



SUPPLEMENTARY MATERIAL TO
**Vapour pressures and vapour–liquid equilibria of binary
systems of *n*-propyl acetate and isobutyl acetate with
ethanol or 2-propanol at 0.15 MPa**

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TABLE S-I. Experimental vapour pressures

<i>T</i> / K	p_i^0 / kPa	<i>T</i> / K	p_i^0 / kPa	<i>T</i> / K	p_i^0 / kPa	<i>T</i> / K	p_i^0 / kPa	<i>T</i> / K	p_i^0 / kPa	<i>T</i> / K	p_i^0 / kPa
2-Propanol											
303.56	8	345.30	66	366.07	152	377.07	224	411.57	630	439.61	1250
311.44	12	345.81	68	367.12	158	377.87	230	412.83	652	440.50	1275
316.51	16	346.48	70	367.90	162	378.39	234	414.36	677	441.23	1297
319.19	20	348.01	74	368.48	166	378.89	238	417.34	732	442.03	1320
324.18	24	349.26	78	369.51	172	379.95	246	418.21	750	442.81	1342
326.53	28	350.40	82	370.52	178	383.66	275	419.23	767	443.61	1367
328.03	30	351.73	86	371.16	182	387.08	307	421.88	822	444.31	1390
329.48	32	352.79	90	372.14	188	391.67	355	423.21	850	445.31	1420
332.50	36	353.80	94	372.66	192	396.12	407	424.69	882	446.15	1447
334.25	40	358.44	116	373.24	196	398.35	432	427.68	947	447.02	1475
336.38	44	359.92	124	374.35	204	399.85	452	428.98	977	447.68	1497
338.14	48	362.66	134	374.95	208	401.41	475	432.25	1055	448.59	1527
339.77	52	363.46	138	375.51	212	405.52	532	435.33	1132	450.13	1577
341.35	56	364.65	142	376.12	216	406.85	555	437.20	1182	450.86	1602
342.89	60	365.31	148	376.65	220	408.62	582	438.84	1227	451.83	1635
343.75	62	–	–	–	–	–	–	–	–	–	–
<i>n</i> -Propyl acetate											
302.38	6	357.81	58	394.33	170	423.22	357	448.73	627	487.55	1282
309.27	8	359.20	62	397.74	187	424.18	365	451.04	657	488.95	1315
315.38	10	362.40	68	399.26	195	425.46	375	455.14	712	490.05	1337
320.58	14	364.27	72	401.24	205	426.57	385	460.59	792	491.35	1365
325.60	18	365.48	74	402.83	215	427.66	395	465.04	862	492.75	1397
328.41	20	367.16	78	406.50	235	429.93	415	467.92	907	493.35	1412
332.40	24	368.08	82	408.00	245	431.15	427	469.84	942	494.65	1442

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TABLE S-I. Continued

T/K	p_i^0/kPa	T/K	p_i^0/kPa	T/K	p_i^0/kPa	T/K	p_i^0/kPa	T/K	p_i^0/kPa
<i>n</i> -Propyl acetate									
335.68	26	369.09	84	409.60	255	432.20	437	472.33	985
339.33	30	370.28	86	411.25	267	433.50	450	475.65	1045
342.21	34	371.66	90	412.54	275	434.35	460	476.95	1067
343.81	36	373.30	94	413.53	282	435.48	470	479.55	1117
346.06	38	373.38	96	415.32	295	436.50	480	481.45	1155
348.04	42	379.45	110	418.10	315	437.21	490	482.55	1180
350.03	44	382.17	120	419.28	325	438.90	507	483.95	1205
352.94	50	385.15	130	420.60	335	440.50	525	486.75	1265
354.50	52	392.84	165	422.07	347	444.26	572	–	–
Isobutyl acetate									
300.37	4	362.48	44	382.54	83	437.17	360	479.05	860
309.69	6	364.22	47	383.57	86	439.16	380	480.25	880
314.21	7	365.73	49	384.87	89	444.08	420	482.55	920
324.01	10	366.75	51	385.95	91	446.83	450	483.85	940
328.95	13	368.21	54	387.33	95	451.64	497	485.25	965
333.57	15	369.67	57	387.82	96	454.17	527	486.45	985
338.71	19	370.70	58	388.48	98	456.23	550	487.55	1005
343.41	23	372.46	61	395.75	122	458.84	580	488.95	1030
345.40	24	374.00	64	401.04	142	462.15	620	490.55	1060
348.39	27	375.80	68	406.50	167	463.55	637	491.55	1080
351.91	31	376.72	70	414.56	205	465.14	657	493.75	1122
354.14	34	378.20	74	416.65	217	466.87	680	494.95	1145
356.77	37	379.85	77	420.55	242	469.53	717	496.95	1185
358.25	39	380.56	79	423.76	260	471.14	740	497.95	1205
360.63	42	381.80	82	434.94	170	472.34	760	498.85	1225

