

## Errata for the 2nd Edition

### Correction on page 20

Table 2.12 on page 20 should be corrected as follows:

**Table 2.12** Coefficients and exponents of the residual part  $\bullet^r$ , Eq. (2.10)

$i$	$I_i$	$J_i$	$n_i$	$i$	$I_i$	$J_i$	$n_i$
1	1	0	$-0.733\ 622\ 601\ 865\ 06 \times 10^2$	8	3	4	$-0.634\ 980\ 376\ 573\ 13 \times 10^2$
2	1	2	$-0.882\ 238\ 319\ 431\ 46 \times 10^1$	9	3	16	$-0.860\ 430\ 930\ 285\ 88 \times 10^1$
3	1	5	$-0.723\ 345\ 552\ 132\ 45 \times 10^1$	10	4	7	$0.753\ 215\ 815\ 227\ 70 \times 10^2$
4	1	11	$-0.408\ 131\ 785\ 344\ 55 \times 10^2$	11	4	10	$-0.792\ 383\ 754\ 461\ 39 \times 10^2$
5	2	1	$0.200\ 978\ 033\ 802\ 07 \times 10^2$	12	5	9	$-0.228\ 881\ 607\ 784\ 47 \times 10^3$
6	2	7	$-0.530\ 459\ 218\ 986\ 42 \times 10^1$	13	5	10	$-0.264\ 565\ 014\ 828\ 10 \times 10^2$
7	2	16	$-0.761\ 904\ 090\ 869\ 70 \times 10^2$				

### Correction on page 21

The last paragraph on page 20 continuing on page 21 should be completed as follows:

*Range of Validity.* Equation (2.9) is valid in the metastable-vapour region from the saturated-vapour line to the 5% equilibrium moisture line (corresponding to the vapour fraction  $x = 0.95$ , determined from the equilibrium  $h'$  and  $h''$  values calculated for the given pressure) at pressures from the triple-point pressure, see Eq. (1.8), up to 10 MPa.

### Correction on page 40

The values for  $h'$  (623.15 K) and  $h''$  (623.15 K) in the paragraph below Table 2.29 on page 40 should be corrected as follows:

The equation  $p_{s,3}(h)$ , Eq. (2.18), describes the saturated-liquid line and the saturated-vapour line including the critical point in the following enthalpy range, see Fig. 2.5:

$$h'(623.15\text{ K}) \subset h \subset h''(623.15\text{ K}),$$

where  $h'(623.15\text{ K}) = h_1(p_s(623.15\text{ K}), 623.15\text{ K}) = 1.670\ 858\ 218 \times 10^3\ \text{kJ kg}^{-1}$   
and  $h''(623.15\text{ K}) = h_2(p_s(623.15\text{ K}), 623.15\text{ K}) = 2.563\ 592\ 004 \times 10^3\ \text{kJ kg}^{-1}$ .

### Correction on page 83

The headline of Table 2.71 on page 83 should be corrected as follows:

**Table 2.71** Coefficients and exponents of the boundary equation  $h''_{2c3b}(s)$  in its dimensionless form, Eq. (2.43)

$i$	$I_i$	$J_i$	$n_i$	$i$	$I_i$	$J_i$	$n_i$
1	0	0	$0.104\ 351\ 280\ 732\ 769 \times 10^1$	9	8	2	$0.743\ 957\ 464\ 645\ 363 \times 10^4$
2	0	3	$-0.227\ 807\ 912\ 708\ 513 \times 10^1$	10	8	20	$-0.356\ 896\ 445\ 355\ 761 \times 10^{20}$
3	0	4	$0.180\ 535\ 256\ 723\ 202 \times 10^1$	11	12	32	$0.167\ 590\ 585\ 186\ 801 \times 10^{32}$
4	1	0	$0.420\ 440\ 834\ 792\ 042$	12	16	36	$-0.355\ 028\ 625\ 419\ 105 \times 10^{36}$
5	1	12	$-0.105\ 721\ 244\ 834\ 660 \times 10^6$	13	22	2	$0.396\ 611\ 982\ 166\ 538 \times 10^{12}$
6	5	36	$0.436\ 911\ 607\ 493\ 884 \times 10^{25}$	14	22	32	$-0.414\ 716\ 268\ 484\ 468 \times 10^{41}$
7	6	12	$-0.328\ 032\ 702\ 839\ 753 \times 10^{12}$	15	24	7	$0.359\ 080\ 103\ 867\ 382 \times 10^{19}$
8	7	16	$-0.678\ 686\ 760\ 804\ 270 \times 10^{16}$	16	36	20	$-0.116\ 994\ 334\ 851\ 995 \times 10^{41}$

