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ナトリウムの熱力学的諸物性値表

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ナトリウムの熱力学的諸物性値表

日本原子力研究所東海研究所原子炉安全工学部

朝日 義郎・田中 洋次*

(1986 年 5 月 21 月受理)

圧力と比エンタルピ（あるいは温度）との函数として、ナトリウムの諸物性値を与える計算コードSODIUMを開発し、そしてSODIUMによってナトリウム諸物性値表を作成した。これら数値表はナトリウムの熱流力過程の数値シミュレーションに用いることができる。

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*ニュークリアデータ帳

Numerical Tables of Thermodynamic
Properties of Sodium

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(Received May 21, 1986)

The numerical tables of thermodynamic properties of sodium are given as functions of pressure and specific enthalpy. To this end, the computer code SODIUM was developed. The numerical tables thus obtained can be used for numerical simulation of thermal-hydraulic processes of sodium.

Keywords: Thermodynamic Property, Sodium, Computer Code,
Manual Thermal-Hydraulic Process

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記 号

| | | |
|------------|---|-------------------------|
| C_p | 定圧比熱 | (J / kg / °K) |
| C_v | 定容比熱 | (J / kg / °K) |
| h | 比エンタルピ | (J / g · mol) |
| h_{ge} | 気化潜熱 | (J / g · mol) |
| P | 圧 力 | (atm) |
| T | 温 度 | (°K) |
| T_c | 臨界温度 = 2509.46°K | |
| V | 音 速 | (m / s) |
| α_p | 熱膨張係数 | (°K ⁻¹) |
| r_v | 熱的圧力係数 = $\left(\frac{2P}{2T} \right)$ | (Pa / °K) |
| ρ | 密 度 | (kg / m ³) |

添 字

| | |
|-----|-----|
| g | 蒸 気 |
| l | 液 |
| sat | 飽 和 |

1. 序

ナトリウムの熱力学的諸量の数値を与えることは、ナトリウムの熱流過程の数値シミュレーションにおいて重要である。計算結果の精度と信頼性のみならず、計算の効率(コスト)までも熱力学的諸量の与え方に依存する。熱力学的諸量の与え方として最も望ましいものは、ヘルムホルツの自由エネルギーから計算する方法即ちカノニカル表現法であると考えられる。この例として Goldammer と Kottowski によるもの⁽¹⁾があるが、彼らの与えた式は飽和領域で特異点を有しているため、Gibbs函数を用いて飽和状態を決定することが不可能である。その他の方法として、状態方程式の(2階)微分に対する経験式に基づいた Breton⁽²⁾の方法があるが、この方法は分割領域内で首尾一貫しているけれど領域境界では一貫していない。

このように、上記2つの方法では、実用的なナトリウムの諸物性値表を作成することは困難である。そこでこの報告書では、Fink-Leibowitz^(3,4)に従って、実用的なナトリウムの諸物性値表を作成することを考える。しかし、彼らの方法で計算しても文献(3)に与えられている数値表の一部は再現できないことがわかった。このようなときには、文献(3)の数値表を近似する式を最小二乗法で作ることとした。

このように確定した式に従って、計算プログラム SODIUM を開発し、ナトリウムの熱力学的諸量の数値表を作成した。独立変数として(圧力, 温度)か(圧力, 比エンタルピ)のうちどちらでも選ぶことができる。付録Bには(圧力, 比エンタルピ)を独立変数とした時に SODIUM が与える数値群を示す。

2. ナトリウムの熱力学的諸物性値の求め方

ANL 法による値と ANL 表による値とを比較検討したところ、次のような問題点があった。

(1) 飽和状態

ANL 法では $T < 1644^\circ\text{K}$ に対する $r_v = \left(\frac{\partial P}{\partial T} \right)_v$ が与えられていない。

(2) 過熱蒸気

ANL 法では、単体、2重体、4重体のモル分率を与えなければならないが、その与え方が不明確である。

(3) サブクール液

ANL 法で必要とされる数値微積分のアルゴリズムが示されていない。

上述のように(1)ANL法による値と、ANL表による値とが不一致であるとき、あるいは(2)ANL法が明確でないときは、ANL表を基にして最小二乗法を適用した。

本節では、このようにして整理した諸物性値計算式について述べる。これらの式のうち、理論的な式の詳細については文献(3)、(4)を参照されたい。

この節では(圧力、温度)を独立変数として諸量を与えている。しかし(圧力、比エンタルピ)を独立変数とする計算体系に対しては、次のようにして、独立変数を(圧力、比エンタルピ)系に変換しなければならない。

(1) 飽和領域

飽和圧力 P は飽和温度 T の関数として $P = f(T)$ として与えられているので、 P を与えてニュートン法でこの式を T について解けば $T(P)$ テーブルを得る。

(2) 単相領域

比エンタルピ h は圧力 P と温度 T の関数として、 $h = f(P, T)$ として与えられている。 P と h とを与えて、ニュートン法でこの式を T について解けば、 $T(P, h)$ テーブルを得る。

2.1 飽和物性値

本報告で、飽和量として考慮したものは、飽和圧力、飽和液比エンタルピ、飽和蒸気比エンタルピ、飽和液密度、飽和蒸気密度、飽和液定圧比熱、飽和蒸気定圧比熱、飽和蒸気定容比熱、飽和液定容比熱である。以下に確定した式を記す。

2.1.1 飽和液比エンタルピと飽和蒸気比エンタルピ

$371^\circ\text{K} \leq T \leq 1644^\circ\text{K}$ のとき、

$$h_e = h_s(298) + C_0 + C_1 T + C_2 T^2 + C_3 T^3 + C_4 T^{-1}$$

$$h_g = h_e + h_{gl}$$

ここに

$$h_{gl} = 3.3305 \times 10^4 \left(1 - \frac{T}{T_c} \right) + 8.0142 \times 10^4 \left(1 - \frac{T}{T_c} \right)^{0.2}$$

$$C_0 = -7.1393 \times 10^3$$

$$C_1 = 35.206$$

$$C_2 = -7.0513 \times 10^{-3}$$

$$C_3 = 2.5711 \times 10^{-6}$$

$$C_4 = -1.2428 \times 10^5$$

1644°K < T ≤ T_c のとき

$$h_l = h_s(298) + E + F(T - T_\mu) - \frac{1}{2} A_H T_c \left(1 - \frac{T}{T_c} \right)^{B_H}$$

$$h_g = h_e + h_{gl}$$

$$h_{gl} = A_H T_c \left(1 - \frac{T}{T_c} \right)^{B_H}$$

ここに

$$E = 81,678 \text{ (J/g · mol)}$$

$$F = 18.525 \text{ (J/g · mol · °K)}$$

$$T_\mu = 1644.26 \text{ (°K)}$$

$$A_H = 43.402 \text{ (J/g · mol · K)}$$

$$B_H = 0.32227$$

2.1.2 飽和蒸気圧 (atm)

$$\ln P = 18.832 - \frac{13113}{T} - 1.0948 \ln T + 1.9777 \times 10^{-4} T$$

2.1.3 飽和蒸気密度と飽和液密度

$$\rho_l = b_0 + b_1 T + b_2 T^2 + b_3 T^3 \quad 371^\circ\text{K} \leq T \leq 1644^\circ\text{K}$$

$$\rho_c \left\{ 1 + A \left(1 - \frac{T}{T_c} \right)^B + C (T_c - T)^2 \right\} \quad 1644^\circ\text{K} < T \leq T_c$$

ここに

$$b_0 = 1011.8$$

$$b_1 = -0.22054$$

$$b_2 = -1.9226 \times 10^{-5}$$

$$b_3 = 5.6371 \times 10^{-9}$$

$$A = 2.3709$$

$$B = 0.31645$$

$$C = 2.8467 \times 10^{-7}$$

$$\rho_c = 214.1 \text{ (kg/m}^3\text{)}$$

2.1.4 飽和液定圧比熱

$$(C_p)_l = C_{\text{sat}} + \frac{T a_p r_{\text{sat}}}{\rho_l}$$

ここに

$$C_{\text{sat}} = \left(\frac{\partial h_e}{\partial T} \right)_{\text{sat}} - \frac{r_{\text{sat}}}{\rho_l}$$

$$r_{\text{sat}} = \left(\frac{\partial P}{\partial T} \right)_{\text{sat}}$$

$$a_p = a_{\text{sat}} + \beta_T r_{\text{sat}}$$

$$a_{\text{sat}} = - \frac{1}{\rho_l} \left(\frac{\partial P_l}{\partial T} \right)_{\text{sat}}$$

$$\beta_T = \frac{\beta_s C_{\text{sat}} + \frac{T}{\rho_l} a_{\text{sat}} (a_{\text{sat}} + \beta_s r_{\text{sat}})}{C_{\text{sat}} - \frac{T}{\rho_l} r_{\text{sat}} (a_{\text{sat}} + \beta_s r_{\text{sat}})}$$

$$\beta_s = \begin{cases} \frac{1}{\rho_e V_2} & 371^\circ\text{K} \leq T \leq 1644^\circ\text{K} \\ \beta_{s,m} \frac{1 + \frac{\theta}{b}}{1 - \theta} & 1644^\circ\text{K} \leq T \end{cases}$$

$$V = 2660.7 - 0.37667 T - 9.0356 \times 10^{-5} T^2$$

$$b = 3.4066$$

$$\beta_{s,m} = 1.7364 \times 10^{-4} \text{ (Mpa}^{-1}\text{)}$$

$$T_m = 370.98 \text{ (}^\circ\text{K)}$$

2.1.5 飽和蒸気定圧比熱

$$1644.26^\circ\text{K} \leq T \leq T_c$$

$$(C_p)_g = (C_{\text{sat}})_g + \frac{T (a_p)_g r_{\text{sat}}}{\rho_g}$$

ここに

$$(C_{\text{sat}})_g = \left(\frac{\partial h_g}{\partial T} \right)_{\text{sat}} - \frac{r_{\text{sat}}}{\rho_g}$$

$$(\alpha_p)_g = - \frac{\rho_g}{\left(\frac{\partial \rho_g}{\partial T}\right)_{\text{sat}}} \left(1 - \frac{r_{\text{sat}}}{r_v}\right)$$

$$r_v = r_v^c + A (T_c - T)^{1/2} + B (T_c - T)$$

$$A = -0.025165$$

$$B = 3.4175 \times 10^{-4}$$

$$r_c = 0.46652$$

$$371^\circ\text{K} < T < 1644.26^\circ\text{K}$$

$$(C_p)_g = \xi_0 + \xi_1 T + \xi_2 T^2 + \xi_3 T^3$$

ここに

$$\xi_0 = -0.6238927 \times 10^2$$

$$\xi_1 = 0.2854764$$

$$\xi_2 = -0.2141192 \times 10^{-3}$$

$$\xi_3 = 0.5028786 \times 10^{-7}$$

2.1.6 定容比熱

$$(C_v)_g = \zeta_0 + \zeta_1 T + \zeta_2 T^2 + \zeta_3 T^3$$

$$(C_v)_l = (C_p)_l \beta_s / \beta_T$$

ここに

$$\zeta_0 = -0.6061327 \times 10^2$$

$$\zeta_1 = 0.25848355$$

$$\zeta_2 = -0.2054598 \times 10^{-3}$$

$$\zeta_3 = 0.4974504 \times 10^{-7}$$

2.2 サブクール液物性値

サブクール海の諸物性値については、ANL法による値とANL表による値とは大きな不一致がみられた。そこで次のように、ANL表を基に最小二乗法を使って計算式を作成した。これらの式の係数を表1にFORTRAN形式で示す。

$$h_l = \sum_{i=1}^5 \sum_{j=1}^5 X X (i, j) T^{5-i} P^{5-j}$$

$$(C_p)_l = \sum_{i=1}^5 \sum_{j=1}^5 X X X (i, j) T^{5-i} P^{5-j}$$

$$\rho_l = \sum_{i=1}^5 \sum_{j=1}^5 X X X X (i, j) T^{5-i} P^{5-j}$$

但し, ここでは $[h_\ell] = \text{KJ/mol}$, $[(C_p)_\ell] = \text{J/mol/}^\circ\text{K}$

