

## ***Antimicrobial and cytotoxic activity of novel imidazolium-based ionic liquids***

Łukasz Pałkowski, Maciej Karolak, Andrzej Skrzypczak, Marta Wojcieszak, Filip Walkiewicz, Jonasz Podemski, Karol Jarocho, Barbara Bojko, Katarzyna Materna, Jerzy Krysiński

### **Supplementary material**

#### **Section S1.1. FTIR ATR spectra**

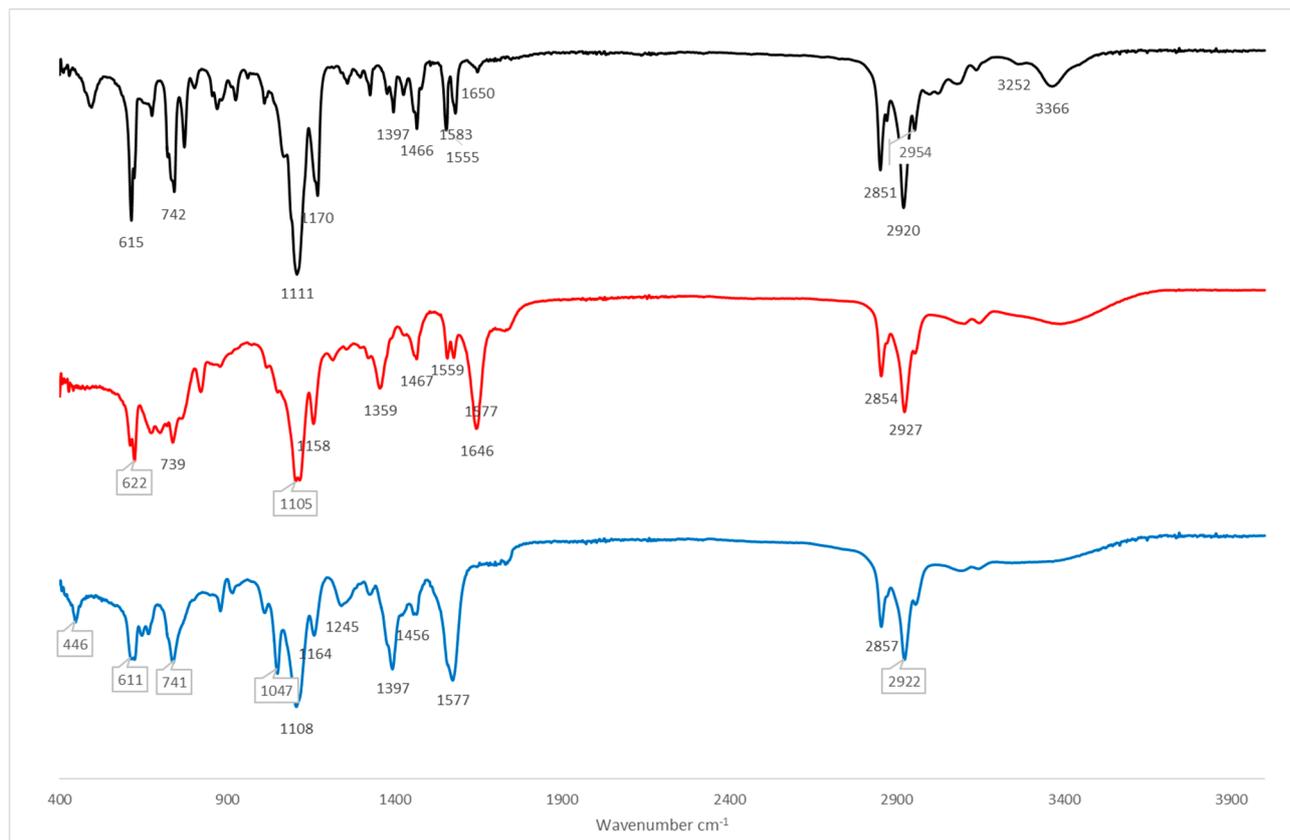


Figure S1. FTIR ATR spectra for CL-4 (black) MR-5 (red) and PR-6 (blue),

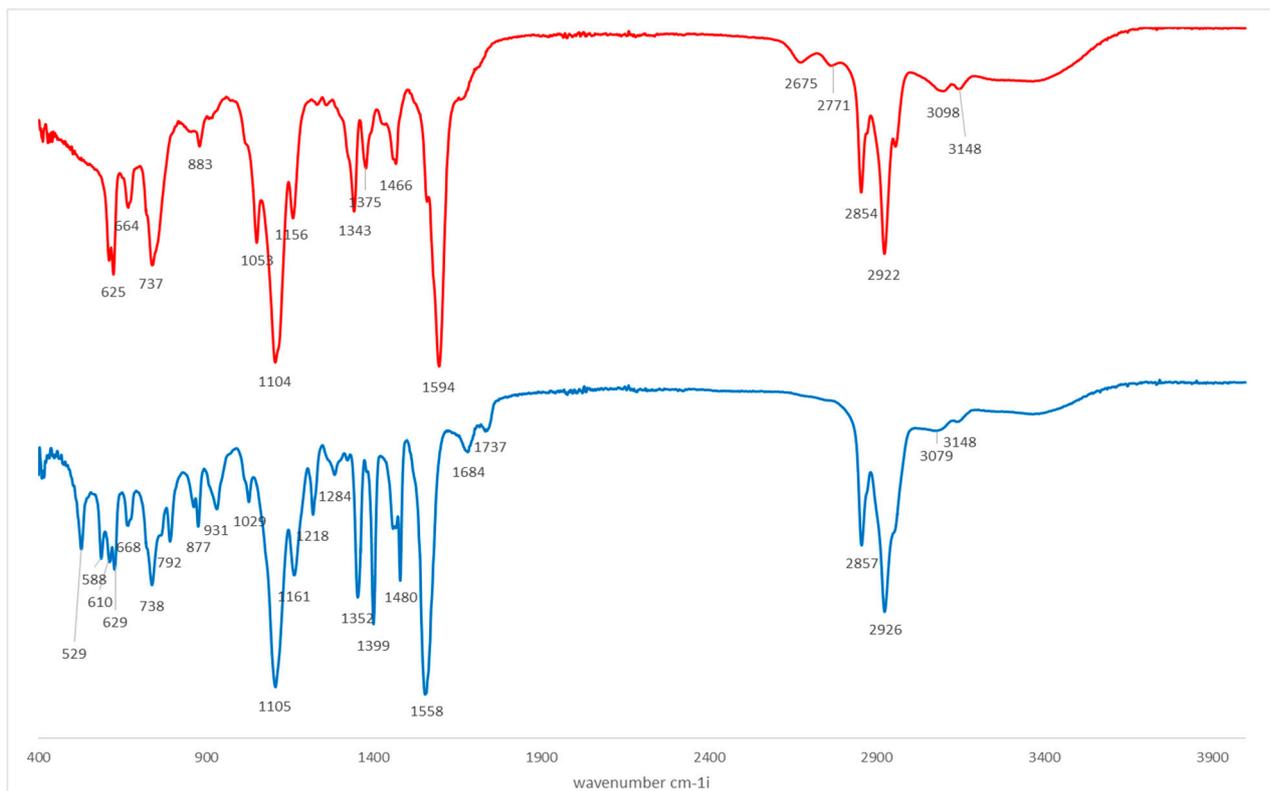


Figure S2. FTIR ATR spectra for TR-10 (red) compared with dichloroacetate (blue),

