

Table S1. Compounds that are commonly used as SCF, and their critical properties.

Compounds	Critical temperature (°C)	Critical pressure (MPa)
Acetone	235.1	4.70
Carbon dioxide	31.1	7.38
Ethane	32.3	4.87
Ethanol	240.9	6.14
Ethylene	9.4	5.04
Ethyl acetate	250.2	3.83
Methanol	239.6	8.09
n-Hexane	234.5	3.01
Nitrous oxide	36.6	7.26
Propane	96.8	4.25
Water	374.1	22.06

Table S2. Experimental phase equilibrium data of aliphatic hydrocarbon/CO₂ mixtures.

X	Mole fraction of X	T/K	P/MPa	VLE/LLE**	References
Methane	0.1885-0.79	219.30-271.48	1.48-7.9	VLE	[1] ⁺
	0.515-0.54	253.15	5.27-8.106	VLE	[2]
	0.043-0.167 (L) [*]	288.15	6.25-8.15	VLE	[3]
	0.043-0.551	253.15-288.15	2.63-8.29	VLE	[3]
	0-0.764	230-270	0.89 -8.52	VLE	[4] ⁺
	0.1035-0.9942 (L)	183.16-219.27	2.73-6.49	VLE	[5]
	0.3111-0.8115	219.27	0.86-6.20	VLE	[5]
	0-0.4006	270.001	3.20-8.43	VLE	[6]
	0-0.789	219.27	0.581-3.86	VLE	[7] ⁺
	0-0.6771	240-270	1.29-8.42	VLE	[7] ⁺
	0-0.132	293.4	5.73-7.98	VLE	[8]
	0-0.175	288.5-293.4	5.12-8.15	VLE	[8]
	0-0.0355	301	6.86-7.56	VLE	[9]
	0-0.7466	230-270	0.892-8.38	VLE	[10] ⁺
	0-0.7454	230 -270	0.894-8.42	VLE	[11]
	0.52-0.95	199.862-271.48	1.11-7.78	VLE	[1]

	0.345	277.59	6.89	VLE	[12]
	0.397	241.51	2.41	VLE	[13]
	0.188-0.703	233.16-283.15	3.7-7.19	VLE	[14]
	0.129-0.444 (L)	253.15-273.15	6.63-8.52	VLE	[3]
	0.254	250.005	2.50	VLE	[4]
	0.8588-0.99984	153.16-210.16	1.12-5.51	VLE	[5]
	0.3873-0.3983	270.001	7.5-8.28	VLE	[6]
	0.3529-0.8055	219.27-270	0.94-6.08	VLE	[7]
	0.507	258.15	6.9	VLE	[15]
	0.4507-0.8047	220-223.15	2-5	VLE	[16]
	0.97104-0.999787	112-169.9	0.093-2.315	VLE	[17]
	0.947-0.975 0.947-0.974 (L)	277.75-302.15	4.11-7.54	VLE	[18]
	0-0.72	218.12-303.16	0.55-8.1	VLE	[19]
	0.2252 0.2559-0.58 (L)	230-270	1.19-8.1	VLE	[11]
	0.00001-0.13134 (L)	293.13-303.15	5.72-7.93	VLE	[20]
	0.019-0.42	240-293.65	1.92-8.37	VLE	[21]
	0-0.2577	274.15-290.15	3.64-8.33	VLE	[22]
Ethane	0-1 (L)	223.16-293.15	1.01-6.3	VLE	[23] +
	0.084-0.88	222-288.69	1.49-8.8	VLE	[24] +
	0-1	253	1.43-2.31	VLE	[25]
	0-1	250	1.30-2.13	VLE	[4]
	0-1	283.15-298.14	3.04-6.63	VLE	[26]
	0-1	207-270	0.7-8.03	VLE	[27] +
	0.08-0.98	288.15-298.14	4.14-6.7	VLE	[28]
	0-1	207-270	0.70- 6.16	VLE	[10]
	0.24-0.39	263.15	3.02-3.04	VLE	[29]
	0.6265 (L)	293.14	5.529	VLE	[26]
	0.17-0.6	210-270	0.54-3.53	VLE	[27] +
	0.08-0.6165 (L)	220-270	0.8-3.5	VLE	[30]
	0-1	260	1.7- 2.8	VLE	[31]
	0.26-0.75	283.76-295.93	4.75-6.27	VLE	[32]

	0.26-0.75 (L)				
Propane	0-1 (L) 0.095-0.84	277.59-344.23	0.54-6.91	VLE	[33] +
	0-1	233-273	0.46-3.5	VLE	[34] +
	0-1	253-273.15	0.24-3.49	VLE	[25]
	0.068-0.48	244.32-266.49	0.50-2.61	VLE	[35]
	0.21-1	311.05-361.15	1.30-6.68	VLE	[36]
	0-1 0-1 (L)	240-330	0.15-5.85	VLE	[37] +
	0.0255-1	230-270	0.43- 5.94	VLE	[11]
	0-1	253.15-323.15	0.244-6.43	VLE	[38]
	0.094-0.773	265-290	0.41-4.71	VLE	[39]
	0.04-0.85 (L)	299-366	2.1-7.11	VLE	[40]
	0.6-0.8	344.23	4.77-6.72	VLE	[33]
	0.043-0.17	297-309	5.7-7	VLE	[41]
	0.844	313	1.71	VLE	[42]
	0.275-0.792	294.3	2.21-4.7	VLE	[43]
	0.143-0.316 0.314-0.729 (L)	240-330	0.59-5.44	VLE	[37]
	0.05	205.1-274.8	0.32-3.5	VLE	[44]
	0.255-0.694	310-320	1.531-6.1	VLE	[45]
Butane	0-1	260	0.061-2.418	VLE	[31]
	0.0108-0.94	311.09-394.60	0.59-8.06	VLE	[46] +
	0.06-1 (L)	310.88-410.89	0.355-8.16	VLE	[47] +
	0.988-1 (L)	273.15	1.35-1.8	VLE	[48]
	0.155-0.895	273.15	0.12-0.75	VLE	[48]
	0-1	273.15	0.11-3.49	VLE	[25] +
	0.0072-0.5	228-283.15	0.033-4.133	VLE	[49]
	0.124-0.66	319.25-377.57	2.18-7.64	VLE	[50]
	0-1	260-280	0.092- 4.16	VLE	[51]
	0.42-1	368.13-418.12	1.39-7.9	VLE	[52]
	0.012-1	250-270	0.04-2.59	VLE	[53]
	0.059-1	311.1-394.57	0.836-7.52	VLE	[46]

	0.022-0.97	292.6-397.86	0.345-8.07	VLE	[54]
	0.066-1	311-344.28	0.7-8.06	VLE	[55]
	0.254-1	309-394	0.336-8.11	VLE	[56]
	0.122-0.747 (L) 0.362-0.068	310.95	1.1-7.08	VLE	[57]
	0.14-0.86	306.78-415.78	1.37-8.14	VLE	[40]
	0.14-0.86 (L)	316.48-383.38	1.89-8.01	VLE	[47]
	0.078-0.18	277.59-310.91	2.76-5.52	VLE	[58]
	0.125 (L)	319.25-377.57	7.57-8.12	VLE	[50]
	0.0076	192.6-274.5	1.3-3.5	VLE	[44]
	0.4068-1	344.25	0.83-7.34	VLE	[59]
Pentane	0-1	277-377	0.03-9.632	VLE	[60] +
	0.38-1	408.12-463.11	1.2-7.05	VLE	[61]
	0.0032-0.98	252.67-458.5	0.159-9.62	VLE	[62] +
	0.094-0.491	343.4	0.62-9.1	VLE	[63]
	0.078-0.549	310.15-363.15	0.57-9.67	VLE	[64]
	0.099-0.786 (L)	323.15	2.25-8.35	VLE	[65]
	0.05-0.545 (L)	295.29-399.88	4.723-9.94	VLE	[40]
	0.061-0.099 0.099 (L)	318.15-323.15	7.92-8.22	VLE	[65]
Hexane	0.175-0.966	273.15-323.15	1.07-8.49	VLE	[43,66]
	0.0096-0.0747	298.09-313.1	0.4437-7.66	VLE	[67]
	0.019-0.493	313.14-393.12	0.78-11.6	VLE	[68]
	0.0981-0.812 (L)	273.15-303.14	1.07- 6.11	VLE	[43]
	0.0091-0.05	303.14-323.15	1.86-8.49	VLE	[66]
	0.055-0.82 (L)	298.15-308.15	1.7-7.31	VLE	[69]
	0.0258-0.0618	323.15-328.15	7.22-8.95	VLE	[70]
	0.09-0.497 (L)	293.15-298.15	3.28-7.31	VLE	[71]
	0.0072-0.872	303.09-323.06	1.41-8.33	VLE	[72]
	0.0382-0.9723	171.21-215.71	0.0213-4.79	VLE	[73]
	0.026-0.166	310.7-351.8	7.77-10.2	VLE	[74]
	0.037-0.062	333.15	8.08-9.25	VLE	[70]
	0.0879-0.746 (L)	303.08-323.25	2.20-6.16	VLE	[72]

	0.015-0.059	313.11-313.12	1.1-7.69	VLE	[72]
	0.0093-0.0365	313.15-343.15	2.39-11.03	VLE	[75]
Heptane	0-0.98	220-477.16	0.058-9.92	VLE	[76] +
	0.532-0.641(L)	501.96	3-7.68	VLE	[77]
	0.053-0.286	394-468.36	0.31-12.5	VLE	[78]
	0.016-0.042	310.65	3.13-6.55	VLE	[79]
	0.086-0.737 (L)	310.65-413.15	2.3-13.4	VLE	[80]
	0.096-0.497 (L)	293.15-313.15	3.79-6.78	VLE	[71]
	0.0414-0.8852	394.15	2.21-13.4	VLE	[81]
	0.419-0.945 (L)	183.21-215.21	0.042-0.48	VLE	[73]
	0.986-0.99 (L)	283.15-313.14	0.101	VLE	[82]
	0.484-0.536 (L)	468.36	9.9-10.9	VLE	[83]
	0.042-0.115	313.2-364.3	8.21-11.88	VLE	[74]
	0.573-0.708	301.76-362.9	3.46-4.38	VLE	[84]
	0.0091- 0.0539	313.15-343.15	1.38-12.95	VLE	[75]
Octane	0.8260-0.1870	313.15-348.15	1.5-11.35	VLE	[85]
	0.383-0.866 (L)	290-311	0.747-3.67	VLE	[86]
	0.042-0.122 (L)	313.1	7.65-8.2	VLE	[74]
	0.005-0.0918	322.39-373.53	2.08-13.77	VLE	[87]
	0.0061-0.89	313.2-373.2	1.11-14.44	VLE	[88]
	0.1269-0.5633 (L)	285.4-531.3	3.45-15.20	VLE	[89]
	0.0242-0.556 (L)	216-231.5	5.07-9.22	VLE	[90]
	0.042-0.122 (L)	323.1-359.5	9.52-13.01	VLE	[74]
	0.61-0.94	313.14	0.52-3.522	VLE	[91]
Nonane	0.0052-0.033	343.25	3.73-11.8	VLE	[92]
	0.0013-0.122	315.12-418.82	2.03-16.77	VLE	[93]
	0.06-0.122 (L)	323.4-386.8	9.53-14.8	VLE	[74]
Decane	0.0650 -0.81	311.02-344.31	2.51-11.52	VLE	[94]
	0.01-0.0677	318-343	9.19-13.1	VLE	[95]
	0-0.345	277.6-510.95	0.345-18.84	VLE	[96]
	0.001-0.217	342.88-520.36	3.09-18	VLE	[78]
	0.005-0.087	344.28-377.57	6.385-16.46	VLE	[50]

	0.1741-0.8526 (L)	313.14	1.427-7.41	VLE	[97]
	0.004-0.048 0.093-0.931 (L)	344.3	0.89-12.7	VLE	[98]
	0.0009-0.073	319.11-372.94	3.241-16.06	VLE	[87]
	0.00044-0.0116 0.065-0.809 (L)	311.02-344.31	2.51-11.51	VLE	[99]
	0.487-0.906 (L)	323.2	1.02-5.96	VLE	[100]
	0.487-0.925 (L)	323.2-373.2	1.12-6.19	VLE	[101]
	0.000703-0.00225	323.13-348.12	2.047-2.959	VLE	[102]
	0.034-0.436	237.16-243.17	2.179-9.707	VLE	[103]
	0.522-0.7511	462.51-586.61	2.002-5.137	VLE	[104]
	0.37-0.859	520.36-594.16	3.95-14.24	VLE	[78]
	0.001-0.036	344.25-377.55	4.99-11.93	VLE	[105]
	0.0006-0.0123	344.3-311	5.51-11.85	VLE	[106]
	0.002-0.016	344.25	4.33-11.85	VLE	[92]
	0.00095-0.0017	311.02-344.31	6.44-7.26	VLE	[99]
	0.0088-0.334 (L)	308.1-348.7	5.91-13.4	VLE	[107]
	0.0032-0.0648	344.15	8-13	VLE	[108]
	0.0032-0.0648	344.15	8-13	VLE	[108]
	0.00876-0.33328	307.6-348.7	5.91-13.4	VLE	[109]
Undecane	0.0007-0.0937	314.98-418.3	2.052-17.11	VLE	[93]
Dodecane	0.288-0.9903	313.2-393.2	0.093-8.179	VLE	[110]
	0.0084-0.0442	318-343	9.60-14.44	VLE	[95]
	61e-05-0.015	318.15	0.95-8.935	VLE	[111]
	0.0005-0.0566	318.14-344.75	1.64-20.37	VLE	[2]
	0.9851-0.9891 (L)	283.15-313.14	1.013	VLE	[82]
	0.025-0.066	254.28-267.31	2.006-2.882	VLE	[112]
	0.0133-0.0516 0.0134-0.306 (L)	307.9- 348.1	6.43-15	VLE	[113]
	0.0008-0.0049	313.15-343.15	1.91-11.97	VLE	[75]
	0.00696-0.30632	7.36-15.04	307.3-348.2	VLE	[109]
	0.2538-0.4055	338-348	12.8-15	VLE	[109]
Tridecane	0.0148-0.1143 (L1)	311.2-313.89		LLE	[114]

	0.14-0.389 (L)	255.16-278.95	2.076-3.933	VLE	[112]
Tetradecane	0.101-0.315 (L) 0.008-0.05	344.282	1.107-16.31	VLE	[115]
	0.4085-0.8226 (L)	290-331	0.91-4.0	VLE	[86]
	0.0074-0.0379	318-343	9.98-16.4	VLE	[95]
	0.504-0.903 (L)	323.2	0.98-6.0	VLE	[100]
	0.642-0.93 (L)	373.2	0.96-5.97	VLE	[116]
	0.16-0.297 (L)	269.10-309.99	3.082-8.06	VLE	[112]
	0.024-0.042	344.282	1.56-1.63	VLE	[115]
	0.1681-0.2378 (L)	279.26-303.12	3.98-6.92	VLE	[117]
	0.0325-0.1674 (L)	298.15-303.15	6.24-6.97	VLE	[118]
Pentadecane	0.218-0.242 (L1) 0.0129-0.0324(L2)	293.15-303.15	5.82-14.12	LLE	[119]
	0.0003-0.05	293.15-353.15	0.56-17.5	VLE	[119]
	0.416-0.817 (L)	313.15	1.703-6.415	VLE	[120]
	0.3876-0.7066	313.15	2.902-6.8	VLE	[121]
	0.212-0.32 (L)	270.4-309.40	3.194-8.022	VLE	[112]
	0.226-0.3112	273.42-308.42	3.453-7.019	VLE	[117]
Hexadecane	0.024-0.182	294.4-413.3	2.5	VLE	[122]
	0.12-0.9761 (L)	333.18	0.24-15.15	VLE	[123]
	0.0060-0.0334	318-343	11.09-19.15	VLE	[95]
	0.0004-0.0201	308.14-343.13	0.69-25.81	VLE	[124]
	0.002-0.025	314.14-353.13	7.69-16.12	VLE	[125]
	0.00176-0.07	393.2	10.1-25.6	VLE	[122]
	0.00058-0.064	353.15	10-20	VLE	[126]
	0.413-0.811 (L)	313.15	1.726-6.473	VLE	[120]
	0.005-0.03	473.15	1.01-2.57	VLE	[127]
	0.9133-0.9961	303.2-323.2	0.052-0.486	VLE	[128]
	0.9862-0.9887	298.14-323.14	0.101325	VLE	[82]
	0.0045-0.3981	463.01-663.51	2.087-5.076	VLE	[104]
	0.778-0.942	295.79-297.39	0.426-1.655	VLE	[129]
	0.005-0.2843 (L)	283.17-306.09	4.44-7.548	VLE	[117]
	0.8505-0.8654 (L)	309.8-512.3	1.242-3.292	VLE	[130]

