Acetyl acetone + 1-butanol (3 niza)

Table 2. Comparison of experimental values of densities, viscosities and reactive index of pure liquids with literature values at T = (298.15, 303.15 and 308.15, 323.15) K

Mole fraction X_{acac}	Density g/ml			Viscosity (mPa.s)			Reactive Index
	298.15	303.15	308.15	298.15	303.15	308.15	
0	0.803771	0.802265	0.801227	2.0578	1.793465	1.257244	1.397
0.03988	0.812525	0.808958	0.798257	1.585634	1.342912	1.090761	1.4005
0.075	0.8172	0.8135	0.805537	1.426	1.1963	1.0382	1.403
0.132832	0.828321	0.823126	0.8181	1.15398	0.988365	0.92038	1.406
0.183	0.8361	0.8323	0.821007	1.059	0.9153	0.8544	1.4085
0.230442	0.845697	0.842113	0.8316	0.949274	0.824467	0.817174	1.4105
0.278	0.8537	0.8529	0.836306	0.8548	0.7817	0.7639	1.414
0.334141	0.865148	0.859937	0.8438	0.747515	0.7306	0.711643	1.4175
0.377	0.872	0.8658	0.853745	0.7422	0.6983	0.6615	1.4195
0.427724	0.8839	0.875292	0.8632	0.728573	0.648574	0.613127	1.4235
0.477655	0.890704	0.883978	0.869663	0.679697	0.612921	0.60426	1.426
0.534178	0.898376	0.8948	0.877573	0.637466	0.601785	0.570373	1.4295
0.585	0.9078	0.9019	0.888589	0.6188	0.5871	0.5527	1.4315
0.625566	0.922667	0.913743	0.8927	0.605318	0.581895	0.549813	1.4355
0.688	0.9267	0.9181	0.9041	0.5756	0.558	0.5406	1.4367
0.730838	0.9341	0.9269	0.913	0.541394	0.533729	0.525581	1.442
0.793	0.9424	0.9397	0.9183	0.5377	0.5268	0.5178	1.4435
0.844434	0.944858	0.939012	0.9242	0.550519	0.536725	0.512006	1.4475
0.895	0.9587	0.951	0.9328	0.5763	0.5574	0.5348	1.4495
0.955826	0.961786	0.955936	0.944	0.623772	0.5891	0.564795	1.452
1	0.975105	0.961046	0.9481	0.756032	0.686377	0.679603	1.452

Aisha Al-abbasi*, Salsabil Almorabt, Omassad Ibrahim and Fatima Almahjoob, Volumetric, viscometric and refractive Indices Properties of binary mixtures of acetyl acetone with 1-butanol at different temperatures, The 1st International Conference on Chemical, Petroleum, and Gas Engineering (ICCPGE 2016), 20th – 22th December 2016, Alkhoms-Libya

Methyl benzoate + tetrahydrofuran (3 niza)

x_1	ρ/g·cm^{-3}	V^E/cm^3·mol^{-1}	η/mPa·s	u/m·s^{-1}	k_s/Tpa^{-1}
Methyl benzoate (1) + tetrahydrofuran (2)					
T = 303.15 K					
0.0689	0.9020	−0.261	0.496	1260	698
0.1417	0.9246	−0.496	0.562	1272	669
0.2202	0.9468	−0.699	0.638	1284	641
0.3030	0.9680	−0.858	0.727	1296	615
0.3932	0.9885	−0.943	0.829	1308	591
0.4930	1.0084	−0.938	0.951	1320	569
0.6018	1.0272	−0.822	1.096	1332	549
0.7225	1.0452	−0.590	1.262	1344	530
0.8535	1.0623	−0.277	1.446	1356	512
T = 308.15 K					
0.0689	0.8964	−0.269	0.484	1232	735
0.1417	0.9192	−0.510	0.546	1236	712
0.2202	0.9413	−0.719	0.616	1244	686
0.3030	0.9627	−0.882	0.699	1256	659
0.3932	0.9833	−0.969	0.790	1268	633
0.4930	1.0033	−0.964	0.904	1284	605
0.6018	1.0222	−0.847	1.032	1300	679
0.7225	1.0403	−0.612	1.181	1316	555
0.8535	1.0575	−0.294	1.343	1336	530
T = 313.15 K					
0.0689	0.8905	−0.283	0.443	1216	759
0.1417	0.9134	−0.538	0.505	1220	736
0.2202	0.9358	−0.749	0.567	1228	709
0.3030	0.9572	−0.913	0.641	1240	679
0.3932	0.9779	−0.999	0.729	1252	652
0.4930	0.9980	−0.990	0.830	1268	623
0.6018	1.0171	−0.877	0.943	1284	596
0.7225	1.0354	−0.645	1.078	1300	572
0.8535	1.0527	−0.317	1.220	1320	545

Rathnam, Manapragada & Ambavadekar, Devappa & Nandini, M.. (2013). Studies on Excess Volume, Viscosity, and Speed of Sound of Binary Mixtures of Methyl Benzoate in Ethers at and K. Journal of Thermodynamics. 2013. 10.1155/2013/413878.

TABLE 1: Comparison of experimental density ρ and viscosity η of pure liquids with the literature values at (303.15, 308.15, and 313.15) K.

Liquid	T/K	ρ/g·cm^{-3}		η/mPa·s	
		Exptl.	Lit.	Exptl.	Lit.
Methyl benzoate	303.15	1.0785	1.0788 [18]	1.678	1.673 [28]
			1.0790 [22]		1.656 [18]
	308.15	1.0743	1.0740 [18]	1.517	1.510 [18]
			1.0741 [19]		
					1.504 [20]
			1.07399 [20]		1.510 [21]
	313.15	1.0696	1.0690 [27]	1.373	1.365 [27]
Tetrahydrofuran	303.15	0.8787	0.8771 [22]	0.439	
	308.15	0.8730	0.87214 [22]	0.429	
	313.15	0.8669	0.86719 [22]	0.390	
1,4-Dioxane	303.15	1.0227	1.02271 [23]	1.090	1.102 [23]
					1.095 [24]
	308.15	1.0178	1.0172 [24]	0.999	1.008 [24]
	313.15	1.0116	1.01132 [23]	0.946	0.946 [23]
Anisole	303.15	0.9853	0.984374 [25]	0.923	0.931 [25]
	308.15	0.9792	0.9788 [26]	0.849	0.849 [26]
	313.15	0.9728		0.764	
Butyl vinyl ether	303.15	0.7741		0.387	
	308.15	0.7682		0.365	
	313.15	0.7633		0.354	

Methyl benzoate + 1,4-dioxane (dva niza)

x_1	ρ/g·cm^{-3}	V^E/cm^3·mol^{-1}	η/mPa·s	u/m·s^{-1}	k_s/Tpa^{-1}
Methyl benzoate (1) + 1,4-dioxane (2)					
T = 303.15 K					
0.0898	1.0307	−0.059	1.130	1328	550
0.1468	1.0355	−0.105	1.157	1336	541
0.2280	1.0421	−0.185	1.198	1344	531
0.3145	1.0485	−0.254	1.244	1352	521
0.4054	1.0543	−0.281	1.293	1360	513
0.5056	1.0599	−0.278	1.352	1368	504
0.6161	1.0653	−0.242	1.418	1372	499
0.7316	1.0701	−0.161	1.491	1372	496
0.8597	1.0749	−0.062	1.573	1372	494
T = 308.15 K					
0.0898	1.0261	−0.093	1.038	1324	556
0.1468	1.0311	−0.157	1.066	1332	547
0.2280	1.0377	−0.237	1.106	1340	537
0.3145	1.0440	−0.297	1.147	1348	530
0.4054	1.0499	−0.333	1.192	1352	521
0.5056	1.0555	−0.329	1.246	1356	515
0.6161	1.0608	−0.282	1.308	1360	510
0.7316	1.0655	−0.189	1.376	1360	507
0.8597	1.0702	−0.077	1.449	1360	505

Rathnam, Manapragada & Ambavadekar, Devappa & Nandini, M.. (2013). Studies on Excess Volume, Viscosity, and Speed of Sound of Binary Mixtures of Methyl Benzoate in Ethers at and K. Journal of Thermodynamics. 2013. 10.1155/2013/413878.

TABLE 1: Comparison of experimental density ρ and viscosity η of pure liquids with the literature values at (303.15, 308.15, and 313.15) K.

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	308.15	1.0743	1.0740 [18]	1.517	1.510 [18]
			1.0741 [19]		
					1.504 [20]
			1.07399 [20]		1.510 [21]
	313.15	1.0696	1.0690 [27]	1.373	1.365 [27]
Tetrahydrofuran	303.15	0.8787	0.8771 [22]	0.439	
	308.15	0.8730	0.87214 [22]	0.429	
	313.15	0.8669	0.86719 [22]	0.390	
1,4-Dioxane	303.15	1.0227	1.02271 [23]	1.090	1.102 [23]
					1.095 [24]
	308.15	1.0178	1.0172 [24]	0.999	1.008 [24]
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Anisole	303.15	0.9853	0.984374 [25]	0.923	0.931 [25]
	308.15	0.9792	0.9788 [26]	0.849	0.849 [26]
	313.15	0.9728		0.764	
Butyl vinyl ether	303.15	0.7741		0.387	
	308.15	0.7682		0.365	
	313.15	0.7633		0.354	

Ethylammonium nitrate + methanol (1 niz)

Table 3 Density and excess volume for EAN–methanol mixtures at 25 °C and atmospheric pressure

xEAN	Density (±0.05) ($kg\cdot m^{-3}$)	V^{ex} ($cm^3\cdot mol^{-1}$)
0.00000	786.69	0.000
0.10425	890.02	−0.893
0.19691	956.80	−1.171
0.29902	1014.08	−1.257
0.40419	1061.13	−1.233
0.50421	1097.45	−1.127
0.60445	1127.73	−0.967
0.69737	1151.19	−0.759
0.80209	1174.26	−0.525
0.90903	1194.20	−0.242
1.00000	1209.23	0.000

Olga Russina • Alessandro Mariani • Ruggero Caminiti •Alessandro Triolo, Structure of a Binary Mixture of Ethylammonium Nitrate and Methanol, Journal of Solution Chemistry volume 44, pages 669–685(2015), DOI 10.1007/s10953-015-0311-7

Xenon + ethane (1 niz)

TABLE 3: Molar volumes and excess molar volumes of xenon + ethane and xenon + propane mixtures at 161.40 K and under saturation vapor pressure (prikazani *x* odnosi se na množinski udio ksenona)

K and under Saturation Vapor Pressure[a]

x	V_m/cm^3 mol^{-1}	V_m^E/cm^3 mol^{-1}
		xenon + ethane
0	52.548	0
0.2585	50.325	−0.065
0.3401	49.624	−0.085
0.4761	48.465	−0.108
0.6206	47.262	−0.105
0.6995	46.609	−0.099
0.8553	45.360	−0.048
0.9184	44.861	−0.019
1	(44.199)	0

Eduardo J. M. Filipe, Edmundo J. S. Gomes de Azevedo, Luís F. G. Martins, Virgílio A. M. Soares, Jorge C. G. Calado, Clare McCabe, George Jackson, Thermodynamics of Liquid Mixtures of Xenon with Alkanes: (Xenon + Ethane) and (Xenon + Propane). J. Phys. Chem. B 2000, 104, 6, 1315-1321

Xenon + propane (1 niz)

TABLE 3: Molar volumes and excess molar volumes of xenon + ethane and xenon + propane mixtures at 161.40 K and under saturation vapor pressure (prikazani *x* odnosi se na množinski udio ksenona)

K and under Saturation Vapor Pressure[a]

x	V_m/cm^3 mol^{-1}	V_m^E/cm^3 mol^{-1}
		xenon+propane
0	67.217	0
0.1844	62.867	−0.115
0.2998	60.124	−0.206
0.4191	57.316	−0.275
0.6429	52.112	−0.341
0.7695	49.279	−0.266
0.8515	47.441	−0.221
1	44.253	0

Eduardo J. M. Filipe, Edmundo J. S. Gomes de Azevedo, Luís F. G. Martins, Virgílio A. M. Soares, Jorge C. G. Calado, Clare McCabe, George Jackson, Thermodynamics of Liquid Mixtures of Xenon with Alkanes: (Xenon + Ethane) and (Xenon + Propane). J. Phys. Chem. B 2000, 104, 6, 1315-1321

1-ethyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide + ethyl acetate (1 niz)

Table 6
Excess molar volumes, V^E (cm ^{3} mol^{-1}), of [EMIM][NTf_2](1) + ethyl acetate(2) and [EMIM][NTf_2](1) + methanol(2) as a function of mole fraction at various temperatures and at pressure $P = 0.1$ MPa.

x_1	T (K) 298.15	303.15	308.15	313.15	318.15	323.15
[EMIM][NTf_2] + ethyl acetate						
0.1021	−0.4827	−0.5210	−0.5549	−0.5888	−0.6364	−0.6919
0.2026	−1.0289	−1.1005	−1.1847	−1.2691	−1.3628	−1.4561
0.3091	−1.4474	−1.5360	−1.6257	−1.7175	−1.8188	−1.8899
0.4039	−2.0671	−2.1664	−2.2661	−2.3625	−2.4724	−2.5569
0.4949	−2.3215	−2.4326	−2.5382	−2.6487	−2.7617	−2.8560
0.6038	−1.8548	−1.9373	−2.0161	−2.0773	−2.1546	−2.2272
0.7024	−0.9527	−1.0199	−1.0512	−1.0654	−1.1066	−1.1431
0.8142	−0.3363	−0.3759	−0.4100	−0.4233	−0.4440	−0.4805
0.9014	−0.2405	−0.2745	−0.2915	−0.2998	−0.3065	−0.3523
0.9567	0.0420	0.0356	0.0295	0.0265	0.0235	0.0153

Naushad Anwar, Riyazuddeen ⁎, Shama Yasmeen, Volumetric, compressibility and viscosity studies of binary mixtures of [EMIM][NTf2] with ethylacetate/methanol at (298.15–323.15) K, Journal of Molecular Liquids 224 (2016) 189–200.

1-Ethyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide + methanol (1 niz)

Table 6
Excess molar volumes, V^E (cm ^{3} mol^{-1}), of [EMIM][NTf_2](1) + ethyl acetate(2) and [EMIM][NTf_2](1) + methanol(2) as a function of mole fraction at various temperatures and at pressure $P = 0.1$ MPa.

x_1	T (K) 298.15	303.15	308.15	313.15	318.15	323.15
[EMIM][NTf_2] + methanol						
0.1022	−0.2793	−0.3257	−0.3769	−0.4078	−0.4462	−0.4957
0.2039	−0.4146	−0.4868	−0.5621	−0.6229	−0.7050	−0.7683
0.3091	−0.3945	−0.4497	−0.5072	−0.5933	−0.6803	−0.7466
0.4012	−0.3559	−0.4170	−0.4688	−0.5193	−0.5809	−0.6463
0.4912	−0.3167	−0.3552	−0.4042	−0.4449	−0.4962	−0.5550
0.5995	−0.2399	−0.2719	−0.3159	−0.3592	−0.4081	−0.4468
0.7111	−0.1590	−0.1926	−0.2264	−0.2677	−0.3130	−0.3536
0.8035	−0.0985	−0.1265	−0.1634	−0.1978	−0.2420	−0.2724
0.9062	−0.0475	−0.0667	−0.0799	−0.0895	−0.0981	−0.1175

Combined expanded uncertainties Uc(x) = ±1 × 10^{-3}, Uc: Uc(V^E) = ±5 × 10^{-3} cm^3·mol^{-1} (level of confidence = 0.95, k = 2).

Naushad Anwar, Riyazuddeen ⁎, Shama Yasmeen, Volumetric, compressibility and viscosity studies of binary mixtures of [EMIM][NTf2] with ethylacetate/methanol at (298.15–323.15) K, Journal of Molecular Liquids 224 (2016) 189–200.

Trichlorofluoromethane (1) + 2,2,4-trimethylpentane (1 niz)

Table I. Molar Excess Volumes V^E of the Liquid System R11 (1) + ISO (2) at 293.15 K and Atmospheric Pressure, Coefficients A_i, Maximum δ_{max} and Standard Deviations σ,[a] Equations 2–4

x_1	$V^E/(cm^3\ mol^{-1})$	x_1	$V^E/(cm^3\ mol^{-1})$
0.100 73	0.084	0.652 23	0.313
0.104 44	0.094	0.690 97	0.302
0.204 26	0.162	0.739 33	0.279
0.207 87	0.165	0.748 06	0.273
0.299 74	0.234	0.792 85	0.249
0.321 23	0.243	0.817 12	0.229
0.404 30	0.283	0.844 05	0.206
0.470 12	0.312	0.850 37	0.200
0.528 39	0.323	0.894 66	0.151
0.542 64	0.325	0.948 10	0.079
0.570 74	0.326		

[a] $A_0 = 1.266$; $A_1 = 0.413$; $A_2 = -0.002$; $\delta_{max}/(cm^3\ mol^{-1}) = 0.006$; $\sigma/(cm^3\ mol^{-1}) = 0.003$.

J. Chem. Eng. Data 1990, 35, 183–184 183

Excess Volume, Isothermal Compressibility, and Excess Enthalpy of the Binary Liquid System Trichlorofluoromethane + 2,2,4-Trimethylpentane

G. Hahn, Nguyen van Nhu,† M. A. Siddiqi, and P. Svejda*

PEG (polyethylene glycol) 400 + water (7 nizova)

Table 3. Excess molar volumes (cm^3 mol^{-1}) for both binary mixtures at various temperatures.

PEG 400 [1] + water [2]								
w_{PEG}	x_{PEG}	283.15 K	288.15 K	293.15 K	298.15 K	303.15 K	308.15 K	313.15 K
0.0000	0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.1000	0.0050	−0.094	−0.096	−0.093	−0.094	−0.091	−0.090	−0.083
0.2000	0.0111	−0.225	−0.223	−0.218	−0.213	−0.208	−0.206	−0.202
0.3000	0.0189	−0.394	−0.381	−0.373	−0.363	−0.359	−0.351	−0.342
0.4000	0.0292	−0.606	−0.590	−0.575	−0.560	−0.550	−0.536	−0.523
0.5000	0.0431	−0.856	−0.832	−0.810	−0.788	−0.768	−0.756	−0.740
0.6000	0.0633	−1.110	−1.081	−1.054	−1.023	−0.994	−0.973	−0.953
0.7000	0.0951	−1.346	−1.305	−1.280	−1.241	−1.210	−1.176	−1.164
0.8000	0.1527	−1.458	−1.430	−1.401	−1.346	−1.342	−1.306	−1.272
0.9000	0.2885	−1.330	−1.346	−1.317	−1.230	−1.254	−1.239	−1.219
1.0000	1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Gerson A. Rodríguez, Andrés R. Holguín, Fleming Martínez, Maryam Khoubnasabjafari, Abolghasem Jouyban, Volumetric properties of (PEG 400 + water) and (PEG 400 + ethanol) mixtures at several temperatures and correlation with the Jouyban-Acree model, Rev. colomb. cienc. quim. farm. vol.41 no.2 Bogotá July/Dec. 2012

PEG (polyethylene glycol) 400 + water (7 nizova)

Table 3. Excess molar volumes ($cm^3 mol^{-1}$) for both binary mixtures at various temperatures.

PEG 400 [1] + ethanol [2]								
w_{PEG}	x_{PEG}	283.15 K	288.15 K	293.15 K	298.15 K	303.15 K	308.15 K	313.15 K
0.0000	0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.1000	0.0126	−0.351	−0.297	−0.389	−0.397	−0.435	−0.402	−0.440
0.2000	0.0280	−0.550	−0.556	−0.595	−0.657	−0.652	−0.645	−0.735
0.3000	0.0470	−0.636	−0.759	−0.797	−0.796	−0.783	−0.850	−0.866
0.4000	0.0713	−0.794	−0.951	−1.030	−1.022	−0.982	−0.992	−1.041
0.5000	0.1033	−0.951	−1.087	−1.210	−1.142	−1.180	−1.132	−1.256
0.6000	0.1473	−1.009	−1.184	−1.269	−1.206	−1.252	−1.279	−1.414
0.7000	0.2118	−1.002	−1.215	−1.263	−1.220	−1.247	−1.311	−1.442
0.8000	0.3154	−0.979	−1.159	−1.194	−1.204	−1.231	−1.334	−1.341
0.9000	0.5090	−0.785	−0.966	−0.985	−1.024	−0.978	−1.051	−1.133
1.0000	1.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Gerson A. Rodríguez, Andrés R. Holguín, Fleming Martínez, Maryam Khoubnasabjafari, Abolghasem Jouyban, Volumetric properties of (PEG 400 + water) and (PEG 400 + ethanol) mixtures at several temperatures and correlation with the Jouyban-Acree model, Rev. colomb. cienc. quim. farm. vol.41 no.2 Bogotá July/Dec. 2012

N-ethylaniline + p-methylacetophenone (1 niz)

N-Ethylaniline (1) + p-Methylacetophenone (2)								
x_1	P /g.cm^{-3}	V^E/cm^3.mol^{-1}	η/mPa.s	$\Delta\eta$/ mPa.s	G^{*E}/ J.mol^{-1}	d	$W_{vis/RT}$	H_{12}
0.0000	1.00065	0.0000	1.581	0.0000	0.0000			
0.0838	0.99752	-0.0930	1.587	-0.0075	-0.0533	-0.0245	-0.0279	1.6127
0.1427	0.99529	-0.1569	1.592	-0.0120	-0.0856	-0.0245	-0.0281	1.6126
0.2179	0.99217	-0.2051	1.601	-0.0151	-0.1067	-0.0218	-0.0252	1.6173
0.2904	0.98904	-0.2387	1.608	-0.0198	-0.1378	-0.0237	-0.0269	1.6136
0.3608	0.98589	-0.2598	1.616	-0.0231	-0.1594	-0.0247	-0.0278	1.6114
0.4284	0.98278	-0.2718	1.625	-0.0250	-0.1711	-0.0250	-0.0281	1.6105
0.4942	0.97969	-0.2781	1.635	-0.0256	-0.1743	-0.0249	-0.0280	1.6104
0.5577	0.97664	-0.2778	1.645	-0.0258	-0.1750	-0.0254	-0.0285	1.6092
0.6194	0.97361	-0.2713	1.656	-0.0247	-0.1673	-0.0253	-0.0285	1.6091
0.6889	0.97012	-0.2569	1.670	-0.0219	-0.1484	-0.0244	-0.0278	1.6104
0.7467	0.96713	-0.2359	1.683	-0.0182	-0.1238	-0.0227	-0.0263	1.6133
0.8128	0.96360	-0.2000	1.697	-0.0149	-0.1012	-0.0229	-0.0267	1.6127
0.9072	0.95831	-0.1209	1.718	-0.0091	-0.0616	-0.0251	-0.0294	1.6077
1.0000	0.95274	0.0000	1.742	0.0000	0.0000			

Gowrisankar Manukonda, P. Venkatalakshami, Karumudi Rambabu, Excess volumes, isentropic compressibilities and viscosities of binary mixtures of N-ethylaniline with phenones at 303.15 K, International journal of physics and research (IJPR) 3(4) (2013) 5-16.

N-ethylaniline + acetophenone (1 niz)

N-Ethylaniline(1) + Acetophenone(2)								
x_1	P /g.cm^{-3}	V^E/cm^3.mol^{-1}	η/mPa.s	$\Delta\eta$/ mPa.s	G^{*E}/ J.mol^{-1}	d	$W_{vis/RT}$	H_{12}
0.0000	1.01937	0.0000	1.512	0.0000	0.0000			
0.0651	1.01520	-0.0568	1.524	-0.0030	-0.0174	-0.0094	-0.0115	1.6026
0.1424	1.01018	-0.1103	1.538	-0.0068	-0.0398	-0.0111	-0.0131	1.5994
0.2225	1.00493	-0.1529	1.554	-0.0092	-0.0527	-0.0103	-0.0122	1.6005
0.2977	0.99996	-0.1813	1.568	-0.0125	-0.0722	-0.0120	-0.0139	1.5972
0.3611	0.99575	-0.1975	1.581	-0.0141	-0.0807	-0.0123	-0.0141	1.5965
0.4487	0.98991	-0.2091	1.599	-0.0162	-0.0928	-0.0133	-0.0151	1.5943
0.5162	0.98539	-0.2090	1.614	-0.0167	-0.0951	-0.0136	-0.0153	1.5935
0.5869	0.98064	-0.2008	1.631	-0.0160	-0.0894	-0.0132	-0.0148	1.5940
0.6407	0.97703	-0.1907	1.644	-0.0154	-0.0854	-0.0133	-0.0149	1.5936
0.7083	0.97248	-0.1709	1.662	-0.0129	-0.0701	-0.0120	-0.0136	1.5958
0.7798	0.96766	-0.1423	1.681	-0.0104	-0.0553	-0.0113	-0.0129	1.5969
0.8256	0.96457	-0.1200	1.694	-0.0079	-0.0410	-0.0098	-0.0114	1.5996
0.9025	0.95936	-0.0732	1.715	-0.0046	-0.0232	-0.0090	-0.0106	1.6010
1.0000	0.95274	0.0000	1.742	0.0000	0.0000			

Gowrisankar Manukonda, P. Venkatalakshami, Karumudi Rambabu, Excess volumes, isentropic compressibilities and viscosities of binary mixtures of N-ethylaniline with phenones at 303.15 K, International journal of physics and research (IJPR) 3(4) (2013) 5-16.

N-ethylaniline + propiophenone (1 niz)

N-Ethylaniline (1) + Propiophenone (2)								
x_1	P /g.cm^{-3}	V^E/cm^3.mol^{-1}	η/mPa.s	Δη/ mPa.s	G^{*E}/ J.mol^{-1}	d	$W_{vis/RT}$	H_{12}
0.0000	1.00437	0.0000	1.510	0.0000	0.0000			
0.0789	1.00105	-0.0762	1.524	-0.0043	-0.0274	-0.0122	-0.0151	1.5964
0.1541	0.99772	-0.1304	1.537	-0.0088	-0.0555	-0.0143	-0.0171	1.5924
0.2249	0.99446	-0.1682	1.550	-0.0122	-0.0763	-0.0149	-0.0176	1.5911
0.3002	0.99089	-0.1982	1.565	-0.0146	-0.0906	-0.0147	-0.0173	1.5911
0.3862	0.98668	-0.2195	1.581	-0.0186	-0.1150	-0.0169	-0.0195	1.5868
0.4651	0.98272	-0.2304	1.598	-0.0199	-0.1221	-0.0172	-0.0197	1.5860
0.5244	0.97967	-0.2315	1.612	-0.0197	-0.1196	-0.0167	-0.0193	1.5866
0.6049	0.97546	-0.2276	1.631	-0.0193	-0.1171	-0.0170	-0.0197	1.5855
0.6891	0.97093	-0.2115	1.653	-0.0169	-0.1014	-0.0162	-0.0190	1.5866
0.7354	0.96838	-0.1969	1.666	-0.0146	-0.0874	-0.0152	-0.0180	1.5885
0.8005	0.96472	-0.1690	1.683	-0.0127	-0.0764	-0.0162	-0.0192	1.5862
0.8523	0.96173	-0.1385	1.699	-0.0087	-0.0520	-0.0134	-0.0166	1.5913
0.9099	0.95831	-0.0941	1.716	-0.0051	-0.0302	-0.0114	-0.0148	1.5949
1.0000	0.95274	0.0000	1.742	0.0000	0.0000			

Gowrisankar Manukonda, P. VENKATALAKSHAMI, Karumudi Rambabu, Excess volumes, isentropic compressibilities and viscosities of binary mixtures of N-ethylaniline with phenones at 303.15 K, International journal of physics and research (IJPR) 3(4) (2013) 5-16.

Water + diisopropanolamine (DIPA) (4 niza)

Table 2. Experimental Densities and Excess volumes of the Water (1) + DIPA (2) system

x_1	Density (g/cm^3)				Excess volume (cm^3/mol)			
	303.15K,	313.15K,	323.15K,	333.15K,	303.15K,	313.15K,	323.15K	333.15K,
0.0000	0.9994	0.9919	0.9842	0.9763	0.0000	0.0000	0.0000	0.0000
0.1117	1.0018	0.9944	0.9868	0.9789	-0.3032	-0.3043	-0.3093	-0.3108
0.2087	1.0043	0.9969	0.9893	0.9814	-0.5437	-0.5440	-0.5480	-0.5468
0.3473	1.0083	1.0009	0.9933	0.9890	-0.8420	-0.8417	-0.8382	-0.8331
0.4503	1.0118	1.0045	0.9969	0.9890	-1.0221	-1.0175	-1.0077	-0.9973
0.5323	1.0156	1.0082	1.0005	0.9926	-1.1728	-1.1576	-1.1407	-1.1255
0.6486	1.0205	1.0130	1.0052	0.9971	-1.2407	-1.2085	-1.1820	-1.1557
0.7592	1.0259	1.0184	1.0106	1.0025	-1.2179	-1.1771	-1.1415	-1.1101
0.8313	1.0276	1.0202	1.0126	1.0046	-1.0675	-1.0266	-0.9890	-0.9571
0.9172	1.0217	1.0155	1.0089	1.0019	-0.6457	-0.6212	-0.6017	-0.5859
0.9672	1.0087	1.0043	0.9993	0.9936	-0.2472	-0.2454	-0.2446	-0.2458
1.0000	0.9957	0.9923	0.9881	0.9832	0.0000	0.0000	0.0000	0.0000

Jinho Kim, Jaeseok Na and Hun Yong Shin, Measurement and Correlation of density and excess volume for Water+DIPA, DIPA+MDEA and Water+DIPA+MDEA systems, Korean Chem. Eng. Res., 57(2), 198-204 (2019)

Diisopropanolamine (DIPA)+ Methyldiethanolamine (MDEA) (4 niza)

Table 3. Experimental Densities and Excess volumes of the DIPA (1) + MDEA (2) system

Table 3. Experimental Densities and Excess volumes of the DIPA (1) + MDEA (2) system

x_1	Density (g/cm^3)				Excess volume (cm^3/mol)			
	303.15K,	313.15K,	323.15K,	333.15K,	303.15K,	313.15K,	323.15K,	333.15K,
0.0000	1.0327	1.0253	1.0176	1.0099	0.0000	0.0000	0.0000	0.0000
0.0900	1.0302	1.0226	1.0150	1.0073	-0.1008	-0.0826	-0.0919	-0.0942
0.1823	1.0267	1.0192	1.0115	1.0038	-0.0971	-0.0831	-0.0924	-0.0956
0.2774	1.0232	1.0157	1.0080	1.0003	-0.0890	-0.0768	-0.0847	-0.0912
0.3740	1.0197	1.0122	1.0046	0.9969	-0.0786	-0.0683	-0.0772	-0.0857
0.5735	1.0129	1.0055	0.9978	0.9901	-0.0642	-0.0628	-0.0701	-0.0778
0.6758	1.0096	1.0021	0.9945	0.9867	-0.0533	-0.0552	-0.0609	-0.0667
0.7818	1.0062	0.9988	0.9911	0.9833	-0.0464	-0.0518	-0.0573	-0.0610
0.8902	1.0027	0.9953	0.9876	0.9798	-0.0162	-0.0222	-0.0229	-0.0309
1.0000	0.9994	0.9919	0.9842	0.9763	0.0000	0.0000	0.0000	0.0000

Jinho Kim, Jaeseok Na and Hun Yong Shin, Measurement and Correlation of density and excess volume for Water+DIPA, DIPA+MDEA and Water+DIPA+MDEA systemsKorean Chem. Eng. Res., 57(2), 198-204 (2019)

Ethanol + water (3 niza)

Table 1. Densities (g cm^{-3})^{a} for all binary mixtures at various temperatures. μ and x represent mass and mole fraction of the first component, respectively.