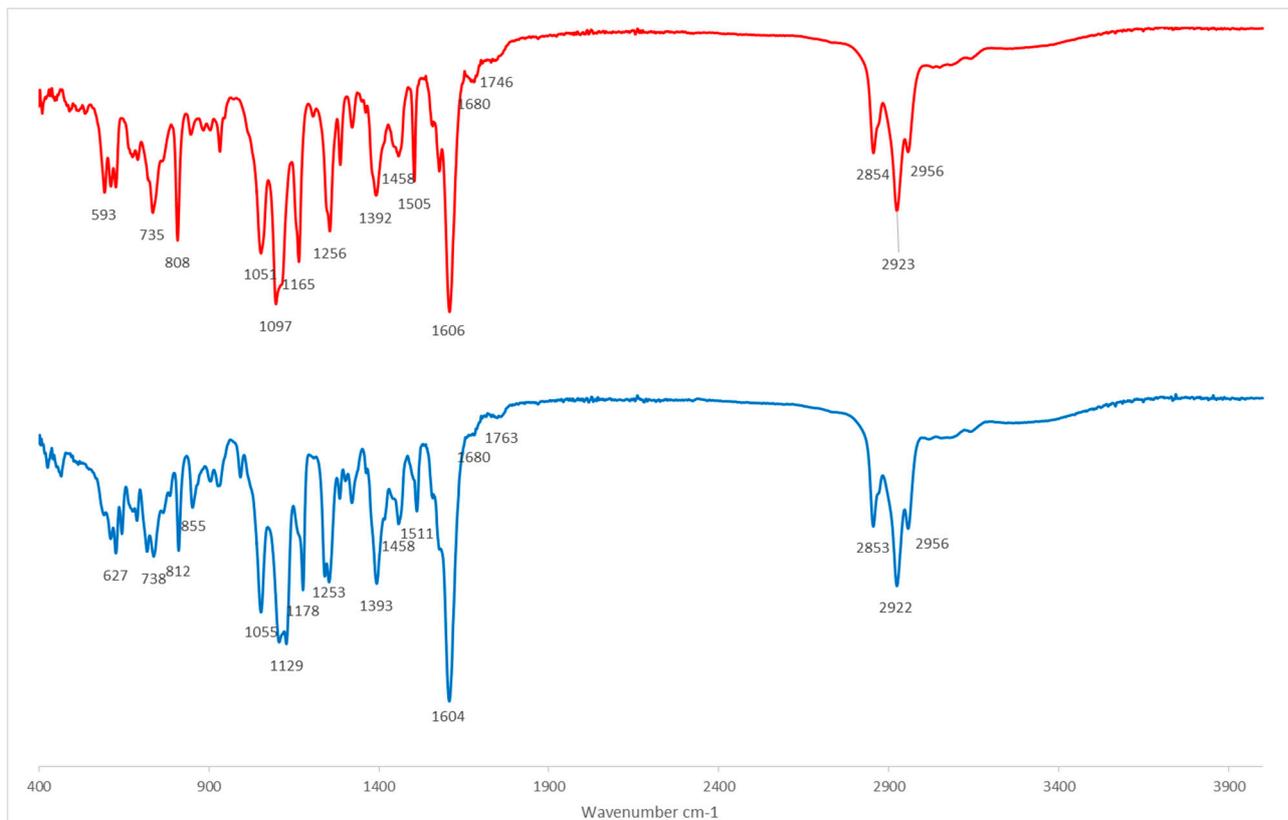


Figure S3. FTIR ATR spectra for TY-7 (red) and OR-3 (blue),

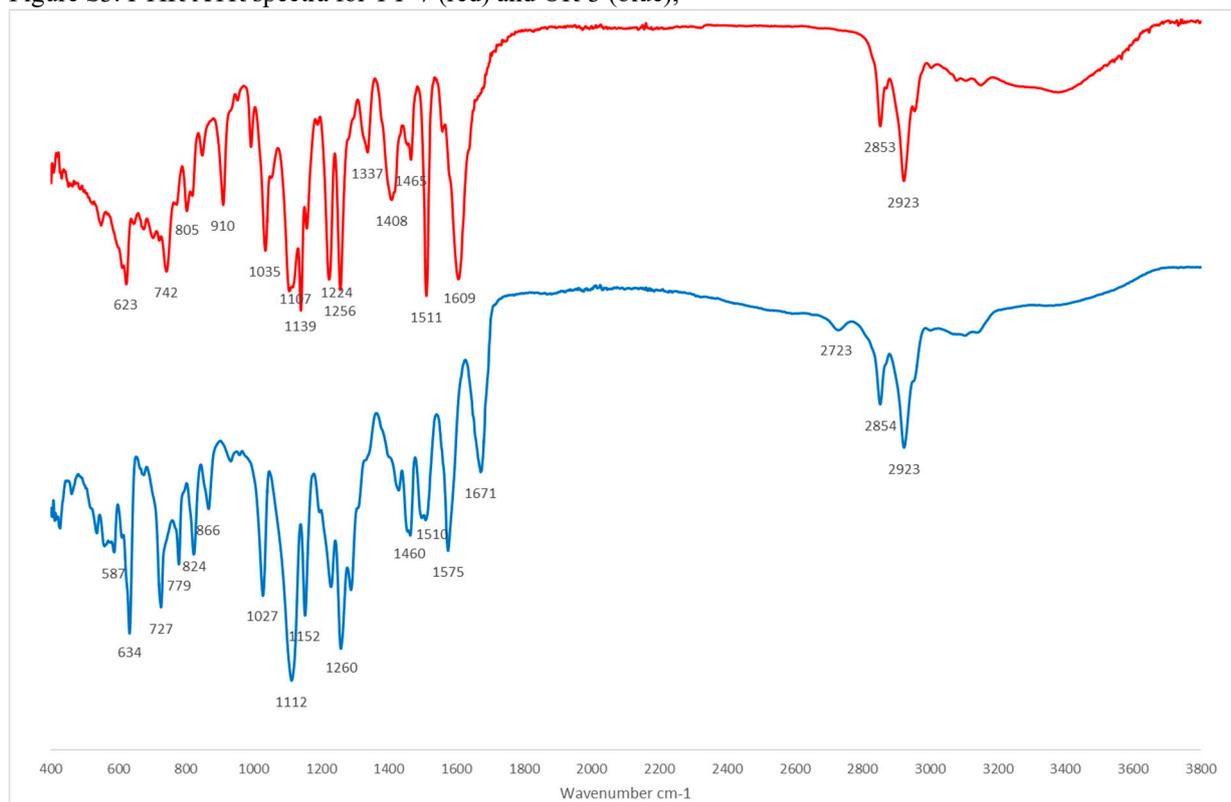


Figure S4. FTIR ATR spectra for EV-9 (red) and VA-8 (blue),

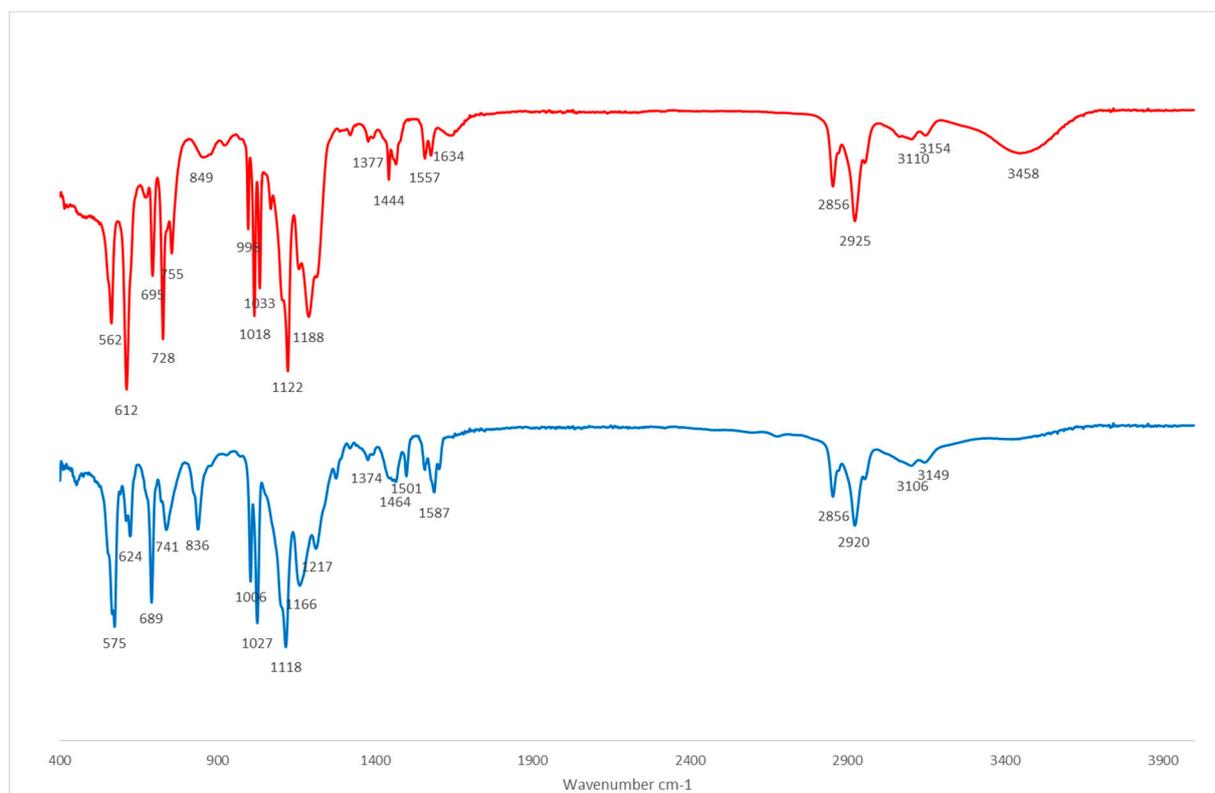


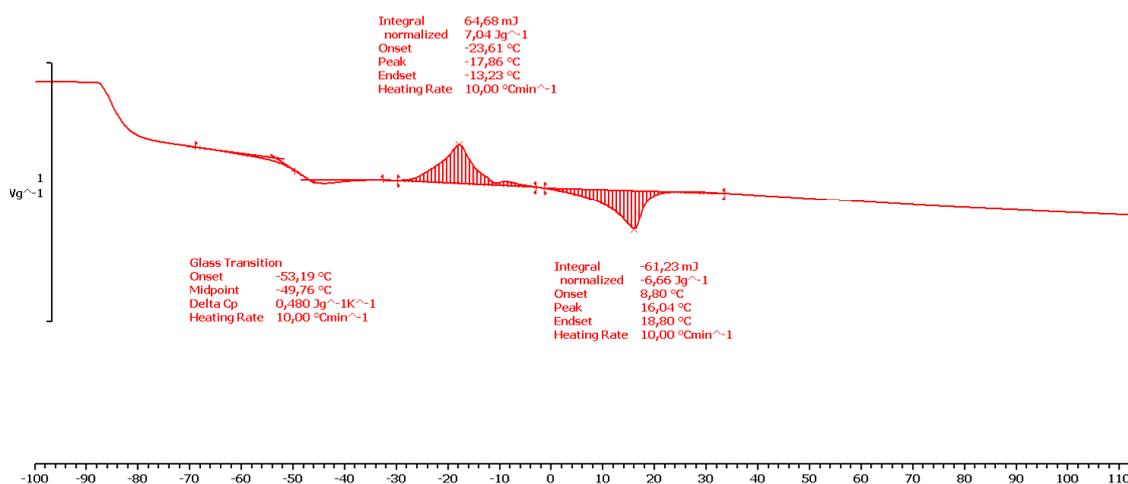
Figure S5. FTIR ATR spectra for FE-1 (red) and BE-2 (blue),

## Section S1.2. DSC data

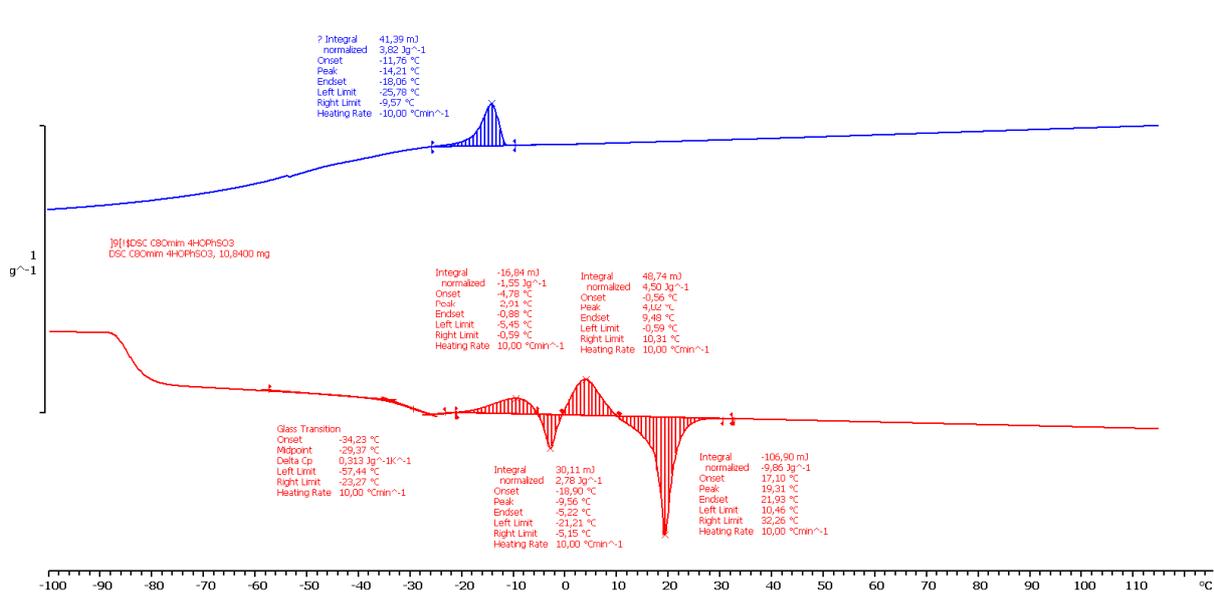
**Table S1.** DSC data for obtained ionic liquids

compound	T <sub>g</sub> [°C] <sup>a</sup>	T <sub>c</sub> [°C] <sup>b</sup>	T <sub>m</sub> [°C] <sup>c</sup>
FE-1	-49.76	-23.61	8.8
BE-2	-29.37	-4.78	-18.90
OR-3	-69.24	-50.39	-43.05
CL-4	-	-2.02	16.62
MR-5	-54.54	-18.75	-24.98
PR-6	-	-52.23	-37.01
TY-7	-68.73	-	-
VA-8	-36.92	-	-
EV-9	-59.45	-49.36	-37.26
TR-10	-	-68.65	-61.58

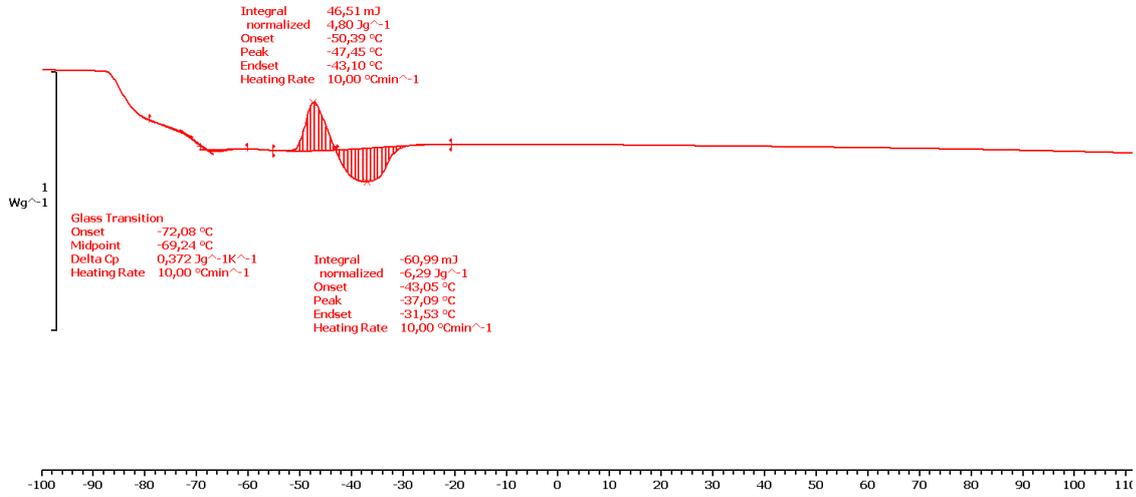
T<sub>m</sub> – melting point; T<sub>c</sub> – temperature of crystallization; T<sub>g</sub> – glass transition temperature



