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Supporting Information

Insights into the Properties and Potential Applications of Renewable Carbohydrate-Based Ionic Liquids—A Review

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Table S1. Thermal properties of carbohydrate ILs and salts. n.a. – not available, a – measured at 20 °C, b – measured in 70 °C, c – decomposition of 50% of the sample.

No.	Acronym	T_g [°C]	T_m [°C]	T_d [°C]	η [mPa s]	Ref.
1a	[EMIM][Glucuronate]	n.a.	Liquid	<200	n.a.	[1]
1b	[$N_{4\,4\,4\,4}$][Glucuronate]	-20.5	80-100	136	n.a.	[2]
1c	[$N_{4\,4\,4\,4}$][Galacturonate]	18.3	n.a.	n.a.	n.a.	[2]
2a	[$N_{4\,4\,4\,4}$][Gluconate]	0.4	120.0	161.8	n.a.	[3]
2b	[$P_{4\,4\,4\,4}$][Gluconate]	-21.8	80.2	155.0	n.a.	[3]
2c	[$P_{6\,6\,6\,14}$][Gluconate]	34.0	n.a.	161.8	n.a.	[3]
2d	[tmgH][Gluconate]	-24.1	n.a.	103.1	55870[a]	[3]
2e	[EMIM][Gluconate]	n.a.	Liquid	>250	n.a.	[4]
3a	[GlcO$(CH_2)_2N_{1\,1\,1}$][Arg]	-15	-	107	247626[b]	[5]
3b	[GlcO$(CH_2)_2N_{1\,1\,1}$][Gly]	-19	-	198	10196[b]	[5]
3c	[GlcO$(CH_2)_2N_{1\,1\,1}$][Ser]	-18	-	198	28645[b]	[5]
3d	[GlcO$(CH_2)_2N_{1\,1\,1}$][Hist]	-9	-	207	106930[b]	[5]
3e	[GlcO$(CH_2)_2N_{1\,1\,1}$][Leu]	4	28	208	359841[b]	[5]
3f	[GlcO$(CH_2)_2N_{1\,1\,1}$][Trp]	0	-	211	408284[b]	[5]
3g	[GlcO$(CH_2)_2N_{1\,1\,1}$][Tyr]	6	-	209	1476023[b]	[5]
3h	[GlcO$(CH_2)_2N_{1\,1\,1}$][NTf_2]	-30	n.a.	454.0[c]	n.a.	[6]
3i	[GlcO$(CH_2)_3N_{1\,1\,1}$][NTf_2]	-20	n.a.	456.0[c]	n.a.	[6]
3j	[GlcOCH_2CH(OH)$CH_2N_{1\,1\,1}$][NTf_2]	-14	n.a.	460.0[c]	n.a.	[6]
4a	[GlcO$(CH_2)_2N_{1\,1\,1}$][Br]	n.a.	n.a.	n.a.	n.a.	[7]
4b	[GlcO$(CH_2)_2N_{1\,1\,12}$][Br]	n.a.	90-93	n.a.	n.a.	[8]
4c	[GlcO$(CH_2)_2N_{1\,1\,16}$][Br]	n.a.	53-55	n.a.	n.a.	[8]
4d	[GlcO$(CH_2)_2N_{1\,1\,1}$][MCPA]	12	Wax	235	n.a.	[9]
4e	[GlcO$(CH_2)_2N_{1\,1\,4}$][MCPA]	20	Liquid	285	n.a.	[9]
4f	[GlcO$(CH_2)_2N_{1\,1\,8}$][MCPA]	10	Wax	259	n.a.	[9]
4g	[GlcO$(CH_2)_2N_{1\,1\,12}$][MCPA]	13	Liquid	327	n.a.	[9]
4h	[GlcO$(CH_2)_2N_{1\,1\,16}$][MCPA]	8	Wax	287	n.a.	[9]
4i	[GlcO$(CH_2)_2N_{1\,1\,1}$][2,4-D]	21	121	251	n.a.	[9]
4j	[GlcO$(CH_2)_2N_{1\,1\,4}$][2,4-D]	n.a.	134	247	n.a.	[9]
4k	[GlcO$(CH_2)_2N_{1\,1\,8}$][2,4-D]	22	Wax	279	n.a.	[9]
4l	[GlcO$(CH_2)_2N_{1\,1\,12}$][2,4-D]	12	Wax	340	n.a.	[9]
4m	[GlcO$(CH_2)_2N_{1\,1\,16}$][2,4-D]	15	Wax	296	n.a.	[9]
5a	[$Im_{3GA\,4}$][I]	-3.7	n.a.	197.3	5569[a]	[3]
5b	[$N_{1\,1\,2GA\,8}$][NTf_2]	-15.9	n.a.	191.1	17420[a]	[3]
5c	[$N_{1\,1\,2GA\,8}$][Br]	-16.6	n.a.	168.4	34880[a]	[3]
5d	[$N_{1\,1\,3GA\,8}$][NTf_2]	-16.2	n.a.	188.5	29030[a]	[3]
5e	[$N_{1\,1\,3GA\,8}$][Br]	-0.1	n.a.	195.1	18120[a]	[3]
5f	[$N_{1\,1\,2GA\,4}$][I]	-7.9	n.a.	210.3	41700[a]	[3]
5g	[$N_{1\,1\,2GA\,4}$][Br]	-46.6	n.a.	127.8	106.3[a]	[3]
5h	[$N_{1\,1\,3GA\,4}$][I]	-19.4	n.a.	197.7	31190[a]	[3]
5i	[$N_{1\,1\,2GA\,8L}$][Br]	-55.5	n.a.	200.6	21980[a]	[3]
5j	[$N_{1\,1\,3GA\,8L}$][Br]	-36.1	n.a.	200.6	n.a.	[3]
6a	[redRibMePyr][OTf]	-18	48-51	345	n.a.	[10]
6b	[redRibOHPyr][OTf]	-30	Liquid	297	n.a.	[10]
6c	[redRibPrPyr][OTf]	-27	Liquid	235	n.a.	[10]
6d	[redRibEtPyr][OTf]	-26	Liquid	316	n.a.	[10]
6e	[redRibIsoPyr][OMs]	n.a.	92-94	296	n.a.	[10]
6f	[redLyxMePyr][OTf]	-41	Liquid	325	n.a.	[10]
6g	[redXylMePyr][OTf]	-28	Liquid	345	n.a.	[10]

