

Supporting Information

Densities and Viscosities for the Ternary Mixture of *n*-Undecane (1) + Methyl decanoate (2) + *n*-Butanol (3) and Corresponding Binaries from $T = 293.15$ to 333.15 K and at Atmospheric Pressure

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Table S1. The Excess Molar Volumes (V_m^E) at Different Mole Fractions (x_1) for the Binary Mixtures of *n*-Undecane (1) + Methyl Decanoate (2); *n*-Undecane (1) + *n*-Butanol (2); Methyl Decanoate (1) + *n*-Butanol (2) at $T = (293.15 \text{ to } 333.15) \text{ K}$ and $p = 0.1 \text{ MPa}^a$

x_1	$V_m^E/\text{cm}^3 \cdot \text{mol}^{-1}$								
	293.15K	298.15K	303.15K	308.15K	313.15K	318.15K	323.15K	328.15K	333.15K
<i>n</i> -Undecane (1) + Methyl Decanoate (2)									
0.00000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.09865	0.0848	0.0860	0.0878	0.0883	0.0901	0.0919	0.0928	0.0942	0.0958
0.19976	0.160	0.162	0.165	0.167	0.170	0.173	0.175	0.178	0.181
0.29920	0.220	0.224	0.227	0.230	0.233	0.237	0.240	0.243	0.247
0.39882	0.261	0.265	0.270	0.274	0.278	0.283	0.287	0.291	0.295
0.49737	0.288	0.293	0.297	0.301	0.306	0.311	0.315	0.319	0.324
0.59943	0.295	0.299	0.304	0.308	0.313	0.317	0.322	0.327	0.332
0.69987	0.279	0.283	0.288	0.291	0.295	0.299	0.303	0.307	0.311
0.79926	0.227	0.229	0.233	0.235	0.239	0.242	0.245	0.248	0.252
0.89899	0.141	0.143	0.144	0.145	0.147	0.149	0.151	0.152	0.154
1.00000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<i>n</i> -Undecane (1) + <i>n</i> -Butanol (2)									
0.00000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.10028	0.138	0.146	0.155	0.165	0.176	0.190	0.205	0.221	0.241
0.19976	0.237	0.253	0.271	0.290	0.312	0.337	0.364	0.394	0.428
0.30056	0.306	0.327	0.352	0.380	0.410	0.445	0.482	0.524	0.569
0.40001	0.352	0.378	0.408	0.441	0.478	0.518	0.563	0.612	0.664
0.50057	0.377	0.406	0.439	0.475	0.515	0.559	0.607	0.660	0.718
0.60134	0.382	0.412	0.445	0.482	0.523	0.568	0.617	0.672	0.730
0.69892	0.356	0.385	0.416	0.452	0.491	0.535	0.583	0.635	0.693
0.80185	0.300	0.326	0.355	0.386	0.422	0.462	0.505	0.553	0.604
0.89906	0.208	0.228	0.250	0.275	0.304	0.335	0.369	0.406	0.446
1.00000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Methyl Decanoate (1) + <i>n</i> -Butanol (2)									
0.00000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.09981	0.0566	0.0636	0.0718	0.0811	0.0910	0.102	0.112	0.128	0.137
0.20027	0.0952	0.108	0.122	0.136	0.152	0.169	0.187	0.206	0.226
0.30007	0.142	0.158	0.176	0.194	0.215	0.236	0.259	0.283	0.308
0.39927	0.163	0.181	0.201	0.222	0.245	0.269	0.295	0.322	0.350
0.50098	0.174	0.192	0.213	0.235	0.259	0.284	0.311	0.339	0.368
0.60024	0.178	0.196	0.217	0.238	0.261	0.286	0.312	0.339	0.368
0.70278	0.166	0.181	0.200	0.219	0.241	0.263	0.286	0.310	0.336
0.79529	0.135	0.149	0.164	0.179	0.197	0.215	0.233	0.253	0.273
0.89989	0.0821	0.0901	0.100	0.108	0.119	0.129	0.139	0.150	0.161
1.00000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

^aStandard uncertainties u are $u(p)=0.5 \text{ kPa}$, $u(T)=0.01 \text{ K}$. The combined standard uncertainties are $u_c(x) = 0.00003$, $u_c(V_m^E) = 0.032 \text{ cm}^3 \cdot \text{mol}^{-1}$