TABLE S-II. Experimental T - x_1 - y_1 data and calculated values for the activity coefficients of the liquid phase for the *n*-propyl acetate systems

T/K	x_1	y_1	γ_1	γ_2	T/K	x_1	y_1	γ_1	γ_2
<i>n</i> -Propyl acetate (1) + ethanol (2) at 0.15 MPa									
362.13	0.000	0.000	–	1.000	365.31	0.464	0.276	1.238	1.190
361.97	0.008	0.009	2.619	0.989	365.79	0.489	0.290	1.215	1.204
361.95	0.018	0.020	2.588	0.989	366.22	0.525	0.311	1.196	1.238
361.93	0.028	0.034	2.830	0.985	366.82	0.532	0.310	1.154	1.233
361.93	0.044	0.050	2.648	0.985	367.60	0.592	0.339	1.106	1.319
361.96	0.086	0.081	2.192	0.996	368.47	0.641	0.367	1.075	1.393
362.01	0.098	0.091	2.157	0.996	369.38	0.669	0.393	1.071	1.405
362.07	0.113	0.103	2.113	0.998	370.05	0.700	0.417	1.063	1.456
362.56	0.196	0.156	1.815	1.018	370.39	0.716	0.429	1.058	1.489
362.99	0.247	0.180	1.638	1.040	374.57	0.828	0.534	0.999	1.747
363.17	0.256	0.185	1.614	1.040	377.27	0.876	0.612	0.996	1.848
363.44	0.275	0.196	1.578	1.043	379.26	0.907	0.666	0.986	1.991
364.32	0.352	0.231	1.411	1.082	383.06	0.951	0.791	0.997	2.098
364.58	0.373	0.238	1.360	1.098	387.53	0.989	0.939	1.001	2.379

TABLE S-II. Continued

T / K	x_1	y_1	γ_1	γ_2	T / K	x_1	y_1	γ_1	γ_2
<i>n</i> -Propyl acetate (1) + ethanol (2) at 0.15 MPa									
365.01	0.419	0.256	1.284	1.140	389.26	1.000	1.000	1.000	–
<i>n</i> -Propyl acetate (1) + 2-propanol (2) at 0.15 MPa									
365.88	0.000	0.000	–	1.000	366.65	0.232	0.180	1.539	1.034
365.79	0.002	0.003	3.058	0.998	366.77	0.256	0.188	1.452	1.052
365.79	0.005	0.007	2.854	0.997	366.81	0.268	0.202	1.488	1.050
365.78	0.006	0.007	2.379	0.998	366.94	0.297	0.211	1.397	1.075
365.77	0.008	0.010	2.550	0.998	367.02	0.303	0.221	1.430	1.068
365.77	0.014	0.012	1.749	1.002	367.16	0.330	0.235	1.390	1.085
365.77	0.021	0.018	1.749	1.003	367.19	0.345	0.245	1.385	1.095
365.80	0.036	0.031	1.755	1.004	367.44	0.365	0.259	1.373	1.098
365.83	0.043	0.037	1.752	1.004	367.92	0.408	0.284	1.326	1.119
365.85	0.063	0.051	1.647	1.010	368.91	0.492	0.332	1.246	1.174
365.85	0.066	0.056	1.727	1.008	369.34	0.521	0.351	1.227	1.191
365.89	0.070	0.057	1.655	1.009	371.78	0.648	0.445	1.158	1.272
365.95	0.089	0.071	1.618	1.013	375.92	0.781	0.566	1.075	1.388
365.99	0.114	0.088	1.564	1.021	379.26	0.877	0.686	1.049	1.599
366.04	0.140	0.108	1.561	1.027	386.11	0.969	0.902	1.022	1.589
366.11	0.168	0.131	1.574	1.031	387.46	0.985	0.950	1.019	1.607
366.31	0.193	0.146	1.517	1.037	387.98	0.991	0.972	1.021	1.476
366.58	0.223	0.168	1.498	1.040	389.26	1.000	1.000	1.000	–