6h	[redAraMePyr][OTf]	-38	Liquid	340	n.a.	[10]
7a	[αMeGluMePyr][OTf]	n.a.	95-100	242	n.a.	[10]
7b	[βMeGluMePyr][OTf]	n.a.	Liquid	225	n.a.	[10]
7c	[βMeGluMePyr][OMs]	n.a.	60-63	250	n.a.	[10]
7d	[βMeGluMePyr][OTs]	n.a.	135-138	242	n.a.	[10]
7e	[βAllGluMePyr][OTf]	n.a.	66-70	205	n.a.	[10]
7f	[βPhGluMePyr][OTf]	n.a.	164-168	225	n.a.	[10]
7g	[βMeGluEtPyr][OTf]	n.a.	118-120	215	n.a.	[10]
8a	[$N_{1\,1\,1GLU}$][Br]	n.a.	n.a.	277[c]	n.a.	[1]
8b	[$N_{1\,1\,1GLU}$][$N(CN)_2$]	n.a.	124	281[c]	n.a.	[1]
8c	[$N_{1\,1\,1GLU}$][NTf_2]	n.a.	Liquid	429[c]	n.a.	[1]
9a	[GalDABCO][OTf]	n.a.	n.a.	178-182	n.a.	[11]
9b	[GalDABCO][I]	n.a.	n.a.	189-192	n.a.	[11]
9c	[GalDABCO][$BrCH_2CH_2SO_3$]	n.a.	n.a.	198-200	n.a.	[11]
9d	[GalDABCO][SbF_6]	n.a.	n.a.	202-206	n.a.	[11]
9e	[GalDABCO][BF_4]	n.a.	n.a.	222-224	n.a.	[11]
9f	[GalDABCO][PF_6]	n.a.	n.a.	249-252	n.a.	[11]
10a	[RibMIM][NTf_2]	n.a.	Liquid	n.a.	n.a.	[12]
10b	[RibMIM][OTs]	n.a.	Liquid	n.a.	n.a.	[12]
10c	[RibMIM][BF_4]	n.a.	Liquid	n.a.	n.a.	[12]
10d	[RibMIM][PF_6]	n.a.	96-98	n.a.	n.a.	[12]
10e	[RibMIM][I]	n.a.	124-126	n.a.	n.a.	[12]
10f	[RibMIM][Br]	n.a.	157-160	n.a.	n.a.	[12]
11a	[GalMIM][NTf_2]	n.a.	83-85	n.a.	n.a.	[12]
11b	[GalMIM][OTf]	n.a.	121-123	n.a.	n.a.	[12]
11c	[GalMIM]][PF_6]	n.a.	159-161	n.a.	n.a.	[12]
11d	[GalMIM]][BF_4]	n.a.	177-179	n.a.	n.a.	[12]
11e	[GalMIM][I]	n.a.	196-198	n.a.	n.a.	[13]
12a	[GluNEt3][OTf]	n.a.	137.5	300.0	n.a.	[14]
12b	[GluSEt2][OTf]	-53	n.a.	210.0	n.a.	[14]
12c	[GluTHT][OTf]	n.a.	110.0	250.0	n.a.	[14]
13a	[GluDABCOC_4][Br][OTs]	n.a.	102-107	n.a.	n.a.	[15]
13b	[GluDABCOC_8][Br][OTs]	n.a.	164-166	n.a.	n.a.	[15]
13c	[GluDABCOC_{14}][Br][OTs]	n.a.	129-130	n.a.	n.a.	[15]
13d	[GluDABCOC_{18}][Br][OTs]	n.a.	174-176	n.a.	n.a.	[15]
14a	[BnOIsoS$N_{1\,1\,8}$][NTf_2]	-49	n.a.	180	n.a.	[16]
14b	[BnOIsoS$N_{1\,1\,12}$][NTf_2]	-47	n.a.	180	n.a.	[16]
14c	[BnOIsoS$N_{1\,1\,Bn}$][NTf_2]	-29	n.a.	200	n.a.	[16]
14d	[HOIsoS$N_{1\,1\,8}$][NTf_2]	-35	n.a.	198	n.a.	[16]
14e	[BnOIsoS$N_{1\,1\,8}$][OTf]	-33	40	195	n.a.	[16]
14f	[BnOIsoS$N_{1\,1\,12}$][OTf]	-51	45	192	n.a.	[16]
14g	[BnOIsoS$N_{1\,1\,Bn}$][OTf]	-15	125	210	n.a.	[16]
14h	[HOIsoS$N_{1\,1\,8}$][OTf]	-15	42	204	n.a.	[16]
15a	[$N_{1\,1\,1}$IsoM$N_{1\,1\,Bn}$][NTf_2]$_2$	n.a.	60	n.a.	n.a.	[17]
15b	[$N_{1\,1\,1}$IsoM$N_{1\,1\,Bn}$][TFA]$_2$	n.a.	65	n.a.	n.a.	[17]
15c	[$N_{1\,1\,1}$IsoM$N_{1\,1\,Bn}$][OTf]$_2$	n.a.	75	n.a.	n.a.	[17]
15d	[$N_{1\,1\,1}$IsoM$N_{1\,1\,Bn}$][I]$_2$	n.a.	190	n.a.	n.a.	[17]
15e	[$N_{1\,1\,1}$IsoM$N_{1\,1\,Bn}$][BF_4]$_2$	n.a.	240	n.a.	n.a.	[17]
15f	[$N_{1\,1\,1}$IsoM$N_{1\,1\,Bn}$][PF_6]$_2$	n.a.	251	n.a.	n.a.	[17]
16a	[EtOIsoM$N_{1\,1\,Bn}$][NTf_2]	n.a.	Liquid	n.a.	n.a.	[18]
16b	[EtOIsoM$N_{1\,1\,Bn}$][TFA]	n.a.	Liquid	n.a.	n.a.	[18]

