Supporting Information

Some Physicochemical Properties of Binary Mixtures of Glycerol with Butanol Isomers in the Temperature Range (293.15 – 318.15) K and Ambient Pressure

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Table S1. Redlisch-Kister equation parameters

T (K)	A_0	A_1	A_2	σ
		Excess molar volumes, V^E		
Glycerol + 1-Butanol				
293.15	-2.131	-0.542	-0.822	0.0191
298.15	-2.169	-0.558	-0.901	0.0177
303.15	-2.238	-0.579	-0.927	0.0160
308.15	-2.286	-0.607	-1.027	0.0138
313.15	-2.325	-0.705	-1.117	0.0122
318.15	-2.380	-0.724	-1.261	0.0118
Glycerol + 2-Butanol				
293.15	-2.405	-0.716	-0.923	0.0106
298.15	-2.526	-0.750	-0.951	0.0074
303.15	-2.661	-0.736	-1.046	0.0097
308.15	-2.799	-0.760	-1.158	0.0109
313.15	-2.957	-0.777	-1.266	0.0131
318.15	-3.183	-0.710	-1.393	0.0118
Glycerol + Iso-Butanol				
293.15	-2.660	-2.368	-1.568	0.0082
298.15	-2.778	-2.455	-1.671	0.0067
303.15	-2.910	-2.422	-1.820	0.0149
308.15	-3.026	-2.499	-2.078	0.0165
313.15	-3.172	-2.505	-2.087	0.0188
318.15	-3.280	-2.564	-2.231	0.0187
Glycerol + Tert-Butanol				
303.15	-5.449	-1.757	-0.339	0.0239
308.15	-5.815	-1.623	-0.472	0.0241
313.15	-6.197	-1.437	-0.487	0.0286
318.15	-6.518	-1.393	-0.802	0.0232

		Viscosities, $\Delta\eta$		
Glycerol + 1-Butanol				
298.15	-1.466	-0.817	0.041	0.0084
308.15	-0.618	-0.369	-0.063	0.0012
318.15	-0.261	-0.151	-0.033	0.0003
Glycerol + 2-Butanol				
298.15	-1.412	-0.851	-0.176	0.0037
308.15	-0.596	-0.346	-0.076	0.0016
318.15	-0.254	-0.134	-0.019	0.0006
Glycerol + Iso-Butanol				
298.15	-1.394	-0.507	0.383	0.0115
308.15	-0.588	-0.185	0.194	0.0058
318.15	-0.247	-0.062	0.086	0.0018
Glycerol + Tert-Butanol				
308.15	-0.444	-0.033	0.083	0.0020
318.15	-0.166	0.045	0.077	0.0012
		Excess energies of activation, ΔG^{*E}		
Glycerol + 1-Butanol				
298.15	-1646.71	7214.557	4799.95	12.75
308.15	-1654.55	5410.69	2274.21	8.95
318.15	-1376.60	4007.79	1044.02	6.80
Glycerol + 2-Butanol				
298.15	274.20	4447.57	1625.12	7.16
308.15	298.15	3574.59	993.07	5.44
318.15	168.84	2853.84	1201.81	4.23
Glycerol + Iso-Butanol				
298.15	670.57	8905.42	-626.92	5.99
308.15	622.42	7481.82	503.82	5.54
318.15	497.35	6591.21	665.98	6.07
Glycerol + Tert-Butanol				
308.15	7590.28	1658.50	-2840.85	4.57
318.15	8031.59	1957.36	-2158.74	3.69
		Excess Thermal expansion, α^E		
Glycerol + 1-Butanol				
298.15	-112.275	-37.59	-75.85	1.31
Glycerol + 2-Butanol				
298.15	-372.567	-17.19	-129.99	2.27
Glycerol + Iso-Butanol				
298.15	-296.425	-192.66	-298.78	5.04
Glycerol + Tert-Butanol				
303.15	-832.790	202.80	-225.17	4.95

