751D+03 | 0.14712D+01 | 0.41488D+01 | 0.14286D+04 |
| 130.00 | 0.96318D-03 | 0.53091D+03 | 0.52899D+03 | 0.15755D+01 | 0.41508D+01 | 0.14130D+04 |
| 140.00 | 0.97230D-03 | 0.57245D+03 | 0.57051D+03 | 0.16772D+01 | 0.41573D+01 | 0.13949D+04 |
| 150.00 | 0.98209D-03 | 0.61408D+03 | 0.61211D+03 | 0.17768D+01 | 0.41689D+01 | 0.13748D+04 |
| 160.00 | 0.99260D-03 | 0.65585D+03 | 0.65386D+03 | 0.18744D+01 | 0.41856D+01 | 0.13525D+04 |
| 170.00 | 0.10039D-02 | 0.69781D+03 | 0.69580D+03 | 0.19701D+01 | 0.42078D+01 | 0.13282D+04 |
| 180.00 | 0.10160D-02 | 0.74002D+03 | 0.73799D+03 | 0.20643D+01 | 0.42357D+01 | 0.13019D+04 |
| 190.00 | 0.10291D-02 | 0.78254D+03 | 0.78048D+03 | 0.21571D+01 | 0.42697D+01 | 0.12736D+04 |
| 200.00 | 0.10432D-02 | 0.82544D+03 | 0.82335D+03 | 0.22488D+01 | 0.43106D+01 | 0.12430D+04 |
| 210.00 | 0.10584D-02 | 0.86878D+03 | 0.86666D+03 | 0.23394D+01 | 0.43591D+01 | 0.12102D+04 |
| 220.00 | 0.91623D-01 | 0.26154D+04 | 0.24321D+04 | 0.59355D+01 | 0.27190D+01 | 0.48296D+03 |
| 230.00 | 0.94548D-01 | 0.26420D+04 | 0.24529D+04 | 0.59889D+01 | 0.26066D+01 | 0.49042D+03 |
| 240.00 | 0.97362D-01 | 0.26676D+04 | 0.24729D+04 | 0.60393D+01 | 0.25168D+01 | 0.49749D+03 |
| 250.00 | 0.10009D+00 | 0.26924D+04 | 0.24922D+04 | 0.60872D+01 | 0.24442D+01 | 0.50422D+03 |
| 260.00 | 0.10273D+00 | 0.27165D+04 | 0.25111D+04 | 0.61329D+01 | 0.23849D+01 | 0.51067D+03 |
| 270.00 | 0.10532D+00 | 0.27401D+04 | 0.25295D+04 | 0.61767D+01 | 0.23362D+01 | 0.51689D+03 |
| 280.00 | 0.10785D+00 | 0.27633D+04 | 0.25476D+04 | 0.62190D+01 | 0.22960D+01 | 0.52289D+03 |
| 290.00 | 0.11034D+00 | 0.27861D+04 | 0.25654D+04 | 0.62598D+01 | 0.22628D+01 | 0.52871D+03 |
| 300.00 | 0.11279D+00 | 0.28085D+04 | 0.25830D+04 | 0.62994D+01 | 0.22352D+01 | 0.53436D+03 |
| 310.00 | 0.11520D+00 | 0.28308D+04 | 0.26004D+04 | 0.63378D+01 | 0.22124D+01 | 0.53986D+03 |
| 320.00 | 0.11759D+00 | 0.28528D+04 | 0.26176D+04 | 0.63753D+01 | 0.21936D+01 | 0.54523D+03 |
| 330.00 | 0.11994D+00 | 0.28747D+04 | 0.26348D+04 | 0.64118D+01 | 0.21781D+01 | 0.55048D+03 |
| 340.00 | 0.12228D+00 | 0.28964D+04 | 0.26518D+04 | 0.64475D+01 | 0.21655D+01 | 0.55562D+03 |
| 350.00 | 0.12460D+00 | 0.29180D+04 | 0.26688D+04 | 0.64825D+01 | 0.21553D+01 | 0.56066D+03 |
| 360.00 | 0.12689D+00 | 0.29395D+04 | 0.26857D+04 | 0.65167D+01 | 0.21472D+01 | 0.56560D+03 |
| 365.00 | 0.12804D+00 | 0.29502D+04 | 0.26941D+04 | 0.65336D+01 | 0.21438D+01 | 0.56803D+03 |
| 370.00 | 0.12918D+00 | 0.29609D+04 | 0.27026D+04 | 0.65503D+01 | 0.21409D+01 | 0.57045D+03 |
| 370.74 | 0.12934D+00 | 0.29625D+04 | 0.27038D+04 | 0.65528D+01 | 0.21405D+01 | 0.57081D+03 |
| 380.00 | 0.13144D+00 | 0.29823D+04 | 0.27194D+04 | 0.65833D+01 | 0.21361D+01 | 0.57522D+03 |
| 390.00 | 0.13370D+00 | 0.30037D+04 | 0.27363D+04 | 0.66157D+01 | 0.21328D+01 | 0.57992D+03 |
| 400.00 | 0.13594D+00 | 0.30250D+04 | 0.27531D+04 | 0.66476D+01 | 0.21307D+01 | 0.58454D+03 |
| 500.00 | 0.15793D+00 | 0.32386D+04 | 0.29227D+04 | 0.69434D+01 | 0.21511D+01 | 0.62759D+03 |
| 600.00 | 0.17946D+00 | 0.34563D+04 | 0.30974D+04 | 0.72083D+01 | 0.22072D+01 | 0.66642D+03 |
| 700.00 | 0.20076D+00 | 0.36803D+04 | 0.32788D+04 | 0.74511D+01 | 0.22732D+01 | 0.70235D+03 |
| 800.00 | 0.22193D+00 | 0.39110D+04 | 0.34671D+04 | 0.76766D+01 | 0.23392D+01 | 0.73611D+03 |

# Appendix 3

# 熱水力解析用重水蒸気表作成プログラム実行結果

SATURATED WATER PROPERTIES

| PS(I, 1) PRES. (AT) | PS(I, 4) TEMP. (DEG.) | PS(I, 5) ENTH. (KCAL/KG) | PS(I, 6) SPVL. (M**3/KG) | PS(I, 9) DVDP (M**3/KG/AT) | PS(I,10) DHDP (KCAL/KG/AT) | CPFS(I) SPHT. (KCAL/KG/K) |
|---|---|---|---|---|---|---|
| 0.01 | 0.9346D+01 | 0.5589D+01 | 0.9042D-03 | -0.3879D-04 | 0.1448D+04 | 0.1010D+01 |
| 0.02 | 0.1970D+02 | 0.1607D+02 | 0.9047D-03 | 0.8715D-04 | 0.7893D+03 | 0.1013D+01 |
| 0.03 | 0.2618D+02 | 0.2264D+02 | 0.9056D-03 | 0.1012D-03 | 0.5535D+03 | 0.1013D+01 |
| 0.04 | 0.3098D+02 | 0.2750D+02 | 0.9066D-03 | 0.9956D-04 | 0.4306D+03 | 0.1013D+01 |
| 0.05 | 0.3483D+02 | 0.3140D+02 | 0.9076D-03 | 0.9472D-04 | 0.3544D+03 | 0.1012D+01 |
| 0.06 | 0.3807D+02 | 0.3467D+02 | 0.9085D-03 | 0.8946D-04 | 0.3024D+03 | 0.1011D+01 |
| 0.07 | 0.4086D+02 | 0.3750D+02 | 0.9094D-03 | 0.8450D-04 | 0.2645D+03 | 0.1011D+01 |
| 0.08 | 0.4333D+02 | 0.3999D+02 | 0.9102D-03 | 0.7999D-04 | 0.2356D+03 | 0.1010D+01 |
| 0.09 | 0.4555D+02 | 0.4223D+02 | 0.9110D-03 | 0.7596D-04 | 0.2127D+03 | 0.1009D+01 |
| 0.10 | 0.4756D+02 | 0.4426D+02 | 0.9118D-03 | 0.7235D-04 | 0.1942D+03 | 0.1009D+01 |
| 0.20 | 0.6158D+02 | 0.5838D+02 | 0.9177D-03 | 0.5043D-04 | 0.1069D+03 | 0.1004D+01 |
| 0.30 | 0.7048D+02 | 0.6730D+02 | 0.9222D-03 | 0.3999D-04 | 0.7554D+02 | 0.1002D+01 |
| 0.40 | 0.7713D+02 | 0.7396D+02 | 0.9259D-03 | 0.3374D-04 | 0.5914D+02 | 0.9995D+00 |
| 0.50 | 0.8251D+02 | 0.7933D+02 | 0.9290D-03 | 0.2951D-04 | 0.4896D+02 | 0.9979D+00 |
| 0.60 | 0.8705D+02 | 0.8386D+02 | 0.9318D-03 | 0.2644D-04 | 0.4198D+02 | 0.9967D+00 |
| 0.70 | 0.9099D+02 | 0.8779D+02 | 0.9343D-03 | 0.2408D-04 | 0.3687D+02 | 0.9957D+00 |
| 0.80 | 0.9449D+02 | 0.9127D+02 | 0.9366D-03 | 0.2221D-04 | 0.3297D+02 | 0.9949D+00 |
| 0.90 | 0.9764D+02 | 0.9441D+02 | 0.9388D-03 | 0.2068D-04 | 0.2988D+02 | 0.9943D+00 |
| 1.00 | 0.1005D+03 | 0.9727D+02 | 0.9408D-03 | 0.1941D-04 | 0.2737D+02 | 0.9938D+00 |
| 2.00 | 0.1208D+03 | 0.1174D+03 | 0.9563D-03 | 0.1282D-04 | 0.1545D+02 | 0.9920D+00 |
| 3.00 | 0.1339D+03 | 0.1304D+03 | 0.9676D-03 | 0.1013D-04 | 0.1113D+02 | 0.9930D+00 |
| 4.00 | 0.1438D+03 | 0.1403D+03 | 0.9769D-03 | 0.8612D-05 | 0.8841D+01 | 0.9950D+00 |
| 5.00 | 0.1519D+03 | 0.1484D+03 | 0.9850D-03 | 0.7616D-05 | 0.7412D+01 | 0.9975D+00 |
| 6.00 | 0.1588D+03 | 0.1553D+03 | 0.9922D-03 | 0.6905D-05 | 0.6426D+01 | 0.1000D+01 |
| 7.00 | 0.1648D+03 | 0.1613D+03 | 0.9989D-03 | 0.6367D-05 | 0.5702D+01 | 0.1003D+01 |
| 8.00 | 0.1702D+03 | 0.1667D+03 | 0.1005D-02 | 0.5944D-05 | 0.5145D+01 | 0.1006D+01 |
| 9.00 | 0.1751D+03 | 0.1717D+03 | 0.1011D-02 | 0.5602D-05 | 0.4702D+01 | 0.1009D+01 |
| 10.00 | 0.1795D+03 | 0.1762D+03 | 0.1016D-02 | 0.5318D-05 | 0.4341D+01 | 0.1012D+01 |
| 15.00 | 0.1977D+03 | 0.1947D+03 | 0.1040D-02 | 0.4402D-05 | 0.3208D+01 | 0.1028D+01 |
| 20.00 | 0.2115D+03 | 0.2091D+03 | 0.1061D-02 | 0.3899D-05 | 0.2603D+01 | 0.1043D+01 |

## SATURATED STEAM PROPERTIES

| PS(I, 1) PRES. (AT) | PS(I, 4) TEMP. (DEG.) | PS(I, 7) ENTH. (KCAL/KG) | PS(I, 8) SPVL. (M**3/KG) | PS(I,11) DVDP (M**3/KG/AT) | PS(I,12) DHDP (KCAL/KG/AT) | CPGS(I) SPHT. (KCAL/KG/K) |
|---|---|---|---|---|---|---|
| 0.01 | 0.9346D+01 | 0.5572D+03 | 0.1195D+03 | -0.1135D+05 | 0.5741D+03 | 0.4101D+00 |
| 0.02 | 0.1970D+02 | 0.5614D+03 | 0.6192D+02 | -0.2933D+04 | 0.3111D+03 | 0.4130D+00 |
| 0.03 | 0.2618D+02 | 0.5640D+03 | 0.4218D+02 | -0.1330D+04 | 0.2176D+03 | 0.4151D+00 |
| 0.04 | 0.3098D+02 | 0.5659D+03 | 0.3213D+02 | -0.7593D+03 | 0.1690D+03 | 0.4167D+00 |
| 0.05 | 0.3483D+02 | 0.5674D+03 | 0.2602D+02 | -0.4916D+03 | 0.1389D+03 | 0.4181D+00 |
| 0.06 | 0.3807D+02 | 0.5687D+03 | 0.2191D+02 | -0.3446D+03 | 0.1183D+03 | 0.4193D+00 |
| 0.07 | 0.4086D+02 | 0.5698D+03 | 0.1894D+02 | -0.2553D+03 | 0.1033D+03 | 0.4204D+00 |
| 0.08 | 0.4333D+02 | 0.5708D+03 | 0.1670D+02 | -0.1968D+03 | 0.9190D+02 | 0.4213D+00 |
| 0.09 | 0.4555D+02 | 0.5716D+03 | 0.1494D+02 | -0.1565D+03 | 0.8287D+02 | 0.4222D+00 |
| 0.10 | 0.4756D+02 | 0.5724D+03 | 0.1353D+02 | -0.1275D+03 | 0.7555D+02 | 0.4231D+00 |
| 0.20 | 0.6158D+02 | 0.5779D+03 | 0.7048D+01 | -0.3313D+02 | 0.4107D+02 | 0.4295D+00 |
| 0.30 | 0.7048D+02 | 0.5813D+03 | 0.4816D+01 | -0.1507D+02 | 0.2871D+02 | 0.4341D+00 |
| 0.40 | 0.7713D+02 | 0.5838D+03 | 0.3677D+01 | -0.8622D+01 | 0.2224D+02 | 0.4379D+00 |
| 0.50 | 0.8251D+02 | 0.5858D+03 | 0.2982D+01 | -0.5592D+01 | 0.1823D+02 | 0.4411D+00 |
| 0.60 | 0.8705D+02 | 0.5875D+03 | 0.2514D+01 | -0.3927D+01 | 0.1548D+02 | 0.4441D+00 |
| 0.70 | 0.9099D+02 | 0.5889D+03 | 0.2176D+01 | -0.2912D+01 | 0.1347D+02 | 0.4467D+00 |
| 0.80 | 0.9449D+02 | 0.5902D+03 | 0.1920D+01 | -0.2248D+01 | 0.1193D+02 | 0.4492D+00 |
| 0.90 | 0.9764D+02 | 0.5913D+03 | 0.1719D+01 | -0.1790D+01 | 0.1072D+02 | 0.4516D+00 |
| 1.00 | 0.1005D+03 | 0.5924D+03 | 0.1558D+01 | -0.1459D+01 | 0.9730D+01 | 0.4538D+00 |
| 2.00 | 0.1208D+03 | 0.5993D+03 | 0.8136D+00 | -0.3814D+00 | 0.5069D+01 | 0.4721D+00 |
| 3.00 | 0.1339D+03 | 0.6034D+03 | 0.5561D+00 | -0.1742D+00 | 0.3394D+01 | 0.4871D+00 |
| 4.00 | 0.1438D+03 | 0.6063D+03 | 0.4243D+00 | -0.9988D-01 | 0.2518D+01 | 0.5006D+00 |
| 5.00 | 0.1519D+03 | 0.6085D+03 | 0.3438D+00 | -0.6491D-01 | 0.1975D+01 | 0.5132D+00 |
| 6.00 | 0.1588D+03 | 0.6103D+03 | 0.2894D+00 | -0.4564D-01 | 0.1605D+01 | 0.5252D+00 |
| 7.00 | 0.1648D+03 | 0.6118D+03 | 0.2500D+00 | -0.3389D-01 | 0.1336D+01 | 0.5368D+00 |
| 8.00 | 0.1702D+03 | 0.6130D+03 | 0.2203D+00 | -0.2619D-01 | 0.1130D+01 | 0.5480D+00 |
| 9.00 | 0.1751D+03 | 0.6140D+03 | 0.1969D+00 | -0.2086D-01 | 0.9687D+00 | 0.5589D+00 |
| 10.00 | 0.1795D+03 | 0.6150D+03 | 0.1780D+00 | -0.1702D-01 | 0.8380D+00 | 0.5696D+00 |
| 15.00 | 0.1977D+03 | 0.6180D+03 | 0.1205D+00 | -0.7783D-02 | 0.4371D+00 | 0.6211D+00 |
| 20.00 | 0.2115D+03 | 0.6196D+03 | 0.9107D-01 | -0.4467D-02 | 0.2307D+00 | 0.6703D+00 |

SUBCOOLED WATER ENTHALPY (KCAL/KG) : PHL(30,20)

| PS(I,1) PRES. (AT) | PHL(I, 1) ENTH. (KCAL/KG) | PHL(I, 2) ENTH. (KCAL/KG) | PHL(I, 3) ENTH. (KCAL/KG) | PHL(I, 4) ENTH. (KCAL/KG) | PHL(I, 5) ENTH. (KCAL/KG) | PHL(I, 6) ENTH. (KCAL/KG) | PHL(I, 7) ENTH. (KCAL/KG) | PHL(I, 8) ENTH. (KCAL/KG) | PHL(I, 9) ENTH. (KCAL/KG) | PHL(I,10) ENTH. (KCAL/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.5589D+01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.02 | 0.1000D+02 | 0.1607D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.03 | 0.1000D+02 | 0.2000D+02 | 0.2264D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.04 | 0.1000D+02 | 0.2000D+02 | 0.2750D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.3140D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.06 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.3467D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.07 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.3750D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.08 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.3999D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.09 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.4223D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.10 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.4426D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.20 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.5838D+02 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.30 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.6730D+02 | 0.0 | 0.0 | 0.0 |
| 0.40 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.7396D+02 | 0.0 | 0.0 |
| 0.50 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.7933D+02 | 0.0 | 0.0 |
| 0.60 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.8386D+02 | 0.0 |
| 0.70 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.8779D+02 | 0.0 |
| 0.80 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.9127D+02 |
| 0.90 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.9441D+02 |
| 1.00 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.9727D+02 |
| 2.00 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.1000D+03 |
| 3.00 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.1000D+03 |
| 4.00 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.1000D+03 |
| 5.00 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.1000D+03 |
| 6.00 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.1000D+03 |
| 7.00 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.1000D+03 |
| 8.00 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.1000D+03 |
| 9.00 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.1000D+03 |
| 10.00 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.1000D+03 |
| 15.00 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.1000D+03 |
| 20.00 | 0.1000D+02 | 0.2000D+02 | 0.3000D+02 | 0.4000D+02 | 0.5000D+02 | 0.6000D+02 | 0.7000D+02 | 0.8000D+02 | 0.9000D+02 | 0.1000D+03 |

SUBCOOLED WATER ENTHALPY (KCAL/KG) : PHL(30,20)

| PS(1,1) PRES. (AT) | PHL(I,11) ENTH. (KCAL/KG) | PHL(I,12) ENTH. (KCAL/KG) | PHL(I,13) ENTH. (KCAL/KG) | PHL(I,14) ENTH. (KCAL/KG) | PHL(I,15) ENTH. (KCAL/KG) | PHL(I,16) ENTH. (KCAL/KG) | PHL(I,17) ENTH. (KCAL/KG) | PHL(I,18) ENTH. (KCAL/KG) | PHL(I,19) ENTH. (KCAL/KG) | PHL(I,20) ENTH. (KCAL/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.08 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.00 | 0.1100D+03 | 0.1174D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.00 | 0.1100D+03 | 0.1200D+03 | 0.1300D+03 | 0.1304D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.00 | 0.1100D+03 | 0.1200D+03 | 0.1300D+03 | 0.1400D+03 | 0.1403D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.00 | 0.1100D+03 | 0.1200D+03 | 0.1300D+03 | 0.1400D+03 | 0.1484D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.00 | 0.1100D+03 | 0.1200D+03 | 0.1300D+03 | 0.1400D+03 | 0.1500D+03 | 0.1553D+03 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.00 | 0.1100D+03 | 0.1200D+03 | 0.1300D+03 | 0.1400D+03 | 0.1500D+03 | 0.1600D+03 | 0.1613D+03 | 0.0 | 0.0 | 0.0 |
| 8.00 | 0.1100D+03 | 0.1200D+03 | 0.1300D+03 | 0.1400D+03 | 0.1500D+03 | 0.1600D+03 | 0.1667D+03 | 0.0 | 0.0 | 0.0 |
| 9.00 | 0.1100D+03 | 0.1200D+03 | 0.1300D+03 | 0.1400D+03 | 0.1500D+03 | 0.1600D+03 | 0.1700D+03 | 0.1717D+03 | 0.0 | 0.0 |
| 10.00 | 0.1100D+03 | 0.1200D+03 | 0.1300D+03 | 0.1400D+03 | 0.1500D+03 | 0.1600D+03 | 0.1700D+03 | 0.1762D+03 | 0.0 | 0.0 |
| 15.00 | 0.1100D+03 | 0.1200D+03 | 0.1300D+03 | 0.1400D+03 | 0.1500D+03 | 0.1600D+03 | 0.1700D+03 | 0.1800D+03 | 0.1900D+03 | 0.1947D+03 |
| 20.00 | 0.1100D+03 | 0.1200D+03 | 0.1300D+03 | 0.1400D+03 | 0.1500D+03 | 0.1600D+03 | 0.1700D+03 | 0.1800D+03 | 0.1900D+03 | 0.2000D+03 |

SUBCOOLED WATER TEMPERATURE (DEG.) : PTL(30,20)

| PS(I,1) PRES. (AT) | PTL(I, 1) TEMP. (DEG.) | PTL(I, 2) TEMP. (DEG.) | PTL(I, 3) TEMP. (DEG.) | PTL(I, 4) TEMP. (DEG.) | PTL(I, 5) TEMP. (DEG.) | PTL(I, 6) TEMP. (DEG.) | PTL(I, 7) TEMP. (DEG.) | PTL(I, 8) TEMP. (DEG.) | PTL(I, 9) TEMP. (DEG.) | PTL(I,10) TEMP. (DEG.) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.9346D+01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.02 | 0.1371D+02 | 0.1970D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.03 | 0.1371D+02 | 0.2358D+02 | 0.2618D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.04 | 0.1371D+02 | 0.2358D+02 | 0.3098D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.1371D+02 | 0.2358D+02 | 0.3345D+02 | 0.3483D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.06 | 0.1371D+02 | 0.2358D+02 | 0.3345D+02 | 0.3807D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.07 | 0.1371D+02 | 0.2358D+02 | 0.3345D+02 | 0.4086D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.08 | 0.1371D+02 | 0.2358D+02 | 0.3345D+02 | 0.4333D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.09 | 0.1371D+02 | 0.2358D+02 | 0.3345D+02 | 0.4334D+02 | 0.4555D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.10 | 0.1371D+02 | 0.2358D+02 | 0.3345D+02 | 0.4334D+02 | 0.4756D+02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.20 | 0.1370D+02 | 0.2357D+02 | 0.3345D+02 | 0.4334D+02 | 0.5325D+02 | 0.6158D+02 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.30 | 0.1370D+02 | 0.2357D+02 | 0.3345D+02 | 0.4334D+02 | 0.5325D+02 | 0.6320D+02 | 0.7048D+02 | 0.0 | 0.0 | 0.0 |
| 0.40 | 0.1370D+02 | 0.2357D+02 | 0.3344D+02 | 0.4333D+02 | 0.5325D+02 | 0.6320D+02 | 0.7317D+02 | 0.7713D+02 | 0.0 | 0.0 |
| 0.50 | 0.1370D+02 | 0.2357D+02 | 0.3344D+02 | 0.4333D+02 | 0.5325D+02 | 0.6319D+02 | 0.7317D+02 | 0.8251D+02 | 0.0 | 0.0 |
| 0.60 | 0.1370D+02 | 0.2357D+02 | 0.3344D+02 | 0.4333D+02 | 0.5325D+02 | 0.6319D+02 | 0.7317D+02 | 0.8318D+02 | 0.8705D+02 | 0.0 |
| 0.70 | 0.1369D+02 | 0.2357D+02 | 0.3344D+02 | 0.4333D+02 | 0.5324D+02 | 0.6319D+02 | 0.7317D+02 | 0.8318D+02 | 0.9099D+02 | 0.0 |
| 0.80 | 0.1369D+02 | 0.2356D+02 | 0.3344D+02 | 0.4333D+02 | 0.5324D+02 | 0.6319D+02 | 0.7317D+02 | 0.8317D+02 | 0.9321D+02 | 0.9449D+02 |
| 0.90 | 0.1369D+02 | 0.2356D+02 | 0.3343D+02 | 0.4332D+02 | 0.5324D+02 | 0.6319D+02 | 0.7316D+02 | 0.8317D+02 | 0.9321D+02 | 0.9764D+02 |
| 1.00 | 0.1369D+02 | 0.2356D+02 | 0.3343D+02 | 0.4332D+02 | 0.5324D+02 | 0.6319D+02 | 0.7316D+02 | 0.8317D+02 | 0.9321D+02 | 0.1005D+03 |
| 2.00 | 0.1367D+02 | 0.2354D+02 | 0.3341D+02 | 0.4330D+02 | 0.5322D+02 | 0.6317D+02 | 0.7315D+02 | 0.8315D+02 | 0.9319D+02 | 0.1032D+03 |
| 3.00 | 0.1365D+02 | 0.2352D+02 | 0.3339D+02 | 0.4329D+02 | 0.5320D+02 | 0.6315D+02 | 0.7313D+02 | 0.8314D+02 | 0.9317D+02 | 0.1032D+03 |
| 4.00 | 0.1363D+02 | 0.2350D+02 | 0.3337D+02 | 0.4327D+02 | 0.5318D+02 | 0.6313D+02 | 0.7311D+02 | 0.8312D+02 | 0.9316D+02 | 0.1032D+03 |
| 5.00 | 0.1360D+02 | 0.2348D+02 | 0.3336D+02 | 0.4325D+02 | 0.5317D+02 | 0.6311D+02 | 0.7309D+02 | 0.8310D+02 | 0.9314D+02 | 0.1032D+03 |
| 6.00 | 0.1358D+02 | 0.2346D+02 | 0.3334D+02 | 0.4323D+02 | 0.5315D+02 | 0.6310D+02 | 0.7308D+02 | 0.8309D+02 | 0.9313D+02 | 0.1032D+03 |
| 7.00 | 0.1356D+02 | 0.2344D+02 | 0.3332D+02 | 0.4321D+02 | 0.5313D+02 | 0.6308D+02 | 0.7306D+02 | 0.8307D+02 | 0.9311D+02 | 0.1032D+03 |
| 8.00 | 0.1354D+02 | 0.2342D+02 | 0.3330D+02 | 0.4319D+02 | 0.5311D+02 | 0.6306D+02 | 0.7304D+02 | 0.8305D+02 | 0.9309D+02 | 0.1032D+03 |
| 9.00 | 0.1352D+02 | 0.2340D+02 | 0.3328D+02 | 0.4317D+02 | 0.5309D+02 | 0.6304D+02 | 0.7303D+02 | 0.8304D+02 | 0.9308D+02 | 0.1031D+03 |
| 10.00 | 0.1350D+02 | 0.2338D+02 | 0.3326D+02 | 0.4315D+02 | 0.5308D+02 | 0.6303D+02 | 0.7301D+02 | 0.8302D+02 | 0.9306D+02 | 0.1031D+03 |
| 15.00 | 0.1340D+02 | 0.2328D+02 | 0.3316D+02 | 0.4306D+02 | 0.5299D+02 | 0.6294D+02 | 0.7292D+02 | 0.8294D+02 | 0.9298D+02 | 0.1030D+03 |
| 20.00 | 0.1329D+02 | 0.2318D+02 | 0.3307D+02 | 0.4297D+02 | 0.5289D+02 | 0.6285D+02 | 0.7284D+02 | 0.8285D+02 | 0.9290D+02 | 0.1030D+03 |