	0.038-0.078	573.15	10.1-21.3	VLE	[127]
	0.0026-0.0099	344.15	8.3-12.42	VLE	[108]
Octadecane	0.0104-0.165	534.86-605.36	1.016-6.19	VLE	[131]
	0.0054-0.0162	318-343	12.48- 20.86	VLE	[95]
	0.611-0.9169 (L)	396.57	1.11-6.13	VLE	[131]
	0.622-0.918 (L)	372.8	0.95-5.99	VLE	[132]
	0.508-0.897 (L)	323.1	0.99-5.96	VLE	[133]
	0.299	673.15	2.065	VLE	[131]
	0.0001-0.0086	310-353	10-20	VLE	[108]
	0.0001-0.0086	310-353	10-20	VLE	[108]
	0.054-0.632	307.7-359.1	8.47-28.57	VLE	[134]
	0.021-0.447	308.2-358.2	8.61-35.55	VLE	[134]
Nonadecane	0.00766-0.245	303.15-383.15	25	VLE	[126]
	0.323-0.9101 (L)	313.14-333.13	0.936-7.958	VLE	[135]
	0.00016-0.07	393.15	10-30.3	VLE	[126]
	0.001-0.8561	293.4-303.6	1.04-7.258	VLE	[135]
	0.000328-0.0814	353.15	10-27.5	VLE	[126]
Eicosane	0.321-0.964 (L)	310.14-373.12	0.507-7.599	VLE	[136]
	0.499-0.927 (L)	323.19-373.17	0.621-6.76	VLE	[137]
	0.554 -0.947 (L)	323.24-573.31	0.992-5.056	VLE	[138]
	0.00016-0.084	353.15-393.15	10-32	VLE	[126]
	0.0798-0.49 (L)	373.2-473.2	8.79-34.41	VLE	[139]
	0.001-0.931 (L)	300.39-309.14	0.507-7.549	VLE	[136]
	0.0002-0.2877 (L)	300.38-304.1	6.751-7.348	VLE	[135]
	0.828-0.946 (L)	322.69	0.455-1.567	VLE	[129]
	0.00019-0.2843 (L)	303.19	7.185	VLE	[140]
	0.741-0.934 (L)	322.9-323	0.538-2.482	VLE	[141]
	0.2154-0.49	323.2	5.91-14.78	VLE	[139]
	0.056-0.625	311.8-359.3	9-23.02	VLE	[134]
	0.06-0.62	308.2-358.2	8.18-37.08	VLE	[134]
Heneicosane	0.3504-0.9 (L)	318.14	0.931-7.82	VLE	[135]
	0.0003-0.8532 (L)	301.77-311.23	1.094-7.275	VLE	[135]
Docosane	0.4075-0.917 (L)	323.14-373.12	0.962-7.715	VLE	[142]

	0.348-0.867 (L)	308.45-315.33	0.96-6.946	VLE	[142]
	0.076-0.429 (L)	373.2-473.2	9.61-37.3	VLE	[139]
	0.232-0.429 (L)	323.2	6.37-12.38	VLE	[139]
Tetracosane	1e-05-0.011	473.15-573.15	1.01-5.066	VLE	[143]
	0.647-0.918 (L)	373.15	1.01-5.066	VLE	[143]
	0.00013-0.0643	353.15-393.15	5-30	VLE	[126]
	0.1003-0.4413 (L)	373.2-473.2	9.43-38.94	VLE	[139]
	0.00088-0.00106	310	12.9-45.9	VLE	[144]
Pentacosane	0.00086-0.00095	313	15.2-36	VLE	[144]
Hexacosane	0.0004-0.00043	313	13.8-41.3	VLE	[144]
Heptacosane	0.0001-0.00026	313	10-52.3	VLE	[144]
Octacosane	0.383-0.93 (L)	348.18-423.16	0.807-9.604	VLE	[137]
	0.621-0.9404 (L)	373.32-573.41	0.994-5.061	VLE	[145]
	0.1028-0.4523	423.2	11.5-40.85	VLE	[139]
	0.8704-0.8932	405.2-519.4	1.88-2.495	VLE	[130]
	0.201-0.4523 (L)	373.2	8.97-22.28	VLE	[139]
Nonacosane	4e-05-7e-05	313	12.4-17.8	VLE	[144]

*: 'L' denotes mole fraction in liquid phase. **: VLE: Vapour-Liquid Equilibrium; LLE; Liquid-Liquid Equilibrium.

+: quality data

Table S3. Experimental phase equilibria data of aromatic hydrocarbon/CO₂ mixtures.

X	Mole fraction of X	T/K	P/MPa	VLE / LLE	References
Benzene	0.5-0.861 (L1)* 0.398-0.5 (L2)*	313.19	1.64-5.57	LLE	[146]
	0.0041-0.0185	298.094-313.09	0.89-7.749	VLE	[67]
	0.052-1.0 (L)	313.19-393.18	0.105 -13.3	VLE	[147] +
	0.027-0.45	313.39-393.17	0.212-6.27	VLE	[148] +
	0.023-0.245	343.58-413.57	2.29-15.39	VLE	[149]
	0.0718-0.8762 (L)	273.15-303.14	0.826-6.313	VLE	[43] +
	0.059-0.102	344.28	6.895-10.92	VLE	[150]
	0.021-0.821(L)	293.15-308.15	1.7-7.31	VLE	[69]
	0.052-0.944 (L)	313.14		VLE	[147] +

	0.944	313.19	0.758	VLE	[151]
Toluene	0.1-0.7 (L)	425.3-564	6.77-8.62	VLE	[152]
	0.003-0.734	311.25-476.99	0.334-15.22	VLE	[153] +
	0.223-0.931	422.42-476.91	1.24-5.19	VLE	[154]
	0.019-0.074	353.13-413.12	0.259-13.17	VLE	[155]
	0.00055-0.00081	263.15	0.689-2.22	VLE	[156]
	0.021-0.246	353.38-393.17	0.515-6.45	VLE	[148]
	0.0049-0.119	308.16-353.18	0.518-12.35	VLE	[157]
	0.018-0.07	352	0.876-10.99	VLE	[158]
	0.205-0.582	476.3	1.71-14.72	VLE	[159]
	0.19-0.834 (L)	298	1.63-5.6	VLE	[160]
	0.0186-0.0816	352-388.7	6.15-14.26	VLE	[161]
	0.000358-0.00086	262	0.605-2.201	VLE	[162]
	0.008-0.35	323.15-333.15	1.08-8.63	VLE	[64] +
	0.833-0.995 (L)	352.6	0.16-2.98	VLE	[163]
	0.117-0.909 (L)	323	1.2-8.66	VLE	[164]
	0.833-0.995 (L)	352.6	0.16-2.98	VLE	[165]
	0.029-0.78 (L)	293.15-308.15	1.7-7.31	VLE	[69]
	0.2-0.7 (L)	353.2-413.2	6.99-16.3	VLE	[152]
	0.008-0.018	323.2	1.87-8.72	VLE	[166]
	0.8304-0.9882	352.6	0.28-3.03	VLE	[167]
	0.001-0.901	283.15-391.45	0.206-12.13	VLE	[168] +
	0.0214-0.0412	323.15	1.64-8.17	VLE	[169]
	0.097-0.498 (L)	293.15-313.15	3.68-7.49	VLE	[71]
	0.245-0.959 (L)	298.15-363.15	0.93-5.07	VLE	[170]
	0.00705-0.0209	323.127-348.12	2.077-2.766	VLE	[102]
	0.0515-0.636	393.22-502.71	2.062-5.2	VLE	[154]
	0.00026-0.00041	253.13	0.689-1.71	VLE	[156]
	0.0046-0.0077	311	1.49-6.93	VLE	[171]
	0.987-0.99 (L)	283-303	0.101	VLE	[172]
	0.000129-0.00376	241.8-282.9	0.394-3.52	VLE	[172]
	0.019-0.037	352.6	1.4-5.72	VLE	[173]
	0.1	323.6-374.4	11.1-15.5	VLE	[174]

	0.1-0.7 0.2-0.8(L)	343.2-565	6.74-16.58	VLE	[152]
m-xylene	0.402-0.707	543.31	2.08-5.16	VLE	[154]
	0.0024-0.559	310.89-477.56	0.31 -11.33	VLE	[175]
	0.005-0.01	303.14-343.13	0.67-3.34	VLE	[176]
	0.0028-0.05	312.64-366.13	1.328-15.36	VLE	[177]
	0.003-0.0682	333-392.6	6.10-16.28	VLE	[161] +
	0.0246-0.049	313.2-353.2	0.70-10.37	VLE	[178]
	0.109-0.822	462.1-582.51	3.15-5.26	VLE	[154]
o- xylene	0.0022-0.0435	312.64-366.13	1.47-14.92	VLE	[177]
	0.0639-0.744 (L)	312.64-366.13	2.38-14.95	VLE	[177]
	0.0025-0.0608	313.2-393.3	6.10-17.29	VLE	[161] +
	0.0244-0.1531	313.2-353.2	0.79-14.86	VLE	[178]
	0.0073	366.13		VLE	[177]
p-xylene	0.011-0.18	353.17-393.17	0.46-6.15	VLE	[148] +
	0.0025-0.0483	312.64-366.13	1.198-14.17	VLE	[177]
	0.1326-0.773 (L)	312.64-366.13	0.407-14.16	VLE	[177]
	0.0033-0.0626	333.1-393.1	5.69-15.49	VLE	[161]
	0.0255-0.0413	313.2-353.2	0.83-12.37	VLE	[178] +
Styrene	0.0092-0.825 (L)	308.14-373.07	2.69-12.51	VLE	[179]
	0.0014-0.0062	308-328	1.44-8.31	VLE	[171]
	0.0029-0.0555	313.2-393.2	6.09-16.08	VLE	[180]
	0.0225-0.101 (L)	303.2-318.2	6.39-8.86	VLE	[181]
	0.0093-0.0476	328.15-333.15	8.94-10.84	VLE	[182]
	0.048-0.386	303-323	5.47-9.06	VLE	[183]
	0.0225-0.0488 0.0363-0.101 (L)	321.2-333.2	9.19-10.72	VLE	[181]
	0.0093-0.03	323.15	8.78-9.46	VLE	[182]
	0.09 0.4879 (L)	373.15	9.538-15.73	VLE	[184]
	0.123-0.386 0.048-0.062 (L)	333-343	8.72-12.19	VLE	[183]
Ethylbenzene	0.0026-0.0168	312.65-366.15	2.40-14.25	VLE	[185]

	0.002-0.0066	308-328	1.38-8.44	VLE	[186]
	0.986-0.99 (L)	283-303	0.101	VLE	[172]
	0.0037-0.0772	313.2-393.2	5.69-16.09	VLE	[180]
	0.0211-0.0998 (L)	303.2-333.2	6.42-9.32	VLE	[181]
	0.0512-0.0998 (L)	318.2-333.2	0.99-10.64	VLE	[185]
	0.021-0.0512				
Naphthalene	0.00024-0.055 (L)	308.13-328.13	6.079-33.44	VLE	[187]
	0.664-0.953 (L)	373.12-423.11	1.39-10.45	VLE	[188] +
	0.0059-0.059	373.1-423.15	1.013-5.066	VLE	[189]
	0.0049-0.0112	394.2-435.2	3.74-16.44	VLE	[190]
	0.356-1 (L)	372.45-430.65	0.01-20.88	VLE	[191] +
	0.691-0.96 (L)	339.97-351.26	1.129-7.243	VLE	[192]
	0.0199-0.0304	372.45-430.65	18.52-23.4	VLE	[191]
	0.0093-0.0175	308.2	9.8-20	VLE	[193]
Anthracene	0.0131-0.0838	308.2	10.2-18.1	VLE	[193]
	0.0000205- 0.0001018 (L)	318.15	11.7-20.1	VLE	[194]
Phenanthrene	0.771-0.953 (L)	383.12-423.11	1.877-10.62	VLE	[188]
	0.0003-0.008	423.15-523.15	1.01-5.07	VLE	[195]
	0.017-0.98	377.57-699.76	11.03-13.79	VLE	[196]
	0.9499-0.9523	399.9-534.8	2.438-3.776	VLE	[130]
	0.0000849- 0.000114 (L)	318-338	12-28	VLE	[197]
	0.00042485- 0.0019425 (L)	318.15	10.1-20.1	VLE	[194]
	0.000404-0.00233 (L)	318.15-328.15	12-27	VLE	[198]
Biphenyl	0.00029-0.0335	373.1-473.15	1.013-5.066	VLE	[189]
	0.193-0.754 (L)	333.2-343.2	5.41-46.32	VLE	[199]
	0.9636-0.9988 (L)	353.15-383.15	10.18-29.54	VLE	[200]
	0.41-0.866	323.15-343.15	50-70	VLE	[201]
Diphenylmethane	0.0062 -0.2873	462.71-703.69	1.92-5.097	VLE	[202]
	0.745-0.93	313.22-363.03	0.993-5.156	VLE	[203]

Anisole	0.0057-0.0544	343.08-372.27	2.45-16.81	VLE	[204]
	0.0048-0.049	333.3-393.2	4.125-18.33	VLE	[205]
	0.0018-0.0466	313.2-393.2	5.69-16.47	VLE	[206]
Benzaldehyde	0.0037-0.0365	342.98-372.57	2.83-18.31	VLE	[204]
	0.0007-0.0704	313.2-393.2	6.15-22.34	VLE	[207]
	0.000121-0.0289	298.55-353.3	2.69-14.17	VLE	[208]
Benzoic acid	0.582- 1 (L)	403.28 -458.37	0.1-20.71	VLE	[191]
Cumene	0.008-0.95 (L)	299.24 -383.12	0.72-15.65	VLE	[209]
	0.0018-0.0994	313.2-393.1	0.569-18.31	VLE	[180]
	0.0041-0.0224	343.35	0.429-11.60	VLE	[92]
	0.0024-0.0087	323	3.02-9.11	VLE	[210]
Propylbenzene	0.152-0.92 (L) 0.001-0.003	313.19-392.97	1.65-18	VLE	[211]
	0.0009-0.046	313.2-393.2	6.1-16.61	VLE	[212]
	0.0033-0.0276	343.25	3.96-12.07	VLE	[92]
	0.0019-0.085 0.381-0.968 (L)	313.19-472.86	1.1-19.35	VLE	[213]
	0.986-0.99 (L)	283-303	1.01	VLE	[172]
1,3,5- Trimethylbenzene	0.0015-0.0901	313.2-393.1	6.09-18.09	VLE	[180]
	0.0028-0.027	343.25	3.99- 12.06	VLE	[92]
1,2,4- Trimethylbenzene	0.0018-0.0389	313.1-393.1	6.04-16.08	VLE	[180]
Tetralin	0.001-0.092	345.88-521.16	4.56-22.73	VLE	[214]
	0.0011-0.0544	343.58-373.07	3.17-22.12	VLE	[204]
	0.001-0.135	344.25-377.55	4.07-24.38	VLE	[105]
	0.085-0.389	544.2	1.54-26.6	VLE	[159]
	0.0004 -0.0274	313.2-393.1	6.09-20.08	VLE	[215]
	0.023-0.733	461.86-623.26	1.99-5.127	VLE	[216]
1- Methylnaphthalene	0.515-0.637 (L1) 0.0135-0.028 (L2)	248.16-303	1.657-6.988	LLE	[217]
	0.001-0.006	353.13-413.12	1.22-14.45	VLE	[155]
	5.9E-05 -0.0467	308.19-328.19	2-24	VLE	[218]
	0.0036-0.0153	372.57	3.72-20.67	VLE	[204]

	0.0097-0.358	463.01-703.5	2.08-5.15	VLE	[202]
	0.0016	308	7.79	VLE	[219]
	9.99E-05-0.042	323.65-563.55	2-15.99	VLE	[220]
	0.0135-0.637 (L)	248.15-303	1.657-6.988	VLE	[217]
	0.308-0.602	313.15-353.15	8-18.2	VLE	[221]
2-Methylnaphthalene	0.566-0.946	307.14	0.878-6.975	VLE	[222]
	0.566-0.946 (L)	323.15-373.1	1.013-5.066	VLE	[189]
	0.43-0.827 (L)	394.2-435.2	5.54-15.98	VLE	[190]
	0.0017	308	7.75	VLE	[219]
Benzophenone	0.418-0.431 (L1)	295.28		LLE	[223]
	0.0051-0.0137 (L2)	282.51-303.72		LLE	[223]
	0.507-0.896 (L)	298.15-323.15	1.265-6.774	VLE	[223]

*: 'L1' and 'L2' denotes mole fraction in liquid phases in LLE.

+: quality data

Table S4. Experimental phase equilibrium data of alcohol/CO₂ mixtures.

X	Mole fraction of X	T/K	P/MPa	VLE/ LLE	References
Methanol	0.995-1.0 (L)*	299-327	0.103	VLE	[224] +
	0.639-0.976 (L)	273.1-348.07	0.689-6.971	VLE	[225] +
	0-0.975 (L)	213.15-237.13	0.098-1.569	VLE	[226]
	0.211-0.952 (L)	243.07-273.10	0.203-3.334	VLE	[227]
	0.0063-0.0798	298.144	0.219-6.128	VLE	[228]
	0.007-0.0637 (L)	298.09-313.09	0.789-8.058	VLE	[67] +
	0.03-0.732	323.09-398.07	0.5-18.5	VLE	[229]
	0.0-0.942 (L)	233.16-298.14	0.3-5.083	VLE	[230]
	0.285-0.982 (L)	243.16-298.14	0.206-5.453	VLE	[231]
	0.271-0.961 (L)	323.14-423.11	0.201-16.08	VLE	[232] +
	0.00703-0.259	298.14-423.11	0.41-16.06	VLE	[232] +
	0.0001914-0.1241	230-329.985	0.689-10.65	VLE	[233]
	0.014-0.02	313.4	0.683-7.71	VLE	[234]
	0.0223-0.872	323.2-477.6	0.439-16.5	VLE	[235]
	0.00152-0.00363	262	0.611-2.206	VLE	[162]
	0.014-0.055	313.2	0.7-8.21	VLE	[236]

	0.011-0.025	313.15	2.01-7.51	VLE	[237]
	0.0015-0.0354	291.15-313.14	0.56-8.03	VLE	[238]
	0.008-0.028	291.15-313.14	0.56-7.72	VLE	[239]
	0.024-0.225 (L)	303.15	6.52-7.008	VLE	[240]
	0.0143-0.228	313.15-342.8	0.78-12.39	VLE	[241]
	0.0018-0.0425	278.15-308.15	1.5-7.433	VLE	[242]
	0.0098-0.0244	298.15-313.15	1.3-6.34	VLE	[243]
	0.022-0.7236 0.3654 (L)	323.15-473.15	6-16.2	VLE	[244]
	0.214-0.949 (L)	313.2	0.93-7.93	VLE	[245]
	0.0069-0.0231	303.15	0.84-5.4	VLE	[246]
	0.0021-0.2746	263.15-373.15	0.697-12.07	VLE	[168]
	0.285-0.839 (L)	313.11-330.03	3.62-10.71	VLE	[247]
	0.008-0.0174	313.14	0.573-7.873	VLE	[91]
	0.1334-0.7617 (L)	303.15-313.15	3.24-7.82	VLE	[248]
	0.0254-0.969 (L)	323.15	0.65-9.79	VLE	[249]
	0.561-0.946	303.2-323.2	1.02-5.95	VLE	[250]
	0.0011-0.0081	228.2-273.2	0.154-3.02	VLE	[251]
	0.732-0.969 (L)	298.15-318.15	0.468-3.77	VLE	[252]
	0.00193-0.00333	263.05-273.1	1.723-1.783	VLE	[253]
	0.026	313.09	2.203-2.703	VLE	[42]
	0.304-0.712 0.183-0.932 (L)	323.14-473.11	7.52 -15.42	VLE	[232]
	0.075 (L)	287.65-301.75	5.035-6.776	VLE	[254]
	0.00088-0.0155	241.8	0.401-3.52	VLE	[162]
	0.05-0.302	313.15	7.83-8.187	VLE	[237]
	0.0883-0.895 (L)	298.35-372.95	1.54-15.47	VLE	[255]
	0.0115-0.027	312.95-313.05	1.139-7.534	VLE	[256]
	0.024-0.508 0.024-0.508 (L)	298.15-421.15	5.871-16.42	VLE	[240]
Ethanol	0.0026-0.0813 0.033-0.104 (L)	312.84-333.25	0.533-10.628	VLE	[257]
	0.018-0.092	333-373	4-12	VLE	[258]