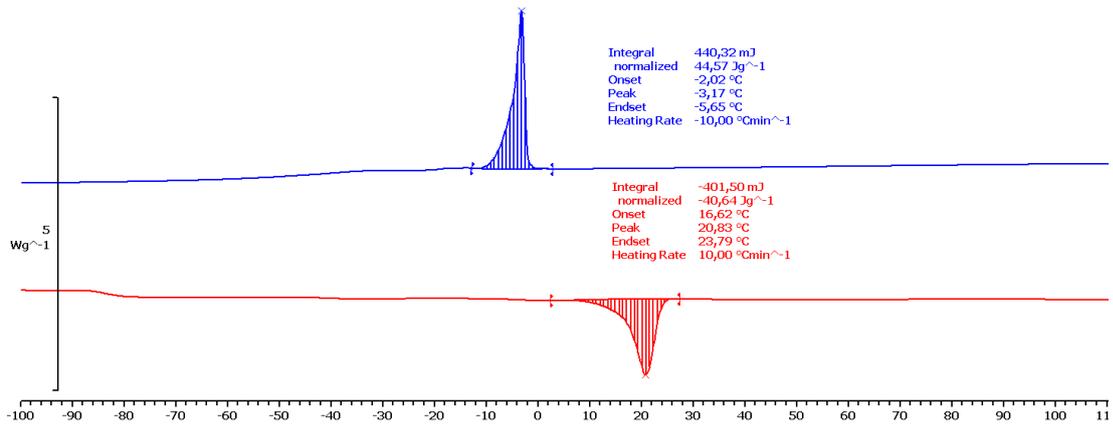
DSC curve for FE-1



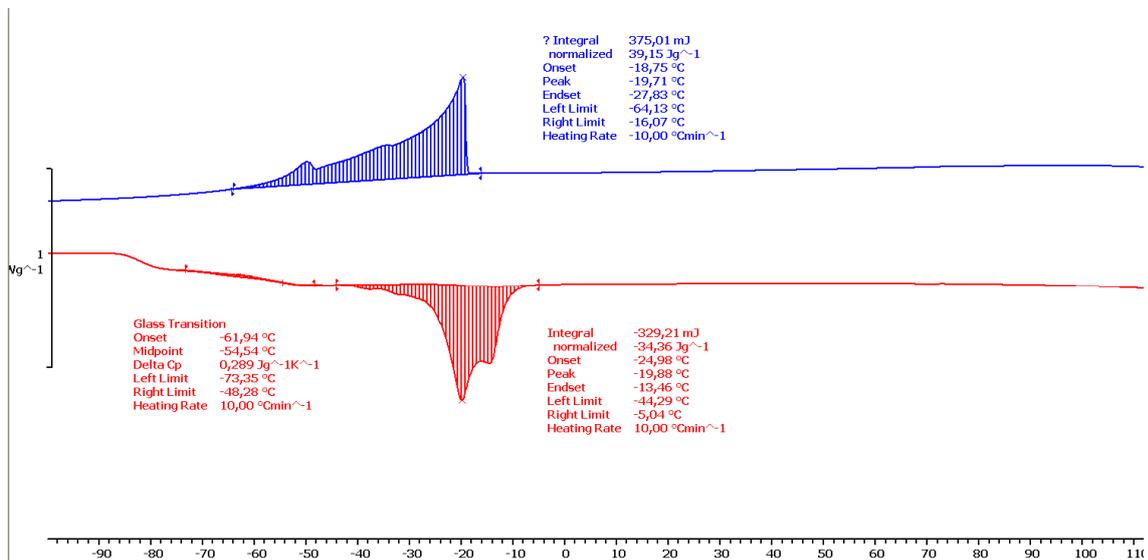
DSC curve for BE-2



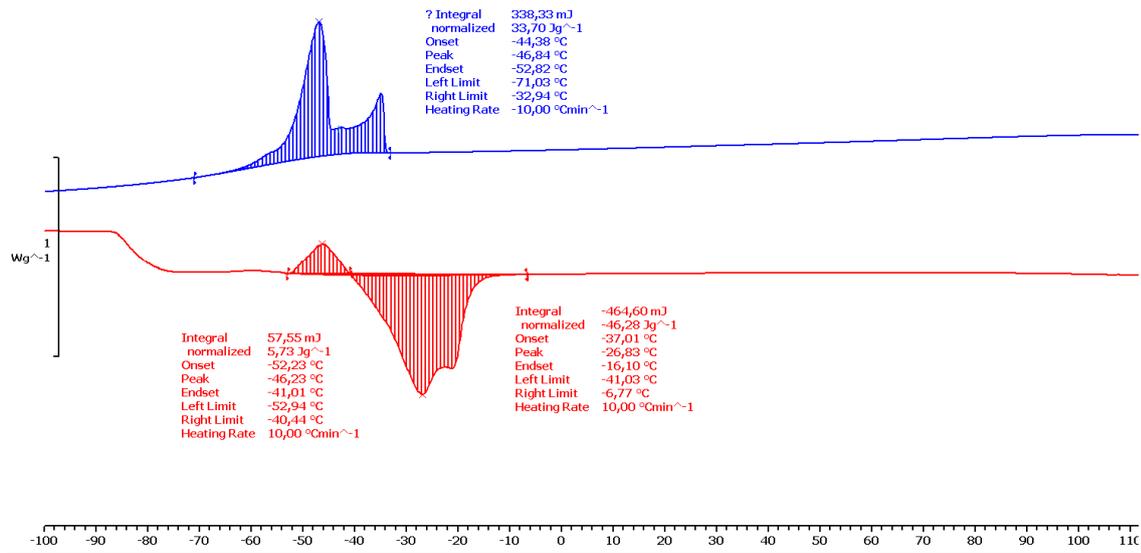
DSC curve for OR-3



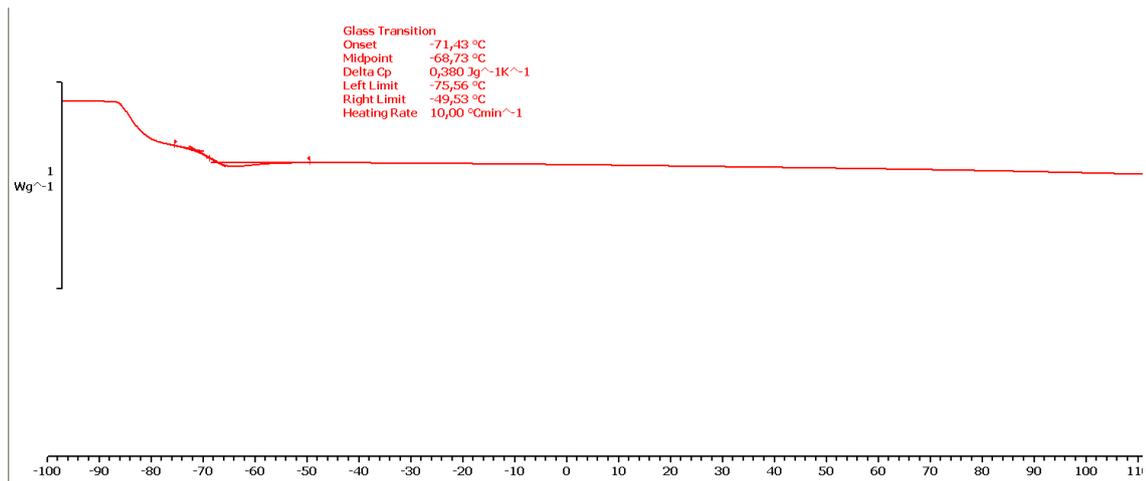
DSC curve for CL-4



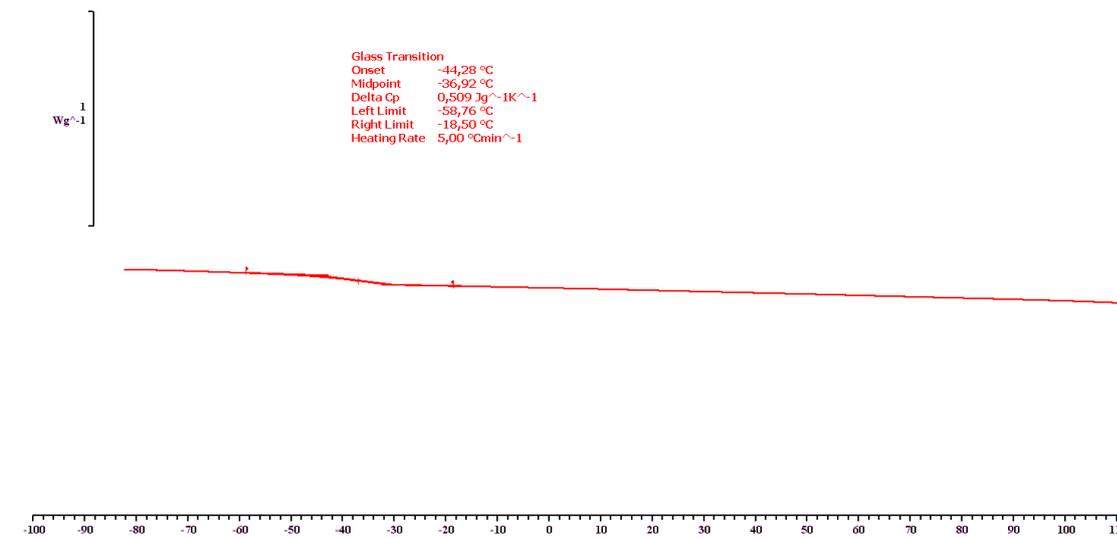
DSC curve for MR-5



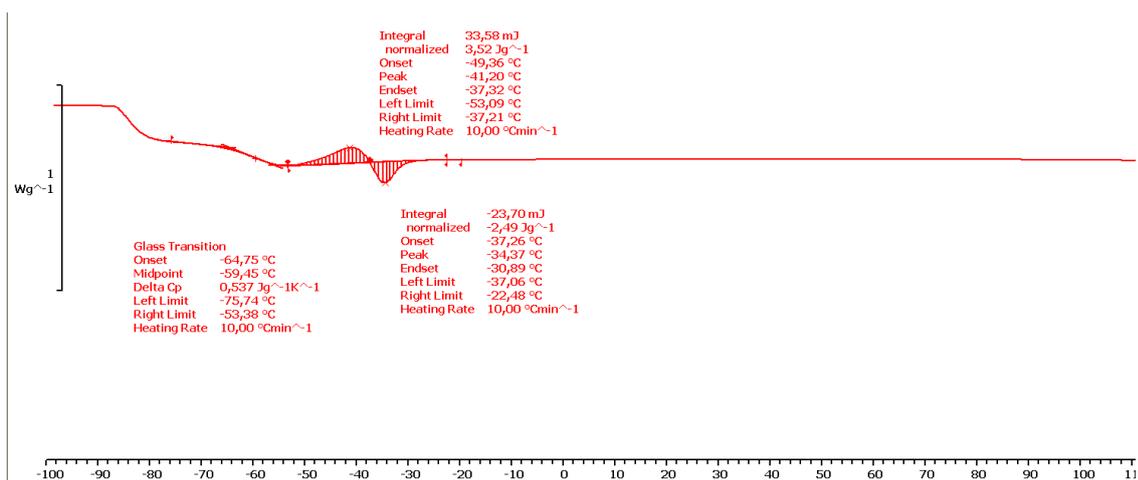
DSC curve for PR-6



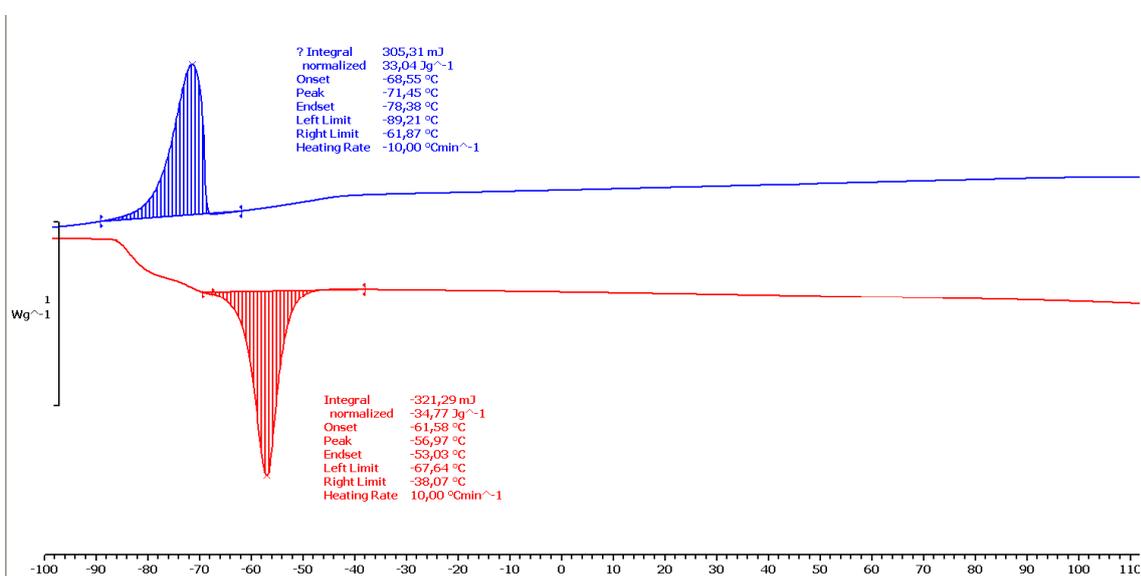
DSC curve for TY-7



DSC curve for VA-8



DSC curve for EV-9



DSC curve for TR-10

### Section S1.3. Thermal stability and TGA curves

Table S2. Thermal stability for obtained ionic liquids

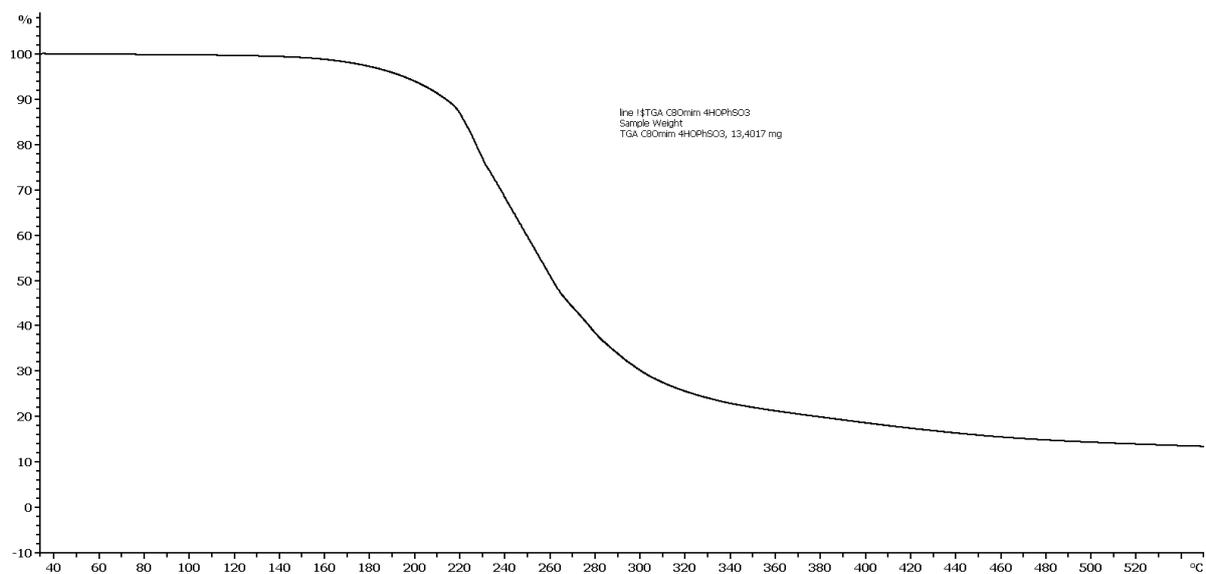
compound	T <sub>i</sub> [°C]	T <sub>0.01</sub> [°C]	T <sub>0.02</sub> [°C]	T <sub>0.05</sub> [°C]