$[P] = \text{MP}_a$

表1 サブクール液の諸物性値計算式の係数

XX : h_{ℓ} の係数
 XXX : ρ_{ℓ} の係数
 XXXX : $(C_p)_{\ell}$ の係数

DIMENSION XX (5, 5), XXX (5, 5), XXXX (5, 5)

```

DATA XX/ 0.13713290126989D-18, -0.70390579634201D-15,
0.12605399285920D-11, -0.93967647489174D-09,
0.24789615652973D-06, -0.13481204466815D-16,
0.70166204637040D-13, -0.12684142554038D-09,
0.95060360575735D-07, -0.25104807730948D-04,
0.47463959063439D-15, -0.24328873453570D-11,
0.43689336076161D-08, -0.32526839774604D-05,
0.85028158315811D-03, -0.92746934714262D-14,
0.40658504361277D-10, -0.69947238944329D-07,
0.48196966500710D-04, 0.10662291203343D-01,
-0.14122410002694D-12, 0.32407494266920D-08,
-0.83708321905388D-05, 0.36519499206680D-01,
-0.77858436226555D+01/

DATA XXX/ 0.15289931155008D-17, -0.72189778176416D-14,
0.12252304609559D-10, -0.87697983268889D-08,
0.21973544985199D-05, -0.12800295356906D-15,
0.61149865384497D-12, -0.10449283527853D-08,
0.75101688410234D-06, -0.18805982890702D-03,
0.25391082522012D-14, -0.12893412107927D-10,
0.22470596023750D-07, -0.16447188453110D-04,
0.40361681462462D-02, 0.34437043493106D-13,
-0.87309367009755D-10, 0.16023224624081D-06,
0.25454903171201D-04, 0.14955803601978D+00,
-0.25584943513170D-11, 0.14354949074387D-07,
-0.30365295953998D-04, -0.21421498713117D+00,
0.10103007233093D+04/

DATA XXXX/ -0.91403177378156D-19, 0.47748087263980D-15,
-0.87419976197691D-12, 0.66615359135296D-09,
-0.17876542149588D-06, 0.61703260017171D-17,
-0.36669877595305D-13, 0.72642484845923D-10,
-0.58471678194022D-07, 0.16343240690332D-04,
-0.25369114371986D-16, 0.55795783552716D-12,
-0.14963866431949D-08, 0.14043498609832D-05,
-0.42782862421416D-03, -0.60503254630595D-14,
0.12813952738954D-10, -0.96350052647847D-08,
-0.50967107095297D-05, 0.19810175228854D-02,
0.10325192393305D-11, -0.49725909952451D-08,
0.16619131946828D-04, -0.21415357712558D-01,
0.37673443318554D+02/

```

2.3 過熱蒸気物性値

サブクール液物性値と同様に、過熱蒸気物性値も、ANL法による値と、ANL表による値とに大きな不一致がみられたので、最小二乗法によるANL表の近似を試みた。ところが、高圧時には、これら諸量が大きな非線型性をもつために有効な近似が困難であった。そこで圧力を7気圧までに制限した。得られた式の係数は第2表にFORTRAN形式で載せてある。

$$h_g = \sum_{i=1}^5 \sum_{j=1}^3 X X (i, j) T^{5-i} P^{3-j}$$

$$(C_p)_g = \sum_{i=1}^5 \sum_{j=1}^5 X X X (i, j) T^{5-i} P^{5-j}$$

$$\rho_g = \sum_{i=1}^5 \sum_{j=1}^5 X X X X (i, j) T^{5-i} P^{5-i} P^{5-j}$$

但し、ここでは $(h_g) = \text{KJ/mol}$, $((C_p)_g) = \text{J/mol/}^\circ\text{K}$

$$[P] = \text{MPa}$$

表2 過熱蒸気の諸物性値計算式の係数

XX : h_g の係数
 XXX : ρ_g の係数
 XXXX : $(C_p)_g$ の係数

DIMENSION XX(5,3),XXX(5,5),XXXX(5,5)

```

DATA XX/      0.13634440796682E-08, -0.65109461920683E-05,
              0.11377743539986E-01, -0.85943729895029E+01,
              0.23686572142881E+04, -0.77854141356870E-07,
              0.39338139050036E-03, -0.74167681207009E+00,
              0.61867480238787E+03, -0.19278148922634E+06,
              0.15848976464485E-10, -0.77036797443815E-07,
              0.13793556213956E-03, -0.86400824231765E-01,
              0.13090753242292E+03/

DATA XXX/     0.86387085939372E-09, -0.41832438708293E-05,
              0.75280320718694E-02, -0.59708164389566E+01,
              0.17637023749678E+04,  0.20843642530345E-09,
              -0.10712483544723E-05,  0.19811247242376E-02,
              -0.15344832851609E+01,  0.40390942528727E+03,
              -0.13162962606660E-08,  0.63907275493025E-05,
              -0.11465982494850E-01,  0.89810159145989E+01,
              -0.25775870444127E+04,  0.14883601817030E-10,
              -0.75671827843416E-07,  0.14475982599236E-03,
              -0.12523375114045E+00,  0.44028956132485E+02,
              -0.53401339042949E-14,  0.26741937630545E-10,
              -0.49877248817056E-07,  0.41058278060999E-04,
              -0.12583403332653E-01/

DATA XXXX/    0.91398580014771E-04, -0.43912897742049E+00,
              0.77938346476099E+03, -0.60405645085329E+06,
              0.17183653046901E+09, -0.10331597913976E-03,
              0.49648594647432E+00, -0.88136236907227E+03,
              0.68323214056334E+06, -0.19439594572626E+09,
              0.12159640642426E-04, -0.58518526147781E-01,
              0.10404118494732E+03, -0.80777693088915E+05,
              0.23016652697621E+08,  0.69739355157846E-06,
              -0.35506854759062E-02,  0.67534074787020E+01,
              -0.56905220316164E+04,  0.17936834630910E+07,
              0.24564527045629E-09, -0.12285015685797E-05,
              0.22880852526814E-02, -0.18807038081499E+01,
              0.59626796546608E+03/
  
```

3. ナトリウムの熱力学的諸物性値表作成プログラム SODIUM

3.1 概 要

このプログラムは、圧力とエンタルピを独立変数として、ナトリウムの熱力学的諸量の数値表を出力する。諸物性値の計算方法は第2節で述べた通りである。計算コードSODIUMは次のような手順で計算がすすむ。

- ① 入力データ即ち一群の（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 変数変換を行う。
- ⑥ サブクール液の熱力学的諸量を求める。
- ⑦ 過熱蒸気の熱力学的諸量を求める。
- ⑧ ④，⑥，⑦で求めた諸量の単位変換を行う。
- ⑨ ファイル出力，リスト出力を行う。

コードSODIUMで使用されるファイルは次の通りである。

ファイル番号1 (VBS) ナトリウム物性値出力用
 ファイル番号5 (FB) 入力データ読み込み用
 ファイル番号6 (FB) プリントアウト用

3.2 入力データの説明

入力データは以下のように4群に分けて入力される。以下に各変数について、変数タイプ（I = 整数，R = 実数）記号，変数の説明を記す。

- (a) データ群1 圧力とエンタルピの代表点の数
 FORMAT (3 I 6, 12 X, I 6)

| | 変数タイプ | 記号 | |
|---|-------|-------|----------------|
| 1 | I | IPMAX | 圧力代表点数 |
| 2 | I | ILMAX | サブクールエンタルピ代表点数 |
| 3 | I | IGMAX | 過熱蒸気エンタルピ代表点数 |
| 4 | I | IFLG | = 1 (必ず入力する) |

- (b) データ群2 圧力代表点
 FORMAT (6 D 12, 5)

| | 変数タイプ | 記号 | データの説明 |
|-------|-------|-----------------|---------------------------------|
| 1 | R | PS (1, 1) | 点1の圧力 (kg/m ²) |
| 2 | R | PS (2, 1) | 点2の圧力 (kg/m ²) |
| ⋮ | ⋮ | ⋮ | ⋮ |
| IPMAX | R | PS (IPMAX, 1) | 点IPMAXの圧力 (kg/m ²) |

(c) データ群3 サブクール比エンタルピの代表点

FORMAT (6 D 12, 5)

| | 変数タイプ | 記号 | データの説明 |
|-------|-------|------------------|---------------------------|
| 1 | R | PHL (1, 1) | 点1の比エンタルピ (kcal/kg) |
| 2 | R | PHL (1, 2) | 点2の比エンタルピ (kcal/kg) |
| ⋮ | ⋮ | ⋮ | ⋮ |
| ILMAX | R | PHL (1, ILMAX) | 点ILMAXの比エンタルピ (kcal/kg) |

(d) データ群4 過熱蒸気比エンタルピの代表点

FORMAT (6 D 12, 5)

| | 変数タイプ | 記号 | データの説明 |
|-------|-------|------------------|---------------------------|
| 1 | R | PHG (1, 1) | 点1の比エンタルピ (kcal/kg) |
| 2 | R | PHG (1, 2) | 点2の比エンタルピ (kcal/kg) |
| ⋮ | ⋮ | ⋮ | ⋮ |
| IGMAX | R | PHG (1, IGMAX) | 点IGMAXの比エンタルピ (kcal/kg) |

表3にSODIUMコードの入力データの例を示す。

表3 SODIUMの入力データの例

| | | | | | | |
|------------|------------|------------|------------|------------|------------|--|
| 30 | 20 | 30 | 1 | | | |
| 1.0000D+02 | 2.0000D+02 | 3.0000D+02 | 4.0000D+02 | 5.0000D+02 | 6.0000D+02 | |
| 7.0000D+02 | 8.0000D+02 | 9.0000D+02 | 1.0000D+03 | 2.0000D+03 | 3.0000D+03 | |
| 4.0000D+03 | 5.0000D+03 | 6.0000D+03 | 7.0000D+03 | 8.0000D+03 | 9.0000D+03 | |
| 1.0000D+04 | 2.0000D+04 | 3.0000D+04 | 4.0000D+04 | 5.0000D+04 | 6.0000D+04 | |
| 7.0000D+04 | 8.0000D+04 | 9.0000D+04 | 1.0000D+05 | 1.1000D+05 | 1.2000D+05 | |
| 1.0000D+00 | 2.0000D+01 | 4.0000D+01 | 6.0000D+01 | 8.0000D+01 | 1.0000D+02 | |
| 1.2000D+02 | 1.4000D+02 | 1.6000D+02 | 1.8000D+02 | 2.0000D+02 | 2.2000D+02 | |
| 2.4000D+02 | 2.6000D+02 | 2.8000D+02 | 3.0000D+02 | 3.2000D+02 | 3.4000D+02 | |
| 3.6000D+02 | 3.8000D+02 | | | | | |
| 9.7000D+02 | 9.8000D+02 | 9.9000D+02 | 1.0000D+03 | 1.0100D+03 | 1.0200D+03 | |
| 1.0300D+03 | 1.0400D+03 | 1.0500D+03 | 1.0600D+03 | 1.0700D+03 | 1.0800D+03 | |
| 1.0900D+03 | 1.1000D+03 | 1.1100D+03 | 1.1200D+03 | 1.1300D+03 | 1.1400D+03 | |
| 1.1500D+03 | 1.1600D+03 | 1.1700D+03 | 1.1800D+03 | 1.1900D+03 | 1.2000D+03 | |
| 1.2100D+03 | 1.2200D+03 | 1.2300D+03 | 1.2400D+03 | 1.2500D+03 | 1.2600D+03 | |

3.3 出力ファイルの内容

SODIUMコードの出力は1番ファイルに行われるが、FORMATなしのWRITE文で書かれるので、バイナリーファイルを出力する。以下に出力ファイルの内容を示す。

| | 変数名 | 内 容 | 単 位 |
|----|-----------|--|--------------------|
| 1 | PS(I, 1) | P 圧力 | kg/m ² |
| 2 | PS(I, 4) | T _s 飽和温度 | °C |
| 3 | PS(I, 5) | H _{fs} 飽和液エンタルピー | kcal/kg |
| 4 | PS(I, 6) | V _{fs} 飽和液比容積 | m ³ /kg |
| 5 | PS(I, 7) | H _{gs} 飽和蒸気エンタルピー | kcal/kg |
| 6 | PS(I, 8) | V _{gs} 飽和蒸気比容積 | m ³ /kg |
| 7 | PS(I, 9) | $\frac{dV_{fs}}{dP}$ | |
| 8 | PS(I, 10) | $\frac{dH_{fs}}{dP}$ | |
| 9 | PS(I, 11) | $\frac{dV_{gs}}{dP}$ | |
| 10 | PS(I, 12) | $\frac{dH_{gs}}{dP}$ | |
| 11 | CPFS(I) | C _{pfs} 飽和液定圧比熱 | 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 未飽和液エンタルピー | kcal/kg |
| 14 | PTL(I, J) | T _f 未飽和液温度 | °C |
| 15 | PD(I, J) | V _f 未飽和液比容積 | m ³ /kg |
| 16 | PDD(I, J) | $\left(\frac{\partial V_f}{\partial H}\right)_p$ | |
| 17 | PDP(I, J) | $\left(\frac{\partial V_f}{\partial P}\right)_H$ | |
| 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ー | kcal/kg |
| 20 | PTG(I, K) | T _g 過熱蒸気温度 | °C |
| 21 | PV(I, K) | V _g 過熱蒸気比容積 | m ³ /kg |
| 22 | PGD(I, K) | $\left(\frac{\partial V_g}{\partial H}\right)_p$ | |
| 23 | PGP(I, K) | $\left(\frac{\partial V_g}{\partial P}\right)_H$ | |
| 24 | CPG(I, K) | C _{pg} 過熱蒸気定圧比熱 | kcal/kg·K |

ただし、I = 1 ~ IPMAX

J = 1 ~ ILMAX

K = 1 ~ IGMAX

4. 結 論

ナトリウムの熱力学的諸物性値を与える計算コードSODIUMを開発した。サブクール液状態あるいは過熱蒸気状態での物性値をSODIUMで与える時、独立変数として(圧力、温度)か(圧力、比エンタルピ)かのどちらかを選んでもよい。圧力の範囲は、飽和状態とサブクール液状態とに対しては、12気圧まで、過熱蒸気に対しては7気圧までである。付録Bに、独立変数を(圧力、比エンタルピ)とした時にSODIUMが与える物性値表を示す。もし代表点の数を変更したいときには、3.2節に従って、入力データを作りSODIUMで再計算をすればよい。