Table S2. The Viscosity Deviations ($\Delta\eta$) at Different Mole Fractions (x_1) for the Binary Mixtures of *n*-Undecane (1) + Methyl Decanoate (2); *n*-Undecane (1) + *n*-Butanol (2); Methyl Decanoate (1) + *n*-Butanol (2) at $T = (293.15 \text{ to } 333.15) \text{ K}$ and $p = 0.1 \text{ MPa}^a$

x_1	$\Delta\eta/\text{mPa}\cdot\text{s}$								
	293.15K	298.15K	303.15K	308.15K	313.15K	318.15K	323.15K	328.15K	333.15K
<i>n</i> -Undecane (1) + Methyl Decanoate (2)									
0.00000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.09865	-0.051	-0.046	-0.039	-0.035	-0.030	-0.027	-0.025	-0.023	-0.020
0.19976	-0.094	-0.082	-0.072	-0.064	-0.055	-0.050	-0.045	-0.041	-0.037
0.29920	-0.11	-0.10	-0.088	-0.078	-0.068	-0.061	-0.055	-0.049	-0.044
0.39882	-0.13	-0.11	-0.097	-0.086	-0.075	-0.067	-0.060	-0.054	-0.048
0.49737	-0.13	-0.11	-0.099	-0.087	-0.078	-0.070	-0.062	-0.056	-0.051
0.59943	-0.12	-0.10	-0.093	-0.080	-0.071	-0.063	-0.057	-0.052	-0.047
0.69987	-0.11	-0.091	-0.080	-0.070	-0.062	-0.055	-0.049	-0.044	-0.040
0.79926	-0.084	-0.073	-0.063	-0.055	-0.049	-0.043	-0.039	-0.035	-0.032
0.89899	-0.042	-0.035	-0.030	-0.027	-0.024	-0.022	-0.020	-0.018	-0.016
1.00000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>n</i> -Undecane (1) + <i>n</i> -Butanol (2)									
0.00000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.10028	-0.37	-0.32	-0.27	-0.24	-0.21	-0.18	-0.16	-0.14	-0.12
0.19976	-0.56	-0.48	-0.41	-0.36	-0.31	-0.27	-0.23	-0.20	-0.18
0.30056	-0.65	-0.56	-0.49	-0.42	-0.36	-0.32	-0.27	-0.24	-0.21
0.40001	-0.68	-0.58	-0.50	-0.43	-0.37	-0.32	-0.28	-0.24	-0.21
0.50057	-0.65	-0.56	-0.48	-0.41	-0.36	-0.31	-0.27	-0.23	-0.20
0.60134	-0.58	-0.50	-0.43	-0.37	-0.32	-0.27	-0.24	-0.21	-0.18
0.69892	-0.48	-0.41	-0.35	-0.30	-0.26	-0.22	-0.20	-0.17	-0.15
0.80185	-0.34	-0.29	-0.25	-0.22	-0.19	-0.16	-0.14	-0.12	-0.11
0.89906	-0.19	-0.17	-0.15	-0.13	-0.12	-0.10	-0.093	-0.084	-0.076
1.00000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methyl Decanoate (1) + <i>n</i> -Butanol (2)									
0.00000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.09981	-0.43	-0.36	-0.30	-0.26	-0.21	-0.18	-0.15	-0.13	-0.10
0.20027	-0.61	-0.50	-0.42	-0.36	-0.30	-0.25	-0.21	-0.18	-0.15
0.30007	-0.65	-0.55	-0.46	-0.39	-0.33	-0.28	-0.24	-0.20	-0.17
0.39927	-0.63	-0.54	-0.45	-0.39	-0.33	-0.28	-0.24	-0.20	-0.17
0.50098	-0.57	-0.49	-0.41	-0.35	-0.30	-0.25	-0.22	-0.18	-0.16
0.60024	-0.50	-0.43	-0.36	-0.31	-0.26	-0.22	-0.19	-0.16	-0.14
0.70278	-0.40	-0.34	-0.29	-0.25	-0.21	-0.18	-0.16	-0.13	-0.12
0.79529	-0.30	-0.25	-0.22	-0.19	-0.16	-0.14	-0.12	-0.10	-0.087
0.89989	-0.17	-0.14	-0.12	-0.11	-0.091	-0.079	-0.069	-0.060	-0.051
1.00000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

^aStandard uncertainties u are $u(p)=0.5 \text{ kPa}$, $u(T)=0.01 \text{ K}$. The combined standard uncertainties are $u_c(x) = 0.00003$, $u_c(\Delta\eta) =$

Table S3 Correlation Coefficients (A_i) and Standard Deviations (σ) of V_m^E and $\Delta\eta$ with the Redlich-Kister for the Binary Mixtures of *n*-Undecane (1) + Methyl Decanoate (2); *n*-Undecane (1) + *n*-Butanol (2); Methyl Decanoate (1) + *n*-Butanol (2) at $T = (293.15$ to $333.15)$ K and $p = 0.1$ MPa