FE-1	138.65	159.92	170.90	192.18
BE-2	135.62	163.71	176.93	196.93
OR-3	115.98	130.23	139.40	156.37
CL-4	117.60	147.81	159.69	177.68
MR-5	97.48	107.77	116.00	129.73
PR-6	85.81	97.92	106.05	120.46
TY-7	114.24	133.92	144.79	162.77
VA-8	112.85	135.25	144.08	157.66
EV-9	118.62	135.59	145.78	163.09
TR-10	102.67	114.21	122.36	134.91

T<sub>i</sub> initial decomposition -temperature at which dm/dt obtained value 10<sup>-4</sup> mg/s

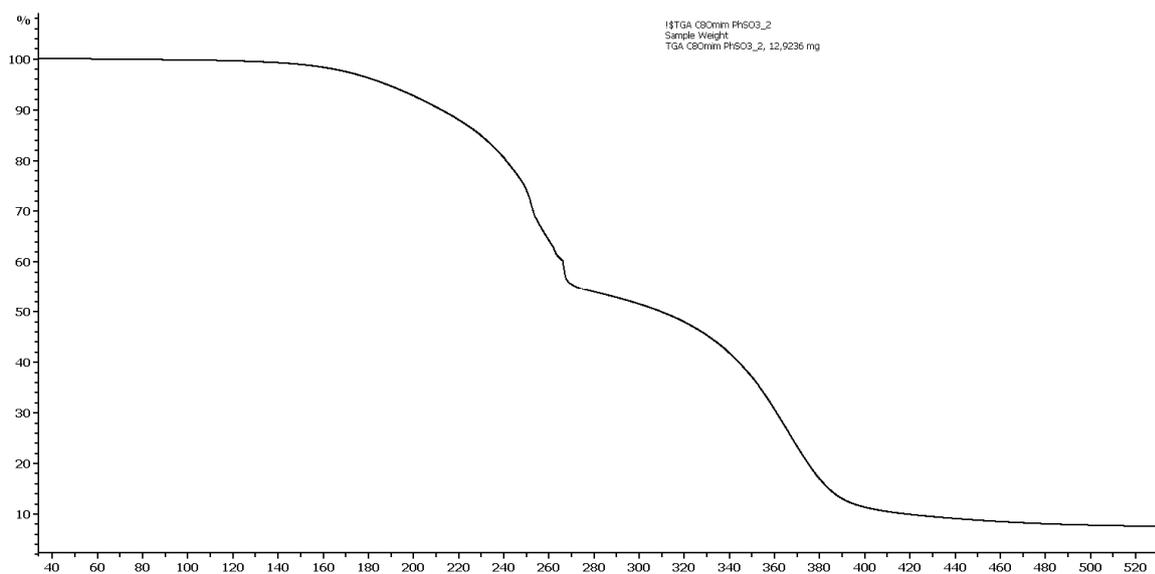
T<sub>0.01</sub> – decomposition temperature of 1% sample;

T<sub>0.02</sub> – decomposition temperature of 50% sample

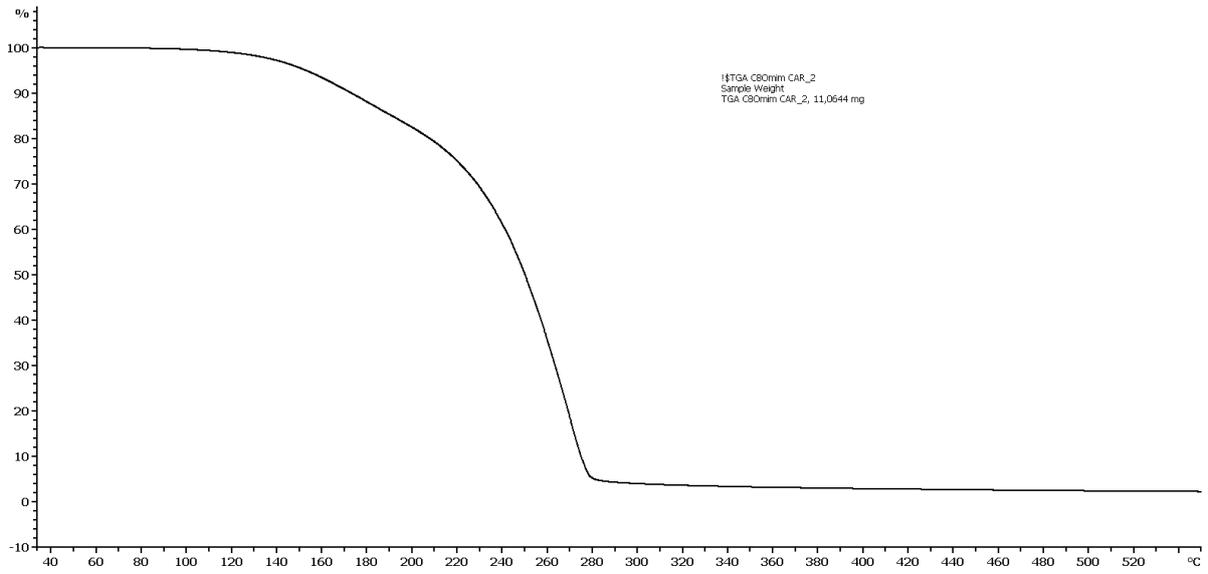
T<sub>0.05</sub> – decomposition temperature of 50% sample



