Supplementary Data for:

Deep Eutectic Solvents: Physicochemical Properties and Challenges in Applications as Phase Change Materials in Thermal Energy Storage

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Table S1. Heat of fusion ($\Delta_{fus}h$) values of Eutectics

Eutectic Composition (Component A:Component B)	Mass percentage of component A:B (%)	T_m (ºC)	$\Delta_{fus}h$ (J g^{-1})	Uncertainty	Reference
1,6-hexanediol: LA	20:80	30.24	172.6	±7.93	[1]
	40:60	34.5	178.7		
	60:40	33.1	177.6		
	80:20	31.4	190.8		
CA:LA	61:39	19.1	132	-	[2]
CA:PA	75:25	22.1	153		
CA:SA	86:14	26.8	160		
CA:MA	73:27	21.4	152		
LA:MA	62:38	32.6	156		
LA:PA	64:36	32.8	165		
LA:SA	75:25	37.4	171		
MA:PA	51:49	39.8	174		
MA:SA	65:35	44	181		
CA:LA	10:90	40.73	172	±2%	[3]
	20:80	24.30	113.64		
	40:60	22.69	128.23		
	50:50	23.98	128.37		
	60:40	21.33	150.10		
	70:30	21.09	123.98		
CA:PA	10:90	60.43	149.55		
	20:80	56.67	133.74		
	70:30	27.07	142.61		
	80:20	27.28	160.4		
CA:SA	10:90	54.62	154.9		
	20:80	52.24	141.9		
	40:60	22.19	51.94		
	50:50	21.87	73.10		
	60:40	23.50	104.34		
	70:30	23.40	104.9		
Tetradecanol: LA	53:47	24.3	161	-	[4]
Tetradecane: Hexadecane	40:60	16.2	147	-	[5]
	50:50	11.9	146		
	60:40	10	148		
	70:30	8.1	143		

Eutectic Composition (Component A:Component B)	Mass percentage of component A:B (%)	T_m (ºC)	$\Delta_{fus}h$ (J g^{-1})	Uncertainty	Reference
Galactitol:Mannitol	30:70	153.5	292	-	[6]
CA:1-Dodecanol	70:30	6.52	171.1	-	[7]
CA:LA:PA:SA	65.05:22.39:7.91:4.65	13.94	132.3	-	[8]
CA:LA:MA:PA:SA	61.1:24.6:8.1:4.0:2.2	14.04	132.8		
	50.7:31.2:10.3:5.1:2.7	17.64	132.8		
CA:LA:MA:PA	63.1:19.7:12.4:4.8	14.61	133.4		
CA:LA:MA:SA	62.1:23.1:11.4:3.4	15.13	129.6		
CA:LA:PA	63.4:31.5:5.1	15.47	134		
CA:LA:MA	66.4:20.6:13	15.83	131.4		
CA:LA:SA	30:60:10	16.4	174.9	-	[9]
	65.3:32.5:2.2	17.9	132.5		
LA:1-Dodecanol	29:71	17	175.3	-	[10]
MA:1-Dodecanol	17:83	18.43	180.8		
SA:1-Dodecanol	10:90	20.08	191		
CA:MA:PA:SA	71.8:19.8:5.3:3.1	17.47	138.2	-	[9]
CA:MA:PA	71.8:18.9:9.3	17.56	16.8		
	64.8:22.6:12.6	17.7	148.7		
CA:LA	64:36	18.5	162.9		
	65:35	18.92	107.9	-	[11]
	65.1:34.9	19.1	126.5	-	[12]
	67:33	22.81	154.2	±1.0%	[13]
CA:MA:SA	71.8:18.9:9.3	18.9	145.9	-	[8]
	64.8:22.6:12.6	23.9	158.7		
CA:Tetradecanol	78:22	20.5	153	±15	[14]
CA:PA:SA	79.3:14.7:6	18.5	139.3	-	[15]

Eutectic Composition (Component A:Component B)	Mass percentage of component A:B (%)	T_m (ºC)	$\Delta_{fus}h$ (J g^{-1})	Uncertainty	Reference
	83.8:10.2:6.0	19.7	147.2		16
	80:10:10	19.8	154.1		
CA:MA	78.4:21.6	20.1	155.2	±4%	17
	78:22	19.65	149.02		
	72:28	18.2	148.5		
	73:27	21.7	168.4		
	75:25	22.2	153.2		
	76:24	23.6	147.7		
	73.6:26.4	21.7	139.2		18
	74.6:25.4	22.6	154.8		
	72:28	22.6	139.2		
CA:SA	86:14	24.1	161.4	-	19
	77:23	27.8	122.6	±1.0%	13
CA:PA	76.5:23.5	21.85	171.2		20
	89:11	22.9	141.4		
	88:12	29.6	163.7		
CA:Cetyl alcohol	70:30	22.9	144.9	±15	21
DA:LA	75:25	19.9	163		22
DA:MA	78:22	20.5	153		14
	82:18	24.9	155		
	71:29	33.9	182		22
DA:HA	85:15	28.1	156		
LA:OA	85:15	39.9	183		
LA:Myristic alcohol	40:60	21.3	151.5		23
LA:TD	46.4:53.6	24.5	90.2	-	4
LA:Methyl palmitate	80:20	22.8	198.7	±2.2	24
	70:30	21.7	195.3		
	50:50	25.6	205.4		
	40:60	22.5	137.5		
LA:MA:SA	61:30.1:8.9	29.2	152.9	-	8
	57.5:34.3:8.2	29.4	140		
LA:MA:PA	63.3:24.6:12.1	30.8	155.7		
	55.3:29.7:15	31.4	145.8		
LA:PA:SA	72.3:21:6.7	32	159		

Eutectic Composition (Component A:Component B)	Mass percentage of component A:B (%)	T_m (ºC)	$\Delta_{fus}h$ (J g^{-1})	Uncertainty	Reference
LA:SA	20:80	31.1	160.4	±5.0%	[25]
	40:60	31.6	168.4		
	50:50	32.3	163.8		
	60:40	33	158.9		
	69:30	33.55	161.6		
	80:20	33.9	166.1		
SA:ADA	16:84	66.63	209.69	±5.0%	[26]
	22:78	66.64	200.38		
	28:72	66.86	207.11		
	36:64	67.04	221.2		
	44:56	67.14	189.16		
	56:44	67.05	189.46		
SA:SUA	12:88	66.46	202		
	17:87	66.32	203.04		
	23:77	66.61	198.91		
	29:71	66.58	198.11		
	36:64	66.52	173.03		
	44:56	66.41	192.5		
	52:48	66.68	186.9		
	54:46	66.57	196.1		
SA:SEA	13:87	65.67	187.76		
	18:82	66.15	181.63		
	23:77	66.01	169.83		
	30:70	66.39	149.9		
	36:64	66.41	150.45		
	43:57	66.47	151.59		
	50:50	66.29	193.16		
	52:48	66.84	201.46		
	55:45	67.23	196.63		
SA:PA	61:39	64.84	201.18	±10	[27]
	60:40	55.59	191.81		
	46:54	55.16	190.00		
	47:53	55.14	190.51		
	40:60	53.64	189.47		
	37:63	53.97	190.71		
	34:66	54.25	191.97		
	31:69	54.25	191.24		

Eutectic Composition (Component A:Component B)	Mass percentage of component A:B (%)	T_m (ºC)	$\Delta_{fus}h$ (J g^{-1})	Uncertainty	Reference
	28:72	54.5	188.84		
LA:MA	60:40	35	172	-	28
	63:37	34	169.5		
	64:36	33	168.8		
	65:35	34.2	168.1		
	66:34	34.5	16.8		
	67:33	34.3	165.5		
	68:32	32	164.3		
LA:PA	65:35	34	170.2		
	66:34	34.5	169.2		
	67:33	35.1	168.4		
	68:32	35.2	167.7		
	69:31	35.2	166.3		
	70:30	35.6	165.6		
	85:15	45	170.7		
MA:SA	50:50	43	183.2		
	61:39	44	185.4		
	62:38	44	184.2		
	63:37	44.2	183.1		
	64:36	44.1	182.4		
	65:35	44.3	181.2		
LA:PA	20:80	-2.37	287.8	-	29
	40:60	-2.33	314.9		
	60:40	-2.28	316.9		
	80:20	-2.16	330.6		
	70:30	-2.19	325.7		
	75:25	-2.22	321.6		
	85:15	-2.29	317.8		
	90:10	-2.31	310.4		
LA:SA	86:14	37.5	199.6	±4%	30
	75.5:24.5	37	182.7		
	80:20	39.9	167.1		
LA:PT68	80:20	38.3	180.3	-	9
MA:DE	17:83	18.43	180.8		10
MA:TD	30.3:69.7	32.5	205.3		31
	28.2:71.8	33.2	128.6		
MA:SA	64:36	44.1	184.4	±4%	30

Eutectic Composition (Component A:Component B)	Mass percentage of component A:B (%)	T_m (°C)	$\Delta_{fus}h$ (J g^{-1})	Uncertainty	Reference
MA:PA	40:60	35.1	177.4		[32]
	50:50	39.1	173.7		
	58:42	42.6	169.71		
	65:35	45.4	166.1		
	80:20	48.4	174.3		
MA:PT68	69:31	46.3	170.3		[9]
MA:SA	76.3:23.7	46.4	203.8		[33]
MA:PA:SA	56.8:28.1:15.1	46.7	191		[8]
OA:Polyethylene glycol (PEG)	88:12	3.42	226.6	-	[34]
PA:DE	10:90	20.1	184.5		[10]
PA:1-hexadecanol	64.5:35.5	50.2	181.7		[35]
PA:PT68	58:42	54.9	204.7		[9]
PA:SA	64.2:35.8	52.3	181.7	±2%	[2]
	63:37	53.7	204.7		
	62:38	53.9	177.7		
	58.8:41.2	54	180		
	61:39	55.1	204.7		
	63.2:36.8	55	127.7		
	62.9:37.1	56.2	151.9		
SA:PA:LA:MA	11.9:18.5:45.6:24	27.4	151.9	-	[9]
	6.8:12.6:55.2:25.4	29.6	151.9		[8]
	5.6:10.3:63.2:20.9	29.6	157.9		
SA:PA:LA:MA:PT68	17.4:11.1:42.9:22.6:6	27.8	160.8		[9]
SA:PA:LA:PT68	14:21.9:54:1	30	167.91		
SA:PA:LA	6.8:21:72.2	32	159		
	15.6:24.4:60	31.2	159.9		
CA:LA	66.75:33.25	19.26	127.2	-	[8]
CA:MA	78.39:21.61	20.08	155.2		
CA:PA	89:11	22.9	141.4		

