

Supplementary Files

The Separation Process for Methanol - Methylal - Methyl Formate Multicomponent System in Polyformaldehyde Production Waste Liquid: Modeling and Techno-economic Analysis

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Table S1. The VLE data for methanol (1) - methyl formate (2) - methylal (3) at atmospheric pressure.

No.	T(K)	x ₁	x ₂	x ₃	y ₁	y ₂	y ₃
1	304.68	0.058	0.935	0.007	0.049	0.945	0.006
2	304.98	0.116	0.877	0.007	0.068	0.927	0.005
3	305.38	0.141	0.851	0.008	0.083	0.909	0.008
4	305.89	0.175	0.791	0.034	0.103	0.865	0.032
5	306.29	0.230	0.726	0.044	0.120	0.840	0.040
6	307.00	0.294	0.661	0.044	0.141	0.817	0.042
7	308.21	0.412	0.551	0.038	0.161	0.800	0.040
8	309.22	0.498	0.471	0.031	0.191	0.771	0.038
9	312.93	0.688	0.292	0.020	0.256	0.708	0.037
10	316.45	0.780	0.206	0.014	0.333	0.634	0.034
11	322.02	0.871	0.105	0.024	0.452	0.478	0.070
12	305.10	0.051	0.932	0.017	0.035	0.953	0.012
13	305.10	0.052	0.942	0.005	0.034	0.962	0.004
14	305.50	0.048	0.935	0.017	0.037	0.950	0.014
15	305.20	0.054	0.917	0.030	0.035	0.944	0.021
16	305.20	0.048	0.919	0.032	0.034	0.941	0.025
17	305.40	0.045	0.886	0.070	0.032	0.915	0.053
18	305.30	0.047	0.901	0.052	0.033	0.925	0.041
19	305.81	0.044	0.839	0.117	0.032	0.873	0.095
20	305.91	0.044	0.804	0.152	0.033	0.847	0.120
21	306.11	0.041	0.765	0.193	0.031	0.821	0.148
22	306.61	0.041	0.692	0.267	0.029	0.763	0.209
23	306.92	0.037	0.663	0.300	0.028	0.734	0.238
24	307.52	0.034	0.581	0.385	0.027	0.670	0.303
25	307.72	0.033	0.549	0.418	0.026	0.637	0.336

26	308.82	0.027	0.441	0.532	0.023	0.548	0.429
27	309.43	0.023	0.383	0.594	0.021	0.489	0.491
28	309.93	0.022	0.338	0.641	0.020	0.437	0.544
29	310.43	0.018	0.294	0.688	0.017	0.392	0.591
30	312.10	0.003	0.178	0.819	0.003	0.260	0.737
31	312.61	0.002	0.148	0.850	0.002	0.221	0.777
32	312.81	0.002	0.131	0.866	0.002	0.204	0.793
33	313.32	0.002	0.102	0.896	0.002	0.162	0.836
34	313.35	0.028	0.095	0.877	0.032	0.146	0.822
35	313.25	0.080	0.085	0.835	0.068	0.138	0.794
36	313.25	0.116	0.083	0.802	0.116	0.124	0.761
37	313.45	0.154	0.078	0.768	0.121	0.120	0.759
38	313.75	0.199	0.074	0.727	0.153	0.120	0.727
39	314.35	0.308	0.063	0.629	0.192	0.113	0.695
40	315.15	0.374	0.059	0.567	0.227	0.101	0.673
41	316.06	0.469	0.045	0.487	0.261	0.090	0.649
42	316.57	0.502	0.043	0.455	0.270	0.094	0.636
43	317.28	0.582	0.034	0.384	0.294	0.090	0.617
44	318.29	0.630	0.030	0.340	0.331	0.080	0.590
45	319.91	0.672	0.026	0.302	0.354	0.075	0.572
46	320.42	0.722	0.020	0.258	0.386	0.072	0.543
47	322.13	0.780	0.015	0.205	0.428	0.064	0.509
48	324.56	0.827	0.011	0.163	0.481	0.054	0.465
49	326.67	0.868	0.008	0.124	0.558	0.047	0.395
50	329.29	0.910	0.004	0.085	0.625	0.037	0.338
51	331.61	0.943	0.002	0.055	0.719	0.024	0.257
52	332.42	0.958	0.001	0.041	0.755	0.024	0.222
53	334.53	0.976	0.001	0.023	0.852	0.011	0.137
54	335.85	0.987	0.000	0.013	0.901	0.006	0.093