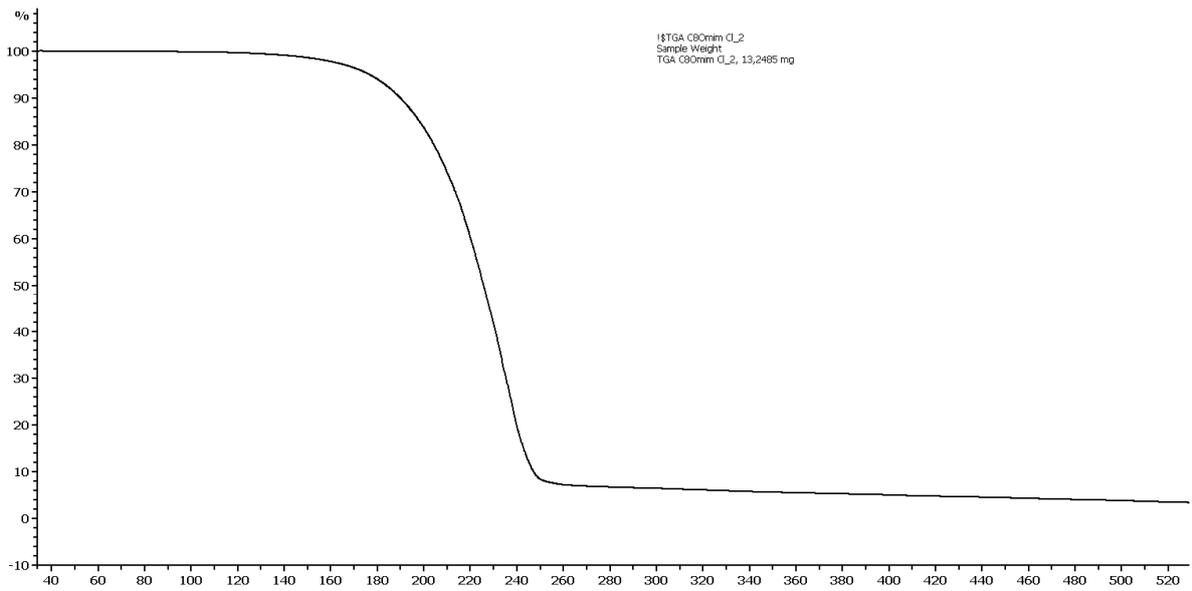
TGA curve for compound FE-1



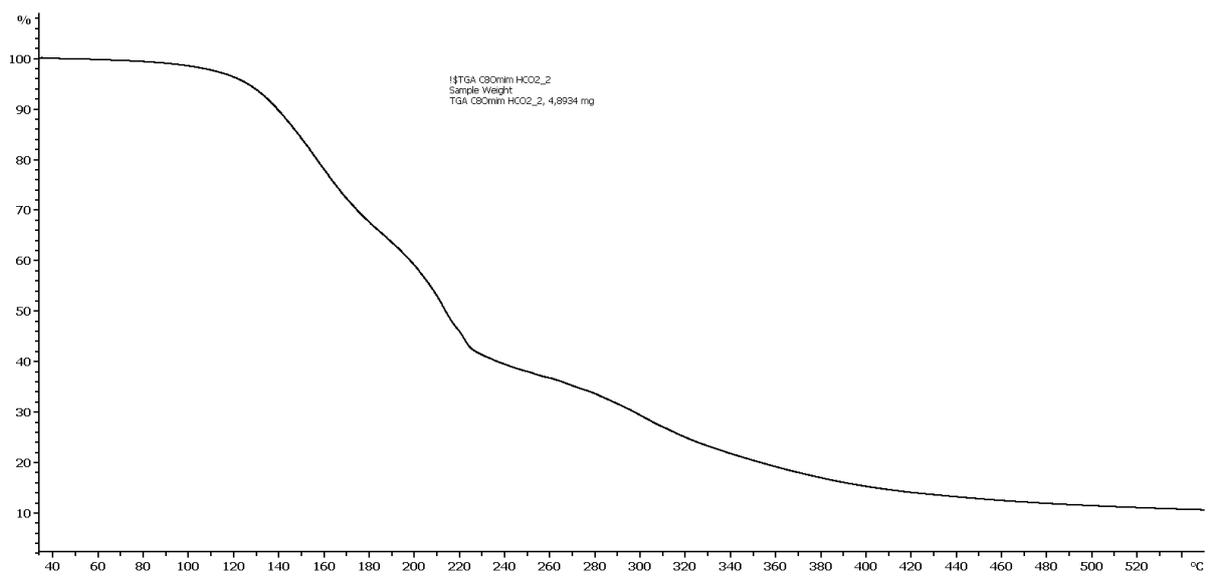
TGA curve for compound BE-2



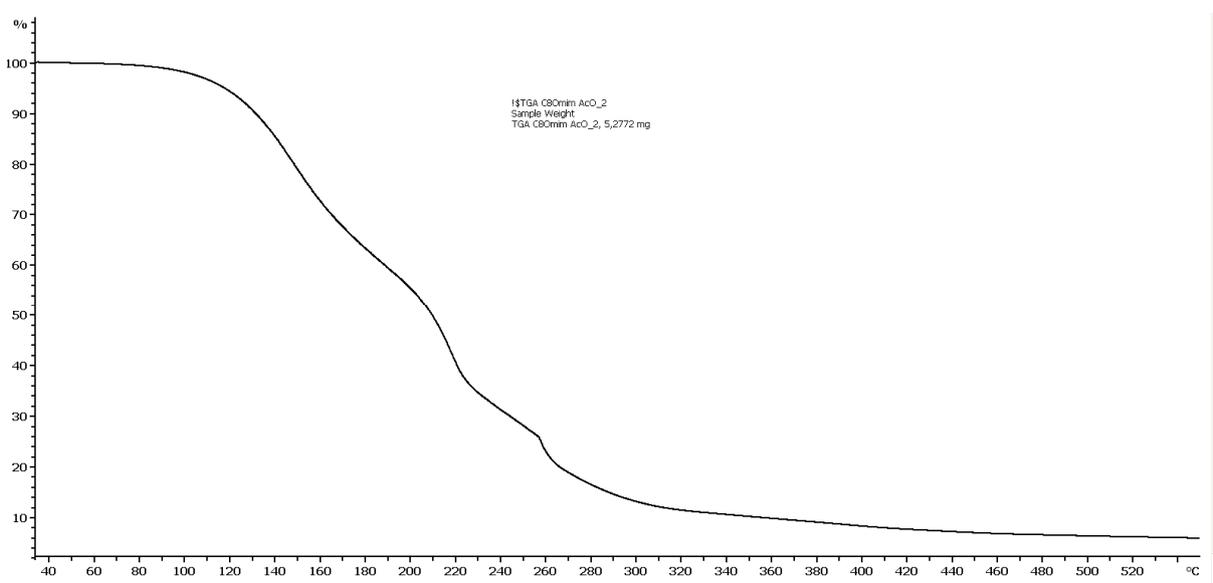
TGA curve for compound OR-3



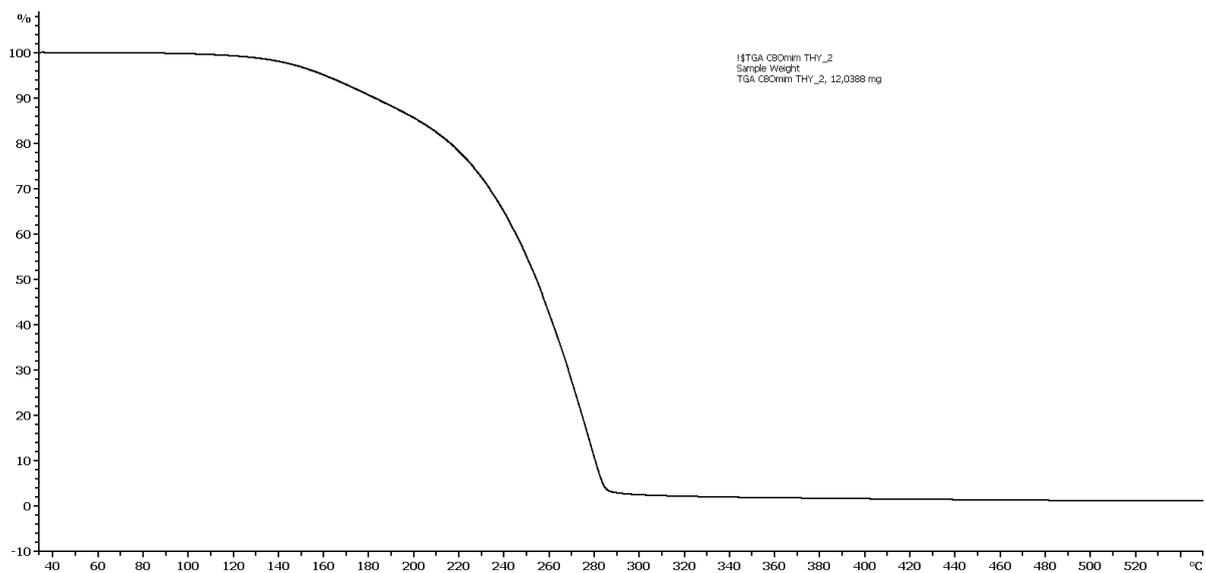
TGA curve for compound CL-4



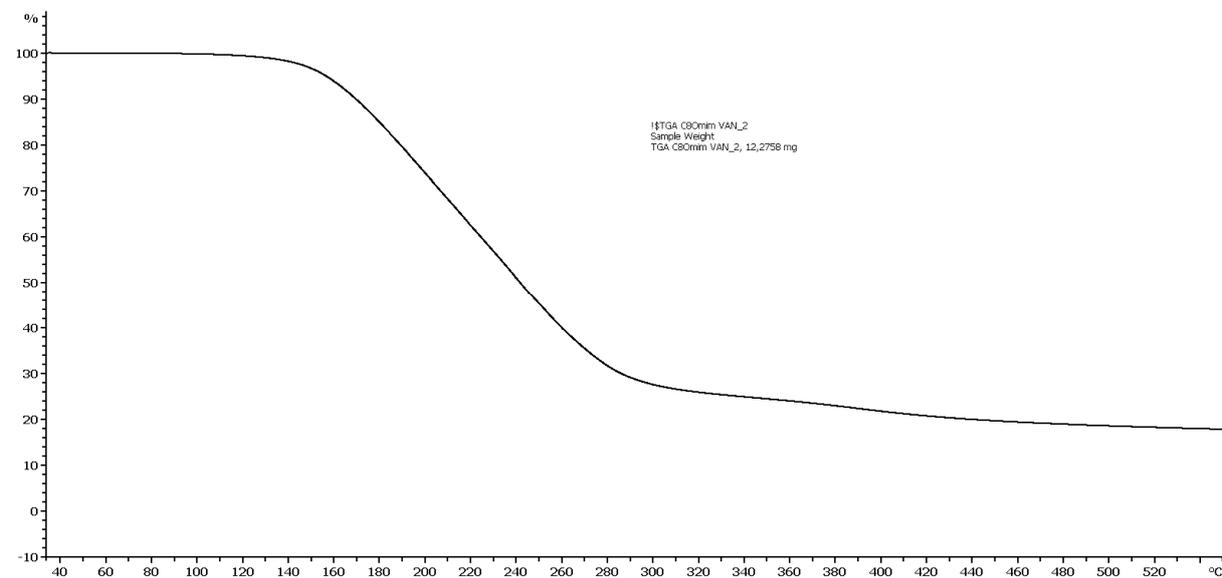
TGA curve for compound MR-5



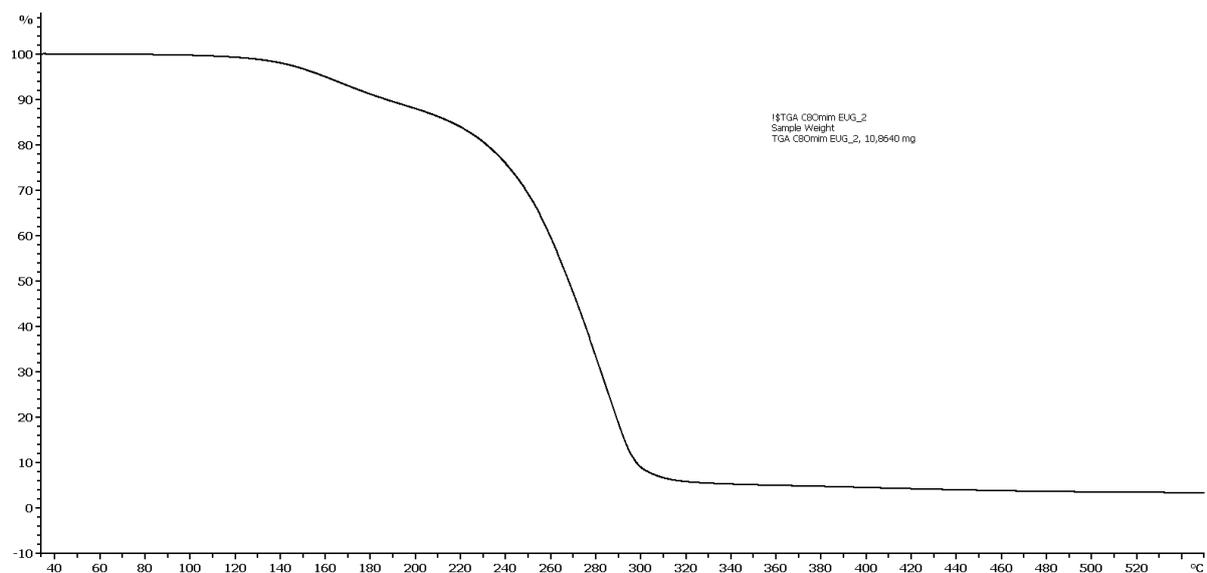
TGA curve for compound PR-6



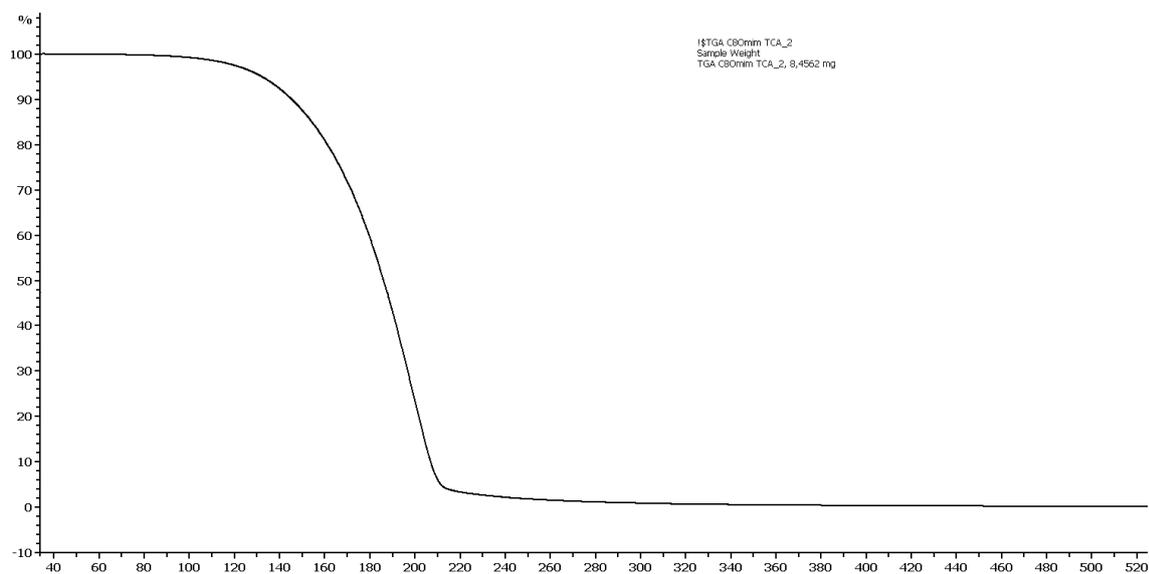
TGA curve for compound TY-7



TGA curve for compound VA-8



TGA curve for compound EV-9



TGA curve for compound TR-10

### Section S1.4. Elementary analysis

**Table S3.** Elementary analysis for obtained ionic liquids

Compound	Formula	calculated	obtained
FE-1	$C_{19}H_{30}N_2O_4S$	C(59.66%) H(7.91%) N(7.32%) O(16.73%) S(8.38%)	C(59.18%) H(7.42%) N(6.85%) O(16.21%) S(7.91%)
BE-2	$C_{19}H_{30}N_2O_5S$	C(57.26%) H(7.59%) N(7.03%) O(20.07%)	C(57.69%) H(7.96%) N(7.44%) O(20.45%)

		S(8.05%)	S(8.52%)
OR-3	$C_{25}H_{40}N_2O_4$	C(69.41%) H(9.32%) N(6.48%) O(14.79%)	C(69.01%) H(8.92%) N(6.09%) O(14.38%)
CL-4	$C_{13}H_{25}ClN_2O$	C(59.87%) H(9.66%) Cl(13.59%) N(10.74%) O(6.13%)	C(59.25%) H(9.13%) Cl(13.02%) N(10.20%) O(5.73%)
MR-5	$C_{14}H_{26}N_2O_3$	C(62.19%) H(9.69%) N(10.36%) O(17.75%)	C(62.49%) H(9.98%) N(10.66%) O(18.09%)
PR-6	$C_{15}H_{28}N_2O_3$	C(63.35%) H(9.92%) N(9.85%) O(16.88%)	C(63.02%) H(9.66%) N(9.23%) O(16.26%)
TY-7	$C_{25}H_{40}N_2O_4$	C(69.41%) H(9.32%) N(6.48%) O(14.79%)	C(69.90%) H(9.78%) N(6.96%) O(15.26%)
VA-8	$C_{23}H_{34}N_2O_6$	C(63.57%) H(7.89%) N(6.45%) O(22.09%)	C(63.05%) H(7.36%) N(5.99%) O(21.66%)
EV-9	$C_{25}H_{38}N_2O_5$	C(67.24%) H(8.58%) N(6.27%) O(17.91%)	C(67.81%) H(8.93%) N(6.81%) O(18.42%)
TR-10	$C_{18}H_{34}N_2O_3$	C(66.22%) H(10.50%) N(8.58%) O(14.70%)	C(66.44%) H(10.93%) N(8.99%) O(15.07%)

### Section S1.5. <sup>1</sup>H and <sup>13</sup>C-NMR spectroscopy

The novel group of imidazolium based ionic liquids was characterized by <sup>1</sup>H and <sup>13</sup>C-NMR spectroscopy. <sup>1</sup>H and <sup>13</sup>C NMR spectra were recorded at 25 °C using a 400 MHz (for <sup>1</sup>H) and 100 MHz (for <sup>13</sup>C) Bruker NMR spectrometer.