SUBCOOLED WATER TEMPERATURE (DEG.) : PTL(30,20)

| PS(I,1) PRES. (AT) | PTL(I,11) TEMP. (DEG.) | PTL(I,12) TEMP. (DEG.) | PTL(I,13) TEMP. (DEG.) | PTL(I,14) TEMP. (DEG.) | PTL(I,15) TEMP. (DEG.) | PTL(I,16) TEMP. (DEG.) | PTL(I,17) TEMP. (DEG.) | PTL(I,18) TEMP. (DEG.) | PTL(I,19) TEMP. (DEG.) | PTL(I,20) TEMP. (DEG.) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.08 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.00 | 0.1133D+03 | 0.1208D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.00 | 0.1133D+03 | 0.1234D+03 | 0.1335D+03 | 0.1339D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.00 | 0.1133D+03 | 0.1234D+03 | 0.1335D+03 | 0.1435D+03 | 0.1438D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.00 | 0.1133D+03 | 0.1234D+03 | 0.1334D+03 | 0.1435D+03 | 0.1519D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.00 | 0.1133D+03 | 0.1233D+03 | 0.1334D+03 | 0.1435D+03 | 0.1535D+03 | 0.1588D+03 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.00 | 0.1132D+03 | 0.1233D+03 | 0.1334D+03 | 0.1435D+03 | 0.1535D+03 | 0.1635D+03 | 0.1648D+03 | 0.0 | 0.0 | 0.0 |
| 8.00 | 0.1132D+03 | 0.1233D+03 | 0.1334D+03 | 0.1435D+03 | 0.1535D+03 | 0.1635D+03 | 0.1702D+03 | 0.0 | 0.0 | 0.0 |
| 9.00 | 0.1132D+03 | 0.1233D+03 | 0.1334D+03 | 0.1434D+03 | 0.1535D+03 | 0.1635D+03 | 0.1734D+03 | 0.1751D+03 | 0.0 | 0.0 |
| 10.00 | 0.1132D+03 | 0.1233D+03 | 0.1334D+03 | 0.1434D+03 | 0.1535D+03 | 0.1635D+03 | 0.1734D+03 | 0.1795D+03 | 0.0 | 0.0 |
| 15.00 | 0.1131D+03 | 0.1232D+03 | 0.1333D+03 | 0.1434D+03 | 0.1534D+03 | 0.1634D+03 | 0.1734D+03 | 0.1833D+03 | 0.1931D+03 | 0.1977D+03 |
| 20.00 | 0.1130D+03 | 0.1231D+03 | 0.1332D+03 | 0.1433D+03 | 0.1533D+03 | 0.1634D+03 | 0.1733D+03 | 0.1832D+03 | 0.1930D+03 | 0.2028D+03 |

SUBCOOLED WATER SPECIFIC VOLUME (M**3/KG) : PD(30,20)

| PS(I,1) PRES. (MT) | PD(I, 1) SPVL. (M**3/KG) | PD(I, 2) SPVL. (M**3/KG) | PD(I, 3) SPVL. (M**3/KG) | PD(I, 4) SPVL. (M**3/KG) | PD(I, 5) SPVL. (M**3/KG) | PD(I, 6) SPVL. (M**3/KG) | PD(I, 7) SPVL. (M**3/KG) | PD(I, 8) SPVL. (M**3/KG) | PD(I, 9) SPVL. (M**3/KG) | PD(I,10) SPVL. (M**3/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.9042D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.02 | 0.9042D-03 | 0.9047D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.03 | 0.9042D-03 | 0.9052D-03 | 0.9056D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.04 | 0.9042D-03 | 0.9052D-03 | 0.9066D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.9042D-03 | 0.9052D-03 | 0.9073D-03 | 0.9076D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.06 | 0.9042D-03 | 0.9052D-03 | 0.9073D-03 | 0.9085D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.07 | 0.9042D-03 | 0.9052D-03 | 0.9073D-03 | 0.9094D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.08 | 0.9042D-03 | 0.9052D-03 | 0.9073D-03 | 0.9102D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.09 | 0.9042D-03 | 0.9052D-03 | 0.9073D-03 | 0.9102D-03 | 0.9110D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.10 | 0.9042D-03 | 0.9052D-03 | 0.9073D-03 | 0.9102D-03 | 0.9118D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.20 | 0.9042D-03 | 0.9052D-03 | 0.9072D-03 | 0.9102D-03 | 0.9140D-03 | 0.9177D-03 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.30 | 0.9042D-03 | 0.9052D-03 | 0.9072D-03 | 0.9102D-03 | 0.9140D-03 | 0.9185D-03 | 0.9222D-03 | 0.0 | 0.0 | 0.0 |
| 0.40 | 0.9042D-03 | 0.9052D-03 | 0.9072D-03 | 0.9102D-03 | 0.9140D-03 | 0.9185D-03 | 0.9237D-03 | 0.9259D-03 | 0.0 | 0.0 |
| 0.50 | 0.9042D-03 | 0.9052D-03 | 0.9072D-03 | 0.9102D-03 | 0.9140D-03 | 0.9185D-03 | 0.9236D-03 | 0.9290D-03 | 0.0 | 0.0 |
| 0.60 | 0.9042D-03 | 0.9052D-03 | 0.9072D-03 | 0.9102D-03 | 0.9140D-03 | 0.9185D-03 | 0.9236D-03 | 0.9294D-03 | 0.9318D-03 | 0.0 |
| 0.70 | 0.9042D-03 | 0.9052D-03 | 0.9072D-03 | 0.9102D-03 | 0.9140D-03 | 0.9185D-03 | 0.9236D-03 | 0.9294D-03 | 0.9343D-03 | 0.0 |
| 0.80 | 0.9042D-03 | 0.9052D-03 | 0.9072D-03 | 0.9102D-03 | 0.9140D-03 | 0.9185D-03 | 0.9236D-03 | 0.9294D-03 | 0.9358D-03 | 0.9366D-03 |
| 0.90 | 0.9042D-03 | 0.9052D-03 | 0.9072D-03 | 0.9102D-03 | 0.9140D-03 | 0.9185D-03 | 0.9236D-03 | 0.9294D-03 | 0.9358D-03 | 0.9388D-03 |
| 1.00 | 0.9042D-03 | 0.9052D-03 | 0.9072D-03 | 0.9102D-03 | 0.9140D-03 | 0.9185D-03 | 0.9236D-03 | 0.9294D-03 | 0.9358D-03 | 0.9408D-03 |
| 2.00 | 0.9041D-03 | 0.9051D-03 | 0.9072D-03 | 0.9101D-03 | 0.9139D-03 | 0.9184D-03 | 0.9236D-03 | 0.9293D-03 | 0.9357D-03 | 0.9427D-03 |
| 3.00 | 0.9041D-03 | 0.9051D-03 | 0.9071D-03 | 0.9101D-03 | 0.9139D-03 | 0.9184D-03 | 0.9235D-03 | 0.9293D-03 | 0.9357D-03 | 0.9426D-03 |
| 4.00 | 0.9041D-03 | 0.9050D-03 | 0.9071D-03 | 0.9101D-03 | 0.9138D-03 | 0.9183D-03 | 0.9235D-03 | 0.9292D-03 | 0.9356D-03 | 0.9426D-03 |
| 5.00 | 0.9040D-03 | 0.9050D-03 | 0.9070D-03 | 0.9100D-03 | 0.9138D-03 | 0.9183D-03 | 0.9234D-03 | 0.9292D-03 | 0.9356D-03 | 0.9425D-03 |
| 6.00 | 0.9040D-03 | 0.9049D-03 | 0.9070D-03 | 0.9100D-03 | 0.9137D-03 | 0.9182D-03 | 0.9234D-03 | 0.9291D-03 | 0.9355D-03 | 0.9425D-03 |
| 7.00 | 0.9039D-03 | 0.9049D-03 | 0.9069D-03 | 0.9099D-03 | 0.9137D-03 | 0.9182D-03 | 0.9233D-03 | 0.9291D-03 | 0.9354D-03 | 0.9424D-03 |
| 8.00 | 0.9039D-03 | 0.9048D-03 | 0.9069D-03 | 0.9099D-03 | 0.9136D-03 | 0.9181D-03 | 0.9233D-03 | 0.9290D-03 | 0.9354D-03 | 0.9423D-03 |
| 9.00 | 0.9038D-03 | 0.9048D-03 | 0.9068D-03 | 0.9098D-03 | 0.9136D-03 | 0.9181D-03 | 0.9232D-03 | 0.9290D-03 | 0.9353D-03 | 0.9423D-03 |
| 10.00 | 0.9038D-03 | 0.9047D-03 | 0.9068D-03 | 0.9098D-03 | 0.9135D-03 | 0.9180D-03 | 0.9232D-03 | 0.9289D-03 | 0.9353D-03 | 0.9422D-03 |
| 15.00 | 0.9036D-03 | 0.9045D-03 | 0.9066D-03 | 0.9095D-03 | 0.9133D-03 | 0.9178D-03 | 0.9229D-03 | 0.9287D-03 | 0.9350D-03 | 0.9419D-03 |
| 20.00 | 0.9033D-03 | 0.9043D-03 | 0.9063D-03 | 0.9093D-03 | 0.9131D-03 | 0.9175D-03 | 0.9227D-03 | 0.9284D-03 | 0.9347D-03 | 0.9417D-03 |

SUBCOOLED WATER SPECIFIC VOLUME (M**3/KG) : PD(30,20)

| PS(I,1) PRES. (AT) | PD(I,11) SPVL. (M**3/KG) | PD(I,12) SPVL. (M**3/KG) | PD(I,13) SPVL. (M**3/KG) | PD(I,14) SPVL. (M**3/KG) | PD(I,15) SPVL. (M**3/KG) | PD(I,16) SPVL. (M**3/KG) | PD(I,17) SPVL. (M**3/KG) | PD(I,18) SPVL. (M**3/KG) | PD(I,19) SPVL. (M**3/KG) | PD(I,20) SPVL. (M**3/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.08 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.00 | 0.9503D-03 | 0.9563D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.00 | 0.9502D-03 | 0.9584D-03 | 0.9672D-03 | 0.9676D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.00 | 0.9501D-03 | 0.9583D-03 | 0.9671D-03 | 0.9766D-03 | 0.9769D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.00 | 0.9501D-03 | 0.9583D-03 | 0.9671D-03 | 0.9765D-03 | 0.9850D-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.00 | 0.9500D-03 | 0.9582D-03 | 0.9670D-03 | 0.9765D-03 | 0.9866D-03 | 0.9922D-03 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.00 | 0.9500D-03 | 0.9581D-03 | 0.9669D-03 | 0.9764D-03 | 0.9865D-03 | 0.9974D-03 | 0.9989D-03 | 0.0 | 0.0 | 0.0 |
| 8.00 | 0.9499D-03 | 0.9581D-03 | 0.9669D-03 | 0.9763D-03 | 0.9864D-03 | 0.9973D-03 | 0.1005D-02 | 0.0 | 0.0 | 0.0 |
| 9.00 | 0.9498D-03 | 0.9580D-03 | 0.9668D-03 | 0.9763D-03 | 0.9864D-03 | 0.9972D-03 | 0.1009D-02 | 0.1011D-02 | 0.0 | 0.0 |
| 10.00 | 0.9498D-03 | 0.9579D-03 | 0.9667D-03 | 0.9762D-03 | 0.9863D-03 | 0.9971D-03 | 0.1009D-02 | 0.1016D-02 | 0.0 | 0.0 |
| 15.00 | 0.9495D-03 | 0.9576D-03 | 0.9664D-03 | 0.9758D-03 | 0.9859D-03 | 0.9967D-03 | 0.1008D-02 | 0.1021D-02 | 0.1034D-02 | 0.1040D-02 |
| 20.00 | 0.9492D-03 | 0.9573D-03 | 0.9661D-03 | 0.9755D-03 | 0.9855D-03 | 0.9963D-03 | 0.1008D-02 | 0.1020D-02 | 0.1033D-02 | 0.1047D-02 |

PRESSURE DERIVATIVE OF SUBCOOLED WATER SPECIFIC VOLUME : PDP(30,20)

| PS(I,1) PRES. (AT) | PDP(I, 1) DVDP | PDP(I, 2) DVDP | PDP(I, 3) DVDP | PDP(I, 4) DVDP | PDP(I, 5) DVDP | PDP(I, 6) DVDP | PDP(I, 7) DVDP | PDP(I, 8) DVDP | PDP(I, 9) DVDP | PDP(I,10) DVDP |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | -0.4404D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.02 | -0.4441D-07 | -0.4485D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.03 | -0.4441D-07 | -0.4513D-07 | -0.4533D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.04 | -0.4441D-07 | -0.4513D-07 | -0.4572D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | -0.4441D-07 | -0.4513D-07 | -0.4593D-07 | -0.4606D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.06 | -0.4441D-07 | -0.4513D-07 | -0.4593D-07 | -0.4637D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.07 | -0.4441D-07 | -0.4513D-07 | -0.4593D-07 | -0.4665D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.08 | -0.4441D-07 | -0.4513D-07 | -0.4593D-07 | -0.4692D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.09 | -0.4441D-07 | -0.4513D-07 | -0.4593D-07 | -0.4692D-07 | -0.4717D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.10 | -0.4441D-07 | -0.4513D-07 | -0.4593D-07 | -0.4692D-07 | -0.4740D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.20 | -0.4440D-07 | -0.4513D-07 | -0.4593D-07 | -0.4692D-07 | -0.4812D-07 | -0.4930D-07 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.30 | -0.4440D-07 | -0.4512D-07 | -0.4593D-07 | -0.4691D-07 | -0.4812D-07 | -0.4955D-07 | -0.5074D-07 | 0.0 | 0.0 | 0.0 |
| 0.40 | -0.4440D-07 | -0.4512D-07 | -0.4593D-07 | -0.4691D-07 | -0.4812D-07 | -0.4955D-07 | -0.5122D-07 | -0.5195D-07 | 0.0 | 0.0 |
| 0.50 | -0.4440D-07 | -0.4512D-07 | -0.4592D-07 | -0.4691D-07 | -0.4811D-07 | -0.4954D-07 | -0.5122D-07 | -0.5301D-07 | 0.0 | 0.0 |
| 0.60 | -0.4440D-07 | -0.4512D-07 | -0.4592D-07 | -0.4691D-07 | -0.4811D-07 | -0.4954D-07 | -0.5122D-07 | -0.5315D-07 | -0.5397D-07 | 0.0 |
| 0.70 | -0.4440D-07 | -0.4512D-07 | -0.4592D-07 | -0.4691D-07 | -0.4811D-07 | -0.4954D-07 | -0.5121D-07 | -0.5315D-07 | -0.5485D-07 | 0.0 |
| 0.80 | -0.4440D-07 | -0.4512D-07 | -0.4592D-07 | -0.4691D-07 | -0.4811D-07 | -0.4954D-07 | -0.5121D-07 | -0.5314D-07 | -0.5536D-07 | -0.5566D-07 |
| 0.90 | -0.4439D-07 | -0.4511D-07 | -0.4592D-07 | -0.4690D-07 | -0.4811D-07 | -0.4954D-07 | -0.5121D-07 | -0.5314D-07 | -0.5536D-07 | -0.5642D-07 |
| 1.00 | -0.4439D-07 | -0.4511D-07 | -0.4592D-07 | -0.4690D-07 | -0.4810D-07 | -0.4953D-07 | -0.5121D-07 | -0.5314D-07 | -0.5535D-07 | -0.5715D-07 |
| 2.00 | -0.4438D-07 | -0.4510D-07 | -0.4590D-07 | -0.4689D-07 | -0.4809D-07 | -0.4951D-07 | -0.5119D-07 | -0.5312D-07 | -0.5533D-07 | -0.5784D-07 |
| 3.00 | -0.4437D-07 | -0.4508D-07 | -0.4588D-07 | -0.4687D-07 | -0.4807D-07 | -0.4949D-07 | -0.5116D-07 | -0.5309D-07 | -0.5530D-07 | -0.5781D-07 |
| 4.00 | -0.4435D-07 | -0.4507D-07 | -0.4587D-07 | -0.4685D-07 | -0.4805D-07 | -0.4947D-07 | -0.5114D-07 | -0.5307D-07 | -0.5528D-07 | -0.5778D-07 |
| 5.00 | -0.4434D-07 | -0.4505D-07 | -0.4585D-07 | -0.4683D-07 | -0.4803D-07 | -0.4945D-07 | -0.5112D-07 | -0.5305D-07 | -0.5525D-07 | -0.5775D-07 |
| 6.00 | -0.4433D-07 | -0.4504D-07 | -0.4583D-07 | -0.4682D-07 | -0.4801D-07 | -0.4943D-07 | -0.5110D-07 | -0.5302D-07 | -0.5523D-07 | -0.5773D-07 |
| 7.00 | -0.4431D-07 | -0.4502D-07 | -0.4582D-07 | -0.4680D-07 | -0.4799D-07 | -0.4941D-07 | -0.5108D-07 | -0.5300D-07 | -0.5520D-07 | -0.5770D-07 |
| 8.00 | -0.4430D-07 | -0.4501D-07 | -0.4580D-07 | -0.4678D-07 | -0.4797D-07 | -0.4939D-07 | -0.5106D-07 | -0.5298D-07 | -0.5518D-07 | -0.5767D-07 |
| 9.00 | -0.4429D-07 | -0.4499D-07 | -0.4579D-07 | -0.4676D-07 | -0.4796D-07 | -0.4938D-07 | -0.5104D-07 | -0.5296D-07 | -0.5515D-07 | -0.5765D-07 |
| 10.00 | -0.4427D-07 | -0.4498D-07 | -0.4577D-07 | -0.4675D-07 | -0.4794D-07 | -0.4936D-07 | -0.5101D-07 | -0.5293D-07 | -0.5513D-07 | -0.5762D-07 |
| 15.00 | -0.4421D-07 | -0.4490D-07 | -0.4569D-07 | -0.4666D-07 | -0.4785D-07 | -0.4926D-07 | -0.5091D-07 | -0.5282D-07 | -0.5500D-07 | -0.5748D-07 |
| 20.00 | -0.4414D-07 | -0.4483D-07 | -0.4561D-07 | -0.4658D-07 | -0.4776D-07 | -0.4916D-07 | -0.5080D-07 | -0.5270D-07 | -0.5488D-07 | -0.5735D-07 |

PRESSURE DERIVATIVE OF SUBCOOLED WATER SPECIFIC VOLUME : PDP(30,20)

| PS(I,1) PRES. (AT) | PDP(I,11) DVDP | PDP(I,12) DVDP | PDP(I,13) DVDP | PDP(I,14) DVDP | PDP(I,15) DVDP | PDP(I,16) DVDP | PDP(I,17) DVDP | PDP(I,18) DVDP | PDP(I,19) DVDP | PDP(I,20) DVDP |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.08 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.00 | -0.6067D-07 | -0.6299D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.00 | -0.6064D-07 | -0.6381D-07 | -0.6736D-07 | -0.6753D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.00 | -0.6061D-07 | -0.6378D-07 | -0.6733D-07 | -0.7129D-07 | -0.7143D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.00 | -0.6058D-07 | -0.6375D-07 | -0.6729D-07 | -0.7125D-07 | -0.7493D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.00 | -0.6055D-07 | -0.6371D-07 | -0.6726D-07 | -0.7121D-07 | -0.7563D-07 | -0.7817D-07 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.00 | -0.6052D-07 | -0.6368D-07 | -0.6722D-07 | -0.7117D-07 | -0.7558D-07 | -0.8051D-07 | -0.8121D-07 | 0.0 | 0.0 | 0.0 |
| 8.00 | -0.6049D-07 | -0.6365D-07 | -0.6718D-07 | -0.7113D-07 | -0.7553D-07 | -0.8046D-07 | -0.8412D-07 | 0.0 | 0.0 | 0.0 |
| 9.00 | -0.6046D-07 | -0.6361D-07 | -0.6715D-07 | -0.7109D-07 | -0.7549D-07 | -0.8041D-07 | -0.8593D-07 | -0.8691D-07 | 0.0 | 0.0 |
| 10.00 | -0.6043D-07 | -0.6358D-07 | -0.6711D-07 | -0.7105D-07 | -0.7544D-07 | -0.8036D-07 | -0.8587D-07 | -0.8961D-07 | 0.0 | 0.0 |
| 15.00 | -0.6028D-07 | -0.6342D-07 | -0.6693D-07 | -0.7085D-07 | -0.7522D-07 | -0.8011D-07 | -0.8558D-07 | -0.9174D-07 | -0.9871D-07 | -0.1023D-06 |
| 20.00 | -0.6013D-07 | -0.6326D-07 | -0.6675D-07 | -0.7065D-07 | -0.7500D-07 | -0.7986D-07 | -0.8530D-07 | -0.9142D-07 | -0.9834D-07 | -0.1062D-06 |