本報告による方法は、ナトリウムの諸物性値の全体的傾向をよく表現していると考えられるが、熱力学的首尾一貫性は充分であるとはいえない。これを解決するには文献(1)に記されているようなカノニカル表現法を用いる必要がある。従って次になすべき仕事は、全相領域に適用できるヘルムホルツ函数を見つけて、カノニカル表現法によって熱力学的諸物性値表を作成することである。カノニカル表現法による物性値表がSODIUMによる物性値表に比べて実用上どのようにすぐれているかを挙げることは困難である。予想できる1つの点は、あるナトリウム熱流解析コードで前者を使用する方が後者を使用するよりも計算スピードが早いことである。

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付録 ナトリウムの熱力学的諸物性表

| S A T U R A T E D L I Q U I D P R O P E R T I E S | | | | | | |
|---|------------|------------|------------|--------------|--------------|-------------|
| PS(1, 1) | PS(1, 4) | PS(1, 5) | PS(1, 6) | PS(1, 9) | PS(1, 10) | CPFS(1) |
| PRES. | TEMP. | ENTH. | SPVL. | DVDP | DHDP | SPHT. |
| (AT) | (DEG.) | (KCAL/KG) | (M**3/KG) | (M**3/KG/AT) | (KCAL/KG/AT) | (KCAL/KG/K) |
| 0.010 | 0.1077D+04 | 0.1849D+03 | 0.1212D-02 | 0.1849D-02 | 0.1579D+04 | 0.3018D+00 |
| 0.020 | 0.1115D+04 | 0.1964D+03 | 0.1226D-02 | 0.1041D-02 | 0.8659D+03 | 0.3011D+00 |
| 0.030 | 0.1139D+04 | 0.2036D+03 | 0.1235D-02 | 0.7467D-03 | 0.6109D+03 | 0.3008D+00 |
| 0.040 | 0.1157D+04 | 0.2090D+03 | 0.1241D-02 | 0.5907D-03 | 0.4776D+03 | 0.3006D+00 |
| 0.050 | 0.1172D+04 | 0.2133D+03 | 0.1247D-02 | 0.4930D-03 | 0.3948D+03 | 0.3005D+00 |
| 0.060 | 0.1184D+04 | 0.2170D+03 | 0.1251D-02 | 0.4256D-03 | 0.3382D+03 | 0.3004D+00 |
| 0.070 | 0.1194D+04 | 0.2202D+03 | 0.1255D-02 | 0.3761D-03 | 0.2968D+03 | 0.3004D+00 |
| 0.080 | 0.1204D+04 | 0.2230D+03 | 0.1259D-02 | 0.3380D-03 | 0.2651D+03 | 0.3003D+00 |
| 0.090 | 0.1212D+04 | 0.2255D+03 | 0.1262D-02 | 0.3076D-03 | 0.2400D+03 | 0.3003D+00 |
| 0.100 | 0.1220D+04 | 0.2278D+03 | 0.1265D-02 | 0.2829D-03 | 0.2197D+03 | 0.3004D+00 |
| 0.200 | 0.1273D+04 | 0.2439D+03 | 0.1286D-02 | 0.1640D-03 | 0.1232D+03 | 0.3007D+00 |
| 0.300 | 0.1308D+04 | 0.2542D+03 | 0.1300D-02 | 0.1198D-03 | 0.8817D+02 | 0.3012D+00 |
| 0.400 | 0.1334D+04 | 0.2621D+03 | 0.1311D-02 | 0.9614D-04 | 0.6970D+02 | 0.3016D+00 |
| 0.500 | 0.1355D+04 | 0.2684D+03 | 0.1319D-02 | 0.8118D-04 | 0.5815D+02 | 0.3021D+00 |
| 0.600 | 0.1373D+04 | 0.2738D+03 | 0.1327D-02 | 0.7079D-04 | 0.5020D+02 | 0.3026D+00 |
| 0.700 | 0.1388D+04 | 0.2785D+03 | 0.1334D-02 | 0.6309D-04 | 0.4436D+02 | 0.3030D+00 |
| 0.800 | 0.1402D+04 | 0.2827D+03 | 0.1340D-02 | 0.5714D-04 | 0.3987D+02 | 0.3034D+00 |
| 0.900 | 0.1415D+04 | 0.2865D+03 | 0.1345D-02 | 0.5238D-04 | 0.3630D+02 | 0.3038D+00 |
| 1.000 | 0.1426D+04 | 0.2900D+03 | 0.1350D-02 | 0.4848D-04 | 0.3340D+02 | 0.3042D+00 |
| 2.000 | 0.1508D+04 | 0.3150D+03 | 0.1387D-02 | 0.2944D-04 | 0.1945D+02 | 0.3076D+00 |
| 3.000 | 0.1561D+04 | 0.3315D+03 | 0.1413D-02 | 0.2220D-04 | 0.1429D+02 | 0.3104D+00 |
| 4.000 | 0.1602D+04 | 0.3443D+03 | 0.1433D-02 | 0.1825D-04 | 0.1152D+02 | 0.3129D+00 |
| 5.000 | 0.1636D+04 | 0.3549D+03 | 0.1450D-02 | 0.1572D-04 | 0.9778D+01 | 0.3151D+00 |
| 6.000 | 0.1665D+04 | 0.3641D+03 | 0.1464D-02 | 0.1395D-04 | 0.8565D+01 | 0.3171D+00 |
| 7.000 | 0.1690D+04 | 0.3721D+03 | 0.1478D-02 | 0.1262D-04 | 0.7668D+01 | 0.3190D+00 |
| 8.000 | 0.1713D+04 | 0.3795D+03 | 0.1490D-02 | 0.1159D-04 | 0.6975D+01 | 0.3208D+00 |
| 9.000 | 0.1734D+04 | 0.3861D+03 | 0.1501D-02 | 0.1076D-04 | 0.6420D+01 | 0.3225D+00 |
| 10.000 | 0.1753D+04 | 0.3923D+03 | 0.1511D-02 | 0.1008D-04 | 0.5966D+01 | 0.3242D+00 |
| 11.000 | 0.1770D+04 | 0.3981D+03 | 0.1521D-02 | 0.9503D-05 | 0.5586D+01 | 0.3257D+00 |
| 12.000 | 0.1787D+04 | 0.4035D+03 | 0.1530D-02 | 0.9012D-05 | 0.5263D+01 | 0.3273D+00 |

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) |
|---------------------------|-----------------------------|--------------------------------|--------------------------------|-----------------------------------|-----------------------------------|---------------------------------|
| 0.010 | 0.10770+04 | 0.11910+04 | 0.27940+03 | -0.26340+05 | 0.38440+03 | 0.57020+00 |
| 0.020 | 0.11150+04 | 0.11940+04 | 0.14540+03 | -0.68400+04 | 0.20450+03 | 0.58410+00 |
| 0.030 | 0.11390+04 | 0.11950+04 | 0.99280+02 | -0.31100+04 | 0.14160+03 | 0.59150+00 |
| 0.040 | 0.11570+04 | 0.11970+04 | 0.75760+02 | -0.17780+04 | 0.10920+03 | 0.59640+00 |
| 0.050 | 0.11720+04 | 0.11980+04 | 0.61440+02 | -0.11530+04 | 0.89270+02 | 0.59990+00 |
| 0.060 | 0.11840+04 | 0.11980+04 | 0.51780+02 | -0.80930+03 | 0.75760+02 | 0.60260+00 |
| 0.070 | 0.11940+04 | 0.11990+04 | 0.44820+02 | -0.60000+03 | 0.65960+02 | 0.60480+00 |
| 0.080 | 0.12040+04 | 0.12000+04 | 0.39550+02 | -0.46300+03 | 0.58510+02 | 0.60660+00 |
| 0.090 | 0.12120+04 | 0.12000+04 | 0.35410+02 | -0.36840+03 | 0.52650+02 | 0.60810+00 |
| 0.100 | 0.12200+04 | 0.12010+04 | 0.32090+02 | -0.30030+03 | 0.47920+02 | 0.60930+00 |
| 0.200 | 0.12730+04 | 0.12040+04 | 0.16790+02 | -0.78350+02 | 0.25860+02 | 0.61580+00 |
| 0.300 | 0.13080+04 | 0.12060+04 | 0.11500+02 | -0.35730+02 | 0.18080+02 | 0.61790+00 |
| 0.400 | 0.13340+04 | 0.12080+04 | 0.87950+01 | -0.20470+02 | 0.14050+02 | 0.61860+00 |
| 0.500 | 0.13550+04 | 0.12090+04 | 0.71460+01 | -0.13300+02 | 0.11560+02 | 0.61850+00 |
| 0.600 | 0.13730+04 | 0.12100+04 | 0.60310+01 | -0.93460+01 | 0.98680+01 | 0.61810+00 |
| 0.700 | 0.13880+04 | 0.12110+04 | 0.52260+01 | -0.69370+01 | 0.86350+01 | 0.61750+00 |
| 0.800 | 0.14020+04 | 0.12120+04 | 0.46170+01 | -0.53590+01 | 0.76960+01 | 0.61680+00 |
| 0.900 | 0.14150+04 | 0.12130+04 | 0.41380+01 | -0.42690+01 | 0.69550+01 | 0.61600+00 |
| 1.000 | 0.14260+04 | 0.12130+04 | 0.37530+01 | -0.34820+01 | 0.63540+01 | 0.61510+00 |
| 2.000 | 0.15080+04 | 0.12180+04 | 0.19740+01 | -0.91380+00 | 0.35320+01 | 0.60610+00 |
| 3.000 | 0.15610+04 | 0.12210+04 | 0.13560+01 | -0.41820+00 | 0.25210+01 | 0.59800+00 |
| 4.000 | 0.16020+04 | 0.12230+04 | 0.10400+01 | -0.24020+00 | 0.19900+01 | 0.59090+00 |
| 5.000 | 0.16360+04 | 0.12250+04 | 0.84580+00 | -0.15630+00 | 0.16600+01 | 0.58480+00 |
| 6.000 | 0.16650+04 | 0.12270+04 | 0.71470+00 | -0.11010+00 | 0.14320+01 | 0.57930+00 |
| 7.000 | 0.16900+04 | 0.12280+04 | 0.61980+00 | -0.81820-01 | 0.12650+01 | 0.57450+00 |
| 8.000 | 0.17130+04 | 0.12290+04 | 0.54790+00 | -0.63290-01 | 0.11370+01 | 0.57010+00 |
| 9.000 | 0.17340+04 | 0.12300+04 | 0.49140+00 | -0.50460-01 | 0.10350+01 | 0.56620+00 |
| 10.000 | 0.17530+04 | 0.12310+04 | 0.44580+00 | -0.41210-01 | 0.95110+00 | 0.56260+00 |
| 11.000 | 0.17700+04 | 0.12320+04 | 0.40820+00 | -0.34310-01 | 0.88140+00 | 0.55940+00 |
| 12.000 | 0.17870+04 | 0.12330+04 | 0.37660+00 | -0.29030-01 | 0.82220+00 | 0.55640+00 |

* * * * * S U B C O O L E D L I Q U I D E N T H A L P Y (K C A L / K G) : P H L (3 0 , 2 0) * * * * *

| PS(I,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) |
|--------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 0.010 | 0.1849D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.1964D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.2000D+03 | 0.2036D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.2000D+03 | 0.2090D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.2000D+03 | 0.2133D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.2000D+03 | 0.2170D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.2000D+03 | 0.2200D+03 | 0.2202D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.2000D+03 | 0.2200D+03 | 0.2230D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.2000D+03 | 0.2200D+03 | 0.2255D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.2000D+03 | 0.2200D+03 | 0.2278D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2439D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2542D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2621D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2684D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2738D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2785D+03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.2827D+03 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.2865D+03 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.2900D+03 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.3000D+03 | 0.3150D+03 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.3000D+03 | 0.3200D+03 | 0.3315D+03 | 0.0 | 0.0 |
| 4.000 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.3000D+03 | 0.3200D+03 | 0.3400D+03 | 0.3443D+03 | 0.0 |
| 5.000 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.3000D+03 | 0.3200D+03 | 0.3400D+03 | 0.3549D+03 | 0.0 |
| 6.000 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.3000D+03 | 0.3200D+03 | 0.3400D+03 | 0.3600D+03 | 0.3641D+03 |
| 7.000 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.3000D+03 | 0.3200D+03 | 0.3400D+03 | 0.3600D+03 | 0.3721D+03 |
| 8.000 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.3000D+03 | 0.3200D+03 | 0.3400D+03 | 0.3600D+03 | 0.3795D+03 |
| 9.000 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.3000D+03 | 0.3200D+03 | 0.3400D+03 | 0.3600D+03 | 0.3800D+03 |
| 10.000 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.3000D+03 | 0.3200D+03 | 0.3400D+03 | 0.3600D+03 | 0.3800D+03 |
| 11.000 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.3000D+03 | 0.3200D+03 | 0.3400D+03 | 0.3600D+03 | 0.3800D+03 |
| 12.000 | 0.2000D+03 | 0.2200D+03 | 0.2400D+03 | 0.2600D+03 | 0.2800D+03 | 0.3000D+03 | 0.3200D+03 | 0.3400D+03 | 0.3600D+03 | 0.3800D+03 |