Ethanol (1) + Water (2)				
μ_{EtOH}	x_{EtOH}	278.15 K	283.15 K	288.15K
0.00	0.0000	1.0000	0.9998	0.9992
0.10	0.0416	0.9860	0.9850	0.9836
0.20	0.0891	0.9740	0.9726	0.9708
0.30	0.1435	0.9628	0.9600	0.9572
0.40	0.2068	0.9460	0.9428	0.9393
0.50	0.2811	0.9257	0.9222	0.9184
0.60	0.3697	0.9040	0.9000	0.8968
0.70	0.4771	0.8808	0.8768	0.8736
0.80	0.6100	0.8569	0.8525	0.8493
0.90	0.7787	0.8315	0.8271	0.8238
1.00	1.0000	0.8024	0.7983	0.7952

Gerson A. Rodríguez, Daniel R. Delgado, Fleming Martínez, Maryam Khoubnasabjafari, Abolghasem Jouyban, Volumetric properties of some pharmaceutical binary mixtures at low temperatures and correlation with the Jouyban-Acree model, Rev. colomb. cienc. quim. farm. vol.40 no.2 Bogotá July/Dec. 2011

1,2-Propanediol + water (3 niza)

Table 1. Densities (g cm^{-3})^a for all binary mixtures at various temperatures. μ and x represent mass and mole fraction of the first component, respectively.

1,2-Propanediol (1) + Water (2)				
μ_{PD}	x_{PD}	278.15 K	283.15 K	288.15K
0.00	0.0000	1.0000	0.9998	0.9992
0.10	0.0256	1.0086	1.0078	1.0069
0.20	0.0559	1.0180	1.0168	1.0154
0.30	0.0921	1.0283	1.0265	1.0245
0.40	0.1363	1.0379	1.0354	1.0328
0.50	0.1914	1.0453	1.0423	1.0391
0.60	0.2621	1.0500	1.0467	1.0432
0.70	0.3558	1.0519	1.0482	1.0448
0.80	0.4864	1.0513	1.0477	1.0441
0.90	0.6806	1.0485	1.0451	1.0414
1.00	1.0000	1.0445	1.0420	1.0389

Gerson A. Rodríguez, Daniel R. Delgado, Fleming Martínez, Maryam Khoubnasabjafari, Abolghasem Jouyban, Volumetric properties of some pharmaceutical binary mixtures at low temperatures and correlation with the Jouyban-Acree model, Rev. colomb. cienc. quim. farm. vol.40 no.2 Bogotá July/Dec. 2011

Ethanol + 1,2-Propanediol (3 niza)

Table 1. Densities (g cm^{-3})[a] for all binary mixtures at various temperatures. μ and x represent mass and mole fraction of the first component, respectively.

Ethanol (1) + 1,2-Propanediol (2)

μ_{EtOH}	x_{EtOH}	278.15 K	283.15 K	288.15K
0.00	0.0000	1.0445	1.0420	1.0389
0.10	0.1551	1.0153	1.0123	1.0089
0.20	0.2923	0.9875	0.9842	0.9807
0.30	0.4145	0.9612	0.9575	0.9539
0.40	0.5241	0.9361	0.9322	0.9286
0.50	0.6229	0.9120	0.9080	0.9043
0.60	0.7124	0.8889	0.8848	0.8811
0.70	0.7940	0.8664	0.8622	0.8586
0.80	0.8685	0.8446	0.8403	0.8366
0.90	0.9370	0.8234	0.8191	0.8154
1.00	1.0000	0.8024	0.7983	0.7950

[a] The mean standard deviation was 0.0001 g cm^{-3}

Gerson A. Rodríguez, Daniel R. Delgado, Fleming Martínez, Maryam Khoubnasabjafari, Abolghasem Jouyban, Volumetric properties of some pharmaceutical binary mixtures at low temperatures and correlation with the Jouyban-Acree model, Rev. colomb. cienc. quim. farm. vol.40 no.2 Bogotá July/Dec. 2011

Dimethylformamide + 2-butanol (1 niz)

Table 2. Experimental densities (ρ), excess molar volume (V^E), ultrasonic velocity (u), excess ultrasonic velocity (u^E), excess isentropic compressibility values (K_S^E), acoustical impedance (Z^E) of the systems DMF (x_1) + 2-BuOH (x_2) and + 2-PnOH (x_2) for different molar ratios at different temperatures

x_1	ρ (kgm^{-3})	u (ms^{-1})	V^E (m^{3}mol^{-1})	u^E (ms^{-1})	K_s^Ex10^{-12} (Pa^{-1})	Z^Ex10^{-3} (kgm^{-2}s^{-1})
			T=298.15K			
			DMF+2-BuOH			
0.0000	802.876	1212.46	0.000000	0.0000	0.0000	0.0000
0.0501	808.412	1221.62	0.051275	-1.2418	-5.1712	-4.1991
0.0998	814.391	1230.81	0.057082	-2.5396	-9.5810	-8.1522
0.1494	820.230	1240.03	0.087625	-3.9582	-13.2035	-11.9287
0.1986	826.253	1249.46	0.102792	-5.2549	-16.3315	-15.3106
0.2514	832.892	1259.16	0.111956	-7.2640	-18.2764	-19.1462
0.2994	838.943	1269.01	0.129339	-8.2407	-20.4661	-21.6352
0.3491	845.789	1278.61	0.097950	-10.038	-21.2227	-24.5820
0.3998	853.100	1289.34	0.045545	-11.137	-22.1926	-26.6438
0.4495	860.600	1300.63	-0.025648	-11.644	-23.0998	-27.8472
0.5002	868.514	1312.25	-0.109503	-12.271	-23.2197	-28.8213
0.5498	876.198	1324.71	-0.171279	-12.006	-23.5260	-28.6514
0.5999	884.624	1337.68	-0.282010	-11.573	-23.2564	-27.9612
0.6524	892.730	1351.75	-0.314051	-10.883	-22.3857	-26.6122
0.7001	900.111	1364.88	-0.331903	-10.132	-20.9800	-24.8931
0.7496	907.623	1378.78	-0.324764	-9.3078	-18.8252	-22.6723
0.7999	914.938	1392.87	-0.277351	-8.7504	-15.6421	-20.2480
0.8502	922.106	1407.87	-0.206137	-7.5377	-12.2139	-16.7833
0.9000	928.796	1422.85	-0.090818	-6.4661	-7.9416	-13.0228
0.9501	936.300	1439.38	-0.030371	-4.1948	-3.7221	-7.6586
1.0000	944.270	1458.05	0.000000	0.0000	0.0000	0.0000

Aklima Jahan, Md. Ashraful Alam, Md. Rabiul Awual, Shamim Akhtar, Volumetric and Acoustic Properties for Binary Mixtures of N,N-Dimethylformamide with 2-Butanol and 2-Pentanol at Temperatures between 298.15 K and 318.15 K, American Journal of Chemistry 2019; 9(1): 1-12

Dimethylformamide + 2-butanol (1 niz)

Table 2. Experimental densities (ρ), excess molar volume (V^E), ultrasonic velocity (u), excess ultrasonic velocity (u^E), excess isentropic compressibility values (K_S^E), acoustical impedance (Z^E) of the systems DMF (x_1) + 2-BuOH (x_2) and + 2-PnOH (x_2) for different molar ratios at different temperatures

x_1	ρ (kgm^{-3})	u (ms^{-1})	V^E (m^{3}mol^{-1})	u^E (ms^{-1})	K_s^Ex10^{-12} (Pa^{-1})	Z^Ex10^{-3} (kgm^{-2}s^{-1})
			T=303.15K			
			DMF+2-BuOH			
0.0000	798.683	1195.45	0.000000	0.0000	0.0000	0.0000
0.0501	804.205	1204.05	0.050489	-1.6905	-4.7153	-4.5084
0.0998	810.160	1213.28	0.056186	-2.8361	-9.5071	-8.2930
0.1494	815.793	1222.38	0.107076	-4.2611	-13.2556	-12.0326
0.1986	821.967	1232.09	0.102739	-5.1634	-17.0121	-15.0515
0.2514	828.575	1242.07	0.112298	-6.7679	-19.5129	-18.5090
0.2994	834.597	1251.07	0.130175	-8.4795	-20.8673	-21.5846
0.3491	841.410	1261.13	0.099046	-9.6960	-22.3289	-24.0125
0.3998	848.374	1271.33	0.078713	-11.198	-22.8548	-26.3975
0.4495	855.730	1282.56	0.017839	-11.642	-23.8699	-27.5328
0.5002	863.058	1294.26	-0.012715	-12.059	-24.2150	-28.3169
0.5498	871.791	1306.23	-0.181361	-12.155	-24.1624	-28.4634
0.5999	880.089	1318.99	-0.283729	-11.800	-23.8197	-27.8505
0.6524	888.162	1332.79	-0.315971	-11.239	-22.8122	-26.6333
0.7001	895.575	1345.88	-0.339602	-10.399	-21.4570	-24.8553
0.7496	902.987	1359.92	-0.326055	-9.2973	-19.4825	-22.4121
0.7999	910.279	1373.88	-0.278927	-8.7283	-16.1945	-20.0085
0.8502	917.420	1388.77	-0.207420	-7.4816	-12.6736	-16.5530
0.9000	924.083	1403.50	-0.091358	-6.5149	-8.1639	-12.9352
0.9501	931.500	1419.60	-0.025713	-4.5252	-3.5903	-7.8925
1.0000	939.496	1438.45	0.000000	0.0000	0.0000	0.0000

Aklima Jahan, Md. Ashraful Alam, Md. Rabiul Awual, Shamim Akhtar, Volumetric and Acoustic Properties for Binary Mixtures of N,N-Dimethylformamide with 2-Butanol and 2-Pentanol at Temperatures between 298.15 K and 318.15 K, American Journal of Chemistry 2019; 9(1): 1-12

Dimethylformamide + 2-butanol (1 niz)

Table 2. Experimental densities (ρ), excess molar volume (V^E), ultrasonic velocity (u), excess ultrasonic velocity (u^E), excess isentropic compressibility values (K_S^E), acoustical impedance (Z^E) of the systems DMF (x_1) + 2-BuOH (x_2) and + 2-PnOH (x_2) for different molar ratios at different temperatures

x_1	ρ (kgm^{-3})	u (ms^{-1})	V^E (m^{3}mol^{-1})	u^E (ms^{-1})	K_s^Ex10^{-12} (Pa^{-1})	Z^Ex10^{-3} (kgm^{-2}s^{-1})
			T=308.15K			
			DMF+2-BuOH			
0.0000	794.386	1178.45	0.000000	0.0000	0.0000	0.0000
0.0501	799.909	1187.21	0.048321	-1.4189	-5.2843	-4.2386
0.0998	805.852	1196.13	0.052924	-2.7622	-9.9534	-8.1359
0.1494	811.647	1205.16	0.083677	-4.1436	-13.8914	-11.7969
0.1986	817.619	1214.21	0.099496	-5.5916	-17.0415	-15.2279
0.2514	824.200	1224.04	0.109487	-7.2216	-19.6102	-18.6732
0.2994	830.197	1233.22	0.127871	-8.6383	-21.3950	-21.4751
0.3491	836.983	1243.08	0.096824	-9.9342	-22.8131	-23.9467
0.3998	843.914	1253.43	0.077225	-11.162	-23.6858	-26.0782
0.4495	851.244	1264.12	0.015938	-12.021	-24.2601	-27.5582
0.5002	858.582	1275.48	-0.018379	-12.650	-24.3995	-28.5211
0.5498	867.345	1287.80	-0.194019	-12.268	-24.8854	-28.2551
0.5999	875.517	1300.48	-0.287560	-11.862	-24.5944	-27.6053
0.6524	883.548	1314.28	-0.318651	-11.162	-23.6976	-26.2788
0.7001	890.938	1326.99	-0.342646	-10.573	-22.0559	-24.7441
0.7496	898.324	1340.68	-0.328901	-9.6856	-19.8240	-22.5215
0.7999	905.581	1354.86	-0.280483	-8.7568	-16.7463	-19.8244
0.8502	912.702	1369.23	-0.208802	-7.8881	-12.7768	-16.7536
0.9000	919.312	1384.32	-0.089231	-6.4186	-8.5232	-12.7191
0.9501	926.800	1399.72	-0.031276	-4.9829	-3.3449	-8.2442
1.0000	934.707	1418.88	0.000000	0.0000	0.0000	0.0000

Aklima Jahan, Md. Ashraful Alam, Md. Rabiul Awual, Shamim Akhtar, Volumetric and Acoustic Properties for Binary Mixtures of N,N-Dimethylformamide with 2-Butanol and 2-Pentanol at Temperatures between 298.15 K and 318.15 K, American Journal of Chemistry 2019; 9(1): 1-12

Dimethylformamide + 2-butanol (1 niz)

Table 2. Experimental densities (ρ), excess molar volume (V^E), ultrasonic velocity (u), excess ultrasonic velocity (u^E), excess isentropic compressibility values (K_S^E), acoustical impedance (Z^E) of the systems DMF (x_1) + 2-BuOH (x_2) and + 2-PnOH (x_2) for different molar ratios at different temperatures

x_1	ρ (kgm^{-3})	u (ms^{-1})	V^E (m^{3}mol^{-1})	u^E (ms^{-1})	K_s^Ex10^{-12} (Pa^{-1})	Z^Ex10^{-3} (kgm^{-2}s^{-1})
			T=318.15K			
			DMF+2-BuOH			
0.0000	785.493	1144.45	0.000000	0.0000	0.0000	0.0000
0.0501	791.051	1153.18	0.041059	-1.1903	-6.0408	-3.9514
0.0998	797.007	1162.05	0.040246	-2.3238	-11.3693	-7.5830
0.1494	802.800	1170.06	0.068053	-4.4623	-14.3935	-11.7636
0.1986	808.747	1179.26	0.083327	-5.4960	-18.3960	-14.7807
0.2514	815.297	1189.19	0.093066	-6.7385	-21.6887	-17.8313
0.2994	821.258	1198.05	0.112293	-8.2103	-23.4871	-20.6159
0.3491	828.010	1207.39	0.080656	-9.7482	-24.6455	-23.2354
0.3998	834.906	1217.38	0.060756	-11.049	-25.4637	-25.3852
0.4495	842.169	1227.66	0.001664	-12.032	-25.9114	-26.9423
0.5002	849.532	1238.48	-0.039438	-12.905	-25.7594	-28.0988
0.5498	857.973	1250.18	-0.189891	-12.849	-25.9308	-28.1208
0.5999	866.297	1262.61	-0.304044	-12.393	-25.7211	-27.4465
0.6524	874.271	1276.14	-0.333749	-11.644	-24.8573	-26.1110
0.7001	881.621	1288.89	-0.357560	-10.719	-23.4775	-24.3220
0.7496	888.933	1302.11	-0.339798	-9.9928	-20.9345	-22.2959
0.7999	896.151	1316.15	-0.289991	-8.8846	-17.8208	-19.5059
0.8502	903.226	1329.94	-0.215809	-8.2718	-13.3164	-16.7448
0.9000	909.776	1344.78	-0.091491	-6.7268	-8.8314	-12.7387
0.9501	917.100	1360.39	-0.021133	-4.7488	-3.7415	-7.8754
1.0000	925.096	1378.98	0.000000	0.0000	0.0000	0.0000

Aklima Jahan, Md. Ashraful Alam, Md. Rabiul Awual, Shamim Akhtar, Volumetric and Acoustic Properties for Binary Mixtures of N,N-Dimethylformamide with 2-Butanol and 2-Pentanol at Temperatures between 298.15 K and 318.15 K, American Journal of Chemistry 2019; 9(1): 1-12

Dimethylformamide + 2-pentanol (1 niz)

Table 2. Experimental densities (ρ), excess molar volume (V^E), ultrasonic velocity (u), excess ultrasonic velocity (u^E), excess isentropic compressibility values (K_S^E), acoustical impedance (Z^E) of the systems DMF (x_1) + 2-BuOH (x_2) and + 2-PnOH (x_2) for different molar ratios at different temperatures

x_1	ρ (kgm^{-3})	u (ms^{-1})	V^E (m^3mol^{-1})	u^E (ms^{-1})	$K_s^E x10^{-12}$ (Pa^{-1})	$Z^E x10^{-3}$ ($kgm^{-2}s^{-1}$)
			T=303.15K			
			DMF+2-PnOH			
0.0000	801.295	1214.93	0.000000	0.0000	0.0000	0.0000
0.0506	805.702	1225.76	0.082507	2.7103	-7.3910	-5.0418
0.0997	810.540	1236.45	0.104533	5.2844	-14.4381	-9.0018
0.1515	816.272	1247.80	0.066828	7.8077	-21.5428	-12.2251
0.2000	821.868	1257.94	0.024205	9.4255	-26.8252	-15.2368
0.2497	828.337	1268.91	-0.087389	11.3917	-32.6281	-16.7940
0.2909	833.318	1278.26	-0.113738	13.0606	-36.5962	-18.2516
0.3510	841.237	1290.49	-0.199946	13.7157	-40.0897	-20.5525
0.3999	847.995	1300.59	-0.278183	14.0575	-42.2800	-21.7460
0.4494	854.694	1310.71	-0.314954	13.9720	-43.2681	-23.0899
0.5003	861.886	1321.72	-0.359273	14.1265	-44.0772	-23.4091
0.5491	868.917	1331.99	-0.389957	13.6269	-43.6197	-23.6338
0.6002	876.136	1342.91	-0.379755	12.8697	-42.0887	-23.7615
0.6500	883.479	1353.81	-0.374990	11.9673	-39.9339	-23.1014
0.7000	890.808	1364.31	-0.339436	10.2018	-36.2394	-22.7020
0.7499	898.243	1374.43	-0.289828	7.5942	-31.1553	-22.3480
0.7999	905.546	1385.90	-0.200843	5.8398	-25.9569	-20.8190
0.8500	913.278	1395.95	-0.124727	2.1332	-18.6279	-19.8425
0.9000	921.494	1406.99	-0.066932	-1.1133	-11.1824	-17.0951
0.9500	929.400	1417.92	0.044794	-5.0490	-2.1743	-14.7081
1.0000	939.496	1438.45	0.000000	0.0000	0.0000	0.0000

Aklima Jahan, Md. Ashraful Alam, Md. Rabiul Awual, Shamim Akhtar, Volumetric and Acoustic Properties for Binary Mixtures of N,N-Dimethylformamide with 2-Butanol and 2-Pentanol at Temperatures between 298.15 K and 318.15 K, American Journal of Chemistry 2019; 9(1): 1-12

Dimethylformamide + 2-pentanol (1 niz)

Table 2. Experimental densities (ρ), excess molar volume (V^E), ultrasonic velocity (u), excess ultrasonic velocity (u^E), excess isentropic compressibility values (K_S^E), acoustical impedance (Z^E) of the systems DMF (x_1) + 2-BuOH (x_2) and + 2-PnOH (x_2) for different molar ratios at different temperatures

x_1	ρ (kgm^{-3})	u (ms^{-1})	V^E (m^{3}mol^{-1})	u^E (ms^{-1})	K_s^Ex10^{-12} (Pa^{-1})	Z^Ex10^{-3} (kgm^{-2}s^{-1})
			T=308.15K			
			DMF+2-PnOH			
0.0000	797.109	1197.23	0.000000	0.0000	0.0000	0.0000
0.0506	801.536	1208.13	0.077592	2.8492	-7.9807	-4.7820
0.0997	806.370	1218.43	0.097506	5.1022	-14.9265	-8.8973
0.1515	812.122	1229.81	0.053811	7.7302	-22.5459	-11.9121
0.2000	817.685	1239.98	0.012255	9.4501	-28.1865	-14.7926
0.2497	824.126	1250.96	-0.099811	11.5023	-34.3471	-16.2411
0.2909	829.112	1259.43	-0.129392	12.3561	-37.5274	-18.3041
0.3510	836.942	1271.97	-0.209293	13.4187	-41.6171	-20.2996
0.3999	843.557	1281.90	-0.274735	13.6727	-43.7063	-21.6956
0.4494	850.438	1292.22	-0.335653	13.8729	-45.2291	-22.5081
0.5003	857.445	1302.69	-0.362927	13.5785	-45.4675	-23.4065
0.5491	864.399	1313.62	-0.388811	13.8293	-45.7278	-23.0491
0.6002	871.761	1324.51	-0.396805	13.1398	-44.3135	-22.8896
0.6500	878.964	1334.85	-0.380667	11.7760	-41.5249	-22.7931
0.7000	886.310	1345.68	-0.349628	10.4429	-38.1006	-21.9657
0.7499	893.744	1355.53	-0.302505	7.6712	-32.6514	-21.7394
0.7999	901.109	1366.02	-0.221465	5.0467	-26.5252	-20.8990
0.8500	908.803	1377.11	-0.143936	2.4943	-19.8571	-18.9282
0.9000	916.977	1387.69	-0.084678	-1.0938	-11.7865	-16.5658
0.9500	924.896	1398.52	0.024152	-5.0067	-2.4282	-14.1558
1.0000	934.707	1418.88	0.000000	0.0000	0.0000	0.0000

Aklima Jahan, Md. Ashraful Alam, Md. Rabiul Awual, Shamim Akhtar, Volumetric and Acoustic Properties for Binary Mixtures of N,N-Dimethylformamide with 2-Butanol and 2-Pentanol at Temperatures between 298.15 K and 318.15 K, American Journal of Chemistry 2019; 9(1): 1-12

Dimethylformamide + 2-pentanol (1 niz)

Table 2. Experimental densities (ρ), excess molar volume (V^E), ultrasonic velocity (u), excess ultrasonic velocity (u^E), excess isentropic compressibility values (K_S^E), acoustical impedance (Z^E) of the systems DMF (x_1) + 2-BuOH (x_2) and + 2-PnOH (x_2) for different molar ratios at different temperatures

x_1	ρ (kgm^{-3})	u (ms^{-1})	V^E (m^{3}mol^{-1})	u^E (ms^{-1})	K_s^Ex10^{-12} (Pa^{-1})	Z^Ex10^{-3} (kgm^{-2}s^{-1})
			T=313.15K			
			DMF+2-PnOH			
0.0000	792.841	1179.60	0.000000	0.0000	0.0000	0.0000
0.0506	797.301	1190.40	0.071086	2.8087	-8.3689	-4.6638
0.0997	802.145	1200.00	0.087278	4.4209	-14.7562	-9.1830
0.1515	807.889	1210.89	0.041528	6.6232	-22.1885	-12.4676
0.2000	813.304	1221.96	0.016129	9.3051	-29.3060	-14.6737
0.2497	819.826	1232.94	-0.110194	11.4227	-35.9432	-15.9083
0.2909	824.859	1242.04	-0.148027	12.9621	-40.1992	-17.2890
0.3510	832.691	1253.97	-0.231902	13.4983	-43.8218	-19.6430
0.3999	839.281	1263.67	-0.297398	13.5925	-45.8007	-21.1512
0.4494	845.990	1273.99	-0.341722	13.8660	-47.3398	-22.0753
0.5003	853.098	1284.59	-0.383305	13.7794	-47.9155	-22.6225
0.5491	859.934	1295.21	-0.399088	13.7970	-47.8461	-22.5848
0.6002	867.282	1306.19	-0.408455	13.2806	-46.5483	-22.2636
0.6500	874.535	1316.59	-0.399939	12.0606	-43.8210	-21.9482
0.7000	881.790	1327.01	-0.361977	10.4042	-39.8625	-21.5057
0.7499	889.234	1337.29	-0.317994	8.1523	-34.6740	-20.7873
0.7999	896.660	1347.92	-0.244472	5.7606	-28.5234	-19.6409
0.8500	904.314	1357.53	-0.164827	1.8245	-20.2973	-18.9713
0.9000	912.550	1368.39	-0.112906	-1.3841	-12.2571	-16.1962
0.9500	920.623	1379.91	-0.018580	-4.5037	-3.2498	-12.8595
1.0000	929.906	1399.66	0.000000	0.0000	0.0000	0.0000

Aklima Jahan, Md. Ashraful Alam, Md. Rabiul Awual, Shamim Akhtar, Volumetric and Acoustic Properties for Binary Mixtures of N,N-Dimethylformamide with 2-Butanol and 2-Pentanol at Temperatures between 298.15 K and 318.15 K, American Journal of Chemistry 2019; 9(1): 1-12

Dimethylformamide + 2-pentanol (1 niz)

Table 2. Experimental densities (ρ), excess molar volume (V^E), ultrasonic velocity (u), excess ultrasonic velocity (u^E), excess isentropic compressibility values (K_S^E), acoustical impedance (Z^E) of the systems DMF (x_1) + 2-BuOH (x_2) and + 2-PnOH (x_2) for different molar ratios at different temperatures

x_1	ρ (kgm^{-3})	u (ms^{-1})	V^E (m^{3}mol^{-1})	u^E (ms^{-1})	K_s^Ex10^{-12} (Pa^{-1})	Z^Ex10^{-3} (kgm^{-2}s^{-1})
			T=318.15K			
			DMF+2-PnOH			
0.0000	788.491	1162.00	0.000000	0.0000	0.0000	0.0000
0.0506	792.992	1172.42	0.063641	2.5429	-8.3967	-4.6957
0.0997	797.854	1182.75	0.075266	4.9992	-16.3891	-8.4031
0.1515	803.584	1193.40	0.028572	7.0853	-23.9488	-11.6879
0.2000	809.325	1203.95	-0.041647	9.3665	-31.1538	-13.7322
0.2497	815.449	1214.93	-0.119938	11.6099	-37.8479	-15.2708
0.2909	820.427	1223.41	-0.153244	12.6365	-41.5590	-17.0755
0.3510	828.400	1235.61	-0.257961	13.6040	-46.0487	-18.8185
0.3999	834.982	1245.27	-0.325098	13.7938	-48.2203	-20.1975
0.4494	841.643	1255.77	-0.366254	14.3889	-50.1649	-20.8589
0.5003	848.706	1266.24	-0.405250	14.3226	-50.7338	-21.4001
0.5491	855.509	1276.79	-0.419593	14.4190	-50.7105	-21.3020
0.6002	862.702	1287.61	-0.414704	13.9036	-49.2169	-21.1521
0.6500	869.909	1297.73	-0.403766	12.5659	-46.2000	-20.9808
0.7000	877.203	1307.79	-0.371836	10.7178	-41.8991	-20.6457
0.7499	884.709	1317.31	-0.335802	7.8802	-35.9527	-20.3657
0.7999	892.198	1327.81	-0.269640	5.5391	-29.6498	-19.1054
0.8500	899.814	1337.92	-0.187512	2.2902	-21.6909	-17.8904
0.9000	908.012	1348.71	-0.133515	-0.7943	-13.3897	-15.0978
0.9500	916.149	1359.95	-0.045789	-3.9927	-3.9702	-11.7989
1.0000	925.096	1378.98	0.000000	0.00000	0.00000	0.00000

Aklima Jahan, Md. Ashraful Alam, Md. Rabiul Awual, Shamim Akhtar, Volumetric and Acoustic Properties for Binary Mixtures of N,N-Dimethylformamide with 2-Butanol and 2-Pentanol at Temperatures between 298.15 K and 318.15 K, American Journal of Chemistry 2019; 9(1): 1-12

1,4 Dioxane + Bromo Benzene (1 niz)

Table 2. Comparison of Experimental and Prediction of Excess molar volume, kinematic viscosities by Redlitch-Kister nonlinear model for 1,4 Dioxane + Bromo Benzene at 303.15K

	Experimental				Prediction			
x_1	ρ/g·cm^{-3}	η/mPa·s	V^E /cm^3·mol^{-1}	$\gamma_{expt\,(C.S)}$	V^E (cm^3·mol^{-1})	ΔV^E	η/mPa·s	$\Delta\eta$
0.0000	1.4817	1.0201	0.0000	0.6863	0.0000	0.0000	1.0201	0.0000
0.1047	1.4432	1.0255	0.7354	0.7106	0.7125	0.0229	1.0182	-0.0073
0.2083	1.3962	1.0302	1.1127	0.7379	0.8569	0.2558	1.0202	-0.0100
0.3109	1.3468	1.0333	1.5952	0.7672	1.4569	0.1383	1.0200	-0.0133
0.4124	1.2965	1.0333	2.0647	0.7919	1.7569	0.3078	1.0123	-0.0210
0.5128	1.2496	1.0355	2.1888	0.8229	1.9895	0.1993	1.0095	-0.0260
0.6122	1.1999	1.0450	2.4288	0.8655	2.3526	0.0762	1.0213	-0.0237
0.7106	1.1578	1.0569	1.9581	0.9129	1.9465	0.0116	1.0386	-0.0183
0.8080	1.1125	1.0688	1.6402	0.9607	1.6301	0.0101	1.0543	-0.0145
0.9045	1.0698	1.0800	1.1176	1.0095	1.1134	0.0042	1.0712	-0.0088
1.0000	1.0271	1.0958	0.0000	1.0669	0.0000	0.0000	1.0958	0.0000

R. Ramesh, A. Hisyam, A.Z. Sulaiman, K. Ramesh, Measurement and Predict Thermo Physical Properties of Binary Liquid Mixtures at Various Temperatures Using Redlich-Kister Model. Chemical Engineering and Science, 2014, Vol. 2, No. 2, 18-23

1,4 Dioxane + Bromo Benzene (1 niz)

Table 3. Comparison of Experimental and Prediction of Excess molar volume, kinematic viscosities by Redlitch-Kister nonlinear model for 1,4 Dioxane + Bromo Benzene at 308.15K

	Experimental				Prediction			
x_1	ρ/g·cm^{-3}	η/mPa·s	V^E /cm^3·mol^{-1}	$\gamma_{expt\,(CS)}$	V^E (cm^3·mol^{-1})	ΔV^E	η/mPa·s	$\Delta\eta$
0.0000	1.4682	0.9815	0.0000	0.6685	0.0000	0.0000	0.9815	0.0000
0.1047	1.4267	0.9785	0.5469	0.6858	0.5407	0.0062	0.9844	-0.0059
0.2083	1.3819	0.9795	0.8984	0.7088	0.8394	0.0590	0.9874	-0.0079
0.3109	1.3356	0.9886	1.2546	0.7335	1.1785	0.0761	0.9985	-0.0099
0.4124	1.2826	0.9875	1.7914	0.7562	1.6934	0.0980	1.0031	-0.0156
0.5128	1.2373	0.9735	2.0053	0.7808	1.9620	0.0433	0.9932	-0.0197
0.6122	1.1899	0.9555	1.9880	0.8187	1.8028	0.1852	0.9739	-0.0184
0.7106	1.1499	0.9589	1.6459	0.8618	1.5106	0.1353	0.9730	-0.0141
0.8080	1.1036	0.9705	1.3838	0.9011	1.2973	0.0865	0.9810	-0.0105
0.9045	1.0596	0.9717	0.7805	0.9445	0.7711	0.0094	0.9778	-0.0061
1.0000	1.0169	1.0094	0.0000	0.9927	0.0000	0.0000	1.0094	0.0000