	0.002-0.011	304.19-308.19	3.75-7.67	VLE	[259]
	0.0008-0.0117	304.19-323.39	3.313-7.964	VLE	[260]
	0.009-0.095	313.4-333.4	0.514-10.65	VLE	[234] ⁺
	0.008-0.065	314.5-337.2	5.55-10.845	VLE	[261]
	0.008-0.03	313.2	0.6-8.15	VLE	[236] ⁺
	0.015-0.105	313.2-343.2	5.03-11.8	VLE	[262] ⁺
	0.124-0.886	298.15	1.55-5.90	VLE	[263]
	0.0022-0.0167	308.15	1.552-7.748	VLE	[264]
	0.0006-0.0246	291.15-313.14	0.86-7.92	VLE	[265]
	0.0073-0.0275	291.15-313.14	0.91-7.92	VLE	[238]
	0.0048-0.0794	303.15-329.15	1.79-9.1	VLE	[266]
	0.007-0.026	291.15-313.14	0.91-7.92	VLE	[239]
	0.023-0.45	322.75-391.96	1.32-14.62	VLE	[267]
	0.019-0.048	323.15	5.03-8.2	VLE	[268]
	0.0186-0.032	333.45	4.336-9.465	VLE	[256]
	0.009-0.1703	312.82-373	0.476-14.11	VLE	[269]
	0.0097-0.1506	313.4-344.75	0.57-11.93	VLE	[241]
	0.187-0.927	333.15-453.15	0.4-14.5	VLE	[270]
	0.3044 (L)				
	0.054-0.813	333.2-453.2	2-14.5	VLE	[271]
	0.0503-0.45	314.45	7.068-8.3	VLE	[272]
	0.0069-0.0451	313.2-328.2	1.6-9.42	VLE	[273]
	0.0201-0.0797	333.15	3.05-10.40	VLE	[274]
	0.001-0.015	291.15	2.094-5.40	VLE	[275]
	0.966-0.994 (L)	298-323	0.855-5.384	VLE	[276]
	0.2-0.8 (L)	333.2-41.32	0.7-14.84	VLE	[152]
	0.015-0.808 (L)	291.15-313.14	2.45-8.18	VLE	[277]
	0.0285-0.0867	313.2-353.2	1.53-13.9	VLE	[178]
	0.0013-0.2181	293.15-353.15	0.52-11.08	VLE	[278]
	0.05-0.9 (L)	313.15	1.97-8.175	VLE	[279]
	0.0052-0.0315	313.14	0.613-7.716	VLE	[91]
	0.788-0.973 (L)	313.15	0.514-3.81	VLE	[280]
	0.23-0.9402 (L)	333.15-373.15	1.12-14.15	VLE	[281]

	0.411-0.951 (L)	323.2	1.02-6.08	VLE	[250]
	0.288-0.741	313.15-333.15	3.84-10.01	VLE	[282]
	0.156-0.837 (L)	313	3.04-7.95	VLE	[283]
	0.011-0.02				
	0.002-0.011	283.4-308.2	0.86-7.14	VLE	[284]
	0.006 (L)	308.15	7.794	VLE	[264]
	0.495-0.718 (L)	304.2	3.655-5.835	VLE	[285]
	0.0074	308.11	6.89	VLE	[265]
	0.068-0.1175	373.15	7-13.3	VLE	[286]
	0.0126-0.0655	323.45-333.35	0.729-9.055	VLE	[256]
	0.0292-0.0951	333.75	0.307-10.70	VLE	[269]
	0.043-0.403 (L)	298.15-413.15	6.18-15.17	VLE	[240]
	0.044-0.403				
	0.4501 (L)	324.17	8.22	VLE	[287]
	0.981-0.983 (L)	323-373	0.407-7.619	VLE	[288]
	0.968-0.991 (L)	288	1.23-4.34	VLE	[276]
	0.1-0.6	333.2-473.2	6.76-14.83	VLE	[152] ⁺
	0.4-0.8 (L)				
	0.0206-0.0858	333	0.705-10.47	VLE	[289]
	0.015	313.15	7.8	VLE	[277]
	0.0028-0.0121	293.15-303.15	0.75-3.05	VLE	[290]
	0.794-0.947 (L)	293.15-303.15	0.716-2.904	VLE	[291]
	0.794-0.947 (L)	293.15-303.15	0.716-2.904	VLE	[292]
	0.0185-0.0352	313-323	8-9	VLE	[293]
	0.011	313	6.05	VLE	[283]
	0.0248-0.0868	333.15	7.05-10.47	VLE	[294]
	0.0275-0.0915	333.4	9.02-10.66	VLE	[295]
	0.193-0.807	298.2-323.3	2.79-8.89	VLE	[296]
	0.0073- 0.0359	313.15-343.15	2.98-11.57	VLE	[75]
1-Propanol	0.004-0.058	313.4-333.4	0.518-10.82	VLE	[234] ⁺
	0.004-0.016	314.8-337.2	2.64-8.98	VLE	[297]
	0.006-0.099	322.36-352.83	1.30-13.33	VLE	[267] ⁺

	0.033-0.363 0.032-0.363 (L)	298.15-423.15	6.271-15.91	VLE	[240] ⁺
	0.003-0.0145	308.15-318.15	0.47-8.33	VLE	[243]
	0.198-0.823 (L)	344.82-426.68	10.60-15.77	VLE	[298]
	0.0022-0.0789	293.15-353.15	0.61-12.64	VLE	[299]
	0.03-0.114	313.24-363.17	3.313-14	VLE	[300]
	0.007-0.034	313-333	2.15-10.46	VLE	[301]
	0.0037-0.0428	313.15-343.15	1.39-12.74	VLE	[302]
	0.63-0.966 (L)	303.2-323.2	0.77-6.0	VLE	[250]
2-Propanol	0.1024-0.6207	308.14-313.14	1.96-7.77	VLE	[303]
	0.03-0.9 (L)	313.15	1.836-8.137	VLE	[304]
	0.0063-0.0393	303.15-329.15	1.80-10.4	VLE	[266]
	0.0033-0.025	293.2-333.1	1.1-8.1	VLE	[305]
	0.0191-0.0743	324.7-348.6	1.025-10.45	VLE	[269]
	0.0019-0.0218	293.25-323.15	0.68-8.6	VLE	[306]
	0.212-0.982 (L)	313	0.72-7.58	VLE	[164]
	0.025-0.557	344.23-443.46	2.03-13.79	VLE	[307]
	0.0285-0.861 (L)	308.1-348	1.76-11.35	VLE	[308]
	0.0124-0.0833	323.15-353.15	1.06-10.77	VLE	[309]
	0.0076-0.1455	313.22-362.92	1.801-12.42	VLE	[300]
	0.609-0.953 (L)	302.8-323.1	0.98-5.94	VLE	[310]
	0.0085-0.1468	316.64-394.52	1.379-12.41	VLE	[311]
	0.0171-0.0582	313.15-343.15	3.05-9.72	VLE	[75]
1-Butanol	0.0019-0.0481	314.8-337.2	4.633-11.78	VLE	[261]
	0.208-0.88 (L)	298	1.74-6.26	VLE	[160]
	0.001-0.0056 0.228-0.8401 (L)	313.4	2.73-8.31	VLE	[312]
	0.003-0.009	313.15	6.702-8.183	VLE	[313]
	0.0048-0.153	313.2-333.2	0.49-11.24	VLE	[314]
	0.00163-0.0217	313.2-333.2	2.1-11.09	VLE	[315]
	0.0041-0.0107	313.2	6.02-7.96	VLE	[316]
	0.0373-0.202	333.58-426.95	9.634-16.94	VLE	[1]
	0.009-0.086	313.15-393.15	4.38-17.33	VLE	[317]

	0.013-0.71 (L)				
	0.0018-0.0655	343.15-353.15	5.02-12.02	VLE	[318]
	0.0014-0.0153	293.15-324.15	0.52-10.09	VLE	[319]
	0.0004-0.1823	323	7.5-14	VLE	[320]
	0.087-0.162	430.25	2.369-16.127	VLE	[307]
	0.0019-0.0289	313.15-323.15	1.67-9.27	VLE	[321]
	0.00177-0.1202	313.22-363.17	3.09-14.895	VLE	[322]
	0.013-0.036	313.15	1.692-7.794	VLE	[323]
	0.626-0.953 (L)	303-323.1	0.92-6.25	VLE	[324]
	0.033-0.286 0.033-0.286 (L)	303.15-428.15	7.063-17.41	VLE	[240]
2-Butanol	0.989-0.994 (L)	263.15-303.15	0.1013	VLE	[325]
	0.00231-0.0193	303.2-333.2	1.15-9.25	VLE	[315]
	0.0054-0.014	313.2	4.03-7.69	VLE	[316]
	0.025-0.292	335.14-431.73	8.541-14.54	VLE	[326]
	0.0019-0.0723	333.93-351.27	4.92-12.01	VLE	[327]
	0.0012-0.0105	298.15-318.15	0.46-8.15	VLE	[328]
	0.0012-0.015	298.15-318.15	0.46-8.15	VLE	[328]
	0.0047-0.1137 0.346 (L)	313.21-363.06	2.656-13.07	VLE	[322]
	0.05-0.9 (L)	313.15	1.548-8.008	VLE	[329]
	0.1-0.2	323.2-353.2	5.2-13	VLE	[330]
	0.0487-0.899	249.34-525.29	1.16-14.189	VLE	[331]
	0.431-0.899	293.3-352.87	1.411-11.39	VLE	[332]
tert-Butanol	0.0-0.06	299-343.2	0.64-11.12	VLE	[333]
	0.099-0.503 (L)	313.15-353.15	4.67-11.69	VLE	[334]
	0.0041-0.145	331.93-351.27	5.01-12.01	VLE	[327]
	0.0057-0.0719	323.2-353.2	4.16-11.09	VLE	[335]
	0.095-0.205 0.095-0.503 (L)	333-368	7 -12.03	VLE	[336]
1-Pentanol	0.0009-0.0383	314.7-337.5	5.59-11.05	VLE	[337]
	0.0007-0.912 0.159-0.603 (L)	283.2-373.2	2.03-17.26	VLE	[338]

	0.0086-0.1926	333.08-426.86	3.563-18.61	VLE	[339]
	0.005-0.032	313-333	1.81-11.72	VLE	[301]
	0.0011-0.0164	293.15-333.15	0.51-10.67	VLE	[340]
	0.0808 0.155-0.601 (L)	303.15-373.15	6.71-17.05	VLE	[341]
	0.819-0.968	323.17-343.22	0.912-3.999	VLE	[342]
2- Pentanol	0.003-0.01	313.2	1-8	VLE	[343]
	0.749-0.995	332.1-431.78	2.122-15.73	VLE	[339]
	0.0071-0.0355	313.2-333.2	2.002-10.59	VLE	[344]
3-Pentanol	0.0056-0.0322	313.2-333.2	1.942-10.21	VLE	[344]
	0.003-0.01	313.2	2-8	VLE	[345]
1-Hexanol	0.485-0.65 (L1) 0.0042-0.262 (L2)	217.97-309.66	0.531-7.858	LLE	[346]
	0.0533-0.269 (L2)	293.15-303.15	5.84-7.87	LLE	[347]
	0.0025-0.1382	324.56-432.45	2.268-20.13	VLE	[348]
	0.159-0.76 (L)	323.15-383.15	2.6-14.8	VLE	[349]
	0.0021-0.0544	323.15-383.15	2.3-15.2	VLE	[349]
	0.0005-0.0808	293.15-353.15	0.60-15.88	VLE	[347]
	0.02-0.054 0.02-0.6074 (L)	303.15-353.15	4.87-16.2	VLE	[341]
	0.0042-0.65 (L)	217.97-312.93	0.531-8.407	VLE	[346]
1-Heptanol	0.2242-0.3552 (L1) 0.016-0.0616 (L2)	289.85-310.15	56-123.9	LLE	[350]
	0.0022-0.1068	374.63-431.54	4.038-21.39	VLE	[348]
	0.0015-0.0985	293.15-353.15	0.58-14.02	VLE	[350]
1-Octanol	0.504-0.539 (L1) 0.0077-0.334 (L2)	250.3-306.15	1.791-7.477	LLE	[346]
	0.0003-0.0808	313.15-348.15	4-19	VLE	[351]
	0.00057-0.0778	348.15-453.15	1-5	VLE	[352]
	0.0055-0.0527	403.15-453.15	6.5-19	VLE	[353]
	0.218-0.892 (L)	308.15-328.15	1.51-15.11	VLE	[239]
	0.0006-0.0266	328.15	3-13.38	VLE	[354]
	0.035-0.78 (L)	313.15-393.15	0.293-21.55	VLE	[317]

	0.0021-0.0245	328.2	0.3-13.3	VLE	[355]
	0.113-0.784 (L)	313.15-348.15	0.325-18.29	VLE	[356]
	0.016-0.113	348.15	9.56-18.23	VLE	[356]
	0.0077-0.5394	250.3-309.12	1.791-7.927	VLE	[346]
	0.016-0.712	308-348	6.84-17.94	VLE	[357]
	0.062-0.543	308.2-348.2	9.71-18.07	VLE	[134]
1-Nonanol	0.0202-0.348 (L2)	303.15	11.3-34	LLE	[286]
	0.342-0.893 (L1)	303.15	1.3-8.56	LLE	[358]
	0.0084-0.0104 (L2)				
	0.001-0.838	308.14-328.18	2.23-15.6	VLE	[239]
	0.37-0.571 (L)				
	0.0009-0.0046	313.15-343.15	1.15-13.51	VLE	[75]
1-Decanol	0.00508-0.39029	308.5-348.6	8.16-27.53	VLE	[109]
	0.0066-0.4698 (L2)	270.54-303.15	3.214-7.095	LLE	[346]
	0.000165-0.0294	348.15-453.15	1-5	VLE	[352]
	0.00025-0.030	348.15-453.15	6 -19	VLE	[353]
	0.29-0.838 (L)	308.14-328.16	2.23-15.17	VLE	[239]
	0.00107-0.01882	323	9-18	VLE	[320]
	0.0051-0.39 (L)	318.3-338.7	8.97-23.11	VLE	[359]
	0.34-0.885 (L)	303.2-343.2	1.68-13.26	VLE	[360]
	0.0066-0.47	270.54-307.18	3.214-7.095	VLE	[346]
	0.4723-0.9321 (L)	271.54-278.66	0.663-3.018	VLE	[361]
	0.419-0.848	308.14-318.14	2.18-7.75	VLE	[239]
	0.0051-0.39	308.8-348.6	7.56-27.04	VLE	[359]
Benzyl alcohol	0.481-0.989 (L)	298.09-398.07	0.1-14	VLE	[362]
	3.8E-05-0.0658	308.2-318.2	3.16-23.19	VLE	[363]
	0.0003-0.0159	313.2-393.1	6.09-20.08	VLE	[206]
	0.000291-0.0407	333.15-453.15	1-19	VLE	[364]
	9.99E-05-0.014	298.15-313.15	1.03-16.11	VLE	[365]
	0.969-0.999 (L)	303-323	0.053-0.756	VLE	[366]
	0.5667 (L)	306.35	7.61-16.15	VLE	[365]
Furfuryl alcohol	0.958-0.997 (L)	283.15-323.15	0.0556-0.568	VLE	[367]
Propylene glycol	0.178-0.213	398.2-453.2	2.51-52.5	VLE	[368]

	0.9381-0.9937	303.15-423.15	0.42- 4.55	VLE	[369]
Glycerol	1.93E-05-0.00096	313.15-413.15	5-35	VLE	[370]
	0.879-0.979 (L)	313.15-473.15			
	2E-05-3.9E-05	296.2-333.2	9.9-28.3	VLE	[371]
	0.9034-0.9754 (L)	433.15-453.15	10-30	VLE	[370]
	0.911-0.981 (L)	353.2-423.2	4.21-31.75	VLE	[372]
Cyclohexanol	0.000471-0.156	333.15-453.15	1-19	VLE	[373]
	0.053-0.16	433.2-473.2	3.55-21.5	VLE	[374]
	0.653-0.959 (L)	303.8-392	1.09-7.69	VLE	[375]
	0.35-0.427	433.2	21.2-22.48	VLE	[374]
	0.023-0.798	303-343	5.33-12.65	VLE	[376]
2-Ethylhexanol	0.0058-0.127	308-348	7.27-15.97	VLE	[377]
	0.10-0.354 (L)				
	0.099	343-393	9.14-19.4	VLE	[336]
	0.2-0.503 (L)				

*: 'L' denotes mole fraction in liquid phase. **: VLE: Vapour-Liquid Equilibrium; LLE; Liquid-Liquid Equilibrium.

+: quality data

Table S5. Experimental phase behaviour data of ether/CO₂ mixtures.