S U B C O O L E D T E M P E R A T U R E (D E G .) : P T L (3 0 , 2 0)

| PS(I,1) PRES. (AT) | PIL(I, 1) TEMP. (DEG.) | PIL(I, 2) TEMP. (DEG.) | PIL(I, 3) TEMP. (DEG.) | PIL(I, 4) TEMP. (DEG.) | PIL(I, 5) TEMP. (DEG.) | PIL(I, 6) TEMP. (DEG.) | PIL(I, 7) TEMP. (DEG.) | PIL(I, 8) TEMP. (DEG.) | PIL(I, 9) TEMP. (DEG.) | PIL(I,10) TEMP. (DEG.) |
|--------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 0.010 | 0.4997D+03 | 0.5553D+03 | 0.6151D+03 | 0.6760D+03 | 0.7380D+03 | 0.8010D+03 | 0.8649D+03 | 0.9297D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.020 | 0.4997D+03 | 0.5553D+03 | 0.6151D+03 | 0.6760D+03 | 0.7380D+03 | 0.8010D+03 | 0.8649D+03 | 0.9297D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.030 | 0.4997D+03 | 0.5553D+03 | 0.6151D+03 | 0.6760D+03 | 0.7380D+03 | 0.8010D+03 | 0.8649D+03 | 0.9297D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.040 | 0.4997D+03 | 0.5553D+03 | 0.6151D+03 | 0.6760D+03 | 0.7380D+03 | 0.8010D+03 | 0.8649D+03 | 0.9297D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.050 | 0.4997D+03 | 0.5553D+03 | 0.6151D+03 | 0.6760D+03 | 0.7379D+03 | 0.8010D+03 | 0.8649D+03 | 0.9297D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.060 | 0.4997D+03 | 0.5553D+03 | 0.6151D+03 | 0.6760D+03 | 0.7379D+03 | 0.8010D+03 | 0.8649D+03 | 0.9297D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.070 | 0.4997D+03 | 0.5553D+03 | 0.6151D+03 | 0.6759D+03 | 0.7379D+03 | 0.8010D+03 | 0.8649D+03 | 0.9297D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.080 | 0.4997D+03 | 0.5553D+03 | 0.6151D+03 | 0.6759D+03 | 0.7379D+03 | 0.8010D+03 | 0.8649D+03 | 0.9297D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.090 | 0.4997D+03 | 0.5553D+03 | 0.6151D+03 | 0.6759D+03 | 0.7379D+03 | 0.8010D+03 | 0.8649D+03 | 0.9297D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.100 | 0.4997D+03 | 0.5553D+03 | 0.6151D+03 | 0.6759D+03 | 0.7379D+03 | 0.8010D+03 | 0.8649D+03 | 0.9297D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.200 | 0.4997D+03 | 0.5553D+03 | 0.6150D+03 | 0.6759D+03 | 0.7379D+03 | 0.8010D+03 | 0.8649D+03 | 0.9297D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.300 | 0.4997D+03 | 0.5553D+03 | 0.6150D+03 | 0.6759D+03 | 0.7379D+03 | 0.8010D+03 | 0.8649D+03 | 0.9297D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.400 | 0.4997D+03 | 0.5553D+03 | 0.6150D+03 | 0.6759D+03 | 0.7379D+03 | 0.8009D+03 | 0.8649D+03 | 0.9296D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.500 | 0.4997D+03 | 0.5553D+03 | 0.6150D+03 | 0.6759D+03 | 0.7379D+03 | 0.8009D+03 | 0.8649D+03 | 0.9296D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.600 | 0.4997D+03 | 0.5553D+03 | 0.6150D+03 | 0.6759D+03 | 0.7379D+03 | 0.8009D+03 | 0.8649D+03 | 0.9296D+03 | 0.9951D+03 | 0.1061D+04 |
| 0.700 | 0.4997D+03 | 0.5553D+03 | 0.6150D+03 | 0.6759D+03 | 0.7379D+03 | 0.8009D+03 | 0.8649D+03 | 0.9296D+03 | 0.9950D+03 | 0.1061D+04 |
| 0.800 | 0.4997D+03 | 0.5553D+03 | 0.6150D+03 | 0.6759D+03 | 0.7379D+03 | 0.8009D+03 | 0.8649D+03 | 0.9296D+03 | 0.9950D+03 | 0.1061D+04 |
| 0.900 | 0.4997D+03 | 0.5553D+03 | 0.6150D+03 | 0.6759D+03 | 0.7379D+03 | 0.8009D+03 | 0.8649D+03 | 0.9296D+03 | 0.9950D+03 | 0.1061D+04 |
| 1.000 | 0.4997D+03 | 0.5553D+03 | 0.6150D+03 | 0.6759D+03 | 0.7379D+03 | 0.8009D+03 | 0.8648D+03 | 0.9296D+03 | 0.9950D+03 | 0.1061D+04 |
| 2.000 | 0.4996D+03 | 0.5552D+03 | 0.6149D+03 | 0.6758D+03 | 0.7378D+03 | 0.8008D+03 | 0.8648D+03 | 0.9295D+03 | 0.9950D+03 | 0.1061D+04 |
| 3.000 | 0.4996D+03 | 0.5552D+03 | 0.6149D+03 | 0.6758D+03 | 0.7377D+03 | 0.8008D+03 | 0.8647D+03 | 0.9295D+03 | 0.9949D+03 | 0.1061D+04 |
| 4.000 | 0.4995D+03 | 0.5551D+03 | 0.6148D+03 | 0.6757D+03 | 0.7377D+03 | 0.8007D+03 | 0.8646D+03 | 0.9294D+03 | 0.9948D+03 | 0.1061D+04 |
| 5.000 | 0.4995D+03 | 0.5550D+03 | 0.6147D+03 | 0.6756D+03 | 0.7376D+03 | 0.8006D+03 | 0.8646D+03 | 0.9293D+03 | 0.9947D+03 | 0.1061D+04 |
| 6.000 | 0.4994D+03 | 0.5550D+03 | 0.6147D+03 | 0.6756D+03 | 0.7375D+03 | 0.8006D+03 | 0.8645D+03 | 0.9292D+03 | 0.9947D+03 | 0.1061D+04 |
| 7.000 | 0.4994D+03 | 0.5549D+03 | 0.6146D+03 | 0.6755D+03 | 0.7375D+03 | 0.8005D+03 | 0.8644D+03 | 0.9292D+03 | 0.9946D+03 | 0.1061D+04 |
| 8.000 | 0.4993D+03 | 0.5549D+03 | 0.6146D+03 | 0.6754D+03 | 0.7374D+03 | 0.8004D+03 | 0.8643D+03 | 0.9291D+03 | 0.9945D+03 | 0.1060D+04 |
| 9.000 | 0.4992D+03 | 0.5548D+03 | 0.6145D+03 | 0.6754D+03 | 0.7373D+03 | 0.8003D+03 | 0.8643D+03 | 0.9290D+03 | 0.9944D+03 | 0.1060D+04 |
| 10.000 | 0.4992D+03 | 0.5547D+03 | 0.6144D+03 | 0.6753D+03 | 0.7373D+03 | 0.8003D+03 | 0.8642D+03 | 0.9289D+03 | 0.9944D+03 | 0.1060D+04 |
| 11.000 | 0.4991D+03 | 0.5547D+03 | 0.6144D+03 | 0.6752D+03 | 0.7372D+03 | 0.8002D+03 | 0.8641D+03 | 0.9289D+03 | 0.9943D+03 | 0.1060D+04 |
| 12.000 | 0.4991D+03 | 0.5546D+03 | 0.6143D+03 | 0.6752D+03 | 0.7371D+03 | 0.8001D+03 | 0.8641D+03 | 0.9288D+03 | 0.9942D+03 | 0.1060D+04 |

S U B C O O L E D L I Q U I D T E M P E R A T U R E (D E G .) : P T L (3 0 / 2 0)

| 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.) |
|--------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 0.010 | 0.1077D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.1115D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.1127D+04 | 0.1139D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.1127D+04 | 0.1157D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.1127D+04 | 0.1172D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.1127D+04 | 0.1184D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.1127D+04 | 0.1194D+04 | 0.1194D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.1127D+04 | 0.1194D+04 | 0.1204D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.1127D+04 | 0.1194D+04 | 0.1212D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.1127D+04 | 0.1194D+04 | 0.1220D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.1127D+04 | 0.1194D+04 | 0.1260D+04 | 0.1273D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.1127D+04 | 0.1194D+04 | 0.1260D+04 | 0.1308D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.1127D+04 | 0.1194D+04 | 0.1260D+04 | 0.1327D+04 | 0.1334D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.1127D+04 | 0.1194D+04 | 0.1260D+04 | 0.1327D+04 | 0.1355D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.1127D+04 | 0.1194D+04 | 0.1260D+04 | 0.1327D+04 | 0.1373D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.1127D+04 | 0.1194D+04 | 0.1260D+04 | 0.1327D+04 | 0.1388D+04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.1127D+04 | 0.1194D+04 | 0.1260D+04 | 0.1327D+04 | 0.1393D+04 | 0.1402D+04 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.1127D+04 | 0.1194D+04 | 0.1260D+04 | 0.1327D+04 | 0.1393D+04 | 0.1415D+04 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.1127D+04 | 0.1194D+04 | 0.1260D+04 | 0.1327D+04 | 0.1393D+04 | 0.1426D+04 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.1127D+04 | 0.1194D+04 | 0.1260D+04 | 0.1327D+04 | 0.1393D+04 | 0.1459D+04 | 0.1508D+04 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.1127D+04 | 0.1194D+04 | 0.1260D+04 | 0.1327D+04 | 0.1393D+04 | 0.1459D+04 | 0.1524D+04 | 0.1561D+04 | 0.0 | 0.0 |
| 4.000 | 0.1127D+04 | 0.1194D+04 | 0.1260D+04 | 0.1327D+04 | 0.1393D+04 | 0.1459D+04 | 0.1524D+04 | 0.1588D+04 | 0.1602D+04 | 0.0 |
| 5.000 | 0.1127D+04 | 0.1194D+04 | 0.1260D+04 | 0.1327D+04 | 0.1393D+04 | 0.1459D+04 | 0.1524D+04 | 0.1588D+04 | 0.1636D+04 | 0.0 |
| 6.000 | 0.1127D+04 | 0.1193D+04 | 0.1260D+04 | 0.1327D+04 | 0.1393D+04 | 0.1458D+04 | 0.1524D+04 | 0.1588D+04 | 0.1652D+04 | 0.1665D+04 |
| 7.000 | 0.1127D+04 | 0.1193D+04 | 0.1260D+04 | 0.1326D+04 | 0.1393D+04 | 0.1458D+04 | 0.1524D+04 | 0.1588D+04 | 0.1652D+04 | 0.1690D+04 |
| 8.000 | 0.1127D+04 | 0.1193D+04 | 0.1260D+04 | 0.1326D+04 | 0.1393D+04 | 0.1458D+04 | 0.1524D+04 | 0.1588D+04 | 0.1652D+04 | 0.1713D+04 |
| 9.000 | 0.1127D+04 | 0.1193D+04 | 0.1260D+04 | 0.1326D+04 | 0.1393D+04 | 0.1458D+04 | 0.1523D+04 | 0.1588D+04 | 0.1652D+04 | 0.1714D+04 |
| 10.000 | 0.1127D+04 | 0.1193D+04 | 0.1260D+04 | 0.1326D+04 | 0.1392D+04 | 0.1458D+04 | 0.1523D+04 | 0.1588D+04 | 0.1652D+04 | 0.1714D+04 |
| 11.000 | 0.1127D+04 | 0.1193D+04 | 0.1260D+04 | 0.1326D+04 | 0.1392D+04 | 0.1458D+04 | 0.1523D+04 | 0.1588D+04 | 0.1652D+04 | 0.1714D+04 |
| 12.000 | 0.1127D+04 | 0.1193D+04 | 0.1260D+04 | 0.1326D+04 | 0.1392D+04 | 0.1458D+04 | 0.1523D+04 | 0.1588D+04 | 0.1651D+04 | 0.1714D+04 |