Fuction		$V_m^E/\text{cm}^3 \cdot \text{mol}^{-1}$					$\Delta\eta/\text{mPa}\cdot\text{s}$				
T/K	A_1	A_2	A_3	A_4	σ	A_1	A_2	A_3	A_4	σ	
<i>n</i> -Undecane (1) + Methyl Decanoate (2)											
293.15	1.1563	0.3513	0.1557	-	0.0013	-0.5133	0.0525	-0.0688	-	0.0026	
298.15	1.1739	0.3550	0.1506	-	0.0016	-0.4437	0.0629	-0.0631	-	0.0026	
303.15	1.1933	0.3577	0.1504	-	0.0014	-0.4013	0.0524	-	-	0.0018	
308.15	1.2087	0.3609	0.1420	-	0.0013	-0.3515	0.0511	-	-	0.0017	
313.15	1.2276	0.3631	0.1441	-	0.0011	-0.3100	0.0395	-	-	0.0013	
318.15	1.2476	0.3656	0.1452	-	0.0011	-0.2763	0.0352	-	-	0.0013	
323.15	1.2646	0.3699	0.1382	-	0.0010	-0.2490	0.0332	-	-	0.0012	
328.15	1.2829	0.3736	0.1372	-	0.0010	-0.2215	0.0298	-0.0239	-	0.0009	
333.15	1.3016	0.3756	0.1387	-	0.0009	-0.2017	0.0265	-	-	0.0012	
<i>n</i> -Undecane (1) + <i>n</i> -Butanol (2)											
293.15	1.4985	0.2456	0.5699	0.3255	0.0042	-2.5921	1.0152	-0.6806	0.3585	0.0043	
298.15	1.6122	0.2767	0.6213	0.4023	0.0050	-2.2201	0.9747	-0.6101	-	0.0054	
303.15	1.7409	0.3061	0.6755	0.4828	0.0056	-1.9076	0.8431	-0.5617	-	0.0046	
308.15	1.8829	0.3327	0.7366	0.5990	0.0065	-1.6411	0.7258	-0.5133	-	0.0041	
313.15	2.0396	0.3638	0.8177	0.7300	0.0074	-1.4163	0.6296	-0.4773	-	0.0039	
318.15	2.2140	0.3996	0.9148	0.8616	0.0084	-1.2243	0.5409	-0.4418	-	0.0037	
323.15	2.4034	0.4343	1.0172	1.0079	0.0095	-1.0594	0.4647	-0.4090	-	0.0037	
328.15	2.6116	0.4795	1.1312	1.1449	0.0104	-0.9174	0.3954	-0.3847	-	0.0037	
333.15	2.8376	0.5280	1.2648	1.2857	0.0115	-0.7946	0.3389	-0.3611	-	0.0036	
Methyl Decanoate (1) + <i>n</i> -Butanol (2)											
293.15	0.7177	0.1733	-	-	0.0039	-2.2895	1.3622	-1.5295	0.7758	0.0052	
298.15	0.7806	0.1756	0.0952	-	0.0032	-1.9442	1.1129	-1.2163	0.6052	0.0052	
303.15	0.8638	0.1835	0.1170	-	0.0033	-1.6496	0.9309	-1.0224	0.4736	0.0042	
308.15	0.9502	0.1847	0.1364	-	0.0032	-1.4014	0.7705	-0.8697	0.4087	0.0040	
313.15	1.0458	0.1905	0.1600	-	0.0034	-1.1925	0.6443	-0.7117	0.3097	0.0030	
318.15	1.1474	0.1921	0.1813	-	0.0034	-1.0155	0.5326	-0.5944	0.2531	0.0026	
323.15	1.2537	0.1948	0.1955	-	0.0033	-0.8654	0.4432	-0.4970	0.1846	0.0022	
328.15	1.3639	0.1902	0.2347	-	0.0039	-0.7376	0.3624	-0.4115	0.1408	0.0019	
333.15	1.4845	0.1921	0.2353	-	0.0036	-0.6250	0.2979	-0.3389	0.1101	0.0016	

Table S4. The Excess Molar Volumes (V_m^E) at Different Mole Fractions (x_1, x_2) for the Ternary Mixture of *n*-Undecane (1) + Methyl Decanoate (2) + *n*-Butanol (3) at $T = (293.15$ to $333.15)$ K and $p = 0.1$ MPa^a

$V_m^E/\text{cm}^3 \cdot \text{mol}^{-1}$											
x_1	x_2	293.15K	298.15K	303.15K	308.15K	313.15K	318.15K	323.15K	328.15K	333.15K	
0.09949	0.10089	0.192	0.205	0.221	0.238	0.256	0.276	0.298	0.322	0.348	