X	Mole fraction of X	T/K	P/MPa	VLE	References
Dimethyl ether	0.1389-1 (L)*	273.15-386.53	0.26 -7.93	VLE	[378]
	0.042-1	288.2-320.12	0.42-6.79	VLE	[379]
	0.0458-1	298.15-320.15	0.6-7.32	VLE	[243]
	0-1	283.15-313.15	0.374-7.218	VLE	[380]
Ethyl ether	0.0101-0.1163	298.14-313.14	0.702-7.222	VLE	[381]
	0.0064-0.1611	298.45-318.45	0.72-8.31	VLE	[382]
	0.0163 (L)	290.35-301.35	5.189-6.774	VLE	[254]
	0.0298	301.65-307.75	3.487-4.888	VLE	[383]
	0.00489-0.0865	299.15-318.45	0.82-8.32	VLE	[384]
	0.0002-0.0731	293.15-333.15	0.56-2.554	VLE	[385]
	0.0433-0.2945	298.15-308.15	5-7.5	VLE	[386]

	0.0002-0.0731	273.15-333.15	0.54-2.554	VLE	[387]
Tetrahydrofuran	0.012-0.1008	311.01-331.33	0.813-8.02	VLE	[388]
	0.2002 (L)				
	0.101-0.902 (L)	298-333	0.66-9.54	VLE	[164]
	0.0418-0.0653	313.2-353.2	0.47-10.29	VLE	[178]
	0.002-0.03	298.15-313.15	2.06-7.629	VLE	[389]
Dioxane	0.781-0.881	333.2	1.14-2.06	VLE	[390]
	0.088-0.936(L)	298.15-313.15	0.43-7.14	VLE	[263]
	0.429-0.905	298.15	0.827-3.24	VLE	[391]
Diethylene glycol dimethyl ether	0.981-0.983	303.14-333.13	0.101	VLE	[392]
	0.207-0.952 (L)	258.2- 313.2	0.3-3.19	VLE	[393]
Diethyl ether	0.0101-0.1163	298.14-313.14	0.702-7.22	VLE	[381]
	0.0064-0.1611	298.45-318.49	0.72-8.31	VLE	[384]
	0.0163 (L)	290.35-303.35	5.189-6.774	VLE	[254]
	0.0298	301.65-307.75	3.487-4.888	VLE	[383]
Methyl phenyl ether	0.0063-0.0544	343.08-372.27	2.45-16.81	VLE	[204]
	0.0048-0.0489	333.2-393.2	4.125-18.33	VLE	[205]
	0.0018-0.0466	313.2-393.2	5.69-16.47	VLE	[206]

Table S6. Experimental phase behaviour data of ester/CO₂ mixtures.

X	Mole fraction of X	T/K	P/MPa	VLE	References
Butyl acetoacetate	0.0450-0.8239	313.2-393.2	3.04-20.43	VLE	[394]
Hexyl acetoacetate	0.0548-0.7620	313.2-393.2	2.69-22.18	VLE	[394]
Octyl Acetoacetate	0.0405-0.7948	313.2-393.2	2.39-23.83	VLE	[394]
Allyl acetoacetate	0.030-0.629	313.2-393.2	3.09-20.78	VLE	[395]
Methyl acetoacetate	0.030-0.629	313.2-393.2	3.62-17.55	VLE	[395]
Ethyl Acetoacetate	0.0487-0.6434	313.2-393.2	3.69-20.31	VLE	[395]
Allyl Acetate	0.081-0.645	313.2-393.2	2.4-14.82	VLE	[396]
Methyl Acrylate	0.173-0.792	313.2-393.2	1.9-13.21	VLE	[397]
Ethyl Acrylate	0.080-0.770	313.2-393.2	1.76-13.66	VLE	[397]
Allyl acrylate	0.029-0.762	313.2-393.2	1.75-15.97	VLE	[396]

Propyl acrylate	0.008-0.603	313.2-393.2	3.51-16.08	VLE	[398]
Propyl methacrylate	0.009-0.799	313.2-393.2	1.63-16.59	VLE	[398]
Hexyl Acrylate	0.007-0.663	313.2-393.2	2.56-18.1	VLE	[399]
Hexyl Methacrylate	0.016-0.665	313.2-393.2	3.5-18.93	VLE	[399]
Octadecyl Acrylate	0.012-0.719	318.15-393.15	2.79-30.59	VLE	[400]
Methyl acetate	0.031-0.797	313.2-393.2	1.33-11.38	VLE	[401]
Ethyl acetate	0.036-0.748	313.2-393.2	1.79-11.66	VLE	[401]
Propyl acetate	0.035-0.774	313.2-393.2	1.79-12.69	VLE	[401]
Butyl acetate	0.057-0.744	313.2-393.2	2-14.40	VLE	[401]
Pentyl acetate	0.056-0.731	313.2-393.2	2.40-15.53	VLE	[401]
	0.086-0.770	313.2-393.2	2.27-16.80	VLE	[402]
Hexyl acetate	0.025-0.654	313.2-393.2	3.01-16.45	VLE	[401]
Pentyl methacrylate	0.043-0.740	313.2-393.2	2.54-17.48	VLE	[402]
Allyl methacrylate	0.054-0.682	313.2-393.2	4.01-16.27	VLE	[396]
Isobutyl acrylate	0.054-0.701	313.2-393.2	2.41-14.79	VLE	[403]
Cyclohexyl acrylate	0.002-0.764	313.2-393.2	3.35-19.98	VLE	[404,405]
Cyclohexyl methacrylate	0.012-0.793	313.2-393.2	3.85-20.59	VLE	[404,405]
Decyl acrylate	0.009-0.136	313.2-393.2	3.07-22.26	VLE	[404,405]
Decyl methacrylate	0.050-0.239	313.2-393.2	3.27-23.08	VLE	[404,405]
Tert-Butyl Acrylate	0.090-0.664	313.2-393.2	2.38-13.97	VLE	[403]
Ethyl oleate	0.026-0.802	313.2-393.2	3.07-27.93	VLE	[406]
Propyl oleate	0.050-0.646	313.2-393.2	3.76-29.55	VLE	[406]
Butyl oleate	0.082-0.720	313.2-393.2	3.09-31.71	VLE	[406]
Phenyl acetate	0.033-0.609	313.2-393.2	7.31-22.76	VLE	[407]
Methyl Methoxyacetate	0.065-0.567	313.2-393.2	5.28-16.48	VLE	[408]
Methyl trans-3-methoxyacrylate	0.032-0.655	313.2-393.2	5.38-19.96	VLE	[408]
2-Ethoxyethyl acetate	0.391-0.965	313.2-393.2	3.9-17.83	VLE	[409]
2-(2-Ethoxyethoxy)ethyl acetate	0.32-0.973	313.2-393.2	3.9-20.59	VLE	[409]
Isobutyl acetate	0.034-0.639	313.2-393.2	2.97-15.72	VLE	[410]
Isopentyl acetate	0.034-0.617	313.2-393.2	3.36-17.69	VLE	[410]

2-(2-Ethoxyethoxy)ethyl acrylate	0.052-0.664	313.2-393.2	5.11-22.86	VLE	[411]
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Table S7. Experimental phase behaviour data of ketone/CO₂ mixtures.

X	Mole fraction of X	T/K	P/MPa	VLE/ LLE	References
Acetone	0.07-0.94 (L)*	213.15-293.09	0.253-2.531	VLE	[412]
	0.0034-0.08	298.14-313.14	0.3958-7.413	VLE	[228]
	0.0082-0.0891	291.15-313.13	0.78-7.39	VLE	[265]
	0.034-0.8979 (L)	313.15-333.15	0.987-9.5	VLE	[413]
	0.0096-0.0661	291.15-313.13	0.78-7.39	VLE	[238]
	0.063-0.857 (L)	291.15-313.13	0.78-7.39	VLE	[239]
	0.0115-0.1087	303-332.9	1.05-7.08	VLE	[305]
	0.067-0.814 (L)	323.15	1.54-8.85	VLE	[65]
	0.0734-0.675 (L)	333.15-393.15	2.36-12.37	VLE	[414]
	0.213-0.944 (L)	323	0.49-7.11	VLE	[164]
	0.016-0.802 (L)	291.15-313.15	0.72-7.88	VLE	[277]
	0.075-0.94 (L)	313.15	0.51-7.58	VLE	[415]
	0.153-0.653 (L)	313.11-353.18	1.93-10.78	VLE	[247]
	0.5319-0.8721 (L)	298.15	0.776-2.714	VLE	[391]
	0.104-0.903 (L)	298.2-333.2	0.81-5.47	VLE	[416]
	0.157-0.515 (L)	313.15-353.15	0.62-10.53	VLE	[417]
	0.022-0.077 0.233-0.809 (L)	308.15-333.15	1.5-6.02	VLE	[57]
	0.02-0.022	298.15	2.153-3.368	VLE	[418]
	0.086 (L)	289.45-302.45	5.389-6.922	VLE	[254]
	0.02-0.206 (L)	297.15-400.85	4.864-11.73	VLE	[419]
	0.0385	321.45-328.25	3.34-4.58	VLE	[383]
	0.0103-0.0365	303-332.9	5.5-6.06	VLE	[305]
	0.048-0.098 0.098 (L)	318.15-333.15	8-10.06	VLE	[65]
	0.1	322.1-363	9.2-11	VLE	[174]
	0.1-0.7	343.2-482	6.70-11.55	VLE	[152]

	0.1-0.7 (L)				
	0.016	313.15	7.95	VLE	[277]
	0.0741 -0.8934	258.3-298.2	0.496- 5.495	VLE	[420]
	0.1-0.59	303-323	2.32-8.16	VLE	[421]
	0.3008-0.9925	288.15-318.15	0.0617-5.329	VLE	[422]
	0.157-0.515	313.15-353.15	4.06-10.53	VLE	[417]
	0.193-0.713	313.11-353.18	1.93-10.78	VLE	[247]
	0.157-0.515	313.15-353.15	4.06-10.53	VLE	[417]
Methyl ethyl ketone	0.394-0.906	298	0.48-3.945	VLE	[423]
	0.066-0.917	313.15	0.53-7.55	VLE	[415]
	0.186-0.562	313.11-353.18	2.35-9.92	VLE	[247]
	0.241-0.977	288.15-318.15	0.158-5.219	VLE	[422]
Acetophenone	0.00017-0.0864	313.15-348.15	2.5-16.5	VLE	[424]
	0.0003-0.0115	313.1-393.2	6.1-15.11	VLE	[212]
	0.527-0.937 (L)	298	0.739-4.195	VLE	[423]
	0.000088-0.000214	313.15-343.15	10-28	VLE	[425]
Methyl isobutyl ketone	0.0929-0.467 (L)	313.11-353.18	2.33-11.55	VLE	[247]
Cyclohexanone	0.126-0.822 (L)	298	1.46-5.54	VLE	[160]
	0.126-1	298	0.1-5.5	VLE	[426]
	0.001-0.0022	313.25-323.3	4.29-8.91	VLE	[427]
	0.455-0.946 (L)	298	0.442-4.149	VLE	[423]
	0.038-0.157	433.5-453.2	3.03-21.52	VLE	[374]
	0.009-0.402 (L)	293-333	3.53-10.83	VLE	[376]
	0.702-0.891 (L)	313.5-392	1.23-4.46	VLE	[428]
	0.978-0.985 (L)	283.15-303.14	0.101	VLE	[429]
Diethyl ketone	0.11-0.658 (L)	313.15-353.15	2.51-11.79	VLE	[417]
Benzophenone	0.427-0.431 (L1)**	282.51-304.15		LLE	[223]
	0.0051-0.0137 (L2)**				
	0.507-0.896	298.15-323.15	1.265-6.774	VLE	[223]
Acetonylacetone	0.394-0.883 (L)	298	0.705-4.078	VLE	[423]
	0.3973-0.8266	298.15	1.261-3.828	VLE	[391]
Camphor	0.0093-0.684 (L)	304-354	3.42-15.71	VLE	[430]

	0.0093-0.038				
	0.000863-0.036	313-333	7.51-12.50	VLE	[431]
Acetylacetone	0.394-0.883	298	0.705-4.078	VLE	[423]

Table S8. Experimental phase behaviour data of water/CO₂ mixtures.

X	Mole fraction of X	T/K	P/MPa	VLE/ LLE	References
Water	0.9752 (L1) 0.00265(L2)	298.15		LLE	[432]
	0.976-0.974 (L1) 0.0028-0.0045 (L2)	288.71- 304.2	10.14-20.27	LLE	[433]
	0.000819-0.676 0.9797-0.99 (L)	288.71-533.11	2.534-10.14	VLE	[433]
	0.9693-0.97555 0.00222-0.00378 (L2)	288.15-298.15	5.17-24.32	LLE	[434]
	0.00384-0.0058	308.15-313.15	9.12-20.27	VLE	[434]
	0.9651-0.975 (L2)	278-293	6.44-29.49	LLE	[435]
	0.00246-0.00451 (L2)	283.2-311.4	8.1-20.1	LLE	[436]
	0.974-0.97 (L1) 0.0045-0.0068 (L2)	298.15	10.18-17.55	LLE	[432]
	0.01-0.945	323.18-623.24	10-50	VLE	[437]
	0.9992-0.9995	290.27-302.93	0.1013	VLE	[438]
	0.9993-0.9997	303-333	0.1013	VLE	[224]
	0.0101-0.0355	347.15-385.85	4.05-5.05	VLE	[439]
	0.00354-0.0426	323.13-373.07	2.533-30.4	VLE	[440]
	0.9998-1	284.59-350.07	0.0128-0.09746	VLE	[441]
	0.01-0.88	323.18-623.24	20-100	VLE	[442]
	0.042-0.9	383.13-598.19	10-100	VLE	[443]
	0.00145-0.0328	298.14-373.07	1.733-5.147	VLE	[444]
	0.9924-0.9995 (L)	323.14-473.11	0.154-53.89	VLE	[445]
	0.00339-0.00643	323.14	6.82-17.68	VLE	[446]
	0.045-0.767	373.12-493.11	0.325-8.11	VLE	[447]
	0.0474-0.0607	421.4	10.18-19.72	VLE	[448]
	0.9925-0.9936	631.71	19.65-19.89	VLE	[449]

	0.017-0.906	313.15-333.15	0.0032-0.272	VLE	[450]
	0.0012-0.101	308.8	1.166-7.957	VLE	[285]
	0.9792-0.9912 (L)	304.19-313.15	1.763-5.825	VLE	[451]
	0.9853-0.9966	293	0.5215-2.533	VLE	[452]
	0.9683-0.9834	344.15	10-100	VLE	[453]
	0.0034-0.0143	323.2-353.1	4.05-14.11	VLE	[454]
	0.0013-0.0096 0.972-0.9982 (L)	288.26-318.23	0.465-7.963	VLE	[455]
	0.9964-0.9993(L)	288-323	0.092-0.473	VLE	[276]
	0.9773-0.9936 (L)	323.1	2.06-20.2	VLE	[456]
	0.9969-0.9997 (L)	303.2-323.2	0.0638-0.535	VLE	[128]
	0.9909-0.9996 (L)	313-333	0.105-2.505	VLE	[457]
	0.978-0.999 (L)	298.15-393.15	0.54-5.14	VLE	[458]
	0.0031-0.3464	323.15-448.15	0.109-17.53	VLE	[432]
	0.9986-0.9996	303	0.125-0.408	VLE	[459]
	0.9936-0.9772	323.15	2.066-18.68	VLE	[460]
	0.9785-0.999 (L)	333.15-353.15	0.1-21.3	VLE	[461]
	0.9766-0.9989 (L)	292.15-298.15	0.2-4	VLE	[462]
	0.178-0.91	383.13-533.17	20-30	VLE	[443]
	0.9736-0.9915 (L)	273.1-298.09	1.0132-3.039	VLE	[463]
	0.121-.935 0.9924-0.9995 (L)	373.12-473.11	0.237-4.56	VLE	[445]
	0.9994-0.9995 (L)	293.15-303.14	1.09	VLE	[464]
	0.0014-0.0032	298.19	3.63	VLE	[465]
	0.02-0.5	327.72-467.08	0.108-9.6114	VLE	[466]
	0.0055-0.0079	323.14	10.133-15.20	VLE	[125]
	0.9834-0.9979 (L)	352.83-471.11	2.04-10.2	VLE	[467]
	0.003	313.2	4-10	VLE	[57]
	0.0063-0.075	348.1	10.34-15.31	VLE	[448]
	0.9913-0.9952 (L)	623-642.7	17.63-20.23	VLE	[449]
	0.00547-0.00782	323.15	10.1-30.1	VLE	[468]
	0.0612-0.7913	405 -613	5.7-24	VLE	[469]
	0.9995-0.9997 (L)	303.15-318.15	0.101	VLE	[469]

	0.9994-1 (L)	278.15-338.15	0.0491-0.0842	VLE	[470]
	0.967-0.984 (L)	278.05-283.05	2-3.7	VLE	[471]
	0.9853-0.9934 (L)	293	1.012-2.533	VLE	[472]
	0.9995-0.9997	308.15-318.15	0.1013	VLE	[473]
	0.9874-0.9924	299.98-367.86	2.63-6.7	VLE	[474]
	0.982-0.995 (L)	304-313	1.01-4.59	VLE	[475]
	0.9799-0.9921 (L)	373.1	5.05-19.47	VLE	[456]
	0.9994-1 (L)	293.15-313.15	0.101	VLE	[476]
	0.9698-0.9847 (L)	324.1-375.8	10.6-49.9	VLE	[477]
	0.00778-0.0312	353-393	10-30	VLE	[478]
	0.9954-0.9983 (L)	298.43-298.62	0.263-0.747	VLE	[479]
	0.9728-0.9837 (L)	273.95-282.55	1.37-4.2	VLE	[480]
	0.0016-0.0027	298.15	1.666-3.258	VLE	[432]
	0.9977-0.9991 (L)	288	0.1535-0.3783	VLE	[459]
	0.9781-0.989	374.15-374.99	7.21-27.26	VLE	[481]
	0.98-0.997 (L)	283.35-363.04	0.31-11.99	VLE	[482]
	0.9918-0.9987 (L)	286.15	0.2-1	VLE	[462]
	0.0099-0.0348	355.05-379.35	6.03	VLE	[439]

Table S9. Experimental phase equilibrium data of monomer/CO₂ and polymer/ CO₂ mixtures.