S U B C O O L E D L I Q U I D S P E C I F I C V O L U M E (M * * 3 / K G) : P D (3 0 / 2 0)

| 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) |
|--------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.010 | 0.1212D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.1226D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.1230D-02 | 0.1235D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.1230D-02 | 0.1241D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.1230D-02 | 0.1247D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.1230D-02 | 0.1251D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.1230D-02 | 0.1255D-02 | 0.1255D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.1230D-02 | 0.1255D-02 | 0.1259D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.1230D-02 | 0.1255D-02 | 0.1262D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.1230D-02 | 0.1255D-02 | 0.1265D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1286D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1300D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1308D-02 | 0.1311D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1308D-02 | 0.1320D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1308D-02 | 0.1327D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1308D-02 | 0.1334D-02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1308D-02 | 0.1336D-02 | 0.1340D-02 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1308D-02 | 0.1336D-02 | 0.1345D-02 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1308D-02 | 0.1336D-02 | 0.1350D-02 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1308D-02 | 0.1336D-02 | 0.1365D-02 | 0.1388D-02 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1308D-02 | 0.1336D-02 | 0.1365D-02 | 0.1395D-02 | 0.1413D-02 | 0.0 | 0.0 |
| 4.000 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1308D-02 | 0.1336D-02 | 0.1365D-02 | 0.1395D-02 | 0.1426D-02 | 0.1433D-02 | 0.0 |
| 5.000 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1308D-02 | 0.1336D-02 | 0.1365D-02 | 0.1395D-02 | 0.1426D-02 | 0.1450D-02 | 0.0 |
| 6.000 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1308D-02 | 0.1336D-02 | 0.1365D-02 | 0.1395D-02 | 0.1426D-02 | 0.1458D-02 | 0.1465D-02 |
| 7.000 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1308D-02 | 0.1336D-02 | 0.1365D-02 | 0.1395D-02 | 0.1426D-02 | 0.1458D-02 | 0.1478D-02 |
| 8.000 | 0.1230D-02 | 0.1255D-02 | 0.1281D-02 | 0.1307D-02 | 0.1335D-02 | 0.1365D-02 | 0.1395D-02 | 0.1426D-02 | 0.1458D-02 | 0.1490D-02 |
| 9.000 | 0.1230D-02 | 0.1255D-02 | 0.1280D-02 | 0.1307D-02 | 0.1335D-02 | 0.1364D-02 | 0.1394D-02 | 0.1426D-02 | 0.1458D-02 | 0.1491D-02 |
| 10.000 | 0.1230D-02 | 0.1255D-02 | 0.1280D-02 | 0.1307D-02 | 0.1335D-02 | 0.1364D-02 | 0.1394D-02 | 0.1425D-02 | 0.1458D-02 | 0.1491D-02 |
| 11.000 | 0.1230D-02 | 0.1254D-02 | 0.1280D-02 | 0.1307D-02 | 0.1335D-02 | 0.1364D-02 | 0.1394D-02 | 0.1425D-02 | 0.1457D-02 | 0.1491D-02 |
| 12.000 | 0.1230D-02 | 0.1254D-02 | 0.1280D-02 | 0.1307D-02 | 0.1335D-02 | 0.1364D-02 | 0.1394D-02 | 0.1425D-02 | 0.1457D-02 | 0.1490D-02 |

P R E S S U R E D E R I V A T I V E O F S U B C O O L E D L I Q U I D S P E C I F I C V O L U M E : P D P (3 0 , 2 0)

 PS(I,1) PDP(I, 1) PDP(I, 2) PDP(I, 3) PDP(I, 4) PDP(I, 5) PDP(I, 6) PDP(I, 7) PDP(I, 8) PDP(I, 9) PDP(I,10)
 PRES. DVDP DVDP DVDP DVDP DVDP DVDP DVDP DVDP DVDP DVDP
 (AT)

| | | | | | | | | | | |
|--------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 0.010 | -0.30630-07 | -0.33270-07 | -0.36160-07 | -0.39150-07 | -0.42240-07 | -0.45440-07 | -0.48760-07 | -0.52220-07 | -0.55830-07 | -0.59620-07 |
| 0.020 | -0.30630-07 | -0.33270-07 | -0.36160-07 | -0.39150-07 | -0.42240-07 | -0.45440-07 | -0.48760-07 | -0.52220-07 | -0.55830-07 | -0.59620-07 |
| 0.030 | -0.30630-07 | -0.33270-07 | -0.36160-07 | -0.39150-07 | -0.42240-07 | -0.45440-07 | -0.48760-07 | -0.52220-07 | -0.55830-07 | -0.59620-07 |
| 0.040 | -0.30630-07 | -0.33270-07 | -0.36160-07 | -0.39150-07 | -0.42240-07 | -0.45440-07 | -0.48760-07 | -0.52220-07 | -0.55830-07 | -0.59620-07 |
| 0.050 | -0.30630-07 | -0.33270-07 | -0.36160-07 | -0.39150-07 | -0.42240-07 | -0.45440-07 | -0.48760-07 | -0.52220-07 | -0.55830-07 | -0.59620-07 |
| 0.060 | -0.30630-07 | -0.33270-07 | -0.36160-07 | -0.39150-07 | -0.42240-07 | -0.45440-07 | -0.48760-07 | -0.52220-07 | -0.55830-07 | -0.59620-07 |
| 0.070 | -0.30630-07 | -0.33280-07 | -0.36160-07 | -0.39150-07 | -0.42240-07 | -0.45440-07 | -0.48760-07 | -0.52220-07 | -0.55830-07 | -0.59620-07 |
| 0.080 | -0.30630-07 | -0.33280-07 | -0.36160-07 | -0.39150-07 | -0.42240-07 | -0.45440-07 | -0.48760-07 | -0.52220-07 | -0.55830-07 | -0.59620-07 |
| 0.090 | -0.30630-07 | -0.33280-07 | -0.36160-07 | -0.39150-07 | -0.42240-07 | -0.45440-07 | -0.48760-07 | -0.52220-07 | -0.55830-07 | -0.59620-07 |
| 0.100 | -0.30630-07 | -0.33280-07 | -0.36160-07 | -0.39150-07 | -0.42240-07 | -0.45440-07 | -0.48760-07 | -0.52220-07 | -0.55830-07 | -0.59620-07 |
| 0.200 | -0.30640-07 | -0.33280-07 | -0.36170-07 | -0.39150-07 | -0.42240-07 | -0.45440-07 | -0.48760-07 | -0.52220-07 | -0.55820-07 | -0.59620-07 |
| 0.300 | -0.30640-07 | -0.33290-07 | -0.36170-07 | -0.39150-07 | -0.42240-07 | -0.45440-07 | -0.48760-07 | -0.52210-07 | -0.55820-07 | -0.59610-07 |
| 0.400 | -0.30650-07 | -0.33290-07 | -0.36170-07 | -0.39160-07 | -0.42240-07 | -0.45440-07 | -0.48760-07 | -0.52210-07 | -0.55820-07 | -0.59610-07 |
| 0.500 | -0.30660-07 | -0.33300-07 | -0.36180-07 | -0.39160-07 | -0.42250-07 | -0.45440-07 | -0.48760-07 | -0.52210-07 | -0.55820-07 | -0.59610-07 |
| 0.600 | -0.30660-07 | -0.33300-07 | -0.36180-07 | -0.39160-07 | -0.42250-07 | -0.45440-07 | -0.48760-07 | -0.52210-07 | -0.55820-07 | -0.59610-07 |
| 0.700 | -0.30670-07 | -0.33310-07 | -0.36180-07 | -0.39160-07 | -0.42250-07 | -0.45440-07 | -0.48760-07 | -0.52210-07 | -0.55820-07 | -0.59610-07 |
| 0.800 | -0.30680-07 | -0.33310-07 | -0.36180-07 | -0.39160-07 | -0.42250-07 | -0.45440-07 | -0.48760-07 | -0.52210-07 | -0.55810-07 | -0.59600-07 |
| 0.900 | -0.30680-07 | -0.33320-07 | -0.36190-07 | -0.39160-07 | -0.42250-07 | -0.45440-07 | -0.48760-07 | -0.52210-07 | -0.55810-07 | -0.59600-07 |
| 1.000 | -0.30690-07 | -0.33320-07 | -0.36190-07 | -0.39170-07 | -0.42250-07 | -0.45440-07 | -0.48750-07 | -0.52200-07 | -0.55810-07 | -0.59600-07 |
| 2.000 | -0.30760-07 | -0.33370-07 | -0.36220-07 | -0.39180-07 | -0.42250-07 | -0.45440-07 | -0.48740-07 | -0.52190-07 | -0.55790-07 | -0.59580-07 |
| 3.000 | -0.30820-07 | -0.33410-07 | -0.36250-07 | -0.39200-07 | -0.42260-07 | -0.45430-07 | -0.48730-07 | -0.52170-07 | -0.55770-07 | -0.59560-07 |
| 4.000 | -0.30880-07 | -0.33460-07 | -0.36280-07 | -0.39220-07 | -0.42260-07 | -0.45430-07 | -0.48720-07 | -0.52160-07 | -0.55760-07 | -0.59540-07 |
| 5.000 | -0.30950-07 | -0.33510-07 | -0.36310-07 | -0.39230-07 | -0.42270-07 | -0.45430-07 | -0.48710-07 | -0.52140-07 | -0.55740-07 | -0.59520-07 |
| 6.000 | -0.31010-07 | -0.33550-07 | -0.36340-07 | -0.39250-07 | -0.42270-07 | -0.45420-07 | -0.48700-07 | -0.52130-07 | -0.55720-07 | -0.59500-07 |
| 7.000 | -0.31070-07 | -0.33600-07 | -0.36370-07 | -0.39270-07 | -0.42280-07 | -0.45420-07 | -0.48690-07 | -0.52110-07 | -0.55700-07 | -0.59490-07 |
| 8.000 | -0.31130-07 | -0.33640-07 | -0.36400-07 | -0.39280-07 | -0.42280-07 | -0.45410-07 | -0.48680-07 | -0.52100-07 | -0.55690-07 | -0.59470-07 |
| 9.000 | -0.31190-07 | -0.33690-07 | -0.36430-07 | -0.39300-07 | -0.42290-07 | -0.45410-07 | -0.48670-07 | -0.52090-07 | -0.55670-07 | -0.59450-07 |
| 10.000 | -0.31250-07 | -0.33730-07 | -0.36460-07 | -0.39310-07 | -0.42290-07 | -0.45410-07 | -0.48660-07 | -0.52070-07 | -0.55650-07 | -0.59430-07 |
| 11.000 | -0.31310-07 | -0.33770-07 | -0.36480-07 | -0.39330-07 | -0.42300-07 | -0.45400-07 | -0.48650-07 | -0.52060-07 | -0.55630-07 | -0.59410-07 |
| 12.000 | -0.31370-07 | -0.33810-07 | -0.36510-07 | -0.39340-07 | -0.42300-07 | -0.45400-07 | -0.48640-07 | -0.52040-07 | -0.55620-07 | -0.59390-07 |

P R E S S U R E D E R I V A T I V E O F S U B C O O L E D L I Q U I D S P E C I F I C V O L U M E
 : P D P (3 0 , 2 0)
 * * * * *
 PS(I,1) PDP(I,11) PDP(I,12) PDP(I,13) PDP(I,14) PDP(I,15) PDP(I,16) PDP(I,17) PDP(I,18) PDP(I,19) PDP(I,20)
 PRES. DVDP DVDP DVDP DVDP DVDP DVDP DVDP DVDP DVDP DVDP
 (AT)