R. Ramesh, A. Hisyam, A.Z. Sulaiman, K. Ramesh, Measurement and Predict Thermo Physical Properties of Binary Liquid Mixtures at Various Temperatures Using Redlich-Kister Model. Chemical Engineering and Science, 2014, Vol. 2, No. 2, 18-23

1,4 Dioxane + Bromo Benzene (1 niz)

Table 4. Comparison of Experimental and Prediction of Excess molar volume, kinematic viscosities by Redlitch-Kister nonlinear model for 1,4 Dioxane + Bromo Benzene at 313.15K

	Experimental				Prediction			
x_1	ρ/g·cm^{-3}	η/mPa·s	V^E /cm^3·mol^{-1}	$\gamma_{expt\,(C.S)}$	V^E (cm^3·mol^{-1})	ΔV^E	η/mPa·s	$\Delta\eta$
0.0000	1.4549	0.9550	0.0000	0.6564	0.0000	0.0000	0.9550	0.0000
0.1047	1.4129	0.9429	0.3930	0.6700	0.2986	0.0944	0.9496	-0.0067
0.2083	1.3698	0.9489	0.6855	0.6980	0.5167	0.1688	0.9712	-0.0223
0.3109	1.3256	0.9480	1.1992	0.7182	1.0909	0.1083	0.9982	-0.0502
0.4124	1.2775	0.9467	1.3704	0.7411	1.1593	0.2111	1.0243	-0.0776
0.5128	1.2308	0.9370	1.6700	0.7613	1.4501	0.2199	1.0280	-0.0910
0.6122	1.1873	0.9162	1.7245	0.7746	1.3576	0.3669	1.0148	-0.0986
0.7106	1.1467	0.9011	1.1760	0.7958	1.1098	0.0662	1.0153	-0.1142
0.8080	1.1026	0.9203	0.8960	0.8457	0.8637	0.0323	1.0411	-0.1208
0.9045	1.0568	0.9145	0.6064	0.8757	0.5359	0.0705	0.9882	-0.0737
1.0000	1.0128	0.9447	0.0000	0.9327	0.0000	0.0000	0.9447	0.0000

R. Ramesh, A. Hisyam, A.Z. Sulaiman, K. Ramesh, Measurement and Predict Thermo Physical Properties of Binary Liquid Mixtures at Various Temperatures Using Redlich-Kister Model. Chemical Engineering and Science, 2014, Vol. 2, No. 2, 18-23

1,4 Dioxane + Ethyl Benzene (1 niz)

Table 5. Comparison of Experimental and Prediction of Excess molar volume, kinematic viscosities by Redlitch-Kister nonlinear model for 1,4 Dioxane + Ethyl Benzene at 303.15K

	Experimental				Prediction			
x_1	ρ/g·cm^{-3}	η/mPa·s	V^E /cm^3·mol^{-1}	$\gamma_{expt(CS)}$	V^E (cm^3·mol^{-1})	ΔV^E	η/mPa·s	$\Delta\eta$
0.0000	0.8662	0.6020	0.0000	0.7042	0.0000	0.0000	0.6020	0.0000
0.1047	0.9068	0.6514	0.7737	0.7193	0.7495	0.0242	0.6854	-0.0340
0.2083	0.9135	0.6663	1.1728	0.7298	1.1297	0.0431	0.7287	-0.0624
0.3109	0.9218	0.6934	1.4122	0.7522	1.3095	0.1027	0.7792	-0.0858
0.4124	0.9301	0.7161	1.6919	0.7689	1.5621	0.1298	0.8284	-0.1123
0.5128	0.9399	0.7489	1.8462	0.7924	1.6591	0.1871	0.8740	-0.1251
0.6122	0.9534	0.7925	1.6595	0.8302	1.5415	0.1180	0.9149	-0.1224
0.7106	0.9687	0.8390	1.3748	0.8677	1.3663	0.0085	0.9593	-0.1203
0.8080	0.9876	0.8986	0.8473	0.9236	0.8404	0.0069	1.0137	-0.1151
0.9045	1.0069	0.9711	0.4005	0.9722	0.3965	0.0040	1.0404	-0.0693
1.0000	1.0271	1.0958	0.0000	1.0669	0.0000	0.0000	1.0958	0.0000

R. Ramesh, A. Hisyam, A.Z. Sulaiman, K. Ramesh, Measurement and Predict Thermo Physical Properties of Binary Liquid Mixtures at Various Temperatures Using Redlich-Kister Model. Chemical Engineering and Science, 2014, Vol. 2, No. 2, 18-23

1,4 Dioxane + Ethyl Benzene (1 niz)

Table 6. Comparison of Experimental and Prediction of Excess molar volume, kinematic viscosities by Redlitch-Kister nonlinear model for 1,4 Dioxane + Ethyl Benzene at 308.15K

	Experimental				Prediction			
x_1	ρ/g·cm^{-3}	η/mPa·s	V^E /cm^3·mol^{-1}	$\gamma_{expt(C.S)}$	V^E (cm^3·mol^{-1})	ΔV^E	η/mPa·s	$\Delta\eta$
0.0000	0.8595	0.5893	0.0000	0.6855	0.0000	0.0000	0.5893	0.0000
0.1047	0.8948	0.6220	0.6049	0.6951	0.5886	0.0163	0.6531	-0.0311
0.2083	0.9030	0.6399	0.8638	0.7086	0.8166	0.0472	0.6897	-0.0498
0.3109	0.9118	0.6665	1.0935	0.7310	1.0421	0.0514	0.7336	-0.0671
0.4124	0.9207	0.6844	1.3569	0.7433	1.3240	0.0329	0.7782	-0.0938
0.5128	0.9310	0.7073	1.5074	0.7597	1.3972	0.1102	0.8165	-0.1092
0.6122	0.9445	0.7421	1.3707	0.7857	1.3197	0.0510	0.8504	-0.1083
0.7106	0.9602	0.7874	1.0924	0.8200	1.0521	0.0403	0.8958	-0.1084
0.8080	0.9786	0.8440	0.6535	0.8625	0.6520	0.0015	0.9523	-0.1083
0.9045	0.9976	0.8858	0.2830	0.8879	0.2827	0.0003	0.9539	-0.0681
1.0000	1.0169	1.0095	0.0000	0.9927	0.0000	0.0000	1.0095	0.0000

R. Ramesh, A. Hisyam, A.Z. Sulaiman, K. Ramesh, Measurement and Predict Thermo Physical Properties of Binary Liquid Mixtures at Various Temperatures Using Redlich-Kister Model. Chemical Engineering and Science, 2014, Vol. 2, No. 2, 18-23

1,4 Dioxane + Ethyl Benzene (1 niz)

Table 7. Comparison of Experimental and Prediction of Excess molar volume, kinematic viscosities by Redlitch-Kister nonlinear model for 1,4 Dioxane + Ethyl Benzene at 313.15K

	Experimental				Prediction			
x_1	ρ/g·cm^{-3}	η/mPa·s	V^E /cm^3·mol^{-1}	$\gamma_{expt\,(C.S)}$	V^E (cm^3·mol^{-1})	ΔV^E	η/mPa·s	$\Delta\eta$
0.0000	0.8519	0.5699	0.0000	0.6690	0.0000	0.0000	0.5699	0.0000
0.1047	0.8615	0.5957	0.3975	0.6812	0.0022	0.3953	0.6099	-0.0142
0.2083	0.8725	0.6161	0.6663	0.6910	0.5167	0.1496	0.6462	-0.0301
0.3109	0.8845	0.6379	0.9803	0.7100	0.7409	0.2394	0.6859	-0.0480
0.4124	0.8974	0.6600	1.0629	0.7266	0.8593	0.2036	0.7278	-0.0678
0.5128	0.9120	0.6808	1.1312	0.7411	1.0501	0.0811	0.7622	-0.0814
0.6122	0.9300	0.7068	0.9261	0.7607	0.8576	0.0685	0.7962	-0.0894
0.7106	0.9498	0.7379	0.6624	0.7885	0.6098	0.0526	0.8353	-0.0974
0.8080	0.9712	0.7814	0.3894	0.8099	0.3570	0.0324	0.8756	-0.0942
0.9045	0.9935	0.8539	0.1881	0.8455	0.1606	0.0275	0.9077	-0.0538
1.0000	1.0128	0.9446	0.0000	0.9327	0.0000	0.0000	0.9446	0.0000

R. Ramesh, A. Hisyam, A.Z. Sulaiman, K. Ramesh, Measurement and Predict Thermo Physical Properties of Binary Liquid Mixtures at Various Temperatures Using Redlich-Kister Model. Chemical Engineering and Science, 2014, Vol. 2, No. 2, 18-23

Methanol + Water (1 niz)

Table 1: Densities ρ, viscosities η, refractive indices n_D, excess molar volumes V^E, change of refractive indices on mixing Δn_D and viscosity deviations $\Delta\eta$, for binary mixtures at T = 292.15 K as a function of mole fractions x_1

x_1	ρ [g/cm^3]	η [mPa.s]	n_D	V^E[cm^3/moL]	$\Delta\eta$ [mPa.s]	Δn_D
Methanol (1) + water (2)						
0	0.9987	1.0226	1.3330	0	0	0
0.0287	0.9892	1.1653	1.3340	-0.0635	0.1551	0.0011
0.0588	0.9821	1.3317	1.3355	-0.1741	0.3345	0.0027
0.0903	0.9742	1.4720	1.3365	-0.2716	0.4884	0.0039
0.1232	0.9663	1.6070	1.3380	-0.3701	0.6376	0.0055
0.1650	0.9575	1.7340	1.3395	-0.5075	0.7826	0.0072
0.2092	0.9486	1.8166	1.3410	-0.6461	0.8843	0.0088
0.2563	0.9379	1.8392	1.3425	-0.7458	0.9272	0.0105
0.3064	0.9275	1.8188	1.3430	-0.8538	0.9284	0.0112
0.3785	0.9111	1.7338	1.3435	-0.9279	0.8745	0.0120
0.4785	0.8904	1.5537	1.3425	-1.0002	0.7376	0.0114
0.5911	0.8664	1.3195	1.3405	-0.9335	0.5520	0.0099
0.7192	0.8419	1.0726	1.3380	-0.7887	0.3603	0.0079
0.8661	0.8146	0.8064	1.3340	-0.4352	0.1575	0.0045
1	0.7918	0.5911	1.3290	0	0	0

Fardad Koohyar, Farhoush Kiani, Sasan Sharifi, Meysam Sharifirad, Seyed Hamed Rahmanpour, Study on the Change of Refractive Index on Mixing, Excess Molar Volume and Viscosity Deviation for Aqueous Solution of Methanol, Ethanol, Ethylene Glycol, 1-Propanol and 1, 2, 3-Propantriol at T = 292.15 K and Atmospheric Pressure. September 2012, Research Journal of Applied Sciences, Engineering and Technology 4(17):3095-3101

Ethanol + Water (1 niz)

Table 1: Densities ρ, viscosities η, refractive indices n_D, excess molar volumes V^E, change of refractive indices on mixing Δn_D and viscosity deviations $\Delta\eta$, for binary mixtures at T = 292.15 K as a function of mole fractions x_1

x_1	ρ [g/cm^3]	η [mPa.s]	n_D	V^E[cm^3/moL]	$\Delta\eta$ [mPa.s]	Δn_D
Ethanol (1) + water (2)						
0	0.9987	1.0226	1.3330	0	0	0
0.0201	0.9896	1.2281	1.3360	-0.0732	0.2014	0.0024
0.0416	0.9822	1.5008	1.3395	-0.1829	0.4697	0.0053
0.0645	0.9749	1.8260	1.3430	-0.2991	0.7902	0.0082
0.0890	0.9684	2.1431	1.3470	-0.4388	1.1022	0.0115
0.1207	0.9605	2.4781	1.3510	-0.6144	1.4307	0.0146
0.1554	0.9506	2.7282	1.3545	-0.7546	1.6737	0.0171
0.1933	0.9389	2.8270	1.3575	-0.8540	1.7648	0.0190
0.2350	0.9271	2.8508	1.3600	-0.9525	1.7797	0.0203
0.2975	0.9105	2.7870	1.3620	-1.0579	1.7034	0.0205
0.3894	0.8875	2.4801	1.3640	-1.1007	1.3776	0.0199
0.5013	0.8631	2.1491	1.3655	-1.0445	1.0237	0.0182
0.6404	0.8385	1.8061	1.3660	-0.8976	0.6522	0.0147
0.8180	0.8123	1.4735	1.3645	-0.5263	0.2831	0.0082
1	0.7905	1.2277	1.3615	0	0	0

Fardad Koohyar, Farhoush Kiani, Sasan Sharifi, Meysam Sharifirad, Seyed Hamed Rahmanpour, Study on the Change of Refractive Index on Mixing, Excess Molar Volume and Viscosity Deviation for Aqueous Solution of Methanol, Ethanol, Ethylene Glycol, 1-Propanol and 1, 2, 3-Propantriol at T = 292.15 K and Atmospheric Pressure. September 2012, Research Journal of Applied Sciences, Engineering and Technology 4(17):3095-3101

Ethylene glycol+ Water (1 niz)

Table 1: Densities ρ, viscosities η, refractive indices n_D, excess molar volumes V^E, change of refractive indices on mixing Δn_D and viscosity deviations $\Delta\eta$, for binary mixtures at T = 292.15 K as a function of mole fractions x_1

x_1	ρ [g/cm^3]	η [mPa.s]	n_D	V^E[cm^3/moL]	$\Delta\eta$ [mPa.s]	Δn_D
Ethylene Glycol (1) + water (2)						
0	0.9987	1.0226	1.3330	0	0	0
0.0059	1.0005	1.0455	1.3350	-0.0052	-0.0928	0.0014
0.0151	1.0043	1.1258	1.3375	-0.0068	-0.1929	0.0030
0.0246	1.0084	1.2101	1.3405	-0.0251	-0.2948	0.0050
0.0381	1.0135	1.3500	1.3445	-0.0419	-0.4196	0.0077
0.0524	1.0186	1.5004	1.3485	-0.0591	-0.5496	0.0103
0.0676	1.0242	1.6592	1.3525	-0.0867	-0.6889	0.0127
0.1014	1.0351	2.0454	1.3605	-0.1366	-0.9654	0.0174
0.1403	1.0458	2.5371	1.3685	-0.1849	-1.2364	0.0215
0.1857	1.0566	3.1645	1.3770	-0.2379	-1.4992	0.0254
0.2392	1.0669	3.9795	1.3850	-0.2826	-1.7332	0.0281
0.2697	1.0718	4.4758	1.3890	-0.2999	-1.8349	0.0290
0.3033	1.0763	5.0231	1.3930	-0.3063	-1.9464	0.0297

Fardad Koohyar, Farhoush Kiani, Sasan Sharifi, Meysam Sharifirad, Seyed Hamed Rahmanpour, Study on the Change of Refractive Index on Mixing, Excess Molar Volume and Viscosity Deviation for Aqueous Solution of Methanol, Ethanol, Ethylene Glycol, 1-Propanol and 1, 2, 3-Propantriol at T = 292.15 K and Atmospheric Pressure. September 2012, Research Journal of Applied Sciences, Engineering and Technology 4(17):3095-3101

1-propanol+ Water (1 niz)

Table 1: Densities ρ, viscosities η, refractive indices n_D, excess molar volumes V^E, change of refractive indices on mixing Δn_D and viscosity deviations $\Delta\eta$, for binary mixtures at T = 292.15 K as a function of mole fractions x_1

x_1	ρ [g/cm^3]	η [mPa.s]	n_D	V^E[cm^3/moL]	$\Delta\eta$ [mPa.s]	Δn_D
1-Propanol (1) + water (2)						
0	0.9987	1.0226	1.3330	0	0	0
0.0155	0.9898	1.2679	1.3375	-0.0571	0.2258	0.0037
0.0322	0.9831	1.5788	1.3425	-0.1601	0.5156	0.0078
0.0540	0.9751	1.9872	1.3475	-0.2929	0.8964	0.0117
0.0865	0.9614	2.4333	1.3540	-0.4154	1.3015	0.0165
0.1443	0.9372	2.9016	1.3615	-0.5137	1.6969	0.0209
0.2167	0.9129	3.1705	1.3680	-0.5946	1.8744	0.0236
0.3101	0.8884	3.1877	1.3735	-0.6431	1.7737	0.0242
0.3891	0.8721	3.0826	1.3765	-0.6540	1.5689	0.0231
0.4869	0.8560	2.9167	1.3795	-0.6459	1.2795	0.0209
0.6114	0.8392	2.7274	1.3825	-0.5567	0.9331	0.0174
0.6873	0.8308	2.5971	1.3835	-0.4858	0.7070	0.0144
0.7751	0.8220	2.4734	1.3845	-0.3609	0.4725	0.0108
0.8779	0.8132	2.3510	1.3850	-0.1994	0.2203	0.0059
1	0.8045	2.2848	1.3855	0	0	0

Fardad Koohyar, Farhoush Kiani, Sasan Sharifi, Meysam Sharifirad, Seyed Hamed Rahmanpour, Study on the Change of Refractive Index on Mixing, Excess Molar Volume and Viscosity Deviation for Aqueous Solution of Methanol, Ethanol, Ethylene Glycol, 1-Propanol and 1, 2, 3-Propantriol at T = 292.15 K and Atmospheric Pressure. September 2012, Research Journal of Applied Sciences, Engineering and Technology 4(17):3095-3101

glycerol+ Water (1 niz)

Table 1: Densities ρ, viscosities η, refractive indices n_D, excess molar volumes V^E, change of refractive indices on mixing Δn_D and viscosity deviations $\Delta\eta$, for binary mixtures at T = 292.15 K as a function of mole fractions x_1

x_1	ρ [g/cm³]	η [mPa.s]	n_D	V^E[cm³/moL]	$\Delta\eta$ [mPa.s]	Δn_D
1, 2, 3-Propantriol (1) + water (2)						
0	0.9987	1.0226	1.3330	0	0	0
0.0213	1.0217	1.3174	1.3450	-0.0318	-35.2572	0.0090
0.0359	1.0363	1.5708	1.3520	-0.0604	-59.3728	0.0139
0.0466	1.0461	1.7769	1.3570	-0.0774	-77.0262	0.0174
0.0707	1.0665	2.3407	1.3675	-0.1199	-116.6879	0.0245
0.0991	1.0878	3.2093	1.3785	-0.1732	-163.2219	0.0314
0.1332	1.1090	4.6115	1.3895	-0.2143	-218.7363	0.0376
0.1748	1.1305	6.9124	1.4010	-0.2521	-285.8703	0.0432
0.2268	1.1532	11.1324	1.4130	-0.3078	-368.4440	0.0477
0.3824	1.1978	43.1006	1.4370	-0.3577	-596.1891	0.0497
0.4389	1.2088	64.7962	1.4430	-0.3516	-668.7981	0.0477
0.5892	1.2304	193.1452	1.4555	-0.2941	-778.316	0.0388
0.6922	1.2407	402.7561	1.4615	-0.2194	-753.6233	0.0302
0.8244	1.2511	804.9952	1.4675	-0.1195	-572.0404	0.0175
1	1.2619	1670.1310	1.4750	0	0	0

Fardad Koohyar, Farhoush Kiani, Sasan Sharifi, Meysam Sharifirad, Seyed Hamed Rahmanpour, Study on the Change of Refractive Index on Mixing, Excess Molar Volume and Viscosity Deviation for Aqueous Solution of Methanol, Ethanol, Ethylene Glycol, 1-Propanol and 1, 2, 3-Propantriol at T = 292.15 K and Atmospheric Pressure. September 2012, Research Journal of Applied Sciences, Engineering and Technology 4(17):3095-3101

m-xylene + 1-propanol (1 niz)

Table 1—Mole fraction of *m*-xylene (X_1) and excess volume (V^E) for the binary mixtures of *m*-xylene with 1-alkanols at 303.15 K

Mole fraction (X_1) of *m*-xylene	$V^E/m^3\ mol^{-1}$
m-Xylene+1-propanol	
0.0452	–0.003
0.0922	–0.007
0.1144	–0.009
0.1475	–0.011
0.2179	–0.012
0.2878	–0.008
0.3305	–0.002
0.4332	0.020
0.5541	0.058
0.6122	0.078
0.7172	0.106
0.7810	0.113
0.8512	0.105
0.9084	0.082
0.9526	0.050

C.L. Prabhavathi, K. Sivakumar, P. Venkateswarlu, G.K. Raman, Volumetric and ultrasonic study of binary liquid mixtures of m-xylene with 1-alkanols at 303.15 K, Indian Journal of Chemistry 43A February 2004, pp. 294-298

m-xylene + 1-butanol (1 niz)

Table 1—Mole fraction of *m*-xylene (X_1) and excess volume (V^E) for the binary mixtures of *m*-xylene with 1-alkanols at 303.15 K

Mole fraction (X_1) of *m*-xylene	V^E/m^3 mol^{-1}
m-Xylene+1-butanol	
0.0525	–0.007
0.0947	–0.009
0.1211	–0.008
0.1520	–0.006
0.2161	0.003
0.2502	0.010
0.3460	0.032
0.4050	0.046
0.4880	0.064
0.5460	0.074
0.6065	0.081
0.6900	0.084
0.7434	0.080
0.8120	0.069
0.8565	0.058

C.L. Prabhavathi, K. Sivakumar, P. Venkateswarlu, G.K. Raman, Volumetric and ultrasonic study of binary liquid mixtures of m-xylene with 1-alkanols at 303.15 K, Indian Journal of Chemistry 43A February 2004, pp. 294-298

m-xylene + 1-pentanol (1 niz)

Table 1—Mole fraction of *m*-xylene (X_1) and excess volume (V^E) for the binary mixtures of *m*-xylene with 1-alkanols at 303.15 K

Mole fraction (X_1) of *m*-xylene	V^E/m^3 mol^{-1}
m-Xylene+1-pentanol	
0.0637	–0.003
0.0990	–0.005
0.1351	–0.006
0.1581	–0.005
0.2122	–0.004
0.2561	–0.001
0.3506	0.012
0.4356	0.029
0.5026	0.047
0.6190	0.078
0.6792	0.091
0.7529	0.100
0.8020	0.099
0.8516	0.091
0.9411	0.050

C.L. Prabhavathi, K. Sivakumar, P. Venkateswarlu, G.K. Raman, Volumetric and ultrasonic study of binary liquid mixtures of m-xylene with 1-alkanols at 303.15 K, Indian Journal of Chemistry 43A February 2004, pp. 294-298

No.	Formula	Molar Mass	CAS Registry Number	Name
1	C_2H_6O	46.069	64-17-5	Ethanol
2	H_2O	18.015	7732-18-5	Water

Constant Value

Temperature	298.150	K

Data Table

Excess Volume [cm^3/mol]	x_1 [mol/mol]
-0.0500	0.01280
-0.0880	0.02130
-0.1510	0.03410
-0.2340	0.04960
-0.3200	0.06510
-0.4090	0.08070
-0.4870	0.09540
-0.5750	0.11310
-0.6420	0.12780
-0.7500	0.15600
-0.8840	0.20380
-0.9270	0.22670
-0.9860	0.26310
-1.0600	0.35050
-1.0680	0.39540
-1.0670	0.46190
-0.9990	0.57450
-0.6780	0.78050
-0.4540	0.86650
-0.2220	0.93730

Reference

Source
Grolier J.-P.E.; Wilhelm E.: Excess Volumes and Excess Heat Capacities of Water + Ethanol at 298.15 K. Fluid Phase Equilib. 6 (1981) 283-287

No.	Formula	Molar Mass	CAS Registry Number	Name
1	C_2H_6O	46.069	64-17-5	Ethanol
2	H_2O	18.015	7732-18-5	Water

Search the DDB for all data of this mixture

Constant Value

Temperature	298.150	K
Pressure	0.400	bar

Data Table

Excess Volume [cm^3/mol]	x_1 [mol/mol]
-0.0400	0.01060
-0.0910	0.02160
-0.1490	0.03330
-0.2140	0.04550
-0.2880	0.05830
-0.3600	0.07180
-0.4420	0.08610
-0.5220	0.10120
-0.5970	0.11710
-0.6720	0.13400
-0.8020	0.17110
-0.9080	0.21320
-0.9890	0.26140
-1.0410	0.31710
-1.0690	0.36510
-1.0800	0.41940
-1.0800	0.45990
-1.0650	0.50430
-1.0310	0.55330
-0.9830	0.60760
-0.8990	0.66810
-0.8480	0.70090
-0.7830	0.73590
-0.7140	0.77300
-0.6160	0.81250
-0.5050	0.85470
-0.3710	0.89980
-0.2040	0.94810

Reference

Source
Ott J.B.; Sipowska J.T.; Gruszkiewicz M.S.; Woolley A.T.: Excess Volumes for (Ethanol + Water) at the Temperatures (298.15 and 348.15) K and Pressures (0.4, 5, and 15) MPa and at the Temperature 323.15 K and Pressures (5 and 15) MPa. J.Chem.Thermodyn. 25 (1993) 307-318

No.	Formula	Molar Mass	CAS Registry Number	Name
1	C_2H_6O	46.069	64-17-5	Ethanol
2	H_2O	18.015	7732-18-5	Water

Search the DDB for all data of this mixture

Constant Value

Temperature	298.150	K
Pressure	5.000	bar

Data Table

Excess Volume [cm^3/mol]	x_1 [mol/mol]
-0.0600	0.01610
-0.0830	0.02170
-0.1410	0.03340
-0.2040	0.04560
-0.2720	0.05850
-0.3420	0.07200
-0.4220	0.08630
-0.4990	0.10150
-0.5750	0.11740
-0.7470	0.16180
-0.8770	0.21370
-0.9550	0.26190
-1.0080	0.31780
-1.0370	0.36580
-1.0430	0.40120
-1.0400	0.46060
-1.0230	0.50500
-0.9910	0.55400
-0.9360	0.60820
-0.8650	0.66870
-0.8110	0.70160
-0.7550	0.73650
-0.5920	0.81300
-0.4850	0.85510
-0.3520	0.90010
-0.1910	0.94820

Reference

Source
Ott J.B.; Sipowska J.T.; Gruszkiewicz M.S.; Woolley A.T.: Excess Volumes for (Ethanol + Water) at the Temperatures (298.15 and 348.15) K and Pressures (0.4, 5, and 15) MPa and at the Temperature 323.15 K and Pressures (5 and 15) MPa. J.Chem.Thermodyn. 25 (1993) 307-318

No.	Formula	Molar Mass	CAS Registry Number	Name
1	C_3H_6O	58.080	67-64-1	Acetone
2	H_2O	18.015	7732-18-5	Water

Search the DDB for all data of this mixture

Constant Value

Temperature	298.150 K

Data Table

Excess Volume [cm^3/mol]	x_1 [mol/mol]
-0.012686	0.001785
-0.019384	0.002712
-0.03173	0.004424
-0.04505	0.006209
-0.06632	0.009501
-0.09672	0.013088
-0.11891	0.016004
-0.2724	0.03601
-0.4440	0.05888
-0.5832	0.07864
-0.7166	0.09977
-0.8615	0.12458
-0.9869	0.15078
-1.1417	0.18643
-1.2774	0.23036
-1.4053	0.28975
-1.4563	0.32808
-1.4798	0.36523
-1.4776	0.45618
-1.4430	0.49521
-1.3312	0.57798
-1.0862	0.68968
-0.9984	0.72064
-0.5985	0.84261

Reference

Source
Boje L.; Hvidt A.: Densities of aqueous mixtures of non-electrolytes. J.Chem.Thermodyn. 3 (1971) 663-673

No.	Formula	Molar Mass	CAS Registry Number	Name
1	C_3H_6O	58.080	67-64-1	Acetone
2	H_2O	18.015	7732-18-5	Water

Search the DDB for all data of this mixture

Constant Value

Temperature	298.150 K

Data Table

Excess Volume [cm^3/mol]	x_1 [mol/mol]
-0.4393	0.05830
-0.9527	0.14600
-1.1891	0.20560
-1.4207	0.30200
-1.4914	0.45970
-1.4106	0.52660
-1.2375	0.61810
-0.8268	0.76990
-0.6726	0.81950

Reference

Source
Noda K.; Ohashi M.; Ishida K.: Viscosities and Densities at 298.15 K for Mixtures of Methanol, Acetone, and Water. J.Chem.Eng.Data 27 (1982) 326-328

No.	Formula	Molar Mass	CAS Registry Number	Name
1	C_3H_6O	58.080	67-64-1	Acetone
2	H_2O	18.015	7732-18-5	Water

Search the DDB for all data of this mixture

Constant Value

Temperature	298.150 K

Data Table

Excess Volume [cm^3/mol]	x_1 [mol/mol]
-0.6700	0.10000
-1.2000	0.20000
-1.4400	0.30000
-1.5000	0.40000
-1.6500	0.50000
-1.3400	0.60000
-1.0500	0.70000
-0.8800	0.80000
-0.4400	0.90000

Reference

Source
Winnick J.; Kong J.: Excess Volumes of Mixtures Containing Polar Liquids. Ind.Eng.Chem. Fundam. 13 (1974) 292-293

Furan + ethanol (6 nizova)

Table 3: Densities (ρ) and excess molar volumes (v^E) for furan *(1)* + ethanol *(2)* binary system as a function of furan mole fraction at atmospheric pressure (U_p = ±0.03 kPa, $U_{x1}=\pm2\times10^{-5}$, $U_T=\pm0.01$K, $U_\rho=\pm10^{-5}$ g.cm^{-3}, $U_{VE}=\pm0.003$ cm^3.mol^{-1}(k=2)).

x_1	d /g.cm^{-3}	V^E /cm^3.mol^{-1}	d /g.cm^{-3}	V^E /cm^3.mol^{-1}	d /g.cm^{-3}	V^E /cm^3.mol^{-1}	d /g.cm^{-3}	V^E /cm^3.mol^{-1}	d /g.cm^{-1}	V^E /cm^3.mol^{-1}	d /g.cm^{-3}	V^E /cm^3.mol^{-1}
	T=278.15 K		T=283.15 K		T=288.15 K		T=293.15 K		T=298.15 K		T=303.15 K	
0.0248	0.8075	-0.045	0.80322	-0.044	0.79889	-0.044	0.79454	-0.044	0.79018	-0.045	0.7858	-0.044
0.0501	0.8128	-0.075	0.80839	-0.074	0.80398	-0.074	0.79956	-0.074	0.79507	-0.071	0.7906	-0.069
0.0748	0.8177	-0.095	0.81321	-0.092	0.80871	-0.091	0.80420	-0.090	0.79967	-0.089	0.7951	-0.085
0.1005	0.8227	-0.113	0.81817	-0.110	0.81359	-0.108	0.80900	-0.107	0.80437	-0.104	0.7997	-0.099
0.1505	0.8323	-0.149	0.82763	-0.145	0.82289	-0.141	0.81812	-0.137	0.81333	-0.134	0.8085	-0.130
0.2027	0.8419	-0.169	0.83705	-0.164	0.83215	-0.159	0.82723	-0.155	0.82227	-0.150	0.8172	-0.140
0.2549	0.8512	-0.186	0.84622	-0.180	0.84116	-0.174	0.83607	-0.168	0.83093	-0.160	0.8257	-0.151
0.2999	0.8590	-0.194	0.85386	-0.187	0.84867	-0.180	0.84343	-0.172	0.83820	-0.167	0.8328	-0.154
0.3526	0.8678	-0.194	0.86251	-0.187	0.85716	-0.179	0.85178	-0.170	0.84634	-0.160	0.8408	-0.149
0.3999	0.8754	-0.185	0.86996	-0.177	0.86449	-0.169	0.85897	-0.159	0.85339	-0.148	0.8478	-0.135
0.4500	0.8833	-0.177	0.8777	-0.168	0.87209	-0.158	0.86643	-0.148	0.86079	-0.142	0.8549	-0.123
0.4998	0.8909	-0.163	0.88518	-0.155	0.87943	-0.145	0.87364	-0.134	0.86780	-0.123	0.8619	-0.108
0.4998	0.8909	-0.167	0.88523	-0.158	0.87949	-0.148	0.87369	-0.137	0.86785	-0.126	0.8619	-0.111
0.5499	0.8983	-0.148	0.89251	-0.139	0.88664	-0.129	0.88071	-0.117	0.87474	-0.106	0.8687	-0.090
0.6000	0.9055	-0.128	0.8996	-0.118	0.89361	-0.108	0.88756	-0.096	0.88145	-0.084	0.8753	-0.068
0.6500	0.9126	-0.111	0.90659	-0.102	0.90047	-0.090	0.89430	-0.079	0.88807	-0.067	0.8818	-0.051
0.7009	0.9197	-0.090	0.91349	-0.080	0.90726	-0.069	0.90097	-0.058	0.89462	-0.046	0.8882	-0.032
0.7500	0.9263	-0.069	0.92003	-0.060	0.91369	-0.050	0.90729	-0.039	0.90082	-0.028	0.8943	-0.017
0.8000	0.9329	-0.050	0.92657	-0.042	0.92012	-0.033	0.91362	-0.023	0.90705	-0.013	0.9004	0.001
0.8499	0.9394	-0.031	0.93296	-0.024	0.92642	-0.016	0.91981	-0.007	0.91314	0.002	0.9064	0.014
0.9000	0.9459	-0.014	0.93929	-0.008	0.93266	-0.002	0.92596	0.005	0.91919	0.013	0.9124	0.021
0.9250	0.9491	-0.009	0.94245	-0.004	0.93577	0.002	0.92903	0.007	0.92221	0.014	0.9153	0.023
0.9500	0.9523	-0.007	0.94562	-0.003	0.93890	0.001	0.93211	0.006	0.92527	0.010	0.9183	0.017
0.9750	0.9554	-0.002	0.94874	-0.001	0.94198	0.003	0.93517	0.005	0.92830	0.006	0.9213	0.012

Christophe Coquelet, Eric Auger, Alain Valtz. Density and excess volume for four systems involving eugenol and furan. Journal of Solution Chemistry, Springer Verlag (Germany), 2019, 48 (4), pp.455-488. ff10.1007/s10953-019-00870-6ff.