TABLE S-III. Experimental T - x_1 - y_1 data and calculated values for the activity coefficients of the liquid phase for the isobutyl acetate systems

T / K	x_1	y_1	γ_1	γ_2	T / K	x_1	y_1	γ_1	γ_2
Isobutyl acetate (1) + ethanol (2) at 0.15 MPa									
362.13	0.000	0.000	–	1.000	366.49	0.467	0.196	1.275	1.276
362.17	0.020	0.017	3.010	0.986	367.15	0.494	0.209	1.256	1.292
362.22	0.036	0.027	2.651	0.990	367.80	0.527	0.219	1.206	1.335
362.30	0.054	0.043	2.806	0.990	368.45	0.563	0.233	1.175	1.388
362.36	0.077	0.055	2.511	1.000	368.65	0.571	0.243	1.200	1.386
362.40	0.091	0.065	2.507	1.003	369.13	0.586	0.248	1.174	1.404
362.50	0.116	0.077	2.321	1.015	369.70	0.608	0.257	1.150	1.437
362.61	0.133	0.086	2.252	1.020	370.25	0.631	0.269	1.138	1.474
362.91	0.168	0.098	2.010	1.038	371.70	0.677	0.289	1.086	1.560
363.05	0.190	0.107	1.930	1.051	373.40	0.720	0.322	1.075	1.622
363.23	0.215	0.117	1.853	1.065	374.30	0.743	0.338	1.061	1.675
363.40	0.233	0.125	1.816	1.074	375.50	0.767	0.361	1.056	1.715
363.66	0.261	0.130	1.670	1.098	377.15	0.801	0.393	1.043	1.808
364.02	0.297	0.144	1.605	1.122	378.70	0.827	0.422	1.032	1.885
364.15	0.307	0.149	1.600	1.126	381.29	0.856	0.466	1.014	1.927
364.60	0.330	0.156	1.534	1.137	383.95	0.891	0.538	1.035	2.027
364.97	0.355	0.167	1.506	1.151	389.15	0.935	0.646	1.011	2.224
365.40	0.378	0.172	1.435	1.169	391.86	0.952	0.714	1.012	2.245
365.50	0.393	0.175	1.400	1.189	403.32	1.000	1.000	1.000	–

TABLE S-III. Continued

T / K	x_1	y_1	γ_1	γ_2	T / K	x_1	y_1	γ_1	γ_2
Isobutyl acetate (1) + ethanol (2) at 0.15 MPa									
365.80	0.422	0.186	1.371	1.220	–	–	–	–	–
Isobutyl acetate (1) + 2-propanol (2) at 0.15 MPa									
365.88	0.000	0.000	–	1.000	371.00	0.435	0.204	1.217	1.169
365.98	0.009	0.007	2.393	0.994	371.50	0.459	0.218	1.212	1.178
366.07	0.017	0.010	1.804	0.996	372.18	0.490	0.233	1.186	1.197
366.14	0.036	0.021	1.785	1.002	372.90	0.518	0.243	1.143	1.220
366.28	0.057	0.035	1.870	1.004	373.50	0.541	0.255	1.126	1.235
366.46	0.071	0.045	1.918	1.002	375.83	0.631	0.308	1.080	1.318
366.75	0.105	0.061	1.741	1.012	376.80	0.661	0.327	1.061	1.350
367.06	0.151	0.083	1.629	1.031	378.04	0.693	0.354	1.053	1.373
367.49	0.192	0.102	1.552	1.044	379.15	0.723	0.380	1.046	1.408
367.58	0.235	0.119	1.475	1.079	383.30	0.795	0.460	1.011	1.449
368.29	0.281	0.141	1.426	1.091	387.37	0.853	0.558	1.009	1.455
368.72	0.313	0.154	1.378	1.107	389.58	0.873	0.601	0.994	1.421
368.80	0.323	0.152	1.315	1.123	392.84	0.907	0.687	0.993	1.380
369.20	0.344	0.163	1.306	1.128	395.69	0.935	0.771	0.995	1.328
369.86	0.371	0.177	1.286	1.130	403.32	1.000	1.000	1.000	–
370.36	0.402	0.189	1.246	1.151	–	–	–	–	–