0.09987	0.19973	0.231	0.248	0.268	0.289	0.312	0.337	0.363	0.392	0.423
0.10012	0.29998	0.261	0.282	0.307	0.327	0.352	0.380	0.409	0.441	0.475
0.10037	0.39934	0.269	0.290	0.312	0.337	0.363	0.392	0.423	0.455	0.490
0.09958	0.49847	0.269	0.290	0.312	0.335	0.361	0.389	0.418	0.450	0.483
0.09973	0.59863	0.254	0.273	0.293	0.315	0.339	0.363	0.390	0.418	0.447
0.09886	0.70047	0.223	0.238	0.256	0.273	0.293	0.314	0.335	0.357	0.379
0.10043	0.79866	0.175	0.185	0.197	0.207	0.219	0.231	0.243	0.256	0.269
0.20051	0.09985	0.292	0.312	0.334	0.357	0.383	0.411	0.443	0.476	0.513
0.19930	0.20113	0.326	0.349	0.373	0.399	0.428	0.459	0.493	0.531	0.572
0.19981	0.29861	0.342	0.366	0.391	0.417	0.446	0.478	0.511	0.547	0.586
0.19892	0.39924	0.346	0.369	0.393	0.419	0.447	0.478	0.510	0.545	0.583
0.19922	0.49519	0.336	0.358	0.382	0.406	0.432	0.461	0.489	0.520	0.553
0.20240	0.59823	0.301	0.319	0.338	0.357	0.379	0.403	0.426	0.452	0.478
0.19996	0.69840	0.247	0.259	0.273	0.286	0.300	0.316	0.331	0.347	0.363
0.29827	0.10042	0.359	0.382	0.408	0.437	0.469	0.505	0.543	0.584	0.629
0.29937	0.20144	0.383	0.408	0.435	0.464	0.497	0.532	0.570	0.611	0.655
0.29871	0.29939	0.391	0.415	0.442	0.470	0.501	0.535	0.572	0.611	0.653
0.30022	0.40162	0.384	0.406	0.430	0.456	0.485	0.516	0.548	0.583	0.620
0.30082	0.50057	0.354	0.373	0.394	0.416	0.440	0.465	0.492	0.520	0.550
0.29925	0.60026	0.310	0.324	0.339	0.353	0.368	0.385	0.401	0.419	0.437
0.39934	0.09953	0.404	0.431	0.460	0.492	0.528	0.567	0.609	0.656	0.706
0.39893	0.19915	0.423	0.449	0.477	0.508	0.541	0.579	0.618	0.662	0.708
0.39872	0.29994	0.424	0.448	0.475	0.503	0.533	0.567	0.603	0.642	0.684
0.39982	0.40135	0.402	0.423	0.445	0.469	0.495	0.523	0.552	0.584	0.617
0.40106	0.50090	0.353	0.368	0.384	0.400	0.417	0.436	0.454	0.474	0.495
0.49929	0.10060	0.424	0.452	0.482	0.516	0.552	0.593	0.636	0.684	0.736
0.49971	0.19931	0.434	0.459	0.487	0.517	0.550	0.587	0.627	0.671	0.717
0.50052	0.30083	0.424	0.446	0.470	0.496	0.525	0.555	0.588	0.623	0.661
0.50078	0.40077	0.382	0.399	0.416	0.434	0.453	0.474	0.494	0.516	0.540
0.59964	0.09988	0.415	0.442	0.472	0.504	0.540	0.579	0.622	0.669	0.721
0.59838	0.20099	0.418	0.440	0.466	0.493	0.524	0.558	0.594	0.633	0.675
0.60136	0.30005	0.384	0.403	0.422	0.442	0.463	0.486	0.510	0.535	0.562
0.70006	0.10124	0.378	0.402	0.429	0.458	0.491	0.527	0.566	0.609	0.655
0.70081	0.20217	0.361	0.380	0.400	0.420	0.443	0.468	0.494	0.522	0.551
0.80171	0.09993	0.304	0.323	0.344	0.367	0.392	0.420	0.450	0.481	0.515

^aStandard uncertainties u are $u(p)=0.5 \text{ kPa}$, $u(T)=0.01 \text{ K}$. The combined standard uncertainties are $u_c(x) = 0.00004$, $u_c(V_m^E) = 0.029 \text{ cm}^3 \cdot \text{mol}^{-1}$

Table S5. The Viscosity Deviations ($\Delta\eta$) at Different Mole Fractions (x_1, x_2) for the Ternary Mixture of *n*-Undecane (1) + Methyl Decanoate (2) + *n*-Butanol (3) at $T = (293.15 \text{ to } 333.15) \text{ K}$ and $p = 0.1 \text{ MPa}^a$