ENTHALPY DERIVATIVE OF SUBCOOLED WATER SPECIFIC VOLUME : PDD(30,20)

| PS(I,1) PRES. (AI) | PDD(I, 1) DVDH | PDD(I, 2) DVDH | PDD(I, 3) DVDH | PDD(I, 4) DVDH | PDD(I, 5) DVDH | PDD(I, 6) DVDH | PDD(I, 7) DVDH | PDD(I, 8) DVDH | PDD(I, 9) DVDH | PDD(I,10) DVDH |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | -0.2675D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.02 | 0.3451D-07 | 0.1105D-06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.03 | 0.3451D-07 | 0.1549D-06 | 0.1830D-06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.04 | 0.3451D-07 | 0.1549D-06 | 0.2313D-06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.3451D-07 | 0.1549D-06 | 0.2547D-06 | 0.2674D-06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.06 | 0.3451D-07 | 0.1549D-06 | 0.2547D-06 | 0.2960D-06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.07 | 0.3451D-07 | 0.1549D-06 | 0.2547D-06 | 0.3196D-06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.08 | 0.3451D-07 | 0.1549D-06 | 0.2547D-06 | 0.3398D-06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.09 | 0.3451D-07 | 0.1549D-06 | 0.2547D-06 | 0.3399D-06 | 0.3573D-06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.10 | 0.3451D-07 | 0.1549D-06 | 0.2547D-06 | 0.3399D-06 | 0.3729D-06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.20 | 0.3450D-07 | 0.1549D-06 | 0.2547D-06 | 0.3398D-06 | 0.4149D-06 | 0.4724D-06 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.30 | 0.3449D-07 | 0.1549D-06 | 0.2547D-06 | 0.3398D-06 | 0.4149D-06 | 0.4831D-06 | 0.5300D-06 | 0.0 | 0.0 | 0.0 |
| 0.40 | 0.3449D-07 | 0.1549D-06 | 0.2547D-06 | 0.3398D-06 | 0.4149D-06 | 0.4831D-06 | 0.5469D-06 | 0.5713D-06 | 0.0 | 0.0 |
| 0.50 | 0.3448D-07 | 0.1549D-06 | 0.2546D-06 | 0.3398D-06 | 0.4149D-06 | 0.4831D-06 | 0.5469D-06 | 0.6039D-06 | 0.0 | 0.0 |
| 0.60 | 0.3447D-07 | 0.1549D-06 | 0.2546D-06 | 0.3398D-06 | 0.4149D-06 | 0.4831D-06 | 0.5468D-06 | 0.6080D-06 | 0.6312D-06 | 0.0 |
| 0.70 | 0.3446D-07 | 0.1549D-06 | 0.2546D-06 | 0.3398D-06 | 0.4149D-06 | 0.4831D-06 | 0.5468D-06 | 0.6079D-06 | 0.6547D-06 | 0.0 |
| 0.80 | 0.3445D-07 | 0.1549D-06 | 0.2546D-06 | 0.3398D-06 | 0.4149D-06 | 0.4831D-06 | 0.5468D-06 | 0.6079D-06 | 0.6679D-06 | 0.6754D-06 |
| 0.90 | 0.3445D-07 | 0.1549D-06 | 0.2546D-06 | 0.3398D-06 | 0.4148D-06 | 0.4830D-06 | 0.5468D-06 | 0.6079D-06 | 0.6678D-06 | 0.6942D-06 |
| 1.00 | 0.3444D-07 | 0.1549D-06 | 0.2546D-06 | 0.3398D-06 | 0.4148D-06 | 0.4830D-06 | 0.5468D-06 | 0.6079D-06 | 0.6678D-06 | 0.7113D-06 |
| 2.00 | 0.3436D-07 | 0.1548D-06 | 0.2545D-06 | 0.3397D-06 | 0.4147D-06 | 0.4829D-06 | 0.5466D-06 | 0.6077D-06 | 0.6676D-06 | 0.7274D-06 |
| 3.00 | 0.3429D-07 | 0.1547D-06 | 0.2544D-06 | 0.3395D-06 | 0.4146D-06 | 0.4827D-06 | 0.5464D-06 | 0.6075D-06 | 0.6673D-06 | 0.7271D-06 |
| 4.00 | 0.3421D-07 | 0.1546D-06 | 0.2543D-06 | 0.3394D-06 | 0.4144D-06 | 0.4826D-06 | 0.5462D-06 | 0.6073D-06 | 0.6671D-06 | 0.7269D-06 |
| 5.00 | 0.3414D-07 | 0.1546D-06 | 0.2542D-06 | 0.3393D-06 | 0.4143D-06 | 0.4824D-06 | 0.5460D-06 | 0.6071D-06 | 0.6669D-06 | 0.7266D-06 |
| 6.00 | 0.3406D-07 | 0.1545D-06 | 0.2542D-06 | 0.3392D-06 | 0.4142D-06 | 0.4823D-06 | 0.5459D-06 | 0.6068D-06 | 0.6666D-06 | 0.7263D-06 |
| 7.00 | 0.3398D-07 | 0.1544D-06 | 0.2541D-06 | 0.3391D-06 | 0.4140D-06 | 0.4821D-06 | 0.5457D-06 | 0.6066D-06 | 0.6664D-06 | 0.7261D-06 |
| 8.00 | 0.3391D-07 | 0.1544D-06 | 0.2540D-06 | 0.3390D-06 | 0.4139D-06 | 0.4820D-06 | 0.5455D-06 | 0.6064D-06 | 0.6662D-06 | 0.7258D-06 |
| 9.00 | 0.3383D-07 | 0.1543D-06 | 0.2539D-06 | 0.3389D-06 | 0.4138D-06 | 0.4818D-06 | 0.5453D-06 | 0.6062D-06 | 0.6659D-06 | 0.7255D-06 |
| 10.00 | 0.3376D-07 | 0.1542D-06 | 0.2538D-06 | 0.3388D-06 | 0.4137D-06 | 0.4816D-06 | 0.5452D-06 | 0.6060D-06 | 0.6657D-06 | 0.7253D-06 |
| 15.00 | 0.3339D-07 | 0.1539D-06 | 0.2534D-06 | 0.3382D-06 | 0.4130D-06 | 0.4809D-06 | 0.5443D-06 | 0.6050D-06 | 0.6645D-06 | 0.7240D-06 |
| 20.00 | 0.3302D-07 | 0.1535D-06 | 0.2529D-06 | 0.3377D-06 | 0.4124D-06 | 0.4801D-06 | 0.5434D-06 | 0.6040D-06 | 0.6634D-06 | 0.7226D-06 |

ENTHALPY DERIVATIVE OF SUBCOOLED WATER SPECIFIC VOLUME : PDD(30,20)

| PS(I,1) PRES. (MT) | PDD(I,11) DVDH | PDD(I,12) DVDH | PDD(I,13) DVDH | PDD(I,14) DVDH | PDD(I,15) DVDH | PDD(I,16) DVDH | PDD(I,17) DVDH | PDD(I,18) DVDH | PDD(I,19) DVDH | PDD(I,20) DVDH |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.08 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.00 | 0.7880D-06 | 0.8339D-06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.00 | 0.7877D-06 | 0.8498D-06 | 0.9138D-06 | 0.9167D-06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.00 | 0.7874D-06 | 0.8494D-06 | 0.9135D-06 | 0.9800D-06 | 0.9822D-06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.00 | 0.7871D-06 | 0.8491D-06 | 0.9131D-06 | 0.9796D-06 | 0.1038D-05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.00 | 0.7868D-06 | 0.8488D-06 | 0.9127D-06 | 0.9792D-06 | 0.1049D-05 | 0.1087D-05 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.00 | 0.7865D-06 | 0.8484D-06 | 0.9123D-06 | 0.9787D-06 | 0.1048D-05 | 0.1121D-05 | 0.1131D-05 | 0.0 | 0.0 | 0.0 |
| 8.00 | 0.7862D-06 | 0.8481D-06 | 0.9120D-06 | 0.9783D-06 | 0.1048D-05 | 0.1120D-05 | 0.1172D-05 | 0.0 | 0.0 | 0.0 |
| 9.00 | 0.7859D-06 | 0.8478D-06 | 0.9116D-06 | 0.9779D-06 | 0.1047D-05 | 0.1120D-05 | 0.1197D-05 | 0.1210D-05 | 0.0 | 0.0 |
| 10.00 | 0.7856D-06 | 0.8474D-06 | 0.9112D-06 | 0.9775D-06 | 0.1047D-05 | 0.1119D-05 | 0.1196D-05 | 0.1246D-05 | 0.0 | 0.0 |
| 15.00 | 0.7841D-06 | 0.8458D-06 | 0.9094D-06 | 0.9754D-06 | 0.1044D-05 | 0.1117D-05 | 0.1193D-05 | 0.1274D-05 | 0.1361D-05 | 0.1404D-05 |
| 20.00 | 0.7827D-06 | 0.8441D-06 | 0.9075D-06 | 0.9734D-06 | 0.1042D-05 | 0.1114D-05 | 0.1190D-05 | 0.1271D-05 | 0.1357D-05 | 0.1450D-05 |

SUBCOOLED WATER SPECIFIC HEAT (KCAL/KG/K) : CPF(30,20)

| PS(I,1) PRES. (AT) | CPF(I, 1) SPHT (KCAL/KG/K) | CPF(I, 2) SPHT (KCAL/KG/K) | CPF(I, 3) SPHT (KCAL/KG/K) | CPF(I, 4) SPHT (KCAL/KG/K) | CPF(I, 5) SPHT (KCAL/KG/K) | CPF(I, 6) SPHT (KCAL/KG/K) | CPF(I, 7) SPHT (KCAL/KG/K) | CPF(I, 8) SPHT (KCAL/KG/K) | CPF(I, 9) SPHT (KCAL/KG/K) | CPF(I,10) SPHT (KCAL/KG/K) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.1010D+01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.02 | 0.1012D+01 | 0.1013D+01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.03 | 0.1012D+01 | 0.1013D+01 | 0.1013D+01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.04 | 0.1012D+01 | 0.1013D+01 | 0.1013D+01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1012D+01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.06 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1011D+01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.07 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1011D+01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.08 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.09 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1009D+01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.10 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1009D+01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.20 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.30 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1002D+01 | 0.0 | 0.0 | 0.0 |
| 0.40 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1001D+01 | 0.9995D+00 | 0.0 | 0.0 |
| 0.50 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1001D+01 | 0.9979D+00 | 0.0 | 0.0 |
| 0.60 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1001D+01 | 0.9977D+00 | 0.9967D+00 | 0.0 |
| 0.70 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1001D+01 | 0.9977D+00 | 0.9957D+00 | 0.0 |
| 0.80 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1001D+01 | 0.9977D+00 | 0.9952D+00 | 0.9949D+00 |
| 0.90 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1001D+01 | 0.9977D+00 | 0.9952D+00 | 0.9943D+00 |
| 1.00 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1001D+01 | 0.9977D+00 | 0.9952D+00 | 0.9938D+00 |
| 2.00 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1001D+01 | 0.9977D+00 | 0.9952D+00 | 0.9933D+00 |
| 3.00 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1001D+01 | 0.9976D+00 | 0.9951D+00 | 0.9932D+00 |
| 4.00 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1001D+01 | 0.9976D+00 | 0.9951D+00 | 0.9932D+00 |
| 5.00 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1000D+01 | 0.9976D+00 | 0.9950D+00 | 0.9931D+00 |
| 6.00 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1000D+01 | 0.9975D+00 | 0.9950D+00 | 0.9931D+00 |
| 7.00 | 0.1012D+01 | 0.1013D+01 | 0.1012D+01 | 0.1010D+01 | 0.1007D+01 | 0.1004D+01 | 0.1000D+01 | 0.9975D+00 | 0.9949D+00 | 0.9930D+00 |
| 8.00 | 0.1011D+01 | 0.1013D+01 | 0.1012D+01 | 0.1009D+01 | 0.1007D+01 | 0.1003D+01 | 0.1000D+01 | 0.9974D+00 | 0.9949D+00 | 0.9930D+00 |
| 9.00 | 0.1011D+01 | 0.1013D+01 | 0.1012D+01 | 0.1009D+01 | 0.1007D+01 | 0.1003D+01 | 0.1000D+01 | 0.9974D+00 | 0.9949D+00 | 0.9929D+00 |
| 10.00 | 0.1011D+01 | 0.1013D+01 | 0.1012D+01 | 0.1009D+01 | 0.1007D+01 | 0.1003D+01 | 0.1000D+01 | 0.9973D+00 | 0.9948D+00 | 0.9929D+00 |
| 15.00 | 0.1011D+01 | 0.1012D+01 | 0.1011D+01 | 0.1009D+01 | 0.1006D+01 | 0.1003D+01 | 0.1000D+01 | 0.9971D+00 | 0.9946D+00 | 0.9926D+00 |
| 20.00 | 0.1010D+01 | 0.1012D+01 | 0.1011D+01 | 0.1009D+01 | 0.1006D+01 | 0.1003D+01 | 0.9998D+00 | 0.9969D+00 | 0.9944D+00 | 0.9924D+00 |

SUBCOOLED WATER SPECIFIC HEAT (KCAL/KG/K) : CPF(30,20)

| PS(I,1) PRES. (AT) | CPF(I,11) SPHT (KCAL/KG/K) | CPF(I,12) SPHT (KCAL/KG/K) | CPF(I,13) SPHT (KCAL/KG/K) | CPF(I,14) SPHT (KCAL/KG/K) | CPF(I,15) SPHT (KCAL/KG/K) | CPF(I,16) SPHT (KCAL/KG/K) | CPF(I,17) SPHT (KCAL/KG/K) | CPF(I,18) SPHT (KCAL/KG/K) | CPF(I,19) SPHT (KCAL/KG/K) | CPF(I,20) SPHT (KCAL/KG/K) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.08 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.00 | 0.9922D+00 | 0.9920D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.00 | 0.9921D+00 | 0.9920D+00 | 0.9929D+00 | 0.9930D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.00 | 0.9921D+00 | 0.9919D+00 | 0.9928D+00 | 0.9949D+00 | 0.9950D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.00 | 0.9920D+00 | 0.9918D+00 | 0.9928D+00 | 0.9948D+00 | 0.9975D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.00 | 0.9920D+00 | 0.9918D+00 | 0.9927D+00 | 0.9948D+00 | 0.9981D+00 | 0.1000D+01 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.00 | 0.9919D+00 | 0.9917D+00 | 0.9926D+00 | 0.9947D+00 | 0.9980D+00 | 0.1003D+01 | 0.1003D+01 | 0.0 | 0.0 | 0.0 |
| 8.00 | 0.9919D+00 | 0.9917D+00 | 0.9926D+00 | 0.9946D+00 | 0.9979D+00 | 0.1002D+01 | 0.1006D+01 | 0.0 | 0.0 | 0.0 |
| 9.00 | 0.9918D+00 | 0.9916D+00 | 0.9925D+00 | 0.9945D+00 | 0.9978D+00 | 0.1002D+01 | 0.1008D+01 | 0.1009D+01 | 0.0 | 0.0 |
| 10.00 | 0.9917D+00 | 0.9916D+00 | 0.9924D+00 | 0.9945D+00 | 0.9977D+00 | 0.1002D+01 | 0.1008D+01 | 0.1012D+01 | 0.0 | 0.0 |
| 15.00 | 0.9915D+00 | 0.9913D+00 | 0.9921D+00 | 0.9941D+00 | 0.9973D+00 | 0.1002D+01 | 0.1008D+01 | 0.1015D+01 | 0.1023D+01 | 0.1028D+01 |
| 20.00 | 0.9912D+00 | 0.9910D+00 | 0.9918D+00 | 0.9938D+00 | 0.9969D+00 | 0.1001D+01 | 0.1007D+01 | 0.1014D+01 | 0.1023D+01 | 0.1033D+01 |

SUPERHEATED STEAM ENTHALPY (KCAL/KG) : PHG(30,30)

| PS(I,1) PRES. (AT) | PHG(I, 1) ENTH. (KCAL/KG) | PHG(I, 2) ENTH. (KCAL/KG) | PHG(I, 3) ENTH. (KCAL/KG) | PHG(I, 4) ENTH. (KCAL/KG) | PHG(I, 5) ENTH. (KCAL/KG) | PHG(I, 6) ENTH. (KCAL/KG) | PHG(I, 7) ENTH. (KCAL/KG) | PHG(I, 8) ENTH. (KCAL/KG) | PHG(I, 9) ENTH. (KCAL/KG) | PHG(I,10) ENTH. (KCAL/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.0 | 0.0 | 0.5572D+03 | 0.5700D+03 | 0.5850D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.02 | 0.0 | 0.0 | 0.5614D+03 | 0.5700D+03 | 0.5850D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.03 | 0.0 | 0.0 | 0.5640D+03 | 0.5700D+03 | 0.5850D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.04 | 0.0 | 0.0 | 0.5659D+03 | 0.5700D+03 | 0.5850D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.05 | 0.0 | 0.0 | 0.5674D+03 | 0.5700D+03 | 0.5850D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.06 | 0.0 | 0.0 | 0.5687D+03 | 0.5700D+03 | 0.5850D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.07 | 0.0 | 0.0 | 0.5698D+03 | 0.5700D+03 | 0.5850D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.08 | 0.0 | 0.0 | 0.0 | 0.5708D+03 | 0.5850D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.09 | 0.0 | 0.0 | 0.0 | 0.5716D+03 | 0.5850D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.10 | 0.0 | 0.0 | 0.0 | 0.5724D+03 | 0.5850D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.20 | 0.0 | 0.0 | 0.0 | 0.5779D+03 | 0.5850D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.30 | 0.0 | 0.0 | 0.0 | 0.5813D+03 | 0.5850D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.40 | 0.0 | 0.0 | 0.0 | 0.5838D+03 | 0.5850D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5858D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5875D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5889D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5902D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 0.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5913D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5924D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 2.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5993D+03 | 0.6000D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 3.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6034D+03 | 0.6050D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 4.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6063D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6085D+03 | 0.6100D+03 | 0.6150D+03 | 0.6200D+03 |
| 6.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6103D+03 | 0.6150D+03 | 0.6200D+03 |
| 7.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6118D+03 | 0.6150D+03 | 0.6200D+03 |
| 8.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6130D+03 | 0.6150D+03 | 0.6200D+03 |
| 9.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6140D+03 | 0.6150D+03 | 0.6200D+03 |
| 10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6150D+03 | 0.6150D+03 | 0.6200D+03 |
| 15.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6180D+03 | 0.6200D+03 |
| 20.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6196D+03 | 0.6200D+03 |

SUPERHEATED STEAM ENTHALPY (KCAL/KG) : PHG(30,30)

| PS(I,1) PRES. (AT) | PHG(I,11) ENTH. (KCAL/KG) | PHG(I,12) ENTH. (KCAL/KG) | PHG(I,13) ENTH. (KCAL/KG) | PHG(I,14) ENTH. (KCAL/KG) | PHG(I,15) ENTH. (KCAL/KG) | PHG(I,16) ENTH. (KCAL/KG) | PHG(I,17) ENTH. (KCAL/KG) | PHG(I,18) ENTH. (KCAL/KG) | PHG(I,19) ENTH. (KCAL/KG) | PHG(I,20) ENTH. (KCAL/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.02 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.03 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.04 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.05 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.06 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.07 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.08 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.09 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.10 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.20 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.30 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.40 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.50 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.60 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.70 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.80 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 0.90 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 1.00 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 2.00 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 3.00 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 4.00 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 5.00 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 6.00 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 7.00 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 8.00 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 9.00 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 10.00 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 15.00 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |
| 20.00 | 0.6250D+03 | 0.6300D+03 | 0.6450D+03 | 0.6600D+03 | 0.6750D+03 | 0.6900D+03 | 0.7050D+03 | 0.7200D+03 | 0.7350D+03 | 0.7500D+03 |

SUPERHEATED STEAM ENTHALPY (KCAL/KG) : PHG(30,30)

| PS(I,1) PRES. (AT) | PHG(I,21) ENTH. (KCAL/KG) | PHG(I,22) ENTH. (KCAL/KG) | PHG(I,23) ENTH. (KCAL/KG) | PHG(I,24) ENTH. (KCAL/KG) | PHG(I,25) ENTH. (KCAL/KG) | PHG(I,26) ENTH. (KCAL/KG) | PHG(I,27) ENTH. (KCAL/KG) | PHG(I,28) ENTH. (KCAL/KG) | PHG(I,29) ENTH. (KCAL/KG) | PHG(I,30) ENTH. (KCAL/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.02 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.03 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.04 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.05 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.06 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.07 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.08 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.09 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.10 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.20 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.30 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.40 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.50 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.60 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.70 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.80 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 0.90 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 1.00 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 2.00 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 3.00 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 4.00 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 5.00 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 6.00 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 7.00 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 8.00 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 9.00 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 10.00 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 15.00 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |
| 20.00 | 0.7650D+03 | 0.7800D+03 | 0.7950D+03 | 0.8100D+03 | 0.8250D+03 | 0.8400D+03 | 0.8550D+03 | 0.8700D+03 | 0.8850D+03 | 0.9000D+03 |

SUPERHEATED STEAM TEMPERATURE (DEG.) : PTG(30,30)

| PS(I,1) PRES. (A1) | PTG(I, 1) TEMP. (DEG.) | PTG(I, 2) TEMP. (DEG.) | PTG(I, 3) TEMP. (DEG.) | PTG(I, 4) TEMP. (DEG.) | PTG(I, 5) TEMP. (DEG.) | PTG(I, 6) TEMP. (DEG.) | PTG(I, 7) TEMP. (DEG.) | PTG(I, 8) TEMP. (DEG.) | PTG(I, 9) TEMP. (DEG.) | PTG(I,10) TEMP. (DEG.) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.0 | 0.0 | 0.9346D+01 | 0.4043D+02 | 0.7661D+02 | 0.1123D+03 | 0.1241D+03 | 0.1359D+03 | 0.1476D+03 | 0.1592D+03 |
| 0.02 | 0.0 | 0.0 | 0.1970D+02 | 0.4059D+02 | 0.7670D+02 | 0.1124D+03 | 0.1242D+03 | 0.1359D+03 | 0.1476D+03 | 0.1593D+03 |
| 0.03 | 0.0 | 0.0 | 0.2618D+02 | 0.4075D+02 | 0.7679D+02 | 0.1125D+03 | 0.1242D+03 | 0.1360D+03 | 0.1477D+03 | 0.1593D+03 |
| 0.04 | 0.0 | 0.0 | 0.3098D+02 | 0.4091D+02 | 0.7687D+02 | 0.1125D+03 | 0.1243D+03 | 0.1360D+03 | 0.1477D+03 | 0.1593D+03 |
| 0.05 | 0.0 | 0.0 | 0.3483D+02 | 0.4107D+02 | 0.7696D+02 | 0.1126D+03 | 0.1243D+03 | 0.1361D+03 | 0.1477D+03 | 0.1594D+03 |
| 0.06 | 0.0 | 0.0 | 0.3807D+02 | 0.4123D+02 | 0.7704D+02 | 0.1126D+03 | 0.1244D+03 | 0.1361D+03 | 0.1478D+03 | 0.1594D+03 |
| 0.07 | 0.0 | 0.0 | 0.4086D+02 | 0.4139D+02 | 0.7713D+02 | 0.1127D+03 | 0.1244D+03 | 0.1361D+03 | 0.1478D+03 | 0.1594D+03 |
| 0.08 | 0.0 | 0.0 | 0.0 | 0.4333D+02 | 0.7721D+02 | 0.1127D+03 | 0.1245D+03 | 0.1362D+03 | 0.1478D+03 | 0.1595D+03 |
| 0.09 | 0.0 | 0.0 | 0.0 | 0.4555D+02 | 0.7730D+02 | 0.1128D+03 | 0.1245D+03 | 0.1362D+03 | 0.1479D+03 | 0.1595D+03 |
| 0.10 | 0.0 | 0.0 | 0.0 | 0.4756D+02 | 0.7738D+02 | 0.1128D+03 | 0.1246D+03 | 0.1363D+03 | 0.1479D+03 | 0.1595D+03 |
| 0.20 | 0.0 | 0.0 | 0.0 | 0.6158D+02 | 0.7822D+02 | 0.1134D+03 | 0.1250D+03 | 0.1367D+03 | 0.1483D+03 | 0.1599D+03 |
| 0.30 | 0.0 | 0.0 | 0.0 | 0.7048D+02 | 0.7905D+02 | 0.1139D+03 | 0.1255D+03 | 0.1371D+03 | 0.1487D+03 | 0.1602D+03 |
| 0.40 | 0.0 | 0.0 | 0.0 | 0.7713D+02 | 0.7986D+02 | 0.1144D+03 | 0.1260D+03 | 0.1375D+03 | 0.1490D+03 | 0.1605D+03 |
| 0.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8251D+02 | 0.1149D+03 | 0.1264D+03 | 0.1379D+03 | 0.1494D+03 | 0.1608D+03 |
| 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8705D+02 | 0.1155D+03 | 0.1269D+03 | 0.1383D+03 | 0.1498D+03 | 0.1612D+03 |
| 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9099D+02 | 0.1160D+03 | 0.1273D+03 | 0.1387D+03 | 0.1501D+03 | 0.1615D+03 |
| 0.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9449D+02 | 0.1165D+03 | 0.1278D+03 | 0.1391D+03 | 0.1505D+03 | 0.1618D+03 |
| 0.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9764D+02 | 0.1170D+03 | 0.1282D+03 | 0.1395D+03 | 0.1508D+03 | 0.1621D+03 |
| 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1005D+03 | 0.1175D+03 | 0.1287D+03 | 0.1399D+03 | 0.1512D+03 | 0.1625D+03 |
| 2.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1208D+03 | 0.1224D+03 | 0.1331D+03 | 0.1438D+03 | 0.1547D+03 | 0.1657D+03 |
| 3.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1339D+03 | 0.1372D+03 | 0.1476D+03 | 0.1581D+03 | 0.1688D+03 |
| 4.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1438D+03 | 0.1513D+03 | 0.1615D+03 | 0.1718D+03 |
| 5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1519D+03 | 0.1548D+03 | 0.1647D+03 | 0.1747D+03 |
| 6.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1588D+03 | 0.1678D+03 | 0.1776D+03 |
| 7.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1648D+03 | 0.1709D+03 | 0.1804D+03 |
| 8.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1702D+03 | 0.1739D+03 | 0.1832D+03 |
| 9.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1751D+03 | 0.1768D+03 | 0.1859D+03 |
| 10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1795D+03 | 0.1796D+03 | 0.1885D+03 |
| 15.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1977D+03 | 0.2009D+03 |
| 20.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2115D+03 | 0.2121D+03 |