Polymer/monomer	MW in g. mol ⁻¹	X _{CO2}	T/K	P/MPa	Types of data	References
2-Ethyl-2-oxazoline	99.13	0.33-0.881	333.2-393.2	5.63-17.48	B/C/D*	[483]
Trimethylolpropane triacrylate	296.32	0.0308-0.736	313.2-393.2	4.27-32.23	B/C/D	[484]
Trimethylolpropane trimethacrylate	338.40	0.324-0.995	313.2-393.2	3.22-26.90	B/C/D	[484]
Vinyl benzoate	148.16	0.292-0.96	313.2-393.2	6.10-22.19	B/C/D	[485]
Vinyl pivalate	128.17	0.345-0.923	313.2-393.2	3.42-13.59	B/C/D	[485]
Vinyl octanoate	170.25	0.52-0.974	313.2-393.2	5.90-20.93	B/C/D	[485]

Vinyl laurate	226.36	0.278-0.968	313.2-393.2	3.92-23.55	B/C/D	[486]
Vinyl methacrylate	112.13	0.332-0.962	313.2-393.2	4.28-15.69	B/C/D	[486]
Vinyl propionate	100.12	0.391-0.945	313.2-393.2	2.96-13.79	B/C/D	[486]
Vinyl Acetate	86.09	0.266-0.973	313.2-393.2	2.46-12.6	B/C/D	[487]
Vinyl Acrylate	98.1	0.406-0.945	313.2-393.2	4.62-13.86	B/C/D	[487]
2-Phenylethyl methacrylate	190.24	0.579-0.95	313.2-393.2	7.76-25.21	B/C/D	[407]
Caprolactone acrylate		0.347-0.653	313.2-393.2	4.21-55.93	B/C/D	[488]
Vinyl stearate		0.417-0.583	313.2-393.2	3.21-27.40	B/C/D	[489]
t-Butylaminoethyl methacrylate		0.39-0.948	313.2-393.2	3.7-20.62	B/C/D	[490]
Triethylene glycol dimethacrylate		0.055-0.507	313.2-393.2	2.98-26.79	B/C/D	[491]
2-Dimethylaminoethyl methacrylate	157.21	0.349-0.95	313.2-393.2	4.17-19.07	B/C/D	[492]
Isobornyl methacrylate		0.254-0.953	313.2-393.2	3.29-23.52	B/C/D	[493]
Triethylene glycol diacrylate		0.023-0.563	313.2-393.2	3.35-30.34	B/C/D	[491]
Phenyl methacrylate		0.406-0.964	313.2-393.2	6.24-23.7	B/C/D	[494]
1,3-Butanediol diacrylate		0.448-0.973	313.2-393.2	5.69-24.90	B/C/D	[495]
1,3-Butanediol dimethacrylate		0.366-0.949	313.2-393.2	3.94-23.21	B/C/D	[495]
2,2,3,3,4,4,4-Heptafluorobutyl acrylate		0.522-0.949	313.2-393.2	3.84-14.31	B/C/D	[496]

2,2,3,3,4,4,4- Heptafluorobuty l methacrylate		0.535-0.951	313.2-393.2	4.17-14.14	B/C/D	[496]
4-Chlorostyrene		0.441-0.94	313.2-393.2	7.46-23.74	B/C/D	[497]
2-Butoxyethyl Acrylate		0.379-0.948	313.2-393.2	4.59-20.38	B/C/D	[498]
2-Ethoxyethyl methacrylate		0.434-0.954	313.2-393.2	4.91-19.39	B/C/D	[499]
2,3-Epoxypropyl methacrylate		0.335-0.95	313.2-393.2	5.83-21.28	B/C/D	[499]
Isobornyl acrylate		0.335-0.949	313.2-393.2	4.05-22.86	B/C/D	[500]
Isopropyl acrylate		0.317-0.96	313.2-393.2	2.69-13.68	B/C/D	[501,502]
Isopropyl methacrylate		0.265-0.984	313.2-393.2	2.48-14.2	B/C/D	[501]
2-Hydroxyethyl methacrylate	130.14	0.306-0.915	313.2-393.2	5.31-26.83	B/C/D	[503]
2- Hydroxypropyl acrylate	130.14	0.276-0.912	313.2-393.2	5.21-25.93	B/C/D	[503]
2- Hydroxypropyl methacrylate	144.17	0.253-0.982	313.2-393.2	4.23-23.62	B/C/D	[503]
2-Ethylhexyl methacrylate	198.3	0.705-0.972	313.2-393.2	3.26-20.48	B/C/D	[504]
Tetrahydrofurfu ryl methacrylate		0.424-0.949	313.2-393.2	4.43-20.35	B/C/D	[505]
Tetrahydrofurfu ryl acrylate		0.052-0.654	313.2-393.2	3.48-20.90	B/C/D	[506]
Octyl acrylate		0.467-0.959	313.2-393.2	4.53-20.1	B/C/D	[507]
Octyl methacrylate		0.345-0.946	313.2-393.2	4.03-20.88	B/C/D	[507]

Neopentyl methacrylate		0.475-0.975	313.2-393.2	4.24-16.07	B/C/D	[508]
2,2,2-Trifluoroethyl methacrylate		0.285-0.755	323.5-353.2	2.35-8.99	B/C/D	[509]
2-(Trimethylsilyloxy)ethyl methacrylate		0.488-0.957	313.2-393.2	4.08-18	B/C/D	[510]
3-(Trimethoxysilyl)propyl methacrylate		0.386-0.961	313.2-393.2	4.49-22.49	B/C/D	[510]
Propargyl acrylate		0.069-0.606	313.2-393.2	4.78-17.50	B/C/D	[511]
Propargyl methacrylate		0.037-0.533	313.2-393.2	5.49-19.14	B/C/D	[511]
2-Methoxyethyl acrylate		0.054-0.670	313.2-393.2	4.48-17.97	B/C/D	[512]
Diethylene glycol diacrylate	214.24	0.406-0.956	313.2-393.2	6.31-28.31	B/C/D	[513]
Diethylene glycol dimethacrylate	242.27	0.383-0.955	313.2-393.2	5.80-26.97	B/C/D	[513]
2,2,3,3,3-Pentafluoropropyl methacrylate	218.12	0.366-0.903	313.15-393.15	3-12.86	B/C/D	[514]
N-Vinyl pyrrolidone	111.14	0.258-0.891	313.2-393.2	3.10-24.66	B/C/D	[514]
N,N-Dimethylacrylamide	99.13	0.372-0.947	313.2-393.2	5.83-21.62	B/C/D	[515]

2,2,3,3,4,4,5,5-Octafluoropentyl acrylate		0.425-0.948	313.2-393.2	4.29- 16.73	B/C/D	[516]
2,2,3,3,4,4,5,5-Octafluoropentyl methacrylate		0.428-0.949	313.2-393.2	4.09-17.86	B/C/D	[516]
Neopentyl glycol diacrylate	212.24	0.345-0.966	313.2-393.2	2.55-24.21	B/C/D	[517]
Neopentyl glycol dimethacrylate	240.30	0.352-0.965	313.2-393.2	4.86-25.28	B/C/D	[517]
Dodecyl acrylate	240.4	0.009-0.649	313.2-393.2	2.31-26.14	B/C/D	[518]
Ethylene glycol dimethacrylate	198.22	0.475-0.942	313.2-393.2	5.83-22.03	B/C/D	[519]
2-Phenoxyethyl acrylate	192.21	0.338-0.924	313.2-393.2	5.14-31.43	B/C/D	[520]
2-Phenoxyethyl methacrylate	206.24	0.301-0.923	313.2-393.2	5.08-30.55	B/C/D	[520]
Dodecyl methacrylate	254.4	0.011-0.787	313.2-393.2	1.47-23.21	B/C/D	[521]
Isodecyl methacrylate	226.36	0.558-0.949	313.2-393.2	5.84-22.03	B/C/D	[522]
Isooctyl acrylate	184.25	0.301-0.979	313.2-393.2	3.79-20.01	B/C/D	[523]
Octyl acrylate	184.28	0.467-0.959	313.2-393.2	4.53-20.10	B/C/D	[507]
Octyl methacrylate	198.30	0.345-0.946	313.2-393.2	4.03-20.88	B/C/D	[507]
Benzyl acrylate	162.19	0.324-0.98	313.2-393.2	5.9-24.4	B/C/D	[524]
Benzyl methacrylate	176.21	0.304-0.976	313.2-393.2	5.76-24.43	B/C/D	[524]
N-Vinyl-2-pyrrolidone		0.153-0.917	324.8-355.8	2.06-18.14	B/C	[525]
2-(Diethylamino)ethyl acrylate	171.27	0.503-0.9158	313.2-393.2	8.441-20.231	VLE	[526]

2-(Diethylamino)ethyl methacrylate	185.27	0.1993-0.9679	313.2-393.2	2.524-21.341	VLE	[526]
Poly(dimethylsiloxane)	38900	95 wt%	315.2- 452.6	33.13-51.38	CP**	[527]
	90200	95.1 wt%	333.7- 453.8	39.14- 54.83	CP	[527]
	170300	94.5 wt%	334.5- 454.3	40.52- 55.52	CP	[527]
	237	5-100 wt%	298.15	0.55- 6.43	VLE	[528]
Polyamide-11		0.688- 2.26 wt%	323.15-363.15	2-4.24	VLE	[529]
Poly(ϵ -caprolactone)	69000	2.85-76.22 wt%	313.15-333.15	8-20	VLE	[530]
	170000	96 wt%	458.25-502.15	252.24-283.28	CP	[531]
Polyester (hyperbranched)	4300	5-15 wt%	283.44-416.99	2.86-12.97	VLE	[532]
	1200	86.74- 89.48 wt%	302.31-423.05	147.99- 183.59	CP	[533]
	2100	90.11 wt%	310.56- 422.86	67.82- 104.68	CP	[533]
	1200	79.22-97.94 wt%	270.82- 375.95	12.17- 46.08	CP	[533]
	4250	64.85-89.95 wt%	304.63- 422.81	47.40- 83.84	CP	[533]
	2150	69.62-90.56 wt%	345.86- 422.64	87.56- 185.66	CP	[533]
	5600	39.64-99.31 wt%	361.26- 423.19	41.11- 197.60	CP	[533]
	7200	82.45 wt%	401.90- 423.31	124.82- 197.24	CP	[533]
	3950	79.99-97.82 wt%	281.15- 376.23	18.32- 46.94	CP	[533]
	10500	79.68-97.74 wt%	280.02- 376.24	21.92- 49.61	CP	[533]
	1400	81.11-98.11 wt%	280.96- 375.55	5.27- 36.27	CP	[533]
	3450	79.09-97.54 wt%	279.92-375.86	17.77-45.42	CP	[533]
	5200	86.66-97.94 wt%	277.38-376.48	38-54.85	CP	[533]

	1500	94.89 wt%	280.11-376.21	58.47-80.92	CP	[533]
	4600	86.74-89.48 wt%	302.31-422.85	147.99-183.59	CP	[533]
	4450	71.18-97.85 wt%	330.36-423.35	144.57-185.57	CP	[533]
Polyether-polycarbonate-polyol	3046	1.513- 15.015 wt%	363-413	1.493-9.929	VLE	[534]
Poly(ethylene glycol)	200	1.3-18.2 wt%	303.15-323.15	1-8.10	VLE	[535]
	200	0.0062-0.0994	303.15-333.15	0.0722-1.143	VLE	[536]
	300	0.0154- 0.1735	303.15-333.15	0.1413-1.1305	VLE	[536]
	400	11.1-22.6 wt%	313.15	5.3-11.6	VLE	[537]
	400	0.0213-0.2220	303.15-333.15	0.1453-1.1205	VLE	[536]
	150	0.0055- 0.0850	303.15-333.15	0.1179-1.1435	VLE	[536]
	1500	1.20-31.30 wt%	298.2-323.2	5.65-25.42	VLE	[538]
	4000	1.57-27.50 wt%	297.9-323.2	5.69-24.66	VLE	[538]
	6000	3.6-27.6 wt%	336.15-393.15	2.8- 33.77	VLE	[539]
	8000	1- 26.4 wt%	353.15-393.15	2.5- 33.58	VLE	[539]
	9000	3.6- 24.1 wt%	353.15-393.15	2.8-32.6	VLE	[539]
	12000	1.5- 28.7 wt%	335.15-393.15	1.9-33.41	VLE	[539]
	20000	1.6-26.4 wt%	340.15-393.15	2.4- 34.28	VLE	[539]
	35000	9 - 29.4 wt%	342.15-393.15	3.3-33.95	VLE	[539]
Poly(ethylene glycol) dimethyl ether	250	5-100 wt%	298.15	0.533-6.43	VLE	[528]
	250	0.21-0.63	293.35-373.55	1.15- 11.2	VLE	[540]
	340	0.052- 0.747	298.15-343.15	0.219- 7.937	VLE	[540]
	2500	0.9636-1	304.18-304.65	7.4-7.5	VLE	[541]

Poly(hexafluoro propylene oxide) carboxylic acid end-capped	2500	0.0362- 0.7532 (L) 0.0621- 0.9812	313.15-343.15	2.408-17.027	VLE	[542,543]
Poly(DL-lactic acid)	75000-120000	2.92-33.67 wt%	313.15-344.15	0.862-7.931	VLE	[544]
poly(L-lactic acid)	42000	16.52-43.01 wt%	308-323	9.62-31.46	VLE	[545]
Poly(propylene glycol)	2700	3.5- 18.4 wt%	298.15-308.15	2-6	VLE	[537]
	2000	93 wt%	298.8-336.3	12.4-22.6	CP	[546]
	4000	95 wt%	312.9-332.8	29.3-34.4	CP	[546]
		98.55-98.71 wt%	308-328	8.20-12.65	CP	[547]
Poly(hexafluoro propylene oxide) carboxylic acid end-capped	2500	0.0362-0.7532 (L) 0.6587-0.9927	313.15-343.15	2.408-14.649	VLE	[542,543]
	2500	0.9636-1	304.18-304.65	7.4-7.5	VLE	[541]
Poly(DL-lactic acid-co-glycolic acid)	14000	1.69-4.62 wt%	313.15	1-3	VLE	[548]
	15300	1.69-7.76 wt%	313.15	1-3.9	VLE	[548]
	15000	1.09- 5.08 wt%	313.15	0.6-3	VLE	[548]
	47000	1.43-5.02 wt%	313.15	1-3	VLE	[548]
	70000	9.03- 29.63 wt%	308-323	10.14- 31.47	VLE	[545]
	50000-75000	2.36-26.49 wt%	313.15-344.15	1.448-8.103	VLE	[544]
	40000-75000	0.54-24.99 wt%	313.15-344.15	1.213-7.9	VLE	[544]
Poly(perfluoropropylene oxide) ether	960	5-100 wt%	298.15	1.60-6.43	VLE	[528]
Polysulfone	26000	9.7- 12 wt%	313.15-333.15	20-40	VLE	[549]
Poly(acetoacetox yethyl methacrylate-b-	53200	96 wt%	293.45-337.65	9.83-27.7	CP	[550]
	86500	96 wt%	293.65-333.95	10.38-27.7	CP	[550]

1,1,2,2-tetrahydroperfluorodecyl acrylate)						
Poly{1,1-bis [4-(trifluorovinyl)oxy]phenyl]-hexafluoroisopropylidene}	31300	97.2 wt%	307.95-384.05	82.69-87	CP	[551]
Poly(2-butoxyethyl acrylate)	80000	95 wt%	363.9-454.2	115.17-224.31	CP	[498]
Poly(tert-butyl acrylate)	72000	95.2 wt%	395.55-457.65	121.52-206.38	CP	[403]
Poly(tert-butyl methacrylate)	69800	95.4 wt%	434.95-463.95	191.31-257.55	CP	[403]
Poly(ϵ -caprolactone)	170000	96 wt%	458.25-502.15	252.24-283.28	CP	[531]
Poly(cyclohexene oxide-co-carbon dioxide)	12000	99.49 wt%	455.06-479.93	252-335	CP	[552]
Poly(decyl acrylate)	130000	94.9 wt%	451.45-479.65	144.93-193.62	CP	[553]
Poly(dimethylsiloxane)	38900	95 wt%	315.2- 452.6	33.13- 51.38	CP	[527]
	90200	95.1 wt%	333.7- 453.8	39.14- 54.83	CP	[527]
	170300	94.5 wt%	334.5-454.3	40.52-55.52	CP	[527]
	237	5-100 wt%	298.15	0.55- 6.43	VLE	[527]
Poly(dimethylsiloxane) monomethacrylate	10000	98.8 wt%	319.15-347.15	19.5-26.8	CP	[554]
	10000	99.8 wt%	298.15-338.15	11.2-22.5	CP	[555]
Poly(dodecyl acrylate)	44000	94.8 wt%	456.9- 463.4	150.14-205.28	CP	[518]

Poly[2-(2-ethoxyethoxy)ethyl acrylate]	100000	95.3 wt%	333.3-453.2	132.6-201.6	CP	[411]
Poly(ethylene oxide-b-dimethylsiloxane-b-ethylene oxide)	1900	0.0026-0.10	293.3-337.5	2.27-35.1	CP	[556]
Poly(ethylene oxide-b-1,1,2,2-tetrahydroperfluorodecyl acrylate)	22800	99 wt%	293.45-338.75	8.71-25	CP	[557]
	23000	96 wt%	293.15-338.15	9.36- 24.12	CP	[558]
	23000	99 wt%	293.05-338.85	9.34 – 33.89	CP	[557]
Poly(2-ethylhexyl acrylate)	90000	95.2 wt%	420.9-454.8	123.10-248.45	CP	[559]
Poly(2-ethylhexyl methacrylate)	100000	94.1 wt%	419.9-477.7	126.48-247.07	CP	[504]
Polyglycerol (hyperbranched)	4400	83.85-90.48 wt%	303.14-423.08	63.26-110.73	CP	[533]
	9800	90.4 wt%	309.47-422.95	79.44- 103.84	CP	[533]
	13500	68.29-97.71	350.97-423.08	80.14-134.78	CP	[533]
	17950	66.37-90.69	374.16-422.65	78.74-197.55	CP	[533]
Poly(heptadecafluorodecyl acrylate)		90.73-99.06	303.67-363.30	8.18-26.41	CP	[560]
Poly(heptadecafluorodecyl methacrylate)		95 wt%	303.7-363.4	11.75-28.12	CP	[561]
		95 wt%	303.6-364	12-29.23	CP	[561]
		95 wt%	303.5-363.5	10.99-27.88	CP	[561]
		95 wt%	303.4-363	9.68-26.29	CP	[561]
		0.95-9.04	303.7–363.2	9.13-26.41	CP	[561]
Poly(isobutyl acrylate)	22000	94.5 wt%	323.95-423.15	92.5-182.24	CP	[403]