Eutectic Composition (Component A:Component B)	Mass percentage of component A:B (%)	T_m (ºC)	$\Delta_{fus}h$ (J g^{-1})	Uncertainty	Reference
CA:SA	94.5:5.5	25.71	156.8		
LA:MA	63.6:36.4	33.27	173.6		
LA:PA	77.5:22.5	33.6	169.6		
LA:SA	86.51:13.49	37.98	181.2		
MA:PA	65:35	45.36	183.1		
MA:SA	76.3:23.7	46.41	180.6		
PA:SA	63:37	53.69	204.7		
CA:LA	10:90	22.5	161.0	-	[36]
	20:80	23.0	163.6		
	27:73	23.6	154.7		
	35:65	24.1	148.4		
	40:60	24.6	142.7		
	50:50	24.9	135.6		
	65:35	22.4	140.8		
	73:27	21.7	141.8		
CA:LA	10:90	40.73	113.64	±2%	[37]
	20:80	24.30	28.23		
	30:70	23.7	52.64		
	40:60	22.69	158.78		
	50:50	23.98	128.38		
	60:40	21.33	150.1		
	70:30	21.09	123.98		
	80:20	21.67	136.91		
	90:10	28.41	104.67		
CA:SA	10:90	54.62	154.94		
	20:80	52.24	141.94		
	40:60	22.2	51.94		
	50:50	21.87	73.1		
	60:40	23.5	104.36		
	70:30	23.4	104.9		
	80:20	26.47	107.32		
	90:10	29.54	160.39		
CA:MA	10:90	52.03	136.80		
	70:30	21.79	123.62		
	80:20	24.06	131.09		
	90:10	24.05	148.48		
CA:PA	10:90	60.43	149.55		

Eutectic Composition (Component A:Component B)	Mass percentage of component A:B (%)	T_m (ºC)	$\Delta_{fus}h$ (J g^{-1})	Uncertainty	Reference
	20:80	56.67	133.74		
	70:30	24.74	142.61		
	80:20	27.28	160.57		
	90:10	27.68	141.50		
LA:SA	72.6:27.4	36.3	186.2	-	[38]
	73.5:26.5	36.5	185.4		
	74.5:25.5	36.7	184.3		
	75.1:24.9	36.9	183.4		
	75.5:24.5	37.00	182.7		
	76.5:23.5	37.2	181.8		
	80.8:19.2	38.2	180.5		
MA:PA	50.0:50.0	39.1	173.7		
	55.0:45.0	41.0	171.5		
	56.0:44.0	41.5	171.2		
	57.0:43.0	42.	169.9		
	58.0:42.0	42.6	169.7		
	59.0:41.0	43.1	169.4		
	80.0:20.0	48.6	174.3		
MA:PA	10:90	59.89	170.35	-	[39]
	20:80	56.43	176.8		
	30:70	49.32	153.7		
	40:60	47.95	153.57		
	50:50	47.91	152.32		
	60:40	47.08	151.15		
	70:30	46.73	152.64		
	80:20	49.81	150.32		
PA:SA	60.0:40.0	51.2	183.7	-	[38]
	62.0:38.0	51.5	182.9		
	63.5:36.5	52.1	182.3		
	64.2:35.8	52.3	181.7		
	64.9:35.1	52.5	181.4		
	65.6:34.4	52.8	181.1		
	85.0:15.0	56.7	183.1		
PA:MA	10:90	47.79	190.99	±5%	[40]
	20:80	45.33	175.34		
	40:60	45.25	176.14		
	50:50	45.59	176.70		

Eutectic Composition (Component A:Component B)	Mass percentage of component A:B (%)	T_m (ºC)	$\Delta_{fus}h$ (J g^{-1})	Uncertainty	Reference
	60:40	45.48	175.76		
	70:30	45.71	176.12		
LA:OD	77.42:22.58	37.16	189.57	-	[41]
Paraffin wax:SA	50:50	56.2	179.4	±0.1%	[42]
Paraffin wax:PA	30:70	55.8	209.6		
Paraffin wax:MA	20:80	51.3	211.6		
SA:1,10-decanediol	14:86	56.5	247.5	-	[43]
d-mannitol:inositol	82:18	159.6	276.9	-	[44]
d-dulcitol:inositol	69:31	178.3	310.6		
d-mannitol:d-dulcitol	70:30	155	296.9		
TBAB:AzA	56:44	44.3	23.21	-	[45]
	53:47	33.8	42		
	50:50	67.1	47.37		
	46:54	71.6	56.82		
	41:59	78.4	74.28		
	35:65	90.6	91.87		
	30:70	101.6	103.4		
	25:75	101.3	112.6		
	22:78	98.3	112.3		
	16:84	101.3	131.7		
	83:17	105.3	155.6		
TBAB:BeA	48:52	66.7	5.7		
	43:57	70.6	7.04		
	37:63	70.8	8.09		
	32:68	105.5	4.56		
	26:74	119.9	52.24		
	22:78	108.5	19.26		
	19:81	120.7	33.15		

Eutectic Composition (Component A:Component B)	Mass percentage of component A:B (%)	T_m (ºC)	$\Delta_{fus}h$ (J g^{-1})	Uncertainty	Reference
	16:84	131	53.3		
	15:85	141.7	56.32		
	13:87	127.5	57.22		
SA:PA	40:60	35.6	226.3	±0.2%	[46]
CA:OA: tetra decanol (TD)	8:32: 60	1.02	187.5	-	[47]
	10:40:50	0.84	181.8		
	12:48:40	0.62	175.4		
$ZnCl_2$: (diethylene glycol) DEG	10:90	206	125	-	[48]
	20:80	196	138		
	30:70	211	114		
$CaCl.6H_2O$: PEG	97:3	21.5	142.8	±0.6	[49]
	89: 11	29.8	193.7		
DHPD:STP	90:10	32.75	172.9	-	[50]
	85:15	29.93	151.18		
	80:20	27.41	146.03		
	75:25	23.37	120.16		
C17:C18	17: 83	20.6	215.1	-	[51]
C20:C17	20:80	21.3	217.5		
C20:C19	20:80	31.9	236.9		
C20:C24	90:10	35.8	265.6		
NaCl: NH_4Cl+H_2O		-24.7	230.7	-	[52]
DMA:DPA	70:30	-22	55.2	-	[53]
	20:80	-20.6	130.8		
PA:SA/SiO_2-TiO_2		51.5	128.12	-	[54]
LA:MA:PA		33.5	151.46	-	[55]
Stearyl alcohol: benzamide	70:30	54.26	157.44	-	[56]
PA: SA		61.1	161.14	-	[57]

Table S2. Thermal reliability of DES

HBA:HBD	Mass percentage	No. of cycles	T_m(°C)	$\Delta_{fus}h$ (J g^{-1})	Reference
CA:LA	40:60	0	22.69	158.77	37
		300	25.34	112.84	
		600	25.21	137.04	
		900	24.59	124.15	
		1200	24.95	117.11	
	50:50	0	23.98	128.38	
		300	25.49	122.56	
		900	25.5	108.21	
		1200	24.87	111.16	
	60:40	0	21.33	150.1	
		300	23.21	162.29	
		600	24.42	140.89	
		900	24.26	137.92	
		1200	23.84	134.97	
	70:30	0	21.09	123.98	
		300	22.79	120.18	
		600	22.46	127.65	
		900	22.75	122.64	
		1200	23.04	132.2	
	80:20	0	21.24	136.91	
		300	22.47	122.78	
		600	22.26	128.62	
		900	22.26	124.82	
		1200	22.25	113.31	
CA:SA	60:40	0	23.5	155.36	
		300	24.06	170.17	
		600	21.81	149.05	
		900	22.8	157.41	
		1200	22.12	136.65	
	90:10	0	29.54	160.39	
		300	29.56	120.06	
		600	29.53	152	
		900	29.2	112.52	
		1200	28.75	140.1	
CA:MA	70:30	0	21.79	123.63	
		300	23.89	150.89	
		600	25.34	144.95	
		900	25.16	141.44	

HBA:HBD	Mass percentage	No. of cycles	T_m(°C)	$\Delta_{fus}h$ (J g^{-1})	Reference
		1200	25.15	112.54	
	80:20	0	24.06	131.09	
		300	25.1	142.49	
		600	24.44	126.16	
		900	24.29	155.86	
		1200	25.18	142.31	
	90:10	0	24.05	148.48	
		300	25.32	141.31	
		600	24.29	148.73	
		900	24.5	141.77	
		1200	25.51	137.4	
CA:PA	70	0	27.07	142.61	
		300	27.15	119.38	
		600	26.96	150.46	
		900	27.3	160.19	
		1200	27.82	138.78	
	80	0	27.28	160.58	
		300	27.06	142.52	
		600	27.1	147.09	
		900	26.38	133.08	
		1200	26.42	106.47	
	90	0	27.68	141.5	
		300	27.04	118.54	
		600	27.79	172.18	
		900	27.9	146.01	
		1200	28.18	146.37	
LA:SA	75:25:	0	37	182.7	38
		90	36.56	171.4	
		180	36.12	149.8	
		360	37.36	183.1	
MA:PA	58:42	0	42.6	169.7	
		90	42.04	157.4	
		180	42.7	163.8	
		360	42.4	174.6	
PA:SA	64:36	0	52.3	181.7	
		90	53.43	185.7	
		180	51.88	175.5	
		360	53.58	186.3	
LA:MA	66:34	0	34.21	166.8	28