SUPERHEATED STEAM TEMPERATURE (DEG.) : PTG(30,30)

| PS(I,1) PRES. (AT) | PTG(I,11) TEMP. (DEG.) | PTG(I,12) TEMP. (DEG.) | PTG(I,13) TEMP. (DEG.) | PTG(I,14) TEMP. (DEG.) | PTG(I,15) TEMP. (DEG.) | PTG(I,16) TEMP. (DEG.) | PTG(I,17) TEMP. (DEG.) | PTG(I,18) TEMP. (DEG.) | PTG(I,19) TEMP. (DEG.) | PTG(I,20) TEMP. (DEG.) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.1708D+03 | 0.1823D+03 | 0.2166D+03 | 0.2503D+03 | 0.2835D+03 | 0.3163D+03 | 0.3486D+03 | 0.3805D+03 | 0.4119D+03 | 0.4429D+03 |
| 0.02 | 0.1708D+03 | 0.1824D+03 | 0.2166D+03 | 0.2503D+03 | 0.2836D+03 | 0.3163D+03 | 0.3486D+03 | 0.3805D+03 | 0.4119D+03 | 0.4429D+03 |
| 0.03 | 0.1709D+03 | 0.1824D+03 | 0.2166D+03 | 0.2503D+03 | 0.2836D+03 | 0.3163D+03 | 0.3486D+03 | 0.3805D+03 | 0.4119D+03 | 0.4429D+03 |
| 0.04 | 0.1709D+03 | 0.1824D+03 | 0.2166D+03 | 0.2503D+03 | 0.2836D+03 | 0.3163D+03 | 0.3486D+03 | 0.3805D+03 | 0.4119D+03 | 0.4429D+03 |
| 0.05 | 0.1709D+03 | 0.1824D+03 | 0.2166D+03 | 0.2504D+03 | 0.2836D+03 | 0.3164D+03 | 0.3486D+03 | 0.3805D+03 | 0.4119D+03 | 0.4429D+03 |
| 0.06 | 0.1710D+03 | 0.1825D+03 | 0.2167D+03 | 0.2504D+03 | 0.2836D+03 | 0.3164D+03 | 0.3487D+03 | 0.3805D+03 | 0.4119D+03 | 0.4429D+03 |
| 0.07 | 0.1710D+03 | 0.1825D+03 | 0.2167D+03 | 0.2504D+03 | 0.2836D+03 | 0.3164D+03 | 0.3487D+03 | 0.3805D+03 | 0.4119D+03 | 0.4429D+03 |
| 0.08 | 0.1710D+03 | 0.1825D+03 | 0.2167D+03 | 0.2504D+03 | 0.2836D+03 | 0.3164D+03 | 0.3487D+03 | 0.3805D+03 | 0.4119D+03 | 0.4429D+03 |
| 0.09 | 0.1710D+03 | 0.1825D+03 | 0.2167D+03 | 0.2504D+03 | 0.2836D+03 | 0.3164D+03 | 0.3487D+03 | 0.3805D+03 | 0.4119D+03 | 0.4429D+03 |
| 0.10 | 0.1711D+03 | 0.1826D+03 | 0.2167D+03 | 0.2504D+03 | 0.2837D+03 | 0.3164D+03 | 0.3487D+03 | 0.3805D+03 | 0.4119D+03 | 0.4429D+03 |
| 0.20 | 0.1714D+03 | 0.1828D+03 | 0.2170D+03 | 0.2506D+03 | 0.2838D+03 | 0.3165D+03 | 0.3488D+03 | 0.3806D+03 | 0.4120D+03 | 0.4430D+03 |
| 0.30 | 0.1717D+03 | 0.1831D+03 | 0.2172D+03 | 0.2508D+03 | 0.2839D+03 | 0.3166D+03 | 0.3489D+03 | 0.3807D+03 | 0.4121D+03 | 0.4431D+03 |
| 0.40 | 0.1720D+03 | 0.1834D+03 | 0.2174D+03 | 0.2509D+03 | 0.2840D+03 | 0.3167D+03 | 0.3490D+03 | 0.3808D+03 | 0.4121D+03 | 0.4431D+03 |
| 0.50 | 0.1723D+03 | 0.1836D+03 | 0.2176D+03 | 0.2511D+03 | 0.2842D+03 | 0.3168D+03 | 0.3490D+03 | 0.3808D+03 | 0.4122D+03 | 0.4432D+03 |
| 0.60 | 0.1726D+03 | 0.1839D+03 | 0.2178D+03 | 0.2512D+03 | 0.2843D+03 | 0.3169D+03 | 0.3491D+03 | 0.3809D+03 | 0.4123D+03 | 0.4432D+03 |
| 0.70 | 0.1729D+03 | 0.1842D+03 | 0.2180D+03 | 0.2514D+03 | 0.2844D+03 | 0.3170D+03 | 0.3492D+03 | 0.3810D+03 | 0.4123D+03 | 0.4433D+03 |
| 0.80 | 0.1731D+03 | 0.1845D+03 | 0.2182D+03 | 0.2516D+03 | 0.2846D+03 | 0.3171D+03 | 0.3493D+03 | 0.3811D+03 | 0.4124D+03 | 0.4433D+03 |
| 0.90 | 0.1734D+03 | 0.1847D+03 | 0.2184D+03 | 0.2517D+03 | 0.2847D+03 | 0.3172D+03 | 0.3494D+03 | 0.3811D+03 | 0.4125D+03 | 0.4434D+03 |
| 1.00 | 0.1737D+03 | 0.1850D+03 | 0.2186D+03 | 0.2519D+03 | 0.2848D+03 | 0.3173D+03 | 0.3495D+03 | 0.3812D+03 | 0.4125D+03 | 0.4434D+03 |
| 2.00 | 0.1766D+03 | 0.1876D+03 | 0.2206D+03 | 0.2535D+03 | 0.2861D+03 | 0.3184D+03 | 0.3503D+03 | 0.3819D+03 | 0.4132D+03 | 0.4440D+03 |
| 3.00 | 0.1794D+03 | 0.1902D+03 | 0.2226D+03 | 0.2550D+03 | 0.2873D+03 | 0.3194D+03 | 0.3512D+03 | 0.3827D+03 | 0.4138D+03 | 0.4446D+03 |
| 4.00 | 0.1822D+03 | 0.1927D+03 | 0.2246D+03 | 0.2566D+03 | 0.2886D+03 | 0.3205D+03 | 0.3521D+03 | 0.3834D+03 | 0.4144D+03 | 0.4451D+03 |
| 5.00 | 0.1849D+03 | 0.1952D+03 | 0.2265D+03 | 0.2581D+03 | 0.2898D+03 | 0.3215D+03 | 0.3529D+03 | 0.3841D+03 | 0.4151D+03 | 0.4457D+03 |
| 6.00 | 0.1876D+03 | 0.1976D+03 | 0.2284D+03 | 0.2596D+03 | 0.2911D+03 | 0.3225D+03 | 0.3538D+03 | 0.3849D+03 | 0.4157D+03 | 0.4462D+03 |
| 7.00 | 0.1902D+03 | 0.2000D+03 | 0.2303D+03 | 0.2612D+03 | 0.2923D+03 | 0.3235D+03 | 0.3546D+03 | 0.3856D+03 | 0.4163D+03 | 0.4468D+03 |
| 8.00 | 0.1927D+03 | 0.2024D+03 | 0.2322D+03 | 0.2627D+03 | 0.2935D+03 | 0.3245D+03 | 0.3555D+03 | 0.3863D+03 | 0.4169D+03 | 0.4473D+03 |
| 9.00 | 0.1952D+03 | 0.2047D+03 | 0.2340D+03 | 0.2641D+03 | 0.2947D+03 | 0.3255D+03 | 0.3563D+03 | 0.3870D+03 | 0.4176D+03 | 0.4479D+03 |
| 10.00 | 0.1976D+03 | 0.2070D+03 | 0.2358D+03 | 0.2656D+03 | 0.2959D+03 | 0.3265D+03 | 0.3572D+03 | 0.3878D+03 | 0.4182D+03 | 0.4484D+03 |
| 15.00 | 0.2092D+03 | 0.2177D+03 | 0.2445D+03 | 0.2727D+03 | 0.3018D+03 | 0.3314D+03 | 0.3613D+03 | 0.3913D+03 | 0.4213D+03 | 0.4511D+03 |
| 20.00 | 0.2197D+03 | 0.2276D+03 | 0.2527D+03 | 0.2795D+03 | 0.3074D+03 | 0.3362D+03 | 0.3654D+03 | 0.3948D+03 | 0.4243D+03 | 0.4538D+03 |

SUPERHEATED STEAM TEMPERATURE (DEG.) : PTG(30,30)

| PS(I,1) PRES. (AT) | PTG(I,21) TEMP. (DEG.) | PTG(I,22) TEMP. (DEG.) | PTG(I,23) TEMP. (DEG.) | PTG(I,24) TEMP. (DEG.) | PTG(I,25) TEMP. (DEG.) | PTG(I,26) TEMP. (DEG.) | PTG(I,27) TEMP. (DEG.) | PTG(I,28) TEMP. (DEG.) | PTG(I,29) TEMP. (DEG.) | PTG(I,30) TEMP. (DEG.) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.4735D+03 | 0.5037D+03 | 0.5336D+03 | 0.5631D+03 | 0.5923D+03 | 0.6212D+03 | 0.6497D+03 | 0.6780D+03 | 0.7060D+03 | 0.7338D+03 |
| 0.02 | 0.4735D+03 | 0.5037D+03 | 0.5336D+03 | 0.5631D+03 | 0.5923D+03 | 0.6212D+03 | 0.6497D+03 | 0.6780D+03 | 0.7060D+03 | 0.7338D+03 |
| 0.03 | 0.4735D+03 | 0.5037D+03 | 0.5336D+03 | 0.5631D+03 | 0.5923D+03 | 0.6212D+03 | 0.6497D+03 | 0.6780D+03 | 0.7060D+03 | 0.7338D+03 |
| 0.04 | 0.4735D+03 | 0.5037D+03 | 0.5336D+03 | 0.5631D+03 | 0.5923D+03 | 0.6212D+03 | 0.6497D+03 | 0.6780D+03 | 0.7060D+03 | 0.7338D+03 |
| 0.05 | 0.4735D+03 | 0.5038D+03 | 0.5336D+03 | 0.5631D+03 | 0.5923D+03 | 0.6212D+03 | 0.6498D+03 | 0.6780D+03 | 0.7060D+03 | 0.7338D+03 |
| 0.06 | 0.4735D+03 | 0.5038D+03 | 0.5336D+03 | 0.5631D+03 | 0.5923D+03 | 0.6212D+03 | 0.6498D+03 | 0.6780D+03 | 0.7060D+03 | 0.7338D+03 |
| 0.07 | 0.4735D+03 | 0.5038D+03 | 0.5336D+03 | 0.5631D+03 | 0.5923D+03 | 0.6212D+03 | 0.6498D+03 | 0.6780D+03 | 0.7061D+03 | 0.7338D+03 |
| 0.08 | 0.4735D+03 | 0.5038D+03 | 0.5336D+03 | 0.5631D+03 | 0.5923D+03 | 0.6212D+03 | 0.6498D+03 | 0.6780D+03 | 0.7061D+03 | 0.7338D+03 |
| 0.09 | 0.4735D+03 | 0.5038D+03 | 0.5336D+03 | 0.5631D+03 | 0.5923D+03 | 0.6212D+03 | 0.6498D+03 | 0.6780D+03 | 0.7061D+03 | 0.7338D+03 |
| 0.10 | 0.4736D+03 | 0.5038D+03 | 0.5336D+03 | 0.5631D+03 | 0.5923D+03 | 0.6212D+03 | 0.6498D+03 | 0.6780D+03 | 0.7061D+03 | 0.7338D+03 |
| 0.20 | 0.4736D+03 | 0.5038D+03 | 0.5337D+03 | 0.5632D+03 | 0.5924D+03 | 0.6212D+03 | 0.6498D+03 | 0.6781D+03 | 0.7061D+03 | 0.7338D+03 |
| 0.30 | 0.4737D+03 | 0.5039D+03 | 0.5337D+03 | 0.5632D+03 | 0.5924D+03 | 0.6213D+03 | 0.6498D+03 | 0.6781D+03 | 0.7061D+03 | 0.7339D+03 |
| 0.40 | 0.4737D+03 | 0.5039D+03 | 0.5338D+03 | 0.5633D+03 | 0.5924D+03 | 0.6213D+03 | 0.6499D+03 | 0.6781D+03 | 0.7061D+03 | 0.7339D+03 |
| 0.50 | 0.4737D+03 | 0.5040D+03 | 0.5338D+03 | 0.5633D+03 | 0.5925D+03 | 0.6213D+03 | 0.6499D+03 | 0.6782D+03 | 0.7062D+03 | 0.7339D+03 |
| 0.60 | 0.4738D+03 | 0.5040D+03 | 0.5338D+03 | 0.5633D+03 | 0.5925D+03 | 0.6214D+03 | 0.6499D+03 | 0.6782D+03 | 0.7062D+03 | 0.7339D+03 |
| 0.70 | 0.4738D+03 | 0.5040D+03 | 0.5339D+03 | 0.5634D+03 | 0.5925D+03 | 0.6214D+03 | 0.6499D+03 | 0.6782D+03 | 0.7062D+03 | 0.7339D+03 |
| 0.80 | 0.4739D+03 | 0.5041D+03 | 0.5339D+03 | 0.5634D+03 | 0.5926D+03 | 0.6214D+03 | 0.6500D+03 | 0.6782D+03 | 0.7062D+03 | 0.7340D+03 |
| 0.90 | 0.4739D+03 | 0.5041D+03 | 0.5340D+03 | 0.5634D+03 | 0.5926D+03 | 0.6214D+03 | 0.6500D+03 | 0.6783D+03 | 0.7063D+03 | 0.7340D+03 |
| 1.00 | 0.4740D+03 | 0.5042D+03 | 0.5340D+03 | 0.5635D+03 | 0.5926D+03 | 0.6215D+03 | 0.6500D+03 | 0.6783D+03 | 0.7063D+03 | 0.7340D+03 |
| 2.00 | 0.4745D+03 | 0.5046D+03 | 0.5344D+03 | 0.5638D+03 | 0.5930D+03 | 0.6218D+03 | 0.6503D+03 | 0.6785D+03 | 0.7065D+03 | 0.7342D+03 |
| 3.00 | 0.4750D+03 | 0.5051D+03 | 0.5348D+03 | 0.5642D+03 | 0.5933D+03 | 0.6221D+03 | 0.6506D+03 | 0.6788D+03 | 0.7068D+03 | 0.7345D+03 |
| 4.00 | 0.4755D+03 | 0.5055D+03 | 0.5352D+03 | 0.5646D+03 | 0.5936D+03 | 0.6224D+03 | 0.6509D+03 | 0.6791D+03 | 0.7070D+03 | 0.7347D+03 |
| 5.00 | 0.4760D+03 | 0.5059D+03 | 0.5356D+03 | 0.5649D+03 | 0.5939D+03 | 0.6227D+03 | 0.6511D+03 | 0.6793D+03 | 0.7072D+03 | 0.7349D+03 |
| 6.00 | 0.4764D+03 | 0.5064D+03 | 0.5360D+03 | 0.5653D+03 | 0.5943D+03 | 0.6230D+03 | 0.6514D+03 | 0.6796D+03 | 0.7075D+03 | 0.7351D+03 |
| 7.00 | 0.4769D+03 | 0.5068D+03 | 0.5364D+03 | 0.5656D+03 | 0.5946D+03 | 0.6233D+03 | 0.6517D+03 | 0.6798D+03 | 0.7077D+03 | 0.7354D+03 |
| 8.00 | 0.4774D+03 | 0.5072D+03 | 0.5368D+03 | 0.5660D+03 | 0.5949D+03 | 0.6236D+03 | 0.6520D+03 | 0.6801D+03 | 0.7080D+03 | 0.7356D+03 |
| 9.00 | 0.4779D+03 | 0.5077D+03 | 0.5372D+03 | 0.5664D+03 | 0.5953D+03 | 0.6239D+03 | 0.6523D+03 | 0.6804D+03 | 0.7082D+03 | 0.7358D+03 |
| 10.00 | 0.4784D+03 | 0.5081D+03 | 0.5375D+03 | 0.5667D+03 | 0.5956D+03 | 0.6242D+03 | 0.6525D+03 | 0.6806D+03 | 0.7085D+03 | 0.7360D+03 |
| 15.00 | 0.4808D+03 | 0.5103D+03 | 0.5395D+03 | 0.5685D+03 | 0.5972D+03 | 0.6257D+03 | 0.6539D+03 | 0.6819D+03 | 0.7097D+03 | 0.7372D+03 |
| 20.00 | 0.4832D+03 | 0.5124D+03 | 0.5415D+03 | 0.5703D+03 | 0.5989D+03 | 0.6272D+03 | 0.6553D+03 | 0.6832D+03 | 0.7109D+03 | 0.7383D+03 |

SUPERHEATED STEAM SPECIFIC VOLUME (M**3/KG) : PV(30,30)

| PS(I,1) PRES. (AT) | PV(I, 1) SPVL. (M**3/KG) | PV(I, 2) SPVL. (M**3/KG) | PV(I, 3) SPVL. (M**3/KG) | PV(I, 4) SPVL. (M**3/KG) | PV(I, 5) SPVL. (M**3/KG) | PV(I, 6) SPVL. (M**3/KG) | PV(I, 7) SPVL. (M**3/KG) | PV(I, 8) SPVL. (M**3/KG) | PV(I, 9) SPVL. (M**3/KG) | PV(I,10) SPVL. (M**3/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.0 | 0.0 | 0.1195D+03 | 0.1327D+03 | 0.1480D+03 | 0.1632D+03 | 0.1682D+03 | 0.1731D+03 | 0.1781D+03 | 0.1830D+03 |
| 0.02 | 0.0 | 0.0 | 0.6192D+02 | 0.6636D+02 | 0.7402D+02 | 0.8159D+02 | 0.8409D+02 | 0.8657D+02 | 0.8905D+02 | 0.9151D+02 |
| 0.03 | 0.0 | 0.0 | 0.4218D+02 | 0.4425D+02 | 0.4935D+02 | 0.5439D+02 | 0.5606D+02 | 0.5772D+02 | 0.5937D+02 | 0.6101D+02 |
| 0.04 | 0.0 | 0.0 | 0.3213D+02 | 0.3319D+02 | 0.3701D+02 | 0.4079D+02 | 0.4204D+02 | 0.4329D+02 | 0.4452D+02 | 0.4576D+02 |
| 0.05 | 0.0 | 0.0 | 0.2602D+02 | 0.2656D+02 | 0.2961D+02 | 0.3264D+02 | 0.3364D+02 | 0.3463D+02 | 0.3562D+02 | 0.3661D+02 |
| 0.06 | 0.0 | 0.0 | 0.2191D+02 | 0.2213D+02 | 0.2468D+02 | 0.2720D+02 | 0.2803D+02 | 0.2886D+02 | 0.2968D+02 | 0.3050D+02 |
| 0.07 | 0.0 | 0.0 | 0.1894D+02 | 0.1897D+02 | 0.2115D+02 | 0.2331D+02 | 0.2403D+02 | 0.2474D+02 | 0.2544D+02 | 0.2615D+02 |
| 0.08 | 0.0 | 0.0 | 0.0 | 0.1670D+02 | 0.1851D+02 | 0.2040D+02 | 0.2102D+02 | 0.2164D+02 | 0.2226D+02 | 0.2288D+02 |
| 0.09 | 0.0 | 0.0 | 0.0 | 0.1494D+02 | 0.1645D+02 | 0.1813D+02 | 0.1869D+02 | 0.1924D+02 | 0.1979D+02 | 0.2034D+02 |
| 0.10 | 0.0 | 0.0 | 0.0 | 0.1353D+02 | 0.1481D+02 | 0.1632D+02 | 0.1682D+02 | 0.1732D+02 | 0.1781D+02 | 0.1830D+02 |
| 0.20 | 0.0 | 0.0 | 0.0 | 0.7048D+01 | 0.7407D+01 | 0.8160D+01 | 0.8410D+01 | 0.8658D+01 | 0.8905D+01 | 0.9151D+01 |
| 0.30 | 0.0 | 0.0 | 0.0 | 0.4816D+01 | 0.4940D+01 | 0.5441D+01 | 0.5607D+01 | 0.5772D+01 | 0.5937D+01 | 0.6101D+01 |
| 0.40 | 0.0 | 0.0 | 0.0 | 0.3677D+01 | 0.3706D+01 | 0.4081D+01 | 0.4205D+01 | 0.4329D+01 | 0.4453D+01 | 0.4576D+01 |
| 0.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2982D+01 | 0.3265D+01 | 0.3365D+01 | 0.3464D+01 | 0.3562D+01 | 0.3661D+01 |
| 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2514D+01 | 0.2721D+01 | 0.2804D+01 | 0.2886D+01 | 0.2969D+01 | 0.3050D+01 |
| 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2176D+01 | 0.2333D+01 | 0.2404D+01 | 0.2474D+01 | 0.2545D+01 | 0.2615D+01 |
| 0.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1920D+01 | 0.2041D+01 | 0.2103D+01 | 0.2165D+01 | 0.2226D+01 | 0.2288D+01 |
| 0.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1719D+01 | 0.1815D+01 | 0.1870D+01 | 0.1924D+01 | 0.1979D+01 | 0.2034D+01 |
| 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1558D+01 | 0.1633D+01 | 0.1683D+01 | 0.1732D+01 | 0.1781D+01 | 0.1830D+01 |
| 2.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8136D+00 | 0.8172D+00 | 0.8417D+00 | 0.8662D+00 | 0.8907D+00 | 0.9151D+00 |
| 3.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5561D+00 | 0.5614D+00 | 0.5776D+00 | 0.5938D+00 | 0.6100D+00 |
| 4.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4243D+00 | 0.4332D+00 | 0.4454D+00 | 0.4575D+00 |
| 5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3438D+00 | 0.3466D+00 | 0.3563D+00 | 0.3660D+00 |
| 6.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2894D+00 | 0.2969D+00 | 0.3049D+00 |
| 7.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2500D+00 | 0.2545D+00 | 0.2613D+00 |
| 8.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2203D+00 | 0.2226D+00 | 0.2286D+00 |
| 9.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1969D+00 | 0.1979D+00 | 0.2032D+00 |
| 10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1780D+00 | 0.1781D+00 | 0.1829D+00 |
| 15.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1205D+00 | 0.1218D+00 |
| 20.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9107D-01 | 0.9125D-01 |