$\Delta\eta/\text{mPa}\cdot\text{s}$										
x_1	x_2	293.15K	298.15K	303.15K	308.15K	313.15K	318.15K	323.15K	328.15K	333.15K
0.09949	0.10089	-0.62	-0.53	-0.45	-0.38	-0.32	-0.28	-0.24	-0.20	-0.17

0.09987	0.19973	-0.69	-0.58	-0.49	-0.42	-0.36	-0.30	-0.26	-0.22	-0.19
0.10012	0.29998	-0.68	-0.58	-0.49	-0.42	-0.35	-0.30	-0.26	-0.22	-0.19
0.10037	0.39934	-0.64	-0.54	-0.46	-0.39	-0.34	-0.29	-0.25	-0.21	-0.18
0.09958	0.49847	-0.56	-0.47	-0.41	-0.35	-0.30	-0.25	-0.22	-0.19	-0.16
0.09973	0.59863	-0.46	-0.39	-0.34	-0.29	-0.25	-0.21	-0.18	-0.16	-0.14
0.09886	0.70047	-0.34	-0.29	-0.25	-0.21	-0.18	-0.16	-0.14	-0.12	-0.10
0.10043	0.79866	-0.21	-0.16	-0.15	-0.11	-0.11	-0.10	-0.09	-0.07	-0.07
0.20051	0.09985	-0.70	-0.59	-0.50	-0.43	-0.37	-0.31	-0.27	-0.23	-0.20
0.19930	0.20113	-0.71	-0.60	-0.51	-0.43	-0.37	-0.32	-0.27	-0.23	-0.20
0.19981	0.29861	-0.66	-0.56	-0.48	-0.41	-0.35	-0.30	-0.25	-0.22	-0.19
0.19892	0.39924	-0.58	-0.50	-0.42	-0.36	-0.31	-0.27	-0.23	-0.20	-0.17
0.19922	0.49519	-0.49	-0.42	-0.36	-0.30	-0.26	-0.22	-0.19	-0.17	-0.14
0.20240	0.59823	-0.37	-0.32	-0.27	-0.24	-0.20	-0.18	-0.15	-0.13	-0.12
0.19996	0.69840	-0.25	-0.21	-0.18	-0.16	-0.14	-0.12	-0.10	-0.09	-0.08
0.29827	0.10042	-0.71	-0.60	-0.51	-0.44	-0.38	-0.32	-0.28	-0.24	-0.21
0.29937	0.20144	-0.68	-0.58	-0.49	-0.42	-0.36	-0.31	-0.27	-0.23	-0.20
0.29871	0.29939	-0.61	-0.52	-0.44	-0.38	-0.33	-0.28	-0.24	-0.21	-0.18
0.30022	0.40162	-0.51	-0.43	-0.37	-0.32	-0.27	-0.24	-0.21	-0.18	-0.16
0.30082	0.50057	-0.40	-0.34	-0.29	-0.25	-0.22	-0.19	-0.16	-0.14	-0.13
0.29925	0.60026	-0.27	-0.24	-0.20	-0.18	-0.15	-0.13	-0.12	-0.10	-0.09
0.39934	0.09953	-0.67	-0.57	-0.49	-0.42	-0.36	-0.31	-0.27	-0.23	-0.20
0.39893	0.19915	-0.61	-0.52	-0.45	-0.38	-0.33	-0.28	-0.24	-0.21	-0.18
0.39872	0.29994	-0.52	-0.44	-0.38	-0.33	-0.28	-0.24	-0.21	-0.18	-0.16
0.39982	0.40135	-0.40	-0.35	-0.30	-0.26	-0.22	-0.19	-0.17	-0.15	-0.13
0.40106	0.50090	-0.28	-0.24	-0.21	-0.18	-0.16	-0.14	-0.12	-0.11	-0.09
0.49929	0.10060	-0.59	-0.50	-0.43	-0.37	-0.32	-0.28	-0.24	-0.21	-0.18
0.49971	0.19931	-0.51	-0.43	-0.37	-0.32	-0.28	-0.24	-0.21	-0.18	-0.16
0.50052	0.30083	-0.40	-0.34	-0.29	-0.25	-0.22	-0.19	-0.17	-0.15	-0.13
0.50078	0.40077	-0.28	-0.24	-0.21	-0.18	-0.16	-0.14	-0.12	-0.11	-0.09
0.59964	0.09988	-0.49	-0.42	-0.36	-0.31	-0.27	-0.23	-0.20	-0.17	-0.15
0.59838	0.20099	-0.39	-0.33	-0.29	-0.25	-0.21	-0.19	-0.16	-0.14	-0.13
0.60136	0.30005	-0.27	-0.23	-0.20	-0.17	-0.15	-0.13	-0.12	-0.10	-0.09
0.70006	0.10124	-0.37	-0.32	-0.27	-0.23	-0.20	-0.18	-0.15	-0.14	-0.12
0.70081	0.20217	-0.25	-0.22	-0.19	-0.16	-0.14	-0.13	-0.11	-0.10	-0.09
0.80171	0.09993	-0.22	-0.19	-0.16	-0.14	-0.13	-0.11	-0.10	-0.09	-0.08