16c	[EtOIsoMN$_{1\,1\,Bn}$][OTf]	n.a.	80	n.a.	n.a.	[18]
16d	[EtOIsoMN$_{1\,1\,Bn}$][PF$_6$]	n.a.	95	n.a.	n.a.	[18]
16e	[EtOIsoMN$_{1\,1\,Bn}$][BF$_4$]	n.a.	150	n.a.	n.a.	[18]
16f	[EtOIsoMN$_{1\,1\,Bn}$][I]	n.a.	170	n.a.	n.a.	[18]
17a	[BimIsoMBim][OTs]$_2$	n.a.	150-152	n.a.	n.a.	[19]
17b	[MimIsoMMim][OTs]$_2$	n.a.	Liquid	n.a.	n.a.	[19]
18a	[DABCOC$_3$MannDABCOC$_3$][Br]$_2$[OTs]$_2$	n.a.	100-108	n.a.	n.a.	[15]
18b	[DABCOC$_4$MannDABCOC$_4$][Br]$_2$[OTs]$_2$	n.a.	109-112	n.a.	n.a.	[15]
18c	[DABCOC$_{14}$MannDABCOC$_{14}$][Br]$_2$[OTs]$_2$	n.a.	135-142	n.a.	n.a.	[15]
18d	[DABCOC$_{12}$MannDABCOC$_{12}$][Br]$_2$[OTs]$_2$	n.a.	158-168	n.a.	n.a.	[15]
18e	[DABCOC$_{18}$MannDABCOC$_{18}$][Br]$_2$[OTs]$_2$	n.a.	224-230	n.a.	n.a.	[15]

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