Table 2 Density of each pure component studied at atmospheric pressure {$u_p=\pm0.03$ kPa, $u_T=\pm0.01$ K, $u_\rho=\pm1\times10^{-5}$ g·cm^{-3} ($k=2$)}

Eugenol		Furan		Ethanol		1-Octanol		*n*-Hexane	
T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})
273.15	1.08383	278.16	0.95856	278.16	0.80214	278.16	0.83536	283.15	0.66887
275.15	1.08206	279.14	0.95724	279.14	0.80131	279.15	0.83468	288.15	0.66442
277.16	1.08028	280.15	0.95589	280.14	0.80046	280.15	0.83400	293.14	0.65992
279.15	1.07850	281.15	0.95455	281.14	0.79962	281.15	0.83332	298.14	0.65538
281.15	1.07674	282.15	0.95320	282.14	0.79877	282.15	0.83263	303.15	0.65082
283.15	1.07497	283.15	0.95185	283.14	0.79792	283.15	0.83195	308.15	0.64621
285.15	1.07320	284.15	0.95050	284.14	0.79707	284.15	0.83126	313.15	0.64157
287.15	1.07143	285.14	0.94916	285.14	0.79622	285.15	0.83058	318.15	0.63687
289.15	1.06967	286.14	0.94780	286.14	0.79537	286.15	0.82990	323.14	0.63212
291.15	1.06791	287.14	0.94644	287.15	0.79451	287.15	0.82921		
293.15	1.06614	288.14	0.94508	288.15	0.79366	288.15	0.82853		
295.15	1.06437	289.14	0.94372	289.15	0.79281	289.15	0.82785		
297.15	1.06260	290.14	0.94235	290.15	0.79196	290.15	0.82716		
299.15	1.06084	291.14	0.94099	291.15	0.79110	291.15	0.82647		
301.16	1.05907	292.14	0.93961	292.15	0.79024	292.15	0.82578		
303.16	1.05730	293.14	0.93824	293.15	0.78939	293.15	0.82509		
305.16	1.05553	294.15	0.93687	294.15	0.78854	294.15	0.82440		
307.16	1.05376	295.15	0.93549	295.15	0.78768	295.15	0.82371		
309.16	1.05199	296.15	0.93410	296.15	0.78682	296.15	0.82302		
311.16	1.05022	297.15	0.93272	297.15	0.78596	297.15	0.82233		
313.16	1.04845	298.15	0.93133	298.15	0.78510	298.15	0.82164		
315.16	1.04668	299.15	0.92995	299.15	0.78424	299.15	0.82095		
317.16	1.04492	300.15	0.92856	300.15	0.78338	300.15	0.82025		
319.16	1.04315	301.15	0.92716	301.15	0.78251	301.15	0.81956		
321.16	1.04138	302.15	0.92576	302.15	0.78165	302.15	0.81886		
323.16	1.03961	303.15	0.92437	303.15	0.78078	303.15	0.81817		
325.16	1.03784	304.15	0.92296	304.15	0.77991	304.15	0.81747		
327.16	1.03607								
329.16	1.03430								
331.16	1.03253								
335.15	1.02898								
337.15	1.02720								
339.15	1.02542								
341.15	1.02365								
343.15	1.02187								

Furan + 1-octanol (6 nizova)

Table 5: Densities (ρ) and excess molar volumes (v^E) for furan *(1)* + 1-Octanol(2) binary system as a function of furan mole fraction at atmospheric pressure (U_p = ±0.03 kPa, U_{x1}=±2x10^{-5}, U_T=±0.01K, U_ρ=±10^{-5} g.cm^{-3}, U_{VE}=±0.003 cm^3.mol^{-1}(k=2)).

x_1	d /g.cm^{-3}	V^E /cm^3.mol^{-1}	d /g.cm^{-3}	V^E /cm^3.mol^{-1}	d /g.cm^{-3}	V^E /cm^3.mol^{-1}	d /g.cm^{-3}	V^E /cm^3.mol^{-1}	d /g.cm^{-1}	V^E /cm^3.mol^{-1}	d /g.cm^{-3}	V^E /cm^3.mol^{-1}
	T=278.15 K		T=283.15 K		T=288.15 K		T=293.15 K		T=298.15 K		T=303.15 K	
0.0134	0.8361	0.0123	0.83262	0.013	0.82918	0.013	0.82574	0.010	0.82227	0.010	0.8188	0.010
0.0256	0.8367	0.0234	0.83325	0.023	0.82979	0.024	0.82632	0.023	0.82284	0.022	0.8193	0.022
0.0506	0.8380	0.0449	0.83456	0.043	0.83106	0.045	0.82755	0.045	0.82403	0.045	0.8205	0.044
0.0739	0.8393	0.0702	0.83578	0.070	0.83225	0.071	0.82871	0.071	0.82517	0.067	0.8216	0.070
0.0995	0.8408	0.0888	0.83721	0.089	0.83365	0.089	0.83007	0.088	0.82647	0.089	0.8229	0.089
0.1495	0.8437	0.1310	0.8401	0.130	0.83645	0.132	0.83279	0.132	0.82911	0.132	0.8254	0.132
0.1999	0.8469	0.1667	0.84322	0.167	0.83948	0.170	0.83574	0.169	0.83200	0.165	0.8282	0.170
0.2512	0.8504	0.2043	0.8466	0.205	0.84278	0.206	0.83894	0.206	0.83506	0.209	0.8312	0.208
0.3042	0.8543	0.2351	0.85038	0.236	0.84644	0.240	0.84250	0.239	0.83852	0.241	0.8345	0.241
0.3501	0.8578	0.2661	0.85382	0.269	0.84980	0.271	0.84575	0.273	0.84170	0.270	0.8376	0.273
0.4043	0.8624	0.2942	0.85824	0.298	0.85409	0.301	0.84992	0.302	0.84573	0.302	0.8415	0.302
0.4511	0.8666	0.3143	0.86237	0.316	0.85810	0.320	0.85382	0.320	0.84951	0.321	0.8452	0.320
0.5000	0.8714	0.3297	0.86702	0.333	0.86263	0.336	0.85822	0.336	0.85380	0.334	0.8493	0.337
0.5529	0.8770	0.3396	0.87251	0.342	0.86797	0.345	0.86340	0.346	0.85881	0.345	0.8542	0.346
0.6016	0.8827	0.3437	0.87802	0.346	0.87332	0.350	0.86860	0.350	0.86386	0.349	0.8591	0.349
0.6500	0.8888	0.3384	0.88401	0.340	0.87915	0.343	0.87427	0.343	0.86934	0.343	0.8644	0.342
0.7000	0.8959	0.3205	0.89086	0.323	0.88581	0.325	0.88073	0.326	0.87564	0.322	0.8705	0.325
0.7499	0.9035	0.3004	0.89833	0.302	0.89307	0.304	0.88778	0.305	0.88246	0.303	0.8771	0.303
0.8010	0.9123	0.2674	0.90685	0.269	0.90135	0.272	0.89582	0.271	0.89024	0.271	0.8846	0.271
0.8500	0.9218	0.2186	0.91605	0.220	0.91029	0.222	0.90449	0.222	0.89867	0.220	0.8927	0.223
0.9010	0.9327	0.1604	0.92673	0.161	0.92067	0.163	0.91456	0.164	0.90840	0.163	0.9022	0.165
0.9250	0.9385	0.1223	0.9323	0.123	0.92608	0.125	0.91981	0.126	0.91349	0.125	0.9071	0.127
0.9500	0.9447	0.0856	0.93839	0.086	0.93199	0.088	0.92554	0.089	0.91903	0.089	0.9125	0.089
0.9750	0.9514	0.0423	0.94493	0.042	0.93835	0.043	0.93171	0.044	0.92501	0.044	0.9183	0.044

Christophe Coquelet, Eric Auger, Alain Valtz. Density and excess volume for four systems involving eugenol and furan. Journal of Solution Chemistry, Springer Verlag (Germany), 2019, 48 (4), pp.455-488. ff10.1007/s10953-019-00870-6ff.

Table 2 Density of each pure component studied at atmospheric pressure {$u_p = \pm 0.03$ kPa, $u_T = \pm 0.01$ K, $u_\rho = \pm 1 \times 10^{-5}$ g·cm^{-3} ($k=2$)}

Eugenol		Furan		Ethanol		1-Octanol		*n*-Hexane	
T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})
273.15	1.08383	278.16	0.95856	278.16	0.80214	278.16	0.83536	283.15	0.66887
275.15	1.08206	279.14	0.95724	279.14	0.80131	279.15	0.83468	288.15	0.66442
277.16	1.08028	280.15	0.95589	280.14	0.80046	280.15	0.83400	293.14	0.65992
279.15	1.07850	281.15	0.95455	281.14	0.79962	281.15	0.83332	298.14	0.65538
281.15	1.07674	282.15	0.95320	282.14	0.79877	282.15	0.83263	303.15	0.65082
283.15	1.07497	283.15	0.95185	283.14	0.79792	283.15	0.83195	308.15	0.64621
285.15	1.07320	284.15	0.95050	284.14	0.79707	284.15	0.83126	313.15	0.64157
287.15	1.07143	285.14	0.94916	285.14	0.79622	285.15	0.83058	318.15	0.63687
289.15	1.06967	286.14	0.94780	286.14	0.79537	286.15	0.82990	323.14	0.63212
291.15	1.06791	287.14	0.94644	287.15	0.79451	287.15	0.82921		
293.15	1.06614	288.14	0.94508	288.15	0.79366	288.15	0.82853		
295.15	1.06437	289.14	0.94372	289.15	0.79281	289.15	0.82785		
297.15	1.06260	290.14	0.94235	290.15	0.79196	290.15	0.82716		
299.15	1.06084	291.14	0.94099	291.15	0.79110	291.15	0.82647		
301.16	1.05907	292.14	0.93961	292.15	0.79024	292.15	0.82578		
303.16	1.05730	293.14	0.93824	293.15	0.78939	293.15	0.82509		
305.16	1.05553	294.15	0.93687	294.15	0.78854	294.15	0.82440		
307.16	1.05376	295.15	0.93549	295.15	0.78768	295.15	0.82371		
309.16	1.05199	296.15	0.93410	296.15	0.78682	296.15	0.82302		
311.16	1.05022	297.15	0.93272	297.15	0.78596	297.15	0.82233		
313.16	1.04845	298.15	0.93133	298.15	0.78510	298.15	0.82164		
315.16	1.04668	299.15	0.92995	299.15	0.78424	299.15	0.82095		
317.16	1.04492	300.15	0.92856	300.15	0.78338	300.15	0.82025		
319.16	1.04315	301.15	0.92716	301.15	0.78251	301.15	0.81956		
321.16	1.04138	302.15	0.92576	302.15	0.78165	302.15	0.81886		
323.16	1.03961	303.15	0.92437	303.15	0.78078	303.15	0.81817		
325.16	1.03784	304.15	0.92296	304.15	0.77991	304.15	0.81747		
327.16	1.03607								
329.16	1.03430								
331.16	1.03253								
335.15	1.02898								
337.15	1.02720								
339.15	1.02542								
341.15	1.02365								
343.15	1.02187								

Eugenol + 1-octanol (5 nizova)

Table 7: Densities (ρ) and excess molar volumes (V^E) for Eugenol*(1)* + 1-Octanol(2) binary system as a function of furan mole fraction at atmospheric pressure (U_p = ±0.03 kPa, U_{x1}=±2x10^{-5}, U_T=±0.01K, U_ρ=±10^{-5} g.cm^{-3}, U_{VE}=±0.003 cm^3.mol^{-1}(k=2)).

x_1	ρ/g.cm^{-3}	V^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	V^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	V^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	V^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	V^E /cm^3.mol^{-1}
	T=283.15 K		T=288.15 K		T=293.15 K		T=298.15 K		T=303.15 K	
0.0500	0.84454	-0.149	0.84104	-0.142	0.83754	-0.137	0.83403	-0.138	0.8305	-0.127
0.1001	0.85699	-0.242	0.85342	-0.233	0.84984	-0.223	0.84623	-0.215	0.8426	-0.206
0.1500	0.86955	-0.356	0.86591	-0.344	0.86224	-0.328	0.85857	-0.318	0.8549	-0.304
0.1502	0.86934	-0.310	0.86570	-0.297	0.86205	-0.285	0.85837	-0.273	0.8547	-0.259
0.2002	0.88188	-0.406	0.87817	-0.391	0.87444	-0.374	0.87069	-0.359	0.8669	-0.342
0.2502	0.89431	-0.479	0.89053	-0.461	0.88674	-0.443	0.88292	-0.425	0.8791	-0.404
0.3004	0.90676	-0.534	0.90291	-0.513	0.89905	-0.492	0.89516	-0.471	0.8913	-0.451
0.3502	0.91897	-0.562	0.91506	-0.540	0.91114	-0.518	0.90719	-0.495	0.9032	-0.473
0.4001	0.9312	-0.585	0.92723	-0.563	0.92325	-0.539	0.91925	-0.516	0.9152	-0.493
0.4003	0.93125	-0.583	0.92728	-0.561	0.92329	-0.536	0.91929	-0.513	0.9153	-0.490
0.4501	0.94351	-0.610	0.93948	-0.587	0.93545	-0.563	0.93139	-0.539	0.9273	-0.514
0.5002	0.95579	-0.619	0.95171	-0.597	0.94762	-0.572	0.94353	-0.552	0.9394	-0.525
0.5502	0.96788	-0.598	0.96379	-0.582	0.95966	-0.559	0.95550	-0.535	0.9513	-0.512
0.6000	0.97992	-0.571	0.97576	-0.551	0.97158	-0.529	0.96738	-0.506	0.9632	-0.483
0.6502	0.99207	-0.543	0.98786	-0.524	0.98364	-0.503	0.97940	-0.482	0.9752	-0.461
0.6992	1.0039	-0.509	0.99965	-0.491	0.99539	-0.472	0.99113	-0.455	0.9868	-0.434
0.7482	1.01573	-0.470	1.01144	-0.454	1.00715	-0.438	1.00284	-0.420	0.9985	-0.404
0.7984	1.02767	-0.401	1.02335	-0.388	1.01902	-0.373	1.01468	-0.358	1.0103	-0.344
0.8457	1.03902	-0.347	1.03468	-0.338	1.03032	-0.325	1.02597	-0.316	1.0216	-0.302
0.8997	1.05185	-0.265	1.04747	-0.257	1.04309	-0.249	1.03870	-0.241	1.0343	-0.233
0.9499	1.06377	-0.182	1.05938	-0.180	1.05497	-0.174	1.05057	-0.171	1.0462	-0.167

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Table 2 Density of each pure component studied at atmospheric pressure {u_p = ±0.03 kPa, u_T = ±0.01 K, u_ρ = ±1×10^{-5} g·cm^{-3} (k = 2)}

Eugenol		Furan		Ethanol		1-Octanol		*n*-Hexane	
T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})
273.15	1.08383	278.16	0.95856	278.16	0.80214	278.16	0.83536	283.15	0.66887
275.15	1.08206	279.14	0.95724	279.14	0.80131	279.15	0.83468	288.15	0.66442
277.16	1.08028	280.15	0.95589	280.14	0.80046	280.15	0.83400	293.14	0.65992
279.15	1.07850	281.15	0.95455	281.14	0.79962	281.15	0.83332	298.14	0.65538
281.15	1.07674	282.15	0.95320	282.14	0.79877	282.15	0.83263	303.15	0.65082
283.15	1.07497	283.15	0.95185	283.14	0.79792	283.15	0.83195	308.15	0.64621
285.15	1.07320	284.15	0.95050	284.14	0.79707	284.15	0.83126	313.15	0.64157
287.15	1.07143	285.14	0.94916	285.14	0.79622	285.15	0.83058	318.15	0.63687
289.15	1.06967	286.14	0.94780	286.14	0.79537	286.15	0.82990	323.14	0.63212
291.15	1.06791	287.14	0.94644	287.15	0.79451	287.15	0.82921		
293.15	1.06614	288.14	0.94508	288.15	0.79366	288.15	0.82853		
295.15	1.06437	289.14	0.94372	289.15	0.79281	289.15	0.82785		
297.15	1.06260	290.14	0.94235	290.15	0.79196	290.15	0.82716		
299.15	1.06084	291.14	0.94099	291.15	0.79110	291.15	0.82647		
301.16	1.05907	292.14	0.93961	292.15	0.79024	292.15	0.82578		
303.16	1.05730	293.14	0.93824	293.15	0.78939	293.15	0.82509		
305.16	1.05553	294.15	0.93687	294.15	0.78854	294.15	0.82440		
307.16	1.05376	295.15	0.93549	295.15	0.78768	295.15	0.82371		
309.16	1.05199	296.15	0.93410	296.15	0.78682	296.15	0.82302		
311.16	1.05022	297.15	0.93272	297.15	0.78596	297.15	0.82233		
313.16	1.04845	298.15	0.93133	298.15	0.78510	298.15	0.82164		
315.16	1.04668	299.15	0.92995	299.15	0.78424	299.15	0.82095		
317.16	1.04492	300.15	0.92856	300.15	0.78338	300.15	0.82025		
319.16	1.04315	301.15	0.92716	301.15	0.78251	301.15	0.81956		
321.16	1.04138	302.15	0.92576	302.15	0.78165	302.15	0.81886		
323.16	1.03961	303.15	0.92437	303.15	0.78078	303.15	0.81817		
325.16	1.03784	304.15	0.92296	304.15	0.77991	304.15	0.81747		
327.16	1.03607								
329.16	1.03430								
331.16	1.03253								
335.15	1.02898								
337.15	1.02720								
339.15	1.02542								
341.15	1.02365								
343.15	1.02187								

Eugenol + 1-octanol (4 niza)

x_1	ρ/g.cm^{-3}	V^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	V^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	V^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	V^E /cm^3.mol^{-1}
	T=308.15 K		T=313.15 K		T=318.15 K		T=323.15 K	
0.0500	0.82688	-0.120	0.82329	-0.114	0.81967	-0.108	0.81603	-0.102
0.1001	0.83897	-0.195	0.83530	-0.184	0.83161	-0.174	0.82789	-0.161
0.1500	0.85115	-0.288	0.84741	-0.274	0.84365	-0.259	0.83986	-0.243
0.1502	0.85095	-0.242	0.84721	-0.227	0.84345	-0.213	0.83966	-0.196
0.2002	0.86314	-0.324	0.85933	-0.305	0.85550	-0.287	0.85165	-0.268
0.2502	0.87523	-0.383	0.87137	-0.364	0.86747	-0.342	0.86355	-0.319
0.3004	0.88735	-0.426	0.88342	-0.404	0.87947	-0.382	0.87549	-0.356
0.3502	0.89927	-0.449	0.89528	-0.425	0.89127	-0.400	0.88724	-0.374
0.4001	0.91121	-0.467	0.90717	-0.443	0.90311	-0.417	0.89904	-0.392
0.4003	0.91126	-0.465	0.90722	-0.441	0.90316	-0.416	0.89908	-0.389
0.4501	0.92325	-0.490	0.91915	-0.464	0.91505	-0.440	0.91092	-0.412
0.5002	0.93527	-0.499	0.93113	-0.474	0.92698	-0.450	0.92281	-0.424
0.5502	0.94717	-0.487	0.94298	-0.462	0.93879	-0.439	0.93457	-0.412
0.6000	0.95896	-0.459	0.95474	-0.437	0.95050	-0.413	0.94625	-0.388
0.6502	0.97090	-0.438	0.96664	-0.417	0.96237	-0.395	0.95808	-0.371
0.6992	0.98256	-0.415	0.97826	-0.395	0.97395	-0.373	0.96964	-0.353
0.7482	0.99421	-0.385	0.98988	-0.368	0.98554	-0.349	0.98120	-0.330
0.7984	1.00599	-0.328	1.00163	-0.313	0.99727	-0.297	0.99290	-0.280
0.8457	1.01722	-0.290	1.01284	-0.278	1.00845	-0.264	1.00406	-0.251
0.8997	1.02991	-0.224	1.02552	-0.218	1.02111	-0.208	1.01670	-0.198
0.9499	1.04174	-0.162	1.03733	-0.159	1.03291	-0.154	1.02849	-0.149

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Table 2 Density of each pure component studied at atmospheric pressure {$u_p = \pm 0.03$ kPa, $u_T = \pm 0.01$ K, $u_\rho = \pm 1 \times 10^{-5}$ g·cm^{-3} ($k = 2$)}

Eugenol		Furan		Ethanol		1-Octanol		n-Hexane	
T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})
273.15	1.08383	278.16	0.95856	278.16	0.80214	278.16	0.83536	283.15	0.66887
275.15	1.08206	279.14	0.95724	279.14	0.80131	279.15	0.83468	288.15	0.66442
277.16	1.08028	280.15	0.95589	280.14	0.80046	280.15	0.83400	293.14	0.65992
279.15	1.07850	281.15	0.95455	281.14	0.79962	281.15	0.83332	298.14	0.65538
281.15	1.07674	282.15	0.95320	282.14	0.79877	282.15	0.83263	303.15	0.65082
283.15	1.07497	283.15	0.95185	283.14	0.79792	283.15	0.83195	308.15	0.64621
285.15	1.07320	284.15	0.95050	284.14	0.79707	284.15	0.83126	313.15	0.64157
287.15	1.07143	285.14	0.94916	285.14	0.79622	285.15	0.83058	318.15	0.63687
289.15	1.06967	286.14	0.94780	286.14	0.79537	286.15	0.82990	323.14	0.63212
291.15	1.06791	287.14	0.94644	287.15	0.79451	287.15	0.82921		
293.15	1.06614	288.14	0.94508	288.15	0.79366	288.15	0.82853		
295.15	1.06437	289.14	0.94372	289.15	0.79281	289.15	0.82785		
297.15	1.06260	290.14	0.94235	290.15	0.79196	290.15	0.82716		
299.15	1.06084	291.14	0.94099	291.15	0.79110	291.15	0.82647		
301.16	1.05907	292.14	0.93961	292.15	0.79024	292.15	0.82578		
303.16	1.05730	293.14	0.93824	293.15	0.78939	293.15	0.82509		
305.16	1.05553	294.15	0.93687	294.15	0.78854	294.15	0.82440		
307.16	1.05376	295.15	0.93549	295.15	0.78768	295.15	0.82371		
309.16	1.05199	296.15	0.93410	296.15	0.78682	296.15	0.82302		
311.16	1.05022	297.15	0.93272	297.15	0.78596	297.15	0.82233		
313.16	1.04845	298.15	0.93133	298.15	0.78510	298.15	0.82164		
315.16	1.04668	299.15	0.92995	299.15	0.78424	299.15	0.82095		
317.16	1.04492	300.15	0.92856	300.15	0.78338	300.15	0.82025		
319.16	1.04315	301.15	0.92716	301.15	0.78251	301.15	0.81956		
321.16	1.04138	302.15	0.92576	302.15	0.78165	302.15	0.81886		
323.16	1.03961	303.15	0.92437	303.15	0.78078	303.15	0.81817		
325.16	1.03784	304.15	0.92296	304.15	0.77991	304.15	0.81747		
327.16	1.03607								
329.16	1.03430								
331.16	1.03253								
335.15	1.02898								
337.15	1.02720								
339.15	1.02542								
341.15	1.02365								
343.15	1.02187								

Eugenol + *n*-hexane (5 nizova)

Table 9: Densities (ρ) and excess molar volumes (v^E) for Eugenol*(1)* + n-hexane (2) binary system as a function of furan mole fraction at atmospheric pressure (U_p = ±0.03 kPa, U_{x1}=±2x10^{-5}, U_T=±0.01K, U_ρ=±10^{-5} g.cm^{-3}, U_{VE}=±0.003 cm^3.mol^{-1}(k=2)).

x_1	ρ/g.cm^{-3}	v^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	v^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	v^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	v^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	v^E /cm^3.mol^{-1}
	T=283.15 K		T=288.15 K		T=293.15 K		T=298.15 K		T=303.15 K	
0.0500	0.69309	-0.068	0.68862	-0.076	0.68413	-0.089	0.67961	-0.105	0.67506	-0.119
0.1000	0.71694	-0.147	0.71248	-0.166	0.70797	-0.185	0.70343	-0.207	0.69887	-0.229
0.1500	0.74038	-0.222	0.73590	-0.245	0.73138	-0.270	0.72685	-0.301	0.72229	-0.331
0.2000	0.76344	-0.299	0.75894	-0.325	0.75444	-0.360	0.74991	-0.397	0.74535	-0.433
0.2500	0.78602	-0.362	0.78153	-0.394	0.77703	-0.433	0.77250	-0.474	0.76794	-0.515
0.3000	0.80828	-0.433	0.80379	-0.469	0.79930	-0.512	0.79477	-0.556	0.79022	-0.601
0.3500	0.82996	-0.474	0.82548	-0.513	0.82098	-0.557	0.81649	-0.609	0.81193	-0.654
0.4000	0.85138	-0.523	0.84691	-0.565	0.84241	-0.609	0.83790	-0.659	0.83337	-0.708
0.4491	0.87192	-0.555	0.86745	-0.597	0.86298	-0.646	0.85846	-0.692	0.85394	-0.743
0.5000	0.89289	-0.585	0.88842	-0.627	0.88394	-0.672	0.87945	-0.722	0.87495	-0.773
0.5489	0.91254	-0.594	0.90807	-0.633	0.90360	-0.678	0.89910	-0.723	0.89460	-0.772
0.6000	0.9326	-0.581	0.92814	-0.619	0.92367	-0.660	0.91918	-0.703	0.91469	-0.750
0.6473	0.95086	-0.571	0.94641	-0.607	0.94195	-0.646	0.93747	-0.687	0.93299	-0.730
0.6994	0.97047	-0.533	0.96602	-0.565	0.96157	-0.600	0.95709	-0.635	0.95261	-0.673
0.7464	0.98787	-0.496	0.98343	-0.525	0.97898	-0.556	0.97451	-0.587	0.97004	-0.620
0.8000	1.00726	-0.443	1.00283	-0.469	0.99839	-0.494	0.99393	-0.520	0.98947	-0.548
0.8499	1.02501	-0.389	1.02057	-0.407	1.01613	-0.427	1.01169	-0.449	1.00723	-0.469
0.8991	1.04192	-0.298	1.03750	-0.313	1.03307	-0.327	1.02863	-0.341	1.02419	-0.357
0.9498	1.05904	-0.201	1.05463	-0.211	1.05021	-0.218	1.04578	-0.226	1.04134	-0.233
0.9751	1.06733	-0.134	1.06291	-0.138	1.05849	-0.141	1.05407	-0.146	1.04965	-0.151

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Table 2 Density of each pure component studied at atmospheric pressure {u_p = ±0.03 kPa, u_T = ±0.01 K, u_ρ = ±1×10^{-5} g·cm^{-3} (k = 2)}

Eugenol		Furan		Ethanol		1-Octanol		*n*-Hexane	
T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})	T (K)	ρ_{exp} (g·cm^{-3})
273.15	1.08383	278.16	0.95856	278.16	0.80214	278.16	0.83536	283.15	0.66887
275.15	1.08206	279.14	0.95724	279.14	0.80131	279.15	0.83468	288.15	0.66442
277.16	1.08028	280.15	0.95589	280.14	0.80046	280.15	0.83400	293.14	0.65992
279.15	1.07850	281.15	0.95455	281.14	0.79962	281.15	0.83332	298.14	0.65538
281.15	1.07674	282.15	0.95320	282.14	0.79877	282.15	0.83263	303.15	0.65082
283.15	1.07497	283.15	0.95185	283.14	0.79792	283.15	0.83195	308.15	0.64621
285.15	1.07320	284.15	0.95050	284.14	0.79707	284.15	0.83126	313.15	0.64157
287.15	1.07143	285.14	0.94916	285.14	0.79622	285.15	0.83058	318.15	0.63687
289.15	1.06967	286.14	0.94780	286.14	0.79537	286.15	0.82990	323.14	0.63212
291.15	1.06791	287.14	0.94644	287.15	0.79451	287.15	0.82921		
293.15	1.06614	288.14	0.94508	288.15	0.79366	288.15	0.82853		
295.15	1.06437	289.14	0.94372	289.15	0.79281	289.15	0.82785		
297.15	1.06260	290.14	0.94235	290.15	0.79196	290.15	0.82716		
299.15	1.06084	291.14	0.94099	291.15	0.79110	291.15	0.82647		
301.16	1.05907	292.14	0.93961	292.15	0.79024	292.15	0.82578		
303.16	1.05730	293.14	0.93824	293.15	0.78939	293.15	0.82509		
305.16	1.05553	294.15	0.93687	294.15	0.78854	294.15	0.82440		
307.16	1.05376	295.15	0.93549	295.15	0.78768	295.15	0.82371		
309.16	1.05199	296.15	0.93410	296.15	0.78682	296.15	0.82302		
311.16	1.05022	297.15	0.93272	297.15	0.78596	297.15	0.82233		
313.16	1.04845	298.15	0.93133	298.15	0.78510	298.15	0.82164		
315.16	1.04668	299.15	0.92995	299.15	0.78424	299.15	0.82095		
317.16	1.04492	300.15	0.92856	300.15	0.78338	300.15	0.82025		
319.16	1.04315	301.15	0.92716	301.15	0.78251	301.15	0.81956		
321.16	1.04138	302.15	0.92576	302.15	0.78165	302.15	0.81886		
323.16	1.03961	303.15	0.92437	303.15	0.78078	303.15	0.81817		
325.16	1.03784	304.15	0.92296	304.15	0.77991	304.15	0.81747		
327.16	1.03607								
329.16	1.03430								
331.16	1.03253								
335.15	1.02898								
337.15	1.02720								
339.15	1.02542								
341.15	1.02365								
343.15	1.02187								

Eugenol + *n*-hexane (4 niza)

x_1	ρ/g.cm^{-3}	V^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	V^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	V^E /cm^3.mol^{-1}	ρ/g.cm^{-3}	V^E /cm^3.mol^{-1}
	T=308.15 K		T=313.15 K		T=318.15 K		T=323.15 K	
0.0500	0.67046	-0.134	0.66583	-0.149	0.66115	-0.166	0.65644	-0.188
0.1000	0.69428	-0.255	0.68966	-0.282	0.68500	-0.314	0.68029	-0.346
0.1500	0.71770	-0.365	0.71308	-0.400	0.70843	-0.441	0.70374	-0.485
0.2000	0.74077	-0.474	0.73616	-0.517	0.73152	-0.566	0.72685	-0.619
0.2500	0.76337	-0.562	0.75877	-0.611	0.75414	-0.665	0.74949	-0.725
0.3000	0.78565	-0.651	0.78107	-0.706	0.77646	-0.766	0.77182	-0.830
0.3500	0.80737	-0.706	0.80280	-0.764	0.79820	-0.826	0.79358	-0.893
0.4000	0.82883	-0.764	0.82427	-0.823	0.81969	-0.887	0.81508	-0.955
0.4491	0.84940	-0.797	0.84485	-0.856	0.84029	-0.921	0.83570	-0.990
0.5000	0.87040	-0.824	0.86586	-0.881	0.86131	-0.945	0.85675	-1.014
0.5489	0.89009	-0.825	0.88557	-0.882	0.88104	-0.944	0.87649	-1.010
0.6000	0.91020	-0.801	0.90570	-0.857	0.90118	-0.914	0.89664	-0.975
0.6473	0.92850	-0.777	0.92401	-0.828	0.91950	-0.881	0.91498	-0.939
0.6994	0.94813	-0.715	0.94365	-0.761	0.93915	-0.808	0.93465	-0.860
0.7464	0.96557	-0.657	0.96109	-0.697	0.95661	-0.739	0.95212	-0.784
0.8000	0.98500	-0.577	0.98054	-0.611	0.97606	-0.644	0.97159	-0.682
0.8499	1.00278	-0.493	0.99832	-0.518	0.99386	-0.545	0.98939	-0.573
0.8991	1.01974	-0.372	1.01529	-0.390	1.01084	-0.408	1.00639	-0.428
0.9498	1.03690	-0.240	1.03247	-0.251	1.02803	-0.260	1.02359	-0.270
0.9751	1.04522	-0.155	1.04079	-0.161	1.03635	-0.165	1.03192	-0.170

Christophe Coquelet, Eric Auger, Alain Valtz. Density and excess volume for four systems involving eugenol and furan. Journal of Solution Chemistry, Springer Verlag (Germany), 2019, 48 (4), pp.455-488. ff10.1007/s10953-019-00870-6ff.