## SUPERHEATED STEAM SPECIFIC VOLUME (M**3/KG) : PV(30,30)

| PS(I,1) PRES. (AT) | PV(I,11) SPVL. (M**3/KG) | PV(I,12) SPVL. (M**3/KG) | PV(I,13) SPVL. (M**3/KG) | PV(I,14) SPVL. (M**3/KG) | PV(I,15) SPVL. (M**3/KG) | PV(I,16) SPVL. (M**3/KG) | PV(I,17) SPVL. (M**3/KG) | PV(I,18) SPVL. (M**3/KG) | PV(I,19) SPVL. (M**3/KG) | PV(I,20) SPVL. (M**3/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.1879D+03 | 0.1928D+03 | 0.2073D+03 | 0.2216D+03 | 0.2357D+03 | 0.2495D+03 | 0.2632D+03 | 0.2767D+03 | 0.2900D+03 | 0.3031D+03 |
| 0.02 | 0.9396D+02 | 0.9640D+02 | 0.1037D+03 | 0.1108D+03 | 0.1178D+03 | 0.1248D+03 | 0.1316D+03 | 0.1383D+03 | 0.1450D+03 | 0.1516D+03 |
| 0.03 | 0.6264D+02 | 0.6427D+02 | 0.6910D+02 | 0.7386D+02 | 0.7855D+02 | 0.8318D+02 | 0.8774D+02 | 0.9223D+02 | 0.9667D+02 | 0.1010D+03 |
| 0.04 | 0.4698D+02 | 0.4820D+02 | 0.5183D+02 | 0.5540D+02 | 0.5891D+02 | 0.6238D+02 | 0.6580D+02 | 0.6917D+02 | 0.7250D+02 | 0.7578D+02 |
| 0.05 | 0.3759D+02 | 0.3856D+02 | 0.4146D+02 | 0.4432D+02 | 0.4713D+02 | 0.4991D+02 | 0.5264D+02 | 0.5534D+02 | 0.5800D+02 | 0.6062D+02 |
| 0.06 | 0.3132D+02 | 0.3213D+02 | 0.3455D+02 | 0.3693D+02 | 0.3928D+02 | 0.4159D+02 | 0.4387D+02 | 0.4612D+02 | 0.4833D+02 | 0.5052D+02 |
| 0.07 | 0.2685D+02 | 0.2754D+02 | 0.2961D+02 | 0.3165D+02 | 0.3367D+02 | 0.3565D+02 | 0.3760D+02 | 0.3953D+02 | 0.4143D+02 | 0.4330D+02 |
| 0.08 | 0.2349D+02 | 0.2410D+02 | 0.2591D+02 | 0.2770D+02 | 0.2946D+02 | 0.3119D+02 | 0.3290D+02 | 0.3459D+02 | 0.3625D+02 | 0.3789D+02 |
| 0.09 | 0.2088D+02 | 0.2142D+02 | 0.2303D+02 | 0.2462D+02 | 0.2618D+02 | 0.2773D+02 | 0.2924D+02 | 0.3074D+02 | 0.3222D+02 | 0.3368D+02 |
| 0.10 | 0.1879D+02 | 0.1928D+02 | 0.2073D+02 | 0.2216D+02 | 0.2357D+02 | 0.2495D+02 | 0.2632D+02 | 0.2767D+02 | 0.2900D+02 | 0.3031D+02 |
| 0.20 | 0.9396D+01 | 0.9640D+01 | 0.1036D+02 | 0.1108D+02 | 0.1178D+02 | 0.1248D+02 | 0.1316D+02 | 0.1383D+02 | 0.1450D+02 | 0.1516D+02 |
| 0.30 | 0.6264D+01 | 0.6427D+01 | 0.6910D+01 | 0.7385D+01 | 0.7855D+01 | 0.8317D+01 | 0.8773D+01 | 0.9222D+01 | 0.9666D+01 | 0.1010D+02 |
| 0.40 | 0.4698D+01 | 0.4820D+01 | 0.5182D+01 | 0.5539D+01 | 0.5891D+01 | 0.6237D+01 | 0.6579D+01 | 0.6917D+01 | 0.7249D+01 | 0.7577D+01 |
| 0.50 | 0.3758D+01 | 0.3856D+01 | 0.4145D+01 | 0.4431D+01 | 0.4712D+01 | 0.4990D+01 | 0.5263D+01 | 0.5533D+01 | 0.5799D+01 | 0.6062D+01 |
| 0.60 | 0.3132D+01 | 0.3213D+01 | 0.3454D+01 | 0.3692D+01 | 0.3927D+01 | 0.4158D+01 | 0.4386D+01 | 0.4611D+01 | 0.4833D+01 | 0.5051D+01 |
| 0.70 | 0.2685D+01 | 0.2754D+01 | 0.2961D+01 | 0.3165D+01 | 0.3366D+01 | 0.3564D+01 | 0.3759D+01 | 0.3952D+01 | 0.4142D+01 | 0.4330D+01 |
| 0.80 | 0.2349D+01 | 0.2410D+01 | 0.2591D+01 | 0.2769D+01 | 0.2945D+01 | 0.3118D+01 | 0.3289D+01 | 0.3458D+01 | 0.3624D+01 | 0.3788D+01 |
| 0.90 | 0.2088D+01 | 0.2142D+01 | 0.2303D+01 | 0.2461D+01 | 0.2618D+01 | 0.2772D+01 | 0.2924D+01 | 0.3074D+01 | 0.3221D+01 | 0.3367D+01 |
| 1.00 | 0.1879D+01 | 0.1928D+01 | 0.2072D+01 | 0.2215D+01 | 0.2356D+01 | 0.2494D+01 | 0.2631D+01 | 0.2766D+01 | 0.2899D+01 | 0.3031D+01 |
| 2.00 | 0.9394D+00 | 0.9637D+00 | 0.1036D+01 | 0.1107D+01 | 0.1177D+01 | 0.1247D+01 | 0.1315D+01 | 0.1383D+01 | 0.1449D+01 | 0.1515D+01 |
| 3.00 | 0.6262D+00 | 0.6423D+00 | 0.6904D+00 | 0.7378D+00 | 0.7847D+00 | 0.8309D+00 | 0.8765D+00 | 0.9215D+00 | 0.9659D+00 | 0.1010D+01 |
| 4.00 | 0.4696D+00 | 0.4817D+00 | 0.5176D+00 | 0.5532D+00 | 0.5883D+00 | 0.6229D+00 | 0.6571D+00 | 0.6909D+00 | 0.7242D+00 | 0.7571D+00 |
| 5.00 | 0.3756D+00 | 0.3852D+00 | 0.4140D+00 | 0.4424D+00 | 0.4705D+00 | 0.4982D+00 | 0.5255D+00 | 0.5525D+00 | 0.5792D+00 | 0.6055D+00 |
| 6.00 | 0.3130D+00 | 0.3210D+00 | 0.3449D+00 | 0.3685D+00 | 0.3919D+00 | 0.4150D+00 | 0.4378D+00 | 0.4603D+00 | 0.4825D+00 | 0.5045D+00 |
| 7.00 | 0.2682D+00 | 0.2751D+00 | 0.2955D+00 | 0.3158D+00 | 0.3358D+00 | 0.3556D+00 | 0.3751D+00 | 0.3944D+00 | 0.4135D+00 | 0.4323D+00 |
| 8.00 | 0.2346D+00 | 0.2406D+00 | 0.2585D+00 | 0.2762D+00 | 0.2937D+00 | 0.3110D+00 | 0.3281D+00 | 0.3450D+00 | 0.3617D+00 | 0.3782D+00 |
| 9.00 | 0.2085D+00 | 0.2138D+00 | 0.2297D+00 | 0.2454D+00 | 0.2610D+00 | 0.2764D+00 | 0.2916D+00 | 0.3066D+00 | 0.3214D+00 | 0.3361D+00 |
| 10.00 | 0.1876D+00 | 0.1924D+00 | 0.2067D+00 | 0.2208D+00 | 0.2348D+00 | 0.2486D+00 | 0.2623D+00 | 0.2758D+00 | 0.2892D+00 | 0.3024D+00 |
| 15.00 | 0.1249D+00 | 0.1281D+00 | 0.1375D+00 | 0.1469D+00 | 0.1562D+00 | 0.1655D+00 | 0.1746D+00 | 0.1836D+00 | 0.1925D+00 | 0.2013D+00 |
| 20.00 | 0.9359D-01 | 0.9594D-01 | 0.1030D+00 | 0.1100D+00 | 0.1170D+00 | 0.1239D+00 | 0.1307D+00 | 0.1375D+00 | 0.1442D+00 | 0.1508D+00 |

SUPERHEATED STEAM SPECIFIC VOLUME (M**3/KG) : PV(30,30)

| PS(I,1) PRES. (A1) | PV(I,21) SPVL. (M**3/KG) | PV(I,22) SPVL. (M**3/KG) | PV(I,23) SPVL. (M**3/KG) | PV(I,24) SPVL. (M**3/KG) | PV(I,25) SPVL. (M**3/KG) | PV(I,26) SPVL. (M**3/KG) | PV(I,27) SPVL. (M**3/KG) | PV(I,28) SPVL. (M**3/KG) | PV(I,29) SPVL. (M**3/KG) | PV(I,30) SPVL. (M**3/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.3161D+03 | 0.3289D+03 | 0.3415D+03 | 0.3540D+03 | 0.3664D+03 | 0.3786D+03 | 0.3907D+03 | 0.4027D+03 | 0.4145D+03 | 0.4263D+03 |
| 0.02 | 0.1580D+03 | 0.1644D+03 | 0.1708D+03 | 0.1770D+03 | 0.1832D+03 | 0.1893D+03 | 0.1953D+03 | 0.2013D+03 | 0.2073D+03 | 0.2131D+03 |
| 0.03 | 0.1054D+03 | 0.1096D+03 | 0.1138D+03 | 0.1180D+03 | 0.1221D+03 | 0.1262D+03 | 0.1302D+03 | 0.1342D+03 | 0.1382D+03 | 0.1421D+03 |
| 0.04 | 0.7902D+02 | 0.8222D+02 | 0.8538D+02 | 0.8850D+02 | 0.9159D+02 | 0.9465D+02 | 0.9767D+02 | 0.1007D+03 | 0.1036D+03 | 0.1066D+03 |
| 0.05 | 0.6322D+02 | 0.6578D+02 | 0.6830D+02 | 0.7080D+02 | 0.7327D+02 | 0.7572D+02 | 0.7814D+02 | 0.8053D+02 | 0.8290D+02 | 0.8525D+02 |
| 0.06 | 0.5268D+02 | 0.5481D+02 | 0.5692D+02 | 0.5900D+02 | 0.6106D+02 | 0.6310D+02 | 0.6511D+02 | 0.6711D+02 | 0.6909D+02 | 0.7105D+02 |
| 0.07 | 0.4515D+02 | 0.4698D+02 | 0.4879D+02 | 0.5057D+02 | 0.5234D+02 | 0.5408D+02 | 0.5581D+02 | 0.5752D+02 | 0.5922D+02 | 0.6090D+02 |
| 0.08 | 0.3951D+02 | 0.4111D+02 | 0.4269D+02 | 0.4425D+02 | 0.4580D+02 | 0.4732D+02 | 0.4884D+02 | 0.5033D+02 | 0.5182D+02 | 0.5328D+02 |
| 0.09 | 0.3512D+02 | 0.3654D+02 | 0.3795D+02 | 0.3933D+02 | 0.4071D+02 | 0.4207D+02 | 0.4341D+02 | 0.4474D+02 | 0.4606D+02 | 0.4736D+02 |
| 0.10 | 0.3161D+02 | 0.3289D+02 | 0.3415D+02 | 0.3540D+02 | 0.3664D+02 | 0.3786D+02 | 0.3907D+02 | 0.4027D+02 | 0.4145D+02 | 0.4263D+02 |
| 0.20 | 0.1580D+02 | 0.1644D+02 | 0.1708D+02 | 0.1770D+02 | 0.1832D+02 | 0.1893D+02 | 0.1953D+02 | 0.2013D+02 | 0.2073D+02 | 0.2131D+02 |
| 0.30 | 0.1054D+02 | 0.1096D+02 | 0.1138D+02 | 0.1180D+02 | 0.1221D+02 | 0.1262D+02 | 0.1302D+02 | 0.1342D+02 | 0.1382D+02 | 0.1421D+02 |
| 0.40 | 0.7901D+01 | 0.8221D+01 | 0.8538D+01 | 0.8850D+01 | 0.9159D+01 | 0.9465D+01 | 0.9767D+01 | 0.1007D+02 | 0.1036D+02 | 0.1066D+02 |
| 0.50 | 0.6321D+01 | 0.6577D+01 | 0.6830D+01 | 0.7080D+01 | 0.7327D+01 | 0.7572D+01 | 0.7814D+01 | 0.8053D+01 | 0.8290D+01 | 0.8525D+01 |
| 0.60 | 0.5267D+01 | 0.5481D+01 | 0.5691D+01 | 0.5900D+01 | 0.6106D+01 | 0.6310D+01 | 0.6511D+01 | 0.6711D+01 | 0.6909D+01 | 0.7104D+01 |
| 0.70 | 0.4515D+01 | 0.4698D+01 | 0.4878D+01 | 0.5057D+01 | 0.5233D+01 | 0.5408D+01 | 0.5581D+01 | 0.5752D+01 | 0.5922D+01 | 0.6089D+01 |
| 0.80 | 0.3950D+01 | 0.4110D+01 | 0.4268D+01 | 0.4425D+01 | 0.4579D+01 | 0.4732D+01 | 0.4883D+01 | 0.5033D+01 | 0.5181D+01 | 0.5328D+01 |
| 0.90 | 0.3511D+01 | 0.3654D+01 | 0.3794D+01 | 0.3933D+01 | 0.4070D+01 | 0.4206D+01 | 0.4341D+01 | 0.4474D+01 | 0.4606D+01 | 0.4736D+01 |
| 1.00 | 0.3160D+01 | 0.3288D+01 | 0.3415D+01 | 0.3540D+01 | 0.3663D+01 | 0.3786D+01 | 0.3907D+01 | 0.4026D+01 | 0.4145D+01 | 0.4263D+01 |
| 2.00 | 0.1580D+01 | 0.1644D+01 | 0.1707D+01 | 0.1770D+01 | 0.1831D+01 | 0.1893D+01 | 0.1953D+01 | 0.2013D+01 | 0.2072D+01 | 0.2131D+01 |
| 3.00 | 0.1053D+01 | 0.1096D+01 | 0.1138D+01 | 0.1180D+01 | 0.1221D+01 | 0.1262D+01 | 0.1302D+01 | 0.1342D+01 | 0.1382D+01 | 0.1421D+01 |
| 4.00 | 0.7895D+00 | 0.8216D+00 | 0.8532D+00 | 0.8846D+00 | 0.9155D+00 | 0.9461D+00 | 0.9764D+00 | 0.1006D+01 | 0.1036D+01 | 0.1066D+01 |
| 5.00 | 0.6315D+00 | 0.6571D+00 | 0.6825D+00 | 0.7075D+00 | 0.7323D+00 | 0.7568D+00 | 0.7811D+00 | 0.8051D+00 | 0.8288D+00 | 0.8524D+00 |
| 6.00 | 0.5261D+00 | 0.5475D+00 | 0.5686D+00 | 0.5895D+00 | 0.6102D+00 | 0.6306D+00 | 0.6508D+00 | 0.6709D+00 | 0.6907D+00 | 0.7103D+00 |
| 7.00 | 0.4509D+00 | 0.4692D+00 | 0.4873D+00 | 0.5053D+00 | 0.5230D+00 | 0.5405D+00 | 0.5578D+00 | 0.5750D+00 | 0.5920D+00 | 0.6088D+00 |
| 8.00 | 0.3944D+00 | 0.4105D+00 | 0.4264D+00 | 0.4420D+00 | 0.4575D+00 | 0.4729D+00 | 0.4881D+00 | 0.5031D+00 | 0.5180D+00 | 0.5327D+00 |
| 9.00 | 0.3505D+00 | 0.3648D+00 | 0.3789D+00 | 0.3929D+00 | 0.4067D+00 | 0.4203D+00 | 0.4338D+00 | 0.4472D+00 | 0.4604D+00 | 0.4735D+00 |
| 10.00 | 0.3154D+00 | 0.3283D+00 | 0.3410D+00 | 0.3535D+00 | 0.3660D+00 | 0.3782D+00 | 0.3904D+00 | 0.4024D+00 | 0.4143D+00 | 0.4261D+00 |
| 15.00 | 0.2101D+00 | 0.2186D+00 | 0.2271D+00 | 0.2355D+00 | 0.2438D+00 | 0.2521D+00 | 0.2602D+00 | 0.2682D+00 | 0.2762D+00 | 0.2841D+00 |
| 20.00 | 0.1574D+00 | 0.1638D+00 | 0.1702D+00 | 0.1765D+00 | 0.1828D+00 | 0.1890D+00 | 0.1951D+00 | 0.2011D+00 | 0.2071D+00 | 0.2130D+00 |

PRESSURE DERIVATIVE OF SUPERHEATED STEAM SPECIFIC VOLUME : PGP(30,30)

| PS(I,1) PRES. (AT) | PGP(I, 1) DVDP | PGP(I, 2) DVDP | PGP(I, 3) DVDP | PGP(I, 4) DVDP | PGP(I, 5) DVDP | PGP(I, 6) DVDP | PGP(I, 7) DVDP | PGP(I, 8) DVDP | PGP(I, 9) DVDP | PGP(I,10) DVDP |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.0 | 0.0 | -0.1194D+05 | -0.1327D+05 | -0.1480D+05 | -0.1632D+05 | -0.1682D+05 | -0.1731D+05 | -0.1781D+05 | -0.1830D+05 |
| 0.02 | 0.0 | 0.0 | -0.3094D+04 | -0.3317D+04 | -0.3701D+04 | -0.4079D+04 | -0.4204D+04 | -0.4329D+04 | -0.4452D+04 | -0.4576D+04 |
| 0.03 | 0.0 | 0.0 | -0.1405D+04 | -0.1474D+04 | -0.1645D+04 | -0.1813D+04 | -0.1869D+04 | -0.1924D+04 | -0.1979D+04 | -0.2034D+04 |
| 0.04 | 0.0 | 0.0 | -0.8026D+03 | -0.8293D+03 | -0.9252D+03 | -0.1020D+04 | -0.1051D+04 | -0.1082D+04 | -0.1113D+04 | -0.1144D+04 |
| 0.05 | 0.0 | 0.0 | -0.5200D+03 | -0.5307D+03 | -0.5921D+03 | -0.6527D+03 | -0.6727D+03 | -0.6926D+03 | -0.7124D+03 | -0.7321D+03 |
| 0.06 | 0.0 | 0.0 | -0.3648D+03 | -0.3686D+03 | -0.4112D+03 | -0.4533D+03 | -0.4671D+03 | -0.4810D+03 | -0.4947D+03 | -0.5084D+03 |
| 0.07 | 0.0 | 0.0 | -0.2703D+03 | -0.2708D+03 | -0.3021D+03 | -0.3330D+03 | -0.3432D+03 | -0.3534D+03 | -0.3635D+03 | -0.3735D+03 |
| 0.08 | 0.0 | 0.0 | 0.0 | -0.2085D+03 | -0.2313D+03 | -0.2550D+03 | -0.2628D+03 | -0.2705D+03 | -0.2783D+03 | -0.2860D+03 |
| 0.09 | 0.0 | 0.0 | 0.0 | -0.1659D+03 | -0.1828D+03 | -0.2014D+03 | -0.2076D+03 | -0.2138D+03 | -0.2199D+03 | -0.2260D+03 |
| 0.10 | 0.0 | 0.0 | 0.0 | -0.1352D+03 | -0.1480D+03 | -0.1632D+03 | -0.1682D+03 | -0.1731D+03 | -0.1781D+03 | -0.1830D+03 |
| 0.20 | 0.0 | 0.0 | 0.0 | -0.3520D+02 | -0.3701D+02 | -0.4079D+02 | -0.4204D+02 | -0.4329D+02 | -0.4452D+02 | -0.4576D+02 |
| 0.30 | 0.0 | 0.0 | 0.0 | -0.1603D+02 | -0.1645D+02 | -0.1813D+02 | -0.1869D+02 | -0.1924D+02 | -0.1979D+02 | -0.2034D+02 |
| 0.40 | 0.0 | 0.0 | 0.0 | -0.9178D+01 | -0.9253D+01 | -0.1020D+02 | -0.1051D+02 | -0.1082D+02 | -0.1113D+02 | -0.1144D+02 |
| 0.50 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5956D+01 | -0.6527D+01 | -0.6727D+01 | -0.6926D+01 | -0.7124D+01 | -0.7321D+01 |
| 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4183D+01 | -0.4533D+01 | -0.4672D+01 | -0.4810D+01 | -0.4947D+01 | -0.5084D+01 |
| 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3103D+01 | -0.3330D+01 | -0.3432D+01 | -0.3534D+01 | -0.3635D+01 | -0.3735D+01 |
| 0.80 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2396D+01 | -0.2550D+01 | -0.2628D+01 | -0.2706D+01 | -0.2783D+01 | -0.2860D+01 |
| 0.90 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1907D+01 | -0.2015D+01 | -0.2076D+01 | -0.2138D+01 | -0.2199D+01 | -0.2260D+01 |
| 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1555D+01 | -0.1632D+01 | -0.1682D+01 | -0.1732D+01 | -0.1781D+01 | -0.1830D+01 |
| 2.00 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4063D+00 | -0.4081D+00 | -0.4205D+00 | -0.4329D+00 | -0.4453D+00 | -0.4576D+00 |
| 3.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1852D+00 | -0.1870D+00 | -0.1924D+00 | -0.1979D+00 | -0.2034D+00 |
| 4.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1060D+00 | -0.1083D+00 | -0.1113D+00 | -0.1144D+00 |
| 5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.6873D-01 | -0.6930D-01 | -0.7127D-01 | -0.7323D-01 |
| 6.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4822D-01 | -0.4950D-01 | -0.5086D-01 |
| 7.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3573D-01 | -0.3637D-01 | -0.3737D-01 |
| 8.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2754D-01 | -0.2785D-01 | -0.2861D-01 |
| 9.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2189D-01 | -0.2201D-01 | -0.2261D-01 |
| 10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1782D-01 | -0.1783D-01 | -0.1832D-01 |
| 15.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.8058D-02 | -0.8144D-02 |
| 20.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4575D-02 | -0.4584D-02 |