HBA:HBD	Mass percentage	No. of cycles	T_m(°C)	$\Delta_{fus}h$ (J g^{-1})	Reference
		1460	33.9	170.8	
LA:PA	69:31	0	35.2	166.3	
		1460	34.8	168.8	
MA:SA	64:36	0	44.1	184.6	
		1460	42.99	184.2	
CA:LA	65:35	0	18.51	162.85	18
		1,000	17.93	152.23	
		2,000	17.71	142.65	
		3,000	17.01	148.14	
		4,000	17.83	137.21	
		5,000	17.04	131.68	
CA:MA	72:28	0	21.7	168.37	
		1,000	21.02	150.53	
		2,000	20.34	143.24	
		3,000	21.2	161.41	
		4,000	20.83	155.14	
		5,000	20.54	160.12	
Wallboard (CA:LA)	65:35	0	19.108	35.239	12
		120	18.286	36.036	
		240	18.24	35.208	
		360	18.353	35.068	
CA:MA	72:28	0	18.1	148.2	17
		500	18.2	144.1	
		1000	19.4	150.0	
		2000	18.6	131.5	
LA:PA	23:77	0	33.09	150.64	58
		30	32.91	187.19	
		50	32.8	174.55	
		80	33.49	181.33	
		100	32.92	165.69	
CA:DE	50:50	0	6.52	171.06	7
		60	6.5	170.89	
		120	6.24	167.96	
LA:TD	50:50	0	24.33	161.45	59
		30	24.23	161.79	
		90	24.32	159.72	
PW:PA	60:40	0	190.42	244.5	60
		500	221.7	280.7	
		1000	200.03	254.2	

HBA:HBD	Mass percentage	No. of cycles	T_m(°C)	$\Delta_{fus}h$ (J g^{-1})	Reference
		1500	208.84	258.1	
		2000	211.36	259.4	
		3000	212.65	261.9	
		4000	209.28	249.8	
SA:Hexanamide	50:50	0	35.16	167.54	61
		20	34.83	166.38	
		40	34.75	165.78	
		60	34.86	165.23	
		80	34.92	164.5	
		100	34.91	164.21	
SA:Benzamide	87:13	0	65.65	191.71	62
		20	65.7	191.56	
		40	65.69	191.39	
		60	65.7	191.49	
		80	65.66	190.81	
Methyl palmitate:LA	60:40	0	22.5	205.6	24
		50	22	203.5	
		100	22.1	203.7	
		150	22.3	204.4	
		200	22.4	205	
		250	22.1	203.9	
		300	22.3	205.5	
		350	22.4	204.2	
CA:Cetyl alcohol	76:24	0	22.89	144.92	21
		500	23.49	169.59	
		600	24.05	166.82	
		1000	23.53	164.59	
SA:ADA	65:35	0	66.86	201.52	26
		100	66.71	202.04	
SA:SUA	60:40	0	66.13	197.32	
		100	65.82	197.44	
SA:SEA	60:40	0	67.66	200.65	
		100	66.75	196.20	
SA:Acetamide	76:24	0	62.23	222.1	63
		100	62.23	211.94	
		300	62.18	202.09	
		500	62.43	200.48	
Galactitol:mannitol	70:30	0	153.4	292.2	6
		20	153.1	289.2	

HBA:HBD	Mass percentage	No. of cycles	T_m(°C)	$\Delta_{fus}h$ (J g^{-1})	Reference
		40	152.6	288.9	
		60	152.2	286.4	
		80	151.8	276	
		100	151.4	275.9	
SA:PA		0	61.1	161.1	57
		500	64.67	183.6	
		100	62.48	178.8	
Steryl alcohol: benzamide		0	54.2	157.44	56
		500	55.5	143.14	
		1000	57.12	113.53	

Table S3. Molar Heat capacities (C_p) of DES

DES A:B	Molar ratio	Temperature (ºC)	C_p (J mol^{-1} K^{-1})	Uncertainty	Reference
EAC:Gly	1:2	30	250.4	±2%	64
		40	253.2		
		50	257.2		
EAC:EG	1:2	30	204.1		
		40	206.5		
		50	209.5		
ChCl:U	1:2	30	187.4	±2%	64
		40	183.2		
		50	184.5		
ChCl:EG	1:2	30	190.8		
		40	194.0		
		50	196.4		
ChCl:Gly	1:2	30	237.7		
		40	240.8		
		50	243.5		
		40	190.9		
		50	193.2		
TBAC:Gly	1:5	30	283.9	±4%	65
		40	289.4		
		50	279.7		
TBAC:TEG	1:1	30	448.8		

DES A:B	Molar ratio	Temperature (°C)	C_p (J mol^{-1} K^{-1})	Uncertainty	Reference
		40	456.1		
		50	461.9		
TBAC:EG	1:3	30	291.0		
		40	295.7		
		50	300.5		
ChCl:fructose	2:1	30	316.7	±4%	[66]
		40	326.2		
		50	334.1		
ChCl:glucose	2:1	30	330.7		
		40	338.6		
		50	346.0		
ChCl:malonic acid	1:1	30	228.3		
		40	230.6		
		50	232.7		
ChCl:citric acid	1:2	30	424.0		
		40	428.7		
		50	434.0		
ChCl:OA	1:2	30	272.1		
		40	275.4		
		50	277.0		
TBAC:U	4:1	30	-		
		40	598.0		
		50	601.5		
TBAC:malonic acid	1:3	30	305.7		
		40	320.6		
		50	333.3		
MTPPB:malonic acid	2:3	30	339.2		
		40	341.2		
		50	346.6		
MTTPB:Gly	1:3	30	330.5		
		40	334.8		
		50	339.4		
MTTPB:EG	1:4	30	239.4		
		40	243.4		
		50	247.2		
EAC:EG	1:9	30	89.8	±2%	[67]
		40	90.8		

DES A:B	Molar ratio	Temperature (ºC)	C_p (J mol^{-1} K^{-1})	Uncertainty	Reference
		50	91.3		
	1:4	30	103.5		
		40	104.6		
		50	105.2		
	2:3	30	129.5		
		40	131.3		
		50	133.7		
	1:1	30	142.1		
		40	144		
		50	146.4		
EAC:Gly	1:9	30	94.0		
		40	94.7		
		50	95.6		
	1:4	30	112.5		
		40	114		
		50	115.8		
	2:3	30	147.8		
		40	149.9		
		50	152.2		
	1:1	30	165.1		
		40	167.3		
		50	168.8		
ChCl:U:l-arginine	1:2:0.05	30	182.21	±1%	[68]
		40	184.52		
		50	186.82		
	1:2:0.1	30	184.38		
		40	186.68		
		50	188.95		
	1:2:0.15	30	186.54		
		40	188.81		
		50	191.08		
	1:2:0.2	30	188.7		
		40	190.95		
		50	193.2		
	1:2:0	30	180.05		
		40	182.37		
		50	184.5		
La:betaine (Bet):H_2O	2:12	27	114.2	±1	[69]

DES A:B	Molar ratio	Temperature (ºC)	C_p (J mol^{-1} K^{-1})	Uncertainty	Reference
		37	116.1		
		47	117.2		
La:Hist:H_2O	9:1:5	27	162.0		
		37	161.6		
		47	164.6		
Ma:Bet:H_2O	1:2:3	27	136		
		37	136.4		
		47	137.5		
Ma:Bet:Pro:H_2O	1:1:1:2	27	176.7		
		37	175.2		
		47	176.7		
Methyl palmitate:LA	3:2	20	365.6	±2%	[24]
		30	477.51		
CA:LA	2:1	-	407.6	-	[36]

Table S4. Thermal conductivity of DES at different temperatures

DES A:B	Temperature (ºC)	HBA:HBD	Thermal conductivity (W m^{-1} K^{-1})	Uncertainty	Reference
ChCl:U	25	1:2	0.241	± 0.001	[70]
ChCl:U		1:2	0.245	± 0.02	[71]
ChCl:U		1:2	0.252	-	[72]
ChCl:U	25	1:2	0.346	± 0.02	[73]
	35		0.298		
	45		0.279		
ChCl:U	25	1:2	0.245	-	[74]
	35		0.244		
	40		0.242		
	50		0.239		
ChCl:Thiourea (TU)	25	1:2	0.185	± 0.001	[70]
ChCl:TU	25	1:2	0.182	± 0.02	[71]
	35		0.180		
	40		0.179		
	50		0.175		
ChCl:Gly	25	1:3	0.223	± 0.001	[70]
ChCl:Gly	25	1:1	0.2835	± 0.02	[73]
	35		0.291		
	45		0.285		
ChCl:Gly	25	1:2	0.325		
	35		0.244		
	45		0.23		
ChCl:Gly	25	1:3	0.3465		
	35		0.279		
	45		0.287		
ChCl:Gly	25	1:4	0.405		
	35		0.299		
	45		0.293		
ChCl:Gly	30	1:2	0.228	-	[74]
ChCl:Gly	25	1:2	0.222	-	[72]
ChCl:EG	25	1:2	0.206	± 0.001	[70]
ChCl:EG	30	1:2	0.237	-	[74]
ChCl:EG	25	1:2	0.2815	± 0.02	[73]
	35		0.240		
	45		0.232		
ChCl:EG	25	2:1	0.2775		