Poly(isobutyl methacrylate)	114000	94.7 wt%	355.95-435.65	204.66-122.14	CP	[403]
Poly(isodecyl acrylate)	60000	94.4 wt%	418.55-474.35	192.29-117.59	CP	[562]
Poly(isodecyl methacrylate)	165000	94.6 wt%	438.2-475.7	142.76-255.15	CP	[522]
Poly(isooctyl acrylate)	60000	95.1 wt%	393.35-454.95	113.28-202.93	CP	[523]
Poly(isopropyl acrylate)	120000	95.8 wt%	406.65-485.85	135.2-268.5	CP	[501]
Poly(isopropyl methacrylate)	100000	95.6 wt%	400.25-443.65	165.5-251.2	CP	[501]
Poly(methyl acrylate)	40000	95.8 wt%	383.75-481.35	191.28-219.14	CP	[563]
Poly(ethyl acrylate)	70000	94.6 wt%	324.35-423.75	131.72-207.07	CP	[563]
Poly(neopentyl methacrylate)	480000	95.9 wt%	349.75-454.45	104.66-200.17	CP	[508]
Poly(octyl acrylate)	100000	95.9 wt%	425.05-454.35	126.9-262.24	CP	[507]
Poly(octyl methacrylate)	100000	94.2 wt%	447.85-493.25	147.41-266.38	CP	[507]
Poly[4-perfluorooctyl(ethyleneoxy)methyl)-styrene]	15400	95.9 wt%	331.55-452.05	23.97-48.1	CP	[564]
	21000	95.9 wt%	298.15-338.15	12.3-24.8	CP	[565]
	43600	95.8 wt%	298.15-343.15	15.1-28.7	CP	[565]
Poly[4-(perfluorooctyl(ethylenesulfonyl)methyl)-styrene]		96.6 wt%	350.55-453.85	55.69-132.59	CP	[564]
Poly[4-(perfluorooctyl(e	20300	95.1 wt%	333.45-453.65	25.69-47.76	CP	[564]

thylenethio)met hyl)- styrene]						
Poly(propyl acrylate)	140000	94.9 wt%	361.85-448.45	121.55-207.07	CP	[566,567]
Poly(propylene glycol) bis(trimethylsilyl) ether		98.4-98.58	308-328	7.63-12.31	CP	[547]
Poly(propylene glycol) diacetate		98.54-98.67	308-328	7.55-12.80	CP	[547]
Poly(propylene glycol) monoacetate		98.59-98.7	308-328	8.18-13.75	CP	[547]
Poly(propylene glycol) monoacetate monotrimethylsi lyl ether		98.45-98.62	308-328	7.70-12.50	CP	[547]
Poly(propylene glycol) monobutyl ether	340	20-100 wt%	298.15	3.83-7.31	CP	[568]
	1000	20-100 wt%	298.15	3.86-31.37	CP	[568]
	1200	20-100 wt%	298.15	4.31-42.27	CP	[568]
Poly(propylene glycol) monotrimethylsi lyl ether		98.54-98.7 wt%	308-328	7.63-12.40	CP	[547]
Poly[styrene-b- 4- (perfluorooctyl(e thyleneoxy)- methyl)styrene]	75700	96 wt%	298.15-338.15	19.9-32.2	CP	[565]
	54200	96.1 wt%	298.35-337.95	12.1-24.9	CP	[565]
Poly(1,1,2,2- tetrahydroperflu	26300	96.2 wt%	298.15-338.15	8.2-19.1	CP	[565]
	33000	96 wt%	293.85-339.05	6.89-21.08	CP	[558]
	52600	96 wt%	298.15-338.15	8.8-20	CP	[565]

orodecyl acrylate)	120000	96.09 wt%	292.65-338.95	7.3-21.9	CP	[565]
Poly(2,2,2-trifluoroethyl methacrylate)	164000	96.09 wt%	316.9-451.9	26.31-59.62	CP	[509]
Poly(vinyl acetate-alt-dibutyl maleate)	3800	98 wt%	308.15-348.15	18.2-24.8	CP	[555]
	7000	98 wt%	308.15-348.15	20.4-30.5	CP	[555]
Poly(vinylbenzyl phosphonic acid diethylester)	1900	99.81-99.84 wt%	298.45-327.25	30.41-40.64	CP	[550]
Poly(vinylbenzyl phosphonic acid diethylester-b-1,1,2,2-tetrahydroperfluorodecyl acrylate)	17400	96 wt%	293.85-337.85	20.77-32.03	CP	[550]
	19100	96 wt%	297.75-337.65	26.34-35.38	CP	[550]
	34100	96 wt%	294.15-336.55	7.52-21.3	CP	[550]
	13200	95.9 wt%	294.65-337.85	6.91-20.35	CP	[550]
	12900	96.1 wt%	293.85-328.35	7.1-18.3	CP	[550]
Poly(vinylbenzyl phosphonic diacid-b-1,1,2,2-tetrahydroperfluorodecyl acrylate)	17000	96 wt%	305.35-337.75	25.04-41.34	CP	[550]
Poly(vinylidene fluoride-co-hexafluoropropylene)	54000	95.51-99.19	313.15	16.39-23.43	CP	[569]

*B/C/D: B: Bubble point; C: Critical point; D: Dew point. **CP : Cloud point.

Table S10. Experimental phase behaviour data of ionic liquids/ CO₂ mixtures.

X	X _{CO2}	T/K	P/MPa	Type of data	References
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1-Butyl-3-methylimidazolium tetrafluoroborate	0.0117-0.4876	273.15-413.15	0.369-4.732	VLE	[570]
	0.00236-0.0133	303.72-344.49	0.01773-0.08443	VLE	[571]
	0.003-0.140	323.15	0.0199-1.4008	VLE	[572]
	0.00236 -0.0133	303.72-344.49	0.01773-0.08443	VLE	[571]
	0.00000086	313.15	15	VLE	[573]
	0.0928-0.5289 (L)	298.20 - 333.30	1.209 -8.5	VLE	[574]
	0.636-0.998	282.75-348.05	0.01017-2.0020	VLE	[575]
	0.1022-0.6017	278.47 -368.22	0.587 - 67.62	VLE	[576]
	4.67E-06- 2.43E-01	283.15 - 323.15	0.0000288-1.3	VLE	[577]
	0.007948- 0.01623	303.38 - 344.27	0.022-0.092	VLE	[578]
	0.001-0.277	298.0 - 298.2	0.0100 - 2.0002	VLE	[579]
	0.27-0.78	313.15 - 333.15	3.0-32.0	VLE	[580]
	0.141-0.61	293.15 - 383.15	1.05-24.60	VLE	[580]
	0.2014-0.3512	298.42 -358.60	1.646 - 8.936	VLE	[581]
	0.093- 0.4402	313.2 - 333.2	1.12-5.53	VLE	[582]
	0.072-0.490	298.20 -333.20	0.86-5.98	VLE	[416]
	0.580-0.622	318.15	9-17	VLE	[583]
	0.0040-0.0261	298.40 - 354.20	0.046-0.192	VLE	[584]
1-Ethyl-3-methylimidazolium tetrafluoroborate	0.033- 0.106	298.15	0.251-0.875	VLE	[585]
1-Butyl-3-methylimidazolium tetrachloroferrate	0.0917-0.4622	273.15-413.15	0.391-4.887	VLE	[585]
1-Butyl-3-methylimidazolium hexafluorophosphate	0.00000032	313.15	15	VLE	[573]
	0.099-0.118	298.15	0.529-0.667	VLE	[585]
	0.236- 0.548	313.15	2.167-8.243	VLE	[586]
	0.1-0.650	298.29-363.54	0.59-73.50	VLE	[587]
	0.0-0.729	313.15-33.15	0.097-9.567	VLE	[588]

	1.19E-291- 2.62E-01	283.15-323.15	0.0-1.3	VLE	[577]
1-Ethyl-3-methylimidazolium hexafluorophosphate	0.104 -0.619	313.04-366.03	1.49-97.1	VLE	[589]
1-Butyl-3-methylimidazolium nitrate	0.0692-0.4704 (L)	298.2-333.1	0.0995-9.316	VLE	[574]
	0-0.530	313.15 -333.15	0.097-9.317	VLE	[588]
1-Butyl-3-methylimidazolium dicyanamide	0.1543-0.5636 (L)	298.2-333.3	0.1003-11.529	VLE	[574]
	0.2-0.601	293.36- 363.21	1.018- 73.640	VLE	[590]
1-Butyl-3-Methylimidazolium dicyanamide	0.0049-0.1434	303-333	0.05-1		[591]
	0.1088-0.6363 (L)	298.2-333.3	0.0991-9.752	VLE	[574]
1-Butyl-3-methylimidazolium tris(trifluoromethylsulfonyl)methide	0.2770-0.7740 (L)	298.2-333.3	0.0983-11.127	VLE	[574]
1-Butyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide	0.1759-0.7521 (L)	298.2-333.3	0.0983-13.24	VLE	[574]
	7.26E-06-3.72E-01	283.15-323.15	0.0000288-1.3	VLE	[577]
	0.688	313.15	7.4	VLE	[592]
	0.3103- 0.8032	293.35-344.55	1.07-42.80	BP/CP	[593]
	0.231- 0.801	292.65- 363.25	0.629- 49.990	VLE	[590]
	0.1151-0.4332	279.98-339.97	0.2918-4.7999	VLE	[594]
	0.2132-0.8041	297.54-344.51	0.6-31.72	BP/CP	[595]
	0.3103-0.8032	293.35-344.55	1.07-42.8	BP/CP	[593]
	0.673-0.878	313.2-323.2	8.08-20.10	VLE	[596]
1-Hexyl-3-methylimidazolium	0.1993-0.7586 (L)	298.2-333.3	0.0985-11.145	VLE	[574]
	0.3221-0.8333	303.85-344.55	1.4-39	BP/CP	[593]
	0.006 -0.539	281.9-348.6	0.0089-1.9764	VLE	[597]

bis(trifluoromethyl sulfonyl)imide	0.069-0.236	298.15	0.164-0.859	VLE	[585]
	7.03E-05-3.86E-01	286.16-323.17	0.000826-0.852	VLE	[598]
	0.165-0.824	303.15-373.15	0.42- 45.28	VLE	[599]
	0.3221-0.8333	303.85-344.55	1.4-39	BP/CP	[593]
2,3-Dimethyl-1- hexylimidazolium bis(trifluoromethyl sulfonyl)imide	0.1991-0.7447 (L)	298.2-333.3	0.0997-11.804	VLE	[574]
1-Octyl-3- methylimidazoliu m bis(trifluoromethyl sulfonyl)imide	0.2467-0.7918 (L)	298.2-333.3	0.099-11.469	VLE	[574]
	0.3019-0.8456	301.15-344.55	0.68-34.8	BP/CP	[593]
	313.2-333.2	0.96-5.5	0.1371-0.7145	VLE	[600]
	0.3019-0.8456	301.15-344.55	0.68-34.80	BP/CP	[593]
1-Hexyl-3- methylimidazoliu m tetra- fluoroborate	0.297-0.703	293.18-367.82	0.54-86.6	VLE	[601]
1-Hexyl-3- methylimidazoliu m hexafluorophosph ate	0.058-0.167	298.15	0.296-0.927	VLE	[585]
	0.216-0.691	303.15- 373.15	0.30- 55.63	VLE	[599]
1-Hexyl-3- methylimidazoliu m tetrafluoroborate	0.071-0.163	298.15	0.312-0.899	VLE	[585]
	0.103-0.703	293.18-368.14	0.54-86.60	VLE	[601]
	0.212- 0.622	303.15-373.15	1.2-41.69	VLE	[599]
1-Ethyl-3- methylimidazoliu m bis(trifluoromethyl sulfonyl)imide	0.050-0.209	298.15	0.213-0.903	VLE	[585]
	0.221-0.75	293.15-363.15	0.718- 43.575	VLE	[602]
	0.123-0.593	312.17-450.49	0.626-14.402	VLE	[603]
	0.233-0.761	292.85-344.55	1.22-43.2	BP/CP	[593]
	0.0125-0.0152	298.65-315	0.048-0.051	VLE	[604]
1-Ethyl-3- methylimidazoliu m	0.1794-0.6268	303.85-344.55	0.8-37.8	BP/CP	[605]

trifluoromethanes ulfonate					
1-Butyl-3- methylimidazoliu m trifluoromethanes ulfonate	0.288-0.778	313.15	1.303-8.487	VLE	[586]
	0.2185-0.6720	303.85-344.55	0.85-37.50	BP/CP	[605]
	0.0089 -0.012	294.85-312.05	0.04835-0.05223	VLE	[604]
1-Hexyl-3- methylimidazoliu m trifluoromethanes ulfonate	0.2885-0.7171	303.85-344.55	1.25-33.84	BP/CP	[605]
	0.267- 0.816	303.15- 373.15	1.42- 100.12	VLE	[599]
1-Octyl-3- methylimidazoliu m trifluoromethanes ulfonate	0.2166-0.7414	303.85-344.55	0.68-34	BP/CP	[605]
Trihexyltetradecyl phosphonium bis(trifluoromethyl sulfonyl)imide	0.169-0.879	293.26-363.35	0.106-37.445	VLE	[606]
	0.761-0.848	313.2-323.2	8.09-20.17	VLE	[596]
	0.0115-0.0154	298.40-315.50	0.049 -0.052	VLE	[604]
Trihexyltetradecyl phosphonium chloride	0.119-0.8	313.16-363.65	0.168-24.57	VLE	[606]
	0.714-0.824	313.2-323.2	8.21-20.71	VLE	[596]
1-Ethyl-3- methylimidazoliu m acetate	0.094-0.428	298.15-348.2	0.01- 1.9996	VLE	[607]
	0.194-0.234	303.1-333.2	0.1343-0.2523	VLE	[608]
	0.102-0.521	293.15-363.15	0.0030-6.4771	VLE	[609]
	0.189-0.428	298.1	0.0100-1.9998	VLE	[579]
1-Ethyl-3- methylimidazoliu m trifluoroacetate	0.001-0.282	298.15-348.2	0.0100- 1.9996	VLE	[607]
	0.001-0.282	298.1	0.01-1.9996	VLE	[579]
1-Pentyl-3- methylimidazoliu m	0.212-0.802	298.15-353.15	0.702- 56.153	VLE	[602]

bis(trifluoromethyl sulfonyl)imide					
1-Octyl-3- methylimidazoliu m hexafluorophosph ate	0-0.755	313.15-333.15	0.097-9.288	VLE	[588]
	0.0231-0.315	303.15-353.15	0.1287-1.8501	VLE	[610]
1-Octyl-3- methylimidazoliu m tetrafluoroborate	0-0.708	313.15 -333.15	0.097-9.373	VLE	[588]
	0.1005- 0.7523	308.22- 363.21	0.571- 85.80	VLE	[611]
N- Butylpyridinium tetrafluoroborate	0.0-0.581	313.15 -333.15	0.097-9.580	VLE	[588]
1-Ethyl-3- methylimidazoliu m ethyl sulfate	0.0-0.457	313.15 -333.15	0.097-9.461	VLE	[588]
3-Butyl-1-meth-yl- imidazolium hexafluorophosph ate	0-0.639	313.15-333.15	0.1-12.93	VLE	[612]
1-Hexyl-3- methylimidazoliu m nitrate	0.0342-0.3539	293.15-343.15	0.315-4.564	VLE	[613]
2,2-Dihexyl- 1,1,3,3- tetramethylguanid inium dicyanamide	0.0294-0.3852	298.1-338.13	0.122-2.395	VLE	[614]
2,2-Dihexyl- 1,1,3,3- tetramethylguanid inium tricyanomethanide	0.0593-0.4427	298.22-338.19	0.2-2.351	VLE	[614]