PRESSURE DERIVATIVE OF SUPERHEATED STEAM SPECIFIC VOLUME : PGP(30,30)

| PS(I,1) PRES. (AT) | PGP(I,11) DVDP | PGP(I,12) DVDP | PGP(I,13) DVDP | PGP(I,14) DVDP | PGP(I,15) DVDP | PGP(I,16) DVDP | PGP(I,17) DVDP | PGP(I,18) DVDP | PGP(I,19) DVDP | PGP(I,20) DVDP |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | -0.1879D+05 | -0.1928D+05 | -0.2073D+05 | -0.2216D+05 | -0.2357D+05 | -0.2495D+05 | -0.2632D+05 | -0.2767D+05 | -0.2900D+05 | -0.3031D+05 |
| 0.02 | -0.4698D+04 | -0.4820D+04 | -0.5183D+04 | -0.5540D+04 | -0.5892D+04 | -0.6238D+04 | -0.6580D+04 | -0.6917D+04 | -0.7250D+04 | -0.7578D+04 |
| 0.03 | -0.2088D+04 | -0.2142D+04 | -0.2303D+04 | -0.2462D+04 | -0.2618D+04 | -0.2773D+04 | -0.2925D+04 | -0.3074D+04 | -0.3222D+04 | -0.3368D+04 |
| 0.04 | -0.1175D+04 | -0.1205D+04 | -0.1296D+04 | -0.1385D+04 | -0.1473D+04 | -0.1560D+04 | -0.1645D+04 | -0.1729D+04 | -0.1812D+04 | -0.1895D+04 |
| 0.05 | -0.7517D+03 | -0.7712D+03 | -0.8292D+03 | -0.8864D+03 | -0.9427D+03 | -0.9981D+03 | -0.1053D+04 | -0.1107D+04 | -0.1160D+04 | -0.1213D+04 |
| 0.06 | -0.5220D+03 | -0.5356D+03 | -0.5758D+03 | -0.6155D+03 | -0.6546D+03 | -0.6932D+03 | -0.7311D+03 | -0.7686D+03 | -0.8056D+03 | -0.8420D+03 |
| 0.07 | -0.3835D+03 | -0.3935D+03 | -0.4231D+03 | -0.4522D+03 | -0.4809D+03 | -0.5093D+03 | -0.5372D+03 | -0.5647D+03 | -0.5918D+03 | -0.6186D+03 |
| 0.08 | -0.2936D+03 | -0.3013D+03 | -0.3239D+03 | -0.3462D+03 | -0.3682D+03 | -0.3899D+03 | -0.4113D+03 | -0.4323D+03 | -0.4531D+03 | -0.4736D+03 |
| 0.09 | -0.2320D+03 | -0.2380D+03 | -0.2559D+03 | -0.2736D+03 | -0.2909D+03 | -0.3081D+03 | -0.3250D+03 | -0.3416D+03 | -0.3580D+03 | -0.3742D+03 |
| 0.10 | -0.1879D+03 | -0.1928D+03 | -0.2073D+03 | -0.2216D+03 | -0.2357D+03 | -0.2495D+03 | -0.2632D+03 | -0.2767D+03 | -0.2900D+03 | -0.3031D+03 |
| 0.20 | -0.4698D+02 | -0.4820D+02 | -0.5183D+02 | -0.5540D+02 | -0.5892D+02 | -0.6238D+02 | -0.6580D+02 | -0.6917D+02 | -0.7250D+02 | -0.7578D+02 |
| 0.30 | -0.2088D+02 | -0.2142D+02 | -0.2303D+02 | -0.2462D+02 | -0.2618D+02 | -0.2773D+02 | -0.2925D+02 | -0.3074D+02 | -0.3222D+02 | -0.3368D+02 |
| 0.40 | -0.1175D+02 | -0.1205D+02 | -0.1296D+02 | -0.1385D+02 | -0.1473D+02 | -0.1560D+02 | -0.1645D+02 | -0.1729D+02 | -0.1812D+02 | -0.1895D+02 |
| 0.50 | -0.7517D+01 | -0.7712D+01 | -0.8292D+01 | -0.8864D+01 | -0.9427D+01 | -0.9981D+01 | -0.1053D+02 | -0.1107D+02 | -0.1160D+02 | -0.1213D+02 |
| 0.60 | -0.5220D+01 | -0.5356D+01 | -0.5758D+01 | -0.6155D+01 | -0.6546D+01 | -0.6932D+01 | -0.7311D+01 | -0.7686D+01 | -0.8056D+01 | -0.8420D+01 |
| 0.70 | -0.3835D+01 | -0.3935D+01 | -0.4231D+01 | -0.4522D+01 | -0.4809D+01 | -0.5093D+01 | -0.5372D+01 | -0.5647D+01 | -0.5918D+01 | -0.6186D+01 |
| 0.80 | -0.2936D+01 | -0.3013D+01 | -0.3239D+01 | -0.3462D+01 | -0.3682D+01 | -0.3899D+01 | -0.4113D+01 | -0.4323D+01 | -0.4531D+01 | -0.4736D+01 |
| 0.90 | -0.2320D+01 | -0.2380D+01 | -0.2559D+01 | -0.2736D+01 | -0.2909D+01 | -0.3081D+01 | -0.3250D+01 | -0.3416D+01 | -0.3580D+01 | -0.3742D+01 |
| 1.00 | -0.1879D+01 | -0.1928D+01 | -0.2073D+01 | -0.2216D+01 | -0.2357D+01 | -0.2495D+01 | -0.2632D+01 | -0.2767D+01 | -0.2900D+01 | -0.3031D+01 |
| 2.00 | -0.4698D+00 | -0.4820D+00 | -0.5183D+00 | -0.5540D+00 | -0.5892D+00 | -0.6238D+00 | -0.6580D+00 | -0.6917D+00 | -0.7250D+00 | -0.7578D+00 |
| 3.00 | -0.2088D+00 | -0.2142D+00 | -0.2303D+00 | -0.2462D+00 | -0.2618D+00 | -0.2773D+00 | -0.2925D+00 | -0.3074D+00 | -0.3222D+00 | -0.3368D+00 |
| 4.00 | -0.1175D+00 | -0.1205D+00 | -0.1296D+00 | -0.1385D+00 | -0.1473D+00 | -0.1560D+00 | -0.1645D+00 | -0.1729D+00 | -0.1812D+00 | -0.1895D+00 |
| 5.00 | -0.7518D-01 | -0.7713D-01 | -0.8292D-01 | -0.8864D-01 | -0.9426D-01 | -0.9981D-01 | -0.1053D+00 | -0.1107D+00 | -0.1160D+00 | -0.1212D+00 |
| 6.00 | -0.5221D-01 | -0.5357D-01 | -0.5759D-01 | -0.6155D-01 | -0.6546D-01 | -0.6931D-01 | -0.7311D-01 | -0.7686D-01 | -0.8055D-01 | -0.8420D-01 |
| 7.00 | -0.3836D-01 | -0.3936D-01 | -0.4231D-01 | -0.4522D-01 | -0.4809D-01 | -0.5092D-01 | -0.5372D-01 | -0.5647D-01 | -0.5918D-01 | -0.6186D-01 |
| 8.00 | -0.2937D-01 | -0.3013D-01 | -0.3239D-01 | -0.3462D-01 | -0.3682D-01 | -0.3899D-01 | -0.4113D-01 | -0.4323D-01 | -0.4531D-01 | -0.4736D-01 |
| 9.00 | -0.2321D-01 | -0.2381D-01 | -0.2560D-01 | -0.2736D-01 | -0.2909D-01 | -0.3081D-01 | -0.3249D-01 | -0.3416D-01 | -0.3580D-01 | -0.3742D-01 |
| 10.00 | -0.1880D-01 | -0.1929D-01 | -0.2073D-01 | -0.2216D-01 | -0.2357D-01 | -0.2495D-01 | -0.2632D-01 | -0.2767D-01 | -0.2900D-01 | -0.3031D-01 |
| 15.00 | -0.8360D-02 | -0.8575D-02 | -0.9215D-02 | -0.9849D-02 | -0.1047D-01 | -0.1109D-01 | -0.1170D-01 | -0.1230D-01 | -0.1289D-01 | -0.1347D-01 |
| 20.00 | -0.4705D-02 | -0.4825D-02 | -0.5184D-02 | -0.5540D-02 | -0.5891D-02 | -0.6237D-02 | -0.6579D-02 | -0.6916D-02 | -0.7248D-02 | -0.7576D-02 |

PRESSURE DERIVATIVE OF SUPERHEATED STEAM SPECIFIC VOLUME : PGP(30,30)

| PS(I,1) PRES. (MT) | PGP(I,21) DVDP | PGP(I,22) DVDP | PGP(I,23) DVDP | PGP(I,24) DVDP | PGP(I,25) DVDP | PGP(I,26) DVDP | PGP(I,27) DVDP | PGP(I,28) DVDP | PGP(I,29) DVDP | PGP(I,30) DVDP |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | -0.3161D+05 | -0.3289D+05 | -0.3415D+05 | -0.3540D+05 | -0.3664D+05 | -0.3786D+05 | -0.3907D+05 | -0.4027D+05 | -0.4145D+05 | -0.4263D+05 |
| 0.02 | -0.7902D+04 | -0.8222D+04 | -0.8538D+04 | -0.8850D+04 | -0.9159D+04 | -0.9465D+04 | -0.9767D+04 | -0.1007D+05 | -0.1036D+05 | -0.1066D+05 |
| 0.03 | -0.3512D+04 | -0.3654D+04 | -0.3795D+04 | -0.3934D+04 | -0.4071D+04 | -0.4207D+04 | -0.4341D+04 | -0.4474D+04 | -0.4606D+04 | -0.4736D+04 |
| 0.04 | -0.1976D+04 | -0.2056D+04 | -0.2135D+04 | -0.2213D+04 | -0.2290D+04 | -0.2366D+04 | -0.2442D+04 | -0.2517D+04 | -0.2591D+04 | -0.2664D+04 |
| 0.05 | -0.1264D+04 | -0.1316D+04 | -0.1366D+04 | -0.1416D+04 | -0.1465D+04 | -0.1514D+04 | -0.1563D+04 | -0.1611D+04 | -0.1658D+04 | -0.1705D+04 |
| 0.06 | -0.8780D+03 | -0.9136D+03 | -0.9487D+03 | -0.9834D+03 | -0.1018D+04 | -0.1052D+04 | -0.1085D+04 | -0.1119D+04 | -0.1151D+04 | -0.1184D+04 |
| 0.07 | -0.6451D+03 | -0.6712D+03 | -0.6970D+03 | -0.7225D+03 | -0.7477D+03 | -0.7726D+03 | -0.7973D+03 | -0.8218D+03 | -0.8460D+03 | -0.8699D+03 |
| 0.08 | -0.4939D+03 | -0.5139D+03 | -0.5336D+03 | -0.5532D+03 | -0.5725D+03 | -0.5916D+03 | -0.6105D+03 | -0.6292D+03 | -0.6477D+03 | -0.6661D+03 |
| 0.09 | -0.3902D+03 | -0.4060D+03 | -0.4216D+03 | -0.4371D+03 | -0.4523D+03 | -0.4674D+03 | -0.4823D+03 | -0.4971D+03 | -0.5118D+03 | -0.5263D+03 |
| 0.10 | -0.3161D+03 | -0.3289D+03 | -0.3415D+03 | -0.3540D+03 | -0.3664D+03 | -0.3786D+03 | -0.3907D+03 | -0.4027D+03 | -0.4145D+03 | -0.4263D+03 |
| 0.20 | -0.7902D+02 | -0.8222D+02 | -0.8538D+02 | -0.8850D+02 | -0.9159D+02 | -0.9465D+02 | -0.9767D+02 | -0.1007D+03 | -0.1036D+03 | -0.1066D+03 |
| 0.30 | -0.3512D+02 | -0.3654D+02 | -0.3795D+02 | -0.3934D+02 | -0.4071D+02 | -0.4207D+02 | -0.4341D+02 | -0.4474D+02 | -0.4606D+02 | -0.4736D+02 |
| 0.40 | -0.1976D+02 | -0.2056D+02 | -0.2135D+02 | -0.2213D+02 | -0.2290D+02 | -0.2366D+02 | -0.2442D+02 | -0.2517D+02 | -0.2591D+02 | -0.2664D+02 |
| 0.50 | -0.1264D+02 | -0.1316D+02 | -0.1366D+02 | -0.1416D+02 | -0.1465D+02 | -0.1514D+02 | -0.1563D+02 | -0.1611D+02 | -0.1658D+02 | -0.1705D+02 |
| 0.60 | -0.8780D+01 | -0.9136D+01 | -0.9487D+01 | -0.9834D+01 | -0.1018D+02 | -0.1052D+02 | -0.1085D+02 | -0.1119D+02 | -0.1151D+02 | -0.1184D+02 |
| 0.70 | -0.6451D+01 | -0.6712D+01 | -0.6970D+01 | -0.7225D+01 | -0.7477D+01 | -0.7726D+01 | -0.7973D+01 | -0.8218D+01 | -0.8460D+01 | -0.8699D+01 |
| 0.80 | -0.4939D+01 | -0.5139D+01 | -0.5336D+01 | -0.5532D+01 | -0.5725D+01 | -0.5916D+01 | -0.6105D+01 | -0.6292D+01 | -0.6477D+01 | -0.6661D+01 |
| 0.90 | -0.3902D+01 | -0.4060D+01 | -0.4216D+01 | -0.4371D+01 | -0.4523D+01 | -0.4674D+01 | -0.4823D+01 | -0.4971D+01 | -0.5118D+01 | -0.5263D+01 |
| 1.00 | -0.3161D+01 | -0.3289D+01 | -0.3415D+01 | -0.3540D+01 | -0.3664D+01 | -0.3786D+01 | -0.3907D+01 | -0.4027D+01 | -0.4145D+01 | -0.4263D+01 |
| 2.00 | -0.7902D+00 | -0.8222D+00 | -0.8538D+00 | -0.8850D+00 | -0.9159D+00 | -0.9465D+00 | -0.9767D+00 | -0.1007D+01 | -0.1036D+01 | -0.1066D+01 |
| 3.00 | -0.3512D+00 | -0.3654D+00 | -0.3795D+00 | -0.3934D+00 | -0.4071D+00 | -0.4207D+00 | -0.4341D+00 | -0.4474D+00 | -0.4606D+00 | -0.4736D+00 |
| 4.00 | -0.1976D+00 | -0.2055D+00 | -0.2135D+00 | -0.2213D+00 | -0.2290D+00 | -0.2366D+00 | -0.2442D+00 | -0.2517D+00 | -0.2591D+00 | -0.2664D+00 |
| 5.00 | -0.1264D+00 | -0.1316D+00 | -0.1366D+00 | -0.1416D+00 | -0.1465D+00 | -0.1514D+00 | -0.1563D+00 | -0.1611D+00 | -0.1658D+00 | -0.1705D+00 |
| 6.00 | -0.8780D-01 | -0.9135D-01 | -0.9487D-01 | -0.9834D-01 | -0.1018D+00 | -0.1052D+00 | -0.1085D+00 | -0.1118D+00 | -0.1151D+00 | -0.1184D+00 |
| 7.00 | -0.6451D-01 | -0.6712D-01 | -0.6970D-01 | -0.7225D-01 | -0.7477D-01 | -0.7726D-01 | -0.7973D-01 | -0.8217D-01 | -0.8459D-01 | -0.8699D-01 |
| 8.00 | -0.4939D-01 | -0.5139D-01 | -0.5336D-01 | -0.5531D-01 | -0.5724D-01 | -0.5915D-01 | -0.6104D-01 | -0.6291D-01 | -0.6477D-01 | -0.6660D-01 |
| 9.00 | -0.3902D-01 | -0.4060D-01 | -0.4216D-01 | -0.4370D-01 | -0.4523D-01 | -0.4674D-01 | -0.4823D-01 | -0.4971D-01 | -0.5117D-01 | -0.5262D-01 |
| 10.00 | -0.3161D-01 | -0.3289D-01 | -0.3415D-01 | -0.3540D-01 | -0.3664D-01 | -0.3786D-01 | -0.3907D-01 | -0.4026D-01 | -0.4145D-01 | -0.4262D-01 |
| 15.00 | -0.1405D-01 | -0.1462D-01 | -0.1518D-01 | -0.1573D-01 | -0.1628D-01 | -0.1682D-01 | -0.1736D-01 | -0.1789D-01 | -0.1842D-01 | -0.1894D-01 |
| 20.00 | -0.7900D-02 | -0.8220D-02 | -0.8536D-02 | -0.8849D-02 | -0.9157D-02 | -0.9463D-02 | -0.9765D-02 | -0.1006D-01 | -0.1036D-01 | -0.1065D-01 |

PRESSURE DERIVATIVE OF SUPERHEATED STEAM SPECIFIC VOLUME : PGP(30,30)

| PS(I,1) PRES. (AI) | PGP(I,21) DVDP | PGP(I,22) DVDP | PGP(I,23) DVDP | PGP(I,24) DVDP | PGP(I,25) DVDP | PGP(I,26) DVDP | PGP(I,27) DVDP | PGP(I,28) DVDP | PGP(I,29) DVDP | PGP(I,30) DVDP |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | -0.3161D+05 | -0.3289D+05 | -0.3415D+05 | -0.3540D+05 | -0.3664D+05 | -0.3786D+05 | -0.3907D+05 | -0.4027D+05 | -0.4145D+05 | -0.4263D+05 |
| 0.02 | -0.7902D+04 | -0.8222D+04 | -0.8538D+04 | -0.8850D+04 | -0.9159D+04 | -0.9465D+04 | -0.9767D+04 | -0.1007D+05 | -0.1036D+05 | -0.1066D+05 |
| 0.03 | -0.3512D+04 | -0.3654D+04 | -0.3795D+04 | -0.3934D+04 | -0.4071D+04 | -0.4207D+04 | -0.4341D+04 | -0.4474D+04 | -0.4606D+04 | -0.4736D+04 |
| 0.04 | -0.1976D+04 | -0.2056D+04 | -0.2135D+04 | -0.2213D+04 | -0.2290D+04 | -0.2366D+04 | -0.2442D+04 | -0.2517D+04 | -0.2591D+04 | -0.2664D+04 |
| 0.05 | -0.1264D+04 | -0.1316D+04 | -0.1366D+04 | -0.1416D+04 | -0.1465D+04 | -0.1514D+04 | -0.1563D+04 | -0.1611D+04 | -0.1658D+04 | -0.1705D+04 |
| 0.06 | -0.8780D+03 | -0.9136D+03 | -0.9487D+03 | -0.9834D+03 | -0.1018D+04 | -0.1052D+04 | -0.1085D+04 | -0.1119D+04 | -0.1151D+04 | -0.1184D+04 |
| 0.07 | -0.6451D+03 | -0.6712D+03 | -0.6970D+03 | -0.7225D+03 | -0.7477D+03 | -0.7726D+03 | -0.7973D+03 | -0.8218D+03 | -0.8460D+03 | -0.8699D+03 |
| 0.08 | -0.4939D+03 | -0.5139D+03 | -0.5336D+03 | -0.5532D+03 | -0.5725D+03 | -0.5916D+03 | -0.6105D+03 | -0.6292D+03 | -0.6477D+03 | -0.6661D+03 |
| 0.09 | -0.3902D+03 | -0.4060D+03 | -0.4216D+03 | -0.4371D+03 | -0.4523D+03 | -0.4674D+03 | -0.4823D+03 | -0.4971D+03 | -0.5118D+03 | -0.5263D+03 |
| 0.10 | -0.3161D+03 | -0.3289D+03 | -0.3415D+03 | -0.3540D+03 | -0.3664D+03 | -0.3786D+03 | -0.3907D+03 | -0.4027D+03 | -0.4145D+03 | -0.4263D+03 |
| 0.20 | -0.7902D+02 | -0.8222D+02 | -0.8538D+02 | -0.8850D+02 | -0.9159D+02 | -0.9465D+02 | -0.9767D+02 | -0.1007D+03 | -0.1036D+03 | -0.1066D+03 |
| 0.30 | -0.3512D+02 | -0.3654D+02 | -0.3795D+02 | -0.3934D+02 | -0.4071D+02 | -0.4207D+02 | -0.4341D+02 | -0.4474D+02 | -0.4606D+02 | -0.4736D+02 |
| 0.40 | -0.1976D+02 | -0.2056D+02 | -0.2135D+02 | -0.2213D+02 | -0.2290D+02 | -0.2366D+02 | -0.2442D+02 | -0.2517D+02 | -0.2591D+02 | -0.2664D+02 |
| 0.50 | -0.1264D+02 | -0.1316D+02 | -0.1366D+02 | -0.1416D+02 | -0.1465D+02 | -0.1514D+02 | -0.1563D+02 | -0.1611D+02 | -0.1658D+02 | -0.1705D+02 |
| 0.60 | -0.8780D+01 | -0.9136D+01 | -0.9487D+01 | -0.9834D+01 | -0.1018D+02 | -0.1052D+02 | -0.1085D+02 | -0.1119D+02 | -0.1151D+02 | -0.1184D+02 |
| 0.70 | -0.6451D+01 | -0.6712D+01 | -0.6970D+01 | -0.7225D+01 | -0.7477D+01 | -0.7726D+01 | -0.7973D+01 | -0.8218D+01 | -0.8460D+01 | -0.8699D+01 |
| 0.80 | -0.4939D+01 | -0.5139D+01 | -0.5336D+01 | -0.5532D+01 | -0.5725D+01 | -0.5916D+01 | -0.6105D+01 | -0.6292D+01 | -0.6477D+01 | -0.6661D+01 |
| 0.90 | -0.3902D+01 | -0.4060D+01 | -0.4216D+01 | -0.4371D+01 | -0.4523D+01 | -0.4674D+01 | -0.4823D+01 | -0.4971D+01 | -0.5118D+01 | -0.5263D+01 |
| 1.00 | -0.3161D+01 | -0.3289D+01 | -0.3415D+01 | -0.3540D+01 | -0.3664D+01 | -0.3786D+01 | -0.3907D+01 | -0.4027D+01 | -0.4145D+01 | -0.4263D+01 |
| 2.00 | -0.7902D+00 | -0.8222D+00 | -0.8538D+00 | -0.8850D+00 | -0.9159D+00 | -0.9465D+00 | -0.9767D+00 | -0.1007D+01 | -0.1036D+01 | -0.1066D+01 |
| 3.00 | -0.3512D+00 | -0.3654D+00 | -0.3795D+00 | -0.3934D+00 | -0.4071D+00 | -0.4207D+00 | -0.4341D+00 | -0.4474D+00 | -0.4606D+00 | -0.4736D+00 |
| 4.00 | -0.1976D+00 | -0.2055D+00 | -0.2135D+00 | -0.2213D+00 | -0.2290D+00 | -0.2366D+00 | -0.2442D+00 | -0.2517D+00 | -0.2591D+00 | -0.2664D+00 |
| 5.00 | -0.1264D+00 | -0.1316D+00 | -0.1366D+00 | -0.1416D+00 | -0.1465D+00 | -0.1514D+00 | -0.1563D+00 | -0.1611D+00 | -0.1658D+00 | -0.1705D+00 |
| 6.00 | -0.8780D-01 | -0.9135D-01 | -0.9487D-01 | -0.9834D-01 | -0.1018D+00 | -0.1052D+00 | -0.1085D+00 | -0.1118D+00 | -0.1151D+00 | -0.1184D+00 |
| 7.00 | -0.6451D-01 | -0.6712D-01 | -0.6970D-01 | -0.7225D-01 | -0.7477D-01 | -0.7726D-01 | -0.7973D-01 | -0.8217D-01 | -0.8459D-01 | -0.8699D-01 |
| 8.00 | -0.4939D-01 | -0.5139D-01 | -0.5336D-01 | -0.5531D-01 | -0.5724D-01 | -0.5915D-01 | -0.6104D-01 | -0.6291D-01 | -0.6477D-01 | -0.6660D-01 |
| 9.00 | -0.3902D-01 | -0.4060D-01 | -0.4216D-01 | -0.4370D-01 | -0.4523D-01 | -0.4674D-01 | -0.4823D-01 | -0.4971D-01 | -0.5117D-01 | -0.5262D-01 |
| 10.00 | -0.3161D-01 | -0.3289D-01 | -0.3415D-01 | -0.3540D-01 | -0.3664D-01 | -0.3786D-01 | -0.3907D-01 | -0.4026D-01 | -0.4145D-01 | -0.4262D-01 |
| 15.00 | -0.1405D-01 | -0.1462D-01 | -0.1518D-01 | -0.1573D-01 | -0.1628D-01 | -0.1682D-01 | -0.1736D-01 | -0.1789D-01 | -0.1842D-01 | -0.1894D-01 |
| 20.00 | -0.7900D-02 | -0.8220D-02 | -0.8536D-02 | -0.8849D-02 | -0.9157D-02 | -0.9463D-02 | -0.9765D-02 | -0.1006D-01 | -0.1036D-01 | -0.1065D-01 |

ENTHALPY DERIVATIVE OF SUPERHEATED STEAM SPECIFIC VOLUME : PGD(30,30)

| PS(I,1) PRES. (AT) | PGD(I, 1) DVDH | PGD(I, 2) DVDH | PGD(I, 3) DVDH | PGD(I, 4) DVDH | PGD(I, 5) DVDH | PGD(I, 6) DVDH | PGD(I, 7) DVDH | PGD(I, 8) DVDH | PGD(I, 9) DVDH | PGD(I,10) DVDH |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.0 | 0.0 | 0.1037D+01 | 0.1029D+01 | 0.1016D+01 | 0.1002D+01 | 0.9974D+00 | 0.9926D+00 | 0.9878D+00 | 0.9831D+00 |
| 0.02 | 0.0 | 0.0 | 0.5157D+00 | 0.5135D+00 | 0.5078D+00 | 0.5010D+00 | 0.4986D+00 | 0.4963D+00 | 0.4939D+00 | 0.4915D+00 |
| 0.03 | 0.0 | 0.0 | 0.3426D+00 | 0.3418D+00 | 0.3383D+00 | 0.3339D+00 | 0.3324D+00 | 0.3308D+00 | 0.3292D+00 | 0.3277D+00 |
| 0.04 | 0.0 | 0.0 | 0.2563D+00 | 0.2560D+00 | 0.2536D+00 | 0.2504D+00 | 0.2493D+00 | 0.2481D+00 | 0.2469D+00 | 0.2457D+00 |
| 0.05 | 0.0 | 0.0 | 0.2046D+00 | 0.2045D+00 | 0.2028D+00 | 0.2003D+00 | 0.1994D+00 | 0.1985D+00 | 0.1975D+00 | 0.1966D+00 |
| 0.06 | 0.0 | 0.0 | 0.1702D+00 | 0.1702D+00 | 0.1689D+00 | 0.1669D+00 | 0.1661D+00 | 0.1654D+00 | 0.1646D+00 | 0.1638D+00 |
| 0.07 | 0.0 | 0.0 | 0.1457D+00 | 0.1457D+00 | 0.1447D+00 | 0.1430D+00 | 0.1424D+00 | 0.1417D+00 | 0.1411D+00 | 0.1404D+00 |
| 0.08 | 0.0 | 0.0 | 0.0 | 0.1273D+00 | 0.1266D+00 | 0.1251D+00 | 0.1246D+00 | 0.1240D+00 | 0.1234D+00 | 0.1228D+00 |
| 0.09 | 0.0 | 0.0 | 0.0 | 0.1130D+00 | 0.1125D+00 | 0.1112D+00 | 0.1107D+00 | 0.1102D+00 | 0.1097D+00 | 0.1092D+00 |
| 0.10 | 0.0 | 0.0 | 0.0 | 0.1016D+00 | 0.1012D+00 | 0.1001D+00 | 0.9964D-01 | 0.9919D-01 | 0.9873D-01 | 0.9826D-01 |
| 0.20 | 0.0 | 0.0 | 0.0 | 0.5040D-01 | 0.5038D-01 | 0.4996D-01 | 0.4976D-01 | 0.4955D-01 | 0.4933D-01 | 0.4911D-01 |
| 0.30 | 0.0 | 0.0 | 0.0 | 0.3344D-01 | 0.3345D-01 | 0.3326D-01 | 0.3314D-01 | 0.3301D-01 | 0.3287D-01 | 0.3272D-01 |
| 0.40 | 0.0 | 0.0 | 0.0 | 0.2499D-01 | 0.2500D-01 | 0.2491D-01 | 0.2483D-01 | 0.2474D-01 | 0.2464D-01 | 0.2453D-01 |
| 0.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1994D-01 | 0.1990D-01 | 0.1984D-01 | 0.1978D-01 | 0.1970D-01 | 0.1962D-01 |
| 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1658D-01 | 0.1656D-01 | 0.1652D-01 | 0.1647D-01 | 0.1641D-01 | 0.1634D-01 |
| 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1418D-01 | 0.1418D-01 | 0.1415D-01 | 0.1410D-01 | 0.1405D-01 | 0.1400D-01 |
| 0.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1239D-01 | 0.1239D-01 | 0.1237D-01 | 0.1233D-01 | 0.1229D-01 | 0.1224D-01 |
| 0.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1099D-01 | 0.1100D-01 | 0.1098D-01 | 0.1095D-01 | 0.1092D-01 | 0.1088D-01 |
| 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9882D-02 | 0.9889D-02 | 0.9876D-02 | 0.9853D-02 | 0.9822D-02 | 0.9787D-02 |
| 2.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4897D-02 | 0.4899D-02 | 0.4901D-02 | 0.4897D-02 | 0.4888D-02 | 0.4875D-02 |
| 3.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3248D-02 | 0.3249D-02 | 0.3249D-02 | 0.3245D-02 | 0.3239D-02 |
| 4.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2426D-02 | 0.2427D-02 | 0.2425D-02 | 0.2422D-02 |
| 5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1934D-02 | 0.1934D-02 | 0.1934D-02 | 0.1932D-02 |
| 6.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1607D-02 | 0.1607D-02 | 0.1606D-02 |
| 7.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1374D-02 | 0.1374D-02 | 0.1373D-02 |
| 8.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1199D-02 | 0.1199D-02 | 0.1199D-02 |
| 9.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1064D-02 | 0.1064D-02 | 0.1063D-02 |
| 10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9551D-03 | 0.9551D-03 | 0.9549D-03 |
| 15.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6307D-03 | 0.6307D-03 |
| 20.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4693D-03 | 0.4693D-03 |