	35		0.238		
	45		0.214		
ChCl:EG	25	1:3	0.3255		
	35		0.255		
	45		0.215		
ChCl:EG	25	1:1	0.315		
	35		0.244		
	45		0.227		
ChCl:Malonic acid	25	1:2	0.198	± 0.001	[70]
ChCl:2-HPA	25	1:2	0.193		
ChCl:2-HPA	25	1:2	0.2655	± 0.02	[73]
	35		0.2595		
	45		0.255		
ChCl:D-fructose	25	1:2	0.211	± 0.001	[70]
ChCl:D-fructose	25	1:2	0.250	± 0.02	[73]
	35		0.241		
	45		0.230		
ChCl:D-glucose	25	1:2	0.214	± 0.001	[70]
ChCl:D-glucose	25	1:2	0.1955	± 0.02	[73]
	35		0.2855		
	45		0.343		
ChCl:EAC	25	1:2	0.242	± 0.02	[71]
Menthol:CA	31	1:4	0.1229	±2%	[75]
	41		0.1218		
	51		0.1211		
Menthol:CA	20	3:7	0.127		
	30		0.126		
	40		0.125		
Menthol:CA	20	2:3	0.131		
	30		0.130		
	40		0.129		
Menthol:CA	20	1:1	0.132		
	30		0.131		
	40		0.129		
2-HPA:Ammonium acetate	25	1:1	0.305	± 0.02	[73]
2-HPA:Ammonium acetate	25	2:1	0.376		
2-HPA:Ammonium acetate	25	3:1	0.322		
Gly:Ammonium acetate	25	2:1	0.2865		
Gly:K_2CO_3	25	6:1	0.363		

Gly:K_2CO_3	25	4:1	0.3565		
Gly:K_2CO_3	25	10:1	0.423		
2-HPA:Alanine	25	9:1	0.299		
2-HPA:ChCl	25	15:1	0.2875		
2-HPA:Histidine	25	9:1	0.2575		
2-HPA:Proline	25	4:1	0.268		
2-HPA:Glycine	25	9:1	0.2075		
2-HPA:Sodium acetate	25	3:1	0.314		
Malic acid:Proline	25	1:1	0.229		
Malic acid:Glycine	25	1:1	0.045		
	35		0.0475		
	45		0.0485		
Malic acid:ChCl	25	1:1	0.2645		
Malonic acid:ChCl	25	1:1	0.246		
Gly:Proline	25	4:1	0.296		
MTPPB:EG	25	1:4	0.233		
	30		0.221		
	35		0.22		
MTPPB; Gly	25	1:3	0.2555		
	30		0.224		
	35		0.215		
OA:ChCl	25	1:1	0.4025		
	30		0.274		
	35		0.254		
OA:ChCl	25	1:1.5	0.294		
	30		0.282		
	35		0.243		
OA:ChCl	25	1.5:1	0.276		
	30		0.257		
	35		0.245		
OA:Proline	25	1:1	0.3225		
	35		0.275		
	45		0.247		
$(COOH)_2.2H_2O$:ChCl	25	1:1	0.313		
	35		0.259		
	45		0.236		
ChCl:Methylmalonic acid	25	1:1	0.2765		
	35		0.17		
ChCl:Methylmalonic acid	25	1:2	0.048		
	35		0.045		
Betaine:Gly	20	1:2	0.2314	± 0.02	[73]

	40		0.2318		
	59		0.233		
Bet:Gly	20	1:3	0.2416		
	40		0.2430		
	59		0.244		
Bet:Gly	20	1:4	0.2491		
	40		0.2496		
	59		0.2514		
Bet:Gly	20	1:5	0.2541		
	40		0.2551		
	59		0.2561		
Bet:Gly	20	1:6	0.2573		
	40		0.2583		
	59		0.2601		
Bet:1,2-PDO	20	1:3.5	0.1906		
	40		0.1908		
	59		0.1914		
Bet:1,2-PDO	20	1:4	0.1908		
	40		0.1912		
	59		0.1916		
Bet:1,2-PDO	20	1:5	0.1913		
	40		0.1917		
	59		0.1921		
Bet:1,2-PDO	20	1:6	0.1921		
	40		0.1921		
	59		0.1927		
ChCl:LA	25	1:1	0.189	5%	[76]
		1:1.5	0.191		
		1:2	0.191		
		1:2.5	0.191		
ChCl:EG	25	1:5	0.22	4%	[77]
		1:6	0.231		
		1:7	0.239		
		1:8	0.245		
ChCl:EG	25	1:2	0.227	-	[78]
		1:3	0.230		
		1:3.5	0.238		
EABr:Gly	20	1:2	0.217	-	[79]
PABr:Gly	20		0.209		
BABr:Gly	20		0.207		
ChCl:Gly	32	1:2	0.2320	3%	[80]

		1:3	0.2405		
		1:4	0.2408		
		1:5	0.2425		
MA:PA	30	7:3	0.225	-	[32]
LA:DE	25	-	0.180	±0.0033	[10]
MA:DE			0.180		
PA:DE			0.180		
SA:ADA	25		0.143	-	[26]
SA:SUA			0.172		
SA:SEA			0.180		
CA:LA	-	2:1	0.143	-	[36]
PA:SA/SiO_2-TiO_2	51.5		0.48		[54]

Table S5. Viscosity dependence of DES on temperature (Data and uncertainty are reported in mPa.s)

HBA	HBD	HBA:HBD	Temperature (ºC)								Uncertainty $mPa.s^{-1}$	Reference
			25	**30**	**35**	**40**	**45**	**50**	**55**	**60**		
ChCl	EG	1:2	48.59	39.78	33.15	27.77	23.61	20.3	17.64	15.31	±10%	[81]
ChCl	EG	1:3	31.12	25.72	21.63	18.27	15.68	13.57	11.9	10.47		
ChCl	EG	1:4	26.21	21.7	18.29	15.52	13.3	11.5	10.06	9.01		
ChCl	EG	1:5	23.36	19.36	16.22	13.72	11.67	9.98	8.86	7.5		
ChCl	EG	1:6	20.93	17.34	14.52	12.3	10.51	9.07	7.89	6.91		
ChCl	1,2-PDO	1:3	72.1	56.26	44.5	35.89	29.15	24.25	20.01	17.11		
ChCl	1,2-PDO	1:4	61.49	47.74	37.47	30.4	24.7	20.43	17	14.43		
ChCl	1,2-PDO	1:5	57.12	44.41	34.61	27.67	22.49	18.56	15.55	13.04		
ChCl	1,2-PDO	1:6	55.1	43.01	33.33	26.42	21.11	17.41	14.3	12.21		
ChCl	1,3-PDO	1:3	55.76	45.4	37.43	31.35	26.52	22.62	19.46	16.88		
ChCl	1,3-PDO	1:4	49.49	40.7	33.88	27.31	23.03	19.63	16.91	14.66		
ChCl	1,3-PDO	1:5	46.14	37.62	30.92	25.67	21.53	18.26	15.56	13.25		
ChCl	1,3-PDO	1:6	42.83	34.73	28.58	24.01	20.38	17.26	14.7	12.83		
ChCl	1,4-BDO	1:3	87.4	70.16	59.73	47.89	39.53	33.04	27.82	23.6		
ChCl	1,4-BDO	1:4	78.77	62.96	51.08	41.67	34.51	28.9	24.36	20.75		
ChCl	1,4-BDO	1:5	74.9	59.28	48	39.41	32.5	27.36	23.31	19.64		
ChCl	1,4-BDO	1:6	72.28	57.86	46.72	38.31	31.67	26.47	22.32	18.98		
ATPB	DEG	1:2	150.76	109.1	81.10	61.77	47.98	37.88	30.3	24.72	-	[82]
ATPB	DEG	1:3	53.41	41.11	32.26	25.80	20.96	17.26	14.43	12.17		
ATPB	DEG	1:4	43.59	33.68	26.69	21.74	17.83	14.79	12.43	10.57		
ATPB	TEG	1:2	166.5	121.64	90.90	69.36	53.99	42.72	34.35	28.07		
ATPB	TEG	1:3	71.69	54.82	42.75	33.94	27.40	22.42	18.65	15.64		
ATPB	TEG	1:4	57.94	44.81	35.25	28.27	22.98	18.96	15.86	13.42		
TBAC	PA	1:2	114.9	87.3	67.2	52.3	41.5	33.6	27.6	22.8	±1%	[83]

HBA	HBD	HBA:HBD	Temperature (℃)								Uncertainty mPa.s^{-1}	Reference
			25	**30**	**35**	**40**	**45**	**50**	**55**	**60**		
TBAC	EG	1:2	92.8	71.6	56.1	44.7	35.9	29.5	24.4	20.4		
TBAC	PEG	1:2	133.4	104	82	65.9	53.4	44.9	37.5	31.6		
TBAC	PAA	1:2	205.5	134.9	109.2	83.3	64.7	51.2	40.4	33.2		
BHDE	AC	1:2	238.1	166.5	122.7	94.54	75.82	59.99	57.86	41.67		
BHDE	2-HPO	1:2	962.2	619.7	414.5	297.0	213.6	160.7	148.3	93.36		
BHDE	Gly-H_2O-AC	1:3	29.98	27.29	24.35	21.41	19.79	18.28	17.52	17.11		
BTMA	AC	1:2	900.2	570.5	385.1	266.06	214.4	142.4	112.7	84.09		
BTMA	Gly	1:2	244.0	173.2	133.8	112.7	96.15	84.9	80.89	74.12		
BTMA	Gly-H_2O	1:2:0.05	113.0	85.38	68.62	55.25	49.83	39.11	35.04	22.39		
BTMA	Gly-H_2O EA	1:2:0.1	716.5	453.89	319.5	229.1	172.4	133.	103.4	83.2		
ChCl	Gly-AC	1:1:1	55.32	47.94	40.98	37.22	32.1	29.73	28.48	26.81		
Guanidinium hydrochloride	EA	1:2	20.36	18.98	17.68	16.68	15.96	15.56	14.72	14.41		
MTPPB	1,2-PDO	1:4	39.58	32.47	28.14	23.39	20.18	18.34	18.43	17.62		
MTPPB	AC	1:4	101.4	78.19	62.66	51.54	43.77	38	33.92	28.81		
MTPPB	EG	1:3	78.32	58.59	45.65	36.91	30.62	25.69	23.63	19.29		
MTPPB	Gly	1:4	119.5	86.33	67.43	52.49	43.48	36.44	30.66	21.59		
MTPPB	LV	1:3	110.5	82.47	66.19	53.79	41.94	36.12	30.75	27.12		
MTPPB	LV-AC	1:3	957.09	574.67	365.74	243.95	170.58	124.79	91.2	71.33		
TBAB	AC	1:2	33.95	28.75	25.18	21.58	19.5	18.03	17.01	16.16		
TBAB	EA	1:6	1748	1036	632.8	436.3	280.1	210.1	178.3	113.9	-	[44]
TBAB	EA	1:7	55.66	43.58	36.01	30.16	26.54	24.36	21.76	18.76		
TBAC	AC	1:2	51.76	42.66	33.28	28.63	24.99	22.67	21.27	19.26		
TBAC	AC	1:2	256.8	177.9	134.4	112.4	92.16	79.55	72.67	64.07		
TBAC	AC	1:3	20.85	19.19	17.67	16.28	15.02	13.91	12.93	12.08		
TBAC	OcA	1:3	27.52	23.7	21.18	19.35	16.59	14.64	14.05	13.86		
TEAC	AC	1:2	21.5	19.45	16.99	15.51	14.56	13.71	12.39	11.45		
TEAC	EG	1:2	65.86	53.37	46.41	40.65	34.89	32.47	31.31	31.07		
TEAC	Gly	1:2	25.97	22.09	18.93	17.35	15.49	13.94	12.61	11.38		
TEAC	Gly-H_2O	1:2:0.05	41.69	32.89	27.05	22.59	20.04	19.31	16.25	15.4		
TEAC	Gly-H_2O-2-HPO	1:2:0.1	236.59	172.68	128.73	97.59	76.53	59.78	52.53	42.57		
TEAC	LV	1:2	72.75	56.15	45.4	39.17	30.79	28.07	26.76	23.56		
TMAC	AC	1:4	37.24	33.62	28.08	26.98	23.94	23.31	20.55	19.31		
TPAC	AC	1:6	117.4	87.65	69.03	54.36	43.77	37.18	32.66	30.66		
TPAC	EA	1:4	96.45	71.49	56.09	45.15	37.32	32.23	28.65	24.38		
TPAC	EA	1:7	32.66	32.39	32.12	31.95	31.6	31.37	31.07	30.89		
TBAB	AC	1:2	55.13	42.58	34.85	27.21	26.96	22.05	24.85	16.99		
TEAC	AC	1:3	38.72	30.91	25.41	22.87	19.82	18.12	16.79	15.71		
$[TMPDA)Cl_2$	PhOH	1:3	150.4	-	111	-	83.5	-	60	-	-	[84]
[TMPDA) Cl_2	PhOH	1:4	124.1	-	85.8	-	57.3	-	40	-		