Water + diethanolamine (7 nizova)

Table 1 . Mole fractions, densities, and excess molar volumes for water (1) + diethanolamine (2, MDEA) mixtures.

	25°C		30°C		40°C		50°C		60°C		70°C		80°C	
x_2	d	V^E	d	V^E	d	V^E	d	V^E	d	V^E	d	V^E	d	V^E
0.0000	0.997 04	0.000	0.995 65	0.000	0.992 22	0.000	0.998 04	0.000	0.983 20	0.000	0.977 77	0.000	0.971 80	0.000
0.0079	1.001 28	−0.044	0.999 68	−0.043	0.996 12	−0.044	0.991 85	−0.046	0.986 68	−0.043	0.981 29	−0.046	0.975 36	−0.049
0.0176	1.006 18	−0.101	1.004 50	−0.101	1.000 69	−0.102	0.996 09	−0.102	0.990 92	−0.102	0.985 28	−0.104	0.979 01	−0.103
0.0364	1.014 93	−0.220	1.012 91	−0.218	1.008 60	−0.218	1.003 58	−0.216	0.997 98	−0.214	0.991 84	−0.211	0.985 31	−0.208
0.0612	1.024 61	−0.379	1.022 26	−0.375	1.017 27	−0.369	1.011 61	−0.363	1.005 47	−0.356	0.999 08	−0.353	0.992 04	−0.343
0.0923	1.034 14	−0.570	1.031 33	−0.561	1.025 54	−0.547	1.019 25	−0.534	1.012 60	−0.522	1.005 66	−0.512	0.998 12	−0.493
0.1322	1.042 43	−0.778	1.039 24	−0.765	1.032 82	−0.744	1.025 86	−0.722	1.018 64	−0.701	1.010 66	−0.667	1.003 29	−0.657
0.1859	1.048 81	−0.989	1.045 28	−0.972	1.038 26	−0.943	1.030 80	−0.915	1.023 13	−0.885	1.015 21	−0.858	1.007 12	−0.827
0.2526	1.052 09	−1.154	1.048 39	−1.136	1.041 03	−1.104	1.033 22	−1.070	1.025 35	−1.039	1.017 43	−1.015	1.008 87	−0.965
0.3021	1.052 76	−1.224	1.049 06	−1.210	1.041 54	−1.177	1.033 64	−1.143	1.025 60	−1.106	1.017 64	−1.083	1.009 12	−1.033
0.3658	1.052 18	−1.252	1.048 39	−1.238	1.040 74	−1.203	1.032 08	−1.134	1.024 76	−1.136	1.016 76	−1.113	1.008 29	−1.062
0.5026	1.048 63	−1.144	1.044 97	−1.145	1.037 20	−1.110	1.029 27	−1.085	1.021 28	−1.054	1.013 03	−1.015	1.004 53	−0.952
0.5653	1.046 88	−1.056	1.043 10	−1.052	1.035 50	−1.032	1.027 61	−1.011	1.019 62	−0.980	1.011 75	−0.968	1.003 45	−0.915
0.6960	1.043 14	−0.798	1.039 52	−0.814	1.031 80	−0.788	1.024 00	−0.779	1.016 06	−0.751	1.008 02	−0.725	1.000 03	−0.690
0.7997	1.040 50	−0.558	1.036 84	−0.575	1.029 12	−0.553	1.021 41	−0.555	1.013 38	−0.518	1.005 60	−0.515	0.997 70	−0.484
0.8989	1.038 32	−0.314	1.034 58	−0.328	1.026 87	−0.308	1.019 20	−0.319	1.011 38	−0.301	1.003 56	−0.295	0.995 70	−0.265
0.9475	1.037 31	−0.185	1.033 57	−0.201	1.025 86	−0.183	1.018 16	−0.192	1.010 38	−0.179	1.002 60	−0.177	0.994 78	−0.149
1.0000	1.035 90	0.000	1.032 00	0.000	1.024 45	0.000	1.016 66	0.000	1.009 00	0.000	1.001 24	0.000	0.993 67	0.000

[a]Units are g cm^{-3} for densities (d) and are cm^3 mol^{-1} for excess molar volumes (V^E).

Yadollah Maham, T.T Teng, Alan Mather, Loren G. Hepler, Volumetric properties of (water + diethanolamine) systems, February 2011Canadian Journal of Chemistry 73(9):1514-1519

Water + Aminoethylethanolamine (4 niza)

Table 2 Compositions, densities, excess molar volumes, and thermal expansion coefficients for AEEA (2) + water (1) mixtures at different temperatures

x_2	283.15 K			298.15 K			313.15 K			328.15 K			343.15 K		
	ρ $g \cdot cm^{-3}$	V^E $cm^3 \cdot mol^{-1}$	α kK^{-1}	ρ $g \cdot cm^{-3}$	V^E $cm^3 \cdot mol^{-1}$	α kK^{-1}	ρ $g \cdot cm^{-3}$	V^E $cm^3 \cdot mol^{-1}$	α kK^{-1}	ρ $g \cdot cm^{-3}$	V^E $cm^3 \cdot mol^{-1}$	α kK^{-1}	ρ $g \cdot cm^{-3}$	V^E $cm^3 \cdot mol^{-1}$	α kK^{-1}
0.0000	0.99969	0.00000	0.086	0.99705	0.00000	0.258	0.99221	0.00000	0.384	0.98569	0.00000	0.485	0.97776	0.00000	0.57
0.0397	1.01635	−0.20443	0.206	1.01189	−0.20113	0.348	1.00585	−0.20339	0.454	0.99845	−0.20716	0.538	0.98988	−0.21128	0.61
0.0796	1.03136	−0.46922	0.319	1.02497	−0.45057	0.44	1.01753	−0.44422	0.529	1.00906	−0.44247	0.601	0.99967	−0.44284	0.662
0.1197	1.04322	−0.73921	0.414	1.03528	−0.70467	0.518	1.02660	−0.68646	0.595	1.01716	−0.67565	0.656	1.00697	−0.66795	0.709
0.1613	1.05177	−0.98349	0.491	1.04270	−0.93721	0.58	1.03308	−0.90859	0.647	1.02285	−0.88848	0.7	1.01201	−0.87236	0.746
0.2015	1.05703	−1.17341	0.546	1.04722	−1.11981	0.624	1.03698	−1.08488	0.682	1.02624	−1.05839	0.729	1.01496	−1.03573	0.769
0.3007	1.06107	−1.42803	0.624	1.05039	−1.37179	0.681	1.03940	−1.33163	0.724	1.02804	−1.29901	0.76	1.01627	−1.26936	0.79
0.3991	1.05897	−1.45639	0.659	1.04801	−1.40700	0.702	1.03675	−1.36908	0.736	1.02523	−1.33823	0.763	1.01339	−1.30954	0.787
0.5013	1.05493	−1.34976	0.68	1.04384	−1.30929	0.713	1.03250	−1.27695	0.74	1.02097	−1.25101	0.762	1.00918	−1.22741	0.781
0.5919	1.05101	−1.17909	0.695	1.03987	−1.14697	0.722	1.02853	−1.12167	0.743	1.01706	−1.10306	0.761	1.00534	−1.08403	0.777
0.7069	1.04632	−0.90088	0.709	1.03514	−0.87840	0.729	1.02378	−0.85884	0.745	1.01230	−0.84309	0.76	1.00065	−0.82839	0.773
0.8059	1.04261	−0.61707	0.717	1.03140	−0.60202	0.732	1.02006	−0.58934	0.745	1.00862	−0.57899	0.757	0.99704	−0.56925	0.769
0.8330	1.04169	−0.53667	0.719	1.03049	−0.52525	0.733	1.01917	−0.51565	0.745	1.00775	−0.50774	0.756	0.99619	−0.49951	0.767
0.8954	1.03960	−0.33909	0.722	1.02840	−0.33295	0.734	1.01710	−0.32860	0.745	1.00570	−0.32308	0.755	0.99420	−0.32023	0.765
0.9277	1.03856	−0.23197	0.724	1.02737	−0.22982	0.735	1.01605	−0.22503	0.745	1.00471	−0.22578	0.754	0.99322	−0.22361	0.764
0.9629	1.03755	−0.12072	0.727	1.02632	−0.11709	0.736	1.01502	−0.11638	0.745	1.00366	−0.11619	0.754	0.99218	−0.11467	0.763
1.0000	1.03652	0.00000	0.729	1.02529	0.00000	0.738	1.01398	0.00000	0.746	1.00262	0.00000	0.754	0.99115	0.00000	0.763

Marcin Stec, Adam Tatarczuk, Dariusz Śpiewak, and Andrzej Wilk, Densities, Excess Molar Volumes, and Thermal Expansion Coefficients of Aqueous Aminoethylethanolamine Solutions at Temperatures from 283.15 to 343.15 K, J Solution Chem. 2014; 43(5): 959–971.

n-octane + octan-2-ol (1 niz)

TABLE 2: Densities (ρ), viscosities (η), excess molar volumes V^E, viscosities deviations $\Delta\eta$, and excess Gibbs free energy ΔG^{*E} of binary mixtures at T = 298.15 K.

x_1	$\rho \times 10^{-3}$ kg·m^{-3}	$V_m^E \times 10^6$ m^3·mol^{-1}	η mPa·s	$\Delta\eta$ mPa·s	ΔG^{*E} KJmol^{-1}
n-Octane(1) + octan-2-ol(2)					
0	0.81705	0	6.429	0	0
0.0487	0.8114	−0.051	5.956	−0.185	115
0.1002	0.8054	−0.097	5.301	−0.535	149
0.1498	0.79959	−0.133	4.654	−0.888	137
0.2006	0.79361	−0.16	3.998	−1.244	78
0.2516	0.78756	−0.177	3.364	−1.576	−30
0.3003	0.78176	−0.183	2.796	−1.856	−183
0.3538	0.77534	−0.18	2.228	−2.108	−410
0.4003	0.76975	−0.169	1.79	−2.27	−661
0.4466	0.76415	−0.151	1.411	−2.375	−960
0.5001	0.75767	−0.123	1.049	−2.421	−1359
0.5517	0.75142	−0.091	0.778	−2.387	−1776
0.6002	0.74554	−0.057	0.59	−2.287	−2157
0.6539	0.73905	−0.018	0.454	−2.106	−2469
0.6994	0.73357	0.013	0.39	−1.901	−2560
0.7449	0.72811	0.042	0.366	−1.656	−2431
0.8	0.72157	0.068	0.376	−1.32	−2019
0.8465	0.7161	0.081	0.402	−1.018	−1571
0.9003	0.70985	0.081	0.434	−0.668	−1034
0.9521	0.70394	0.061	0.441	−0.355	−670
1	0.69867	0	0.512	0	0

Arvind R. Mahajan and Sunil R. Mirgane, Excess Molar Volumes and Viscosities for the Binary Mixtures of n-Octane, n-Decane, n-Dodecane, and n-Tetradecane with Octan-2-ol at 298.15 K, Volume 2013 |Article ID 571918 | 11 pages | https://doi.org/10.1155/2013/571918

n-decane + octan-2-ol (1 niz)

TABLE 2: Densities (ρ), viscosities (η), excess molar volumes V^E, viscosities deviations $\Delta\eta$, and excess Gibbs free energy ΔG^{*E} of binary mixtures at T = 298.15 K.

x_1	$\rho \times 10^{-3}$ kg·m^{-3}	$V_m^E \times 10^6$ m^3·mol^{-1}	η mPa·s	$\Delta\eta$ mPa·s	ΔG^{*E} KJmol^{-1}
		n-Decane(1) + octan-2-ol(2)			
0	0.81705	0	6.429	0	0
0.0554	0.81077	0.036	5.222	−0.898	−233
0.0998	0.80583	0.071	4.638	−1.234	−301
0.1554	0.79974	0.119	3.972	−1.589	−403
0.1999	0.79499	0.158	3.491	−1.822	−497
0.2554	0.7892	0.205	2.951	−2.052	−632
0.2999	0.78467	0.239	2.564	−2.19	−755
0.3555	0.77916	0.275	2.136	−2.308	−927
0.3998	0.7749	0.298	1.836	−2.361	−1078
0.4554	0.76969	0.318	1.509	−2.377	−1285
0.4999	0.76564	0.326	1.284	−2.354	−1461
0.5555	0.76074	0.326	1.046	−2.281	−1690
0.5998	0.75694	0.318	0.889	−2.191	−1871
0.6555	0.7523	0.298	0.73	−2.039	−2080
0.7	0.7487	0.274	0.63	−1.89	−2223
0.7554	0.74432	0.236	0.538	−1.673	−2337
0.7998	0.74091	0.2	0.487	−1.476	−2362
0.8554	0.73674	0.149	0.45	−1.203	−2281
0.8999	0.73347	0.106	0.438	−0.966	−2126
0.9554	0.72948	0.052	0.445	−0.649	−1811
1	0.72635	0	0.845	0	0

Arvind R. Mahajan and Sunil R. Mirgane, Excess Molar Volumes and Viscosities for the Binary Mixtures of n-Octane, n-Decane, n-Dodecane, and n-Tetradecane with Octan-2-ol at 298.15 K, Volume 2013 |Article ID 571918 | 11 pages | https://doi.org/10.1155/2013/571918

n-dodecane + octan-2-ol (1 niz)

Table 2: Densities (ρ), viscosities (η), excess molar volumes V^E, viscosities deviations $\Delta\eta$, and excess Gibbs free energy ΔG^{*E} of binary mixtures at T = 298.15 K.

x_1	$\rho \times 10^{-3}$ kg·m^{-3}	$V_m^E \times 10^6$ m^3·mol^{-1}	η mPa·s	$\Delta\eta$ mPa·s	ΔG^{*E} KJmol^{-1}
		n-Dodecane(1) + octan-2-ol(2)			
0	0.81705	0	6.429	0	0
0.0554	0.81098	0.101	5.513	−0.634	−159
0.0999	0.80637	0.167	4.916	−1.004	−296
0.1554	0.80091	0.24	4.254	−1.383	−404
0.1998	0.79676	0.291	3.786	−1.625	−517
0.2555	0.7918	0.345	3.272	−1.856	−659
0.2998	0.78805	0.38	2.916	−1.986	−770
0.3554	0.78355	0.415	2.532	−2.087	−902
0.3998	0.78012	0.435	2.27	−2.123	−999
0.4554	0.77603	0.451	1.995	−2.115	−1102
0.4999	0.7729	0.456	1.813	−2.071	−1167
0.5555	0.76916	0.453	1.627	−1.973	−1219
0.5998	0.76631	0.444	1.508	−1.866	−1236
0.6555	0.76288	0.422	1.391	−1.699	−1221
0.6998	0.76027	0.398	1.32	−1.545	−1180
0.7554	0.75713	0.359	1.253	−1.328	−1095
0.7998	0.75473	0.32	1.213	−1.142	−1005
0.8555	0.75185	0.263	1.176	−0.896	−869
0.8999	0.74965	0.21	1.152	−0.694	−750
0.9555	0.747	0.134	1.124	−0.439	−599
0.9997	0.74519	0	1.337	0	0

Arvind R. Mahajan and Sunil R. Mirgane, Excess Molar Volumes and Viscosities for the Binary Mixtures of n-Octane, n-Decane, n-Dodecane, and n-Tetradecane with Octan-2-ol at 298.15 K, Volume 2013 |Article ID 571918 | 11 pages | https://doi.org/10.1155/2013/571918

n-tetradecane + octan-2-ol (1 niz)

TABLE 2: Densities (ρ), viscosities (η), excess molar volumes V^E, viscosities deviations $\Delta\eta$, and excess Gibbs free energy ΔG^{*E} of binary mixtures at T = 298.15 K.

x_1	$\rho \times 10^{-3}$ kg·m^{-3}	$V_m^E \times 10^6$ m^3·mol^{-1}	η mPa·s	$\Delta\eta$ mPa·s	ΔG^{*E} KJmol^{-1}
		n-Tetradecane(1) + octan-2-ol(2)			
0	0.81705	0	6.429	0	0
0.0555	0.81134	0.126	5.619	−0.568	−144
0.0999	0.80721	0.193	5.163	−0.831	−230
0.1555	0.80239	0.268	4.632	−1.121	−330
0.1998	0.7988	0.321	4.238	−1.321	−417
0.2554	0.79459	0.376	3.786	−1.533	−531
0.2998	0.79144	0.413	3.455	−1.67	−628
0.3555	0.78774	0.449	3.081	−1.802	−751
0.3999	0.78496	0.47	2.813	−1.876	−850
0.4554	0.78171	0.487	2.519	−1.93	−968
0.4999	0.77925	0.492	2.314	−1.941	−1054
0.5555	0.77637	0.49	2.098	−1.915	−1144
0.5998	0.7742	0.48	1.957	−1.863	−1196
0.6554	0.77163	0.457	1.82	−1.759	−1226
0.7	0.76969	0.432	1.741	−1.644	−1217
0.7555	0.76741	0.39	1.683	−1.46	−1154
0.8	0.76569	0.348	1.668	−1.282	−1060
0.8555	0.76365	0.287	1.688	−1.02	−887
0.9	0.76211	0.23	1.736	−0.779	−703
0.9553	0.76029	0.15	1.835	−0.439	−424
0.9997	0.75914	0	2.081	0	0

Arvind R. Mahajan and Sunil R. Mirgane, Excess Molar Volumes and Viscosities for the Binary Mixtures of n-Octane, n-Decane, n-Dodecane, and n-Tetradecane with Octan-2-ol at 298.15 K, Volume 2013 |Article ID 571918 | 11 pages | https://doi.org/10.1155/2013/571918

2-methoxyethanol + propan-2-ol (1 niz)

Table 2
Mole fraction (x_1), volume fraction (ϕ_1), density (ρ), excess volume (V^E), speed of sound (u), isentropic compressibility (k_s) and viscosity (η) at 303.15 K

x_1	ϕ_1	ρ (g cm^{-3})	V^E (cm^3 mol^{-1})	u (m s^{-1})	k_s (TPa^{-1})	η (mPa s)
2-Methoxyethanol(1) + propan-2-ol(2)						
0.0000	0.0000	0.77694	0.000	1128	1012	1.765
0.0989	0.1015	0.79477	0.031	1148	955	1.540
0.1681	0.1722	0.80727	0.044	1163	916	1.426
0.3537	0.3603	0.84068	0.065	1202	823	1.240
0.3880	0.3949	0.84686	0.064	1209	808	1.222
0.5422	0.5494	0.87460	0.052	1236	748	1.196
0.5877	0.5947	0.88276	0.047	1244	732	1.202
0.7821	0.7870	0.91742	0.022	1276	669	1.268
0.8235	0.8277	0.92475	0.017	1284	656	1.288
0.8851	0.8850	0.93567	0.006	1298	634	1.324
1.0000	1.0000	0.95577	0.000	1332	590	1.376

K. Mohan Krishnan, K. Ramababu, D. Ramachandran, P. Venkateswarlu, G.K. Raman, Excess volumes, speeds of sound and transport properties of mixtures of 2-methoxyethanol with branched and alicyclic alcohols at 303.15 K, Fluid Phase Equilibria, Volume 105, Issue 1, 15 March 1995, Pages 109-118

2-methoxyethanol + 2-methylpropan-1-ol (1 niz)

Table 2
Mole fraction (x_1), volume fraction (ϕ_1), density (ρ), excess volume (V^E), speed of sound (u), isentropic compressibility (k_s) and viscosity (η) at 303.15 K

x_1	ϕ_1	ρ (g cm^{-3})	V^E (cm^3 mol^{-1})	u (m s^{-1})	k_s (TPa^{-1})	η (mPa s)
2-Methoxyethanol(1) + 2-methylpropan-1-ol(2)						
0.0000	0.0000	0.79445	0.000	1170	920	2.882
0.0962	0.0833	0.80734	0.062	1184	884	2.478
0.2087	0.1837	0.82298	0.122	1199	845	2.104
0.3280	0.2941	0.84032	0.166	1214	807	1.823
0.4330	0.3946	0.85629	0.185	1226	777	1.653
0.5976	0.5590	0.88284	0.172	1244	732	1.493
0.6411	0.6093	0.89014	0.164	1249	720	1.468
0.7261	0.6935	0.90481	0.139	1263	693	1.431
0.8566	0.8360	0.92838	0.082	1290	647	1.398
0.9229	0.9108	0.94086	0.045	1308	621	1.391
1.0000	1.0000	0.95577	0.000	1332	590	1.376

K. Mohan Krishnan, K. Ramababu, D. Ramachandran, P. Venkateswarlu, G.K. Raman, Excess volumes, speeds of sound and transport properties of mixtures of 2-methoxyethanol with branched and alicyclic alcohols at 303.15 K, Fluid Phase Equilibria, Volume 105, Issue 1, 15 March 1995, Pages 109-118

2-methoxyethanol + 3-methylbutan-1-ol (1 niz)

Table 2
Mole fraction (x_1), volume fraction (ϕ_1), density (ρ), excess volume (V^E), speed of sound (u), isentropic compressibility (k_s) and viscosity (η) at 303.15 K

x_1	ϕ_1	ρ (g cm^{-3})	V^E (cm^3 mol^{-1})	u (m s^{-1})	k_s (TPa^{-1})	η (mPa s)
2-Methoxyethanol(1) + 3-methylbutan-1-ol(2)						
0.0000	0.0000	0.80185	0.000	1221	837	2.958
0.1536	0.1162	0.81891	0.106	1241	793	2.477
0.2181	0.1681	0.82650	0.153	1246	779	2.305
0.3068	0.2427	0.83747	0.209	1251	763	2.095
0.3756	0.3035	0.84646	0.244	1253	752	1.955
0.4802	0.4009	0.86109	0.273	1256	736	1.772
0.6881	0.6151	0.89409	0.242	1266	698	1.512
0.7438	0.6777	0.90390	0.219	1270	686	1.470
0.8293	0.7787	0.92000	0.157	1283	660	1.413
0.9356	0.9132	0.94165	0.066	1311	618	1.380
1.0000	1.0000	0.95577	0.000	1332	590	1.376

K. Mohan Krishnan, K. Ramababu, D. Ramachandran, P. Venkateswarlu, G.K. Raman, Excess volumes, speeds of sound and transport properties of mixtures of 2-methoxyethanol with branched and alicyclic alcohols at 303.15 K, Fluid Phase Equilibria, Volume 105, Issue 1, 15 March 1995, Pages 109-118

2-methoxyethanol + butan-2-ol (1 niz)

Table 2
Mole fraction (x_1), volume fraction (ϕ_1), density (ρ), excess volume (V^E), speed of sound (u), isentropic compressibility (k_s) and viscosity (η) at 303.15 K

x_1	ϕ_1	ρ (g cm^{-3})	V^E (cm^3 mol^{-1})	u (m s^{-1})	k_s (TPa^{-1})	η (mPa s)
2-Methoxyethanol(1) + butan-2-ol(2)						
0.0000	0.0000	0.79883	0.000	1194	878	3.177
0.1228	0.1072	0.81450	0.130	1211	837	2.584
0.2090	0.1848	0.82603	0.197	1224	808	2.261
0.3377	0.3044	0.84415	0.256	1243	767	1.898
0.4280	0.3910	0.85754	0.270	1255	740	1.714
0.5977	0.5604	0.88419	0.249	1275	696	1.488
0.6442	0.6084	0.89187	0.231	1280	684	1.450
0.7067	0.6740	0.90238	0.206	1286	670	1.411
0.8447	0.8236	0.92663	0.128	1302	637	1.368
0.9188	0.9066	0.94031	0.069	1314	616	1.308
1.0000	1.0000	0.95577	0.000	1332	590	1.376

K. Mohan Krishnan, K. Ramababu, D. Ramachandran, P. Venkateswarlu, G.K. Raman, Excess volumes, speeds of sound and transport properties of mixtures of 2-methoxyethanol with branched and alicyclic alcohols at 303.15 K, Fluid Phase Equilibria, Volume 105, Issue 1, 15 March 1995, Pages 109-118

2-methoxyethanol + 2-methylpropan-2-ol (1 niz)

Table 2
Mole fraction (x_1), volume fraction (ϕ_1), density (ρ), excess volume (V^E), speed of sound (u), isentropic compressibility (k_s) and viscosity (η) at 303.15 K

x_1	ϕ_1	ρ (g cm^{-3})	V^E (cm^3 mol^{-1})	u (m s^{-1})	k_s (TPa^{-1})	η (mPa s)
2-Methoxyethanol(1) + 2-methylpropan-2-ol(2)						
0.0000	0.0000	0.77582	0.000	1106	1054	3.318
0.1011	0.0857	0.79092	0.038	1126	997	2.892
0.1977	0.1722	0.80616	0.073	1145	946	2.538
0.2694	0.2351	0.81727	0.095	1158	912	2.324
0.3774	0.3356	0.83513	0.116	1179	861	2.043
0.4851	0.4398	0.85381	0.119	1200	813	1.831
0.6774	0.6364	0.88934	0.095	1239	732	1.579
0.7450	0.7089	0.90256	0.076	1255	703	1.523
0.8490	0.8241	0.92361	0.045	1281	660	1.456
0.9028	0.8856	0.93488	0.026	1297	636	1.427
1.0000	1.0000	0.95577	0.000	1332	590	1.376

K. Mohan Krishnan, K. Ramababu, D. Ramachandran, P. Venkateswarlu, G.K. Raman, Excess volumes, speeds of sound and transport properties of mixtures of 2-methoxyethanol with branched and alicyclic alcohols at 303.15 K, Fluid Phase Equilibria, Volume 105, Issue 1, 15 March 1995, Pages 109-118

2-methoxyethanol + cyclohexanol (1 niz)

Table 2
Mole fraction (x_1), volume fraction (ϕ_1), density (ρ), excess volume (V^E), speed of sound (u), isentropic compressibility (k_s) and viscosity (η) at 303.15 K

x_1	ϕ_1	ρ (g cm^{-3})	V^E (cm^3 mol^{-1})	u (m s^{-1})	k_s (TPa^{-1})	η (mPa s)
2-Methoxyethanol(1) + Cyclohexanol(2)						
0.0000	0.0000	0.94142	0.000	1444	509	41.064
0.1350	0.1046	0.94044	0.271	1429	521	31.362
0.2320	0.1844	0.94011	0.421	1413	533	23.638
0.3144	0.2555	0.94011	0.519	1398	544	17.355
0.4389	0.3692	0.94070	0.605	1378	560	9.281
0.4908	0.4191	0.94119	0.619	1370	566	6.609
0.5515	0.4792	0.94194	0.618	1362	572	4.075
0.7808	0.7272	0.94700	0.438	1342	586	0.137
0.8288	0.7837	0.94855	0.365	1340	587	0.225
0.9188	0.8944	0.95198	0.195	1338	587	0.811
1.0000	1.0000	0.95577	0.000	1332	590	1.376

K. Mohan Krishnan, K. Ramababu, D. Ramachandran, P. Venkateswarlu, G.K. Raman, Excess volumes, speeds of sound and transport properties of mixtures of 2-methoxyethanol with branched and alicyclic alcohols at 303.15 K, Fluid Phase Equilibria, Volume 105, Issue 1, 15 March 1995, Pages 109-118

2-hydroxy ethylammonium butanoate (2-HEAB) + water (2 niza)

Table 2 Mole fraction, x_1, molality, m, experimental density, ρ, refractive index, n_D, Excess Molar Volumes, Vm^E, and Apparent molar Volumes, $V_{\varphi,1}$ of ionic liquids (1) + water (2).

