ERRATA

Sep 25, 2010

FLUID MECHANICS for CHEMICAL ENGINEERS

Second Edition – Second Printing

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Page	Line	Correction
13	$\boldsymbol{D}_{AB}$ dimensions	should be $\left[L^2 / t\right]$
73	Eqn (3-38)	T_o in denominator should be T_c
122	2^{nd} Eqn from top	*dx* in last term should be *dz*
140	Problem 46	Problem 46 should read Problem 45
168	Eqn (6-60)	f on rhs should be f_L (laminar *f*)
170	Eqn (6-68)	the exponent on *D* in the denominator should be *5*
179	4 from bottom	Fig. 3-7 should be Fig. 3-8
210	$\left(L/D\right)_{eq}$ values for Mitered weld bends	90^o : 2 welds should be 30, 3 welds should be 24 45^o : 2 welds should be 12
210	Mitered weld bends	for 2 welds, K_i should be 0.136, and for 3 welds 0.105
211	Tees, Run Through, Flanged	K_i should be 0.05 instead of 0.017
212	4^{th} Eqn $\left(N_{Re,1} > 2500\right)$	0.48 should be 1.92
212	3rd and 4^{th} Eqns	these Eqns apply for $\theta > 45^o$
218	line 11 from top	Eq. (6-44) should be Eq. (6-47)
218	line 16 from top	Eq. (6-62) should be Eq. (6-65)
223	Eqn (7-64)	the term in [ ] should read: $\left[1-\left(1-\chi / R\right)^2\right]^{1/2}$
232	Problem 28	replace "..for a fluid with a viscosity of 10 cp.." by ".. for the water.."
233	Problem 35, 4^{th} line	should read "…leaving the tube is <u>one</u> foot above…"
265	Probs. 39 and 40	should be in Ch. 9.
267	Eqn (9-1)	should be $\rho = PM / RT$
271	Eqn (9-19)	P_1 / P_2 should be P_2 / P_1
316	Line 17 from Top	L_2 should be L^2
318	Table 10-3	Equal Percentage, C_v for 3 & 4 x 3, 20% travel: 51.7 should be 5.17
322	16 lines from top	*a* should be *c*
328	Eqn (10-47)	should read: $Y=1-\dfrac{1.4X}{3kX_T}$
367	Eqn (12-4)	D should be d
402	Table 13-1	Units for the columns under Contact surface and Packing Factor should be ft^2 / ft^3 and m^2 / m^3
411	Prob. 8 (a)	(a) should read: The flow rate of the liquid (in gpm) that is 50% of that at which flooding would occur.

413	Prob. 13-22	omit part (b)
440	Prob. 19, Table	the 3rd value for φ should be 0.1 (instead of 0.5)
456	Eqn (15-28) and 2nd line following	d should be D, the pipe diameter in mm.
457	Eqn (15-34b)	ρ_G should be included in the middle form of the eqn, i.e. $$\tau_{wG} = \frac{f_G}{2}\varepsilon_m\rho_G V_G^2 = \frac{\Delta P_{fg}}{4L/D_h}$$
457	Eqn (15-36)	the term $\left(\frac{\rho_S}{\rho_G}\right)$ should read $\left(\frac{\rho_G}{\rho_S}\right)$
457	line above Eqn (15-36)	"Hinkel" should read "Hinkle"
459	Eqn (15-42)	should read: $$\lambda = \left[\left(\frac{\rho_G}{\rho_A}\right)\left(\frac{\rho_L}{\rho_W}\right)\right]^{1/2}$$
463	Eqn (15-50)	rhs: $\frac{dP}{dx}$ should be $\frac{dP}{dX}$
461	Fig. 15-6 (b)	x- axis legend: missing] on right of units
466	Eq. (15-62)	third term omit 2 in denominator, last term V_m should be ν_m
470	Eq. (15-84)	(ρ_L/ρ_G) should be (ρ_G/ρ_L)
471	Table 15-3	a_2 values should all be + instead of – value of a_2 for Baroczy should be 0.75 all values for Lockhart-Martenelli should be shifted one column to the right
472	line after Eq. (15-92)	"diensionless" should be "dimensionless"
472	Eq. (15-95)	should read:

$$-\frac{dP}{dX} = \frac{\left[\left(-\frac{\partial P}{\partial X}\right)_{fm} + G_m^2\frac{dx}{dX}A(\varepsilon_m, x) + \rho_m g\frac{dz}{dX}\right]}{1 + G_m^2\left[\frac{x^2}{\varepsilon_m}\frac{d\nu_g}{dP} + \left(\frac{\partial\varepsilon_m}{\partial P}\right)_x\left(\frac{(1-x)^2}{\rho_L(1-\varepsilon_m)^2} - \frac{x^2}{\rho_G\varepsilon_m^2}\right)\right]}$$

473	Eq. (15-96)	φ_m should be ε_m in all six places
473	line 7 after Eq. (15-96)	Eq. (15-87) should be Eq. (15-95)
497	Table	^oC should be C
520	Table F-1 next to last column	should read: US gal/min