

Diffusion coefficient of 1-undecanesulfonic acid sodium salt in dideuterium oxide

3 Diffusion in Liquid Mixtures

3.1. Data

3.1.1. Diffusion in Binary Mixtures

C ₁₁ H ₂₄ O ₃ S Na	(1)	1-undecanesulfonic acid sodium salt	5838-34-6
D ₂ O	(2)	dideuterium oxide	7789-20-0
Intradiffusion Coefficient: D_{1T} (m_i); $T = 298.15 \pm 0.1$ K; Method: NMR PG			Ref.: [1999A11]
m_1 [mol/kg]	p [kPa]	$D \cdot 10^9$ [m ² /s]	
0.0752	101.32	0.157	
0.0922	101.32	0.143	
0.1060	101.32	0.126	
0.1388	101.32	0.102	
0.1795	101.32	0.0797	
0.2250	101.32	0.0651	
Intradiffusion Coefficient: D_{1T} (m_i); $T = 298.15 \pm 0.1$ K; Method: NMR PG			Ref.: [2001R10]
m_1 [mol/kg]	p [kPa]	$D \cdot 10^9$ [m ² /s]	
0.0000	101.32	0.600 ± 3%	
0.0127	101.32	0.512 ± 3%	
0.0159	101.32	0.454 ± 3%	
0.0173	101.32	0.439 ± 3%	
0.0186	101.32	0.314 ± 3%	
0.0246	101.32	0.287 ± 3%	
0.0357	101.32	0.241 ± 3%	
0.0468	101.32	0.178 ± 3%	
0.0638	101.32	0.134 ± 3%	
0.0829	101.32	0.107 ± 3%	
0.1021	101.32	0.103 ± 3%	
0.1205	101.32	0.083 ± 3%	

Symbols and Abbreviations

Short Form	Full Form
D	diffusion coefficient
p	pressure
T	temperature
NMR PG	NMR spin echo pulse gradient
m_i	molality

References

- [1999A11] Annunziata O., Costantino, L., D'Errico, G., Paduano, L., Vitagliano, V.: J. Colloid Interface Sci. **216** (1999) 16–24.
 [2001R10] Roscigno P., Paduano, L., D'Errico, G., Vitagliano, V.: Langmuir **17** (2001) 4510–4518.