## Correction on page 130

Table 2.132 on page 130 should be corrected as follows:

**Table 2.132** Coefficients and exponents of the auxiliary equation  $v_{3u}(p, T)$  for subregion 3u

$i$	$I_i$	$J_i$	$n_i$	$i$	$I_i$	$J_i$	$n_i$
1	-12	14	$0.122\ 088\ 349\ 258\ 355 \times 10^{18}$	20	1	-2	$0.105\ 581\ 745\ 346\ 187 \times 10^{-2}$
2	-10	10	$0.104\ 216\ 468\ 608\ 488 \times 10^{10}$	21	2	5	$-0.651\ 903\ 203\ 602\ 581 \times 10^{15}$
3	-10	12	$-0.882\ 666\ 931\ 564\ 652 \times 10^{16}$	22	2	10	$-0.160\ 116\ 813\ 274\ 676 \times 10^{25}$
4	-10	14	$0.259\ 929\ 510\ 849\ 499 \times 10^{20}$	23	3	-5	$-0.510\ 254\ 294\ 237\ 837 \times 10^{-8}$
5	-8	10	$0.222\ 612\ 779\ 142\ 211 \times 10^{15}$	24	5	-4	$-0.152\ 355\ 388\ 953\ 402$
6	-8	12	$-0.878\ 473\ 585\ 050\ 085 \times 10^{18}$	25	5	2	$0.677\ 143\ 292\ 290\ 144 \times 10^{12}$
7	-8	14	$-0.314\ 432\ 577\ 551\ 552 \times 10^{22}$	26	5	3	$0.276\ 378\ 438\ 378\ 930 \times 10^{15}$
8	-6	8	$-0.216\ 934\ 916\ 996\ 285 \times 10^{13}$	27	6	-5	$0.116\ 862\ 983\ 141\ 686 \times 10^{-1}$
9	-6	12	$0.159\ 079\ 648\ 196\ 849 \times 10^{21}$	28	6	2	$-0.301\ 426\ 947\ 980\ 171 \times 10^{14}$
10	-5	4	$-0.339\ 567\ 617\ 303\ 423 \times 10^3$	29	8	-8	$0.169\ 719\ 813\ 884\ 840 \times 10^{-7}$
11	-5	8	$0.884\ 387\ 651\ 337\ 836 \times 10^{13}$	30	8	8	$0.104\ 674\ 840\ 020\ 929 \times 10^{27}$
12	-5	12	$-0.843\ 405\ 926\ 846\ 418 \times 10^{21}$	31	10	-4	$-0.108\ 016\ 904\ 560\ 140 \times 10^5$
13	-3	2	$0.114\ 178\ 193\ 518\ 022 \times 10^2$	32	12	-12	$-0.990\ 623\ 601\ 934\ 295 \times 10^{-12}$
14	-1	-1	$-0.122\ 708\ 229\ 235\ 641 \times 10^{-3}$	33	12	-4	$0.536\ 116\ 483\ 602\ 738 \times 10^7$

Continued on next page.

## Correction on page 152

The paragraph below Eq. (3.3) must be corrected into:

where  $\delta = \rho/\rho^*$  and  $\tau = T/T^*$  with  $\rho^* = \rho_c$  and  $T^* = T_c$ , where the critical density  $\rho_c = 322\text{ kg m}^{-3}$  and the critical temperature  $T_c = 647.096\text{ K}$  according to Eqs. (1.6) and (1.4). Table 3.2 contains the coefficients  $n_i$  and exponents  $I_i$  and  $J_i$  of Eq. (3.3).

## Correction on page 156

Equations (3.7a) and (3.7b) on page 156 must be corrected into:

$$A(\theta) = \begin{cases} (\Delta\theta)^{-1} & \text{for } \theta \geq 1 \\ n_9 (\Delta\theta)^{-0.6} & \text{for } \theta < 1 \end{cases}, \quad (3.7a)$$

$$B(\theta) = 2 + n_8 (\Delta\theta)^{-0.6} \quad (3.7b)$$

## **Correction of certain results calculated from the attached IAPWS-IF97 Electronic Steam Tables CD**

There is an error in the conversion of the unit kJ/(kg K) into BTU/(lbm °R) that relates to the properties

specific entropy  $s$ ,

isobaric heat capacity  $c_p$ ,

isochoric heat capacity  $c_v$ , and

specific gas constant  $R$ .

**The displayed results for these properties in BTU/(lbm °R) have to be divided by 1.8.**