^aStandard uncertainties u are $u(p)=0.5 \text{ kPa}$, $u(T)=0.01 \text{ K}$. The combined standard uncertainties are $u_c(x) = 0.00004$, $u_c(\Delta\eta)=0.010 \text{ mPa}\cdot\text{s}$

Table S6. Correlation Coefficients (B_i) and Standard Deviations (σ) of V_m^E and $\Delta\eta$ with the Singh Equation for the Ternary Mixture of *n*-Undecane (1) + Methyl Decanoate (2) + *n*-Butanol (3) at $T=(293.15 \text{ to } 333.15) \text{ K}$ and $p=0.1 \text{ MPa}$

Function	$V_m^E/\text{cm}^3\cdot\text{mol}^{-1}$				$\Delta\eta/\text{mPa}\cdot\text{s}$				σ
	T/K	B_1	B_2	B_3	σ	B_1	B_2	B_3	

293.15	0.9470	-2.4024	-6.7052	0.0051		1.5437	-11.0635	-12.2219	0.0074
298.15	1.0050	-2.1023	-7.2788	0.0052		1.3485	-9.4383	-9.7544	0.0078
303.15	1.0266	-1.6645	-7.5244	0.0058		1.1999	-9.3960	-11.3849	0.0063
308.15	1.0499	-0.7357	-6.6751	0.0065		1.0577	-7.9493	-9.0005	0.0070
313.15	1.0604	-0.1620	-6.5768	0.0070		0.9083	-7.9785	-10.1765	0.0053
318.15	1.0670	0.7292	-5.7639	0.0077		0.7914	-7.2567	-9.5307	0.0049
323.15	1.0758	1.6024	-4.8517	0.0085		0.6874	-6.5566	-8.6803	0.0046
328.15	1.0837	2.7116	-3.4000	0.0091		0.5851	-5.7811	-7.5970	0.0042
333.15	1.0829	3.3853	-2.5316	0.0098		0.4933	-5.4194	-7.7435	0.0039

Table S7. Correlation Coefficients (C_i) and Standard Deviations (σ) of V_m^E and $\Delta\eta$ with the Cibulka Equation for the Ternary Mixture of *n*-Undecane (1) + Methyl Decanoate (2) + *n*-Butanol (3) at $T = (293.15$ to $333.15)$ K and $p = 0.1$ MPa

Function	$V_m^E/\text{cm}^3 \cdot \text{mol}^{-1}$					$\Delta\eta/\text{mPa} \cdot \text{s}$			
	T/K	C_1	C_2	C_3	σ	C_1	C_2	C_3	σ
293.15	0.7775	0.6408	-0.1303	0.004	0.0047	3.8839	-2.9391	-4.0845	0.0058
298.15	0.6656	0.8708	0.1497	0.004	0.0048	3.5076	-3.0089	-3.4720	0.0064
303.15	0.4949	1.1624	0.4358	0.004	0.0054	3.1459	-2.6187	-3.2222	0.0046
308.15	0.2552	1.5728	0.8146	0.004	0.0056	2.8100	-2.4711	-2.7888	0.0058
313.15	0.0505	1.9110	1.1230	0.005	0.0059	2.5296	-2.2176	-2.6488	0.0038
318.15	-0.1911	2.3032	1.4756	0.005	0.0061	2.2522	-2.0287	-2.3557	0.0034
323.15	-0.4252	2.7105	1.7979	0.006	0.0063	2.0067	-1.8361	-2.1240	0.0033
328.15	-0.6753	3.1250	2.1579	0.005	0.0063	1.7492	-1.6155	-1.8787	0.0032
333.15	-0.8485	3.4340	2.3665	0.005	0.0064	1.5271	-1.4540	-1.6492	0.0028

Table S8. Correlation Coefficients (D_i) and Standard Deviations (σ) of V_m^E and $\Delta\eta$ with the Nagata-Tamura Equation for the Ternary Mixture of *n*-Undecane (1) + Methyl Decanoate (2) + *n*-Butanol (3) at $T = (293.15$ to $333.15)$ K and $p = 0.1$ MPa

