

Supplementary Material (ESI) for New Journal of Chemistry

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Table S1 Refractive index, n_t^D , and molar refractions, R , in $\text{cm}^3 \text{mol}^{-1}$, of the mixture water (1) + DEEA (2) at 283.15, 288.15, 293.15, 298.15 and 303.15 K.

x_2	283.15 K		288.15 K		293.15 K	
	n_t^D	R	n_t^D	R	n_t^D	R
0.00000	1.3337	3.714	1.3334	3.714	1.3331	3.713
0.01005	1.3432	4.023	1.3421	4.016	1.3421	4.021
0.02016	1.3519	4.335	1.3507	4.329	1.3505	4.334
0.03000	-	-	1.3591	4.644	1.3579	4.639
0.04005	1.3666	4.951	1.3661	4.956	1.3650	4.954
0.05005	1.3727	5.258	1.3717	5.258	1.3710	5.263
0.06152	-	-	1.3779	5.611	-	-
0.07026	1.3836	5.882	1.3831	5.892	1.3815	5.888
0.08016	1.3882	6.186	1.3875	6.195	1.3862	6.196
0.09008	1.3920	6.486	1.3917	6.503	1.3902	6.503
0.10003	1.3957	6.790	1.3946	6.797	1.3937	6.807
0.11005	1.3989	7.094	1.3983	7.110	1.3969	7.114
0.12003	1.4019	7.397	1.4016	7.420	1.4000	7.422
0.13008	1.4048	7.705	1.4039	7.721	1.4028	7.733
0.14007	1.4074	8.010	1.4074	8.044	1.4054	8.041
0.14830	1.4096	8.267	1.4086	8.282	1.4072	8.293
0.16025	1.4120	8.628	1.4114	8.655	1.4100	8.664
0.17038	1.4142	8.942	1.4136	8.969	1.4121	8.978
0.18007	-	-	1.4152	9.264	1.4136	9.273
0.19047	1.4181	9.565	-	-	-	-
0.20024	1.4196	9.864	-	-	1.4172	9.903
0.21042	1.4211	10.177	1.4202	10.204	1.4186	10.216
0.22000	1.4225	10.474	1.4218	10.508	1.4199	10.511
0.23006	1.4238	10.786	1.4229	10.815	1.4213	10.827
0.24008	1.4253	11.102	1.4241	11.125	1.4228	11.145
0.25302	1.4266	11.499	-	-	1.4243	11.549
0.26736	1.4281	11.945	1.4271	11.976	1.4257	11.997
0.27008	1.4283	12.029	1.4274	12.061	1.4259	12.079
0.28008	1.4294	12.344	-	-	1.4269	12.394
0.29002	1.4303	12.653	1.4292	12.684	1.4278	12.704
0.30219	-	-	1.4304	13.070	1.4288	13.086
0.34998	1.4349	14.534	1.4331	14.548	1.4321	14.585
0.39992	-	-	-	-	1.4347	16.151
0.45066	1.4398	17.697	1.4378	17.711	1.4364	17.738
0.50007	1.4415	19.254	-	-	1.4379	19.290
0.55038	-	-	1.4405	20.842	1.4388	20.862
0.60012	1.4436	22.393	1.4415	22.414	1.4396	22.425
0.65141	-	-	-	-	1.4400	24.035
0.70005	1.4446	25.534	1.4424	25.553	1.4407	25.583
0.75077	1.4446	27.121	1.4422	27.134	1.4408	27.182
0.80013	1.4451	28.705	-	-	1.4411	28.762
0.85076	1.4448	30.290	1.4427	30.314	1.4410	30.362
0.90009	1.4452	31.862	1.4428	31.876	1.4411	31.922
0.95009	1.4452	33.408	1.4428	33.428	1.4412	33.482
1.00000	1.4463	34.957	1.4431	34.943	1.4412	34.989

