

Diffusion coefficient of bromobenzene in ethanol

3 Diffusion in Liquid Mixtures

3.1. Data

3.1.1. Diffusion in Binary Mixtures

C ₆ H ₅ Br	(1)	bromobenzene	108-86-1		
C ₂ H ₆ O	(2)	ethanol	64-17-5		
Mutual Diffusion Coefficient: $D_{12}(x_i)$; $T = 293.15 \pm 0.1$ K; Method: DLS			Ref.: [1991F2]		
x_1	p [kPa]	$D \cdot 10^9$ [m ² /s]			
0.136	101.32	4.78 ± 0.1			
0.259	101.32	3.49 ± 0.07			
0.333	101.32	3.25 ± 0.11			
0.399	101.32	2.88 ± 0.19			
0.517	101.32	2.17 ± 0.04			
0.686	101.32	2.30 ± 0.13			
0.767	101.32	2.58 ± 0.07			
0.797	101.32	2.65 ± 0.06			
0.842	101.32	1.65 ± 0.06			
0.866	101.32	3.06 ± 0.09			
0.941	101.32	3.8 ± 0.2			
Mutual Diffusion Coefficient: $D_{12}(x_i)$; Method: DLS			Ref.: [1991F2]		
Equation: $\ln D = A + Bx + Cx^2 + Ex^3$			Range: $0.0 < x_1 < 0.941$		
Comment: D_{12} [m ² /s] = $D \cdot 10^{-9}$					
Parameter:	T [K]	A	B	C	E
	293.15	1.87	-2.16	-1.06	2.92

Symbols and Abbreviations

Short Form	Full Form
D	diffusion coefficient
p	pressure
T	temperature
DLS	dynamic light scattering
x_i	mole fraction

References

[1991F2] Fiedel, H.-W., Schweiger, G., Lucas, K.: J. Chem. Eng. Data **36** (1991) 169–170.