T/K	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	σ
	$V_m^E/\text{cm}^3 \cdot \text{mol}^{-1}$									
293.15	0.0011	0.0011	0.0030	0.0008	-0.0031	-0.0020	-0.0016	0.0003	-0.0037	0.0032
298.15	0.0009	0.0003	0.0027	0.0026	-0.0039	-0.0003	-0.0029	0.0015	-0.0062	0.0036
303.15	0.0009	0.0006	0.0026	0.0025	-0.0035	-0.0007	-0.0033	0.0011	-0.0064	0.0039
308.15	0.0008	-0.0002	0.0026	0.0043	-0.0037	0.0000	-0.0047	0.0012	-0.0079	0.0039
313.15	0.0007	-0.0005	0.0025	0.0052	-0.0039	0.0004	-0.0055	0.0014	-0.0091	0.0040
318.15	0.0006	-0.0007	0.0022	0.0055	-0.0037	0.0005	-0.0058	0.0013	-0.0095	0.0042
323.15	0.0005	-0.0007	0.0019	0.0054	-0.0031	0.0003	-0.0059	0.0009	-0.0094	0.0043
328.15	0.0004	-0.0009	0.0014	0.0053	-0.0027	0.0008	-0.0058	0.0008	-0.0096	0.0044
333.15	0.0003	-0.0005	0.0012	0.0040	-0.0022	0.0000	-0.0051	0.0005	-0.0085	0.0045
$\Delta\eta/\text{mPa} \cdot \text{s}$										
293.15	0.0024	0.0071	0.0033	-0.0129	0.0017	-0.0096	0.0079	-0.0033	0.0138	0.0049
298.15	0.0017	0.0026	0.0011	-0.0025	0.0057	-0.0037	0.0010	-0.0071	0.0053	0.0052
303.15	0.0017	0.0025	0.0030	-0.0020	-0.0007	-0.0038	0.0006	-0.0012	0.0043	0.0041

308.15	0.0016	0.0030	0.0015	-0.0034	0.0046	-0.0043	0.0017	-0.0064	0.0046	0.0045
313.15	0.0015	0.0027	0.0026	-0.0027	-0.0001	-0.0040	0.0011	-0.0016	0.0041	0.0031
318.15	0.0013	0.0021	0.0023	-0.0014	-0.0004	-0.0031	0.0002	-0.0011	0.0029	0.0030
323.15	0.0012	0.0025	0.0021	-0.0025	0.0003	-0.0038	0.0009	-0.0017	0.0038	0.0027
328.15	0.0011	0.0022	0.0018	-0.0018	0.0006	-0.0034	0.0002	-0.0019	0.0033	0.0025
333.15	0.0010	0.0019	0.0016	-0.0013	0.0005	-0.0030	0.0000	-0.0016	0.0025	0.0024

Table S9. Correlation Coefficients (E_i) and Standard Deviations (σ) of V_m^E and $\Delta\eta$ with the Redlich-Kister Equation for the Ternary Mixture of *n*-Undecane (1) + Methyl Decanoate (2) + *n*-Butanol (3) at $T = (293.15$ to $333.15)$ K and $p = 0.1$ MPa

T/K	E_1	E_2	E_3	E_4	E_5	E_6	E_7	σ
$V_m^E/\text{cm}^3 \cdot \text{mol}^{-1}$								
293.15	0.8126	1.2948	1.0347	0.6725	-0.3720	1.5117	0.9074	0.0031
298.15	0.8811	1.2341	1.1499	0.6176	-0.4221	1.0982	1.2120	0.0036
303.15	0.8869	1.2153	1.2677	0.5186	-0.4726	1.0751	1.5279	0.0039
308.15	0.4497	-11.3076	-8.4321	-12.1469	-2.5088	1.1088	3.6954	0.0038
313.15	0.9059	1.2179	1.5198	0.2640	-0.5482	1.0806	1.8281	0.0042
318.15	0.9110	1.2164	1.6483	0.1370	-0.5787	0.9879	1.9751	0.0044
323.15	0.9158	1.2301	1.7643	0.0074	-0.5699	0.8950	2.1234	0.0044
328.15	0.9322	1.2279	1.8870	-0.1131	-0.5280	0.6445	2.2065	0.0045
333.15	0.9312	1.2510	1.9628	-0.2118	-0.5368	0.5660	2.2980	0.0046
$\Delta\eta/\text{mPa}\cdot\text{s}$								
293.15	1.4218	1.4592	-0.4147	1.9580	0.7746	1.1579	-0.0961	0.0052
298.15	1.2146	1.2774	-0.2663	1.9903	1.1846	1.4206	-0.5886	0.0055
303.15	1.1065	1.2902	-0.1171	1.8285	0.4505	1.2015	-0.2491	0.0041
308.15	0.9231	1.2281	-0.0001	1.7730	0.7711	1.6273	-0.3698	0.0048
313.15	0.8196	1.2154	0.0947	1.6910	0.2962	1.1030	-0.0655	0.0031
318.15	0.7117	1.1663	0.1999	1.6346	0.2471	0.9427	0.0084	0.0029
323.15	0.6058	1.1467	0.2830	1.5711	0.2289	0.9124	0.0866	0.0027
328.15	0.4966	1.1246	0.3628	1.5132	0.3617	0.7867	0.1863	0.0026
333.15	0.4201	1.0931	0.4555	1.4518	0.1552	0.7013	0.2449	0.0024