x_1	m/mol. kg^{-1}	ρ/g.cm^{-3}		n_D		Vm^E /cm^{-3}.mol^{-1}		$V_{\varphi,1}$ /cm^{-3}.mol^{-1}	
		25 °C	50 °C	25 °C	50 °C	25 °C	50 °C	25 °C	50 °C
2-HEAB + water									
0.0000		0.99704	0.98749	1.3325	1.3289	0.000	0.000	0.000	0.000
0.0293	1.676	1.03283	1.02016	1.3669	1.3623	-0.451	-0.418	123.698	126.878
0.0492	2.874	1.04701	1.03316	1.3819	1.3771	-0.652	-0.607	125.824	128.819
0.0745	4.470	1.05796	1.04396	1.3952	1.3914	-0.819	-0.783	128.089	130.645
0.1077	6.703	1.06746	1.05262	1.4096	1.4064	-0.991	-0.946	129.882	132.376
0.1532	10.049	1.07499	1.05877	1.4258	1.4205	-1.156	-1.079	131.536	134.115
0.2197	15.638	1.07803	1.06236	1.4373	1.4295	-1.213	-1.165	133.564	135.860
0.3255	26.807	1.07888	1.06332	1.4477	1.4421	-1.188	-1.159	135.435	137.602
0.5203	60.268	1.07753	1.06204	1.4579	1.4514	-0.978	-0.976	137.204	139.287
0.6145	88.550	1.07656	1.06112	1.4599	1.4535	-0.829	-0.841	137.735	139.794
0.7964	217.309	1.07514	1.05974	1.4638	1.4571	-0.530	-0.565	138.419	140.453
1.0000		1.07259	1.05680	1.4661	1.4590	0.000	0.000	0.000	0.000

R. Rocha Pinto, D. Santos, S. Mattedi, M Aznar, Density, refractive index, apparent volumes and excess molar volumes of four protic ionic liquids + water at *T*=298.15 and 323.15 K, Brazilian Journal of Chemical Engineering, Braz. J. Chem. Eng. vol.32 no.3 São Paulo July/Sept. 2015

2-hydroxy ethylammonium pentanoate (2-HEAP) + water (2 niza)

Table 2 Mole fraction, x_1, molality, m, experimental density, ρ, refractive index, n_D, Excess Molar Volumes, Vm^E, and Apparent molar Volumes, $V_{\varphi,1}$ of ionic liquids (1) + water (2).

x_1	m/mol. kg^{-1}	ρ/g.cm^{-3}		n_D		Vm^E /cm^{-3}.mol^{-1}		$V_{\varphi,1}$ /cm^{-3}.mol^{-1}	
		25 °C	50 °C	25 °C	50 °C	25 °C	50 °C	25 °C	50 °C
2-HEAP + water									
0.0000		0.99704	0.98749	1.3325	1.3289	0.000	0.000	0.000	0.000
0.0122	0.6846	1.01150	1.00119	1.3478	1.3440	-0.195	-0.195	140.409	142.786
0.0270	1.5401	1.02437	1.01226	1.3626	1.3589	-0.390	-0.368	141.954	145.147
0.0453	2.6351	1.03465	1.02104	1.3782	1.3741	-0.566	-0.524	143.908	147.220
0.0683	4.0723	1.04207	1.02761	1.3905	1.3885	-0.712	-0.660	145.979	149.119
0.0996	6.1472	1.04746	1.03255	1.4018	1.4004	-0.841	-0.788	147.962	150.878
0.1422	9.2133	1.05108	1.03585	1.4126	1.4116	-0.956	-0.904	149.683	152.430
0.2045	14.2773	1.05298	1.03757	1.4245	1.4234	-1.049	-1.004	151.267	153.876
0.3060	24.4985	1.05331	1.03774	1.4358	1.4338	-1.113	-1.075	152.762	155.274
0.5000	55.5492	1.05162	1.03619	1.4477	1.4451	-1.069	-1.067	154.261	156.654
0.8608	343.5629	1.04651	1.03079	1.4630	1.4558	-0.500	-0.497	155.819	158.211
1.0000		1.04354	1.02785	1.4645	1.4561	0.000	0.000	0.000	0.000

R. Rocha Pinto, D. Santos, S. Mattedi, M Aznar, Density, refractive index, apparent volumes and excess molar volumes of four protic ionic liquids + water at *T*=298.15 and 323.15 K, Brazilian Journal of Chemical Engineering, Braz. J. Chem. Eng. vol.32 no.3 São Paulo July/Sept. 2015

2-hydroxy ethylammonium hexanoate (2-HEAH) + water (2 niza)

Table 2 Mole fraction, x_1, molality, m, experimental density, ρ, refractive index, n_D, Excess Molar Volumes, Vm^E, and Apparent molar Volumes, $V_{\varphi,1}$ of ionic liquids (1) + water (2).

x_1	m/mol. kg^{-1}	ρ/g.cm^{-3}		n_D		Vm^E /cm^{-3}.mol^{-1}		$V_{\varphi,1}$ /cm^{-3}.mol^{-1}	
		25 °C	50 °C	25 °C	50 °C	25 °C	50 °C	25 °C	50 °C
2-HEAH + water									
0.0000		0.99704	0.98749	1..3325	1.3289	0.000	0.000	0.000	0.000
0.0111	0.6257	1.00891	0.99853	1.3478	1.3432	-0.189	-0.188	156.829	159.620
0.0250	1.4263	1.01923	1.00689	1.3617	1.3570	-0.380	-0.353	158.586	162.350
0.0418	2.4262	1.02614	1.01259	1.3748	1.3708	-0.534	-0.493	161.002	164.693
0.0636	3.7721	1.03093	1.01670	1.3877	1.3849	-0.673	-0.626	163.182	166.617
0.0921	5.6324	1.03450	1.01977	1.4002	1.3967	-0.819	-0.769	164.880	168.113
0.1330	8.5245	1.03698	1.02165	1.4132	1.4071	-0.982	-0.925	166.388	169.511
0.1937	13.3480	1.03806	1.02254	1.4247	1.4185	-1.162	-1.111	167.774	170.732
0.2899	22.6811	1.03728	1.02147	1.4354	1.4291	-1.339	-1.286	169.154	172.029
0.6782	84.6653	1.02532	1.00960	1.4576	1.4505	-0.777	-0.747	172.363	175.108
0.8773	397.3627	1.02137	1.00557	1.4618	1.4540	-0.264	-0.224	173.472	176.212
1.0000		1.01995	1.00438	1.4623	1.4548	0.000	0.000	0.000	0.000

R. Rocha Pinto, D. Santos, S. Mattedi, M Aznar, Density, refractive index, apparent volumes and excess molar volumes of four protic ionic liquids + water at *T*=298.15 and 323.15 K, Brazilian Journal of Chemical Engineering, Braz. J. Chem. Eng. vol.32 no.3 São Paulo July/Sept. 2015

2-hydroxy diethylammonium hexanoate (2-HDEAH) + water (2 niza)

Table 2 Mole fraction, x_1, molality, m, experimental density, ρ, refractive index, n_D, Excess Molar Volumes, Vm^E, and Apparent molar Volumes, $V_{\varphi,1}$ of ionic liquids (1) + water (2).

x_1	m/mol. kg^{-1}	ρ/g.cm^{-3}		n_D		Vm^E /cm^{-3}.mol^{-1}		$V_{\varphi,1}$ /cm^{-3}.mol^{-1}	
		25 °C	50 °C	25 °C	50 °C	25 °C	50 °C	25 °C	50 °C
2-HDEAH + water									
0.0000		0.99704	0.98749	1.3325	1.3289	0.000	0.000	0.000	0.000
0.0081	0.4551	1.01091	1.00056	1.3470	1.3434	-0.165	-0.168	188.682	192.109
0.0180	1.0157	1.02345	1.01133	1.3617	1.3573	-0.328	-0.314	190.753	195.319
0.0301	1.7250	1.03433	1.02060	1.3762	1.3724	-0.483	-0.452	192.993	197.789
0.0448	2.6085	1.04281	1.02818	1.3896	1.3849	-0.614	-0.580	195.339	199.871
0.0644	3.8219	1.05056	1.03526	1.4039	1.3998	-0.756	-0.725	197.279	201.537
0.0903	5.5124	1.05681	1.04094	1.4171	1.4135	-0.895	-0.870	199.115	203.164
0.1324	8.4767	1.06226	1.04593	1.4314	1.4279	-1.054	-1.044	201.066	204.909
0.1832	12.4630	1.06470	1.04810	1.4422	1.4379	-1.152	-1.164	202.738	206.444
0.4769	50.6553	1.06131	1.04449	1.4641	1.4567	-0.816	-0.961	207.318	210.783
1.0000		1.05871	1.03995	1.4714	1.4632	0.000	0.000	0.000	0.000

R. Rocha Pinto, D. Santos, S. Mattedi, M Aznar, Density, refractive index, apparent volumes and excess molar volumes of four protic ionic liquids + water at *T*=298.15 and 323.15 K, Brazilian Journal of Chemical Engineering, Braz. J. Chem. Eng. vol.32 no.3 São Paulo July/Sept. 2015

Furfural + benzene (1 niz)

TABLE 1. Molar excess volumes, V^E ($cm^3 mol^{-1}$), for binary mixtures of furfural with some aromatic hydrocarbons at 308.15 K

x	V^E ($cm^3 mol^{-1}$)	x	V^E ($cm^3 mol^{-1}$)
x Furfural + $(1 - x)$ benzene			
0.0672	−0.023	0.5620	−0.108
0.2082	−0.066	0.6652	−0.103
0.2751	−0.088	0.8072	−0.062
0.3528	−0.101	0.9284	−0.024
0.4552	−0.113		

Homendra Naorem, S. K. Suri, Excess molar volumes, speeds of sound, and isentropic compressibilities of binary mixtures of furfural with some aromatic hydrocarbons, CAN. J. CHEM. VOL. 66, 198, 1295-1298

Furfural + toluene (1 niz)

TABLE 1. Molar excess volumes, V^E ($cm^3 mol^{-1}$), for binary mixtures of furfural with some aromatic hydrocarbons at 308.15 K

x	V^E ($cm^3 mol^{-1}$)	x	V^E ($cm^3 mol^{-1}$)
x Furfural + (1 − x) toluene			
0.0857	−0.036	0.6802	−0.144
0.2344	−0.098	0.7596	−0.118
0.3053	−0.126	0.8593	−0.082
0.3720	−0.147	0.9164	−0.055
0.5304	−0.162		

Homendra Naorem, S. K. Suri, Excess molar volumes, speeds of sound, and isentropic compressibilities of binary mixtures of furfural with some aromatic hydrocarbons, CAN. J. CHEM. VOL. 66, 198, 1295-1298

Furfural + ethylbenzene (1 niz)

TABLE 1. Molar excess volumes, V^E ($cm^3\ mol^{-1}$), for binary mixtures of furfural with some aromatic hydrocarbons at 308.15 K

x	V^E ($cm^3\ mol^{-1}$)	x	V^E ($cm^3\ mol^{-1}$)
x Furfural + (1 − *x*) ethylbenzene			
0.0916	−0.016	0.5716	−0.052
0.1733	−0.028	0.6448	−0.051
0.2378	−0.036	0.7479	−0.038
0.3957	−0.049	0.8948	−0.018
0.4752	−0.058		

Homendra Naorem, S. K. Suri, Excess molar volumes, speeds of sound, and isentropic compressibilities of binary mixtures of furfural with some aromatic hydrocarbons, CAN. J. CHEM. VOL. 66, 198, 1295-1298

Furfural + *o*-xylene (1 niz)

TABLE 1. Molar excess volumes, V^E (cm^3 mol^{-1}), for binary mixtures of furfural with some aromatic hydrocarbons at 308.15 K

x	V^E (cm^3 mol^{-1})	x	V^E (cm^3 mol^{-1})
x Furfural + $(1 - x)$ *o*-xylene			
0.0853	0.019	0.5976	0.024
0.1887	0.039	0.7308	0.001
0.2941	0.052	0.8544	−0.013
0.4381	0.040	0.9530	−0.008
0.5498	0.035		

Homendra Naorem, S. K. Suri, Excess molar volumes, speeds of sound, and isentropic compressibilities of binary mixtures of furfural with some aromatic hydrocarbons, CAN. J. CHEM. VOL. 66, 198, 1295-1298

Furfural + *m*-xylene (1 niz)

TABLE 1. Molar excess volumes, V^E ($cm^3\ mol^{-1}$), for binary mixtures of furfural with some aromatic hydrocarbons at 308.15 K

x	V^E ($cm^3\ mol^{-1}$)	x	V^E ($cm^3\ mol^{-1}$)
x Furfural + $(1 - x)$ *m*-xylene			
0.0888	−0.004	0.6550	−0.040
0.2724	−0.026	0.7319	−0.034
0.3749	−0.038	0.8487	−0.018
0.4821	−0.042	0.8945	−0.016
0.5578	−0.044		

Homendra Naorem, S. K. Suri, Excess molar volumes, speeds of sound, and isentropic compressibilities of binary mixtures of furfural with some aromatic hydrocarbons, CAN. J. CHEM. VOL. 66, 198, 1295-1298

Furfural + *p*-xylene (1 niz)

TABLE 1. Molar excess volumes, V^E ($cm^3\ mol^{-1}$), for binary mixtures of furfural with some aromatic hydrocarbons at 308.15 K

x	V^E ($cm^3\ mol^{-1}$)	x	V^E ($cm^3\ mol^{-1}$)
x Furfural + $(1 - x)$ *p*-xylene			
0.1862	−0.056	0.6551	−0.088
0.2889	−0.080	0.7328	−0.075
0.3716	−0.094	0.8687	−0.041
0.5058	−0.099	0.9631	−0.012
0.5939	−0.095		

Homendra Naorem, S. K. Suri, Excess molar volumes, speeds of sound, and isentropic compressibilities of binary mixtures of furfural with some aromatic hydrocarbons, CAN. J. CHEM. VOL. 66, 198, 1295-1298

Methanol + acetonitrile (1 niz)

TABLE II. Density and molar excess volume at 298.15 K

x_1	ρ g cm^{-3}	V^E cm^{3}mol^{-1}	x_1	ρ g cm^{-3}	V^E cm^{3}mol^{-1}	x_1	ρ g cm^{-3}	V^E cm^{3}mol^{-1}
Methanol(1)+acetonitrile(2)								
0.1012	0.77800	– 0.034	0.3869	0.78189	– 0.120	0.6998	0.78583	– 0.155
0.1986	0.77919	– 0.058	0.3995	0.78207	– 0.123	0.7983	0.78675	– 0.140
0.2482	0.77994	– 0.078	0.4990	0.78342	– 0.144	0.8523	0.78709	– 0.122
0.3028	0.78076	– 0.099	0.5871	0.78449	– 0.151	0.9012	0.78731	– 0.101

Ivona R. Grgurić, Aleksandar Ž. Tasić, Bojan D. Djordjević, Mirjana Lj. Kijevčanin and Slobodan P. Šerbanović, Excess molar volume of the acetonitrile + alcohol systems at 298.15 K. Part I: Density measurements for acetonitrile + methanol, + ethanol systems, J.Serb.Chem.Soc. 67(8–9)581–586(2002)

TABLE I. Densities of the pure compounds at 298.15 K

Compound	Density/g cm^{-3}	
	this work	literature
Methanol	0.78665	078655 – 0.78676[5]
Ethanol	0.78525	0.7852[6] 0.78517[7]
Acetonitrile	0.77669	0.77669[5] 0.77649[8], 0.77673[8]

n-pentane + difuryl methane (2 niza)

x_2	ρ	V_m^E (DFM + n-Pentane) T = 293.15 K	x_2	ρ	V_m^E T = 298.15 K
0.00000	626.34	0.00000	0.00000	621.37	0.00000
0.00237	627.58	0.01180	0.00237	622.60	0.01300
0.00591	629.45	0.02610	0.00591	624.45	0.02999
0.00935	631.28	0.03755	0.00935	626.29	0.03854
0.01155	632.45	0.04340	0.01155	627.45	0.04558
0.01975	636.93	0.04622	0.01975	631.92	0.04747
0.02739	641.27	0.01572	0.02739	636.25	0.01576
0.03124	643.49	0.00537	0.03124	638.47	-0.00692
0.04018	648.40	0.01379	0.04018	643.36	-0.01469
0.05043	654.18	0.05257	0.05043	649.12	-0.05364
0.06282	661.00	0.07467	0.06282	655.92	-0.07617
0.08197	671.68	0.14131	0.08197	666.56	-0.14213
0.10130	682.22	0.17790	0.10130	677.16	-0.19476
0.15077	708.95	0.27795	0.15077	703.92	-0.31207
0.20126	735.78	0.37367	0.20126	730.79	-0.42408
0.25220	762.47	0.47563	0.25220	757.41	-0.52240
0.35191	812.97	0.59058	0.35191	808.01	-0.66129
0.40132	837.41	0.64557	0.40132	832.78	-0.76691
0.50397	886.84	0.73608	0.50397	881.91	-0.81240
0.65159	953.91	0.68707	0.65159	949.15	-0.77636
0.75103	996.88	0.59535	0.75103	992.07	-0.66643
0.84966	1037.62	0.43573	0.84966	1032.58	-0.46305
0.89796	1056.81	0.32180	0.89796	1051.81	-0.34649
0.95704	1079.79	0.17383	0.95704	1074.68	-0.17458
1.00000	1095.68	0.00000	1.00000	1090.63	0.00000

Wilfred Ddamba, Belcher Fulele, Misael Silas Nadiye –Tabbiruka, Densities, Excess and Partial Molar Volumes of (DFM + n-pentane or n-hexane or n-heptane or n-octane) Binary Mixtures at (T = 293.15, 298.15 and 303.15) K and Atmospheric Pressure, Physical Chemistry 2018; 8(1): 13-25, doi:10.5923/j.pc.20180801.02

n-hexane + difuryl methane (3 niza)

x_1	ρ	V_m^E						
		T = 293.15 K			T = 298.15 K			T = 303.15 K
0.00000	659.98	0.00000	0.00000	655.42	0.00000	0.00000	650.86	0.00000
0.00102	660.44	0.00058	0.00102	655.88	0.00047	0.00102	651.31	0.00036
0.00202	660.89	0.00080	0.00202	656.32	0.00079	0.00202	651.76	0.00057
0.00410	661.82	0.00154	0.00410	657.26	0.00129	0.00410	652.69	0.00083
0.00603	662.69	0.00253	0.00603	658.12	0.00190	0.00603	653.55	0.00165
0.00801	663.58	0.00311	0.00801	659.01	0.00229	0.00801	654.44	0.00163
0.01005	664.49	0.00428	0.01005	659.92	0.00325	0.01005	655.35	0.00217
0.01589	667.11	0.00671	0.01589	662.54	0.00396	0.01589	657.96	0.00310
0.02751	672.33	0.00951	0.02751	667.74	0.00733	0.02751	663.15	0.00501
0.04246	679.03	0.01564	0.04246	674.44	0.00927	0.04246	669.83	0.00656
0.05570	684.94	0.02316	0.05570	680.35	0.01326	0.05570	675.74	0.00686
0.07395	693.10	0.03003	0.07395	688.49	0.01926	0.07395	683.87	0.00993
0.08716	699.00	0.03516	0.08716	694.38	0.02301	0.08716	689.75	0.01222
0.12031	713.78	0.04685	0.12031	709.12	0.03442	0.12031	704.45	0.02323
0.15151	727.65	0.05909	0.15151	722.96	0.04542	0.15151	718.28	0.02916
0.23626	765.26	0.07491	0.23626	760.50	0.05778	0.23626	755.77	0.03433
0.30591	796.04	0.08021	0.30591	791.27	0.05432	0.30591	786.59	0.01179
0.34734	814.30	0.07957	0.34734	809.70	0.02062	0.34734	804.92	-0.01061
0.37207	825.22	0.07191	0.37207	820.65	0.00567	0.37207	815.84	-0.02357
0.40008	837.61	0.05660	0.40008	833.02	-0.00887	0.40008	828.19	-0.03789
0.46056	864.25	0.02894	0.46056	859.59	-0.02986	0.46056	854.74	-0.06111
0.48698	875.91	0.00851	0.48698	871.18	-0.04118	0.48698	866.32	-0.07282
0.57618	914.88	-0.02151	0.57618	910.06	-0.06166	0.57618	905.17	-0.09335
0.60756	928.57	-0.03693	0.60756	923.71	-0.07218	0.60756	918.79	-0.10052
0.67985	959.86	-0.05205	0.67985	954.93	-0.07841	0.67985	949.98	-0.10365
0.73457	983.44	-0.06270	0.73457	978.35	-0.06700	0.73457	973.35	-0.08510
0.79902	1010.88	-0.04593	0.79902	1005.81	-0.05213	0.79902	1000.75	-0.06103
0.84676	1031.11	-0.03185	0.84676	1026.04	-0.03674	0.84676	1020.96	-0.04165
0.89350	1050.90	-0.02436	0.89350	1045.81	-0.02495	0.89350	1040.71	-0.02550
1.00000	1095.68	0.00000	1.00000	1090.63	0.00000	1.00000	1085.57	000000

Wilfred Ddamba, Belcher Fulele, Misael Silas Nadiye –Tabbiruka, Densities, Excess and Partial Molar Volumes of (DFM + n-pentane or n-hexane or n-heptane or n-octane) Binary Mixtures at (T = 293.15, 298.15 and 303.15) K and Atmospheric Pressure, Physical Chemistry 2018; 8(1): 13-25, doi:10.5923/j.pc.20180801.02

n-heptane + difuryl methane (3 niza)

x_2	ρ	V_m^E						
		T = 293.15 K			T = 298.15 K			T = 303.15 K
0.00000	684.19	0.00000	0.00000	679.96	0.00000	0.00000	675.71	0.00000
0.00105	684.57	0.00362	0.00105	680.34	0.00336	0.00105	676.09	0.00309
0.00203	684.93	0.00671	0.00203	680.70	0.00598	0.00203	676.46	0.00348
0.00404	685.67	0.01145	0.00404	681.44	0.01041	0.00404	677.19	0.00934
0.00605	686.41	0.01658	0.00605	682.19	0.01286	0.00605	677.94	0.01123
0.00805	687.16	0.02013	0.00805	682.93	0.01695	0.00805	678.68	0.01500
0.01065	688.12	0.02543	0.01065	683.89	0.02265	0.01065	679.63	0.02197
0.02047	691.78	0.04205	0.02047	687.54	0.03881	0.02047	683.28	0.03548
0.04190	699.84	0.06655	0.04190	695.56	0.06609	0.04190	691.26	0.06561
0.06413	708.22	0.09376	0.06413	703.91	0.09384	0.06413	699.59	0.09180
0.08505	716.10	0.12500	0.08505	711.77	0.12405	0.08505	707.42	0.12305
0.09963	721.64	0.13953	0.09963	717.31	0.13498	0.09963	712.94	0.13444
0.15055	741.20	0.16721	0.15055	736.81	0.16254	0.15055	732.38	0.16175
0.20019	760.46	0.18454	0.20019	756.02	0.17848	0.20019	751.54	0.17617
0.25405	781.58	0.19282	0.25405	777.09	0.18497	0.25405	772.57	0.17883
0.30182	800.49	0.19451	0.30182	795.94	0.18837	0.30182	791.37	0.18214
0.35906	823.42	0.18197	0.35906	818.82	0.17432	0.35906	814.21	0.16483
0.45157	861.16	0.12305	0.45157	856.49	0.11220	0.45157	851.80	0.10130
0.50205	881.94	0.10125	0.50205	877.23	0.08983	0.50205	872.50	0.07843
0.55484	904.01	0.05447	0.55484	899.25	0.04402	0.55484	894.47	0.03368
0.61140	927.71	0.02986	0.61140	922.95	0.01305	0.61140	918.11	0.00554
0.65009	944.11	0.00411	0.65009	939.27	-0.00467	0.65009	934.44	-0.01765
0.70711	968.37	-0.01757	0.70711	963.47	-0.02281	0.70711	958.58	-0.03194
0.79823	1007.44	-0.02769	0.79823	1002.51	-0.03533	0.79823	997.57	-0.04374
0.84778	1028.88	-0.02554	0.84778	1024.00	-0.04260	0.84778	1019.01	-0.04690
0.90629	1054.41	-0.02218	0.90629	1049.41	-0.02583	0.90629	1044.50	-0.04301
0.94036	1069.35	-0.01523	0.94036	1064.33	-0.01748	0.94036	1059.31	-0.02125
1.00000	1095.68	0.00000	1.00000	1090.63	0.00000	1.00000	1085.57	0.00000

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n-octane + difuryl methane (3 niza)

x_1	ρ	V_m^E
		T = 293.15 K
0.00000	702.76	0.00000
0.00208	703.42	0.00461
0.00410	704.06	0.00917
0.00601	704.67	0.01289
0.00809	705.34	0.01585
0.01048	706.11	0.01837
0.02170	709.72	0.03603
0.04573	717.39	0.09784
0.06068	722.20	0.13344
0.07982	728.44	0.16845
0.10932	738.00	0.25150
0.15059	751.86	0.29523
0.20332	769.90	0.34108
0.25390	787.50	0.38606
0.30544	805.88	0.40663
0.34968	821.96	0.41691
0.40906	844.05	0.41128
0.45307	860.73	0.40725
0.50500	880.78	0.39897
0.55731	901.55	0.36091
0.60238	919.86	0.31557
0.65073	939.90	0.26029
0.69975	960.59	0.20762
0.75628	984.98	0.14279
0.79952	1004.10	0.08089
0.85572	1029.20	0.03569
0.90193	1050.10	0.02125
0.95170	1073.03	0.00724
1.00000	1095.68	0.00000

		T = 298.15 K
0.00000	698.74	0.00000
0.00208	699.40	0.00407
0.00410	700.04	0.00811
0.00601	700.65	0.01133
0.00809	701.32	0.01373
0.01048	702.08	0.01794
0.02170	705.68	0.03496
0.04573	713.33	0.09541
0.06068	718.12	0.13188
0.07982	724.34	0.16663
0.10932	733.87	0.24949
0.15059	747.68	0.29399
0.20332	765.66	0.34001
0.25390	783.21	0.38381
0.30544	801.53	0.40493
0.34968	817.59	0.40977
0.40906	839.58	0.41062
0.45307	856.21	0.40699
0.50500	876.21	0.39776
0.55731	896.93	0.35866
0.60238	915.20	0.31201
0.65073	935.18	0.25819
0.69975	955.82	0.20551
0.75628	980.20	0.13394
0.79952	999.32	0.06620
0.85572	1024.30	0.03088
0.90193	1045.13	0.02069
0.95170	1068.03	0.00544
1.00000	1090.63	0.00000

		T = 303.15 K
0.00000	694.70	0.00000
0.00208	695.36	0.00351
0.00410	696.00	0.00703
0.00601	696.61	0.00974
0.00809	697.28	0.01157
0.01048	698.03	0.01750
0.02170	701.62	0.03386
0.04573	709.25	0.09293
0.06068	714.03	0.12800
0.07982	720.22	0.16478
0.10932	729.72	0.24746
0.15059	743.48	0.29276
0.20332	761.40	0.33899
0.25390	778.90	0.38163
0.30540	797.16	0.40334
0.34968	813.18	0.40649
0.40906	835.10	0.40836
0.45307	851.69	0.40345
0.50500	871.62	0.39690
0.55731	892.29	0.35680
0.60238	910.51	0.31051
0.65073	930.44	0.25663
0.69975	951.07	0.19791
0.75628	975.36	0.13155
0.79952	994.45	0.06207
0.85572	1019.36	0.02967
0.90193	1040.16	0.01849
0.95170	1063.03	0.00217
1.00000	1085.57	0.00000

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Ethanol + acetonitrile (1 niz)

TABLE II. Density and molar excess volume at 298.15 K

x_1	ρ g cm^{-3}	V^E cm^{3}mol^{-1}	x_1	ρ g cm^{-3}	V^E cm^{3}mol^{-1}	x_1	ρ g cm^{-3}	V^E cm^{3}mol^{-1}
Ethanol(1)+acetonitrile(2)								
0.0480	0.77703	0.008	0.4009	0.78044	– 0.007	0.6525	0.78332	– 0.061
0.1474	0.77785	0.015	0.4400	0.78096	– 0.020	0.7842	0.78454	– 0.072
0.2461	0.77882	0.010	0.4878	0.78152	– 0.031	0.8202	0.78479	– 0.069
0.3008	0.77938	0.005	0.5929	0.78259	– 0.044	0.8988	0.78516	– 0.052
0.3523	0.77994	– 0.002	0.6113	0.78287	– 0.053	0.9478	0.78540	– 0.041

Ivona R. Grgurić, Aleksandar Ž. Tasić, Bojan D. Djordjević, Mirjana Lj. Kijevčanin and Slobodan P. Šerbanović, Excess molar volume of the acetonitrile + alcohol systems at 298.15 K. Part I: Density measurements for acetonitrile + methanol, + ethanol systems, J.Serb.Chem.Soc. 67(8–9)581–586(2002)

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Compound	Density/g cm^{-3}	
	this work	literature
Methanol	0.78665	078655 – 0.78676[5]
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Acetonitrile	0.77669	0.77669[5] 0.77649[8], 0.77673[8]

1-propanol + cyclohexylamine (6 nizova)

TABLE II. Experimental densities, ρ, and excess molar volumes, V^E, for the alkanol (1) + cyclohexylamine (2) binary mixtures at different temperatures 288.15–323.15 K and atmospheric pressure

x_1	ρ / g·cm^{-3}	V^E / cm^3 mol^{-1}	x_1	ρ / g cm^{-3}	V^E / cm^3 mol^{-1}
		1-Propanol (1) + cyclohexylamine (2)			
		T = 288.15 K			
0.0000	0.871290	0.0000	0.6002	0.852683	–1.3633
0.0509	0.870750	–0.2073	0.7000	0.844776	–1.2147
0.1017	0.870088	–0.4014	0.7997	0.834754	–0.9312
0.1486	0.869388	–0.5726	0.8500	0.828866	–0.7418
0.1992	0.868514	–0.7466	0.8998	0.822459	–0.5250
0.3007	0.866227	–1.0467	0.9502	0.815368	–0.2770
0.4009	0.863037	–1.2608	1.0000	0.807690	0.0000
0.4998	0.858771	–1.3819			
		T = 293.15 K			
0.0000	0.866747	0.0000	0.6002	0.848350	–1.3698
0.0509	0.866243	–0.2116	0.7000	0.840517	–1.2212
0.1017	0.865605	–0.4082	0.7997	0.830587	–0.9376
0.1486	0.864928	–0.5816	0.8500	0.824743	–0.7473
0.1992	0.864070	–0.7567	0.8998	0.818382	–0.5292
0.3007	0.861807	–1.0572	0.9502	0.811337	–0.2793
0.4009	0.858633	–1.2699	1.0000	0.803703	0.0000
0.4998	0.854393	–1.3896			
		T = 298.15 K			
0.0000	0.862207	0.0000	0.6002	0.843999	–1.3757
0.0509	0.861732	–0.2152	0.7000	0.836238	–1.2273
0.1017	0.861122	–0.4150	0.7997	0.826395	–0.9434
0.1486	0.860461	–0.5899	0.8500	0.820597	–0.7524
0.1992	0.859622	–0.7666	0.8998	0.814283	–0.5333
0.3007	0.857380	–1.0676	0.9502	0.807280	–0.2814
0.4009	0.854219	–1.2787	1.0000	0.799692	0.0000
0.4998	0.850004	–1.3959			
		T = 303.15 K			
0.0000	0.857671	0.0000	0.6002	0.839630	–1.3812
0.0509	0.857223	–0.2188	0.7000	0.831934	–1.2327
0.1017	0.856634	–0.4211	0.7997	0.822178	–0.9490
0.1486	0.855990	–0.5978	0.8500	0.816427	–0.7576
0.1992	0.855164	–0.7756	0.8998	0.810149	–0.5366
0.3007	0.852939	–1.0769	0.9502	0.803196	–0.2837
0.4009	0.849790	–1.2867	1.0000	0.795650	0.0000
0.4998	0.845594	–1.4023			
		T = 308.15 K			
0.0000	0.853138	0.0000	0.6002	0.835236	–1.3857
0.0509	0.852710	–0.2217	0.7000	0.827602	–1.2373
0.1017	0.852139	–0.4263	0.7997	0.817929	–0.9538
0.1486	0.851509	–0.6047	0.8500	0.812223	–0.7620
0.1992	0.850697	–0.7839	0.8998	0.805991	–0.5404
0.3007	0.848483	–1.0851	0.9502	0.799076	–0.2854
0.4009	0.845341	–1.2934	1.0000	0.791576	0.0000
0.4998	0.841161	–1.4076			
		T = 313.15 K			
0.0000	0.848607	0.0000	0.6002	0.830816	–1.3894
0.0509	0.848196	–0.2244	0.7000	0.823240	–1.2410
0.1017	0.847641	–0.4313	0.7997	0.813647	–0.9579
0.1486	0.847020	–0.6109	0.8500	0.807982	–0.7657
0.1992	0.846216	–0.7910	0.8998	0.801787	–0.5427
0.3007	0.844011	–1.0924	0.9502	0.794911	–0.2860
0.4009	0.840874	–1.2993	1.0000	0.787466	0.0000
0.4998	0.836705	–1.4118			