HBA	HBD	HBA:HBD	Temperature (℃)								Uncertainty mPa.s^{-1}	Reference
			25	**30**	**35**	**40**	**45**	**50**	**55**	**60**		
[TMPDA)Cl_2	PhOH	1:5	76.2	-	55.1	-	39.8	-	27.7	-		
[TMPDA)Cl_2	PhOH	1:6	56.3	-	41.7	-	30.6	-	23.6	-		
[TMPDA)Cl_2	PhOH	1:7	48.1	-	34	-	24.3	-	18.1	-		
ChCl	1,4-BDO	1:4	-	54.7	44.49	36.66	30.4	25.74	21.73	18.68		
ChCl	1,4-BDO	1:3	-	60.64	49.3	40.55	33.94	28.53	24.31	20.83		
ChCl	2,3-BDO	1:4	-	71.79	53.5	40.72	31.73	25.22	20.52	16.86	±0.61	[85]
ChCl	2,3-BDO	1:3	-	84.88	63.93	48.73	38.16	30.43	24.66	20.4		
ChCl	1,3-PDO	1:4	-	34.45	28.87	24.21	20.52	17.57	15.19	13.21		
ChCl	1,3-PDO	1:3	-	40.05	33.17	27.84	23.62	20.25	17.56	15.3		
Menthol	CA	1:2	12.71	10.47	-	7.45	-	5.45	-	4.14		
Menthol	CA	1:1	15.92	12.81	-	8.54	-	6	-	4.41		
Menthol	CA	1.5:1	18.61	14.52	-	9.42	-	6.42	-	4.59		
Menthol	CA	2:1	21.3	16.22	-	10.1	-	6.73	-	4.74		
THY	CA	1:2	11.13	9.34	-	6.64	-	4.94	-	3.8		
THY	CA	1:1	12	9.72	-	6.93	-	5.03	-	3.8		
THY	CA	1.5:1	12.45	9.97	-	7.01	-	5.09	-	3.79		
THY	CA	2:1	12.84	10	-	6.89	-	4.86	-	3.6		
THY	Menthol	1:5	52.54	34.38	-	16.7	-	9.25	-	5.65	±0.02	[86]
THY	Menthol	1:4	51.36	33.73	-	16.54	-	9.17	-	5.61		
THY	Menthol	1:3	48.99	32.12	-	16.01	-	9.09	-	5.62		
THY	Menthol	1:2	42.16	28.45	-	14.54	-	8.4	-	5.29		
THY	Menthol	1:1	36.06	24.52	-	12.94	-	7.68	-	4.95		
THY	Menthol	2:1	27.5	19.2	-	10.58	-	6.5	-	4.33		
THY	Menthol	3:1	23.34	16.67	-	9.41	-	5.9	-	4		
THY	Menthol	4:1	21.27	15.28	-	8.75	-	5.54	-	3.8		
THY	Menthol	5:1	20.16	14.58	-	8.5	-	5.41	-	3.71		
TBAB	AP	1:4	84.69	63.71	49.65	38.79	30.76	24.94	20.54	16.99		
TBAB	AP	1:6	60.03	46.01	35.84	28.31	22.73	18.62	15.4	12.83		
TBAB	AP	1:8	50.16	38.6	29.98	23.97	19.27	15.76	12.93	10.91		
TEAC	AP	1:4	42.37	32.9	26.2	21.2	17.36	14.41	12.13	10.28		
TEAC	AP	1:6	35.79	27.95	22.33	18.04	14.8	12.32	10.37	8.82	±1%	[87]
TEAC	AP	1:8	33.36	26.08	20.97	16.86	13.95	11.6	9.77	8.3		
TBAC	AP	1:4	77.36	57.75	44.64	36.19	28.87	23.45	19.38	16.08		
TBAC	AP	1:6	53.86	41.7	32.75	26.01	21.12	17.25	14.24	11.99		
TBAC	AP	1:8	46.14	35.71	27.99	22.48	18.33	15.02	12.51	10.73		
ChCl	OA	1:1	-	4.359	-	2.174	-	1.111	-	0.62		
ChCl	Malonic acid	1:1	-	1.029	-	0.615	-	0.38	-	0.247		
ChCl	Maleic anhydride	1:1	-	8.065	-	4.196	-	2.295	-	1.327	±0.059	[88]
ChCl	Malic acid	1:1	-	-	-	6.421	-	3.116	-	1.629		

HBA	HBD	HBA:HBD	Temperature (℃)								Uncertainty mPa.s^{-1}	Reference
			25	**30**	**35**	**40**	**45**	**50**	**55**	**60**		
ChCl	Tartaric acid	1:1	-	-	-	-	-	9.964	-	5.52		
ChCl	Maliec anhydride	1.5:1	-	4.891	-	2.579	-	1.401	-	0.814		
ChCl	Maliec anhydride	2:1	-	2.627	-	1.488	-	0.481	-	0.503		
ChCl	Malic acid	1.5:1	-	5.432	-	2.827	-	1.501	-	0.845		
ChCl	Malic acid	2:1	-	2.81	-	1.676	-	0.987	-	0.599		
ChCl	Tartaric acid	1.5:1	-	-	-	-	-	6.022	-	3.157		
ChCl	Tartaric acid	2:1	-	-	-	-	-	6.79	-	3.791		
ChCl	phenol	1:2	90.33	68.41	53.43	42.42	34.34	-	-	-		
ChCl	phenol	1:3	44.64	35.17	28.22	23.08	19.14	-	-	-		
ChCl	phenol	1:4	31.55	25.2	20.25	16.71	14	-	-	-	± 3%	[89]
ChCl	phenol	1:5	25.25	19.75	16.16	13.44	11.26	-	-	-		
ChCl	phenol	1:6	21.43	16.82	13.76	11.45	9.46	-	-	-		
ChCl	Glycolic acid	1:2	47.11	37.6	30.63	25.1	21	17.7	12.9	11.35		
ChCl	OA	1:2	56.89	45.9	35	28.59	23.4	19.53	16.86	15	±0.5%	[90]
ChCl	Malic acid	1:1	56.24	45.1	36.6	30.4	25.93	22.46	19.19	17.31		
ChCl	OA	1:1	-	-	-	145.2	110.3	95.26	85.37	77.25		
ChCl	OA	2:1	-	-	-	70.08	58.34	48.23	38.25	34.33	±0.5%	[91]
ChCl	OA	3:1	-	-	-	49.38	36.35	27.47	18.35	14.27		
ChCl	OA	4:1	-	-	-	28.74	22.37	17.8	13.62	11.77		
ChCl	MEA	0.84:0.16	48.5	-	28.8	-	20.1	-	13.5	-		
ChCl	MEA	0.86:0.14	36.7	-	25	-	16.8	-	11.2	-		
ChCl	MEA	0.87:0.13	37.7	-	25.5	-	13.8	-	10.1	-		
ChCl	MEA	0.89:0.11	32.7	-	22.6	-	15	-	10.5	-		
MTPB	MEA	0.84:0.16	128.9	-	84.9	-	37.9	-	25.4	-		
MTPB	MEA	0.86:0.14	35.5	-	20.7	-	13.6	-	10	-		
MTPB	MEA	0.87:0.13	28	-	20	-	13.1	-	9.1	-	±0.0001	[92]
MTPB	MEA	0.89:0.11	27.7	-	20	-	13.6	-	9.5	-		
TBAB	MEA	0.84:0.16	106.8	-	77	-	53.57	-	35.29	-		
TBAB	MEA	0.86:0.14	80.2	-	54.7	-	38.2	-	20.1	-		
TBAB	MEA	0.87:0.13	52.9	-	31	-	21.1	-	14.4	-		
TBAB	MEA	0.89:0.11	22	-	15.5	-	12	-	9	-		
ChCl	PTSA	1:2	697.9	456.4	317.4	227.4	161.3	124	94.1	72.3		
ChCl	TCA	1:2	434.9	302.4	216.0	158.6	119.2	91.40	71.54	57.01	1%	[93]
ChCl	MCA	1:2	117.9	88.58	68.10	53.44	42.65	34.64	28.56	23.85		
ChCl	PA	1:2	55.9	44.78	36.44	30.05	25.09	21.18	18.07	15.55		
ChCl	1,2-BD	1:3	-	51.22	39.55	30.7	24.53	17.83	16.45	-		
ChCl	1,2-BD	0.2:0.8	-	45.8	35.08	27.65	22.02	19.8	16.48	-		[94]
ChCl	m-cresol	1:2	155	111	81.8	62.1	48.5	38.7	31	21.1		
ChCl	m-cresol	0.25:0.75	74.7	55	42.6	33.6	27.5	21.5	18.2	13		