1-(2-Hydroxyethyl)-3-methylimidazolium hexafluorophosphate	0.006-0.013	303.15-353.15	0.139- 1.127	VLE	[615]
1-(2-Hydroxyethyl)-3-methylimidazolium trifluoromethanesulfonate	0.013-0.017	303.15-353.15	0.1012-1.28	VLE	[615]
1-(2-Hydroxyethyl)-3-methylimidazolium bis-(trifluoromethyl)sulfonylimide	0.016-0.022	303.15-353.15	0.0973-1.1143	VLE	[615]
1-Ethyl-3-methylimidazolium thiocyanate	0.08-0.34	299.4-313.3	0.0980-5.67	VLE	[616]
	0.0008-0.0189	298.2-373.2	0.0528-0.308	VLE	[617]
	0.169- 0.474	303.15- 373.15	1.30- 95.34	VLE	[618]
1-Ethyl-3-methylimidazolium hydrogen sulfate	0.2 -0.69	313.3-332.8	0.099-9.7	VLE	[616]
1-Ethyl-3-methylimidazolium methylsulfate	0.01-0.51	299.5-333	0.0986- 7.93	VLE	[616]
1-Ethyl-3-methylimidazolium methane sulfonate	0.05-0.33	298.7-313.3	0.0990-5.56	VLE	[616]
1-Ethyl-3-methylimidazolium	0.11-0.65	298.3-333.2	0.0995-333.2	VLE	[616]
	0.00307-0.02666	313.2-333.2	0.02379-0.19884	VLE	[619]

m diethylphosphate					
1-(2-Hydroxyethyl) -3-methylimidazolium trifluoroacetate	0.09-0.63	299.2-333.6	0.0995- 8.23	VLE	[616]
1-Hexyl-3-methylimidazolium trifluoromethane sulfonate	0.05-0.76	297.8-313.1	0.0988-8.02	VLE	[616]
Trihexyltetradecyl phosphonium bis(trifluoromethyl sulfonyl)imide	0.37-0.85	298.1-333.1	0.0991 -7.29	VLE	[616]
Ethyl(tributyl)phosphonium diethylphosphate	0.10-0.71	298.6-333.7	0.0985-8.41	VLE	[616]
1-Butyl-3-methylimidazolium acetate	0.201-0.402	313.04-353.24	0.23- 75.526	VLE	[616]
	0.108-0.455	283.1-348.2	0.0101-1.9994		[620]
1-Hexyl-3-methylimidazolium bis[(trifluoromethyl) sulfonyl] imide	7.03E-05-3.86E-01	283.16- 323.17	0.000826-1.3	VLE	[598]
1-Butyl-3-methylimidazolium pentadecafluorooctanoate	0.0 -0.744	333.23	0.0998 -8.41	VLE	[598]
1-Butyl-nicotinic acid butyl ester	0.0-0.725	333.3	0.0987-8.7	VLE	[598]

bis[(trifluoromethyl) sulfonyl] imide					
1-Hexyl 3-methyl pyridinium bis(trifluoromethyl sulfonyl)imide	6.48E-05-3.76E-01	283.18-323.15	0.00105-0.6	VLE	[598]
1-Hexyl-3-methylimidazolium tris(pentafluoroethyl)trifluorophosphate	0.0- 8.24E-01	298.15-313.13	0.000826-9.11	VLE	[598]
	0.012- 0.517	283.5-323.2	0.0297-1.7998	VLE	[621]
1-Hexyl-3-methylimidazolium tris(heptafluoropropyl)trifluorophosphate	4.32E-04-4.05E-01	298.15-333.12	0.000812-1.29	VLE	[598]
1-Pentyl-3-methylimidazolium tris(nonafluorobutyl)trifluorophosphate	0.0-0.818	298.18-333.4	0.000771-8.76	VLE	[598]
Tetrabutylammonium docusate	0.0-0.795	333.46	0.099-9.17	VLE	[598]
1-Methyl-3-(3,3,4,4,5,5,6,6,6-nonafluorohexyl)imidazolium bis[(trifluoromethyl)sulfonyl]imide	0.0-0.853	298.16-333.3	0.00157-0.997	VLE	[598]
1-Methyl-(3,3,4,4,5,5,6,6,7,7,8	0.0-0.655	298.16-333.05	0.00102-3.62	VLE	[598]

,8,8-tridecafluorooctyl)-3-methylimidazolium bis(trifluoromethylsulfonyl)amide					
PEG-5 cocomonium methylsulfate	0.0 -0.709	333.37	0.0988-9.27	VLE	[598]
1-Butyl-3-methylimidazolium 2-(2-methoxyethoxy)-ethylsulfate	0.0-0.0494	313.31-333.36	0.0989-9.12	VLE	[598]
1-Hexyl-3-methylimidazolium saccharinate	4.14E-05- 2.58E-02	333.36	0.00239-0.3	VLE	[598]
1-Hexyl-3-methylimidazolium acesulfamate	7.64E-04- 2.90E-02	333.14	0.0198-0.3	VLE	[598]
1-Methylimidazole)(triethylamine)boronium bis(trifluoromethylsulfonyl)imide	5.63E-04- 6.15E-03	298.15	0.00258-0.299	VLE	[598]
Choline bis(trifluoromethylsulfonyl)imide	0 -0.606	333.24	0.0991-8.36	VLE	[598]
N,N,N,N-Trimethylbutylammonium bis(trifluoromethylsulfonyl)imide	0.0-0.684	333.23	0.099-8.09	VLE	[598]

1-Hexyl-3-methylimidazolium bis(trifluoromethyl-sulfonyl)imide	0.005-0.311	303.15-343.15	0.0195- 1.4009	VLE	[572]
1-Butyl-3-methylimidazolium dimethyl-phosphate	0.002-0.157	303.15-343.15	0.0199- 1.4006	VLE	[572]
1-Propyl-3-methylimidazolium (trifluoromethylsulfonyl)imide	0.002- 0.291	303.15-343.15	0.0198-1.3993	VLE	[572]
1-Ethyl-3-methylimidazolium dicyanamide	0.0221-0.0237	303.2-332.6	0.2073-0.3541	VLE	[608]
	0.171-0.585	303.15-373.15	0.88- 96.20	VLE	[618]
	0.0017- 0.0298	298.2-373.2	0.0521- 0.3051	VLE	[617]
1-Ethyl-3-methylimidazolium tricyanomethanide	0.0032- 0.0563	298.2- 298.2	0.0494- 0.3063	VLE	[617]
	0.17-0.703	303.15- 373.15	0.59- 88.29	VLE	[618]
1-Ethyl-3-methylimidazolium methyl sulfate	0.0169- 0.0336	304.5-332	0.2593-0.3625	VLE	[608]
1-Methyl-3-octylimidazolium tetrafluoroborate	0.0120-0.1873	303-333	0.1-1	VLE	[591]
N-Butyl-4-methylpyridinium tetrafluoroborate	0.0104- 0.0961	303-333	0.1-1	VLE	[591]
N-Butyl-3-methylpyridinium dicyanamide	0.0036-0.1436	303-333	0.05-1	VLE	[591]

1-Butyl-1-methylpyrrolidinium dicyanamide	0.0045-0.1204	303-333	0.05-1	VLE	[591]
1-Butyl-3-methylimidazolium thiocyanate	0.0069-0.0978	303-333	0.1-1	VLE	[591]
N-Butyl-4-methylpyridinium thiocyanate	0.0081-0.0962	303-333	0.1-1	VLE	[591]
1-Butyl-1-methylpyrrolidinium thiocyanate	0.0068-0.0971	303-333	0.1-1	VLE	[591]
1-Butyl-1-methylpyrrolidinium trifluoroacetate	0.0105-0.1674	303-333	0.1-1	VLE	[591]
1-Butyl-3-methylimidazolium hexafluorophosphate	0.0042-0.1662	303-333	0.05-1	VLE	[591]
	0.063-0.492	298.15	0.26-4.02	VLE	[622]
	0.001-0.286	298-298.1	0.0105-1.9997	VLE	[579]
1-Butyl-3-methylimidazolium methylsulfate	0.0104 -0.1190	303-333	0.1-1	VLE	[591]
1-Ethyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide	0.0106-0.2257	303-333	0.1-1	VLE	[591]
1-Butyl-3-methylimidazolium trifluoroacetate	0.005-0.301	298-298.1	0.0105-1.9996	VLE	[579]
1-Butyl-3-methylimidazolium acetate	0.162-0.455	298-298.2	0.0102-1.9994	VLE	[579]

1-Ethyl-3-methyl- imidazolium bis(trifluoromethyl sulfonyl)imide	0.004-0.39	297.9-298.2	0.01-1.9998	VLE	[579]
1-Hexyl-3- methylimidazoliu mbis(trifluorometh ylsulfonyl)imide	0.0091-1.9748	297.3-297.4	0.006-0.433	VLE	[579]
1-Butyl-3- methylimidazoliu m tetrafluoroborate	0.001-0.277	298-298.2	0.0100-2.0002	VLE	[579]
	0.0048-0.1461	303-333	0.05-1	VLE	[591]
1-Butyl-3- methylini- dazolium propionate	0.134-0.393	298.1-298.2	0.0103-1.9990	VLE	[579]
1-Butyl-3- methylimidazo- lium isobutyrate	0.123-0.403	298.1-298.2	0.0102-1.9999	VLE	[579]
1-Butyl-3- methylimidazoliu mtrimethylacetate	0.085-0.431	298.1	0.0101-2	VLE	[579]
Tetrabutylphosph onium formate	0.008-0.348	298-298.2	0.008-0.348	VLE	[579]
1-Hexyl-3- methylimidazoliu m tris(pentafluoroeth yl)trifluoro- phosphate	0.008-0.493	298.1	0.0101-1.9998	VLE	[579]
1-Butyl-3- methylimidazoliu m 1,1,2,2-	0.001-0.285	297.9-298.2	0.0101-1.9998	VLE	[579]

tetrafluoroethanes ulfonate					
1-Butyl-3- methylimidazoliu m levulinate	0.118-0.46	298.1	0.0101-1.9998	VLE	[579]
1-Butyl-3- methylimidazoliu m succinamate	0.001-0.232	298.1	0.01-1.9997	VLE	[579]
Bis(1-butyl-3- methylimidazoliu m) iminodiacetate	0.021-0.395	298.1	0.0101-1.9997	VLE	[579]
1-Butyl-3- methylimidazoliu m iminoacetic acid acetate	0.001-0.191	298.1	0.0101-1.9996	VLE	[579]
1-Butyl-1- methylpyrrolidini um tris(pentafluoroeth yl)trifluorophosph ate	0.007-0.498	283.5-323.2	0.0297-1.8001	VLE	[621]
	0.0163- 0.0249	303.16- 343.38	0.0635- 0.07494	VLE	[623]
S-Ethyl-N,N,N',N'- tetramethylisothio uronium tris(pentafluoroeth yl)trifluorophosph ate	0.00477-1.7997	283.5-323.2	0.00477-1.7997	VLE	[621]
2- Hydroxyethanami nium acetate 2- hydroxyethanami nium acetate	0.0081- 0.1442	298.15-328.15	0.124-1.542	VLE	[624]
Bis(2- hydroxyethyl)am	0.0074-0.1076	298.15-328.15	0.125-1.515	VLE	[624]

monium acetate bis(2-hydroxyethyl)am monium acetate					
2-Hydroxy-N-(2-hydroxyethyl)-N-methylethanaminium acetate 2-hydroxy-N-(2-hydroxyethyl)-N-methylethanaminium acetate	0.0024-0.0761	298.15-328.15	0.125-1.542	VLE	[624]
2-Hydroxyethanaminium lactate 2-hydroxyethanaminium lactate	0.0034-0.1056	298.15-328.15	0.127-1.556	VLE	[624]
Bis(2-hydroxyethyl)ammonium lactate bis(2-hydroxyethyl)ammonium lactate	0.0035-0.0835	298.15-328.15	0.121-1.598	VLE	[624]
2-Hydroxy-N-(2-hydroxyethyl)-N-methylethanaminium lactate 2-hydroxy-N-(2-hydroxyethyl)-N-methylethanaminium lactate	0.0027-0.0776	298.15-328.15	0.154-1.562	VLE	[624]

2-Hydroxy ethylammonium formate	0.0271- 0.3083	303-323	0.44-10.01	VLE	[625]
2-Hydroxy ethylammonium acetate	0.0316-0.4009	303-323	0.89-10.98	VLE	[625]
2-Hydroxy ethylammonium lactate	0.0260-0.2422	303-323	0.78-10.09	VLE	[625]
Tri-(2-hydroxy ethyl)-ammonium acetate	0.0345-0.2561	303-323	1.03-10.12	VLE	[625]
Tri-(2-hydroxy ethyl)-ammonium lactate	0.0835-0.4617	303-323	0.96-8.47	VLE	[625]
2-(2-Hydroxy ethoxy)- ammonium formate	0.0202-0.1907	303-323	0.66-8.52	VLE	[625]
2-(2-Hydroxy ethoxy)- ammonium acetate	0.0680-0.4431	303-323	0.76-7.67	VLE	[625]
2-(2-Hydroxy ethoxy)- ammonium lactate	0.0559-0.2640	303-323	1.24-8.5	VLE	[625]
1,3- Dimethylimidazoli um methanesulfonate	0.0629-0.369	333.25-363.65	1.65-43.1	BP/CP	[626]
1-Ethyl-3- methylimidazoliu m methanesulfonate	0.0556-0.4518	302.25-342.55	0.4-46.15	BP/CP	[626]

1-Butyl-3-methylimidazolium methanesulfonate	0.0517- 0.5219	302.75- 343.15	0.55-35.7	BP/CP	[626]
1,3-Dibutylimidazolium methanesulfonate	0.1389- 0.7738	296.95- 343.15	1.5-34.2	BP/CP	[626]
1-Butyl-3-methylimidazolium chloride	0.1306- 0.406	353.15- 373.15	2.454- 36.946	VLE	[627]
1-Ethyl-3-methylimidazolium tris(pentafluoroethyl)-trifluorophosphate	0.0173-0.0338	303.18- 343.23	5.5980- 7.5391	VLE	[628]
1-Butyl-3-methylimidazolium tris(pentafluoroethyl)-trifluorophosphate	0.0221-0.0399	303.16-343.27	6.551- 7.691	VLE	[628]
1-Butyl-3-methylimidazolium diethylene-glycolmonomethyl ethersulfate	0.2309-0.6835	313.15-363.15	2.26-22.27	VLE	[629]
Trihexyl(tetradecyl)phosphonium dodecyl-benzenesulfonate	0.0971-0.7435	313.15-363.15	0.39-11.37	VLE	[629]
Trihexyltetradecyl phosphonium	0.3603- 0.8258	293.65- 373.65	0.53- 22.20	VLE	[630]

bis(trifluoro- methylsulfonyl)im ide					
1-Butyl-1- methylpyrrolidini um trifluoromethane sulfonate	0.2583- 0.7058	303.35- 373.15	1.88-70.23	VLE	[630]
Hydroxypropylme thylimidazolium nitrate	0.0528- 0.3081	303.36- 363.33	0.851- 11.621	VLE	[631]
Butylmethylimida zolium nitrate	0.0382-0.2997	293.20- 368.24	0.368- 12.832	VLE	[631]
1-Nonyl-3- methylimidazoliu m hexafluorosph ate	0.197-0.554	293.15-298.15	0.86-3.54	VLE	[622]
l-n-Butyl-3- methylimidazoliu m tetrafluoroborate	0.0040- 0.0261	298.4- 354.2	0.046-0. 192	VLE	[584]
l-n-Butyl-3- methylimidazoliu m hexafluorosph ate	0.0100- 0.0239	298.3- 354.9	0.064-0.186	VLE	[584]
1-Butyl-3- methylimidazoliu m hexafluophosphat e	0.0- 0.5428	318-338	0.0120- 19.9948	VLE	[632]
1-Ethyl-3- methylimidazoliu	0.0- 0.7562	318-338	0.0120-19.9974	VLE	[632]

m bis(trifluoromethyl sulfonyl)imide					
1-Butyl-3- methylimidazoliu m bis(trifluoromethyl sulfonyl)imide	0.0-0.7638	318-338	0.0120-19.9977	VLE	[632]
1-Decyl-3- methylimidazoliu m bis(trifluoromethyl sulfonyl)imide	0.758-0.878	313.2-323.2	8.07-20.15	VLE	[596]
	0.257-0.849	298.15-343.15	1.474-14.847	VLE	[633]
1-Butyl-1- methylpyrrolidini um bis(trifluoromethyl sulfonyl)imide	0.650-0.853	313.2-323.2	8.06-20.38	VLE	[596]
Butyltrimethylam monium bis(trifluoromethyl sulfonyl)imide	0.744-0.879	313.2-323.2	8.58-20.37	VLE	[596]
Methyltrioctylam monium bis(trifluoromethyl sulfonyl)imide	0.789-0.907	313.2-323.2	8.08-20.56	VLE	[596]
1-Butyl-3- methylimidazoliu m Bis(trifluoromethy lsulfonyl)imide	0.0847-0.5852	313.55-439.65	0.422- 14.099	VLE	[634]
1-Ethyl-3-methyl- imidazoliumbis(tri	0.247-0.782	298.15-343.15	1.235-14.794	VLE	[633]

fluoromethylsulfonyl)amide					
1-Hexyl-3-methylimidazolium bis(trifluoromethylsulfonyl)amide	0.139-0.823	298.15-343.15	2.015-24.708	VLE	[633]
1-Butyl-1-methylpyrrolidinium bis(trifluoromethylsulfonyl)imide	0.2276-0.8029	303.15-373.15	0.68-62.77	VLE	[635]
1-Butyl-1-methylpyrrolidinium methylsulfate	0.2871- 0.6049	303.15-373.15	3.07-3.07	VLE	[635]
Trihexyl(tetradecyl)phosphonium tris(pentafluoroethyl)trifluorophosphate	0.0249-0.0358	303.17- 343.30	0.067839-0.078807	VLE	[623]
1-Butyl-1-methylpyrrolidinium acetate	0.005-0.011	353.18-353.55	0.043426-0.08918	VLE	[636]
1-Butyl-3-methylimidazolium levulinate	0.0056- 0.0093	303.16- 333.41	0.06336-0.075017	VLE	[636]
1-Hexyl-3-methylimidazolium methylsulfate	0.158- 0.602	303.15- 373.15	0.87- 50.14	VLE	[599]
Methyl-tri-butylammonium bis(trifluoromethyl-sulfonyl)imide	1.19E-05- 1.14E-01	298.15	0.000125-5.50E+00	VLE	[577]
Butyl-methylpyrrolidinium	4.58E-06- 3.37E-01	283.15-323.15	0.0000425-1.3	VLE	[577]

bis(trifluoromethyl sulfonyl) imide					
1-Ethyl-3-methylimidazolium bis((trifluoromethyl)sulfonyl)imide	0.01368-0.02614	303.63-344.23	0.046406-0.057097	VLE	[637]
1-Butyl-1-methylpyrrolidinium bis((trifluoromethyl)sulfonyl)imide	0.0147-0.02715	303.78-344.15	0.048678-0.057264	VLE	[637]
Propylcholinium bis((trifluoromethyl)sulfonyl)imide	0.0467-0.054386	304.16-344.84	0.01221-0.02384	VLE	[637]
N-Propyl N-methylpyrrolidinium bis(trifluoromethyl sulfonyl)imide	0.186-0.787	303.15- 373.15	0.52-47.1	VLE	[638]
N-Pentyl-N-methyl pyrrolidinium bis(trifluoromethyl sulfonyl)imide	0.198-0.785	303.15-373.15	0.27-55.10	VLE	[638]
N-Nonyl-N-methylpyrrolidinium bis(trifluoromethyl sulfonyl)imide	0.323-0.820	303.15-373.15	0.26-36.58	VLE	[638]
N-Heptyl-N-methylpyrrolidinium	0.302-0.853	303.15-373.15	0.26-72.24	VLE	[638]

