

Diffusion coefficient of octane in heptane

3 Diffusion in Liquid Mixtures

3.1. Data

3.1.1. Diffusion in Binary Mixtures

C ₈ H ₁₈	(1)	octane	111-65-9
C ₇ H ₁₆	(2)	heptane	142-82-5
Intradiffusion Coefficient: $D_{1T}(x_i)$; $T = 293.15$ K; Method: NMR PG			Ref.: [2011D1]
x_2	p [kPa]	$D \cdot 10^9$ [m ² /s]	
0.0	101.32	2.17	
0.1	101.32	2.21	
0.2	101.32	2.24	
0.3	101.32	2.31	
0.4	101.32	2.36	
0.5	101.32	2.41	
0.6	101.32	2.47	
0.7	101.32	2.53	
0.8	101.32	2.58	
0.9	101.32	2.62	
1.0	101.32	2.71	
Intradiffusion Coefficient: $D_{1T}(T)$; Method: NMR PG			Ref.: [2011D1]
T [K]	p [MPa]	$D \cdot 10^9$ [m ² /s]	
293.15	101.32	2.41	
297.15	101.32	2.63	
300.15	101.32	2.79	
304.15	101.32	2.95	
308.15	101.32	3.10	
Comment: composition of mixture: $x_1 = 0.500$			

Symbols and Abbreviations

Short Form	Full Form
D	diffusion coefficient
p	pressure
T	temperature
x_i	mole fraction
NMR PG	NMR spin echo pulse gradient

References

[2011D1] D'Agostino C., Mantle, M. D., Gladden, L. F., Moggridge, G. D.: Chem. Eng. Sci. **66** (2011) 3898–3906.