ENTHALPY DERIVATIVE OF SUPERHEATED STEAM SPECIFIC VOLUME : PGD(30,30)

| PS(I,1) PRES. (AT) | PGD(I,11) DVDH | PGD(I,12) DVDH | PGD(I,13) DVDH | PGD(I,14) DVDH | PGD(I,15) DVDH | PGD(I,16) DVDH | PGD(I,17) DVDH | PGD(I,18) DVDH | PGD(I,19) DVDH | PGD(I,20) DVDH |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.9783D+00 | 0.9735D+00 | 0.9592D+00 | 0.9452D+00 | 0.9315D+00 | 0.9182D+00 | 0.9053D+00 | 0.8929D+00 | 0.8809D+00 | 0.8694D+00 |
| 0.02 | 0.4891D+00 | 0.4867D+00 | 0.4796D+00 | 0.4726D+00 | 0.4658D+00 | 0.4591D+00 | 0.4527D+00 | 0.4464D+00 | 0.4405D+00 | 0.4347D+00 |
| 0.03 | 0.3261D+00 | 0.3245D+00 | 0.3197D+00 | 0.3151D+00 | 0.3105D+00 | 0.3061D+00 | 0.3018D+00 | 0.2976D+00 | 0.2936D+00 | 0.2898D+00 |
| 0.04 | 0.2445D+00 | 0.2434D+00 | 0.2398D+00 | 0.2363D+00 | 0.2329D+00 | 0.2296D+00 | 0.2263D+00 | 0.2232D+00 | 0.2202D+00 | 0.2174D+00 |
| 0.05 | 0.1956D+00 | 0.1947D+00 | 0.1918D+00 | 0.1890D+00 | 0.1863D+00 | 0.1836D+00 | 0.1811D+00 | 0.1786D+00 | 0.1762D+00 | 0.1739D+00 |
| 0.06 | 0.1630D+00 | 0.1622D+00 | 0.1599D+00 | 0.1575D+00 | 0.1553D+00 | 0.1530D+00 | 0.1509D+00 | 0.1488D+00 | 0.1468D+00 | 0.1449D+00 |
| 0.07 | 0.1397D+00 | 0.1390D+00 | 0.1370D+00 | 0.1350D+00 | 0.1331D+00 | 0.1312D+00 | 0.1293D+00 | 0.1276D+00 | 0.1258D+00 | 0.1242D+00 |
| 0.08 | 0.1223D+00 | 0.1217D+00 | 0.1199D+00 | 0.1181D+00 | 0.1164D+00 | 0.1148D+00 | 0.1132D+00 | 0.1116D+00 | 0.1101D+00 | 0.1087D+00 |
| 0.09 | 0.1087D+00 | 0.1081D+00 | 0.1066D+00 | 0.1050D+00 | 0.1035D+00 | 0.1020D+00 | 0.1006D+00 | 0.9921D-01 | 0.9788D-01 | 0.9661D-01 |
| 0.10 | 0.9780D-01 | 0.9732D-01 | 0.9591D-01 | 0.9452D-01 | 0.9315D-01 | 0.9182D-01 | 0.9053D-01 | 0.8929D-01 | 0.8809D-01 | 0.8695D-01 |
| 0.20 | 0.4888D-01 | 0.4865D-01 | 0.4795D-01 | 0.4725D-01 | 0.4657D-01 | 0.4591D-01 | 0.4527D-01 | 0.4465D-01 | 0.4405D-01 | 0.4347D-01 |
| 0.30 | 0.3257D-01 | 0.3242D-01 | 0.3196D-01 | 0.3150D-01 | 0.3105D-01 | 0.3061D-01 | 0.3018D-01 | 0.2976D-01 | 0.2937D-01 | 0.2898D-01 |
| 0.40 | 0.2442D-01 | 0.2431D-01 | 0.2397D-01 | 0.2362D-01 | 0.2328D-01 | 0.2295D-01 | 0.2263D-01 | 0.2232D-01 | 0.2203D-01 | 0.2174D-01 |
| 0.50 | 0.1953D-01 | 0.1944D-01 | 0.1917D-01 | 0.1890D-01 | 0.1863D-01 | 0.1836D-01 | 0.1811D-01 | 0.1786D-01 | 0.1762D-01 | 0.1739D-01 |
| 0.60 | 0.1627D-01 | 0.1620D-01 | 0.1597D-01 | 0.1575D-01 | 0.1552D-01 | 0.1530D-01 | 0.1509D-01 | 0.1488D-01 | 0.1469D-01 | 0.1449D-01 |
| 0.70 | 0.1394D-01 | 0.1388D-01 | 0.1369D-01 | 0.1350D-01 | 0.1330D-01 | 0.1312D-01 | 0.1293D-01 | 0.1276D-01 | 0.1259D-01 | 0.1242D-01 |
| 0.80 | 0.1219D-01 | 0.1214D-01 | 0.1198D 01 | 0.1181D-01 | 0.1164D-01 | 0.1148D-01 | 0.1132D-01 | 0.1116D-01 | 0.1101D-01 | 0.1087D-01 |
| 0.90 | 0.1084D-01 | 0.1079D-01 | 0.1064D-01 | 0.1050D-01 | 0.1035D-01 | 0.1020D-01 | 0.1006D-01 | 0.9923D-02 | 0.9791D-02 | 0.9664D-02 |
| 1.00 | 0.9749D-02 | 0.9708D-02 | 0.9578D-02 | 0.9445D-02 | 0.9312D-02 | 0.9181D-02 | 0.9054D-02 | 0.8931D-02 | 0.8812D-02 | 0.8698D-02 |
| 2.00 | 0.4859D-02 | 0.4842D-02 | 0.4782D-02 | 0.4719D-02 | 0.4654D-02 | 0.4590D-02 | 0.4528D-02 | 0.4467D-02 | 0.4408D-02 | 0.4351D-02 |
| 3.00 | 0.3230D-02 | 0.3220D-02 | 0.3184D-02 | 0.3143D-02 | 0.3102D-02 | 0.3060D-02 | 0.3019D-02 | 0.2979D-02 | 0.2940D-02 | 0.2902D-02 |
| 4.00 | 0.2416D-02 | 0.2410D-02 | 0.2385D-02 | 0.2356D-02 | 0.2326D-02 | 0.2295D-02 | 0.2265D-02 | 0.2235D-02 | 0.2206D-02 | 0.2178D-02 |
| 5.00 | 0.1928D-02 | 0.1924D-02 | 0.1905D-02 | 0.1883D-02 | 0.1860D-02 | 0.1836D-02 | 0.1812D-02 | 0.1788D-02 | 0.1765D-02 | 0.1743D-02 |
| 6.00 | 0.1603D-02 | 0.1600D-02 | 0.1586D-02 | 0.1568D-02 | 0.1549D-02 | 0.1530D-02 | 0.1510D-02 | 0.1491D-02 | 0.1472D-02 | 0.1453D-02 |
| 7.00 | 0.1371D-02 | 0.1369D-02 | 0.1357D-02 | 0.1343D-02 | 0.1328D-02 | 0.1311D-02 | 0.1295D-02 | 0.1278D-02 | 0.1262D-02 | 0.1246D-02 |
| 8.00 | 0.1197D-02 | 0.1195D-02 | 0.1186D-02 | 0.1175D-02 | 0.1161D-02 | 0.1147D-02 | 0.1133D-02 | 0.1119D-02 | 0.1105D-02 | 0.1091D-02 |
| 9.00 | 0.1062D-02 | 0.1061D-02 | 0.1053D-02 | 0.1043D-02 | 0.1032D-02 | 0.1020D-02 | 0.1007D-02 | 0.9948D-03 | 0.9823D-03 | 0.9701D-03 |
| 10.00 | 0.9541D-03 | 0.9529D-03 | 0.9468D-03 | 0.9384D-03 | 0.9285D-03 | 0.9179D-03 | 0.9068D-03 | 0.8956D-03 | 0.8844D-03 | 0.8735D-03 |
| 15.00 | 0.6307D-03 | 0.6303D-03 | 0.6279D-03 | 0.6237D-03 | 0.6182D-03 | 0.6119D-03 | 0.6051D-03 | 0.5980D-03 | 0.5908D-03 | 0.5837D-03 |
| 20.00 | 0.4695D-03 | 0.4696D-03 | 0.4688D-03 | 0.4665D-03 | 0.4632D-03 | 0.4590D-03 | 0.4543D-03 | 0.4493D-03 | 0.4440D-03 | 0.4388D-03 |

## ENTHALPY DERIVATIVE OF SUPERHEATED STEAM SPECIFIC VOLUME : PGD(30,30)

| PS(I,1) PRES. (AT) | PGD(I,21) DVDH | PGD(I,22) DVDH | PGD(I,23) DVDH | PGD(I,24) DVDH | PGD(I,25) DVDH | PGD(I,26) DVDH | PGD(I,27) DVDH | PGD(I,28) DVDH | PGD(I,29) DVDH | PGD(I,30) DVDH |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.8584D+00 | 0.8479D+00 | 0.8379D+00 | 0.8283D+00 | 0.8192D+00 | 0.8105D+00 | 0.8022D+00 | 0.7944D+00 | 0.7869D+00 | 0.7798D+00 |
| 0.02 | 0.4292D+00 | 0.4240D+00 | 0.4189D+00 | 0.4141D+00 | 0.4096D+00 | 0.4052D+00 | 0.4011D+00 | 0.3972D+00 | 0.3934D+00 | 0.3899D+00 |
| 0.03 | 0.2861D+00 | 0.2826D+00 | 0.2793D+00 | 0.2761D+00 | 0.2731D+00 | 0.2702D+00 | 0.2674D+00 | 0.2648D+00 | 0.2623D+00 | 0.2599D+00 |
| 0.04 | 0.2146D+00 | 0.2120D+00 | 0.2095D+00 | 0.2071D+00 | 0.2048D+00 | 0.2026D+00 | 0.2006D+00 | 0.1986D+00 | 0.1967D+00 | 0.1949D+00 |
| 0.05 | 0.1717D+00 | 0.1696D+00 | 0.1676D+00 | 0.1657D+00 | 0.1638D+00 | 0.1621D+00 | 0.1604D+00 | 0.1589D+00 | 0.1574D+00 | 0.1560D+00 |
| 0.06 | 0.1431D+00 | 0.1413D+00 | 0.1396D+00 | 0.1381D+00 | 0.1365D+00 | 0.1351D+00 | 0.1337D+00 | 0.1324D+00 | 0.1311D+00 | 0.1300D+00 |
| 0.07 | 0.1226D+00 | 0.1211D+00 | 0.1197D+00 | 0.1183D+00 | 0.1170D+00 | 0.1158D+00 | 0.1146D+00 | 0.1135D+00 | 0.1124D+00 | 0.1114D+00 |
| 0.08 | 0.1073D+00 | 0.1060D+00 | 0.1047D+00 | 0.1035D+00 | 0.1024D+00 | 0.1013D+00 | 0.1003D+00 | 0.9930D-01 | 0.9836D-01 | 0.9747D-01 |
| 0.09 | 0.9538D-01 | 0.9422D-01 | 0.9310D-01 | 0.9204D-01 | 0.9102D-01 | 0.9006D-01 | 0.8914D-01 | 0.8826D-01 | 0.8743D-01 | 0.8664D-01 |
| 0.10 | 0.8585D-01 | 0.8479D-01 | 0.8379D-01 | 0.8283D-01 | 0.8192D-01 | 0.8105D-01 | 0.8022D-01 | 0.7944D-01 | 0.7869D-01 | 0.7798D-01 |
| 0.20 | 0.4293D-01 | 0.4240D-01 | 0.4190D-01 | 0.4142D-01 | 0.4096D-01 | 0.4053D-01 | 0.4011D-01 | 0.3972D-01 | 0.3935D-01 | 0.3899D-01 |
| 0.30 | 0.2862D-01 | 0.2827D-01 | 0.2793D-01 | 0.2761D-01 | 0.2731D-01 | 0.2702D-01 | 0.2674D-01 | 0.2648D-01 | 0.2623D-01 | 0.2600D-01 |
| 0.40 | 0.2146D-01 | 0.2120D-01 | 0.2095D-01 | 0.2071D-01 | 0.2048D-01 | 0.2027D-01 | 0.2006D-01 | 0.1986D-01 | 0.1968D-01 | 0.1950D-01 |
| 0.50 | 0.1717D-01 | 0.1696D-01 | 0.1676D-01 | 0.1657D-01 | 0.1639D-01 | 0.1621D-01 | 0.1605D-01 | 0.1589D-01 | 0.1574D-01 | 0.1560D-01 |
| 0.60 | 0.1431D-01 | 0.1414D-01 | 0.1397D-01 | 0.1381D-01 | 0.1366D-01 | 0.1351D-01 | 0.1337D-01 | 0.1324D-01 | 0.1312D-01 | 0.1300D-01 |
| 0.70 | 0.1227D-01 | 0.1212D-01 | 0.1197D-01 | 0.1184D-01 | 0.1171D-01 | 0.1158D-01 | 0.1146D-01 | 0.1135D-01 | 0.1124D-01 | 0.1114D-01 |
| 0.80 | 0.1073D-01 | 0.1060D-01 | 0.1048D-01 | 0.1036D-01 | 0.1024D-01 | 0.1013D-01 | 0.1003D-01 | 0.9933D-02 | 0.9839D-02 | 0.9750D-02 |
| 0.90 | 0.9542D-02 | 0.9426D-02 | 0.9314D-02 | 0.9208D-02 | 0.9106D-02 | 0.9009D-02 | 0.8917D-02 | 0.8830D-02 | 0.8746D-02 | 0.8667D-02 |
| 1.00 | 0.8588D-02 | 0.8483D-02 | 0.8383D-02 | 0.8287D-02 | 0.8196D-02 | 0.8109D-02 | 0.8026D-02 | 0.7947D-02 | 0.7872D-02 | 0.7801D-02 |
| 2.00 | 0.4296D-02 | 0.4244D-02 | 0.4194D-02 | 0.4146D-02 | 0.4100D-02 | 0.4056D-02 | 0.4015D-02 | 0.3975D-02 | 0.3938D-02 | 0.3902D-02 |
| 3.00 | 0.2866D-02 | 0.2831D-02 | 0.2797D-02 | 0.2765D-02 | 0.2735D-02 | 0.2706D-02 | 0.2678D-02 | 0.2651D-02 | 0.2626D-02 | 0.2602D-02 |
| 4.00 | 0.2150D-02 | 0.2124D-02 | 0.2099D-02 | 0.2075D-02 | 0.2052D-02 | 0.2030D-02 | 0.2009D-02 | 0.1989D-02 | 0.1971D-02 | 0.1953D-02 |
| 5.00 | 0.1721D-02 | 0.1700D-02 | 0.1680D-02 | 0.1661D-02 | 0.1643D-02 | 0.1625D-02 | 0.1608D-02 | 0.1592D-02 | 0.1577D-02 | 0.1563D-02 |
| 6.00 | 0.1435D-02 | 0.1418D-02 | 0.1401D-02 | 0.1385D-02 | 0.1369D-02 | 0.1355D-02 | 0.1341D-02 | 0.1328D-02 | 0.1315D-02 | 0.1303D-02 |
| 7.00 | 0.1231D-02 | 0.1216D-02 | 0.1201D-02 | 0.1188D-02 | 0.1174D-02 | 0.1162D-02 | 0.1150D-02 | 0.1138D-02 | 0.1127D-02 | 0.1117D-02 |
| 8.00 | 0.1077D-02 | 0.1064D-02 | 0.1052D-02 | 0.1040D-02 | 0.1028D-02 | 0.1017D-02 | 0.1007D-02 | 0.9966D-03 | 0.9870D-03 | 0.9779D-03 |
| 9.00 | 0.9581D-03 | 0.9466D-03 | 0.9354D-03 | 0.9247D-03 | 0.9144D-03 | 0.9046D-03 | 0.8952D-03 | 0.8862D-03 | 0.8777D-03 | 0.8696D-03 |
| 10.00 | 0.8627D-03 | 0.8523D-03 | 0.8423D-03 | 0.8326D-03 | 0.8234D-03 | 0.8145D-03 | 0.8061D-03 | 0.7980D-03 | 0.7903D-03 | 0.7830D-03 |
| 15.00 | 0.5766D-03 | 0.5697D-03 | 0.5630D-03 | 0.5566D-03 | 0.5503D-03 | 0.5444D-03 | 0.5387D-03 | 0.5333D-03 | 0.5281D-03 | 0.5231D-03 |
| 20.00 | 0.4335D-03 | 0.4284D-03 | 0.4234D-03 | 0.4185D-03 | 0.4138D-03 | 0.4093D-03 | 0.4050D-03 | 0.4009D-03 | 0.3970D-03 | 0.3933D-03 |

SUPERHEATED STEAM SPECIFIC HEAT (KCAL/KG/K) : CPF(30,30)

| PS(I,1) PRES. (AT) | CPG(I, 1) SPHT (KCAL/KG/K) | CPG(I, 2) SPHT (KCAL/KG/K) | CPG(I, 3) SPHT (KCAL/KG/K) | CPG(I, 4) SPHT (KCAL/KG/K) | CPG(I, 5) SPHT (KCAL/KG/K) | CPG(I, 6) SPHT (KCAL/KG/K) | CPG(I, 7) SPHT (KCAL/KG/K) | CPG(I, 8) SPHT (KCAL/KG/K) | CPG(I, 9) SPHT (KCAL/KG/K) | CPG(I,10) SPHT (KCAL/KG/K) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.0 | 0.0 | 0.4101D+00 | 0.4123D+00 | 0.4170D+00 | 0.4226D+00 | 0.4246D+00 | 0.4266D+00 | 0.4287D+00 | 0.4307D+00 |
| 0.02 | 0.0 | 0.0 | 0.4130D+00 | 0.4136D+00 | 0.4176D+00 | 0.4229D+00 | 0.4248D+00 | 0.4268D+00 | 0.4288D+00 | 0.4309D+00 |
| 0.03 | 0.0 | 0.0 | 0.4151D+00 | 0.4150D+00 | 0.4181D+00 | 0.4232D+00 | 0.4250D+00 | 0.4270D+00 | 0.4290D+00 | 0.4310D+00 |
| 0.04 | 0.0 | 0.0 | 0.4167D+00 | 0.4163D+00 | 0.4186D+00 | 0.4234D+00 | 0.4253D+00 | 0.4272D+00 | 0.4291D+00 | 0.4311D+00 |
| 0.05 | 0.0 | 0.0 | 0.4181D+00 | 0.4177D+00 | 0.4192D+00 | 0.4237D+00 | 0.4255D+00 | 0.4273D+00 | 0.4293D+00 | 0.4313D+00 |
| 0.06 | 0.0 | 0.0 | 0.4193D+00 | 0.4190D+00 | 0.4197D+00 | 0.4240D+00 | 0.4257D+00 | 0.4275D+00 | 0.4294D+00 | 0.4314D+00 |
| 0.07 | 0.0 | 0.0 | 0.4204D+00 | 0.4203D+00 | 0.4202D+00 | 0.4242D+00 | 0.4259D+00 | 0.4277D+00 | 0.4296D+00 | 0.4315D+00 |
| 0.08 | 0.0 | 0.0 | 0.0 | 0.4213D+00 | 0.4208D+00 | 0.4245D+00 | 0.4261D+00 | 0.4279D+00 | 0.4297D+00 | 0.4317D+00 |
| 0.09 | 0.0 | 0.0 | 0.0 | 0.4222D+00 | 0.4213D+00 | 0.4247D+00 | 0.4263D+00 | 0.4281D+00 | 0.4299D+00 | 0.4318D+00 |
| 0.10 | 0.0 | 0.0 | 0.0 | 0.4231D+00 | 0.4218D+00 | 0.4250D+00 | 0.4266D+00 | 0.4282D+00 | 0.4300D+00 | 0.4319D+00 |
| 0.20 | 0.0 | 0.0 | 0.0 | 0.4295D+00 | 0.4270D+00 | 0.4276D+00 | 0.4287D+00 | 0.4300D+00 | 0.4316D+00 | 0.4332D+00 |
| 0.30 | 0.0 | 0.0 | 0.0 | 0.4341D+00 | 0.4321D+00 | 0.4302D+00 | 0.4308D+00 | 0.4318D+00 | 0.4331D+00 | 0.4345D+00 |
| 0.40 | 0.0 | 0.0 | 0.0 | 0.4379D+00 | 0.4370D+00 | 0.4328D+00 | 0.4330D+00 | 0.4336D+00 | 0.4346D+00 | 0.4358D+00 |
| 0.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4411D+00 | 0.4353D+00 | 0.4351D+00 | 0.4354D+00 | 0.4361D+00 | 0.4371D+00 |
| 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4441D+00 | 0.4378D+00 | 0.4372D+00 | 0.4372D+00 | 0.4376D+00 | 0.4384D+00 |
| 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4467D+00 | 0.4403D+00 | 0.4393D+00 | 0.4389D+00 | 0.4391D+00 | 0.4397D+00 |
| 0.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4492D+00 | 0.4428D+00 | 0.4413D+00 | 0.4407D+00 | 0.4406D+00 | 0.4410D+00 |
| 0.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4516D+00 | 0.4452D+00 | 0.4434D+00 | 0.4424D+00 | 0.4421D+00 | 0.4423D+00 |
| 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4538D+00 | 0.4477D+00 | 0.4454D+00 | 0.4442D+00 | 0.4436D+00 | 0.4436D+00 |
| 2.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4721D+00 | 0.4711D+00 | 0.4654D+00 | 0.4613D+00 | 0.4584D+00 | 0.4565D+00 |
| 3.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4871D+00 | 0.4846D+00 | 0.4779D+00 | 0.4729D+00 | 0.4692D+00 |
| 4.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5006D+00 | 0.4942D+00 | 0.4872D+00 | 0.4817D+00 |
| 5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5132D+00 | 0.5102D+00 | 0.5013D+00 | 0.4942D+00 |
| 6.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5252D+00 | 0.5152D+00 | 0.5065D+00 |
| 7.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5368D+00 | 0.5290D+00 | 0.5187D+00 |
| 8.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5480D+00 | 0.5426D+00 | 0.5308D+00 |
| 9.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5589D+00 | 0.5561D+00 | 0.5428D+00 |
| 10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5696D+00 | 0.5695D+00 | 0.5548D+00 |
| 15.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6211D+00 | 0.6128D+00 |
| 20.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6703D+00 | 0.6683D+00 |