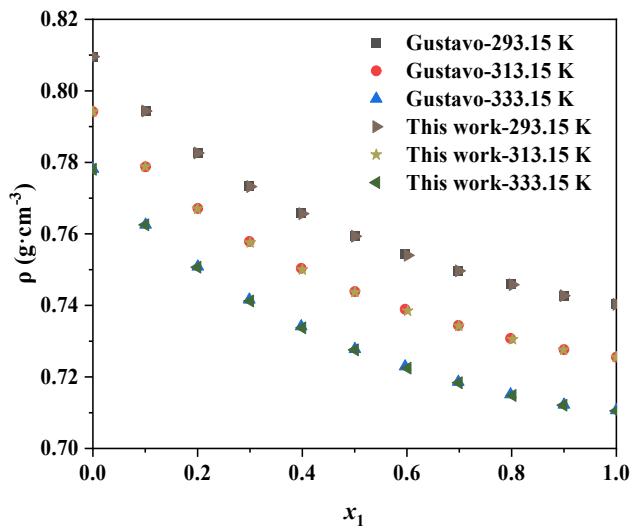


Figure S1 Densities (ρ) for the binary system of *n*-Undecane (1) + *n*-Butanol (2) at different temperatures

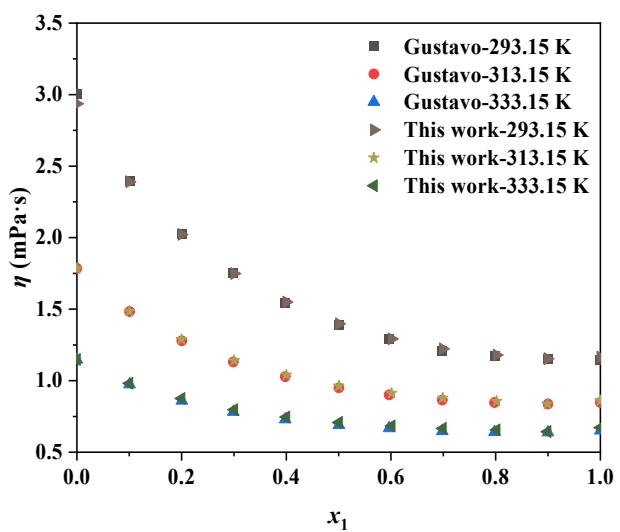


Figure S2 Viscosities (η) for the binary system of *n*-Undecane (1) + *n*-Butanol (2) at different temperatures

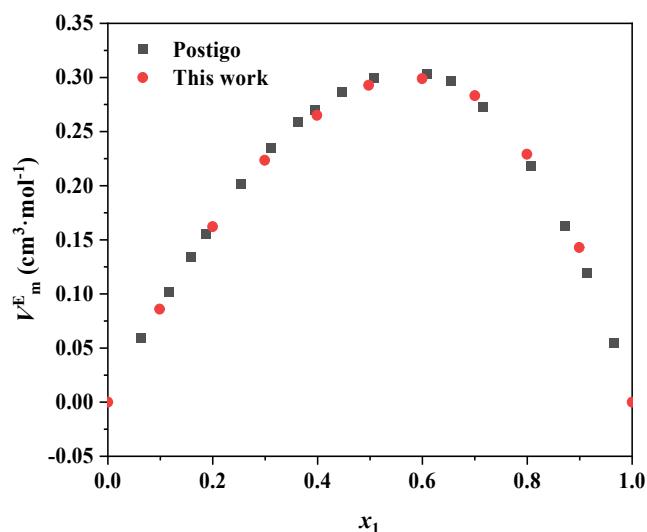


Figure R3 Excess molar volumes (V_m^E) versus the mole fraction of x_1 for the binary systems *n*-undecane (1) + methyl decanoate (2) at temperature $T=298.15$ K.