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Solubility and Diffusivity of Cyclohexane in High Density Polyethylene

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In the recently published article cited above, Equations 1, 2, 3, 4, 16 and Table I were published in error. The correct Equations (1), (2), (3), (4), (16) and Table I are shown below.

$$\frac{M_t}{M_\infty} = 6\left(\frac{Dt}{R_{av}^2}\right)^{\frac{1}{2}} \left(\frac{1}{\sqrt{\pi}} + 2\sum_{n=1}^{\infty} ierfc\frac{nR_{av}}{\sqrt{Dt}}\right) - 3\frac{Dt}{R_{av}^2} \quad (1)$$

$$\frac{M_t}{M_\infty} = \frac{6}{\sqrt{\pi}} + \left(\frac{Dt}{R_{av}^2}\right)^{\frac{1}{2}} - 3\frac{Dt}{R_{av}^2} \quad (2)$$

$$\frac{M_t}{M_\infty} = 2\left(\frac{Dt}{L^2}\right)^{\frac{1}{2}} \left(\frac{1}{\sqrt{\pi}} + 2\sum_{n=1}^{\infty} (-1)^n ierfc\frac{nL}{\sqrt{Dt}}\right) \quad (3)$$

$$\frac{M_t}{M_\infty} = \frac{2}{\sqrt{\pi}} + \left(\frac{Dt}{L^2}\right)^{\frac{1}{2}} \quad (4)$$

$$\ln a_1^{el} = \frac{\left(\frac{\Delta H_2^f}{R}\right)\rho_a V_1\left(\frac{1}{T} - \frac{1}{T_m}\right) - \left(\phi_1 - \chi\phi_1^2\right)}{\left(\frac{3}{2f_e\phi_2} - 1\right)} \quad (16)$$

Table I. Amorphous Solubility and Diffusivity of Cyclohexane in High-Density Polyethylene

Temp (°C)	Sample Type	Final Activity	Pressure (kPa)	Equilibrium Weight Fraction	Diffusion Weight Fraction	Diffusivity (cm^2/s)
90	Beads	0.299	39.66	0.059	0.041	5.01×10^{-7}
		0.451	59.77	0.109	0.076	5.78×10^{-7}
		0.601	79.67	0.149	0.121	6.48×10^{-7}
	Sheet	0.299	39.68	0.060	0.042	
		0.451	59.77	0.106	0.074	4.66×10^{-7}
		0.601	79.67	0.131	0.110	7.73×10^{-7}
100	Beads	0.200	34.98	0.047	0.033	7.49×10^{-7}
		0.300	52.33	0.076	0.053	7.98×10^{-7}
		0.400	69.83	0.103	0.072	8.28×10^{-7}
	Sheet	0.200	34.98	0.048	0.034	9.74×10^{-7}
		0.300	52.33	0.068	0.048	8.07×10^{-7}
		0.400	69.83	0.087	0.075	
105	Beads	0.200	39.81	0.052	0.037	7.87×10^{-7}
		0.300	59.77	0.079	0.055	8.70×10^{-7}
		0.399	79.42	0.104	0.089	8.73×10^{-7}
	Sheet	0.200	39.81	0.044	0.031	8.16×10^{-7}
		0.300	59.77	0.080	0.056	9.94×10^{-7}
		0.399	79.42	0.110	0.077	1.14×10^{-6}
140	Sheet	0.100	45.00	0.023	0.016	1.45×10^{-6}
		0.150	67.59	0.045	0.032	1.67×10^{-6}
		0.200	90.02	0.068	0.054	2.00×10^{-6}
150	Sheet	0.080	44.21	0.022	0.015	1.50×10^{-6}
		0.120	66.27	0.038	0.026	1.77×10^{-6}
		0.160	88.37	0.050	0.035	2.15×10^{-6}
160	Sheet	0.070	47.13	0.024	0.017	1.66×10^{-6}
		0.110	74.03	0.039	0.028	2.17×10^{-6}
		0.142	95.71	0.049	0.035	2.55×10^{-6}