| | | | | | | | | | | |
|--------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 0.010 | -0.6059D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | -0.6289D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | -0.6363D-07 | -0.6438D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | -0.6363D-07 | -0.6551D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | -0.6363D-07 | -0.6644D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | -0.6363D-07 | -0.6723D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | -0.6363D-07 | -0.6789D-07 | -0.6792D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | -0.6363D-07 | -0.6789D-07 | -0.6854D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | -0.6363D-07 | -0.6789D-07 | -0.6911D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | -0.6363D-07 | -0.6789D-07 | -0.6962D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | -0.6362D-07 | -0.6788D-07 | -0.7245D-07 | -0.7337D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | -0.6362D-07 | -0.6788D-07 | -0.7244D-07 | -0.7590D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | -0.6362D-07 | -0.6788D-07 | -0.7244D-07 | -0.7735D-07 | -0.7787D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | -0.6362D-07 | -0.6788D-07 | -0.7244D-07 | -0.7735D-07 | -0.7953D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | -0.6362D-07 | -0.6788D-07 | -0.7244D-07 | -0.7734D-07 | -0.8096D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | -0.6361D-07 | -0.6788D-07 | -0.7244D-07 | -0.7734D-07 | -0.8224D-07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | -0.6361D-07 | -0.6787D-07 | -0.7243D-07 | -0.7734D-07 | -0.8264D-07 | -0.8340D-07 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | -0.6361D-07 | -0.6787D-07 | -0.7243D-07 | -0.7734D-07 | -0.8264D-07 | -0.8447D-07 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | -0.6361D-07 | -0.6787D-07 | -0.7243D-07 | -0.7734D-07 | -0.8264D-07 | -0.8546D-07 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | -0.6359D-07 | -0.6785D-07 | -0.7241D-07 | -0.7732D-07 | -0.8262D-07 | -0.8837D-07 | -0.9300D-07 | 0.0 | 0.0 | 0.0 |
| 3.000 | -0.6357D-07 | -0.6783D-07 | -0.7239D-07 | -0.7730D-07 | -0.8260D-07 | -0.8835D-07 | -0.9460D-07 | -0.9845D-07 | 0.0 | 0.0 |
| 4.000 | -0.6355D-07 | -0.6781D-07 | -0.7237D-07 | -0.7728D-07 | -0.8258D-07 | -0.8832D-07 | -0.9457D-07 | -0.1014D-06 | -0.1029D-06 | 0.0 |
| 5.000 | -0.6353D-07 | -0.6779D-07 | -0.7235D-07 | -0.7726D-07 | -0.8256D-07 | -0.8830D-07 | -0.9454D-07 | -0.1013D-06 | -0.1068D-06 | 0.0 |
| 6.000 | -0.6351D-07 | -0.6777D-07 | -0.7233D-07 | -0.7724D-07 | -0.8254D-07 | -0.8828D-07 | -0.9451D-07 | -0.1013D-06 | -0.1087D-06 | -0.1103D-06 |
| 7.000 | -0.6349D-07 | -0.6775D-07 | -0.7231D-07 | -0.7722D-07 | -0.8252D-07 | -0.8825D-07 | -0.9449D-07 | -0.1013D-06 | -0.1087D-06 | -0.1135D-06 |
| 8.000 | -0.6347D-07 | -0.6773D-07 | -0.7228D-07 | -0.7720D-07 | -0.8249D-07 | -0.8823D-07 | -0.9446D-07 | -0.1012D-06 | -0.1086D-06 | -0.1165D-06 |
| 9.000 | -0.6345D-07 | -0.6771D-07 | -0.7226D-07 | -0.7718D-07 | -0.8247D-07 | -0.8821D-07 | -0.9443D-07 | -0.1012D-06 | -0.1086D-06 | -0.1166D-06 |
| 10.000 | -0.6343D-07 | -0.6770D-07 | -0.7226D-07 | -0.7716D-07 | -0.8245D-07 | -0.8818D-07 | -0.9441D-07 | -0.1012D-06 | -0.1085D-06 | -0.1166D-06 |
| 11.000 | -0.6341D-07 | -0.6768D-07 | -0.7224D-07 | -0.7714D-07 | -0.8243D-07 | -0.8816D-07 | -0.9438D-07 | -0.1011D-06 | -0.1085D-06 | -0.1165D-06 |
| 12.000 | -0.6339D-07 | -0.6766D-07 | -0.7222D-07 | -0.7712D-07 | -0.8241D-07 | -0.8814D-07 | -0.9435D-07 | -0.1011D-06 | -0.1085D-06 | -0.1165D-06 |

E N T H A L P Y D E R I V A T I V E O F S U B C O O L E D L I Q U I D S P E C I F I C V O L U M E
 : P D D (3 0 , 2 0)
 * * * * *
 P S (I , 1) P D D (I , 1) P D D (I , 2) P D D (I , 3) P D D (I , 4) P D D (I , 5) P D D (I , 6) P D D (I , 7) P D D (I , 8) P D D (I , 9) P D D (I , 10)
 P R E S . D V D H D V D H D V D H D V D H D V D H D V D H D V D H D V D H D V D H D V D H
 (A T)

| | | | | | | | | | | |
|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 0.010 | 0.72060-06 | 0.76240-06 | 0.80840-06 | 0.85630-06 | 0.90590-06 | 0.95710-06 | 0.10100-05 | 0.10630-05 | 0.11170-05 | 0.55340-06 |
| 0.020 | 0.72060-06 | 0.76240-06 | 0.80840-06 | 0.85630-06 | 0.90590-06 | 0.95710-06 | 0.10100-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.030 | 0.72060-06 | 0.76240-06 | 0.80840-06 | 0.85630-06 | 0.90590-06 | 0.95710-06 | 0.10100-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.040 | 0.72060-06 | 0.76240-06 | 0.80840-06 | 0.85630-06 | 0.90590-06 | 0.95710-06 | 0.10100-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.050 | 0.72060-06 | 0.76240-06 | 0.80840-06 | 0.85630-06 | 0.90590-06 | 0.95710-06 | 0.10100-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.060 | 0.72060-06 | 0.76240-06 | 0.80840-06 | 0.85630-06 | 0.90590-06 | 0.95710-06 | 0.10100-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.070 | 0.72060-06 | 0.76240-06 | 0.80840-06 | 0.85630-06 | 0.90590-06 | 0.95710-06 | 0.10100-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.080 | 0.72060-06 | 0.76240-06 | 0.80840-06 | 0.85630-06 | 0.90590-06 | 0.95710-06 | 0.10100-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.090 | 0.72060-06 | 0.76240-06 | 0.80840-06 | 0.85630-06 | 0.90590-06 | 0.95710-06 | 0.10100-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.100 | 0.72060-06 | 0.76240-06 | 0.80840-06 | 0.85630-06 | 0.90590-06 | 0.95710-06 | 0.10100-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.200 | 0.72060-06 | 0.76240-06 | 0.80840-06 | 0.85630-06 | 0.90590-06 | 0.95710-06 | 0.10100-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.300 | 0.72060-06 | 0.76240-06 | 0.80840-06 | 0.85630-06 | 0.90590-06 | 0.95700-06 | 0.10100-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.400 | 0.72060-06 | 0.76240-06 | 0.80840-06 | 0.85620-06 | 0.90590-06 | 0.95700-06 | 0.10100-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.500 | 0.72060-06 | 0.76240-06 | 0.80830-06 | 0.85620-06 | 0.90580-06 | 0.95700-06 | 0.10090-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.600 | 0.72050-06 | 0.76240-06 | 0.80830-06 | 0.85620-06 | 0.90580-06 | 0.95700-06 | 0.10090-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.700 | 0.72050-06 | 0.76230-06 | 0.80830-06 | 0.85620-06 | 0.90580-06 | 0.95700-06 | 0.10090-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.800 | 0.72050-06 | 0.76230-06 | 0.80830-06 | 0.85620-06 | 0.90580-06 | 0.95700-06 | 0.10090-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 0.900 | 0.72050-06 | 0.76230-06 | 0.80830-06 | 0.85620-06 | 0.90580-06 | 0.95690-06 | 0.10090-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 1.000 | 0.72050-06 | 0.76230-06 | 0.80830-06 | 0.85610-06 | 0.90580-06 | 0.95690-06 | 0.10090-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 2.000 | 0.72040-06 | 0.76220-06 | 0.80810-06 | 0.85600-06 | 0.90540-06 | 0.95680-06 | 0.10090-05 | 0.10630-05 | 0.11170-05 | 0.11720-05 |
| 3.000 | 0.72020-06 | 0.76200-06 | 0.80800-06 | 0.85580-06 | 0.90540-06 | 0.95660-06 | 0.10090-05 | 0.10630-05 | 0.11170-05 | 0.11710-05 |
| 4.000 | 0.72010-06 | 0.76190-06 | 0.80780-06 | 0.85570-06 | 0.90530-06 | 0.95640-06 | 0.10090-05 | 0.10620-05 | 0.11170-05 | 0.11710-05 |
| 5.000 | 0.72000-06 | 0.76170-06 | 0.80770-06 | 0.85550-06 | 0.90510-06 | 0.95630-06 | 0.10090-05 | 0.10620-05 | 0.11160-05 | 0.11710-05 |
| 6.000 | 0.71980-06 | 0.76160-06 | 0.80750-06 | 0.85540-06 | 0.90500-06 | 0.95610-06 | 0.10090-05 | 0.10620-05 | 0.11160-05 | 0.11710-05 |
| 7.000 | 0.71970-06 | 0.76150-06 | 0.80740-06 | 0.85520-06 | 0.90480-06 | 0.95600-06 | 0.10080-05 | 0.10620-05 | 0.11160-05 | 0.11710-05 |
| 8.000 | 0.71960-06 | 0.76130-06 | 0.80730-06 | 0.85510-06 | 0.90470-06 | 0.95580-06 | 0.10080-05 | 0.10620-05 | 0.11160-05 | 0.11700-05 |
| 9.000 | 0.71940-06 | 0.76120-06 | 0.80710-06 | 0.85490-06 | 0.90450-06 | 0.95560-06 | 0.10080-05 | 0.10610-05 | 0.11160-05 | 0.11700-05 |
| 10.000 | 0.71930-06 | 0.76110-06 | 0.80700-06 | 0.85480-06 | 0.90440-06 | 0.95550-06 | 0.10080-05 | 0.10610-05 | 0.11150-05 | 0.11700-05 |
| 11.000 | 0.71920-06 | 0.76090-06 | 0.80680-06 | 0.85460-06 | 0.90420-06 | 0.95530-06 | 0.10080-05 | 0.10610-05 | 0.11150-05 | 0.11700-05 |
| 12.000 | 0.71900-06 | 0.76080-06 | 0.80670-06 | 0.85450-06 | 0.90410-06 | 0.95510-06 | 0.10080-05 | 0.10610-05 | 0.11150-05 | 0.11700-05 |

E N T H A L P Y D E R I V A T I V E O F S U B C O O L E D L I Q U I D S P E C I F I C V O L U M E
 : P D D (3 0 , 2 0)
 * * * * *
 PS(I,1) 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
 PRES.
 (AT)

| | | | | | | | | | | | | | | | | | | |
|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----|-----|-----|-----|-----|-----|
| 0.010 | 0.1879D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.3940D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.4252D-06 | 0.5028D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.1062D-05 | 0.5704D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.1227D-05 | 0.6157D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.1227D-05 | 0.6473D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.1227D-05 | 0.1982D-07 | 0.6698D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.1227D-05 | 0.3628D-06 | 0.6859D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.1227D-05 | 0.6731D-06 | 0.6744D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.1227D-05 | 0.9570D-06 | 0.7053D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.1227D-05 | 0.1281D-05 | 0.4985D-06 | 0.6994D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.1227D-05 | 0.1281D-05 | 0.1336D-05 | 0.6480D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.1227D-05 | 0.1281D-05 | 0.1336D-05 | 0.2738D-06 | 0.5922D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.1227D-05 | 0.1281D-05 | 0.1336D-05 | 0.1123D-05 | 0.5402D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.1227D-05 | 0.1281D-05 | 0.1336D-05 | 0.1389D-05 | 0.4939D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.1227D-05 | 0.1281D-05 | 0.1336D-05 | 0.1389D-05 | 0.4535D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.1227D-05 | 0.1281D-05 | 0.1336D-05 | 0.1389D-05 | 0.3759D-06 | 0.4186D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.1227D-05 | 0.1281D-05 | 0.1336D-05 | 0.1389D-05 | 0.9030D-06 | 0.3887D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.1227D-05 | 0.1281D-05 | 0.1336D-05 | 0.1389D-05 | 0.1389D-05 | 0.3632D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.1226D-05 | 0.1281D-05 | 0.1335D-05 | 0.1389D-05 | 0.1442D-05 | 0.1494D-05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.1226D-05 | 0.1281D-05 | 0.1335D-05 | 0.1389D-05 | 0.1442D-05 | 0.1494D-05 | 0.1494D-05 | 0.1494D-05 | 0.1545D-05 | 0.3257D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.000 | 0.1226D-05 | 0.1281D-05 | 0.1335D-05 | 0.1389D-05 | 0.1441D-05 | 0.1493D-05 | 0.1493D-05 | 0.1493D-05 | 0.1545D-05 | 0.6608D-06 | 0.4232D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.1226D-05 | 0.1280D-05 | 0.1335D-05 | 0.1388D-05 | 0.1441D-05 | 0.1493D-05 | 0.1493D-05 | 0.1493D-05 | 0.1544D-05 | 0.1595D-05 | 0.5188D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.1226D-05 | 0.1280D-05 | 0.1334D-05 | 0.1388D-05 | 0.1441D-05 | 0.1493D-05 | 0.1493D-05 | 0.1493D-05 | 0.1544D-05 | 0.1595D-05 | 0.6390D-06 | 0.5884D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.1225D-05 | 0.1280D-05 | 0.1334D-05 | 0.1388D-05 | 0.1440D-05 | 0.1492D-05 | 0.1492D-05 | 0.1492D-05 | 0.1544D-05 | 0.1594D-05 | 0.1644D-05 | 0.6171D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.1225D-05 | 0.1280D-05 | 0.1334D-05 | 0.1387D-05 | 0.1440D-05 | 0.1492D-05 | 0.1492D-05 | 0.1492D-05 | 0.1543D-05 | 0.1594D-05 | 0.1644D-05 | 0.5955D-09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.1225D-05 | 0.1279D-05 | 0.1334D-05 | 0.1387D-05 | 0.1440D-05 | 0.1492D-05 | 0.1492D-05 | 0.1492D-05 | 0.1543D-05 | 0.1593D-05 | 0.1643D-05 | 0.9985D-06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.1225D-05 | 0.1279D-05 | 0.1333D-05 | 0.1387D-05 | 0.1440D-05 | 0.1491D-05 | 0.1491D-05 | 0.1491D-05 | 0.1543D-05 | 0.1593D-05 | 0.1643D-05 | 0.1693D-05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.1225D-05 | 0.1279D-05 | 0.1333D-05 | 0.1387D-05 | 0.1439D-05 | 0.1491D-05 | 0.1491D-05 | 0.1491D-05 | 0.1542D-05 | 0.1593D-05 | 0.1643D-05 | 0.1692D-05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.1224D-05 | 0.1279D-05 | 0.1333D-05 | 0.1386D-05 | 0.1439D-05 | 0.1491D-05 | 0.1491D-05 | 0.1491D-05 | 0.1542D-05 | 0.1592D-05 | 0.1642D-05 | 0.1692D-05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