1-methyl-3-octyloxymetyloimidazolium 4-hydroxybenzenesulfonate (FE-1):

<sup>1</sup>H NMR (DMSO-d<sub>6</sub>) δ ppm = 0.84-0.87 (t, J=6.85 Hz, 3H); 1.23-1.27 (m, 12H); 1.47 (m, 2H); 3.45-3.48 (m, 3H); 6.8-6.70 (d, 2H); 7.42-7.44 (d, 2H); 7.79 (s, 1H); 7.86 (s, 1H); 9.38 (s, 1H).

<sup>13</sup>C NMR (DMSO-d<sub>6</sub>) δ ppm = 13.97; 22.16; 25.37; 28.77; 28.79; 29.03; 31.36; 35.91; 69.18; 78.09; 114.06; 121.87; 124.01; 127.02; 137.26; 139.04; 157.72.

1-methyl-3-octyloxymethylimidazolium benzenesulfonate (BE-2):

<sup>1</sup>H NMR (DMSO-d<sub>6</sub>) δ ppm = 0.84-0.87 (t, J=6.8 Hz, 3H); 1.23-1.27 (m, 12H); 1.47 (m, 2H); 3.89 (s, 3H); 5.56 (s, 2H); 7.31-7.64 (m, 5H); 7.78 (s, 1H); 7.86 (s, 1H); 9.34 (s, 1H).

<sup>13</sup>C NMR (DMSO-d<sub>6</sub>) δ ppm = 13.99; 22.17; 25.38; 28.71; 28.77; 29.05; 31.36; 35.95; 69.19; 78.12; 121.90; 124.03; 125.46; 127.70; 128.53; 137.20; 148.13.

1-methyl-3-octyloxymethylimidazolium carvacroloxyacetate (OR-3):

<sup>1</sup>H NMR (DMSO-d<sub>6</sub>) δ ppm = 0.84-0.87 (t, J=6.85 Hz, 3H); 1.12-1.14 (d, 6H); 1.22-1.27 (m, 12H); 1.46 (m, 2H); 2.74 (m, 1H); 3.87 (s, 3H); 5.57 (d, 2H); 6.59-6.61 (m, 2H); 6.94-6.96 (m, 1H); 7.83 (s, 1H); 7.91 (s, 1H); 9.90 (s, 1H).

<sup>13</sup>C NMR (DMSO-d<sub>6</sub>) δ ppm = 13.95; 1.92; 22.16; 23.96; 25.40; 28.74; 28.77; 29.03; 31.36; 35.91; 68.08; 6.08; 77.93; 109.72; 116.52; 121.87; 122.61; 123.99; 127.02; 137.99; 146.76; 157.18; 170.61.

1-methyl-3-octyloxymethylimidazolium chloride (CL-4):

<sup>1</sup>H NMR (DMSO-d<sub>6</sub>) δ ppm = 0.84-0.87 (t, J=6.85 Hz, 3H); 1.23-1.28 (m, 12H); 1.49 (m, 2H); 3.50-3.53 (t, J=6.5 Hz, 3H); 5.69 (s, 2H); 7.85-7.86 (t, J=1.75 Hz, 1H); 8.01-8.02 (t, J=1.8Hz,1H); 9.82 (s, 1H).

<sup>13</sup>C NMR (DMSO-d<sub>6</sub>) δ ppm = 13.89; 22.09; 25.34; 28.70; 28.74; 28.96; 31.29; 35.87; 69.11; 77.90; 121.85; 123.93; 137.39.

1-methyl-3-octyloxymethylimidazolium formate (MR-5):

<sup>1</sup>H NMR (DMSO-d<sub>6</sub>) δ ppm = 0.84-0.87 (t, J=6.85 Hz, 3H); 1.23-1.28 (m, 12H); 1.49 (m, 2H); 3.42-3.49 (m, 3H); 5.52 (s, 2H); 7.84-7.85 (t, J=1.7 Hz, 1H); 7.91-7.92 (t, J=1.7Hz, 1H); 9.53 (s, 1H); 9.72 (s, 1H).

<sup>13</sup>C NMR (DMSO-d<sub>6</sub>) δ ppm = 13.92; 22.13; 25.37; 28.71; 28.74; 29.00; 31.33; 35.87; 69.14; 78.02; 121.87; 124.02; 137.64; 165.65.

1-methyl-3-octyloxymethylimidazolium propionate (PR-6):

<sup>1</sup>H NMR (DMSO-d<sub>6</sub>) δ ppm = 0.84-0.87 (t, J=6.85 Hz, 3H); 1.23-1.27 (m, 12H); 1.49 (m, 2H); 1.67 (s, 3H); 3.93 (m, 3H); 4.86 (s, 2H); 5.62 (s, 2H); 7.84 (s, 1H); 7.91(s, 1H); 9.87 (s, 1H).

<sup>13</sup>C NMR (DMSO-d<sub>6</sub>) δ ppm = 13.90; 18.54, 22.12; 25.36; 28.70; 28.73; 28.75; 28.99; 31.32; 35.81; 55.90; 69.09; 77.98; 121.83; 123.98; 137.92; 173.64.

1-methyl-3-octyloxymethylimidazolium thymoloxycetate (TY-7):

<sup>1</sup>H NMR (DMSO-d<sub>6</sub>) δ ppm = 0.84-0.87 (t, J=6.85 Hz, 3H); 1.12-1.14 (d, 6H); 1.22-1.27 (m, 12H); 1.46 (m, 2H); 2.74 (m, 1H); 3.87 (s, 3H); 5.57 (d, 2H); 6.59-6.61 (m, 2H); 6.94-6.96 (m, 1H); 7.83 (s, 1H); 7.91 (s, 1H); 9.90 (s, 1H).

<sup>13</sup>C NMR (DMSO-d<sub>6</sub>) δ ppm = 13.95; 15.92; 22.16; 23.96; 25.40; 28.74; 28.77; 29.03; 31.36; 35.91; 68.08; 69.08; 77.93; 109.72; 116.52; 121.87; 122.61; 123.99; 12.,02; 137.99; 146.76; 157.18; 170.61.

1-methyl-3-octyloxymethylimidazolium vanillinoxycetate (VA-8):

<sup>1</sup>H NMR (DMSO-d<sub>6</sub>) δ ppm = 0.84-0.87 (t, J=6.7 Hz, 3H); 1.21 (m, 12H); 1.47 (m, 2H); 3.50-3.53 (m, 3H); 3.82-3.93 (m, 3H); 4.36 (s, 2H); 5.59 (s, 2H); 6.74-6.76 (m, 1H); 7.36-7.89 (m, 2H); 9.57 (s, 1H); 9.81 (s, 1H).

<sup>13</sup>C NMR (DMSO-d<sub>6</sub>) δ ppm = 13.98; 22.16; 25.37; 28.76; 29.01 29.04; 31.35; 35.95; 55.11; 69.20; 77.16; 109.62; 116.04; 121.91; 124.05; 124.18; 127.98; 147.95; 149.76; 160.86; 189.19.

1-methyl-3-octyloxymethylimidazolium eugenoloxycetate (EV-9):

<sup>1</sup>H NMR (DMSO-d<sub>6</sub>) δ ppm = 0.83-0.87 (t, J=6.9 Hz, 3H), 1.21-1.27 (m, 12H), 1.45 (s, 2H), 3.25-3.27 (d, 2H), 3.69 (s, 3H), 3.86 (s, 3H), 4.15 (s, 2H), 4.99-5.08 (m, 2H), 5.57 (s, 2H); 5.89-5.95 (m, 1H); 6.57-6.59 (m, 1H) 6.65-6.70 (m, 2H); 7.81 (s, 1H); 7.88 (s, 1H); 9.90 (s, 1H).

<sup>13</sup>C NMR (DMSO-d<sub>6</sub>) δ ppm = 13.95; 22.15; 25.40; 28.76; 28.80; 29.02; 29.05; 31.35; 35.71; 35.72; 55.29; 55.21; 68.07; 69.08; 77.95; 112.09; 112.50; 115.24; 119.93; 121.78; 123.95; 131.01; 138.10; 146.90; 148.39; 170.53.

1-methyl-3-octyloxymethylimidazolium trimethylacetate (TR-10):

<sup>1</sup>H NMR (DMSO-d<sub>6</sub>) δ ppm = 0.84-0.87 (t, J=6.9 Hz, 3H); 1.00 (s, 9H), 1.23-1.27 (m, 12H); 1.48 (m, 2H); 3.94 (m, 3H); 5.65 (s, 2H); 7.86-7.87 (t, J=1.7 Hz, 1H); 7.93-7.94 (t, J=1.7 Hz, 1H); 10.29 (s, 1H).

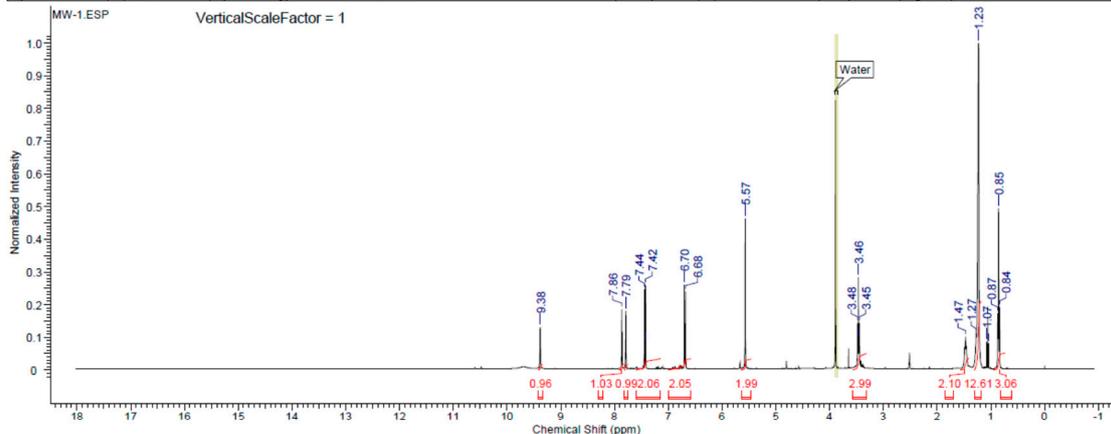
<sup>13</sup>C NMR (DMSO-d<sub>6</sub>) δ ppm = 13.92; 22.16; 25.37; 28.68; 28.73; 28.77; 28.80; 29.02; 29.06; 31.32; 35.74; 69.01; 77.89; 121.84; 123.99; 138.62; 180.84.

1-methyl-3-octyloxymetyloimidazolium 4-hydroxybenzenesulfonate (FE-1):

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-16 19:55:24

Acquisition Time (sec)	5.0000	Date	Nov 15 2021	Date Stamp	Nov 15 2021
File Name	d:\Users\Michal\Desktop\MW-1.fid\fid	Frequency (MHz)	399.91	Nucleus	1H
Original Points Count	37879	Points Count	65536	Pulse Sequence	s2pul
Spectrum Offset (Hz)	3419.2983	Spectrum Type	STANDARD	Sweep Width (Hz)	7575.76
				Receiver Gain	18.00
				Solvent	DMSO-d6
				Temperature (degree C)	25.000



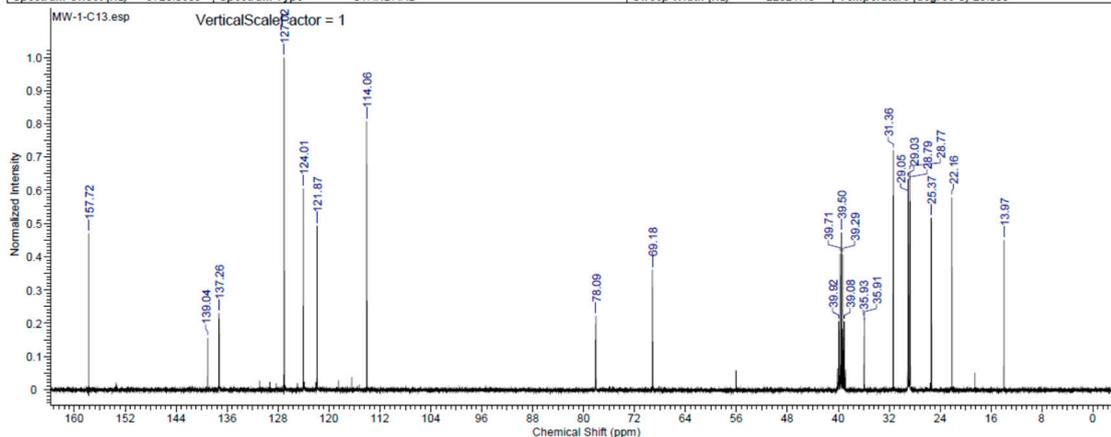
No.	(ppm)	Annotation	Layer No.	Created By	Created At	Modified By	Modified At
1	[3.85 .. 3.90]	Water	1	Michal	Wt 2021-11-16 16:25:41		