HBA	HBD	HBA:HBD	Temperature (℃)								Uncertainty mPa.s^{-1}	Reference
			25	**30**	**35**	**40**	**45**	**50**	**55**	**60**		
ChCl	m-cresol	1:5	41.1	30.5	24.7	19.1	15.9	12.7	10.8	7.73		
ChCl	o-cresol	0.28:0.72	-	124.6	89.53	66.73	53.27	40.77	37.92			
ChCl	o-cresol	0.2:0.8	60.9	45.22	34.9	28.27	22.5	19.3	-	-		
ChCl	o-cresol	1:5	46.17	34.92	27.65	22.48	18.68	15.82	-	-		
ChCl	o-cresol	1:2	133.6	75.5	58.57	36.17	28.83	19.6	-	-		
ChCl	o-cresol	1:1	221.8	159.4	118.13	89.68	69.36	56.98	45.59	37.02		
ChCl	o-cresol	1:2	197.3	144.0	104.97	79.4	62.31	49.68	39.76	32.57		
ChCl	o-cresol	1:3	88.38	68.11	52.05	40.21	32.14	26.16	21.93	18.19		
ChCl	o-cresol	1:4	56.08	42.77	33.44	26.67	21.65	17.85	14.94	12.66		
ChCl	o-cresol	1:5	41.73	32.17	24.76	19.93	16.24	13.49	11.35	9.66		
ChCl	o-cresol	1:6	34.43	27.25	20.42	16.34	13.41	11.21	9.41	8.04		
ChCl	o-cresol	1:7	26.39	20.5	16.28	13.18	10.85	9.06	7.67	6.56		
ChCl	o-cresol	1:8	23.42	18.57	14.6	11.75	9.63	8.11	6.9	5.93		
ChCl	o-cresol	1:9	20.56	16.03	12.81	10.41	8.61	7.22	6.13	5.27		
ChCl	m-cresol	1:1	192.0	140.7	105.6	81.01	63.58	50.64	41.06	33.75		
ChCl	m-cresol	1:2	163.6	117.5	88.41	69.05	56.32	44.97	36.61	30.07		
ChCl	m-cresol	1:3	80.73	60.05	47.24	37.18	30.47	24.78	20.8	17.65		
ChCl	m-cresol	1:4	52.17	41.27	32.45	26.23	21.27	17.6	14.8	12.6		
ChCl	m-cresol	1:5	39.12	30.49	24.24	19.67	16.17	13.55	11.69	9.74		[95]
ChCl	m-cresol	1:6	35.59	27.34	21.45	17.02	14.01	11.81	10.01	8.46		
ChCl	m-cresol	1:7	29.64	23.11	18.38	14.89	12.26	10.24	8.65	7.4		
ChCl	m-cresol	1:8	27.65	21.52	17.12	13.86	11.4	9.52	8.05	6.88		
ChCl	m-cresol	1:9	25.34	19.67	15.63	12.65	10.39	8.67	7.32	6.25		
ChCl	p-cresol	1:1	160.5	119.4	90.82	70.45	55.82	44.86	36.72	30.47		
ChCl	p-cresol	1:2	154.5	114.7	88.35	68.22	53.9	43.07	34.88	29.44		
ChCl	p-cresol	1:3	76.71	58.7	46.08	36.76	29.75	24.49	20.35	17.17		
ChCl	p-cresol	1:4	51.04	39.61	31.34	25.18	20.56	17.05	14.28	12.1		
ChCl	p-cresol	1:5	39.81	31.19	24.95	20.29	16.82	14.1	11.96	10.28		
ChCl	p-cresol	1:6	35.62	28.04	21.58	17.47	14.46	12.13	10.3	8.81		
ChCl	p-cresol	1:7	30.57	23.93	19.15	15.55	12.84	10.77	9.13	7.85		
ChCl	p-cresol	1:8	28.68	22.61	18.14	14.6	11.91	10	8.42	7.23		
ChCl	p-cresol	1:9	26.71	20.67	16.51	13.5	11.04	9.2	7.78	6.63		
ChCl	EG	1:1	17.01	13.92	9.652	6.972	5.211	4.01	3.164	2.551	±0.001	[96]
ChCl	EG	2:1	42.54	34.82	24.24	17.59	13.22	10.27	8.132	6.6		
D-xylose	ChCl	1:1	925.1	623.7	432.9	306.8	222.8	165.0	123.8	95.31		
D-xylose	AeChCl	1:1	2229	1336	837.6	545.5	367.8	256.1	183.5	135.0		
D-xylose	BzChCl	1:1	1392	881.0	575.8	388.2	269.3	191.8	140.0	104.5	±0.35%	[97]
D-Ribose	ChCl	1:1	1562	1034.3	704.9	492.5	352.0	256.6	190.7	144.4		
D-Ribose	AeChCl	1:1	1358	849.9	552.8	372	257.9	183.9	134.6	100.9		
D-Ribose	BzChCl	1:1	3777	2280	1420	912.6	604.9	411.9	287.8	206.2		

HBA	HBD	HBA:HBD	Temperature (ºC)								Uncertainty mPa.s^{-1}	Reference
			25	**30**	**35**	**40**	**45**	**50**	**55**	**60**		
D-Glucose	ChCl	1:1	1590	1035	694.4	478.9	338.5	244.8	180.4	136.2		
D-Glucose	AeChCl	1:1	1066	671.8	439.3	297.1	207.4	148.6	109.7	82.68		
D-Glucose	BzChCl	1:1	3241	1934	1197	767.1	507.7	346.5	242.8	174.7		
D-Mannose	ChCl	1:1	1072	711.1	485.6	340.4	244.5	179.5	134.5	102.8		
D-Mannose	AeChCl	1:1	2190	1316	823.6	535.6	360.7	250.8	179.4	131.7		
D-Mannose	BzChCl	1:1	8168	4540	2657	1616	1019	664.81	447.6	310.3		
D-Fructose	ChCl	1:1	652.3	442.73	308.8	220.8	161.4	119.9	91.09	70.33		
D-Fructose	AeChCl	1:1	845.7	539.47	357.5	244.9	172.6	124.9	92.69	70.17		
D-Fructose	BzChCl	1:1	490.7	325.74	223.0	157.0	113.2	83.46	62.82	48.28		
ChCl	Phenol	1:2	99.81	76.44	57.85	45.29	35.93	28.71	23.65	19.50		
ChCl	p-cresol	1:2	102.04	75.50	58.57	45.82	36.17	28.83	23.74	19.60	±1%	98
ChCl	p-chlorophenol	1:2	123.24	92.75	71.68	55.45	43.94	35.45	28.77	23.50		
TOPO	Phenol	1:2	-	12.38	9.52	-	6.18	-	4.35	-	± 0.5	99
TOPO	Phenol	1:1	-	43.0	-	-	22.0	-	15.02	-		

Table S6. Densities of DES (data and uncertainty are reported in g cm^{-3})

HBA	HBD	HBA: HBD	Temperature (ºC)								Uncertainty	Reference
			20	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**		
ChCl	EG	1:2	1.1193	1.1165	1.1136	1.1108	1.1080	1.1052	1.1024	1.0996	1.0968		
ChCl	EG	1:3	1.1179	1.1150	1.1121	1.1092	1.1063	1.1034	1.1005	1.0976	1.0947		
ChCl	EG	1:4	1.1177	1.1147	1.1117	1.1087	1.1057	1.1027	1.0997	1.0967	1.0936		
ChCl	EG	1:5	1.1165	1.1134	1.1103	1.1072	1.1042	1.1011	1.0981	1.0951	1.0990		
ChCl	EG	1:6	1.1165	1.1136	1.1105	1.1073	1.1042	1.1012	1.0981	1.0950	1.0919		
ChCl	1,2-PDO	1:3	1.0718	1.0688	1.0657	1.0627	1.0596	1.0566	1.0535	1.0504	1.0474		
ChCl	1,2-PDO	1:4	1.0656	1.0624	1.0593	1.0561	1.0530	1.0497	1.0466	1.0435	1.0403		
ChCl	1,2-PDO	1:5	1.0615	1.0583	1.0551	1.0519	1.0486	1.0454	1.0421	1.0388	1.0355		
ChCl	1,2-PDO	1:6	1.0584	1.0552	1.0519	1.0486	1.0453	1.0420	1.0387	1.0353	1.0139	±0.00005	81
ChCl	1,3-PDO	1:3	1.0809	1.0781	1.0753	1.0726	1.0698	1.0670	1.0642	1.0615	1.0587		
ChCl	1,3-PDO	1:4	1.0763	1.0735	1.0706	1.0678	1.0650	1.0625	1.0593	1.0565	1.0537		
ChCl	1,3-PDO	1:5	1.0739	1.0701	1.0681	1.0652	1.0623	1.0593	1.0564	1.0535	1.0505		
ChCl	1,3-PDO	1:6	1.0705	1.0676	1.0647	1.0618	1.0590	1.0561	1.0532	1.0503	1.0475		
ChCl	1,4- BDO	1:3	1.0524	1.0495	1.0466	1.0438	1.0408	1.0379	1.0349	1.0321	1.0292		
ChCl	1,4- BDO	1:4	1.0462	1.0434	1.0407	1.0379	1.0351	1.0324	1.0296	1.0269	1.0241		
ChCl	1,4- BDO	1:5	1.0417	1.0389	1.0361	1.0333	1.0305	1.0277	1.0249	1.0222	1.0194		
ChCl	1,4- BDO	1:6	1.0380	1.0352	1.0324	1.0296	1.0268	1.0239	1.0211	1.0183	1.0155		
TBAC	PA	1:2	0.9692	0.9659	0.9627	0.9594	0.9561	0.9528	0.9491	0.9463	0.9430		
TBAC	EG	1:2	0.9923	0.9893	0.9863	0.9832	0.9801	0.9770	0.9739	0.9709	0.9678	±0.05	83
TBAC	PEG	1:2	1.0810	1.0775	1.0738	1.0702	1.0666	1.0629	1.0593	1.0557	1.0521		