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1-pentanol + cyclohexylamine (6 nizova)

TABLE II. Experimental densities, ρ, and excess molar volumes, V^E, for the alkanol (1) + cyclohexylamine (2) binary mixtures at different temperatures 288.15–323.15 K and atmospheric pressure

x_1	ρ / g·cm^{-3}	V^E / cm^3 mol^{-1}	x_1	ρ / g cm^{-3}	V^E / cm^3 mol^{-1}
1-Pentanol (1) + cyclohexylamine (2)					
T = 288.15 K					
0.0000	0.871290	0.0000	0.6003	0.848864	–1.1277
0.0506	0.870021	–0.1665	0.6998	0.842494	–0.9985
0.1001	0.868675	–0.3172	0.7962	0.835420	–0.7634
0.1500	0.867306	–0.4689	0.8500	0.831143	–0.5921
0.2002	0.865855	–0.6135	0.8995	0.827043	–0.4144
0.2997	0.862562	–0.8507	0.9501	0.822677	–0.2111
0.3995	0.858846	–1.0422	1.0000	0.818282	0.0000
0.5004	0.854296	–1.1412			
T = 293.15 K					
0.0000	0.866747	0.0000	0.6003	0.844821	–1.1339
0.0506	0.865544	–0.1710	0.6998	0.838550	–1.0045
0.1001	0.864254	–0.3248	0.7962	0.831578	–0.7691
0.1500	0.862936	–0.4789	0.8500	0.827355	–0.5968
0.2002	0.861531	–0.6251	0.8995	0.823304	–0.4180
0.2997	0.858315	–0.8631	0.9501	0.818988	–0.2135
0.3995	0.854658	–1.0524	1.0000	0.814635	0.0000
0.5004	0.850173	–1.1489			
T = 298.15 K					
0.0000	0.862207	0.0000	0.6003	0.840764	–1.1398
0.0506	0.861069	–0.1757	0.6998	0.834591	–1.0104
0.1001	0.859833	–0.3325	0.7962	0.827719	–0.7746
0.1500	0.858565	–0.4891	0.8500	0.823550	–0.6016
0.2002	0.857202	–0.6365	0.8995	0.819549	–0.4220
0.2997	0.854056	–0.8747	0.9501	0.815279	–0.2157
0.3995	0.850460	–1.0623	1.0000	0.810968	0.0000
0.5004	0.846039	–1.1565			
T = 303.15 K					
0.0000	0.857671	0.0000	0.6003	0.836693	–1.1456
0.0506	0.856593	–0.1799	0.6998	0.830615	–1.0161
0.1001	0.855410	–0.3400	0.7962	0.823839	–0.7799
0.1500	0.854186	–0.4984	0.8500	0.819726	–0.6065
0.2002	0.852868	–0.6477	0.8995	0.815771	–0.4256
0.2997	0.849789	–0.8860	0.9501	0.811547	–0.2178
0.3995	0.846251	–1.0719	1.0000	0.807278	0.0000
0.5004	0.841893	–1.1638			
T = 308.15 K					
0.0000	0.853138	0.0000	0.6003	0.832605	–1.1515
0.0506	0.852111	–0.1833	0.6998	0.826617	–1.0218
0.1001	0.850981	–0.3468	0.7962	0.819937	–0.7854
0.1500	0.849802	–0.5075	0.8500	0.815876	–0.6114
0.2002	0.848523	–0.6581	0.8995	0.811967	–0.4295
0.2997	0.845509	–0.8966	0.9501	0.807786	–0.2198
0.3995	0.842027	–1.0810	1.0000	0.803558	0.0000
0.5004	0.837730	–1.1709			
T = 313.15 K					
0.0000	0.848607	0.0000	0.6003	0.828501	–1.1569
0.0506	0.847630	–0.1867	0.6998	0.822595	–1.0262
0.1001	0.846545	–0.3528	0.7962	0.816008	–0.7896
0.1500	0.845407	–0.5155	0.8500	0.811997	–0.6148
0.2002	0.844167	–0.6675	0.8995	0.808133	–0.4319
0.2997	0.841215	–0.9063	0.9501	0.803997	–0.2208
0.3995	0.837791	–1.0896	1.0000	0.799817	0.0000
0.5004	0.833551	–1.1773			

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2-butanol + cyclohexylamine (6 nizova)

TABLE II. Experimental densities, ρ, and excess molar volumes, V^E, for the alkanol (1) + cyclohexylamine (2) binary mixtures at different temperatures 288.15–323.15 K and atmospheric pressure

x_1	ρ / g·cm^{-3}	V^E / cm^3 mol^{-1}	x_1	ρ / g cm^{-3}	V^E / cm^3 mol^{-1}
2-Butanol (1) + cyclohexylamine (2)					
T = 288.15 K					
0.0000	0.871290	0.0000	0.5997	0.845367	–0.8520
0.0495	0.869943	–0.1407	0.7000	0.838111	–0.7422
0.1011	0.868364	–0.2692	0.7999	0.829857	–0.5521
0.1505	0.866768	–0.3858	0.8488	0.825461	–0.4333
0.1995	0.865069	–0.4914	0.8997	0.820714	–0.3012
0.3004	0.861240	–0.6829	0.9498	0.815822	–0.1579
0.3996	0.856833	–0.8145	1.0000	0.810689	0.0000
0.4974	0.851641	–0.8669			
T = 293.15 K					
0.0000	0.866747	0.0000	0.5997	0.841061	–0.8560
0.0495	0.865431	–0.1436	0.7000	0.833870	–0.7465
0.1011	0.863878	–0.2674	0.7999	0.825685	–0.5562
0.1505	0.862303	–0.3917	0.8488	0.821326	–0.4373
0.1995	0.860621	–0.4977	0.8997	0.816614	–0.3046
0.3004	0.856824	–0.6894	0.9498	0.811753	–0.1599
0.3996	0.852442	–0.8198	1.0000	0.806646	0.0000
0.4974	0.847283	–0.8710			
T = 298.15 K					
0.0000	0.862207	0.0000	0.5997	0.836727	–0.8617
0.0495	0.860918	–0.1464	0.7000	0.829591	–0.7524
0.1011	0.859388	–0.2722	0.7999	0.821468	–0.5619
0.1505	0.857832	–0.3978	0.8488	0.817137	–0.4423
0.1995	0.856164	–0.5044	0.8997	0.812454	–0.3087
0.3004	0.852393	–0.6966	0.9498	0.807614	–0.1621
0.3996	0.848033	–0.8261	1.0000	0.802528	0.0000
0.4974	0.842904	–0.8766			
T = 303.15 K					
0.0000	0.857671	0.0000	0.5997	0.832362	–0.8693
0.0495	0.856405	–0.1492	0.7000	0.825272	–0.7602
0.1011	0.854895	–0.2771	0.7999	0.817199	–0.5692
0.1505	0.853354	–0.4041	0.8488	0.812891	–0.4489
0.1995	0.851700	–0.5118	0.8997	0.808227	–0.3138
0.3004	0.847947	–0.7044	0.9498	0.803402	–0.1651
0.3996	0.843604	–0.8336	1.0000	0.798326	0.0000
0.4974	0.838501	–0.8840			
T = 308.15 K					
0.0000	0.853138	0.0000	0.5997	0.827960	–0.8790
0.0495	0.851889	–0.1518	0.7000	0.820909	–0.7704
0.1011	0.850393	–0.2816	0.7999	0.812872	–0.5785
0.1505	0.848866	–0.4106	0.8488	0.808580	–0.4572
0.1995	0.847222	–0.5194	0.8997	0.803926	–0.3201
0.3004	0.843483	–0.7132	0.9498	0.799109	–0.1690
0.3996	0.839155	–0.8429	1.0000	0.794030	0.0000
0.4974	0.834068	–0.8930			
T = 313.15 K					
0.0000	0.848607	0.0000	0.5997	0.823519	–0.8912
0.0495	0.847368	–0.1542	0.7000	0.816495	–0.7829
0.1011	0.845885	–0.2864	0.7999	0.808484	–0.5902
0.1505	0.844366	–0.4171	0.8488	0.804198	–0.4673
0.1995	0.842729	–0.5274	0.8997	0.799548	–0.3281
0.3004	0.838998	–0.7227	0.9498	0.794725	–0.1736
0.3996	0.834678	–0.8534	1.0000	0.789632	0.0000
0.4974	0.829603	–0.9040			

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2-methyl-2-propanol + cyclohexylamine (5 nizova)

TABLE II. Experimental densities, ρ, and excess molar volumes, V^E, for the alkanol (1) + cyclohexylamine (2) binary mixtures at different temperatures 288.15–323.15 K and atmospheric pressure

x_1	ρ / g·cm^{-3}	V^E / cm^3 mol^{-1}	x_1	ρ / g cm^{-3}	V^E / cm^3 mol^{-1}
2-Methyl-2-propanol (1) + cyclohexylamine (2)					
T = 303.15 K					
0.0000	0.857671	0.0000	0.5998	0.820236	–1.0212
0.0508	0.855457	–0.1703	0.6997	0.810864	–0.9197
0.1002	0.853151	–0.3215	0.7999	0.800285	–0.7173
0.1502	0.850673	–0.4619	0.8712	0.792153	–0.5281
0.2001	0.848023	–0.5854	0.8992	0.788654	–0.4232
0.3005	0.842301	–0.8051	0.9504	0.782167	–0.2309
0.3991	0.835940	–0.9560	1.0000	0.775412	0.0000
0.4996	0.828512	–1.0243			
T = 308.15 K					
0.0000	0.853138	0.0000	0.5998	0.815570	–1.0686
0.0508	0.850919	–0.1761	0.6997	0.806147	–0.9683
0.1002	0.848606	–0.3324	0.7999	0.795480	–0.7610
0.1502	0.846119	–0.4776	0.8712	0.787246	–0.5629
0.2001	0.843460	–0.6058	0.8992	0.783692	–0.4522
0.3005	0.837714	–0.8337	0.9504	0.777091	–0.2476
0.3991	0.831325	–0.9915	1.0000	0.770193	0.0000
0.4996	0.823876	–1.0668			
T = 313.15 K					
0.0000	0.848607	0.0000	0.5998	0.810845	–1.1164
0.0508	0.846376	–0.1816	0.6997	0.801362	–1.0173
0.1002	0.844050	–0.3430	0.7999	0.790593	–0.8046
0.1502	0.841553	–0.4936	0.8712	0.782252	–0.5976
0.2001	0.838878	–0.6262	0.8992	0.778642	–0.4811
0.3005	0.833102	–0.8630	0.9504	0.771925	–0.2642
0.3991	0.826681	–1.0284	1.0000	0.764884	0.0000
0.4996	0.819193	–1.1098			
T = 318.15 K					
0.0000	0.844073	0.0000	0.5998	0.806063	–1.1649
0.0508	0.841824	–0.1869	0.6997	0.796506	–1.0665
0.1002	0.839485	–0.3541	0.7999	0.785624	–0.8479
0.1502	0.836970	–0.5096	0.8712	0.777167	–0.6313
0.2001	0.834276	–0.6469	0.8992	0.773501	–0.5092
0.3005	0.828457	–0.8922	0.9504	0.766665	–0.2799
0.3991	0.821996	–1.0656	1.0000	0.759488	0.0000
0.4996	0.814465	–1.1538			
T = 323.15 K					
0.0000	0.839547	0.0000	0.5998	0.801219	–1.2122
0.0508	0.837268	–0.1913	0.6997	0.791580	–1.1145
0.1002	0.834906	–0.3635	0.7999	0.780572	–0.8893
0.1502	0.832370	–0.5243	0.8712	0.771995	–0.6632
0.2001	0.829655	–0.6667	0.8992	0.768268	–0.5351
0.3005	0.823784	–0.9207	0.9504	0.761320	–0.2944
0.3991	0.817275	–1.1023	1.0000	0.754015	0.0000
0.4996	0.809685	–1.1965			

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1-chlorobutane + *n*-hexane (1 niz)

Table 2. Excess volumes for mixtures of 1-chlorobutane (BuCl) and n-alkanes (C_nH_{2n+2})

V^E in $cm^3\ mol^{-1}$. x_1 is the mole fraction of 1-chlorobutane

BuCl+C_6H_{14} x_1	V^E
0·0868	0·032
0·1471	0·053
0·2288	0·072
0·3071	0·095
0·4134	0·118
0·5059	0·123
0·5940	0·113
0·6839	0·098
0·7819	0·075
0·9018	0·036

303,15 K

A. Krishnaiah, D. Nagabhushan Rao and P. Ramachandra Naidu, Excess Volumes for Binary Liquid Mixtures of 1-Chlorobutane with Normal Alkanes, Aust. J. Chem., 1980, 33, 2543-5

1-chlorobutane + *n*-heptane (1 niz)

Table 2. Excess volumes for mixtures of 1-chlorobutane (BuCl) and n-alkanes (C_nH_{2n+2})

V^E in $cm^3\ mol^{-1}$. x_1 is the mole fraction of 1-chlorobutane

$BuCl+C_7H_{16}$ x_1	V^E
0·0968	0·092
0·1665	0·152
0·2531	0·207
0·3287	0·245
0·4507	0·278
0·5696	0·263
0·6105	0·249
0·7116	0·202
0·8067	0·152
0·9125	0·072

303,15 K

A. Krishnaiah, D. Nagabhushan Rao and P. Ramachandra Naidu, Excess Volumes for Binary Liquid Mixtures of 1-Chlorobutane with Normal Alkanes, Aust. J. Chem., 1980, 33, 2543-5

1-chlorobutane + *n*-octane (1 niz)

Table 2. Excess volumes for mixtures of 1-chlorobutane (BuCl) and n-alkanes (C_nH_{2n+2})

V^E in $cm^3\ mol^{-1}$. x_1 is the mole fraction of 1-chlorobutane

$BuCl + C_8H_{18}$ x_1	V^E
0·1265	0·127
0·1842	0·180
0·2749	0·241
0·3551	0·278
0·4736	0·304
0·5928	0·295
0·6342	0·285
0·7252	0·245
0·8162	0·176
0·9143	0·097

303,15 K

A. Krishnaiah, D. Nagabhushan Rao and P. Ramachandra Naidu, Excess Volumes for Binary Liquid Mixtures of 1-Chlorobutane with Normal Alkanes, Aust. J. Chem., 1980, 33, 2543-5

1-chlorobutane + *n*-nonane (1 niz)

Table 2. Excess volumes for mixtures of 1-chlorobutane (BuCl) and n-alkanes (C_nH_{2n+2})
V^E in $cm^3\ mol^{-1}$. x_1 is the mole fraction of 1-chlorobutane

BuCl + C_9H_{20} x_1	V^E
0·1035	0·115
0·1921	0·192
0·2868	0·262
0·3707	0·298
0·5068	0·317
0·5740	0·308
0·6517	0·295
0·7421	0·248
0·8352	0·181
0·9250	0·093

303,15 K

A. Krishnaiah, D. Nagabhushan Rao and P. Ramachandra Naidu, Excess Volumes for Binary Liquid Mixtures of 1-Chlorobutane with Normal Alkanes, Aust. J. Chem., 1980, 33, 2543-5

1-butyl-3-methylimidazolium methylsulphate + methanol (tri niza)

Table 2 Densities and excess molar volumes for ionic liquid (x_1) + methanol (x_2) at T = (298.15, 303.15 and 313.15) K.

x_1	ρ/g cm^{-3}	V_m^E/cm^3 mol^{-1}	x_1	ρ/g cm^{-3}	V_m^E/cm^3 mol^{-1}
		$[BMIM]^+[MeSO_4]^-$ (x_1) + methanol (x_2)			
		T = 298.15 K			
0.0533	0.8905	−0.308	0.5589	1.1628	−0.936
0.1131	0.9638	−0.644	0.6518	1.1775	−0.771
0.1936	1.0329	−0.914	0.7169	1.1858	−0.617
0.2651	1.0748	−1.057	0.7935	1.1944	−0.432
0.3228	1.1002	−1.100	0.8510	1.1997	−0.291
0.4386	1.1371	−1.094	0.9206	1.2058	−0.147
		T = 303.15 K			
0.0533	0.8841	−0.407	0.5589	1.1575	−1.321
0.1131	0.9596	−0.695	0.6518	1.1717	−1.171
0.1936	1.0294	−1.101	0.7169	1.1794	−0.987
0.2651	1.0713	−1.318	0.7935	1.1871	−0.754
0.3228	1.0964	−1.406	0.8510	1.1921	−0.571
0.4386	1.1325	−1.444	0.9206	1.1975	−0.353
		T = 313.15 K			
0.0533	0.8740	−0.321	0.5589	1.1535	−1.531
0.1131	0.9504	−0.629	0.6518	1.1680	−1.405
0.1936	1.0207	−1.022	0.7169	1.1758	−1.227
0.2651	1.0630	−1.225	0.7935	1.11833	−0.957
0.3228	1.0890	−1.355	0.8510	1.1880	−0.720
0.4386	1.1270	−1.520	0.9206	1.1930	−0.424

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Table 1 Pure compound specifications: suppliers, purities, literature and experimental densities at T = (298.15, 303.15, and 313.15) K.

Chemical	Supplier	Purity/mole fraction	ρ/g cm^{-3}			
			Literature	Experimental		
			T = 298.15 K	T = 298.15 K	T = 303.15 K	T = 313.15 K
Methanol	Sigma-Aldrich	0.999	0.78637 [a]	0.7862	0.7836	0.7748
Ethanol	Riedel-de Haën	0.998	0.7852 [a]	0.7854	0.7821	0.7739
1- Propanol	Merck	0.995	0.79960 [a]	0.7994	0.7962	0.7884
$[BMIM]^+$ $[MeSO_4]^-$	Sigma- Aldrich	0.999	1.2124 [b]	1.2120	1.2023	1.1975

1-butyl-3-methylimidazolium methylsulphate + ethanol (tri niza)

Table 3 Densities and excess molar volumes for ionic liquid (x_1) + ethanol (x_2) at T = (298.15, 303.15 and 313.15) K.

x_1	ρ/g cm^{-3}	V_m^E/cm^3 mol^{-1}	x_1	ρ/g cm^{-3}	V_m^E/cm^3 mol^{-1}
		$[BMIM]^+[MeSO_4]^-$ (x_1) + ethanol (x_2)			
		T = 298.15 K			
0.0738	0.8814	−0.202	0.6223	1.1533	−0.524
0.1547	0.9573	−0.403	0.7231	1.1731	−0.415
0.2046	0.9950	−0.508	0.8249	1.1896	−0.281
0.3165	1.0560	−0.615	0.8877	1.1983	−0.173
0.4056	1.0926	−0.647	0.9424	1.2052	−0.079
0.5095	1.1256	−0.619			
		T = 303.15 K			
0.0738	0.8771	−0.214	0.6223	1.1460	−0.698
0.1547	0.9520	−0.418	0.7231	1.1652	−0.568
0.2046	0.9893	−0.537	0.8249	1.1810	−0.385
0.3165	1.0500	−0.713	0.8877	1.1895	−0.276
0.4056	1.0862	−0.775	0.9424	1.1960	−0.141
0.5095	1.1187	−0.767			
		T = 313.15 K			
0.0738	0.8694	−0.236	0.6223	1.1414	−0.844
0.1547	0.9445	−0.427	0.7231	1.1609	−0.729
0.2046	0.9819	−0.533	0.8249	1.1768	−0.535
0.3165	1.0437	−0.767	0.8877	1.1851	−0.377
0.4056	1.0806	−0.869	0.9424	1.1915	−0.210
0.5095	1.1134	−0.859			

Precious N. Sibiya and Nirmala Deenadayalu, Excess Molar Volumes and Partial Molar Volumes of Binary Systems (Ionic Liquid + Methanol or Ethanol or 1-Propanol) at T = (298.15, 303.15 and 313.15) K, S. Afr. J. Chem., 2009, 62, 20–25

Table 1 Pure compound specifications: suppliers, purities, literature and experimental densities at T = (298.15, 303.15, and 313.15) K.

Chemical	Supplier	Purity/mole fraction	ρ/g cm^{-3}		
			Literature	Experimental	
			T = 298.15 K	T = 298.15 K	T = 303.15 K	T = 313.15 K

Chemical	Supplier	Purity/mole fraction	Literature T = 298.15 K	Experimental T = 298.15 K	Experimental T = 303.15 K	Experimental T = 313.15 K
Methanol	Sigma-Aldrich	0.999	0.78637[a]	0.7862	0.7836	0.7748
Ethanol	Riedel-de Haën	0.998	0.7852[a]	0.7854	0.7821	0.7739
1- Propanol	Merck	0.995	0.79960[a]	0.7994	0.7962	0.7884
$[BMIM]^+ [MeSO_4]^-$	Sigma- Aldrich	0.999	1.2124[b]	1.2120	1.2023	1.1975

1-butyl-3-methylimidazolium methylsulphate + 1-propanol (tri niza)

Table 4 Densities and excess molar volumes for ionic liquid (x_1) + 1-propanol (x_2) at T = (298.15, 303.15 and 313.15) K.

x_1	ρ/g cm^{-3}	V_m^E/cm^3 mol^{-1}	x_1	ρ/g cm^{-3}	V_m^E/cm^3 mol^{-1}
		$[BMIM]^+[MeSO_4]^-$ (x_1) + 1-propanol (x_2)			
		T = 298.15 K			
0.1011	0.8978	–0.099	0.5862	1.1293	–0.223
0.1258	0.9175	–0.121	0.6708	1.1508	–0.190
0.2100	0.9752	–0.176	0.7775	1.1740	–0.139
0.2639	1.0060	–0.205	0.8542	1.1885	–0.100
0.3556	1.0500	–0.230	0.9168	1.1897	–0.064
0.4756	1.0957	–0.235	0.9600	1.1992	–0.059
		T = 303.15 K			
0.1011	0.8933	–0.094	0.5862	1.11212	–0.227
0.1258	0.9128	–0.124	0.6708	1.1423	–0.193
0.2100	0.9698	–0.194	0.7775	1.1650	–0.133
0.2639	1.0001	–0.221	0.8542	1.1792	–0.090
0.3556	1.0434	–0.248	0.9168	1.1897	–0.055
0.4756	1.0883	–0.251	0.9600	1.1964	–0.023
		T = 313.15 K			
0.1011	0.8858	–0.097	0.5862	1.1156	–0.257
0.1258	0.9054	–0.129	0.6708	1.1371	–0.248
0.2100	0.9626	–0.187	0.7775	1.1600	–0.179
0.2639	0.9931	–0.213	0.8542	1.1743	–0.124
0.3556	1.0368	–0.246	0.9168	1.1848	–0.067
0.4756	1.0822	–0.260	0.9600	1.1916	–0.037

Precious N. Sibiya and Nirmala Deenadayalu, Excess Molar Volumes and Partial Molar Volumes of Binary Systems (Ionic Liquid + Methanol or Ethanol or 1-Propanol) at T = (298.15, 303.15 and 313.15) K, S. Afr. J. Chem., 2009, 62, 20–25

Table 1 Pure compound specifications: suppliers, purities, literature and experimental densities at T = (298.15, 303.15, and 313.15) K.

Chemical	Supplier	Purity/mole fraction	ρ/g cm^{-3}			
			Literature	Experimental		
			T = 298.15 K	T = 298.15 K	T = 303.15 K	T = 313.15 K
Methanol	Sigma-Aldrich	0.999	0.78637 [a]	0.7862	0.7836	0.7748
Ethanol	Riedel-de Haën	0.998	0.7852 [a]	0.7854	0.7821	0.7739
1- Propanol	Merck	0.995	0.79960 [a]	0.7994	0.7962	0.7884
$[BMIM]^+$ $[MeSO_4]^-$	Sigma- Aldrich	0.999	1.2124 [b]	1.2120	1.2023	1.1975

m-xylene + *o*-nitrotoluene (4 niza)

Table 1: Mole fraction of m-xylene (x_1), densities (ρ), excess volumes (V^E), and predicted excess molar volumes from Redlich-Kister equation at T=298.15-313.15 K for the binary mixture of m-xylene (1) with o-nitrotoluene (2).

x_1	ρ (g. cm^{-3})	m-xylene (1)+*o*-nitrotoluene (2) Excess Volume (V^E)	
		Experimental	**Redlich-Kister**
T=298.15 K			
0.09693	1.12893	−0.031	−0.029
0.19452	1.10120	−0.046	−0.049
0.29278	1.07335	−0.060	−0.062
0.39173	1.04540	−0.071	−0.069
0.49135	1.01733	−0.074	−0.071
0.59167	0.98912	−0.070	−0.069
0.69268	0.96081	−0.061	−0.062
0.79441	0.93241	−0.047	−0.049
0.89684	0.90391	−0.030	−0.029
T=303.15 K			
0.09693	1.12891	−0.0281	−0.0274
0.19452	1.10118	−0.0447	−0.0463
0.29278	1.07332	−0.0575	−0.0585
0.39173	1.04536	−0.0657	−0.0652
0.49135	1.01730	−0.0700	−0.0673
0.59167	0.98909	−0.0658	−0.0650
0.69268	0.96079	−0.0574	−0.0583
0.79441	0.93239	−0.0448	−0.0462
0.89684	0.90389	−0.0280	−0.0275
T=308 K			
0.09693	1.12008	−0.025	−0.025
0.19452	1.09218	−0.041	−0.043
0.29278	1.06419	−0.054	−0.054
0.39173	1.03612	−0.062	−0.061
0.49135	1.00795	−0.065	−0.063
0.59167	0.97968	−0.061	−0.060
0.69268	0.95133	−0.053	−0.054
0.79441	0.92290	−0.042	−0.043
0.89684	0.89441	−0.026	−0.026
T=313.15 K			
0.09693	1.12007	−0.0247	−0.0242
0.19452	1.09216	−0.0396	−0.0409
0.29278	1.06417	−0.0509	−0.0517
0.39173	1.03609	−0.0584	−0.0577
0.49135	1.00793	−0.0620	−0.0595
0.59167	0.97966	−0.0583	−0.0575
0.69268	0.95131	−0.0508	−0.0516
0.79441	0.92289	−0.0397	−0.0409
0.89684	0.89440	−0.0248	−0.0243

P. Nagaraja, C. Narasimha Rao, P. Venkateswarlu, Excess Volumes of Binary Liquid Mixtures of m-xylene with Nitrotoluenes, Indian Journal of Advances in Chemical Science 4(4) (2016) 421-424

m-xylene + *m*-nitrotoluene (4 niza)

Table 2: Mole fraction of m-xylene (x_1), densities (ρ), excess volumes (V^E), and predicted excess molar volumes from Redlich-Kister equation at T=298.15-313.15 K for the binary mixture of m-xylene (1) with m-nitrotoluene (2).

x_1	ρ (g. cm^{-3})	m-xylene (1)+*o*-nitrotoluene (2) Excess volume (VE) Experimental	Redlich-Kister
T=298.15 K			
0.09651	1.13457	−0.0321	−0.0312
0.19377	1.10651	−0.0513	−0.0528
0.29179	1.07832	−0.0657	−0.0667
0.39057	1.05001	−0.0751	−0.0744
0.49014	1.02157	−0.0800	−0.0768
0.59050	0.99296	−0.0752	−0.0742
0.69165	0.96424	−0.0656	−0.0665
0.79362	0.93541	−0.0512	−0.0527
0.89639	0.90646	−0.0320	−0.0313
T=303.15 K			
0.09651	1.12906	−0.031	−0.030
0.19377	1.10143	−0.048	−0.050
0.29179	1.07365	−0.061	−0.063
0.39057	1.04574	−0.072	−0.071
0.49014	1.01769	−0.076	−0.073
0.59050	0.98946	−0.071	−0.071
0.69165	0.96111	−0.062	−0.063
0.79362	0.93263	−0.049	−0.050
0.89639	0.90403	−0.030	−0.030
T=308 K			
0.09651	1.12293	−0.028	−0.028
0.19377	1.09514	−0.046	−0.048
0.29179	1.06723	−0.061	−0.061
0.39057	1.03919	−0.068	−0.068
0.49014	1.01103	−0.073	−0.070
0.59050	0.98272	−0.069	−0.068
0.69165	0.95430	−0.060	−0.061
0.79362	0.92577	−0.047	−0.048
0.89639	0.89713	−0.029	−0.029
T=313.15 K			
0.09651	1.12021	−0.027	−0.027
0.19377	1.09242	−0.043	−0.046
0.29179	1.06451	−0.058	−0.058
0.39057	1.03647	−0.066	−0.064
0.49014	1.00833	−0.069	−0.066
0.59050	0.98004	−0.065	−0.064
0.69165	0.95164	−0.057	−0.057
0.79362	0.92314	−0.044	−0.046
0.89639	0.89454	−0.028	−0.027

(pogrešan naziv spoja u naslovu stupca u tablici)

P. Nagaraja, C. Narasimha Rao, P. Venkateswarlu, Excess Volumes of Binary Liquid Mixtures of m-xylene with Nitrotoluenes, Indian Journal of Advances in Chemical Science 4(4) (2016) 421-424 glycerol + methanol (2 niza)

Table 2. The density and excess molar volumes of the binary mixtures of glycerol + methanol and glycerol + water at 298.15, and 303.15 K.

	Methanol			
	ρ (g/mL)		V^E (mL.mol^{-1})	
X	298.15 K	303.15 K	298.15 K	303.15 K
0.00	1.2569	1.2527	0.0000	0.0000
0.05	1.2319	1.2275	0.2954	0.2852
0.10	1.2059	1.2005	0.5807	0.5616
0.15	1.1733	1.1613	0.8535	0.8269
0.20	1.1467	1.1389	1.1116	1.0786
0.25	1.1383	1.1325	1.3521	1.3141
0.30	1.1301	1.1284	1.5722	1.5303
0.35	1.1138	1.1095	1.7688	1.7241
0.40	1.0944	1.0904	1.9386	1.8922
0.45	1.0717	1.0686	2.0777	2.0308
0.50	1.0559	1.0504	2.1822	2.1358
0.55	1.0283	1.0236	2.2475	2.2025
0.60	1.0066	1.0014	2.2685	2.2259
0.65	0.9874	0.9837	2.2398	2.2004
0.70	0.9632	0.9600	2.1550	2.1196
0.75	0.9464	0.9428	2.0071	1.9765
0.80	0.9273	0.9236	1.7881	1.7630
0.85	0.9031	0.8993	1.4891	1.4698
0.90	0.8822	0.8779	1.0996	1.0866
0.95	0.8360	0.8302	0.6078	0.6013
1.00	0.7859	0.7821	0.0000	0.0000

Ufuk Sancar Vural, V. Muradoglu and Sedat Vural, Excess molar volumes, and refractive index of binary mixtures of glycerol + methanol and glycerol + water at 298.15 K and 303.15 K, Bull. Chem. Soc. Ethiop. 2011, 25(1), 111-118 glycerol + water (2 niza)

Table 2. The density and excess molar volumes of the binary mixtures of glycerol + methanol and glycerol + water at 298.15, and 303.15 K.