No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	0.84	334.7	0.1922	6	1.07	429.9	0.0856	11	3.46	1382.0	0.0958	16	6.68	2672.5	0.0841
2	0.85	341.8	0.4948	7	1.23	491.4	1.0000	12	3.46	1384.8	0.2833	17	6.70	2679.2	0.2604
3	0.87	348.4	0.1735	8	1.27	509.0	0.1079	13	3.48	1391.3	0.1439	18	7.42	2967.8	0.2593
4	1.04	415.9	0.0812	9	1.47	587.8	0.1013	14	5.57	2226.8	0.4637	19	7.43	2969.8	0.0847
5	1.06	422.9	0.1626	10	3.45	1378.2	0.1443	15	6.68	2670.5	0.2397	20	7.44	2976.5	0.2455

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-16 19:58:33

Acquisition Time (sec)	1.0000	Date	Nov 15 2021	Date Stamp	Nov 15 2021
File Name	d:\Users\Michal\Desktop\MW-1-C13.fid\fid	Frequency (MHz)	100.57	Nucleus	13C
Original Points Count	23222	Points Count	32768	Pulse Sequence	s2pul
Spectrum Offset (Hz)	9728.0635	Spectrum Type	STANDARD	Sweep Width (Hz)	22321.43
				Receiver Gain	58.00
				Solvent	DMSO-d6
				Temperature (degree C)	25.000



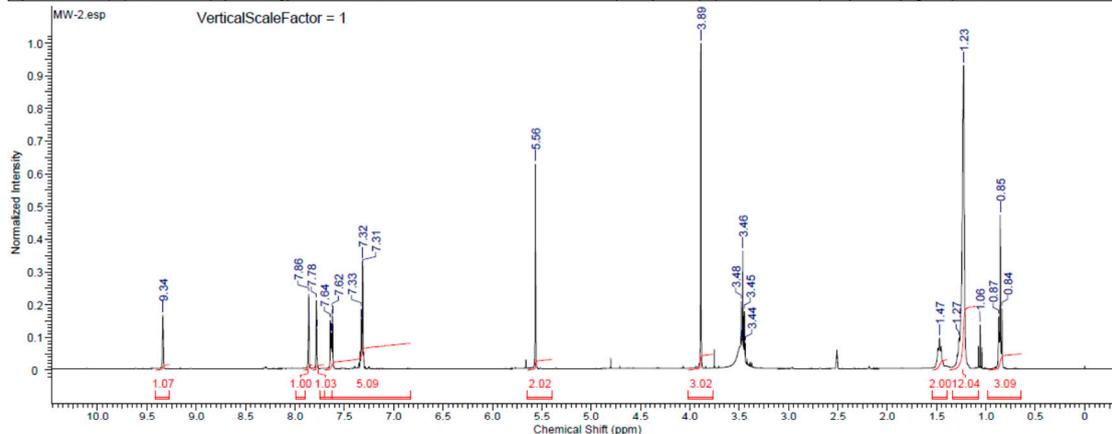
No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	13.97	1404.6	0.4503	6	28.79	2895.1	0.6221	11	35.93	3613.1	0.2008	16	39.92	4014.4	0.2054
2	22.16	2228.9	0.5779	7	29.03	2919.0	0.6330	12	39.08	3930.6	0.2047	17	69.18	6957.2	0.3611
3	25.37	2551.8	0.5169	8	29.05	2921.7	0.5809	13	39.29	3951.7	0.4061	18	78.09	7853.0	0.2210
4	28.71	2887.6	0.5666	9	31.36	3153.3	0.7199	14	39.50	3972.1	0.4727	19	114.06	11471.0	0.8079
5	28.77	2893.1	0.6547	10	35.91	3611.8	0.2156	15	39.71	3993.2	0.4084	20	121.87	12255.7	0.4934
												21	124.01	12471.0	0.6050
												22	127.02	12773.4	1.0000
												23	137.26	13804.1	0.2291
												24	139.04	13982.6	0.1554
												25	157.72	15860.7	0.4706

# 1-methyl-3-octyloxymethylimidazolium benzenesulfonate (BE-2):

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-17 18:44:00

Acquisition Time (sec)	5.0001	Date	Nov 17 2021	Date Stamp	Nov 17 2021
File Name	d:\Users\Michal\Desktop\MW-2.fid.tif	Frequency (MHz)	399.91	Nucleus	1H
Original Points Count	30941	Points Count	32768	Receiver Gain	18.00
Spectrum Offset (Hz)	2743.7021	Spectrum Type	STANDARD	Sweep Width (Hz)	6188.12
				Temperature (degree C)	25.000

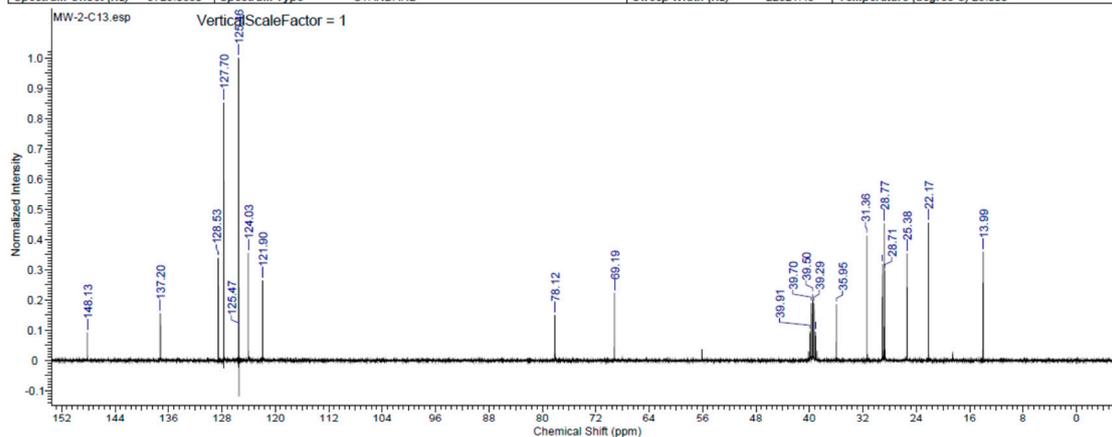


No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	0.84	334.8	0.1880	8	3.44	1375.0	0.0828	15	5.56	2225.0	0.6307	22	7.63	3051.2	0.1141	29	7.79	3113.9	0.1391
2	0.85	341.8	0.4741	9	3.45	1378.4	0.1804	16	7.31	2924.0	0.3188	23	7.63	3052.9	0.1126	30	7.66	3141.7	0.1401
3	0.87	348.4	0.1645	10	3.46	1382.0	0.1108	17	7.32	2925.9	0.3341	24	7.64	3053.7	0.0978	31	7.66	3143.6	0.2323
4	1.06	423.2	0.1385	11	3.46	1384.8	0.3646	18	7.32	2928.9	0.1558	25	7.64	3055.0	0.0899	32	7.67	3145.3	0.1375
5	1.23	490.4	0.9323	12	3.47	1389.0	0.0935	19	7.33	2931.1	0.1876	26	7.64	3056.0	0.1524	33	9.34	3734.3	0.1693
6	1.27	508.9	0.0985	13	3.48	1391.4	0.2109	20	7.62	3046.1	0.1652	27	7.78	3110.5	0.1256				
7	1.47	588.0	0.0990	14	3.89	1555.4	1.0000	21	7.62	3048.0	0.1853	28	7.78	3112.2	0.2137				

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-16 19:57:00

Acquisition Time (sec)	1.0000	Date	Nov 15 2021	Date Stamp	Nov 15 2021
File Name	d:\Users\Michal\Desktop\MW-2-C13.fid.tif	Frequency (MHz)	100.57	Nucleus	13C
Original Points Count	22322	Points Count	32768	Receiver Gain	58.00
Spectrum Offset (Hz)	9729.0850	Spectrum Type	STANDARD	Sweep Width (Hz)	22321.43
				Temperature (degree C)	25.000



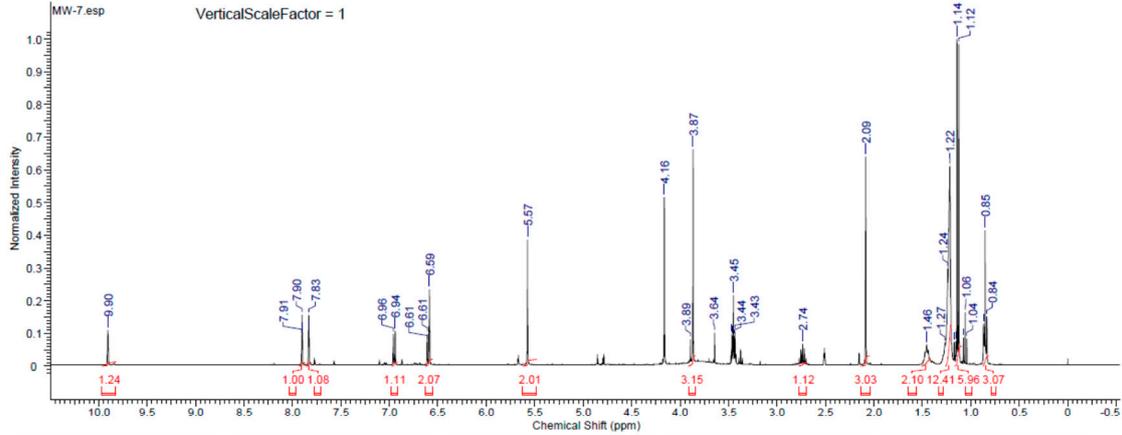
No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	13.99	1407.0	0.3592	6	29.02	2918.6	0.2881	11	39.29	3951.3	0.1888	16	78.12	7856.1	0.1499
2	22.17	2229.2	0.4548	7	29.05	2921.3	0.3183	12	39.50	3972.5	0.2185	17	121.90	12258.8	0.2633
3	25.38	2552.1	0.3531	8	31.36	3153.6	0.4119	13	39.70	3992.9	0.1879	18	124.03	12472.7	0.3550
4	28.71	2887.3	0.2964	9	35.95	3615.5	0.1851	14	39.91	4014.0	0.0946	19	125.46	12617.1	1.0000
5	28.77	2893.4	0.4529	10	39.08	3930.2	0.0940	15	69.19	6958.2	0.2227	20	125.47	12618.5	0.1032

1-methyl-3-octyloxymethylimidazolium carvacroloxyacetate (OR-3):

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-17 18:45:07

Acquisition Time (sec)	4.9999	Date	Nov 16 2021	Date Stamp	Nov 16 2021
File Name	d:\Users\Michal\Desktop\MW-7 fidfid	Frequency (MHz)	399.91	Nucleus	1H
Original Points Count	32216	Points Count	32768	Pulse Sequence	s2pul
Spectrum Offset (Hz)	2851.3411	Spectrum Type	STANDARD	Sweep Width (Hz)	6443.30
				Temperature (degree C)	25.000

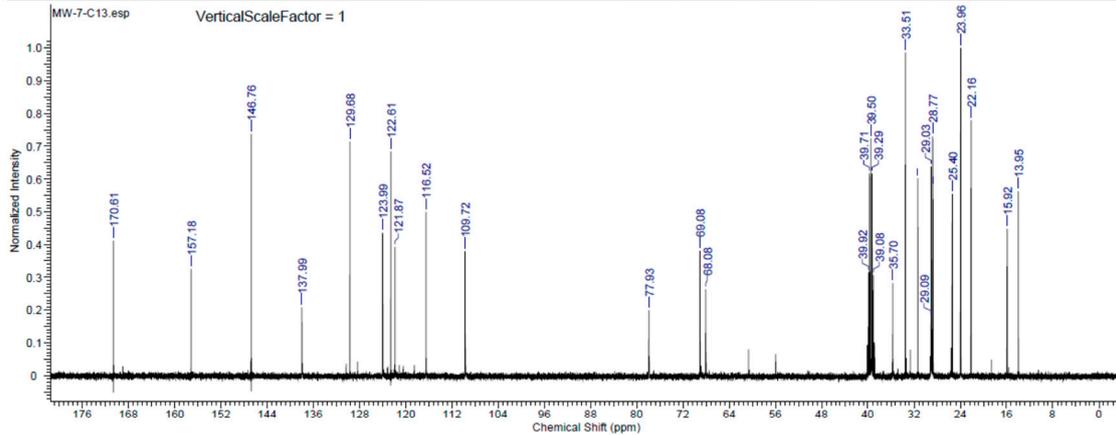


No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	0.84	334.1	0.1511	9	1.15	461.3	0.0754	17	3.43	1373.1	0.1064	25	4.16	1664.7	0.5165	33	7.83	3131.8	0.1557
2	0.85	341.1	0.4144	10	1.17	468.2	0.0741	18	3.44	1376.8	0.0919	26	5.57	2229.5	0.3860	34	7.84	3133.6	0.1084
3	0.87	347.8	0.1293	11	1.22	486.6	0.6108	19	3.45	1379.6	0.2166	27	6.59	2634.2	0.2342	35	7.90	3157.8	0.1039
4	1.04	416.6	0.0844	12	1.24	495.9	0.2981	20	3.46	1383.7	0.0936	28	6.61	2642.0	0.0979	36	7.90	3159.6	0.1564
5	1.06	423.7	0.1646	13	1.27	506.9	0.0706	21	3.47	1386.3	0.0990	29	6.61	2643.6	0.0744	37	7.91	3161.3	0.0939
6	1.08	430.6	0.0864	14	1.46	582.4	0.0638	22	3.64	1457.7	0.1018	30	6.94	2775.5	0.1077	38	9.90	3960.9	0.1108
7	1.12	449.9	0.9842	15	2.09	833.9	0.6394	23	3.87	1546.3	0.6631	31	6.96	2783.0	0.0961				
8	1.14	456.8	1.0000	16	2.74	1094.1	0.0688	24	3.89	1556.8	0.0823	32	7.83	3130.3	0.0850				