TBAC	PAA	1:2	1.0434	1.0404	1.0371	1.0338	1.0306	1.0271	1.0240	1.0207	1.0176		
ChCl	1,4- BDO	1:4	-	-	1.0403	1.0376	1.0348	1.0320	1.0293	1.0265	1.0238		
ChCl	1,4- BDO	1:3	-	-	1.0471	1.0443	1.0416	1.0389	1.0361	1.0334	1.0307		
ChCl	2,3-BDO	1:4	-	-	1.0307	1.0273	1.0239	1.0205	1.0171	1.0136	1.0102	±0.0005	[85]
ChCl	2,3-BDO	1:3	-	-	1.0390	1.0358	1.0325	1.0292	1.0260	1.0227	1.0194		
ChCl	1,3-PDO	1:4	-	-	1.0705	1.0676	1.0648	1.0620	1.0592	1.0564	1.0536		
ChCl	1,3-PDO	1:3	-	-	1.0753	1.0725	1.0697	1.0670	1.0642	1.0614	1.0587		
TBAB	AP	1:4	1.0221	1.0185	1.0149	1.0113	1.0077	1.0042	1.0006	0.9971	0.9935		
TBAB	AP	1:6	1.0156	1.0119	1.0082	1.0045	1.0008	0.9971	0.9934	0.9897	0.9860		
TBAB	AP	1:8	1.0109	1.0071	1.0033	0.9995	0.9958	0.9921	0.9885	0.9847	0.9810		
TEAC	AP	1:4	0.9986	0.9951	0.9915	0.9880	0.9845	0.9810	0.9776	0.9741	0.9707		
TEAC	AP	1:6	0.9960	0.9924	0.9887	0.9851	0.9814	0.9778	0.9742	0.9706	0.9670	±0.35	[87]
TEAC	AP	1:8	0.9946	0.9908	0.9871	0.9834	0.9797	0.9760	0.9723	0.9686	0.9649		
TBAC	AP	1:4	0.9614	0.9580	0.9546	0.9513	0.9479	0.9446	0.9412	0.9378	0.9345		
TBAC	AP	1:6	0.9670	0.9634	0.9599	0.9564	0.9529	0.9494	0.9459	0.9424	0.9389		
TBAC	AP	1:8	0.9705	0.9669	0.9632	0.9596	0.9560	0.9524	0.9488	0.9452	0.9416		
ChCl	OA	1:1	1.2713	-	1.2640	-	1.2567	-	1.2496	-	1.2426		
ChCl	Malonic acid	1:1	1.2267	-	1.2205	-	1.2144	-	1.2082	-	1.2010		
ChCl	Maleic anhydride	1:1	1.2430	-	1.2371	-	1.2313	-	1.2254	-	1.2193		
ChCl	Malic acid	1:1	1.2770	-	1.2702	-	1.2649	-	1.2589	-	1.2530		
ChCl	Tartaric acid	1:1	1.3246	-	1.3190	-	1.3133	-	1.3078	-	1.3022		
ChCl	Maliec anhydride	1.5:1	1.2087	-	1.2028	-	1.1970	-	1.1912	-	1.1855	± 0.12	[88]
ChCl	Maliec anhydride	2:1	1.1919	-	1.1862	-	1.1806	-	1.1751	-	1.1696		
ChCl	Malic acid	1.5:1	1.2402	-	1.2344	-	1.2287	-	1.2230	-	1.2174		
ChCl	Malic acid	2:1	1.2195	-	1.2129	-	1.2084	-	1.2029	-	1.1975		
ChCl	Tartaric acid	1.5:1	1.2898	-	1.2841	-	1.2785	-	1.2729	-	1.2673		
ChCl	Tartaric acid	2:1	1.2599	-	1.2544	-	1.2489	-	1.2434	-	1.2380		
ChCl	phenol	1:2	1.0995	1.0967	1.0930	1.0901	1.0873	1.0843	-	-	-		
ChCl	phenol	1:3	1.0948	1.0921	1.0890	1.0858	1.0829	1.0795	-	-	-		
ChCl	phenol	1:4	1.0918	1.0893	1.0860	1.0819	1.0795	1.0763	-	-	-	± 0.1%	[89]
ChCl	phenol	1:5	1.0898	1.0870	1.0838	1.0803	1.0761	1.0736	-	-	-		
ChCl	phenol	1:6	1.0885	1.0852	1.0818	1.0782	1.0745	1.0717	-	-	-		
ChCl	OA	1:1	1.1937	1.1905	1.1875	1.1840	1.1808	1.1775	1.1743	-	-		
ChCl	OA	2:1	1.2311	1.2308	1.2244	1.2208	1.2179	1.2141	1.2111	-	-	±0.1	[96]
ChCl	OA	3:1	1.2534	1.2502	1.2469	1.2437	1.2404	1.2372	1.2339	-	-		
ChCl	OA	4:1	1.2829	1.2781	1.2733	1.2685	1.2637	1.2589	1.2541	-	-		
ChCl	Gly	1:2	1.1760	1.1730	1.1700	1.1670	1.1640	1.1610	1.1580	1.1530	1.1500		
ChCl	OA	1:2	1.2050	1.2020	1.1990	1.1950	1.1920	1.1890	1.1860	1.1820	1.1790	±0.0005	[90]
ChCl	Malic acid	1:2	1.2000	1.1970	1.1940	1.1910	1.1880	1.1850	1.1820	1.1780	1.1750		

ChCl	PTSA	1:2	1.2461	1.2428	1.2396	1.2364	1.2333	1.2300	1.2268	1.2236	1.2206		
ChCl	TCA	1:2	1.4662	1.4612	1.4563	1.4516	1.4470	1.4424	1.4378	1.4332	1.4287	-	[100]
ChCl	MCA	1:2	1.2824	1.2786	1.2748	1.2710	1.2673	1.2635	1.2597	1.2559	1.2521		
ChCl	PA	1:2	1.0788	1.0755	1.0721	1.0688	1.0655	1.0622	1.0589	1.0557	1.0524		
Menthol	CA	1:2	0.8960	0.8930	-	0.8850	-	0.8780	-	0.8730	-		
Menthol	CA	1:1	0.8960	0.8940	-	0.8850	-	0.8790	-	0.8730	-		
Menthol	CA	1.5:1	0.8960	0.8930	-	0.8850	-	0.8790	-	0.8730	-		
Menthol	CA	2:1	0.8960	0.8930	-	0.8850	-	0.8780	-	0.8730	-		
THY	CA	1:2	0.9180	0.9150	-	0.9060	-	0.9000	-	0.8940	-		
THY	CA	1:1	0.9300	0.9270	-	0.9180	-	0.9110	-	0.9060	-		
THY	CA	1.5:1	0.9370	0.9340	-	0.9250	-	0.9190	-	0.9130	-		
THY	CA	2:1	0.9420	0.9400	-	0.9300	-	0.9240	-	0.9180	-		
THY	CA	1:5	0.9080	0.9050	-	0.8960	-	0.8900	-	0.8840	-	±0.007	[86]
THY	Menthol	1:4	0.9100	0.9080	-	0.8990	-	0.8920	-	0.8870	-		
THY	Menthol	0.25:0.75	0.9140	0.9110	-	0.9030	-	0.8960	-	0.8910	-		
THY	Menthol	1:2	0.9200	0.9180	-	0.9090	-	0.9020	-	0.8970	-		
THY	Menthol	1:1	0.9330	0.9300	-	0.9210	-	0.9150	-	0.9090	-		
THY	Menthol	2:1	0.9450	0.9430	-	0.9340	-	0.9270	-	0.9220	-		
THY	Menthol	0.75:0.25	0.9520	0.9490	-	0.9400	-	0.9330	-	0.9280	-		
THY	Menthol	0.80:0.20	0.9550	0.9520	-	0.9430	-	0.9370	-	0.9310	-		
THY	Menthol	0.83:0.17	0.9580	0.9550	-	0.9460	-	0.9390	-	0.9340	-		
ChCl	Glucose	-	-	-	1.2397	-	1.2346	-	1.2294	-	-		
TBAB	PEG 200	-	-	1.0976	1.0942	1.0906	1.0872	1.0837	1.0802	-	-		
DEAC	Gly	-	-	1.1766	1.1735	1.1703	1.1672	1.1642	1.1582	-	-		
DEAC	EG	-	-	1.0999	1.0968	1.0938	1.0909	1.0879	1.0848	-	-		
ChCl	EG	-	-	-	-	1.1109	1.1081	1.1053	1.1025	-	-		
ChCl	Gly	-	-	-	1.1941	-	1.1913	-	1.1884	-	-		
ChCl	Gly	-	-	1.1921	1.1892	1.1862	1.1834	1.1805	1.1777	-	-		
ChCl	U	-	-	-	1.1942	-	1.1886	-	1.1832	-	-		
ChCl	EG	-	-	1.1171	-	1.1114	-	1.1057	1.1001	-	-		
ChCl	EG	-	-	-	1.1139	-	1.1081	-	1.1025	-	-	-	[100]
ChCl	LV	-	-	-	1.1352	-	1.1285	-	1.1219	-	-		
ChCl	Phenol	-	-	-	1.0934	-	1.0874	-	1.0815	-	-		
ATPPhBr	TEG	1:4	-	1.1871	1.1834	1.1797	1.1761	1.1724	1.1687	-	-		
ATPPhBr	TEG	1:10	-	1.1555	1.1517	1.1480	1.1442	1.1405	1.1367	-	-		
ATPPhBr	TEG	1:16	-	1.1425	1.1388	1.1350	1.1313	1.1275	1.1237	-	-		
ChCl	Phenol	1:2	-	1.0967	1.0930	1.0901	1.0873	1.0843	-	-	-		
ChCl	Phenol	1:3	-	1.0921	1.0890	1.0858	1.0829	1.0795	-	-	-		
ChCl	Phenol	1:4	-	1.0893	1.0860	1.0819	1.0803	1.0782	-	-	-		
ChCl	Phenol	1:5	-	1.0870	1.0838	1.0803	1.0761	1.0736	-	-	-		
ChCl	Phenol	1:6	-	1.0852	1.0818	1.0782	1.0745	1.0717	-	-	-		