SUPERHEATED STEAM SPECIFIC HEAT (KCAL/KG/K) : CPF(30,30)

| PS(I,1) PRES. (AT) | CPG(I,11) SPHT (KCAL/KG/K) | CPG(I,12) SPHT (KCAL/KG/K) | CPG(I,13) SPHT (KCAL/KG/K) | CPG(I,14) SPHT (KCAL/KG/K) | CPG(I,15) SPHT (KCAL/KG/K) | CPG(I,16) SPHT (KCAL/KG/K) | CPG(I,17) SPHT (KCAL/KG/K) | CPG(I,18) SPHT (KCAL/KG/K) | CPG(I,19) SPHT (KCAL/KG/K) | CPG(I,20) SPHT (KCAL/KG/K) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.4328D+00 | 0.4349D+00 | 0.4414D+00 | 0.4479D+00 | 0.4545D+00 | 0.4611D+00 | 0.4676D+00 | 0.4742D+00 | 0.4806D+00 | 0.4869D+00 |
| 0.02 | 0.4329D+00 | 0.4350D+00 | 0.4415D+00 | 0.4480D+00 | 0.4545D+00 | 0.4611D+00 | 0.4677D+00 | 0.4742D+00 | 0.4806D+00 | 0.4869D+00 |
| 0.03 | 0.4331D+00 | 0.4351D+00 | 0.4415D+00 | 0.4480D+00 | 0.4546D+00 | 0.4611D+00 | 0.4677D+00 | 0.4742D+00 | 0.4806D+00 | 0.4870D+00 |
| 0.04 | 0.4332D+00 | 0.4352D+00 | 0.4416D+00 | 0.4481D+00 | 0.4546D+00 | 0.4612D+00 | 0.4677D+00 | 0.4742D+00 | 0.4806D+00 | 0.4870D+00 |
| 0.05 | 0.4333D+00 | 0.4353D+00 | 0.4417D+00 | 0.4481D+00 | 0.4546D+00 | 0.4612D+00 | 0.4677D+00 | 0.4742D+00 | 0.4806D+00 | 0.4870D+00 |
| 0.06 | 0.4334D+00 | 0.4354D+00 | 0.4417D+00 | 0.4482D+00 | 0.4547D+00 | 0.4612D+00 | 0.4677D+00 | 0.4742D+00 | 0.4807D+00 | 0.4870D+00 |
| 0.07 | 0.4335D+00 | 0.4355D+00 | 0.4418D+00 | 0.4482D+00 | 0.4547D+00 | 0.4612D+00 | 0.4678D+00 | 0.4743D+00 | 0.4807D+00 | 0.4870D+00 |
| 0.08 | 0.4336D+00 | 0.4356D+00 | 0.4419D+00 | 0.4483D+00 | 0.4548D+00 | 0.4613D+00 | 0.4678D+00 | 0.4743D+00 | 0.4807D+00 | 0.4870D+00 |
| 0.09 | 0.4337D+00 | 0.4357D+00 | 0.4419D+00 | 0.4483D+00 | 0.4548D+00 | 0.4613D+00 | 0.4678D+00 | 0.4743D+00 | 0.4807D+00 | 0.4870D+00 |
| 0.10 | 0.4339D+00 | 0.4358D+00 | 0.4420D+00 | 0.4484D+00 | 0.4548D+00 | 0.4613D+00 | 0.4678D+00 | 0.4743D+00 | 0.4807D+00 | 0.4870D+00 |
| 0.20 | 0.4350D+00 | 0.4368D+00 | 0.4427D+00 | 0.4489D+00 | 0.4552D+00 | 0.4616D+00 | 0.4681D+00 | 0.4745D+00 | 0.4809D+00 | 0.4871D+00 |
| 0.30 | 0.4361D+00 | 0.4378D+00 | 0.4434D+00 | 0.4494D+00 | 0.4556D+00 | 0.4619D+00 | 0.4683D+00 | 0.4747D+00 | 0.4810D+00 | 0.4873D+00 |
| 0.40 | 0.4373D+00 | 0.4388D+00 | 0.4441D+00 | 0.4499D+00 | 0.4560D+00 | 0.4622D+00 | 0.4685D+00 | 0.4748D+00 | 0.4811D+00 | 0.4874D+00 |
| 0.50 | 0.4384D+00 | 0.4398D+00 | 0.4448D+00 | 0.4504D+00 | 0.4563D+00 | 0.4625D+00 | 0.4687D+00 | 0.4750D+00 | 0.4813D+00 | 0.4875D+00 |
| 0.60 | 0.4395D+00 | 0.4408D+00 | 0.4455D+00 | 0.4509D+00 | 0.4567D+00 | 0.4628D+00 | 0.4689D+00 | 0.4752D+00 | 0.4814D+00 | 0.4876D+00 |
| 0.70 | 0.4407D+00 | 0.4418D+00 | 0.4462D+00 | 0.4514D+00 | 0.4571D+00 | 0.4631D+00 | 0.4692D+00 | 0.4754D+00 | 0.4816D+00 | 0.4877D+00 |
| 0.80 | 0.4418D+00 | 0.4428D+00 | 0.4469D+00 | 0.4519D+00 | 0.4575D+00 | 0.4633D+00 | 0.4694D+00 | 0.4755D+00 | 0.4817D+00 | 0.4878D+00 |
| 0.90 | 0.4429D+00 | 0.4438D+00 | 0.4476D+00 | 0.4524D+00 | 0.4578D+00 | 0.4636D+00 | 0.4696D+00 | 0.4757D+00 | 0.4818D+00 | 0.4879D+00 |
| 1.00 | 0.4440D+00 | 0.4448D+00 | 0.4482D+00 | 0.4529D+00 | 0.4582D+00 | 0.4639D+00 | 0.4698D+00 | 0.4759D+00 | 0.4820D+00 | 0.4881D+00 |
| 2.00 | 0.4553D+00 | 0.4547D+00 | 0.4552D+00 | 0.4579D+00 | 0.4620D+00 | 0.4668D+00 | 0.4720D+00 | 0.4776D+00 | 0.4834D+00 | 0.4892D+00 |
| 3.00 | 0.4664D+00 | 0.4645D+00 | 0.4621D+00 | 0.4630D+00 | 0.4657D+00 | 0.4696D+00 | 0.4743D+00 | 0.4794D+00 | 0.4848D+00 | 0.4903D+00 |
| 4.00 | 0.4775D+00 | 0.4743D+00 | 0.4690D+00 | 0.4680D+00 | 0.4695D+00 | 0.4725D+00 | 0.4765D+00 | 0.4811D+00 | 0.4861D+00 | 0.4915D+00 |
| 5.00 | 0.4885D+00 | 0.4841D+00 | 0.4760D+00 | 0.4730D+00 | 0.4732D+00 | 0.4753D+00 | 0.4787D+00 | 0.4828D+00 | 0.4875D+00 | 0.4926D+00 |
| 6.00 | 0.4994D+00 | 0.4938D+00 | 0.4829D+00 | 0.4781D+00 | 0.4769D+00 | 0.4782D+00 | 0.4809D+00 | 0.4846D+00 | 0.4889D+00 | 0.4937D+00 |
| 7.00 | 0.5103D+00 | 0.5034D+00 | 0.4897D+00 | 0.4831D+00 | 0.4807D+00 | 0.4810D+00 | 0.4831D+00 | 0.4863D+00 | 0.4903D+00 | 0.4948D+00 |
| 8.00 | 0.5211D+00 | 0.5130D+00 | 0.4966D+00 | 0.4881D+00 | 0.4844D+00 | 0.4838D+00 | 0.4852D+00 | 0.4880D+00 | 0.4917D+00 | 0.4960D+00 |
| 9.00 | 0.5318D+00 | 0.5226D+00 | 0.5034D+00 | 0.4930D+00 | 0.4881D+00 | 0.4866D+00 | 0.4874D+00 | 0.4897D+00 | 0.4931D+00 | 0.4971D+00 |
| 10.00 | 0.5424D+00 | 0.5320D+00 | 0.5102D+00 | 0.4980D+00 | 0.4918D+00 | 0.4894D+00 | 0.4896D+00 | 0.4915D+00 | 0.4945D+00 | 0.4982D+00 |
| 15.00 | 0.5943D+00 | 0.5785D+00 | 0.5437D+00 | 0.5226D+00 | 0.5101D+00 | 0.5034D+00 | 0.5004D+00 | 0.5000D+00 | 0.5013D+00 | 0.5038D+00 |
| 20.00 | 0.6441D+00 | 0.6232D+00 | 0.5762D+00 | 0.5465D+00 | 0.5281D+00 | 0.5171D+00 | 0.5111D+00 | 0.5085D+00 | 0.5081D+00 | 0.5094D+00 |

SUPERHEATED STEAM SPECIFIC HEAT (KCAL/KG/K) : CPF(30,30)

| PS(I,1) PRES. (AT) | CPG(I,21) SPHT (KCAL/KG/K) | CPG(I,22) SPHT (KCAL/KG/K) | CPG(I,23) SPHT (KCAL/KG/K) | CPG(I,24) SPHT (KCAL/KG/K) | CPG(I,25) SPHT (KCAL/KG/K) | CPG(I,26) SPHT (KCAL/KG/K) | CPG(I,27) SPHT (KCAL/KG/K) | CPG(I,28) SPHT (KCAL/KG/K) | CPG(I,29) SPHT (KCAL/KG/K) | CPG(I,30) SPHT (KCAL/KG/K) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.4932D+00 | 0.4993D+00 | 0.5053D+00 | 0.5111D+00 | 0.5168D+00 | 0.5223D+00 | 0.5277D+00 | 0.5329D+00 | 0.5380D+00 | 0.5429D+00 |
| 0.02 | 0.4932D+00 | 0.4993D+00 | 0.5053D+00 | 0.5111D+00 | 0.5168D+00 | 0.5223D+00 | 0.5277D+00 | 0.5329D+00 | 0.5380D+00 | 0.5429D+00 |
| 0.03 | 0.4932D+00 | 0.4993D+00 | 0.5053D+00 | 0.5111D+00 | 0.5168D+00 | 0.5223D+00 | 0.5277D+00 | 0.5329D+00 | 0.5380D+00 | 0.5429D+00 |
| 0.04 | 0.4932D+00 | 0.4993D+00 | 0.5053D+00 | 0.5111D+00 | 0.5168D+00 | 0.5223D+00 | 0.5277D+00 | 0.5329D+00 | 0.5380D+00 | 0.5429D+00 |
| 0.05 | 0.4932D+00 | 0.4993D+00 | 0.5053D+00 | 0.5111D+00 | 0.5168D+00 | 0.5224D+00 | 0.5277D+00 | 0.5330D+00 | 0.5380D+00 | 0.5429D+00 |
| 0.06 | 0.4932D+00 | 0.4993D+00 | 0.5053D+00 | 0.5111D+00 | 0.5168D+00 | 0.5224D+00 | 0.5277D+00 | 0.5330D+00 | 0.5380D+00 | 0.5429D+00 |
| 0.07 | 0.4932D+00 | 0.4993D+00 | 0.5053D+00 | 0.5111D+00 | 0.5168D+00 | 0.5224D+00 | 0.5277D+00 | 0.5330D+00 | 0.5380D+00 | 0.5429D+00 |
| 0.08 | 0.4932D+00 | 0.4993D+00 | 0.5053D+00 | 0.5111D+00 | 0.5168D+00 | 0.5224D+00 | 0.5277D+00 | 0.5330D+00 | 0.5380D+00 | 0.5429D+00 |
| 0.09 | 0.4932D+00 | 0.4993D+00 | 0.5053D+00 | 0.5111D+00 | 0.5168D+00 | 0.5224D+00 | 0.5277D+00 | 0.5330D+00 | 0.5380D+00 | 0.5429D+00 |
| 0.10 | 0.4933D+00 | 0.4994D+00 | 0.5053D+00 | 0.5112D+00 | 0.5168D+00 | 0.5224D+00 | 0.5278D+00 | 0.5330D+00 | 0.5380D+00 | 0.5429D+00 |
| 0.20 | 0.4933D+00 | 0.4994D+00 | 0.5054D+00 | 0.5112D+00 | 0.5169D+00 | 0.5224D+00 | 0.5278D+00 | 0.5330D+00 | 0.5381D+00 | 0.5430D+00 |
| 0.30 | 0.4934D+00 | 0.4995D+00 | 0.5055D+00 | 0.5113D+00 | 0.5169D+00 | 0.5225D+00 | 0.5278D+00 | 0.5330D+00 | 0.5381D+00 | 0.5430D+00 |
| 0.40 | 0.4935D+00 | 0.4996D+00 | 0.5055D+00 | 0.5113D+00 | 0.5170D+00 | 0.5225D+00 | 0.5279D+00 | 0.5331D+00 | 0.5381D+00 | 0.5430D+00 |
| 0.50 | 0.4936D+00 | 0.4997D+00 | 0.5056D+00 | 0.5114D+00 | 0.5170D+00 | 0.5226D+00 | 0.5279D+00 | 0.5331D+00 | 0.5382D+00 | 0.5431D+00 |
| 0.60 | 0.4937D+00 | 0.4997D+00 | 0.5057D+00 | 0.5114D+00 | 0.5171D+00 | 0.5226D+00 | 0.5280D+00 | 0.5332D+00 | 0.5382D+00 | 0.5431D+00 |
| 0.70 | 0.4938D+00 | 0.4998D+00 | 0.5057D+00 | 0.5115D+00 | 0.5171D+00 | 0.5226D+00 | 0.5280D+00 | 0.5332D+00 | 0.5382D+00 | 0.5431D+00 |
| 0.80 | 0.4939D+00 | 0.4999D+00 | 0.5058D+00 | 0.5116D+00 | 0.5172D+00 | 0.5227D+00 | 0.5280D+00 | 0.5332D+00 | 0.5383D+00 | 0.5431D+00 |
| 0.90 | 0.4940D+00 | 0.5000D+00 | 0.5059D+00 | 0.5116D+00 | 0.5172D+00 | 0.5227D+00 | 0.5281D+00 | 0.5333D+00 | 0.5383D+00 | 0.5432D+00 |
| 1.00 | 0.4941D+00 | 0.5001D+00 | 0.5059D+00 | 0.5117D+00 | 0.5173D+00 | 0.5228D+00 | 0.5281D+00 | 0.5333D+00 | 0.5383D+00 | 0.5432D+00 |
| 2.00 | 0.4950D+00 | 0.5008D+00 | 0.5066D+00 | 0.5123D+00 | 0.5178D+00 | 0.5232D+00 | 0.5285D+00 | 0.5337D+00 | 0.5387D+00 | 0.5435D+00 |
| 3.00 | 0.4960D+00 | 0.5016D+00 | 0.5073D+00 | 0.5128D+00 | 0.5183D+00 | 0.5237D+00 | 0.5289D+00 | 0.5340D+00 | 0.5390D+00 | 0.5438D+00 |
| 4.00 | 0.4969D+00 | 0.5024D+00 | 0.5079D+00 | 0.5134D+00 | 0.5188D+00 | 0.5241D+00 | 0.5293D+00 | 0.5344D+00 | 0.5393D+00 | 0.5441D+00 |
| 5.00 | 0.4978D+00 | 0.5032D+00 | 0.5086D+00 | 0.5140D+00 | 0.5193D+00 | 0.5246D+00 | 0.5297D+00 | 0.5348D+00 | 0.5397D+00 | 0.5444D+00 |
| 6.00 | 0.4988D+00 | 0.5040D+00 | 0.5093D+00 | 0.5146D+00 | 0.5198D+00 | 0.5250D+00 | 0.5301D+00 | 0.5351D+00 | 0.5400D+00 | 0.5448D+00 |
| 7.00 | 0.4997D+00 | 0.5048D+00 | 0.5099D+00 | 0.5151D+00 | 0.5203D+00 | 0.5255D+00 | 0.5305D+00 | 0.5355D+00 | 0.5403D+00 | 0.5451D+00 |
| 8.00 | 0.5006D+00 | 0.5055D+00 | 0.5106D+00 | 0.5157D+00 | 0.5208D+00 | 0.5259D+00 | 0.5309D+00 | 0.5358D+00 | 0.5407D+00 | 0.5454D+00 |
| 9.00 | 0.5016D+00 | 0.5063D+00 | 0.5113D+00 | 0.5163D+00 | 0.5213D+00 | 0.5264D+00 | 0.5313D+00 | 0.5362D+00 | 0.5410D+00 | 0.5457D+00 |
| 10.00 | 0.5025D+00 | 0.5071D+00 | 0.5119D+00 | 0.5169D+00 | 0.5218D+00 | 0.5268D+00 | 0.5317D+00 | 0.5366D+00 | 0.5413D+00 | 0.5460D+00 |
| 15.00 | 0.5071D+00 | 0.5110D+00 | 0.5152D+00 | 0.5197D+00 | 0.5243D+00 | 0.5290D+00 | 0.5337D+00 | 0.5384D+00 | 0.5430D+00 | 0.5475D+00 |
| 20.00 | 0.5117D+00 | 0.5149D+00 | 0.5186D+00 | 0.5226D+00 | 0.5268D+00 | 0.5312D+00 | 0.5357D+00 | 0.5401D+00 | 0.5446D+00 | 0.5489D+00 |

# 国際単位系（SI）と換算表

**表1　SI基本単位および補助単位**

| 量 | 名称 | 記号 |
|---|---|---|
| 長さ | メートル | m |
| 質量 | キログラム | kg |
| 時間 | 秒 | s |
| 電流 | アンペア | A |
| 熱力学温度 | ケルビン | K |
| 物質量 | モル | mol |
| 光度 | カンデラ | cd |
| 平面角 | ラジアン | rad |
| 立体角 | ステラジアン | sr |

**表2　SIと併用される単位**

| 名称 | 記号 |
|---|---|
| 分，時，日 | min, h, d |
| 度，分，秒 | °, ′, ″ |
| リットル | l, L |
| トン | t |
| 電子ボルト | eV |
| 原子質量単位 | u |

1 eV=1.60218×10$^{-19}$J

1 u=1.66054×10$^{-27}$kg

**表3　固有の名称をもつSI組立単位**

| 量 | 名称 | 記号 | 他のSI単位による表現 |
|---|---|---|---|
| 周波数 | ヘルツ | Hz | $s^{-1}$ |
| 力 | ニュートン | N | $m\cdot kg/s^2$ |
| 圧力，応力 | パスカル | Pa | $N/m^2$ |
| エネルギー,仕事,熱量 | ジュール | J | N·m |
| 工率，放射束 | ワット | W | J/s |
| 電気量，電荷 | クーロン | C | A·s |
| 電位，電圧，起電力 | ボルト | V | W/A |
| 静電容量 | ファラド | F | C/V |
| 電気抵抗 | オーム | Ω | V/A |
| コンダクタンス | ジーメンス | S | A/V |
| 磁束 | ウェーバ | Wb | V·s |
| 磁束密度 | テスラ | T | $Wb/m^2$ |
| インダクタンス | ヘンリー | H | Wb/A |
| セルシウス温度 | セルシウス度 | ℃ | |
| 光束 | ルーメン | lm | cd·sr |
| 照度 | ルクス | lx | $lm/m^2$ |
| 放射能 | ベクレル | Bq | $s^{-1}$ |
| 吸収線量 | グレイ | Gy | J/kg |
| 線量等量 | シーベルト | Sv | J/kg |

**表4　SIと共に暫定的に維持される単位**

| 名称 | 記号 |
|---|---|
| オングストローム | Å |
| バーン | b |
| バール | bar |
| ガル | Gal |
| キュリー | Ci |
| レントゲン | R |
| ラド | rad |
| レム | rem |

1 Å=0.1nm=10$^{-10}$m

1 b=100fm$^2$=10$^{-28}$m$^2$

1 bar=0.1MPa=10$^5$Pa

1 Gal=1cm/s$^2$=10$^{-2}$m/s$^2$

1 Ci=3.7×10$^{10}$Bq

1 R=2.58×10$^{-4}$C/kg

1 rad=1cGy=10$^{-2}$Gy

1 rem=1cSv=10$^{-2}$Sv

**表5　SI接頭語**

| 倍数 | 接頭語 | 記号 |
|---|---|---|
| $10^{18}$ | エクサ | E |
| $10^{15}$ | ペタ | P |
| $10^{12}$ | テラ | T |
| $10^{9}$ | ギガ | G |
| $10^{6}$ | メガ | M |
| $10^{3}$ | キロ | k |
| $10^{2}$ | ヘクト | h |
| $10^{1}$ | デカ | da |
| $10^{-1}$ | デシ | d |
| $10^{-2}$ | センチ | c |
| $10^{-3}$ | ミリ | m |
| $10^{-6}$ | マイクロ | μ |
| $10^{-9}$ | ナノ | n |
| $10^{-12}$ | ピコ | p |
| $10^{-15}$ | フェムト | f |
| $10^{-18}$ | アト | a |

(注)

1．表1～5は「国際単位系」第5版，国際度量衡局1985年刊行による。ただし，1 eVおよび1 uの値はCODATAの1986年推奨値によった。

2．表4には海里，ノット，アール，ヘクタールも含まれているが日常の単位なのでここでは省略した。

3．barは，JISでは流体の圧力を表わす場合に限り表2のカテゴリーに分類されている。

4．EC閣僚理事会指令ではbar，barnおよび「血圧の単位」mmHgを表2のカテゴリーに入れている。

## 換算表

| 力 | N(=10$^5$dyn) | kgf | lbf |
|---|---|---|---|
| | 1 | 0.101972 | 0.224809 |
| | 9.80665 | 1 | 2.20462 |
| | 4.44822 | 0.453592 | 1 |

粘度　1 Pa·s(N·s/m$^2$)=10 P(ポアズ)(g/(cm·s))

動粘度　1m$^2$/s=10$^4$St(ストークス)(cm$^2$/s)

| 圧力 | MPa(=10bar) | kgf/cm$^2$ | atm | mmHg(Torr) | lbf/in$^2$(psi) |
|---|---|---|---|---|---|
| | 1 | 10.1972 | 9.86923 | 7.50062×10$^3$ | 145.038 |
| | 0.0980665 | 1 | 0.967841 | 735.559 | 14.2233 |
| | 0.101325 | 1.03323 | 1 | 760 | 14.6959 |
| | 1.33322×10$^{-4}$ | 1.35951×10$^{-3}$ | 1.31579×10$^{-3}$ | 1 | 1.93368×10$^{-2}$ |
| | 6.89476×10$^{-3}$ | 7.03070×10$^{-2}$ | 6.80460×10$^{-2}$ | 51.7149 | 1 |

| エネルギー・仕事・熱量 | J(=10$^7$ erg) | kgf·m | kW·h | cal(計量法) | Btu | ft·lbf | eV |
|---|---|---|---|---|---|---|---|
| | 1 | 0.101972 | 2.77778×10$^{-7}$ | 0.238889 | 9.47813×10$^{-4}$ | 0.737562 | 6.24150×10$^{18}$ |
| | 9.80665 | 1 | 2.72407×10$^{-6}$ | 2.34270 | 9.29487×10$^{-3}$ | 7.23301 | 6.12082×10$^{19}$ |
| | 3.6×10$^6$ | 3.67098×10$^5$ | 1 | 8.59999×10$^5$ | 3412.13 | 2.65522×10$^6$ | 2.24694×10$^{25}$ |
| | 4.18605 | 0.426858 | 1.16279×10$^{-6}$ | 1 | 3.96759×10$^{-3}$ | 3.08747 | 2.61272×10$^{19}$ |
| | 1055.06 | 107.586 | 2.93072×10$^{-4}$ | 252.042 | 1 | 778.172 | 6.58515×10$^{21}$ |
| | 1.35582 | 0.138255 | 3.76616×10$^{-7}$ | 0.323890 | 1.28506×10$^{-3}$ | 1 | 8.46233×10$^{18}$ |
| | 1.60218×10$^{-19}$ | 1.63377×10$^{-20}$ | 4.45050×10$^{-26}$ | 3.82743×10$^{-20}$ | 1.51857×10$^{-22}$ | 1.18171×10$^{-19}$ | 1 |

1 cal= 4.18605J（計量法）

= 4.184J（熱化学）

= 4.1855J（15℃）

= 4.1868J（国際蒸気表）

仕事率　1 PS(仏馬力)

= 75 kgf·m/s

= 735.499W

| 放射能 | Bq | Ci |
|---|---|---|
| | 1 | 2.70270×10$^{-11}$ |
| | 3.7×10$^{10}$ | 1 |

| 吸収線量 | Gy | rad |
|---|---|---|
| | 1 | 100 |
| | 0.01 | 1 |

| 照射線量 | C/kg | R |
|---|---|---|
| | 1 | 3876 |
| | 2.58×10$^{-4}$ | 1 |

| 線量当量 | Sv | rem |
|---|---|---|
| | 1 | 100 |
| | 0.01 | 1 |

(86年12月26日現在)

# 熱水力解析用重水蒸気表作成プログラムの開発