bis(trifluoromethyl sulfonyl)imide					
N,N- Dimethylformami dium bis(trifluorometha nesulfonyl)amide	0.163-0.697	298.15-333.15	0.1013-10	VLE	[639]
Trihexyltetradecyl phophonium chloride	0.714-0.824	313.2-323.3	8.21-20.71	VLE	[596]
Trihexyltetradecyl phophonium bis(trifluoromethyl sulfonyl)imide	0.761-0.848	313.2-323.2	8.09 -20.17	VLE	[596]
1-Decyl-3- methylimidazoliu m bis(trifluoromethyl sulfonyl)imide	0.758-0.878	313.2-323.2	8.07-20.15	VLE	[596]
1-Butyl-1- methylpyrrolidini um bis(trifluoromethyl sulfonyl)imide	0.650-0.853	313.2-323.2	8.06-20.38	VLE	[596]
Butyltrimethylam monium bis(trifluoromethyl sulfonyl)imide	0.744-0.879	313.2-323.2	8.58-20.37	VLE	[596]
Methyltrioctylam monium bis(trifluoromethyl sulfonyl)imide	0.789-0.907	313.2-323.2	8.08-20.56	VLE	[596]
1,3- Dimethylimidazoli	0.00346-0.01597	313.2-333.2	0.04881-0.17464	VLE	[619]

um dimethylphosphat e					
1-Buyl-3- methylimidazoliu m dibutylphosphate	0.00317-0.03529	313.2-333.2	0.02234- 0.1754	VLE	[619]
1-Ethyl-3- methylimidazoliu m ethylsulfate	0.008- 0.132	313.2-353.2	0.122-1.546	VLE	[640]
1-Ethyl 3-methyl imidazolium ethyl sulfate	0.0174-0.2089	298.04-347.94	0.352-6.495	VLE	[641]
1-Ethyl-3- methylimidazoliu m bis(trifluorometha nesulfonyl)amide	0.01368-0.02614	292.66-344.23	0.04641-0.0571	VLE	[642]
1-(2- Hydroxyethyl)-3- methylimidazoliu m tetrafluoroborate	0.004-0.102	303.15-353.15	0.114-1.194	VLE	[643]
1-Hexyl-3- methylimidazoliu m bromide	0.085-0.489	313.15-333.15	3.09-14.891	VLE	[644]
1-Hexyl-3- methylimidazoliu m bis- (trifluoromethylsu lfonyl)amide	0.0172 -0.4065	288.48-343.20	0.028-0.09385	VLE	[645]
N-Methyl-2- hydroxy	0.057-0.534	293.22-363.28	0.494-52.91	VLE	[646]

ethylammonium formate					
N-Methyl-2-hydroxy ethylammonium acetate	0.157-0.5	313.09-363.61	0.84-80.5	VLE	[646]
2-[2-Hydroxyethyl (methyl) amino] ethanol chloride	0.4852-0.8924	313.15-333.15	1.22-4.63	VLE	[647]
Tributylmethylammonium methylsulfate	0.066-0.368	338.35-368.45	1.009- 11.528	VLE	[648]
Tributylmethylphosphonium methylsulfate	0.07-0.455	313.2-363.3	0.659- 12.640	VLE	[648]
Trihexyltetradecyl phosphonium bromide	0.114-0.694	303.19-363.42	0.876-12.998	VLE	[649]
Trihexyltetradecyl phosphonium dicyanamide	0.111-0.843	271.11-363.40	0.304-54.809	BP/CP	[649]
Trihexyltetradecyl phosphonium bis(2,4,4-trimethylpentyl)phosphinate	0.150-0.895	288.20-363.17	0.163-39.699	BP/CP	[649]
N-(2-Hydroxyethyl) pyridinium bis(trifluoromethanesulfonyl)amide	0 -0.589	298.15-333.15	0-5.0444	VLE	[650]
Trimethyl(hexyl)ammonium	0.0132-0.0159	296.45-313.65	0.048-0.05142	VLE	[604]

bis(trifluoromethyl sulfonyl)imide					
1-Butyl-3-methylimidazolium bis(perfluoroethylsulfonyl)imide	0.0118-0.0143	298.25-313.65	0.046-0.050	VLE	[604]
1-Butyl-3-methylpyridinium tetrafluoroborate	0.009844-0.011761	296.90-313.40	0.051-0.05437	VLE	[604]
1,3-Dimethylimidazolium methylphosphonate	0.005921-0.007519	299.55-314.21	0.0484-0.0517	VLE	[604]
1-Ethanol-3-methylimidazolium tetrafluoroborate	0.003811-0.004057	298.15-312.35	0.04373-0.04585	VLE	[604]

*BP/CP: BP: Bubble point; CP: Cloud point.

Table S11. Experimental phase behaviour data of deep eutectic solvent/CO₂ mixtures.

DES	Molar Ratio	X	T/K	P/MPa	References
Choline chloride/Tri ethylene glycol	1:4	0.0419	298.15	1	[651]
Choline chloride/Ethylene glycol	1:4	0.0230	298.15	1	[651]
	1:8	0.0262	298.15	1	[651]
Choline chloride/Glycerol	1:3	0.0454	298.15	1	[651]
	1:8	0.0306	298.15	1	[651]
Choline chloride/Ethanol amine	1:6	0.1096	298.15	1	[651]

Choline chloride/Di ethanol amine	1:6	0.0925	298.15	1	[651]
Benzyltriphenyl-phosphonium chloride/Glycerol	1:12	0.0511	298.15	1	[651]
n-Butyltriphenyl-phosphonium bromide/Ethylene glycol	1:12	0.0503	298.15	1	[651]
Methyltriphenyl-phosphonium bromide/Ethanol amine	1:6	0.1441	298.15	1	[651]
	1:7	0.1254	298.15	1	[651]
	1:8	0.1189	298.15	1	[651]
Tetra butyl ammonium bromide/Ethanol amine	1:6	0.1168	298.15	1	[651]
Tetra butyl ammonium bromide/Di ethanol amine	1:6	0.1036	298.15	1	[651]
Tetra butyl ammonium bromide/Tri ethanol amine	1:3	0.0830	298.15	1	[651]
Aminometha-namide/2-hydroxy-N,N,N-trimethyleth-anaminium chloride		0.0027-0.0033	303-313	1	[652]
Choline chloride/Urea	1:1.5	0.033 -0.201	313.15-333.15	0.85-12.52	[653]
	1:2	0.051-0.309	313.15-333.15	1-12.7	[653]
	1:2.5	0.032-0.203	313.15-333.15	1.06-12.55	[653]
	1:2	0.013-0.308	303.15-343.15	0.299-5.911	[654]
	1:4	0.0240	298.15	1	[651]
	1:2.5	0.0211	298.15	1	[651]
	1:2	0.0009-0.004	309-329	0.040-0.153	[655]
	1:1.5	0.0004-0.010	313.15-353.15	0.010-0.204	[656]
	1:2	0.0004-0.016	313.15-353.15	0.011-0.202	[656]
	1:2	0.042-0.195	308.2-328.2	0.651-4.504	[657]
	1:2	0.097-0.28	303-323	1.52-3.71	[658]
	1:2.5	0.0003-0.009	313.15-353.15	0.010-0.203	[656]
Choline chloride/1,4-Butanediol	1:3	0.002-0.016	293.15-323.15	0.111-0.526	[659]
	1:4	0.002-0.015	293.15-323.15	0.106-0.519	[659]

Chloride Butanediol	chloride/2,3-	1:3	0.003-0.015	293.15-323.15	0.107-0.529	[659]
		1:4	0.003-0.019	293.15-323.15	0.107-0.512	[659]
Chloride Propanediol	chloride/1,2-	1:3	0.002-0.016	293.15-323.15	0.108-0.524	[659]
		1:4	0.002-0.016	293.15-323.15	0.104-0.526	[659]
Choline-chloride/Phenol		1:2	0.002-0.021	293.15-323.15	0.099-0.52	[660]
		1:3	0.003-0.021	293.15-323.15	0.101-0.514	[660]
		1:4	0.003-0.021	293.15-323.15	0.108-0.529	[660]
Choline-chloride/Diethylene glycol		1:3	0.003-0.019	293.15-323.15	0.113-0.518	[660]
		1:4	0.002-0.021	293.15-323.15	0.110-0.5527	[660]
Choline-chloride/Triethylene glycol		1:3	0.003-0.027	293.15-323.15	0.109-0.516	[660]
		1:4	0.003-0.028	293.15-323.15	0.109-0.520	[660]
Choline-chloride/Lactic acid			0.0248- 0.0995	303.27-348.23	0.829- 0.0995	[661]
Choline-chloride/Guaiacol		1:3	0.001-0.021	293.15-323.15	0.051-0.536	[662]
		1:4	0.001-0.022	293.15-323.15	0.052-0.543	[662]
		1:5	0.001-0.023	293.15-323.15	0.053-0.5539	[662]
Diethylamine hydrochloride/ Guaiacol		1:3	0.002-0.025	293.15-323.15	0.045-0.5529	[662]
		1:4	0.002-0.026	293.15-323.15	0.049-0.5551	[662]
		1:5	0.002-0.027	293.15-323.15	0.054-0.5535	[662]
Acetylcholine chloride/Guaiacol		1:3	0.002-0.026	293.15-323.15	0.054-0.5535	[662]
		1:4	0.002-0.025	293.15-323.15	0.055-0.5559	[662]
		1:5	0.002-0.026	293.15-323.15	0.049-0.5536	[662]
Choline-chloride/Levulinic acid		1:3	0.002-0.030	303.15-333.15	0.079-0.583	[663]
		1:4	0.002-0.032	303.15-333.15	0.072-0.587	[663]
		1:5	0.003-0.033	303.15-333.15	0.072-0.581	[663]
Choline-chloride/Furfuryl alcohol		1:3	0.002-0.020	303.15-333.15	0.081-0.586	[663]
		1:4	0.002-0.023	303.15-333.15	0.082-0.585	[663]
		1:5	0.002-0.023	303.15-333.15	0.077-0.577	[663]
Acetylcholine chloride/Levulinic acid		1:3	0.0035-0.038	303.15-333.15	0.066-0.572	[664]
Tetraethylammonium chloride /Levulinic acid		1:3	0.004-0.028	303.15-333.15	0.066-0.583	[664]

Tetraethylammonium bromide / Levulinic acid	1:3	0.0033-0.028	303.15-333.15	0.069-0.588	[664]
Tetrabutylammonium chloride / Levulinic acid	1:3	0.005-0.040	303.15-333.15	0.063-0.59	[664]
Tetrabutylammonium bromide / Levulinic acid	1:3	0.006-0.037	303.15-333.15	0.07-0.586	[664]
Choline-chloride/Ethylene glycol	1:2	0.006-0.275	303.15-343.15	0.236-6.323	[665]
	1:2	0.0007-0.003	309-329	0.047-0.154	[655]
	1:2	0.026-0.052	303.15	0.644-1.246	[666]
Choline-chloride/Glycerol	1:2	0.006-0.398	303.15-343.15	0.187-6.347	[667]
Choline-chloride/Phenol	1:2	0.070-0.275	313.15-333.15	1.71-13.3	[668]
	1:3	0.086-0.274	313.15	1.91-11.82	[668]
	1:4	0.087-0.293	313.15	2.1-12.17	[668]
N, N, N-trimethyl- methanaminium chloride/Phenol	1:3	0.094-0.262	313.15	2.36-12.17	[668]
	1:3	0.075-0.233	313.15	2.12-11.17	[668]
Choline-chloride/Diethylene glycol	1:3	0.018-0.035	303.15	0.564-1.112	[666]
	1:4	0.017-0.036	303.15	0.524-1.120	[666]
Choline- chloride/Methyldiethanol amine	1:6	0.106-0.156	303.15	0.446-1.096	[666]
	1:7	0.119-0.199	303.15	0.594-1.034	[666]
Choline-chloride/Diethanol amine	1:6	0.032-0.090	303.15	0.664-0.971	[666]
Tetrabutyl ammonium bromide/ Ethylene glycol	1:2	0.015-0.054	303.15	0.412-1.279	[666]
	1:3	0.017-0.052	303.15	0.502-1.249	[666]
	1:4	0.019-0.050	303.15	0.543-1.374	[666]
Tetrabutyl ammonium bromide/ Diethylene glycol	1:2	0.034-0.099	303.15	0.721-1.392	[666]
	1:3	0.038-0.088	303.15	0.688-1.205	[666]
	1:4	0.047-0.090	303.15	0.590-1.048	[666]
Tetrabutyl ammonium bromide/ Methyldiethanol amine	1:3	0.086-0.204	303.15	0.423-1	[666]
	1:4	0.110-0.225	303.15	0.502-1.021	[666]
Tetrabutyl ammonium bromide/ Diethanol amine	1:6	0.046-0.102	303.15	0.610-1.011	[666]

Tetrabutylphos-phonium bromide/ Phenol	1:4	0.018-0.205	313,15-333.15	0.164-1.578	[669]
Tetrabutylphos-phonium bromide/ Diethylene glycol	1:4	0.017-0.212	313,15-333.15	0.094-1.398	[669]
Allyltriphenyl-phosphonium bromide/Phenol	1:4	0.020-0.213	313,15-333.15	0.183-1.345	[669]
Allyltriphenyl-phosphonium bromide/Phenol	1:6	0.021-0.195	313,15-333.15	0.183 -1.387	[669]
Choline-chloride/Ethanol amine	1:7	0.056-0.286	298.15	1.82-20.15	[670]
Allyltriphenyl phosphonium bromide/Diethylene glycol	1:4	0.035-0.541	303.15	0.16-1.946	[671]
	1:10	0.028-0.432	303.15	0.156-1.954	[671]
	1:16	0.024-0.391	303.15	0.166-1.954	[671]
Allyltriphenyl phosphonium bromide/Triethylene glycol	1:4	0.036-0.558	303.15	0.142-1.95	[671]
	1:10	0.030-0.450	303.15	0.149-1.953	[671]
	1:16	0.023-0.413	303.15	0.146-1.957	[671]
Acetylcholine chloride/Imidazole	2:3	0.001-0.025	303.15-333.15	0.30-5.94	[672]
	1:2	0.0009-0.027	303.15-333.15	0.27-5.90	[672]
	1:3	0.0008-0.028	303.15-333.15	0.26-5.92	[672]
Acetylcholine chloride/1,2,4- Triazole	1:1	0.002-0.027	303.15-333.15	0.56-5.93	[672]
Tetrabutylammonium bromide/ Octanoic acid	1:2	0.352	313.15	4	[673]
	1:2	0.406	313.15	4	[673]
DL-menthol/Dodecanoic acid	2:1	0.345	313.15	4	[673]
Methyltrioctyl-ammonium chloride/ Decanoic acid	1:2	0.0112-0.252	298.15-323.15	0.09-1.9	[674]
	1:2	0.0107-0.257	298.15-323.15	0.09-1.9	[674]
Tetraoctyl-ammonium chloride/ Decanoic acid	1:2	0.0117-0.284	298.15-323.15	0.09-1.9	[674]
	1:2	0.0114-0.284	298.15-323.15	0.09-1.9	[674]
L-arginine/Glycerol	1:5	0.403	353.15	0.1	[675]
	1:6	0.457	353.15	0.1	[675]
	1:7	0.451	353.15	0.1	[675]

Benzyltriphenyl-phosphonium chloride/Glycerol	1:12	0.0511	298.15	1	[675]
N-Butyltriphenylphosphonium bromide /Ethylene glycol	1:12	0.0503	298.15	1	[676]
Methyltriphenyl-phosphonium bromide/Mono ethanol amine	1:6	0.1441	298.15	1	[676]
	1:7	0.1254	298.15	1	[676]
	1:8	0.1189	298.15	1	[676]
Tetra butyl ammonium bromide/ Mono ethanol amine	1:6	0.1168	298.15	1	[676]
Tetra butyl ammonium bromide/ Di ethanol amine	1:6	0.1036	298.15	1	[676]
Tetra butyl ammonium bromide/ Tri ethanol amine	1:3	0.0830	298.15	1	[676]
Triethylenetetramine Chloride/ ethylene glycol	1:3	0.175	313.15	0.101	[677]
Triethylenetetramine Chloride/diethylene glycol	1:2	0.159	313.15	0.101	[677]
Monoethanolamide hydrochloride/ Monoethanol-amine	1:1	0.164	313.15	0.8	[678]
	1:3	0.173	313.15	0.8	[678]
	1:6	0.224	313.15	0.8	[678]
	1:9	0.274	313.15	0.8	[678]
Monoethanolamide hydrochloride/ Diethylenetriamine	1:1	0.258	313.15	0.8	[678]
	1:3	0.406	313.15	0.8	[678]
	1:6	0.561	313.15	0.8	[678]
	1:9	0.661	313.15	0.8	[678]
Monoethanolamide hydrochloride/ Ethylenediamine	1:1	0.201	313.15	0.8	[678]
	1:3	0.289	313.15	0.8	[678]
	1:6	0.485	313.15	0.8	[678]
	1:9	0.501	313.15	0.8	[678]
Monoethanolamide hydrochloride/ Triethylene-tetramine	1:1	0.272	313.15	0.8	[678]
	1:3	0.504	313.15	0.8	[678]
	1:6	0.562	313.15	0.8	[678]
	1:9	0.657	313.15	0.8	[678]

Monoethanolamide hydrochloride/ Tetraethylene-pentamine	1:1	0.272	313.15	0.8	[678]
	1:3	0.382	313.15	0.8	[678]
	1:6	0.594	313.15	0.8	[678]
	1:9	0.702	313.15	0.8	[678]
Carvone /Menthol	1:1	0.044-0.5	298-308	0.45-3.96	[658]
Carvone /Thymol	1:1	0.029-0.48	298-308	0.45-3.483	[658]
Cineole / menthol	1:1	0.067-0.508	298-308	0.43-3.479	[658]
Cineole/Thymol	1:1	0.029-0.5	298-308	0.45-3.435	[658]
Choline-chloride/Triethylene glycol	1:3	0.0054- 0.13	303.15-333.15	0.143-3.041	[679]
L-menthol/Thymol	1:3	0.14- 0.39	293.15-323.11	1.63-4.19	[680]
Thymol/2,6-xyleneol	1:3	0.126-0.39	293.15-323.14	1.607-4.085	[680]

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