***** LIQUID SPECIFIC HEAT (KCAL/KG/K) : C P F (3 0 , 2 0) *****

| 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) |
|--------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0.010 | 0.3018D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.3011D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.3009D+00 | 0.3008D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.3009D+00 | 0.3006D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.3009D+00 | 0.3005D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.3009D+00 | 0.3004D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.3009D+00 | 0.3004D+00 | 0.3004D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.3009D+00 | 0.3004D+00 | 0.3004D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.3009D+00 | 0.3004D+00 | 0.3004D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.3009D+00 | 0.3004D+00 | 0.3004D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.3009D+00 | 0.3004D+00 | 0.3006D+00 | 0.3007D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.3009D+00 | 0.3004D+00 | 0.3006D+00 | 0.3012D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.3009D+00 | 0.3004D+00 | 0.3006D+00 | 0.3015D+00 | 0.3016D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.3009D+00 | 0.3004D+00 | 0.3006D+00 | 0.3015D+00 | 0.3021D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.3009D+00 | 0.3004D+00 | 0.3006D+00 | 0.3015D+00 | 0.3026D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.3009D+00 | 0.3004D+00 | 0.3006D+00 | 0.3015D+00 | 0.3030D+00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.3009D+00 | 0.3004D+00 | 0.3006D+00 | 0.3015D+00 | 0.3032D+00 | 0.3034D+00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.3009D+00 | 0.3004D+00 | 0.3006D+00 | 0.3015D+00 | 0.3031D+00 | 0.3038D+00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.3009D+00 | 0.3004D+00 | 0.3006D+00 | 0.3015D+00 | 0.3031D+00 | 0.3042D+00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.3009D+00 | 0.3004D+00 | 0.3006D+00 | 0.3015D+00 | 0.3031D+00 | 0.3055D+00 | 0.3076D+00 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.3009D+00 | 0.3004D+00 | 0.3006D+00 | 0.3015D+00 | 0.3031D+00 | 0.3055D+00 | 0.3084D+00 | 0.3104D+00 | 0.0 | 0.0 |
| 4.000 | 0.3009D+00 | 0.3003D+00 | 0.3006D+00 | 0.3015D+00 | 0.3031D+00 | 0.3054D+00 | 0.3084D+00 | 0.3120D+00 | 0.3129D+00 | 0.0 |
| 5.000 | 0.3009D+00 | 0.3003D+00 | 0.3005D+00 | 0.3015D+00 | 0.3031D+00 | 0.3054D+00 | 0.3084D+00 | 0.3120D+00 | 0.3151D+00 | 0.0 |
| 6.000 | 0.3009D+00 | 0.3003D+00 | 0.3005D+00 | 0.3015D+00 | 0.3031D+00 | 0.3054D+00 | 0.3084D+00 | 0.3120D+00 | 0.3162D+00 | 0.3171D+00 |
| 7.000 | 0.3009D+00 | 0.3003D+00 | 0.3005D+00 | 0.3015D+00 | 0.3031D+00 | 0.3054D+00 | 0.3084D+00 | 0.3120D+00 | 0.3162D+00 | 0.3190D+00 |
| 8.000 | 0.3009D+00 | 0.3003D+00 | 0.3005D+00 | 0.3015D+00 | 0.3031D+00 | 0.3054D+00 | 0.3084D+00 | 0.3120D+00 | 0.3162D+00 | 0.3208D+00 |
| 9.000 | 0.3009D+00 | 0.3003D+00 | 0.3005D+00 | 0.3014D+00 | 0.3031D+00 | 0.3054D+00 | 0.3084D+00 | 0.3120D+00 | 0.3162D+00 | 0.3210D+00 |
| 10.000 | 0.3009D+00 | 0.3003D+00 | 0.3005D+00 | 0.3014D+00 | 0.3031D+00 | 0.3054D+00 | 0.3083D+00 | 0.3119D+00 | 0.3161D+00 | 0.3209D+00 |
| 11.000 | 0.3009D+00 | 0.3003D+00 | 0.3005D+00 | 0.3014D+00 | 0.3031D+00 | 0.3054D+00 | 0.3083D+00 | 0.3119D+00 | 0.3161D+00 | 0.3209D+00 |
| 12.000 | 0.3009D+00 | 0.3003D+00 | 0.3005D+00 | 0.3014D+00 | 0.3030D+00 | 0.3054D+00 | 0.3083D+00 | 0.3119D+00 | 0.3161D+00 | 0.3209D+00 |

* * * * * S U P E R H E A T E D S T E A M E N T H A L P Y (K C A L / K G) : P H G (3 0 , 3 0) * * * * *

| 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) |
|--------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

* * * * * S U P E R H E A T E D S T E A M E N T H A L P Y (K C A L / K G) : P H G (3 0 , 3 0) * * * * *

| 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) |
|--------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

S U P E R H E A T E D S T E A M E N T H A L P Y (K C A L / K G) : P H G (3 0 , 3 0)

| 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) |
|--------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.1191D+04 | 0.1210D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.1194D+04 | 0.1210D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.1195D+04 | 0.1210D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.1197D+04 | 0.1210D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.1198D+04 | 0.1210D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.1198D+04 | 0.1210D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.1199D+04 | 0.1210D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.1200D+04 | 0.1210D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1200D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1201D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1204D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1206D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1208D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1209D+04 | 0.1220D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1210D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1211D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1212D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1213D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1213D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1218D+04 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1230D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1225D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1227D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1228D+04 | 0.1240D+04 | 0.1250D+04 | 0.1260D+04 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

S U P E R H E A T E D S T E A M T E M P E R A T U R E (D E G .) : P T G (3 0 , 3 0)

| PS(I,1) PRES. (AT) | 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.) |
|--------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

***** S U P E R H E A T E D S T E A M T E M P E R A T U R E (D E G .) : P T G (3 0 / 3 0) *****

| 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.) |
|--------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

S U P E R H E A T E D S T E A M T E M P E R A T U R E (D E G .) : P T G (3 0 , 3 0)

| 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.) |
|--------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.1083D+04 | 0.1127D+04 | 0.1153D+04 | 0.1181D+04 | 0.1212D+04 | 0.1246D+04 | 0.1283D+04 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.1130D+04 | 0.1160D+04 | 0.1180D+04 | 0.1203D+04 | 0.1229D+04 | 0.1258D+04 | 0.1291D+04 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.1156D+04 | 0.1180D+04 | 0.1198D+04 | 0.1218D+04 | 0.1241D+04 | 0.1267D+04 | 0.1297D+04 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.1175D+04 | 0.1194D+04 | 0.1211D+04 | 0.1229D+04 | 0.1250D+04 | 0.1274D+04 | 0.1302D+04 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.1189D+04 | 0.1206D+04 | 0.1221D+04 | 0.1238D+04 | 0.1258D+04 | 0.1280D+04 | 0.1307D+04 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.1200D+04 | 0.1215D+04 | 0.1230D+04 | 0.1246D+04 | 0.1264D+04 | 0.1286D+04 | 0.1311D+04 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.1209D+04 | 0.1223D+04 | 0.1237D+04 | 0.1252D+04 | 0.1270D+04 | 0.1290D+04 | 0.1315D+04 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.1217D+04 | 0.1230D+04 | 0.1243D+04 | 0.1258D+04 | 0.1275D+04 | 0.1295D+04 | 0.1318D+04 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1224D+04 | 0.1248D+04 | 0.1263D+04 | 0.1279D+04 | 0.1298D+04 | 0.1321D+04 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1231D+04 | 0.1253D+04 | 0.1267D+04 | 0.1283D+04 | 0.1302D+04 | 0.1324D+04 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1273D+04 | 0.1286D+04 | 0.1297D+04 | 0.1311D+04 | 0.1327D+04 | 0.1347D+04 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1308D+04 | 0.1308D+04 | 0.1316D+04 | 0.1329D+04 | 0.1344D+04 | 0.1365D+04 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1334D+04 | 0.1334D+04 | 0.1334D+04 | 0.1342D+04 | 0.1359D+04 | 0.1381D+04 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1355D+04 | 0.1355D+04 | 0.1355D+04 | 0.1355D+04 | 0.1372D+04 | 0.1399D+04 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1373D+04 | 0.1373D+04 | 0.1373D+04 | 0.1386D+04 | 0.1424D+04 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1388D+04 | 0.1388D+04 | 0.1388D+04 | 0.1404D+04 | 0.1462D+04 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1402D+04 | 0.1402D+04 | 0.1402D+04 | 0.1431D+04 | 0.1494D+04 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1415D+04 | 0.1415D+04 | 0.1415D+04 | 0.1475D+04 | 0.1514D+04 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1426D+04 | 0.1426D+04 | 0.1441D+04 | 0.1502D+04 | 0.1528D+04 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1542D+04 | 0.1554D+04 | 0.1562D+04 | 0.1570D+04 | 0.1577D+04 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1573D+04 | 0.1582D+04 | 0.1587D+04 | 0.1591D+04 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1602D+04 | 0.1602D+04 | 0.1602D+04 | 0.1602D+04 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1636D+04 | 0.1636D+04 | 0.1636D+04 | 0.1636D+04 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1665D+04 | 0.1665D+04 | 0.1665D+04 | 0.1665D+04 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1690D+04 | 0.1690D+04 | 0.1690D+04 | 0.1690D+04 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

***** SUPER HEATED STEAM SPECIFIC VOLUME (M**3 / K G) : P V (3 0 , 3 0) *****

| 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) |
|--------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

* * * * * S U P E R H E A T E D S T E A M S P E C I F I C V O L U M E (M * * 3 / K G) : P V (3 0 , 3 0) * * * * *

| 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) |
|--------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

***** SUPER HEATED STEAM SPECIFIC VOLUME (M * * 3 / K G) : P V (3 0 , 3 0) *****

| PS(I,1) PRES. (AT) | 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) |
|--------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.2813D+03 | 0.3026D+03 | 0.3148D+03 | 0.3278D+03 | 0.3416D+03 | 0.3560D+03 | 0.3710D+03 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.1497D+03 | 0.1571D+03 | 0.1621D+03 | 0.1675D+03 | 0.1733D+03 | 0.1796D+03 | 0.1864D+03 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.1035D+03 | 0.1073D+03 | 0.1102D+03 | 0.1133D+03 | 0.1167D+03 | 0.1205D+03 | 0.1246D+03 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.7948D+02 | 0.8181D+02 | 0.8372D+02 | 0.8582D+02 | 0.8815D+02 | 0.9074D+02 | 0.9367D+02 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.6461D+02 | 0.6619D+02 | 0.6760D+02 | 0.6915D+02 | 0.7087D+02 | 0.7282D+02 | 0.7505D+02 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.5447D+02 | 0.5562D+02 | 0.5671D+02 | 0.5792D+02 | 0.5928D+02 | 0.6082D+02 | 0.6261D+02 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.4710D+02 | 0.4797D+02 | 0.4886D+02 | 0.4984D+02 | 0.5095D+02 | 0.5222D+02 | 0.5370D+02 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.4148D+02 | 0.4217D+02 | 0.4291D+02 | 0.4374D+02 | 0.4467D+02 | 0.4574D+02 | 0.4701D+02 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3706D+02 | 0.3825D+02 | 0.3896D+02 | 0.3976D+02 | 0.4069D+02 | 0.4180D+02 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3349D+02 | 0.3450D+02 | 0.3512D+02 | 0.3582D+02 | 0.3664D+02 | 0.3762D+02 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1703D+02 | 0.1731D+02 | 0.1758D+02 | 0.1790D+02 | 0.1829D+02 | 0.1877D+02 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1151D+02 | 0.1151D+02 | 0.1164D+02 | 0.1186D+02 | 0.1213D+02 | 0.1249D+02 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8717D+01 | 0.8717D+01 | 0.8717D+01 | 0.8837D+01 | 0.9066D+01 | 0.9389D+01 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7042D+01 | 0.7042D+01 | 0.7042D+01 | 0.7042D+01 | 0.7254D+01 | 0.7589D+01 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5929D+01 | 0.5929D+01 | 0.5929D+01 | 0.6079D+01 | 0.6488D+01 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5139D+01 | 0.5139D+01 | 0.5139D+01 | 0.5292D+01 | 0.5849D+01 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4549D+01 | 0.4549D+01 | 0.4549D+01 | 0.4811D+01 | 0.5328D+01 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4092D+01 | 0.4092D+01 | 0.4092D+01 | 0.4574D+01 | 0.4834D+01 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3728D+01 | 0.3728D+01 | 0.3843D+01 | 0.4263D+01 | 0.4400D+01 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2157D+01 | 0.2175D+01 | 0.2185D+01 | 0.2192D+01 | 0.2196D+01 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1414D+01 | 0.1412D+01 | 0.1410D+01 | 0.1408D+01 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1009D+01 | 0.1009D+01 | 0.1009D+01 | 0.1009D+01 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7451D+00 | 0.7451D+00 | 0.7451D+00 | 0.7451D+00 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5791D+00 | 0.5791D+00 | 0.5791D+00 | 0.5791D+00 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4795D+00 | 0.4795D+00 | 0.4795D+00 | 0.4795D+00 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