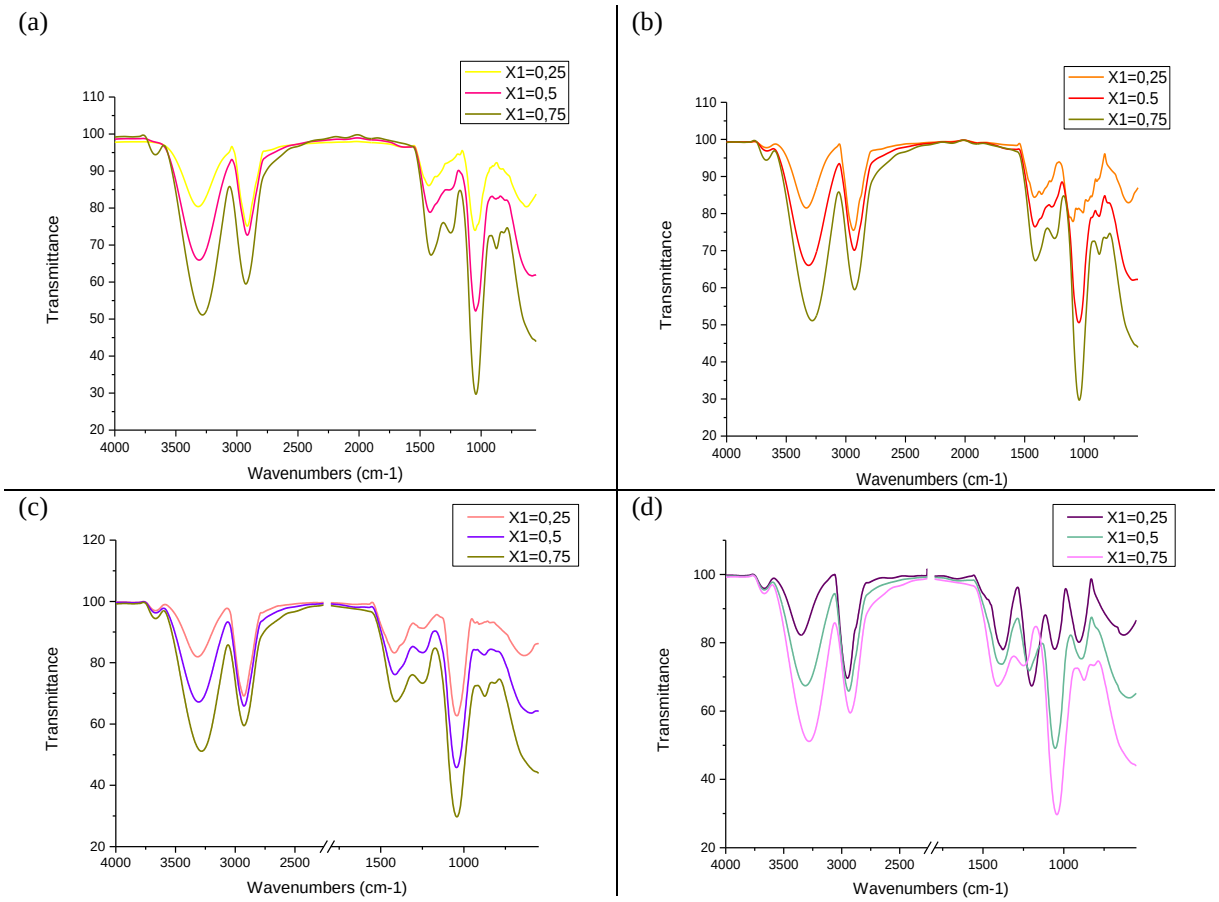

Figure S1. Spectroscopic IR results at three compositions of glycerol, x_1, for Glycerol (1) + Butanol isomers (2) (a) glycerol (1) + 1-butanol (2); (b)glycerol (1) + 2-butanol (2); (c)glycerol (1) + isobutanol (2); (d)glycerol (1) + tert-butanol (2).