ChCl	Gly	1:2	-	1.1558	1.1535	1.1506	1.1483	1.1454	1.1430	1.1402	1.1379		
ChCl	Gly	1:3	-	1.1920	1.1895	1.1867	1.1838	1.1814	1.1776	1.1761	1.1741		
ChCl	Gly	1:4	-	1.2030	1.2002	1.1976	1.1951	1.1922	1.1891	1.1868	1.1844		
ChCl	EG	1:2	-	1.1180	1.1156	1.1122	1.1097	1.1064	1.1037	1.1006	1.0968		
ChCl	EG	1:3	-	1.1174	1.1146	1.1117	1.1088	1.1059	1.1036	1.1001	1.0974		
ChCl	EG	1:4	-	1.1170	1.1141	1.1111	1.1082	1.1052	1.1023	1.0993	1.0962		
EAC	Gly	1:2	-	1.1731	1.1700	1.1671	1.1638	1.1613	1.1585	1.1554	1.1531		
EAC	Gly	1:3	-	1.2051	1.2020	1.1990	1.1961	1.1929	1.1884	1.1868	1.1840		
EAC	Gly	1:4	-	1.2201	1.2173	1.2141	1.2114	1.2081	1.2048	1.2021	1.1989	±0.0005	[92]
EAC	EG	1:2	-	1.0995	1.0965	1.0933	1.0903	1.0871	1.0840	1.0809	1.0778		
EAC	EG	1:3	-	1.1018	1.0986	1.0955	1.0926	1.0893	1.0862	1.0830	1.0797		
EAC	EG	1:4	-	1.1037	1.1004	1.0973	1.0942	1.0910	1.0877	1.0846	1.0815		
MTPPB	Gly	1:2	-	1.3064	1.3030	1.2990	1.2952	1.2920	1.2886	1.2851	1.2817		
MTPPB	Gly	1:3	-	1.2976	1.2945	1.2906	1.2870	1.2836	1.2809	1.2766	1.2736		
MTPPB	Gly	1:4	-	1.2889	1.2855	1.2817	1.2780	1.2745	1.2710	1.2673	1.2634		
MTPPB	EG	1:2	-	1.2501	1.2424	1.2432	1.2398	1.2363	1.2324	1.2293	1.2260		
MTPPB	EG	1:3	-	1.2326	1.2290	1.2256	1.2220	1.2185	1.2151	1.2114	1.2079		
MTPPB	EG	1:4	-	1.2195	1.2163	1.2124	1.2086	1.2052	1.2020	1.1980	1.1947		
TBAB	OcA	1:1.25	-	1.0057	1.0017	0.9993	0.9957	0.9931	0.9904	0.9867	0.9836		
TBAB	OcA	1:1.5	-	0.9985	0.9953	0.9926	0.9889	0.9864	0.9836	0.9799	0.9768		
TBAB	OcA	1:2	-	0.9830	0.9797	0.9764	0.9731	0.9698	0.9665	0.9632	0.9600		
TBAB	OcA	1:3	-	0.9661	0.9627	0.9592	0.9558	0.9524	0.9490	0.9456	0.9422		
TBAB	OcA	1:4	-	0.9575	0.9540	0.9505	0.9470	0.9435	0.9400	0.9366	0.9331		[101]
TBAB	HA	1:1.25	-	1.0212	1.0177	1.0148	1.0110	1.0084	1.0059	1.0023	0.9991		
TBAB	HA	1:1.5	-	1.0157	1.0119	1.0091	1.0054	1.0028	1.0000	0.9963	0.9931		
TBAB	HA	1:2	-	1.0016	0.9983	0.9949	0.9915	0.9882	0.9849	0.9815	0.9782		
TBAB	HA	1:3	-	0.9876	0.9841	0.9806	0.9772	0.9737	0.9702	0.9668	0.9634		
TBAB	HA	1:4	.	0.9784	0.9748	0.9712	0.9677	0.9641	0.9605	0.9570	0.9534		
TBAB	AzA	1:2	1.0680	1.0649	1.0618	1.0588	1.0557	1.0526	1.0495	1.0463	1.0431		
TBAB	Bea	1:2	1.1231	1.1202	1.117	1.1137	1.1105	1.1073	1.1041	1.1008	1.0975		[45]
TBAB	BoA	1:2	1.1042	1.1012	1.0981	1.0949	1.0918	1.0885	1.0851	1.0820	1.0789		
TEAB	CAA	1:1	1.3193	1.3153	1.3112	1.3072	1.3031	1.2991	1.2951	1.2911	1.2871		
TPAB	CAA	1:1	1.2270	1.2231	1.2193	1.2156	1.2118	1.2080	1.2043	1.2005	1.1968		
TBAB	CAA	1:1	1.1250	1.1212	1.1177	1.114	1.1108	1.1074	1.1040	1.1006	1.0973		[102]
TBAB	CAA	1:2	1.1670	1.1632	1.1594	1.1558	1.1521	1.1482	1.1447	1.1410	1.1373		
TBAHS	CAA	1:1	1.1135	1.1102	1.1068	1.1032	1.099	1.0967	1.0935	1.0903	1.0871		
TEAB	CAA	1:2	1.1500	1.1494	1.1458	1.1422	1.1386	1.1351	1.1316	1.1281	1.1247		
BTPC	Gly	1:12	-	-	1.2324	-	-	-	-	-	-		
MTPPB	MEA	1:6	-	-	1.1204	-	-	-	-	-	-	±0.001	[103]
MTPPB	MEA	1:7	-	-	1.1092	-	-	-	-	-	-		
MTPPB	MEA	1:8	-	-	1.0995	-	-	-	-	-	-		

TBAB	MEA	1:6	-	-	1.0322	-	-	-	-	-	-		
TBAB	DEA	1:6	-	-	1.0777	-	-	-	-	-	-		
TBAB	TEA	1:3	-	-	1.0912	-	-	-	-	-	-		
TBAB	Nonanol	1:4	0.8982	0.8949	0.8916	0.8883	0.8850	0.8817	0.8784	0.8751	0.8717		
TBAHS	Nonanol	1:4	0.8994	0.8963	0.8931	0.8899	0.8866	0.8834	0.8802	0.877	0.8737	-	104
TBAI	Nonanol	1:2	0.8569	0.8536	0.8501	0.8467	0.8433	0.8398	0.8364	0.8328	0.8293		
Ninhydrin	Nonanol	1:3	0.9457	0.9419	0.9380	0.9343	0.9304	0.9266	0.9209	0.9165	0.9098		
D-xylose	ChCl	1:1	1.26	1.257	1.254	1.251	1.248	1.246	1.243	1.24	1.238		
D-xylose	AeChCl	1:1	1.257	1.254	1.251	1.248	1.245	1.241	1.238	1.235	1.232		
D-xylose	BzChCl	1:1	1.227	1.224	1.221	1.218	1.215	1.212	1.209	1.207	1.204		
D-Ribose	ChCl	1:1	1.269	1.267	1.264	1.261	1.258	1.255	1.252	1.249	1.246		
D-Ribose	AeChCl	1:1	1.258	1.255	1.252	1.249	1.245	1.242	1.239	1.235	1.232		
D-Ribose	BzChCl	1:1	1.246	1.243	1.24	1.237	1.234	1.231	1.228	1.224	1.221		
D-Glucose	ChCl	1:1	1.275	1.273	1.27	1.267	1.265	1.262	1.259	1.256	1.254		
D-Glucose	AeChCl	1:1	1.266	1.263	1.26	1.257	1.253	1.25	1.247	1.244	1.241	±0.0005	97
D-Glucose	BzChCl	1:1	1.255	1.252	1.25	1.247	1.244	1.241	1.238	1.235	1.232		
D-Mannose	ChCl	1:1	1.281	1.278	1.275	1.272	1.27	1.267	1.264	1.262	1.259		
D-Mannose	AeChCl	1:1	1.275	1.272	1.269	1.266	1.262	1.259	1.256	1.253	1.25		
D-Mannose	BzChCl	1:1	1.262	1.26	1.257	1.255	1.252	1.249	1.246	1.243	1.24		
D-Fructose	ChCl	1:1	1.275	1.272	1.269	1.267	1.264	1.261	1.258	1.255	1.252		
D-Fructose	AeChC	1:1	1.266	1.263	1.26	1.257	1.254	1.25	1.247	1.244	1.24		
D-Fructose	BzChCl	1:1	1.242	1.239	1.236	1.233	1.23	1.227	1.224	1.22	1.217		
ChCl	Phenol	1:2	1.099	1.095	1.091	1.087	1.083	1.079	1.074	1.070	1.065		
ChCl	p-cresol	1:2	1.072	1.068	1.064	1.060	1.056	1.052	1.048	1.044	1.040	±0.00005	98
ChCl	p-chlorophenol	1:2	1.203	1.199	1.195	1.190	1.186	1.182	1.177	1.173	1.168		
TOPO	Phenol	1:2	0.935	0.933	0.927	-	0.923	-	0.912	-	0.905	-	99
TOPO	Phenol	1:1	0.910	-	0.904-	-	-	-	0.890	-	0.883		

Notes

All the abbreviations are defined in the manuscript.

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