

Supporting Information

Influence of high pressure on solubility of ionic liquids: experimental data and correlation[†]

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Table 1S Solid - liquid phase equilibria and liquid-liquid phase equilibria temperatures, T_{LL} for {[EMIM][TOS] (1) + cyclohexane, or benzene (2)} mixtures at ambient pressure

x_1	T/K	T_{LLE}/K	x_1	T/K	T_{LLE}/K
Cyclohexane					
0.0005	318.95		0.6311	319.50	355.11
0.0566	318.94		0.7129	319.58	350.58
0.0908	318.83		0.7967	319.44	346.64
0.1616	318.72		0.8557	319.42	343.38
0.2978	318.47		0.8979	319.83	340.68
0.3677	318.51		0.9462	320.36	338.72
0.4269	318.81		0.9644	321.12	336.99
0.4815	319.22	363.26	1.000	322.93	
0.5578	319.33	358.51			
Benzene					
0.0262	296.40		0.6559	303.81	
0.1368	299.71		0.7422	308.93	
0.2275	300.47		0.8339	313.68	
0.3257	299.97		0.9448	317.79	
0.4497	301.28		1.0000	322.93	
0.5489	302.12				

Table 2S Solid - liquid equilibrium pressures at different temperatures for {[EMIM][TOS] (1)
+ cyclohexane, or benzene (2)} mixtures

<i>T/K</i>	328.15	333.15	338.15	343.15	348.15	353.15	358.15	363.15
<i>x</i> ₁	P /MPa							
Cyclohexane								
0.0000	99.44	109.96	120.49	131.03	141.58	152.15	162.73	173.31
0.0116	68.66	105.67	128.73	156.83	174.71	211.84	252.49	301.92
0.0845	34.29	66.16	94.09	127.06	144.94	174.95	207.05	244.32
0.1736	31.08	52.97	78.91	108.90	126.78	151.68	177.71	206.88
0.2630	27.89	49.79	75.73	100.72	118.60	140.44	162.87	187.88
0.3899	27.29	49.17	72.10	95.08	112.96	132.16	151.55	176.51
0.5325	28.77	50.65	73.59	96.57	114.45	132.33	150.21	170.09
0.6555	26.95	48.84	71.77	94.74	112.62	130.50	148.38	166.26
0.8172	27.14	49.03	71.96	94.93	112.81	130.69	148.57	166.45
0.9229	26.44	48.32	71.25	94.23	112.11	129.99	147.87	165.75
1.0000	20.53	41.40	62.31	83.27	101.15	124.25	139.56	161.44
Benzene								
0.0000	198.24	221.48	245.10	269.09	293.47	318.22	343.35	368.85
0.0332	169.09	188.19	206.77	224.83	242.36	259.36	275.84	291.79
0.0546	159.73	179.60	198.96	217.80	236.12	253.92	271.21	287.98
0.1288	137.27	159.22	179.70	198.70	221.24	242.29	261.87	279.98
0.2109	113.80	135.65	157.21	178.49	199.49	220.21	245.64	265.80
0.3507	91.92	110.96	130.89	151.71	173.43	196.05	219.55	243.96
0.4460	79.14	97.56	116.90	137.14	158.29	180.34	203.30	227.17
0.6001	78.96	96.78	115.10	133.92	153.24	173.05	193.37	214.18
0.7283	68.22	85.90	104.09	122.77	141.96	161.66	181.85	202.55
0.8465	50.89	70.14	89.45	108.81	128.23	147.70	167.23	186.81
0.9553	38.45	58.18	77.77	97.22	116.52	135.69	154.72	173.61
1.0000	19.66	39.86	59.94	79.88	99.70	119.38	138.94	158.37

Table 3S Solid - liquid equilibrium pressures at different temperatures for
{[MMIM][CH₃SO₄] (1) + hexan-1-ol (2)} mixtures

T/K	309.15	318.15	328.15	338.15	348.15
x_1	P /MPa				
0.0000	533.89	634.16	742.65	859.37	984.31
0.0267	360.17	441.85	541.75	654.87	771.21
0.0956	127.09	179.76	250.65	334.76	422.10
0.1566	55.98	97.07	156.38	228.92	304.68
0.2113	34.99	71.52	126.29	194.27	265.48
0.2725	28.39	63.04	115.91	182.01	251.32
0.3003	27.52	61.89	109.48	175.29	239.32
0.3909	27.62	62.11	109.83	165.77	229.93
0.4765	29.76	64.86	113.18	169.73	234.50
0.6144	32.43	68.12	117.05	174.19	239.56
0.7049	31.35	66.86	115.60	172.56	237.74
0.8300	31.94	67.53	116.34	173.37	238.63
0.9117	34.67	70.96	120.48	178.22	244.19
1.0000	24.35	57.87	99.61	149.58	207.77