Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics

Electronic Supplementary Information

Kirkwood correlation factors in liquid mixtures from extended Onsager–Kirkwood–Fröhlich equation

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Table S1. Experimental values of density ρ, relative permittivity ε_r and refractive index n_D for mixtures 2,2,2-trifluorethanol(A)–monoglyme(B) as a function of mole fraction x_A at different temperatures T

x_A	ρ/g cm^{-3}	x_A	ε_r	x_A	n_D
		T = 288.15 K			
0.0522	0.89130	0.0490	8.49	0.0480	1.37872
0.1000	0.90905	0.1040	9.62	0.1004	1.37481
0.2103	0.95185	0.2123	11.92	0.1967	1.36736
0.3144	0.99564	0.3132	14.12	0.2951	1.35938
0.4242	1.04539	0.4196	16.46	0.3856	1.35172
0.5147	1.08971	0.5156	18.52	0.4965	1.34195
0.6169	1.14377	0.6219	20.69	0.5980	1.33273
0.7138	1.20016	0.7201	22.60	0.7014	1.32325
0.8037	1.25749	0.8133	24.41		
0.9086	1.33090	0.9070	26.35		
0.9527	1.36346	0.9544	27.46		
		T = 298.15 K			
0.0522	0.88017	0.05338	8.16	0.04796	1.37366
0.1000	0.89772	0.10620	9.23	0.10044	1.36976
0.2102	0.94004	0.20808	11.28	0.19665	1.36247
0.3144	0.98334	0.31962	13.55	0.29512	1.35475
0.4242	1.03254	0.41534	15.48	0.38557	1.34729
0.5147	1.07638	0.51929	17.55	0.49649	1.33763
0.6169	1.12983	0.62262	19.53	0.59803	1.32869
0.7138	1.18560	0.62468	19.57		
0.8037	1.24227	0.72083	21.35		
0.9086	1.31479	0.81347	23.04		
0.9527	1.34705	0.90652	24.78		
		0.95429	25.73		

Table S2. Experimental values of density ρ, relative permittivity ε_r and refractive index n_D for mixtures 2,2,2-trifluorethanol(A)–diglyme(B) as a function of mole fraction x_A at different temperatures T

x_A	ρ/g cm^{-3}	x_A	ε_r	x_A	n_D
		T = 288.15 K			
0.0463	0.95939	0.0499	8.48	0.0508	1.40679
0.0945	0.97108	0.0856	9.05	0.0951	1.40368
0.2003	0.99849	0.2008	10.92	0.1947	1.39627
0.2938	1.02565	0.3012	12.70	0.2998	1.38733
0.4002	1.06032	0.4407	15.37	0.3845	1.37936
0.5196	1.10529	0.5280	17.09	0.4978	1.36796
0.6113	1.14521	0.6085	18.68	0.5883	1.35827
0.7129	1.19650	0.6967	20.42	0.6881	1.34629
0.7881	1.24049	0.7913	22.39	0.7986	1.32908
0.8894	1.30978	0.8946	24.96		
0.9402	1.34918	0.9503	26.72		
		T = 298.15 K			
0.0463	0.94935	0.0465	8.13	0.0508	1.40239
0.0950	0.96086	0.1010	8.91	0.0951	1.39935
0.2003	0.98789	0.1931	10.31	0.1947	1.39202
0.2938	1.01467	0.2932	12.03	0.2998	1.38313
0.4002	1.04886	0.3979	13.91	0.3845	1.37517
0.5196	1.09318	0.5059	15.90	0.4978	1.36374
0.6113	1.13252	0.5996	17.70	0.5883	1.35404
0.7129	1.18304	0.7031	19.69	0.6881	1.34214
0.7881	1.22636	0.7978	21.56	0.7986	1.32529
0.8894	1.29456	0.8957	23.61		
0.9402	1.33330	0.9451	25.00		

Table S3. Experimental values of density ρ, relative permittivity ε_r and refractive index n_D for mixtures 2,2,2-trifluorethanol(A)–triglyme(B) as a function of mole fraction x_A at different temperatures T

x_A	ρ/g cm^{-3}	x_A	ε_r	x_A	n_D
		T = 288.15 K			
0.0474	0.99806	0.0525	8.69	0.0499	1.42246
0.0774	1.00326	0.0995	9.29	0.1006	1.41932
0.1861	1.02396	0.1929	10.56	0.2046	1.41237
0.2941	1.04778	0.2918	12.01	0.3082	1.40436
0.3976	1.07434	0.3966	13.67	0.4011	1.39602
0.4987	1.10497	0.4879	15.28	0.5065	1.38502
0.5992	1.14125	0.5797	16.89	0.5953	1.37429
0.6943	1.18269	0.6982	19.15	0.6988	1.35959
0.7952	1.23741	0.7968	21.31	0.7979	1.34248
0.9001	1.31052	0.8968	24.11	0.8988	1.32054
0.9499	1.35226	0.9494	26.17		

		T = 298.15 K			
0.0474	0.98844	0.0475	8.35	0.0499	1.41807
0.0774	0.99358	0.0986	8.96	0.1006	1.41492
0.1861	1.01394	0.1963	10.23	0.2046	1.40800
0.2941	1.03741	0.3093	11.80	0.3082	1.40015
0.3976	1.06353	0.3908	13.02	0.4011	1.39198
0.4987	1.09369	0.4961	14.75	0.5065	1.38110
0.5992	1.12939	0.5958	16.48	0.5953	1.37035
0.6943	1.17016	0.6921	18.27	0.6988	1.35557
0.7953	1.22395	0.7941	20.35	0.7979	1.33863
0.9001	1.29568	0.8986	22.84		
0.9499	1.33653	0.9479	24.55		

Table S4. Experimental values of density ρ, relative permittivity ε_r and refractive index n_D for mixtures 2,2,2-trifluorethanol(A)–tetraglyme(B) as a function of mole fraction x_A at different temperatures T

x_A	ρ/g cm^{-3}	x_A	ε_r	x_A	n_D
		T = 288.15 K			
0.0701	1.02534	0.0488	8.78	0.0505	1.43175
0.1224	1.03282	0.0965	9.29	0.0988	1.42966
0.2322	1.05057	0.1940	10.37	0.1971	1.42397
0.3331	1.06987	0.2914	11.60	0.3134	1.41521
0.4296	1.09179	0.3967	13.07	0.4086	1.40672
0.5406	1.12247	0.4981	14.52	0.4978	1.39771
0.6352	1.15506	0.5941	16.12	0.5997	1.38581
0.7429	1.2025	0.6989	18.21	0.7007	1.37133
0.8240	1.24868	0.8017	20.60	0.8017	1.35244
0.9150	1.31667	0.8985	23.49	0.9020	1.32676
0.9567	1.35503	0.9491	25.67		
		T = 298.15 K			
0.0701	1.01591	0.0526	8.29	0.0505	1.42805
0.1224	1.02328	0.1012	8.76	0.0988	1.42550
0.2322	1.04075	0.2002	9.82	0.1971	1.41959
0.3331	1.05971	0.2981	11.01	0.3134	1.41111
0.4296	1.08128	0.4036	12.42	0.4086	1.40284
0.5406	1.11144	0.5059	13.99	0.4978	1.39389
0.6352	1.14347	0.6002	15.59	0.5997	1.38189
0.7429	1.19007	0.6992	17.51	0.7007	1.36727
0.8240	1.23540	0.8014	19.73	0.8017	1.34843
0.9150	1.30197	0.8973	22.15	0.9020	1.32326
0.9567	1.33942	0.9471	24.00		