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x_2	298.15 K		303.15 K	
	n_t^D	R	n_t^D	R
0.00000	1.3326	3.713	1.3321	3.713
0.01005	1.3413	4.018	1.3407	4.018
0.02016	1.3496	4.330	1.3491	4.333
0.03000	1.3570	4.636	1.3563	4.637
0.04005	1.3639	4.949	1.3631	4.952
0.05005	1.3698	5.257	1.3690	5.262
0.06152	1.3753	5.604	1.3745	5.609
0.07026	1.3803	5.883	1.3792	5.888
0.08016	1.3846	6.189	1.3837	6.198
0.09008	1.3890	6.501	1.3876	6.504
0.10003	1.3918	6.797	1.3907	6.805
0.11005	1.3957	7.114	1.3935	7.107
0.12003	1.3987	7.424	1.3967	7.420
0.13008	1.4020	7.742	1.3992	7.726
0.14007	-	-	1.4017	8.036
0.14830	1.4055	8.289	1.4038	8.295
0.16025	1.4083	8.663	1.4062	8.662
0.17038	1.4105	8.981	1.4081	8.976
0.18007	1.4119	9.273	1.4105	9.289
0.19047	1.4146	9.616	-	-
0.20024	1.4157	9.912	1.4136	9.913
0.21042	-	-	1.4146	10.222
0.22000	1.4181	10.518	1.4160	10.523
0.23006	1.4195	10.833	1.4176	10.843
0.24008	1.4208	11.149	-	-
0.25302	-	-	1.4204	11.568
0.26736	1.4240	12.010	1.4215	12.009
0.27008	1.4240	12.089	1.4217	12.092
0.28008	1.4256	12.420	1.4226	12.405
0.29002	1.4263	12.727	1.4235	12.718
0.30219	1.4270	13.102	1.4251	13.117
0.34998	1.4306	14.615	1.4281	14.613
0.39992	1.4327	16.169	1.4306	16.184
0.45066	1.4347	17.764	1.4322	17.764
0.50007	1.4361	19.312	1.4339	19.327
0.55038	1.4368	20.873	1.4346	20.884
0.60012	1.4376	22.428	1.4357	22.455
0.70005	1.4381	25.548	1.4362	25.575
0.75077	1.4387	27.171	1.4363	27.167
0.80013	1.4391	28.759	1.4368	28.753
0.85076	1.4390	30.364	1.4365	30.346
0.90009	1.4391	31.940	1.4365	31.916
0.95009	1.4391	33.513	1.4367	33.502
1.00000	1.4388	35.006	1.4369	35.052

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Table S2 Least squares A_k ($\text{cm}^3 \text{mol}^{-1}$) coefficients of eqn.(10), their standard deviations $\sigma(A_i)$ ($\text{cm}^3 \text{mol}^{-1}$), and the standard deviations of the fits, σ_{fit} ($\text{cm}^3 \text{mol}^{-1}$), for the system water(1) + DEEA(2) from 283.15 to 303.15 K.

T/K	A_0	$\sigma(A_0)$	A_1	$\sigma(A_1)$	A_2	$\sigma(A_2)$	A_3	$\sigma(A_3)$	A_4	$\sigma(A_4)$	σ_{fit}
283.15	-0.3436	0.011	0.4010	0.029	-0.6472	0.083	0.1140	0.069	1.3927	0.13	0.005
288.15	-0.2326	0.013	0.2534	0.043	-0.4853	0.12	0.5211	0.10	1.4952	0.19	0.007
293.15	-0.2604	0.007	0.1623	0.019	-0.2454	0.057	0.8192	0.048	1.3338	0.09	0.004
298.15	-0.2214	0.013	-0.2036	0.039	-0.7771	0.11	1.4854	0.095	2.0464	0.18	0.007
303.15	-0.2553	0.011	-0.0700	0.036	-0.9055	0.097	0.5951	0.086	1.3969	0.16	0.006