P R E S S U R E D E R I V A T I V E O F S U P E R H E A T E D S T E A M S P E C I F I C V O L U M E
 * * * * * : P G P (3 0 , 3 0) * * * * *

| 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 |
|--------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

P R E S S U R E D E R I V A T I V E O F S U P E R H E A T E D S T E A M S P E C I F I C V O L U M E
 : P G P (3 0 , 3 0)

| 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 |
|--------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

P R E S S U R E D E R I V A T I V E O F S U P E R H E A T E D S T E A M S P E C I F I C V O L U M E
 * * * * * P G P (3 0 , 3 0) * * * * *

| PS(I,1) PRES. (AT) | 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 |
|--------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | -0.2629D+05 | -0.2893D+05 | -0.3043D+05 | -0.3199D+05 | -0.3359D+05 | -0.3522D+05 | -0.3686D+05 |
| 0.020 | 0.0 | 0.0 | 0.0 | -0.6871D+04 | -0.7376D+04 | -0.7714D+04 | -0.8071D+04 | -0.8448D+04 | -0.8841D+04 | -0.9245D+04 |
| 0.030 | 0.0 | 0.0 | 0.0 | -0.3189D+04 | -0.3367D+04 | -0.3498D+04 | -0.3640D+04 | -0.3791D+04 | -0.3952D+04 | -0.4121D+04 |
| 0.040 | 0.0 | 0.0 | 0.0 | -0.1853D+04 | -0.1935D+04 | -0.2002D+04 | -0.2073D+04 | -0.2151D+04 | -0.2235D+04 | -0.2324D+04 |
| 0.050 | 0.0 | 0.0 | 0.0 | -0.1216D+04 | -0.1260D+04 | -0.1299D+04 | -0.1341D+04 | -0.1387D+04 | -0.1437D+04 | -0.1491D+04 |
| 0.060 | 0.0 | 0.0 | 0.0 | -0.8607D+03 | -0.8873D+03 | -0.9123D+03 | -0.9395D+03 | -0.9692D+03 | -0.1002D+04 | -0.1038D+04 |
| 0.070 | 0.0 | 0.0 | 0.0 | -0.6424D+03 | -0.6595D+03 | -0.6767D+03 | -0.6954D+03 | -0.7160D+03 | -0.7387D+03 | -0.7640D+03 |
| 0.080 | 0.0 | 0.0 | 0.0 | -0.4982D+03 | -0.5099D+03 | -0.5223D+03 | -0.5358D+03 | -0.5507D+03 | -0.5673D+03 | -0.5859D+03 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3980D+03 | -0.4155D+03 | -0.4257D+03 | -0.4369D+03 | -0.4495D+03 | -0.4636D+03 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3253D+03 | -0.3386D+03 | -0.3464D+03 | -0.3551D+03 | -0.3649D+03 | -0.3760D+03 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | -0.8212D+02 | -0.8737D+02 | -0.8882D+02 | -0.9046D+02 | -0.9231D+02 | -0.9441D+02 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3711D+02 | -0.3711D+02 | -0.3974D+02 | -0.4034D+02 | -0.4099D+02 | -0.4167D+02 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2095D+02 | -0.2095D+02 | -0.2095D+02 | -0.2259D+02 | -0.2284D+02 | -0.2295D+02 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1338D+02 | -0.1338D+02 | -0.1338D+02 | -0.1338D+02 | -0.1433D+02 | -0.1396D+02 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.9250D+01 | -0.9250D+01 | -0.9250D+01 | -0.9552D+01 | -0.8349D+01 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.6760D+01 | -0.6760D+01 | -0.6760D+01 | -0.6331D+01 | -0.5224D+01 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5149D+01 | -0.5149D+01 | -0.5149D+01 | -0.3157D+01 | -0.5168D+01 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4051D+01 | -0.4051D+01 | -0.4051D+01 | -0.2688D+01 | -0.4657D+01 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3271D+01 | -0.3271D+01 | -0.1911D+00 | -0.3291D+01 | -0.4033D+01 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1049D+01 | -0.1103D+01 | -0.1133D+01 | -0.1154D+01 | -0.1171D+01 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5168D+00 | -0.5237D+00 | -0.5261D+00 | -0.5279D+00 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3256D+00 | -0.3256D+00 | -0.3256D+00 | -0.3256D+00 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2089D+00 | -0.2089D+00 | -0.2089D+00 | -0.2089D+00 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1284D+00 | -0.1284D+00 | -0.1284D+00 | -0.1284D+00 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.7434D-01 | -0.7434D-01 | -0.7434D-01 | -0.7434D-01 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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

PS(I,1) PGD(I,1) PGD(I,2) PGD(I,3) PGD(I,4) PGD(I,5) PGD(I,6) PGD(I,7) PGD(I,8) PGD(I,9) PGD(I,10)
 PRES. DVDH DVDH DVDH DVDH DVDH DVDH DVDH DVDH DVDH DVDH DVDH
 (AT)

| | | | | | | | | | | | |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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 |
|--------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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 |
|--------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.1088D+01 | 0.1227D+01 | 0.1302D+01 | 0.1376D+01 | 0.1444D+01 | 0.1503D+01 | 0.1550D+01 |
| 0.020 | 0.0 | 0.0 | 0.4440D+00 | 0.4993D+00 | 0.5387D+00 | 0.5824D+00 | 0.6301D+00 | 0.6301D+00 | 0.6803D+00 | 0.7297D+00 |
| 0.030 | 0.0 | 0.0 | 0.2556D+00 | 0.2863D+00 | 0.3118D+00 | 0.3417D+00 | 0.3768D+00 | 0.4174D+00 | 0.4621D+00 | 0.4621D+00 |
| 0.040 | 0.0 | 0.0 | 0.1720D+00 | 0.1920D+00 | 0.2105D+00 | 0.2329D+00 | 0.2603D+00 | 0.2936D+00 | 0.3330D+00 | 0.3330D+00 |
| 0.050 | 0.0 | 0.0 | 0.1266D+00 | 0.1409D+00 | 0.1553D+00 | 0.1730D+00 | 0.1953D+00 | 0.2235D+00 | 0.2584D+00 | 0.2584D+00 |
| 0.060 | 0.0 | 0.0 | 0.9872D-01 | 0.1096D+00 | 0.1213D+00 | 0.1360D+00 | 0.1548D+00 | 0.1791D+00 | 0.2104D+00 | 0.2104D+00 |
| 0.070 | 0.0 | 0.0 | 0.8021D-01 | 0.8878D-01 | 0.9866D-01 | 0.1112D+00 | 0.1274D+00 | 0.1489D+00 | 0.1773D+00 | 0.1773D+00 |
| 0.080 | 0.0 | 0.0 | 0.6717D-01 | 0.7416D-01 | 0.8270D-01 | 0.9360D-01 | 0.1079D+00 | 0.1271D+00 | 0.1532D+00 | 0.1532D+00 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.5759D-01 | 0.7093D-01 | 0.8061D-01 | 0.9342D-01 | 0.1109D+00 | 0.1351D+00 | 0.1351D+00 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.5029D-01 | 0.6197D-01 | 0.7067D-01 | 0.8230D-01 | 0.9835D-01 | 0.1210D+00 | 0.1210D+00 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.1439D-01 | 0.2735D-01 | 0.3203D-01 | 0.3865D-01 | 0.4863D-01 | 0.6471D-01 | 0.6471D-01 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1342D-01 | 0.2200D-01 | 0.2739D-01 | 0.3620D-01 | 0.5234D-01 | 0.5234D-01 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1226D-01 | 0.2311D-01 | 0.3259D-01 | 0.5274D-01 | 0.5274D-01 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2493D-03 | 0.2133D-01 | 0.3390D-01 | 0.6099D-01 | 0.6099D-01 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1549D-01 | 0.4156D-01 | 0.6034D-01 | 0.6034D-01 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1616D-01 | 0.5580D-01 | 0.3796D-01 | 0.3796D-01 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2759D-01 | 0.5083D-01 | 0.1999D-01 | 0.1999D-01 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4804D-01 | 0.2562D-01 | 0.1191D-01 | 0.1191D-01 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1379D-01 | 0.1358D-01 | 0.7753D-02 | 0.7753D-02 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1572D-02 | 0.9829D-03 | 0.6511D-03 | 0.4085D-03 | 0.2255D-03 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.9090D-04 | -0.1977D-03 | -0.2392D-03 | -0.2728D-03 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

***** S U P E R H E A T E D S T E A M S P E C I F I C H E A T (K C A L / K G / K) : C P G (3 0 , 3 0) *****

| 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) |
|--------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

***** S U P E R H E A T E D S T E A M S P E C I F I C H E A T (K C A L / K G / K) : C P G (3 0 , 3 0) *****

| 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) |
|--------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

SUPERHEATED STEAM SPECIFIC HEAT (KCAL/KG/K) : CPG(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) |
|--------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0.010 | 0.0 | 0.0 | 0.0 | 0.5723D+00 | 0.4450D+00 | 0.3680D+00 | 0.3387D+00 | 0.2979D+00 | 0.2662D+00 | 0.2437D+00 |
| 0.020 | 0.0 | 0.0 | 0.0 | 0.6234D+00 | 0.5096D+00 | 0.4462D+00 | 0.3887D+00 | 0.3384D+00 | 0.2964D+00 | 0.2642D+00 |
| 0.030 | 0.0 | 0.0 | 0.0 | 0.6585D+00 | 0.5527D+00 | 0.4852D+00 | 0.4228D+00 | 0.3668D+00 | 0.3186D+00 | 0.2799D+00 |
| 0.040 | 0.0 | 0.0 | 0.0 | 0.6834D+00 | 0.5837D+00 | 0.5134D+00 | 0.4477D+00 | 0.3878D+00 | 0.3353D+00 | 0.2922D+00 |
| 0.050 | 0.0 | 0.0 | 0.0 | 0.7012D+00 | 0.6069D+00 | 0.5344D+00 | 0.4663D+00 | 0.4036D+00 | 0.3480D+00 | 0.3016D+00 |
| 0.060 | 0.0 | 0.0 | 0.0 | 0.7137D+00 | 0.6242D+00 | 0.5501D+00 | 0.4801D+00 | 0.4154D+00 | 0.3576D+00 | 0.3088D+00 |
| 0.070 | 0.0 | 0.0 | 0.0 | 0.7221D+00 | 0.6370D+00 | 0.5617D+00 | 0.4904D+00 | 0.4241D+00 | 0.3646D+00 | 0.3142D+00 |
| 0.080 | 0.0 | 0.0 | 0.0 | 0.7272D+00 | 0.6461D+00 | 0.5699D+00 | 0.4976D+00 | 0.4302D+00 | 0.3695D+00 | 0.3179D+00 |
| 0.090 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7294D+00 | 0.5754D+00 | 0.5023D+00 | 0.4341D+00 | 0.3726D+00 | 0.3202D+00 |
| 0.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7293D+00 | 0.5784D+00 | 0.5048D+00 | 0.4361D+00 | 0.3741D+00 | 0.3213D+00 |
| 0.200 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6160D+00 | 0.5260D+00 | 0.4553D+00 | 0.3905D+00 | 0.3341D+00 | 0.2899D+00 |
| 0.300 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3799D+00 | 0.3799D+00 | 0.3385D+00 | 0.2870D+00 | 0.2477D+00 | 0.2274D+00 |
| 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1922D+00 | 0.1922D+00 | 0.1922D+00 | 0.1726D+00 | 0.1581D+00 | 0.1751D+00 |
| 0.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7395D-01 | 0.7395D-01 | 0.7395D-01 | 0.7395D-01 | 0.9178D-01 | 0.1646D+00 |
| 0.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2463D-01 | 0.2463D-01 | 0.2463D-01 | 0.6906D-01 | 0.2352D+00 |
| 0.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3443D-01 | 0.3443D-01 | 0.3443D-01 | 0.1119D+00 | 0.4142D+00 |
| 0.800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8978D-01 | 0.8978D-01 | 0.8978D-01 | 0.2655D+00 | 0.5417D+00 |
| 0.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1760D+00 | 0.1760D+00 | 0.1760D+00 | 0.5106D+00 | 0.5866D+00 |
| 1.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2787D+00 | 0.2787D+00 | 0.3661D+00 | 0.6020D+00 | 0.5938D+00 |
| 2.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3127D+00 | 0.3719D+00 | 0.4345D+00 | 0.5037D+00 | 0.5769D+00 |
| 3.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6910D+00 | 0.1450D+01 | 0.1862D+01 | 0.2279D+01 |
| 4.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7801D+01 | 0.7801D+01 | 0.7801D+01 | 0.7801D+01 |
| 5.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3067D+02 | 0.3067D+02 | 0.3067D+02 | 0.3067D+02 |
| 6.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6426D+02 | 0.6426D+02 | 0.6426D+02 | 0.6426D+02 |
| 7.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9294D+02 | 0.9294D+02 | 0.9294D+02 | 0.9294D+02 |
| 8.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |