Density, Viscosity, Refractive Index and Surface Tension for Six Binary Systems of Adamantane Derivatives with 1-Heptanol and Cyclohexylmethanol

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Table S1. Excess Volumes (V_m^E) for the Binary Mixtures of 1-Heptanol (1) + 1,3-DMA (2), 1-Heptanol (1) + 1-EA (2), 1-Heptanol (1) + 1,3,5-TMA (2), Cyclohexylmethanol (1) + 1,3-DMA (2), Cyclohexylmethanol (1) + 1-EA (2) and Cyclohexylmethanol (1) + 1,3,5-TMA (2) with Different Mole Fractions (x_1) at Temperatures from T = (293.15 to 333.15) K and Atmospheric Pressure P = 0.1 MPa[a]

	V_m^E / cm^3·mol^{-1}								
x_1	293.15 K	298.15 K	303.15 K	308.15 K	313.15 K	318.15 K	323.15 K	328.15 K	333.15 K
	1-heptanol (1) + 1,3-DMA (2)								
0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.1001	-0.042	-0.025	-0.008	0.009	0.028	0.048	0.070	0.094	0.119
0.1990	-0.066	-0.048	-0.032	-0.006	0.017	0.042	0.071	0.100	0.132
0.2998	-0.102	-0.085	-0.063	-0.041	-0.017	0.010	0.040	0.072	0.107
0.3997	-0.140	-0.120	-0.099	-0.076	-0.052	-0.025	0.004	0.033	0.066
0.4997	-0.159	-0.140	-0.119	-0.096	-0.073	-0.048	-0.020	0.009	0.039

0.6002	-0.185	-0.167	-0.147	-0.126	-0.104	-0.081	-0.056	-0.031	-0.003
0.7000	-0.164	-0.151	-0.139	-0.122	-0.105	-0.088	-0.070	-0.048	-0.025
0.7996	-0.141	-0.133	-0.121	-0.109	-0.097	-0.084	-0.071	-0.055	-0.038
0.8999	-0.084	-0.084	-0.081	-0.074	-0.068	-0.060	-0.052	-0.044	-0.034
1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1-heptanol (1) + 1-EA (2)

0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.0999	0.017	0.024	0.036	0.052	0.069	0.087	0.107	0.127	0.148
0.1999	-0.004	0.012	0.025	0.043	0.063	0.085	0.112	0.133	0.160
0.2988	-0.029	-0.009	0.007	0.026	0.046	0.069	0.093	0.119	0.146
0.3991	-0.052	-0.030	-0.013	0.006	0.026	0.047	0.070	0.096	0.123
0.4998	-0.072	-0.053	-0.037	-0.019	0.000	0.021	0.043	0.066	0.091
0.5995	-0.080	-0.064	-0.050	-0.033	-0.016	0.003	0.022	0.043	0.066
0.7000	-0.080	-0.068	-0.057	-0.045	-0.031	-0.015	0.002	0.020	0.039
0.8002	-0.072	-0.065	-0.056	-0.046	-0.035	-0.024	-0.011	0.002	0.016
0.9000	-0.044	-0.041	-0.037	-0.032	-0.026	-0.021	-0.014	-0.007	0.001
1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1-heptanol (1) + 1,3,5-TMA (2)

0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.1001	0.060	0.080	0.095	0.109	0.127	0.148	0.171	0.196	0.222
0.2001	0.057	0.078	0.096	0.116	0.139	0.164	0.192	0.222	0.254
0.3002	0.054	0.075	0.095	0.116	0.139	0.165	0.194	0.225	0.258
0.4004	0.030	0.050	0.070	0.092	0.116	0.141	0.170	0.201	0.234
0.5001	0.004	0.023	0.043	0.064	0.087	0.111	0.138	0.167	0.198
0.6002	-0.022	-0.005	0.013	0.031	0.052	0.074	0.099	0.125	0.153
0.7001	-0.050	-0.035	-0.020	-0.002	0.016	0.035	0.057	0.079	0.102
0.7999	-0.069	-0.059	-0.047	-0.034	-0.020	-0.006	0.011	0.027	0.045
0.9002	-0.051	-0.047	-0.042	-0.036	-0.029	-0.021	-0.012	-0.003	0.007
1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

cyclohexylmethanol (1) + 1,3-DMA (2)

0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.1027	0.076	0.093	0.108	0.125	0.144	0.163	0.185	0.207	0.231
0.1995	0.108	0.126	0.145	0.167	0.190	0.215	0.243	0.272	0.303
0.3012	0.123	0.143	0.164	0.186	0.210	0.235	0.263	0.292	0.322
0.4004	0.099	0.118	0.141	0.166	0.191	0.217	0.246	0.274	0.306
0.4973	0.057	0.080	0.104	0.128	0.154	0.180	0.208	0.236	0.267

0.6008	0.037	0.045	0.064	0.086	0.110	0.135	0.161	0.188	0.216
0.7002	0.017	0.034	0.047	0.063	0.077	0.094	0.112	0.133	0.155
0.7892	0.005	0.011	0.028	0.031	0.047	0.050	0.068	0.087	0.104
0.9000	-0.020	-0.013	-0.005	0.003	0.013	0.023	0.033	0.044	0.056
1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

cyclohexylmethanol (1) + 1-EA (2)

0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.1000	0.081	0.100	0.115	0.132	0.150	0.168	0.189	0.209	0.232
0.2002	0.137	0.161	0.180	0.201	0.224	0.248	0.274	0.301	0.329
0.2997	0.178	0.201	0.216	0.232	0.254	0.280	0.307	0.336	0.367
0.3999	0.167	0.192	0.214	0.238	0.263	0.289	0.317	0.347	0.376
0.4998	0.157	0.182	0.203	0.226	0.250	0.276	0.303	0.331	0.361
0.5989	0.125	0.149	0.172	0.195	0.219	0.245	0.270	0.296	0.323
0.7001	0.091	0.109	0.127	0.147	0.169	0.191	0.214	0.237	0.261
0.8023	0.062	0.069	0.082	0.095	0.111	0.127	0.144	0.162	0.181
0.8996	0.028	0.037	0.044	0.051	0.058	0.064	0.073	0.083	0.093
1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

cyclohexylmethanol (1) + 1,3,5-TMA (2)

0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.1000	0.102	0.120	0.136	0.153	0.171	0.191	0.212	0.235	0.258
0.2001	0.142	0.162	0.181	0.200	0.221	0.244	0.269	0.297	0.325
0.2997	0.165	0.185	0.204	0.223	0.245	0.268	0.294	0.323	0.352
0.4000	0.169	0.189	0.207	0.228	0.249	0.272	0.297	0.325	0.353
0.4994	0.157	0.176	0.194	0.213	0.234	0.256	0.279	0.304	0.331
0.5991	0.133	0.150	0.167	0.185	0.202	0.221	0.243	0.265	0.288
0.7000	0.097	0.114	0.127	0.143	0.160	0.177	0.196	0.215	0.236
0.8010	0.066	0.078	0.090	0.102	0.115	0.129	0.144	0.159	0.175
0.8927	0.041	0.051	0.062	0.069	0.076	0.084	0.093	0.101	0.111
1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

[a] x_1 is the mole fraction of 1-heptanol or cyclohexylmethanol in the binary mixtures. Standard uncertainties u are u (x) = 0.0001, u (T) = 0.01 K, u (P) = 0.2 kPa. The combined uncertainty is u_c (V_m^E) = 0.001 $cm^3 \cdot mol^{-1}$.

Table S2. Coefficients (A_i) of the Redlich−Kister Equation (eq 5) with Standard Deviations (σ) for Excess Molar Volumes (V_m^E) of the Binary Mixtures of 1-Heptanol (1) + 1,3-DMA (2), 1-Heptanol (1) + 1-EA (2), 1-Heptanol (1) + 1,3,5-TMA (2), Cyclohexylmethanol (1) + 1,3-DMA (2), Cyclohexylmethanol (1) + 1-EA (2) and Cyclohexylmethanol (1) + 1,3,5-TMA (2) at Temperatures from T = (293.15 to 333.15) K and Atmospheric Pressure P = 0.1 MPa

T / K	A_0	A_1	A_2	A_3	σ	A_0	A_1	A_2	A_3	σ
	1-heptanol (1) + 1,3-DMA (2)					cyclohexylmethanol (1) + 1,3-DMA (2)				
293.15	-0.645	-0.443	-0.063	0.222	0.005	0.291	-0.548	0.057	-0.157	0.009
298.15	-0.570	-0.437	-0.038	0.040	0.005	0.355	-0.597	0.145	-0.180	0.008
303.15	-0.491	-0.438	0.004	-0.097	0.004	0.436	-0.623	0.221	-0.209	0.008
308.15	-0.404	-0.476	0.078	-0.161	0.004	0.522	-0.692	0.280	-0.204	0.005
313.15	-0.313	-0.497	0.148	-0.260	0.003	0.613	-0.723	0.368	-0.242	0.004
318.15	-0.218	-0.537	0.233	-0.331	0.003	0.704	-0.813	0.454	-0.213	0.005
323.15	-0.115	-0.592	0.326	-0.402	0.004	0.808	-0.843	0.561	-0.289	0.005
328.15	-0.004	-0.632	0.430	-0.503	0.004	0.916	-0.880	0.674	-0.349	0.006
333.15	0.116	-0.679	0.539	-0.597	0.004	1.031	-0.928	0.786	-0.404	0.007
	1-heptanol (1) + 1-EA (2)					cyclohexylmethanol (1) + 1-EA (2)				
293.15	-0.291	-0.270	0.203	-0.232	0.002	0.626	-0.492	-0.022	0.205	0.005
298.15	-0.211	-0.329	0.170	-0.186	0.002	0.717	-0.534	0.055	0.145	0.006

303.15	-0.150	-0.336	0.211	-0.268	0.003	0.798	-0.511	0.118	0.021	0.003
308.15	-0.084	-0.350	0.284	-0.355	0.003	0.885	-0.486	0.181	-0.133	0.003
313.15	-0.011	-0.370	0.361	-0.445	0.004	0.983	-0.473	0.239	-0.269	0.003
318.15	0.068	-0.394	0.437	-0.542	0.005	1.089	-0.466	0.293	-0.409	0.003
323.15	0.154	-0.431	0.530	-0.630	0.004	1.195	-0.474	0.375	-0.521	0.003
328.15	0.243	-0.449	0.619	-0.736	0.006	1.306	-0.499	0.462	-0.595	0.003
333.15	0.341	-0.485	0.711	-0.822	0.007	1.420	-0.515	0.568	-0.705	0.004
		1-heptanol (1) + 1,3,5-TMA (2)					cyclohexylmethanol (1) + 1,3,5-TMA (2)			
293.15	0.001	-0.548	0.032	-0.338	0.005	0.602	-0.370	0.236	-0.105	0.005
298.15	0.073	-0.549	0.123	-0.510	0.006	0.673	-0.379	0.354	-0.200	0.006
303.15	0.150	-0.552	0.176	-0.612	0.006	0.736	-0.407	0.468	-0.206	0.008
308.15	0.234	-0.571	0.223	-0.669	0.006	0.809	-0.410	0.552	-0.312	0.009
313.15	0.322	-0.587	0.302	-0.757	0.006	0.886	-0.421	0.647	-0.414	0.009
318.15	0.416	-0.605	0.395	-0.864	0.007	0.970	-0.436	0.751	-0.523	0.010
323.15	0.521	-0.627	0.502	-0.992	0.008	1.060	-0.460	0.861	-0.630	0.011
328.15	0.632	-0.660	0.619	-1.106	0.009	1.157	-0.491	0.972	-0.738	0.011
333.15	0.752	-0.700	0.736	-1.213	0.010	1.260	-0.529	1.083	-0.829	0.012

Table S3. Viscosity Deviations ($\Delta\eta$) for the Binary Mixtures of 1-Heptanol (1) + 1,3-DMA (2), 1-Heptanol (1) + 1-EA (2), 1-Heptanol (1) + 1,3,5-TMA (2), Cyclohexylmethanol (1) + 1,3-DMA (2), Cyclohexylmethanol (1) + 1-EA (2) and Cyclohexylmethanol (1) + 1,3,5-TMA (2) with Different Mole Fractions (x_1) at Temperatures from T = (293.15 to 333.15) K and Atmospheric Pressure P = 0.1 MPa[a]

	$\Delta\eta$ / mPa·s								
x_1	293.15 K	298.15 K	303.15 K	308.15 K	313.15 K	318.15 K	323.15 K	328.15 K	333.15 K
				1-heptanol (1) + 1,3-DMA (2)					
0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.1001	-0.385	-0.322	-0.285	-0.256	-0.231	-0.210	-0.193	-0.178	-0.166
0.1990	-0.597	-0.495	-0.428	-0.375	-0.330	-0.294	-0.265	-0.241	-0.221
0.2998	-0.728	-0.609	-0.521	-0.450	-0.390	-0.342	-0.305	-0.273	-0.247
0.3997	-0.831	-0.646	-0.543	-0.462	-0.394	-0.341	-0.299	-0.264	-0.236
0.4997	-0.803	-0.669	-0.563	-0.478	-0.402	-0.344	-0.300	-0.261	-0.230
0.6002	-0.719	-0.608	-0.515	-0.438	-0.369	-0.316	-0.275	-0.238	-0.209
0.7000	-0.532	-0.462	-0.399	-0.346	-0.295	-0.254	-0.222	-0.194	-0.171
0.7996	-0.337	-0.290	-0.256	-0.227	-0.194	-0.170	-0.151	-0.134	-0.120
0.8999	-0.128	-0.111	-0.107	-0.100	-0.084	-0.075	-0.070	-0.063	-0.056
1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
				1-heptanol (1) + 1-EA (2)					

0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.0999	-0.513	-0.454	-0.403	-0.373	-0.339	-0.312	-0.287	-0.265	-0.246
0.1999	-0.767	-0.657	-0.576	-0.513	-0.457	-0.413	-0.375	-0.343	-0.314
0.2988	-0.906	-0.780	-0.680	-0.595	-0.525	-0.464	-0.417	-0.377	-0.343
0.3991	-0.993	-0.828	-0.707	-0.615	-0.537	-0.473	-0.420	-0.376	-0.339
0.4998	-0.982	-0.830	-0.712	-0.615	-0.530	-0.465	-0.412	-0.366	-0.328
0.5995	-0.838	-0.725	-0.626	-0.544	-0.468	-0.409	-0.360	-0.321	-0.287
0.7000	-0.656	-0.583	-0.512	-0.451	-0.390	-0.344	-0.306	-0.271	-0.241
0.8002	-0.374	-0.341	-0.311	-0.281	-0.245	-0.219	-0.198	-0.177	-0.160
0.9000	-0.117	-0.104	-0.104	-0.101	-0.087	-0.081	-0.077	-0.070	-0.065
1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1-heptanol (1) + 1,3,5-TMA (2)

0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.1001	-0.404	-0.336	-0.288	-0.250	-0.217	-0.191	-0.170	-0.153	-0.138
0.2001	-0.684	-0.564	-0.473	-0.401	-0.341	-0.294	-0.256	-0.226	-0.199
0.3002	-0.917	-0.749	-0.619	-0.517	-0.433	-0.367	-0.315	-0.274	-0.239
0.4004	-1.075	-0.875	-0.719	-0.596	-0.494	-0.415	-0.353	-0.302	-0.261
0.5001	-1.245	-0.944	-0.777	-0.644	-0.532	-0.443	-0.375	-0.319	-0.273

0.6002	-1.122	-0.913	-0.752	-0.620	-0.512	-0.426	-0.360	-0.304	-0.259
0.7001	-0.957	-0.780	-0.644	-0.535	-0.440	-0.367	-0.337	-0.261	-0.221
0.7999	-0.658	-0.550	-0.459	-0.386	-0.319	-0.267	-0.226	-0.191	-0.162
0.9002	-0.239	-0.236	-0.204	-0.173	-0.139	-0.116	-0.101	-0.085	-0.072
1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

cyclohexylmethanol (1) + 1,3-DMA (2)

0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.1027	-3.055	-2.267	-1.736	-1.343	-1.064	-0.853	-0.693	-0.573	-0.153
0.1995	-5.827	-4.287	-3.246	-2.484	-1.940	-1.533	-1.224	-0.995	-0.523
0.3012	-8.345	-6.106	-4.605	-3.498	-2.715	-2.132	-1.690	-1.362	-0.848
0.4004	-10.470	-7.642	-5.740	-4.335	-3.353	-2.618	-2.061	-1.654	-1.109
0.4973	-12.230	-8.826	-6.626	-5.004	-3.867	-3.021	-2.378	-1.907	-1.342
0.6008	-12.987	-9.441	-7.093	-5.436	-4.138	-3.231	-2.541	-2.040	-1.483
0.7002	-12.635	-9.180	-6.911	-5.210	-4.027	-3.164	-2.559	-2.008	-1.492
0.7892	-9.810	-6.967	-5.116	-3.781	-2.882	-2.250	-1.747	-1.511	-1.190
0.9000	-5.666	-4.025	-3.046	-2.176	-1.634	-1.254	-0.987	-0.839	-0.672
1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

cyclohexylmethanol (1) + 1-EA (2)

0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.1000	-2.816	-2.100	-1.615	-1.254	-1.003	-0.810	-0.662	-0.553	-0.463
0.2002	-5.222	-3.844	-2.910	-2.224	-1.741	-1.382	-1.110	-0.909	-0.745
0.2997	-7.408	-5.407	-4.070	-3.088	-2.397	-1.887	-1.501	-1.219	-0.988
0.3999	-9.247	-6.724	-5.044	-3.804	-2.947	-2.308	-1.824	-1.470	-1.181
0.4998	-10.517	-7.630	-5.943	-4.301	-3.321	-2.595	-2.044	-1.644	-1.313
0.5989	-11.078	-8.017	-6.008	-4.520	-3.497	-2.735	-2.152	-1.730	-1.381
0.7001	-10.668	-7.700	-5.797	-4.371	-3.401	-2.671	-2.111	-1.707	-1.363
0.8023	-7.890	-5.571	-4.144	-3.077	-2.324	-1.806	-1.420	-1.163	-1.021
0.8996	-4.995	-3.487	-2.515	-1.856	-1.412	-1.074	-0.824	-0.763	-0.601
1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

cyclohexylmethanol (1) + 1,3,5-TMA (2)

0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.1000	-3.246	-2.422	-1.844	-1.423	-1.120	-0.892	-0.717	-0.587	-0.480
0.2001	-6.306	-4.667	-3.549	-2.723	-2.131	-1.685	-1.345	-1.092	-0.885
0.2997	-9.180	-6.774	-5.137	-3.924	-3.058	-2.409	-1.914	-1.545	-1.246
0.4000	-11.802	-8.686	-6.568	-5.000	-3.886	-3.050	-2.414	-1.943	-1.559
0.4994	-13.945	-10.232	-7.725	-5.866	-4.551	-3.565	-2.816	-2.261	-1.809

0.5991	-15.372	-11.247	-8.472	-6.418	-4.970	-3.888	-3.063	-2.457	-1.960
0.7000	-15.692	-11.427	-8.592	-6.494	-5.029	-3.935	-3.097	-2.485	-1.979
0.8010	-14.096	-10.206	-7.660	-5.800	-4.513	-3.545	-2.800	-2.258	-1.800
0.8927	-9.363	-6.658	-4.891	-3.633	-2.818	-2.187	-1.726	-1.376	-1.135
1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

[a] x_1 is the mole fraction of 1-heptanol or cyclohexylmethanol in the binary mixtures. Standard uncertainties u are u (x) = 0.0001, u (T) = 0.01 K, u (P) = 0.2 kPa. The combined uncertainty is u_c ($\Delta\eta$) = 0.006mPa·s.

Table S4. Coefficients (A_i) of the Redlich−Kister Equation (eq 5) with Standard Deviations (σ) for Viscosity Deviations ($\Delta\eta$) of the Binary Mixtures of 1-Heptanol (1) + 1,3-DMA (2), 1-Heptanol (1) + 1-EA (2), 1-Heptanol (1) + 1,3,5-TMA (2), Cyclohexylmethanol (1) + 1,3-DMA (2), Cyclohexylmethanol (1) + 1-EA (2) and Cyclohexylmethanol (1) + 1,3,5-TMA (2) at Temperatures from T = (293.15 to 333.15) K and Atmospheric Pressure P = 0.1 MPa

T / K	A_0	A_1	A_2	A_3	σ	A_0	A_1	A_2	A_3	σ
	1-heptanol (1) + 1,3-DMA (2)					cyclohexylmethanol (1) + 1,3-DMA (2)				
293.15	-3.180	0.955	0.594	1.274	0.015	-49.367	-26.430	1.215	13.266	0.135
298.15	-2.627	0.580	0.387	1.382	0.009	-35.883	-18.738	1.367	10.541	0.129
303.15	-2.225	0.399	0.226	1.478	0.009	-26.887	-13.575	0.694	7.418	0.128
308.15	-1.874	0.385	-0.120	1.094	0.007	-20.468	-10.520	1.533	7.774	0.106
313.15	-1.585	0.345	-0.230	1.055	0.005	-15.782	-8.005	1.286	6.593	0.086
318.15	-1.359	0.322	-0.325	0.953	0.005	-12.357	-6.388	1.016	5.827	0.072
323.15	-1.181	0.302	-0.412	0.862	0.004	-9.765	-5.175	0.709	5.113	0.080
328.15	-1.031	0.303	-0.459	0.776	0.004	-7.786	-4.193	-0.157	3.716	0.034
333.15	-0.910	0.290	-0.486	0.730	0.003	-5.598	-3.715	1.315	0.235	0.043
	1-heptanol (1) + 1-EA (2)					cyclohexylmethanol (1) + 1-EA (2)				
293.15	-3.839	1.190	0.592	2.429	0.014	-42.187	-17.755	-0.898	-4.918	0.221
298.15	-3.269	0.764	0.288	2.586	0.010	-30.639	-12.531	0.116	5.186	0.175

303.15	-2.808	0.623	0.005	2.248	0.009	-23.290	-9.743	1.114	5.912	0.135
308.15	-2.420	0.486	-0.301	2.166	0.009	-17.379	-7.274	0.504	5.209	0.106
313.15	-2.091	0.451	-0.406	2.004	0.009	-13.441	-5.599	0.384	4.645	0.099
318.15	-1.825	0.401	-0.532	1.856	0.008	-10.539	-4.474	0.348	4.381	0.079
323.15	-1.610	0.375	-0.612	1.674	0.008	-8.329	-3.575	0.268	4.024	0.063
328.15	-1.431	0.362	-0.648	1.531	0.007	-6.610	-2.558	-0.823	1.927	0.061
333.15	-1.280	0.362	-0.662	1.380	0.006	-5.325	-2.357	-0.862	2.226	0.024
		1-heptanol (1) + 1,3,5-TMA (2)					cyclohexylmethanol (1) + 1,3,5-TMA (2)			
293.15	-4.777	-0.823	1.836	3.014	0.028	-56.209	-39.502	-18.405	-0.069	0.142
298.15	-3.778	-0.554	0.904	1.915	0.006	-41.330	-28.704	-12.049	2.141	0.124
303.15	-3.097	-0.454	0.556	1.591	0.004	-31.293	-21.699	-8.123	3.196	0.119
308.15	-2.558	-0.374	0.312	1.392	0.004	-23.813	-16.438	-5.727	3.389	0.109
313.15	-2.114	-0.297	0.198	1.289	0.004	-18.472	-12.675	-4.616	2.661	0.090
318.15	-1.764	-0.221	0.075	1.135	0.004	-14.493	-9.944	-3.590	2.443	0.079
323.15	-1.511	-0.269	-0.003	1.166	0.007	-11.438	-7.745	-2.953	1.899	0.064
328.15	-1.263	-0.096	-0.098	0.867	0.003	-9.198	-6.231	-2.404	1.748	0.057
333.15	-1.079	-0.053	-0.140	0.784	0.003	-7.317	-4.741	-2.293	0.799	0.036

Table S5. Molar Refractive Indices (R) and molar refraction deviations ($\Delta_\Phi R$) for the Binary Mixtures of 1-Heptanol (1) + 1,3-DMA (2), 1-Heptanol (1) + 1-EA (2), 1-Heptanol (1) + 1,3,5-TMA (2), Cyclohexylmethanol (1) + 1,3-DMA (2), Cyclohexylmethanol (1) + 1-EA (2) and Cyclohexylmethanol (1) + 1,3,5-TMA (2) with Different Volume Fractions (Φ_1) at Temperatures from T = (293.15 to 333.15) K and Atmospheric Pressure P = 0.1 MPa[a]

293.15 K			298.15 K			303.15 K			313.15 K			323.15 K			333.15 K		
Φ_1	R / $cm^{-3}\cdot mol^{-1}$	$\Delta_\Phi R$ / $cm^{-3}\cdot mol^{-1}$	Φ_1	R / $cm^{-3}\cdot mol^{-1}$	$\Delta_\Phi R$ / $cm^{-3}\cdot mol^{-1}$	Φ_1	R / $cm^{-3}\cdot mol^{-1}$	$\Delta_\Phi R$ / $cm^{-3}\cdot mol^{-1}$	Φ_1	R / $cm^{-3}\cdot mol^{-1}$	$\Delta_\Phi R$ / $cm^{-3}\cdot mol^{-1}$	Φ_1	R / $cm^{-3}\cdot mol^{-1}$	$\Delta_\Phi R$ / $cm^{-3}\cdot mol^{-1}$	Φ_1	R / $cm^{-3}\cdot mol^{-1}$	$\Delta_\Phi R$ / $cm^{-3}\cdot mol^{-1}$
1-heptanol (1) + 1,3-DMA (2)																	
0.000	51.543	0.000	0.000	51.571	0.000	0.000	51.561	0.000	0.000	51.571	0.000	0.000	51.609	0.000	0.000	51.639	0.000
0.079	50.003	-0.308	0.079	50.015	-0.324	0.079	50.046	-0.285	0.080	50.009	-0.327	0.080	50.057	-0.314	0.080	50.089	-0.311
0.162	48.515	-0.522	0.162	48.554	-0.511	0.162	48.539	-0.522	0.162	48.532	-0.529	0.162	48.573	-0.520	0.162	48.626	-0.495
0.249	46.888	-0.789	0.249	46.924	-0.781	0.249	46.936	-0.768	0.250	46.936	-0.763	0.250	46.948	-0.779	0.250	46.993	-0.764
0.341	45.315	-0.945	0.341	45.342	-0.947	0.341	45.353	-0.938	0.341	45.369	-0.913	0.341	45.379	-0.927	0.341	45.412	-0.924
0.437	43.776	-0.996	0.437	43.776	-1.025	0.437	43.760	-1.046	0.437	43.815	-0.976	0.437	43.807	-1.007	0.437	43.847	-0.997
0.538	42.183	-1.014	0.538	42.239	-0.988	0.538	42.206	-1.030	0.538	42.241	-0.975	0.539	42.256	-0.980	0.539	42.276	-0.991
0.644	40.650	-0.901	0.644	40.694	-0.888	0.644	40.691	-0.904	0.644	40.705	-0.865	0.645	40.690	-0.897	0.645	40.740	-0.880
0.756	39.094	-0.724	0.756	39.150	-0.699	0.756	39.177	-0.690	0.756	39.163	-0.674	0.756	39.161	-0.691	0.756	39.214	-0.673

0.875	37.533	-0.442	0.875	37.562	-0.446	0.875	37.592	-0.438	0.875	37.596	-0.399	0.875	37.582	-0.426	0.875	37.636	-0.409
1.000	36.030	0.000	1.000	36.064	0.000	1.000	36.092	0.000	1.000	36.052	0.000	1.000	36.062	0.000	1.000	36.102	0.000

1-heptanol (1) + 1-EA (2)

0.000	50.923	0.000	0.000	50.931	0.000	0.000	50.932	0.000	0.000	50.925	0.000	0.000	50.990	0.000	0.000	51.001	0.000
0.082	49.441	-0.259	0.082	49.441	-0.269	0.082	49.462	-0.250	0.082	49.463	-0.239	0.082	49.492	-0.269	0.082	49.513	-0.259
0.168	47.947	-0.479	0.168	47.932	-0.506	0.168	47.978	-0.464	0.168	47.970	-0.458	0.168	48.000	-0.480	0.168	48.005	-0.488
0.256	46.457	-0.659	0.256	46.467	-0.662	0.256	46.479	-0.657	0.256	46.487	-0.631	0.256	46.515	-0.650	0.256	46.558	-0.621
0.349	44.964	-0.766	0.349	44.966	-0.779	0.349	44.984	-0.770	0.349	44.990	-0.742	0.349	45.017	-0.757	0.350	45.030	-0.760
0.446	43.424	-0.855	0.446	43.472	-0.824	0.446	43.481	-0.827	0.447	43.477	-0.806	0.447	43.500	-0.818	0.447	43.521	-0.817
0.547	41.982	-0.797	0.547	41.964	-0.836	0.547	41.955	-0.859	0.547	42.012	-0.773	0.548	42.025	-0.791	0.548	42.018	-0.819
0.653	40.485	-0.715	0.653	40.480	-0.742	0.653	40.509	-0.731	0.653	40.506	-0.702	0.654	40.540	-0.694	0.654	40.547	-0.712
0.764	38.992	-0.560	0.764	38.993	-0.585	0.764	39.027	-0.572	0.764	39.028	-0.536	0.764	39.033	-0.550	0.764	39.044	-0.569
0.879	37.494	-0.341	0.879	37.515	-0.349	0.879	37.523	-0.365	0.879	37.526	-0.324	0.879	37.566	-0.300	0.879	37.580	-0.320
1.000	36.030	0.000	1.000	36.064	0.000	1.000	36.092	0.000	1.000	36.052	0.000	1.000	36.062	0.000	1.000	36.102	0.000

1-heptanol (1) + 1,3,5-TMA (2)

0.000	56.426	0.000	0.000	56.433	0.000	0.000	56.452	0.000	0.000	56.430	0.000	0.000	56.501	0.000	0.000	56.501	0.000
0.073	54.360	-0.586	0.073	54.401	-0.553	0.073	54.373	-0.601	0.073	54.419	-0.531	0.073	54.438	-0.578	0.073	54.459	-0.556
0.150	52.331	-1.043	0.150	52.351	-1.033	0.150	52.344	-1.061	0.150	52.360	-1.017	0.150	52.400	-1.038	0.150	52.404	-1.036

0.232	50.303	-1.394	0.232	50.322	-1.387	0.232	50.315	-1.416	0.232	50.320	-1.381	0.232	50.359	-1.397	0.232	50.363	-1.397
0.320	48.256	-1.651	0.320	48.264	-1.657	0.320	48.265	-1.677	0.320	48.279	-1.632	0.320	48.306	-1.653	0.320	48.319	-1.648
0.413	46.197	-1.804	0.413	46.213	-1.805	0.413	46.231	-1.808	0.413	46.215	-1.791	0.414	46.258	-1.790	0.414	46.270	-1.789
0.514	44.171	-1.781	0.514	44.202	-1.769	0.514	44.183	-1.809	0.514	44.174	-1.784	0.514	44.223	-1.771	0.514	44.206	-1.803
0.621	42.141	-1.610	0.622	42.161	-1.611	0.622	42.150	-1.646	0.622	42.173	-1.587	0.622	42.192	-1.597	0.622	42.199	-1.609
0.738	40.098	-1.284	0.738	40.124	-1.284	0.738	40.111	-1.321	0.738	40.120	-1.273	0.738	40.160	-1.257	0.738	40.122	-1.320
0.864	38.051	-0.755	0.864	38.081	-0.754	0.864	38.058	-0.803	0.864	38.093	-0.729	0.864	38.102	-0.737	0.864	38.102	-0.770
1.000	36.030	0.000	1.000	36.064	0.000	1.000	36.092	0.000	1.000	36.052	0.000	1.000	36.062	0.000	1.000	36.102	0.000

cyclohexylmethanol (1) + 1,3-DMA (2)

0.000	51.543	0.000	0.000	51.571	0.000	0.000	51.561	0.000	0.000	51.571	0.000	0.000	51.609	0.000	0.000	51.639	0.000
0.072	49.688	-0.587	0.072	49.700	-0.602	0.072	49.702	-0.591	0.072	49.719	-0.583	0.072	49.700	-0.637	0.072	49.720	-0.644
0.144	48.031	-0.963	0.144	48.050	-0.970	0.144	48.054	-0.960	0.144	48.071	-0.950	0.144	48.065	-0.989	0.144	48.070	-1.008
0.225	46.233	-1.321	0.225	46.251	-1.328	0.225	46.254	-1.320	0.225	46.261	-1.320	0.225	46.254	-1.355	0.225	46.264	-1.367
0.310	44.490	-1.553	0.310	44.482	-1.587	0.310	44.501	-1.563	0.310	44.507	-1.563	0.310	44.525	-1.570	0.310	44.505	-1.608
0.400	42.761	-1.693	0.400	42.769	-1.709	0.400	42.794	-1.681	0.400	42.784	-1.696	0.400	42.800	-1.701	0.400	42.797	-1.718
0.504	40.929	-1.689	0.504	40.962	-1.681	0.504	40.946	-1.694	0.503	40.948	-1.695	0.503	40.947	-1.712	0.503	40.942	-1.728
0.611	39.182	-1.524	0.611	39.179	-1.550	0.611	39.197	-1.531	0.611	39.194	-1.536	0.611	39.203	-1.539	0.611	39.165	-1.584
0.716	37.574	-1.276	0.716	37.581	-1.292	0.716	37.605	-1.268	0.716	37.548	-1.325	0.716	37.601	-1.280	0.716	37.577	-1.307

0.859	35.620	-0.706	0.859	35.646	-0.703	0.859	35.646	-0.704	0.858	35.623	-0.726	0.858	35.672	-0.678	0.858	35.652	-0.696
1.000	33.819	0.000	1.000	33.840	0.000	1.000	33.843	0.000	1.000	33.839	0.000	1.000	33.834	0.000	1.000	33.827	0.000

cyclohexylmethanol (1) + 1-EA (2)

0.000	50.923	0.000	0.000	50.931	0.000	0.000	50.932	0.000	0.000	50.925	0.000	0.000	50.990	0.000	0.000	51.001	0.000
0.072	49.216	-0.471	0.072	49.236	-0.459	0.072	49.241	-0.456	0.072	49.242	-0.449	0.072	49.278	-0.471	0.072	49.246	-0.513
0.149	47.495	-0.876	0.149	47.548	-0.832	0.149	47.528	-0.854	0.149	47.529	-0.846	0.149	47.575	-0.854	0.149	47.555	-0.881
0.231	45.811	-1.168	0.231	45.845	-1.144	0.231	45.839	-1.152	0.231	45.845	-1.139	0.231	45.865	-1.167	0.231	45.854	-1.184
0.318	44.104	-1.376	0.318	44.113	-1.378	0.318	44.100	-1.393	0.318	44.123	-1.364	0.318	44.149	-1.379	0.318	44.139	-1.394
0.412	42.400	-1.480	0.412	42.408	-1.485	0.412	42.402	-1.493	0.412	42.384	-1.506	0.412	42.439	-1.486	0.412	42.443	-1.483
0.511	40.688	-1.492	0.511	40.731	-1.463	0.511	40.739	-1.457	0.511	40.728	-1.463	0.511	40.750	-1.469	0.511	40.745	-1.474
0.621	38.965	-1.344	0.621	38.983	-1.342	0.621	38.989	-1.339	0.621	38.996	-1.326	0.621	39.021	-1.321	0.621	39.022	-1.318
0.740	37.232	-1.038	0.740	37.246	-1.042	0.740	37.248	-1.042	0.740	37.236	-1.049	0.740	37.271	-1.026	0.740	37.283	-1.011
0.863	35.567	-0.603	0.863	35.586	-0.603	0.863	35.586	-0.606	0.863	35.595	-0.593	0.863	35.616	-0.576	0.863	35.623	-0.564
1.000	33.819	0.000	1.000	33.840	0.000	1.000	33.843	0.000	1.000	33.839	0.000	1.000	33.834	0.000	1.000	33.827	0.000

cyclohexylmethanol (1) + 1,3,5-TMA (2)

0.000	56.426	0.000	0.000	56.433	0.000	0.000	56.452	0.000	0.000	56.430	0.000	0.000	56.501	0.000	0.000	56.501	0.000
0.064	54.172	-0.816	0.064	54.202	-0.793	0.064	54.204	-0.810	0.064	54.200	-0.793	0.064	54.238	-0.822	0.064	54.207	-0.852
0.133	51.907	-1.521	0.133	51.945	-1.492	0.133	51.928	-1.527	0.133	51.943	-1.492	0.133	51.952	-1.546	0.133	51.963	-1.532

0.207	49.672	-2.066	0.207	49.690	-2.059	0.207	49.691	-2.075	0.207	49.695	-2.053	0.207	49.712	-2.092	0.207	49.724	-2.078
0.290	47.414	-2.467	0.289	47.413	-2.480	0.289	47.413	-2.495	0.289	47.442	-2.450	0.289	47.439	-2.503	0.289	47.459	-2.480
0.379	45.168	-2.694	0.379	45.166	-2.709	0.379	45.165	-2.724	0.379	45.183	-2.692	0.379	45.196	-2.722	0.379	45.213	-2.701
0.477	42.913	-2.721	0.477	42.917	-2.731	0.477	42.931	-2.729	0.477	42.938	-2.711	0.477	42.940	-2.744	0.477	42.955	-2.725
0.588	40.628	-2.509	0.588	40.654	-2.498	0.588	40.643	-2.520	0.588	40.654	-2.499	0.588	40.678	-2.502	0.588	40.675	-2.500
0.711	38.345	-2.008	0.711	38.353	-2.018	0.711	38.363	-2.017	0.711	38.377	-1.994	0.711	38.397	-1.992	0.711	38.377	-2.006
0.836	36.280	-1.255	0.836	36.293	-1.261	0.836	36.287	-1.273	0.836	36.296	-1.257	0.836	36.318	-1.244	0.836	36.331	-1.225
1.000	33.819	0.000	1.000	33.840	0.000	1.000	33.843	0.000	1.000	33.839	0.000	1.000	33.834	0.000	1.000	33.827	0.000

[a] Φ_1 is the volume fraction of 1-heptanol or cyclohexylmethanol in the binary mixtures. Standard uncertainties u are $u(x) = 0.0001$, $u(T) = 0.01$ K, $u(P) = 0.2$ kPa .The combined uncertainties: $u_c(\Phi) = 0.001$, $u_c(R) = 0.005$ $cm^{-3}\cdot mol^{-1}$, $u_c(\Delta_\Phi R) = 0.006$ $cm^{-3}\cdot mol^{-1}$.

Table S6. Coefficients (A_i) of the Redlich−Kister Equation (eq 5) with Standard Deviations (σ) for molar refraction deviations ($\Delta_\Phi R$) of the Binary Mixtures of 1-Heptanol (1) + 1,3-DMA (2), 1-Heptanol (1) + 1-EA (2), 1-Heptanol (1) + 1,3,5-TMA (2), Cyclohexylmethanol (1) + 1,3-DMA (2), Cyclohexylmethanol (1) + 1-EA (2) and Cyclohexylmethanol (1) + 1,3,5-TMA (2) at Temperatures from T = (293.15 to 333.15) K and Atmospheric Pressure P = 0.1 MPa

T / K	A_0	A_1	A_2	A_3	σ	A_0	A_1	A_2	A_3	σ
					$\Delta_\Phi R$ / cm^{-3}·mol^{-1}					
			1-heptanol (1) + 1,3-DMA (2)					cyclohexylmethanol (1) + 1,3-DMA (2)		
293.15	-4.045	0.250	-0.022	-0.306	0.019	-6.722	0.921	-0.429	1.340	0.020
298.15	-3.990	0.309	-0.179	-0.305	0.029	-6.789	0.850	-0.399	1.679	0.025
303.15	-4.098	0.429	0.314	-0.750	0.019	-6.722	0.899	-0.417	1.451	0.021
313.15	-3.891	0.210	-0.037	0.389	0.019	-6.787	0.717	-0.435	1.419	0.026
323.15	-3.979	0.272	-0.012	-0.131	0.020	-6.780	0.713	-0.435	2.609	0.028
333.15	-3.958	0.207	0.200	0.082	0.026	-6.899	0.665	-0.465	2.647	0.025
			1-heptanol (1) + 1-EA (2)					cyclohexylmethanol (1) + 1-EA (2)		
293.15	-3.292	0.468	-0.039	-0.508	0.013	-5.956	1.090	-0.027	0.254	0.007
298.15	-3.347	0.288	-0.140	-0.159	0.008	-5.933	0.983	0.116	0.195	0.009
303.15	-3.340	0.317	-0.034	-0.604	0.017	-5.942	1.186	0.039	-0.168	0.011
313.15	-3.185	0.434	0.097	-0.549	0.006	-5.946	1.069	0.236	0.059	0.013

323.15	-3.238	0.343	0.112	0.167	0.007	-5.925	1.146	0.166	0.365	0.005
333.15	-3.277	0.175	0.097	0.163	0.012	-5.903	1.076	-0.071	1.111	0.010
		1-heptanol (1) + 1,3,5-TMA (2)					cyclohexylmethanol (1) + 1,3,5-TMA (2)			
293.15	-7.135	1.065	-0.412	0.486	0.013	-10.794	2.606	-0.510	0.423	0.004
298.15	-7.153	1.274	-0.192	-0.242	0.009	-10.833	2.772	-0.342	-0.262	0.008
303.15	-7.214	0.952	-0.801	0.387	0.012	-10.857	2.806	-0.582	-0.145	0.007
313.15	-7.143	1.332	0.160	-0.369	0.013	-10.757	2.721	-0.414	-0.136	0.006
323.15	-7.100	1.230	-0.281	0.267	0.008	-10.840	2.979	-0.517	0.045	0.007
333.15	-7.189	1.069	-0.290	-0.052	0.013	-10.801	2.436	-0.435	1.490	0.009

Table S7. Surface Tension Deviations ($\Delta\gamma$) for the Binary Mixtures of 1-Heptanol (1) + 1,3-DMA (2), 1-Heptanol (1) + 1-EA (2), 1-Heptanol (1)+ 1,3,5-TMA (2), Cyclohexylmethanol (1) + 1,3-DMA (2), Cyclohexylmethanol (1) + 1-EA (2) and Cyclohexylmethanol (1) + 1,3,5-TMA (2) with Different Mole Fractions (x_1) at Temperature T = 298.15 K and Atmospheric Pressure P = 0.1MPa[a]

x_1	$\Delta\gamma$ / mN·m^{-1}	x_1	$\Delta\gamma$ / mN·m^{-1}	x_1	$\Delta\gamma$ / mN·m^{-1}	x_1	$\Delta\gamma$ / mN·m^{-1}	x_1	$\Delta\gamma$ / mN·m^{-1}	x_1	$\Delta\gamma$ / mN·m^{-1}
1-Heptanol (1) + 1,3-DMA (2)		1-Heptanol (1) + 1-EA (2)		1-Heptanol (1) + 1,3,5-TMA (2)		Cyclohexylmethanol (1) + 1,3-DMA (2)		Cyclohexylmethanol (1) + 1-EA (2)		Cyclohexylmethanol (1) + 1,3,5-TMA (2)	
0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00
0.1001	0.11	0.0999	0.15	0.1001	0.02	0.1002	-0.13	0.1000	0.08	0.1000	-0.62
0.1997	0.14	0.1999	0.07	0.2001	0.04	0.1995	-0.42	0.2002	0.45	0.2001	-1.02
0.2998	0.10	0.2988	0.09	0.3002	0.08	0.2996	-0.68	0.2997	0.35	0.2997	-1.27
0.3997	0.14	0.3991	0.30	0.4004	0.13	0.4004	-0.96	0.3999	0.34	0.4000	-1.46
0.4997	0.10	0.4998	0.37	0.5001	0.15	0.4973	-1.19	0.4998	0.36	0.4994	-1.64
0.6002	0.13	0.5995	0.42	0.6002	0.16	0.6008	-1.26	0.5989	0.46	0.5991	-1.76
0.7000	0.07	0.7000	0.43	0.7001	0.11	0.7002	-1.23	0.7001	0.32	0.7000	-1.67
0.7996	0.00	0.8002	0.27	0.7999	0.09	0.7999	-1.06	0.8023	0.17	0.8010	-1.44
0.8999	-0.03	0.9000	0.15	0.9002	0.07	0.9000	-0.64	0.8996	0.04	0.8927	-1.12
1.0000	0.00	1.0000	0.00	1.0000	0.00	1.0000	0.00	1.0000	0.00	1.0000	0.00

[a] x_1 is the mole fraction of 1-heptanol or cyclohexylmethanol in the binary mixtures. Standard uncertainties u are u (x) = 0.0001, u (T) = 0.01 K, u (P) = 0.2 kPa. The combined uncertainty: u_c ($\Delta\gamma$) = 0.06 mN·m^{-1}.

Table S8. Coefficients (A_i) of the Redlich−Kister Equation (eq 5) with Standard Deviations (σ) for Surface Tension Deviations ($\Delta\gamma$) of the Binary Mixtures of 1-Heptanol (1) + 1,3-DMA (2), 1-Heptanol (1) + 1-EA (2), 1-Heptanol (1) + 1,3,5-TMA (2), Cyclohexylmethanol (1) + 1,3-DMA (2), Cyclohexylmethanol (1) + 1-EA (2) and Cyclohexylmethanol (1) + 1,3,5-TMA (2) at Temperatures T = 298.15 K and Atmospheric Pressure P = 0.1 MPa

system	A_0	A_1	A_2	A_3	σ
1-Heptanol (1) + 1,3-DMA (2)	0.481	-0.097	-0.097	-1.391	0.017
1-Heptanol (1) + 1-EA (2)	1.323	2.382	0.189	-3.740	0.050
1-Heptanol (1) + 1,3,5-TMA (2)	0.542	0.176	-0.193	0.236	0.013
Cyclohexylmethanol (1) + 1,3-DMA (2)	-4.696	-3.086	0.528	-0.734	0.016
Cyclohexylmethanol (1) + 1-EA (2)	1.788	-0.726	-1.195	0.335	0.094
Cyclohexylmethanol (1) + 1,3,5-TMA (2)	-6.411	-2.018	-4.345	-1.587	0.049