	Water			
	ρ (g/mL)		V^E (mL.mol^{-1})	
X	298.15 K	303.15 K	298.15 K	303.15 K
0.00	1.2569	1.2527	0.0000	0.0000
0.05	1.2495	1.2373	0.5576	0.5524
0.10	1.2419	1.2308	1.0680	1.0578
0.15	1.2283	1.2176	1.5296	1.5147
0.20	1.2136	1.2106	1.9408	1.9215
0.25	1.1965	1.1927	2.2999	2.2765
0.30	1.1845	1.1816	2.6050	2.5781
0.35	1.1694	1.1648	2.8545	2.8244
0.40	1.1553	1.1520	3.0462	3.0135
0.45	1.1448	1.1392	3.1782	3.1434
0.50	1.1321	1.1295	3.2484	3.2122
0.55	1.1212	1.1176	3.2546	3.2175
0.60	1.1011	1.0987	3.1943	3.1572
0.65	1.0989	1.0942	3.0652	3.0289
0.70	1.0748	1.0728	2.8646	2.8301
0.75	1.0638	1.0596	2.5900	2.5581
0.80	1.0476	1.0454	2.2383	2.2102
0.85	1.0362	1.0324	1.8068	1.7836
0.90	1.0183	1.0153	1.2921	1.2752
0.95	1.0099	1.0068	0.6910	0.6817
1.00	0.9970	0.9956	0.0000	0.0000

Ufuk Sancar Vural, V. Muradoglu and Sedat Vural, Excess molar volumes, and refractive index of binary mixtures of glycerol + methanol and glycerol + water at 298.15 K and 303.15 K, Bull. Chem. Soc. Ethiop. 2011, 25(1), 111-118

Anisaldehyde + Nitrobenzene (3 niza)

TABLE-1
EXPERIMENTAL DENSITIES, EXCESS MOLAR VOLUMES, KINEMATIC VISCOSITIES AND ITS DEVIATION OF ANISALDEHYDE-NITROBENZENE MIXTURE AT 303.15, 313.15 AND 323.15 K

Mole fraction (X_1)	Density (ρ) (g/cc)	Excess volume (V^E) (cc/gmol)	Kinematic viscosity (mpa.s)		Deviation (Δη)
			ν (exp.)	ν (calcd.)	
303.15 K					
0.0714	1.200	0.1322	1.8167	1.8094	0.0012
0.1333	1.199	0.1826	1.9069	1.9098	0.0059
0.2352	1.189	0.2158	2.0864	2.0904	0.0134
0.3157	1.181	0.2495	2.2423	2.2440	0.0427
0.4901	1.166	0.2878	2.5963	2.5944	0.1226
0.5235	1.163	0.2954	2.6623	2.6614	0.1361
0.6059	1.158	0.2858	2.8271	2.8219	0.1713
0.7936	1.151	0.2359	3.1226	3.1275	0.1718
0.8849	1.132	0.1720	3.2317	3.2241	0.1373
0.9389	1.128	0.1013	3.2579	3.2590	0.0787
1.0000	1.125	0.0000	3.2753	3.2753	0.0000
313.15 K					
0.0714	1.196	0.1045	1.4646	1.4620	-0.0296
0.1333	1.191	0.1391	1.5431	1.5407	-0.0495
0.2352	1.179	0.1635	1.6805	1.6863	-0.0740
0.3157	1.172	0.2075	1.8167	1.8145	-0.0657
0.4901	1.158	0.2528	2.1243	2.1245	-0.0351
0.5235	1.153	0.2686	2.1979	2.1873	-0.0146
0.6059	1.149	0.2650	2.3317	2.3442	-0.0117
0.7936	1.134	0.1914	2.7063	2.6878	0.0647
0.8849	1.125	0.1394	2.8381	2.8311	0.0515
0.9389	1.120	0.0836	2.9257	2.9030	0.0533
1.0000	1.119	0.0000	2.9695	2.9695	0.0000
323.15 K					
0.0714	1.185	0.0598	1.3434	1.3440	0.0040
0.1333	1.182	0.0906	1.4158	1.4169	0.0046
0.2352	1.169	0.1221	1.5431	1.5424	0.0026
0.3157	1.163	0.1541	1.6462	1.6454	0.0109
0.4901	1.147	0.2203	1.8754	1.8742	0.0345
0.5235	1.144	0.2344	1.9204	1.9181	0.0402
0.6059	1.140	0.2433	2.0192	2.0247	0.0419
0.7936	1.129	0.1675	2.2423	2.2501	0.0437
0.8849	1.121	0.1106	2.3533	2.3443	0.0472
0.9389	1.118	0.0532	2.3976	2.3934	0.0278
1.0000	1.114	0.0000	2.4418	2.4418	0.0000

R. Baskaran, T.R. Kubendran, Viscosity and Excess Volume of Anisaldehyde-Nitrobenzene at 303.15 K, 313.15 K and 323.15 K, Asian Journal of Chemistry Vol. 20, No. 5 (2008), 3381-3386

Acetic acid + lauryl methacrylate (1 niz)

Densities and excess volumes for all systems at 293 K

x_1	″, g/cm^3	V_m^E, cm^3/mol
Acetic acid–LMA		
0.1030	0.8766	0.1293
0.3245	0.8865	0.4231
0.5348	0.9020	0.6468
0.7103	0.9251	0.7086
0.8995	0.9802	0.4248

Valentyn Serheyev, Densities, excess volumes and partial molar volumes of lauryl methacrylate solutions in some organic solvents, Chemistry & Chemical Technology, Vol. 5, No. 3, 2011, 241-244

Purity, densities, and molar masses of pure components at 293 K

Component	M, g/mol	n_D^{20}		″, g/cm^3		Purity, mas %
		lit.	determ..	lit.	determ.	
Acetic acid	60.0324	1.3717 [5]	1.3716	1.0491 [5]	1.0491	99.9
Benzene	78.1134	1.5011 [5]	1.5009	0.8790 [5]	0.8787	99.9
Hexane	86.1766	1.3750 [5]	1.3751	0.6594 [5]	0.6593	99.9
1,2-Diclorethane	98.9596	1.4448 [6]	1.4445	1.2530 [6]	1.2533	99.8
Lauryl methacrylate	254.4118	1.4457 [6]	1.4455	0.8733 [6]	0.8731	99.8

Dichlorethane + lauryl methacrylate (1 niz)

Densities and excess volumes for all systems at 293 K

x_1	″, g/cm^3	V_m^E, cm^3/mol
1,2-Diclorethane-LMA		
0.1957	0.8955	0.3286
0.3154	0.9131	0.5519
0.5207	0.9552	0.8371
0.7004	1.0144	0.8859
0.9002	1.1378	0.4824

Valentyn Serheyev, Densities, excess volumes and partial molar volumes of lauryl methacrylate solutions in some organic solvents, Chemistry & Chemical Technology, Vol. 5, No. 3, 2011, 241-244,

Purity, densities, and molar masses of pure components at 293 K

Component	*M*, g/mol	n_D^{20}		″, g/cm^3		Purity, mas %
		lit.	determ..	lit.	determ.	
Acetic acid	60.0324	1.3717 [5]	1.3716	1.0491 [5]	1.0491	99.9
Benzene	78.1134	1.5011 [5]	1.5009	0.8790 [5]	0.8787	99.9
Hexane	86.1766	1.3750 [5]	1.3751	0.6594 [5]	0.6593	99.9
1,2-Diclorethane	98.9596	1.4448 [6]	1.4445	1.2530 [6]	1.2533	99.8
Lauryl methacrylate	254.4118	1.4457 [6]	1.4455	0.8733 [6]	0.8731	99.8

n-hexane + lauryl methacrylate (1 niz)

Densities and excess volumes for all systems at 293 K

x_1	″, g/cm^3	V_m^E, cm^3/mol
Hexane-LMA		
0.1137	0.8624	-0.3033
0.3058	0.8402	-0.6883
0.5029	0.8099	-0.9154
0.6053	0.7898	-0.9461
0.7012	0.7674	-0.9088
0.9008	0.7038	-0.4873

Valentyn Serheyev, Densities, excess volumes and partial molar volumes of lauryl methacrylate solutions in some organic solvents, Chemistry & Chemical Technology, Vol. 5, No. 3, 2011, 241-244,

Purity, densities, and molar masses of pure components at 293 K

Component	*M*, g/mol	n_D^{20}		″, g/cm^3		Purity, mas %
		lit.	determ..	lit.	determ.	
Acetic acid	60.0324	1.3717 [5]	1.3716	1.0491 [5]	1.0491	99.9
Benzene	78.1134	1.5011 [5]	1.5009	0.8790 [5]	0.8787	99.9
Hexane	86.1766	1.3750 [5]	1.3751	0.6594 [5]	0.6593	99.9
1,2-Diclorethane	98.9596	1.4448 [6]	1.4445	1.2530 [6]	1.2533	99.8
Lauryl methacrylate	254.4118	1.4457 [6]	1.4455	0.8733 [6]	0.8731	99.8

benzene + lauryl methacrylate (1 niz)

Densities and excess volumes for all systems at 293 K

x_1	", g/cm^3	V_m^E, cm^3/mol
Benzene-LMA		
0.1113	0.8736	-0.1040
0.1546	0.8737	-0.0982
0.3139	0.8737	0.0291
0.4986	0.8735	0.1940
0.7023	0.8741	0.2300
0.9011	0.8763	0.1080

Valentyn Serheyev, Densities, excess volumes and partial molar volumes of lauryl methacrylate solutions in some organic solvents, Chemistry & Chemical Technology, Vol. 5, No. 3, 2011, 241-244,

Purity, densities, and molar masses of pure components at 293 K

Component	*M*, g/mol	n_D^{20}		", g/cm^3		Purity, mas %
		lit.	determ..	lit.	determ.	
Acetic acid	60.0324	1.3717 [5]	1.3716	1.0491 [5]	1.0491	99.9
Benzene	78.1134	1.5011 [5]	1.5009	0.8790 [5]	0.8787	99.9
Hexane	86.1766	1.3750 [5]	1.3751	0.6594 [5]	0.6593	99.9
1,2-Diclorethane	98.9596	1.4448 [6]	1.4445	1.2530 [6]	1.2533	99.8
Lauryl methacrylate	254.4118	1.4457 [6]	1.4455	0.8733 [6]	0.8731	99.8

water + sulfolane (1 niz)

Table 8. Densities (ρ) and Excess Molar Volumes (V^E) for Binary Mixtures at 298.15 K

x_1	ρ/ g·cm^{-3}	V^E/ cm^3·mol^{-1}	x_1	ρ/ g·cm^{-3}	V^E/ cm^3·mol^{-1}
		Water (1) + Sulfolane (2)			
0.0725	1.261 75	−0.003	0.6025	1.209 39	−0.156
0.1148	1.259 24	−0.005	0.6790	1.193 61	−0.181
0.1764	1.255 26	−0.009	0.7374	1.177 76	−0.184
0.2149	1.252 52	−0.011	0.8331	1.141 22	−0.174
0.2730	1.248 01	−0.017	0.8645	1.127 45	−0.162
0.3438	1.241 92	−0.035	0.9008	1.101 55	−0.141
0.4169	1.234 61	−0.058	0.9351	1.074 05	−0.112
0.4651	1.229 21	−0.082	0.9754	1.031 17	−0.052
0.5011	1.224 73	−0.101	0.9872	1.015 84	−0.031
0.5532	1.217 33	−0.125	0.9955	1.003 99	−0.013

Yang-Xin Yu, Jian-Gang Liu, and Guang-Hua Gao, Isobaric Vapor-Liquid Equilibria and Excess Volumes for the Binary Mixtures Water + Sulfolane, Water + Tetraethylene Glycol, and Benzene + Tetraethylene Glycol, J. Chem. Eng. Data 2000, 45, 570-574

Table 1. Densities (ρ) and Refractive Indices (n_D) of Pure Components and Comparison with Literature Values at 298.15 K

	ρ/g·cm^{-3}		n_D	
component	exptl	lit.	exptl	lit.
benzene	0.873 51	0.873 60[a]	1.4979	1.49792[a]
sulfolane	1.265 64[b]	1.264 0[a,b] 1.266 00[c]	1.4819[d]	1.4816[a,d]
tetraethylene glycol	1.120 06	1.120 30[e] 1.119 3[f]	1.4570	1.4570[g]

water + tetraethylene glycol (1 niz)

Table 8. Densities (ρ) and Excess Molar Volumes (V^E) for Binary Mixtures at 298.15 K

x_1	ρ/ g·cm^{-3}	V^E/ cm^3·mol^{-1}	x_1	ρ/ g·cm^{-3}	V^E/ cm^3·mol^{-1}
Water (1) + Tetraethylene Glycol (2)					
0.0098	1.120 01	−0.012	0.7667	1.109 08	−0.999
0.0882	1.119 68	−0.121	0.8402	1.099 54	−0.898
0.1675	1.119 46	−0.254	0.8761	1.090 85	−0.786
0.2370	1.119 24	−0.371	0.9054	1.080 17	−0.653
0.2925	1.119 04	−0.464	0.9373	1.063 50	−0.480
0.4229	1.118 23	−0.664	0.9659	1.040 56	−0.278
0.4359	1.118 10	−0.681	0.9797	1.025 67	−0.170
0.5363	1.117 10	−0.828	0.9890	1.013 68	−0.093
0.6047	1.116 08	−0.921	0.9943	1.006 01	−0.048
0.7168	1.112 42	−1.006			

Yang-Xin Yu, Jian-Gang Liu, and Guang-Hua Gao, Isobaric Vapor-Liquid Equilibria and Excess Volumes for the Binary Mixtures Water + Sulfolane, Water + Tetraethylene Glycol, and Benzene + Tetraethylene Glycol, J. Chem. Eng. Data 2000, 45, 570-574

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benzene + tetraethylene glycol (1 niz)

Table 8. Densities (ρ) and Excess Molar Volumes (V^E) for Binary Mixtures at 298.15 K

x_1	ρ/ g·cm^{-3}	V^E/ cm^3·mol^{-1}	x_1	ρ/ g·cm^{-3}	V^E/ cm^3·mol^{-1}
Benzene (1) + Tetraethylene Glycol (2)					
0.0667	1.111 89	−0.090	0.5371	1.030 79	−0.377
0.1235	1.104 35	−0.146	0.6183	1.010 68	−0.341
0.1685	1.098 08	−0.195	0.6670	0.997 42	−0.310
0.2134	1.091 50	−0.242	0.7296	0.978 81	−0.252
0.2539	1.085 24	−0.279	0.7970	0.956 68	−0.184
0.3326	1.072 13	−0.336	0.8664	0.931 36	−0.119
0.3860	1.062 45	−0.365	0.8920	0.921 26	−0.093
0.4368	1.052 54	−0.379	0.9936	0.903 89	−0.052
0.5015	1.038 87	−0.383			

Yang-Xin Yu, Jian-Gang Liu, and Guang-Hua Gao, Isobaric Vapor-Liquid Equilibria and Excess Volumes for the Binary Mixtures Water + Sulfolane, Water + Tetraethylene Glycol, and Benzene + Tetraethylene Glycol, J. Chem. Eng. Data 2000, 45, 570-574

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component	ρ/g·cm^{-3} exptl	ρ/g·cm^{-3} lit.	n_D exptl	n_D lit.
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sulfolane	1.265 64[b]	1.264 0[a,b] 1.266 00[c]	1.4819[d]	1.4816[a,d]
tetraethylene glycol	1.120 06	1.120 30[e] 1.119 3[f]	1.4570	1.4570[g]

benzonitrile + 1-propanol (1 niz)

Table II. Excess Volumes of Aliphatic Alcohols with Benzonitrile at 308.15 K

x_A[a]	V^E, $cm^3\ mol^{-1}$	ΔV^E,[b] $cm^3\ mol^{-1}$	x_A[a]	V^E, $cm^3\ mol^{-1}$	ΔV^E,[b] $cm^3\ mol^{-1}$
		Benzonitrile + 1-Propanol			
0.1032	−0.163	+0.002	0.4602	−0.249	−0.001
0.1424	−0.210	−0.005	0.5169	−0.225	+0.002
0.2850	−0.268	+0.005	0.6398	−0.160	+0.000
0.3120	−0.277	+0.002	0.7586	−0.113	+0.000
0.3225	−0.277	−0.002	0.8219	−0.084	−0.001
0.4270	−0.258	+0.001			

[a] Mole fraction of benzonitrile. [b] $\Delta V^E = V^E_{obsd} - V^E_{calcd}$ (eq 1).

J. Karunakar, K. Dayananda Reddy, and M. V. Prabhakara Rao, Excess volumes of a homologous series of aliphatic alcohols with benzonltrlle, J. Chem. Eng. Data 1982, 27, 346-347

benzonitrile + 1-butanol (1 niz)

Table II. Excess Volumes of Aliphatic Alcohols with Benzonitrile at 308.15 K

x_A[a]	V^E, cm^3 mol^{-1}	ΔV^E,[b] cm^3 mol^{-1}	x_A[a]	V^E, cm^3 mol^{-1}	ΔV^E,[b] cm^3 mol^{-1}
		Benzonitrile + 1-Butanol			
0.1198	−0.115	+0.000	0.5856	−0.147	+0.000
0.2158	−0.164	+0.002	0.6749	−0.111	+0.004
0.3162	−0.196	−0.007	0.7778	−0.079	−0.004
0.4028	−0.187	+0.002	0.8536	−0.044	+0.001
0.4784	−0.175	+0.002			

[a] Mole fraction of benzonitrile. [b] $\Delta V^E = V^E_{obsd} - V^E_{calcd}$ (eq 1).

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benzonitrile + 1-pentanol (1 niz)

Table II. Excess Volumes of Aliphatic Alcohols with Benzonitrile at 308.15 K

x_A [a]	V^E, cm^3 mol^{-1}	ΔV^E, [b] cm^3 mol^{-1}	x_A [a]	V^E, cm^3 mol^{-1}	ΔV^E, [b] cm^3 mol^{-1}
Benzonitrile + 1-Pentanol					
0.1394	−0.091	−0.004	0.5885	−0.123	+0.003
0.1857	−0.106	+0.001	0.6411	−0.111	+0.005
0.2870	−0.127	+0.008	0.7295	−0.082	−0.003
0.3919	−0.143	+0.002	0.7388	−0.076	+0.000
0.4389	−0.136	+0.008	0.8732	−0.029	+0.003
0.5404	−0.137	−0.006			

[a] Mole fraction of benzonitrile. [b] $\Delta V^E = V^E_{obsd} - V^E_{calcd}$ (eq 1).

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benzonitrile + isopropyl alcohol (1 niz)

Table II. Excess Volumes of Aliphatic Alcohols with Benzonitrile at 308.15 K

x_A[a]	V^E, $cm^3\,mol^{-1}$	ΔV^E,[b] $cm^3\,mol^{-1}$	x_A[a]	V^E, $cm^3\,mol^{-1}$	ΔV^E,[b] $cm^3\,mol^{-1}$
Benzonitrile + Isopropyl Alcohol					
0.1008	−0.135	−0.003	0.5464	−0.134	+0.002
0.1814	−0.187	+0.003	0.6516	−0.079	+0.003
0.2384	−0.207	+0.003	0.7483	−0.049	−0.001
0.3550	−0.208	+0.002	0.8379	−0.003	+0.005
0.4358	−0.190	−0.004			

[a] Mole fraction of benzonitrile. [b] $\Delta V^E = V^E_{obsd} - V^E_{calcd}$ (eq 1).

J. Karunakar, K. Dayananda Reddy, and M. V. Prabhakara Rao, Excess volumes of a homologous series of aliphatic alcohols with benzonltrlle, J. Chem. Eng. Data 1982, 27, 346-347

benzonitrile + isobutyl alcohol (1 niz)

Table II. Excess Volumes of Aliphatic Alcohols with Benzonitrile at 308.15 K

x_A[a]	V^E, $cm^3\ mol^{-1}$	ΔV^E,[b] $cm^3\ mol^{-1}$	x_A[a]	V^E, $cm^3\ mol^{-1}$	ΔV^E,[b] $cm^3\ mol^{-1}$
Benzonitrile + Isobutyl Alcohol					
0.1203	−0.103	−0.002	0.6050	−0.095	+0.000
0.2123	−0.134	+0.006	0.6737	−0.071	+0.001
0.3237	−0.157	−0.003	0.7882	−0.043	−0.006
0.3772	−0.150	+0.001	0.8543	−0.017	+0.003
0.4799	−0.132	+0.000			

[a] Mole fraction of benzonitrile. [b] $\Delta V^E = V^E_{obsd} - V^E_{calcd}$ (eq 1).

J. Karunakar, K. Dayananda Reddy, and M. V. Prabhakara Rao, Excess volumes of a homologous series of aliphatic alcohols with benzonltrlle, J. Chem. Eng. Data 1982, 27, 346-347

benzonitrile + isopentyl alcohol (1 niz)

Table II. Excess Volumes of Aliphatic Alcohols with Benzonitrile at 308.15 K

x_A[a]	V^E, $cm^3\ mol^{-1}$	ΔV^E,[b] $cm^3\ mol^{-1}$	x_A[a]	V^E, $cm^3\ mol^{-1}$	ΔV^E,[b] $cm^3\ mol^{-1}$
Benzonitrile + Isopentyl Alcohol					
0.1337	−0.066	−0.001	0.5830	−0.073	−0.003
0.2394	−0.090	+0.002	0.6099	−0.067	−0.003
0.3468	−0.103	+0.002	0.7283	−0.033	+0.002
0.4469	−0.089	+0.006	0.8124	−0.019	−0.003
0.5402	−0.079	+0.000	0.8756	−0.003	+0.002

[a] Mole fraction of benzonitrile. [b] $\Delta V^E = V^E_{obsd} - V^E_{calcd}$ (eq 1).

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Methyl benzoate + 1,4-dioxane (jedan niz)

x_1	ρ/g·cm^{-3}	V^E/cm^3·mol^{-1}	η/mPa·s	u/m·s^{-1}	k_s/Tpa^{-1}
		T = 313.15 K			
0.0898	1.0205	−0.132	0.984	1320	562
0.1468	1.0257	−0.207	1.006	1328	553
0.2280	1.0326	−0.304	1.040	1336	543
0.3145	1.0390	−0.363	1.075	1340	536
0.4054	1.0450	−0.398	1.110	1348	527
0.5056	1.0507	−0.392	1.157	1352	521
0.6161	1.0560	−0.331	1.208	1356	515
0.7316	1.0608	−0.234	1.263	1356	513
0.8597	1.0655	−0.106	1.324	1356	510

Rathnam, Manapragada & Ambavadekar, Devappa & Nandini, M.. (2013). Studies on Excess Volume, Viscosity, and Speed of Sound of Binary Mixtures of Methyl Benzoate in Ethers at and K. Journal of Thermodynamics. 2013. 10.1155/2013/413878.

TABLE 1: Comparison of experimental density ρ and viscosity η of pure liquids with the literature values at (303.15, 308.15, and 313.15) K.

Liquid	T/K	ρ/g·cm^{-3}		η/mPa·s	
		Exptl.	Lit.	Exptl.	Lit.
Methyl benzoate	303.15	1.0785	1.0788 [18]	1.678	1.673 [28]
			1.0790 [22]		1.656 [18]
	308.15	1.0743	1.0740 [18]	1.517	1.510 [18]
			1.0741 [19]		
					1.504 [20]
			1.07399 [20]		1.510 [21]
	313.15	1.0696	1.0690 [27]	1.373	1.365 [27]
Tetrahydrofuran	303.15	0.8787	0.8771 [22]	0.439	
	308.15	0.8730	0.87214 [22]	0.429	
	313.15	0.8669	0.86719 [22]	0.390	
1,4-Dioxane	303.15	1.0227	1.02271 [23]	1.090	1.102 [23]
					1.095 [24]
	308.15	1.0178	1.0172 [24]	0.999	1.008 [24]
	313.15	1.0116	1.01132 [23]	0.946	0.946 [23]
Anisole	303.15	0.9853	0.984374 [25]	0.923	0.931 [25]
	308.15	0.9792	0.9788 [26]	0.849	0.849 [26]
	313.15	0.9728		0.764	
Butyl vinyl ether	303.15	0.7741		0.387	
	308.15	0.7682		0.365	
	313.15	0.7633		0.354	

Methyl benzoate + anisole (tri niza)

x_1	ρ/g·cm^{-3}	V^E/cm^3·mol^{-1}	η/mPa·s	u/m·s^{-1}	k_s/Tpa^{-1}
Methyl benzoate (1) + Anisole (2)					
T = 303.15 K					
0.0860	0.9950	−0.052	0.974	1388	522
0.1821	1.0056	−0.113	1.038	1380	522
0.2756	1.0157	−0.179	1.101	1372	523
0.3978	1.0282	−0.229	1.187	1368	520
0.4637	1.0347	−0.248	1.234	1368	516
0.5659	1.0442	−0.238	1.307	1368	512
0.6701	1.0534	−0.202	1.391	1368	507
0.7776	1.0624	−0.140	1.480	1368	503
0.8850	1.0710	−0.063	1.572	1368	499
T = 308.15 K					
0.0860	0.9891	−0.062	0.894	1368	540
0.1821	1.0000	−0.145	0.949	1356	544
0.2756	1.0102	−0.209	1.007	1352	542
0.3978	1.0229	−0.264	1.086	1348	538
0.4637	1.0295	−0.285	1.129	1348	535
0.5659	1.0392	−0.282	1.195	1348	530
0.6701	1.0485	−0.242	1.272	1348	525
0.7776	1.0576	−0.175	1.355	1348	520
0.8850	1.0663	−0.093	1.439	1348	516
T = 313.15 K					
0.0860	0.9830	−0.082	0.800	1356	553
0.1821	0.9941	−0.170	0.850	1344	557
0.2756	1.0045	−0.241	0.902	1340	554
0.3978	1.0174	−0.297	0.972	1336	551
0.4637	1.0241	−0.317	1.012	1336	547
0.5659	1.0340	−0.318	1.074	1336	541
0.6701	1.0435	−0.282	1.144	1336	537
0.7776	1.0528	−0.218	1.220	1336	532
0.8850	1.0616	−0.127	1.301	1336	528

Rathnam, Manapragada & Ambavadekar, Devappa & Nandini, M.. (2013). Studies on Excess Volume, Viscosity, and Speed of Sound of Binary Mixtures of Methyl Benzoate in Ethers at and K. Journal of Thermodynamics. 2013. 10.1155/2013/413878.

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Methyl benzoate	303.15	1.0785	1.0788 [18]	1.678	1.673 [28]
			1.0790 [22]		1.656 [18]
	308.15	1.0743	1.0740 [18]	1.517	1.510 [18]
			1.0741 [19]		
					1.504 [20]
			1.07399 [20]		1.510 [21]
	313.15	1.0696	1.0690 [27]	1.373	1.365 [27]
Tetrahydrofuran	303.15	0.8787	0.8771 [22]	0.439	
	308.15	0.8730	0.87214 [22]	0.429	
	313.15	0.8669	0.86719 [22]	0.390	
1,4-Dioxane	303.15	1.0227	1.02271 [23]	1.090	1.102 [23]
					1.095 [24]
	308.15	1.0178	1.0172 [24]	0.999	1.008 [24]
	313.15	1.0116	1.01132 [23]	0.946	0.946 [23]
Anisole	303.15	0.9853	0.984374 [25]	0.923	0.931 [25]
	308.15	0.9792	0.9788 [26]	0.849	0.849 [26]
	313.15	0.9728		0.764	
Butyl vinyl ether	303.15	0.7741		0.387	
	308.15	0.7682		0.365	
	313.15	0.7633		0.354	

Methyl benzoate + butyl vinyl ether (tri niza)

x_1	ρ/g·cm^{-3}	V^E/cm^3·mol^{-1}	η/mPa·s	u/m·s^{-1}	k_s/Tpa^{-1}
T = 303.15 K					
0.1026	0.8056	−0.108	0.437	1104	1019
0.2055	0.8375	−0.260	0.497	1128	938
0.3060	0.8690	−0.423	0.571	1152	867
0.4047	0.8999	−0.544	0.657	1176	804
0.5057	0.9313	−0.605	0.761	1204	741
0.6065	0.9623	−0.596	0.891	1232	685
0.7061	0.9926	−0.524	1.038	1260	635
0.8034	1.0218	−0.388	1.205	1292	586
0.9021	1.0511	−0.201	1.422	1328	540
T = 308.15 K					
0.1026	0.8001	−0.141	0.421	1092	1048
0.2055	0.8322	−0.320	0.478	1116	965
0.3060	0.8637	−0.476	0.546	1136	891
0.4047	0.8947	−0.602	0.657	1160	825
0.5057	0.9261	−0.651	0.626	1188	760
0.6065	0.9572	−0.639	0.720	1216	702
0.7061	0.9875	−0.550	0.974	1248	650
0.8034	1.0168	−0.408	1.124	1280	600
0.9021	1.0462	−0.212	1.319	1316	552
T = 313.15 K					
0.1026	0.7954	−0.182	0.400	1084	1070
0.2055	0.8275	−0.367	0.452	1108	984
0.3060	0.8591	−0.541	0.515	1132	908
0.4047	0.8901	−0.667	0.585	1156	841
0.5057	0.9215	−0.713	0.671	1184	774
0.6065	0.9526	−0.697	0.778	1212	715
0.7061	0.9829	−0.601	0.897	1244	657
0.8034	1.0121	−0.439	1.034	1276	607
0.9021	1.0414	−0.221	1.205	1308	561

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			1.0790 [22]		1.656 [18]
	308.15	1.0743	1.0740 [18]	1.517	1.510 [18]
			1.0741 [19]		
					1.504 [20]
			1.07399 [20]		1.510 [21]
	313.15	1.0696	1.0690 [27]	1.373	1.365 [27]
Tetrahydrofuran	303.15	0.8787	0.8771 [22]	0.439	
	308.15	0.8730	0.87214 [22]	0.429	
	313.15	0.8669	0.86719 [22]	0.390	
1,4-Dioxane	303.15	1.0227	1.02271 [23]	1.090	1.102 [23]
					1.095 [24]
	308.15	1.0178	1.0172 [24]	0.999	1.008 [24]
	313.15	1.0116	1.01132 [23]	0.946	0.946 [23]
Anisole	303.15	0.9853	0.984374 [25]	0.923	0.931 [25]
	308.15	0.9792	0.9788 [26]	0.849	0.849 [26]
	313.15	0.9728		0.764	
Butyl vinyl ether	303.15	0.7741		0.387	
	308.15	0.7682		0.365	
	313.15	0.7633		0.354	