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-17 18:46:37

Acquisition Time (sec)	1.0000	Date	Nov 16 2021	Date Stamp	Nov 16 2021
File Name	d:\Users\Michal\Desktop\MW-7-C13 fidfid	Frequency (MHz)	100.57	Nucleus	13C
Original Points Count	22322	Points Count	32768	Pulse Sequence	s2pul
Spectrum Offset (Hz)	9724.6572	Spectrum Type	STANDARD	Sweep Width (Hz)	22321.43
				Temperature (degree C)	25.000



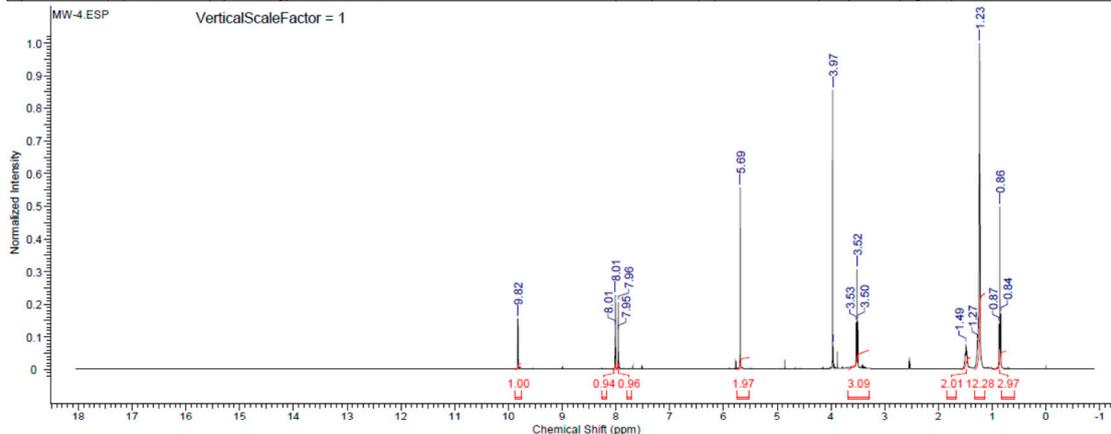
No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	13.95	1403.3	0.5618	8	28.80	2896.5	0.5766	15	35.72	3592.7	0.2018	22	69.08	6947.0	0.3803	29	129.68	13041.8	0.7141
2	15.92	1600.8	0.4479	9	29.03	2919.0	0.6370	16	39.08	3930.6	0.3067	23	77.93	7836.7	0.1992	30	137.99	13877.0	0.2086
3	22.16	2228.9	0.7792	10	29.05	2921.7	0.5702	17	39.29	3951.0	0.6166	24	109.72	11033.6	0.3799	31	138.01	13879.1	0.1905
4	23.96	2409.4	1.0000	11	29.09	2925.1	0.1791	18	39.50	3972.1	0.7230	25	116.52	11717.6	0.4993	32	146.76	14759.2	0.7368
5	25.40	2554.5	0.5543	12	31.36	3153.3	0.6020	19	39.71	3993.2	0.6162	26	121.87	12256.4	0.3920	33	157.18	15806.9	0.3249
6	28.74	2890.4	0.5044	13	33.51	3369.9	0.9856	20	39.92	4014.4	0.3142	27	122.61	12330.0	0.6841	34	170.61	17157.8	0.4107
7	28.77	2893.8	0.7299	14	35.70	3590.6	0.2819	21	68.08	6846.2	0.2637	28	123.99	12469.6	0.4364				

1-methyl-3-octylloxymethylimidazolium chloride (CL-4):

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-16 19:55:54

Acquisition Time (sec)	5.0000	Date	Nov 15 2021	Date Stamp	Nov 15 2021
File Name	d:\Users\Michal\Desktop\MW-4.fid.fid	Frequency (MHz)	399.91	Nucleus	1H
Original Points Count	37879	Points Count	65536	Pulse Sequence	s2pul
Spectrum Offset (Hz)	3429.7598	Spectrum Type	STANDARD	Receiver Gain	20.00
				Sweep Width (Hz)	7575.76
				Temperature (degree C)	25.000

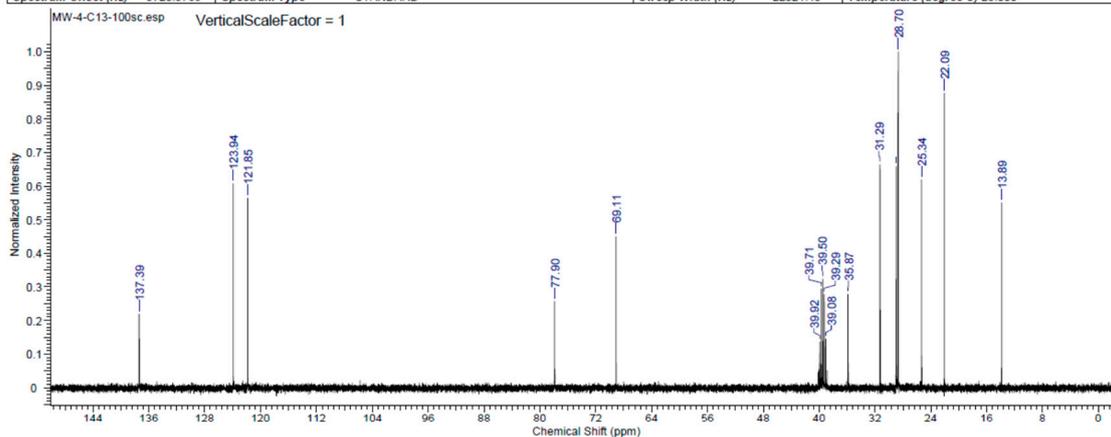


No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	0.84	335.5	0.1711	5	1.27	509.4	0.0879	9	3.53	1412.6	0.1443	13	7.95	3180.1	0.1163	17	8.01	3203.0	0.2281
2	0.86	342.5	0.4993	6	1.49	594.9	0.0775	10	3.96	1584.7	0.0773	14	7.96	3181.9	0.2062	18	8.01	3204.9	0.1309
3	0.87	349.2	0.1407	7	3.50	1399.6	0.1484	11	3.97	1587.2	0.8565	15	7.96	3183.6	0.1371	19	9.82	3928.2	0.1563
4	1.23	493.8	1.0000	8	3.52	1406.0	0.3076	12	5.69	2274.2	0.5577	16	8.01	3201.3	0.1564	20	9.82	3928.6	0.1551

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-16 19:57:40

Acquisition Time (sec)	1.0000	Date	Nov 15 2021	Date Stamp	Nov 15 2021
File Name	d:\Users\Michal\Desktop\MW-4-C13-100sc.fid.fid	Frequency (MHz)	100.57	Nucleus	13C
Original Points Count	22322	Points Count	32768	Pulse Sequence	s2pul
Spectrum Offset (Hz)	9723.9766	Spectrum Type	STANDARD	Receiver Gain	58.00
				Sweep Width (Hz)	22321.43
				Temperature (degree C)	25.000



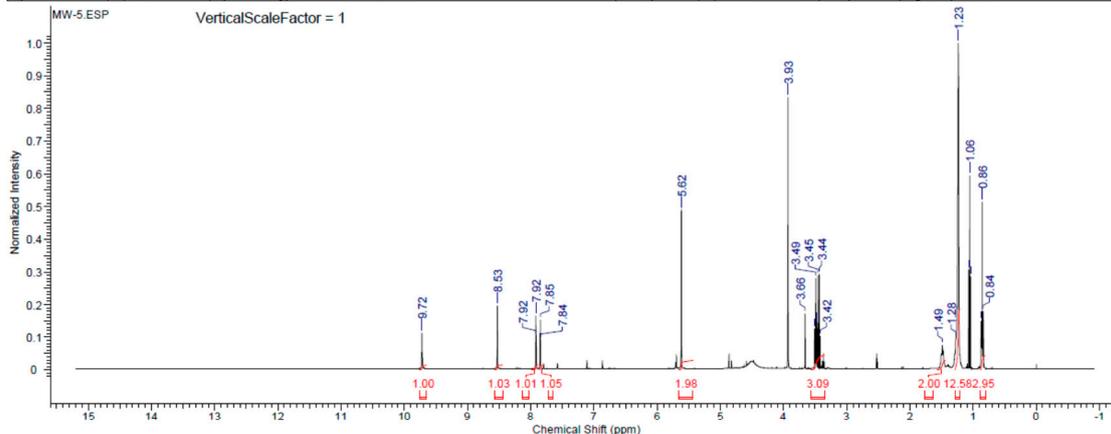
No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height												
1	13.89	1396.4	0.5514	5	28.74	2890.4	0.4604	9	35.87	3607.7	0.2794	13	39.71	3993.2	0.2940	17	121.85	12254.4	0.5656
2	22.09	2221.4	0.8773	6	28.96	2912.8	0.6599	10	39.08	3929.9	0.1464	14	39.92	4014.4	0.1365	18	123.94	12464.2	0.6083
3	25.34	2548.4	0.6198	7	28.99	2915.6	0.5080	11	39.29	3951.0	0.2776	15	69.11	6949.7	0.4502	19	137.39	13816.4	0.2201
4	28.70	2886.3	1.0000	8	31.29	3146.5	0.6646	12	39.50	3972.8	0.3242	16	77.90	7833.9	0.2573				

# 1-methyl-3-octylloxymethylimidazolium formate (MR-5):

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-16 19:56:21

Acquisition Time (sec)	7.0000	Date	Nov 15 2021	Date Stamp	Nov 15 2021
File Name	d:\Users\Michal\Desktop\MW-5.fid.fid	Frequency (MHz)	399.91	Nucleus	1H
Original Points Count	45103	Points Count	65536	Receiver Gain	22.00
Spectrum Offset (Hz)	2856.2053	Spectrum Type	STANDARD	Sweep Width (Hz)	6443.30
				Temperature (degree C)	25.000

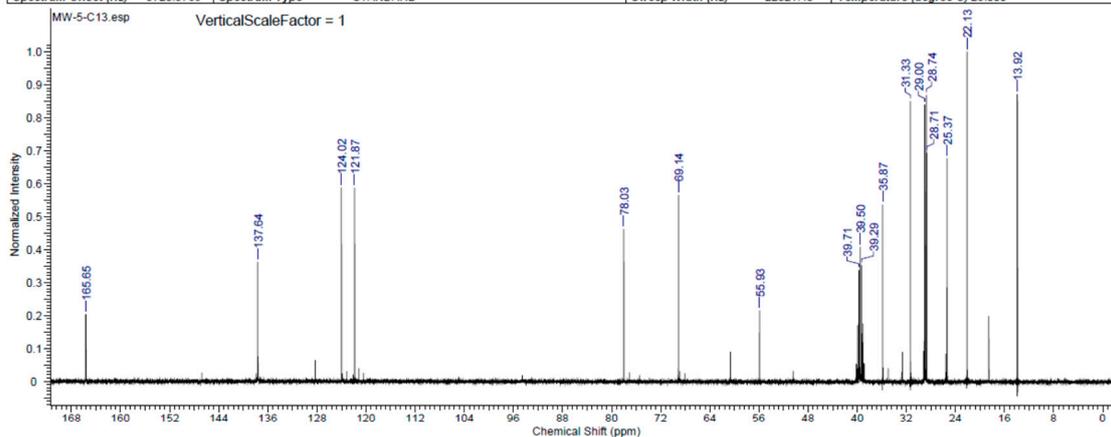


No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	0.84	335.7	0.1790	7	1.23	493.9	1.0000	13	3.47	1388.8	0.1368	19	5.62	2246.1	0.4873	25	7.92	3167.7	0.1012
2	0.86	342.7	0.5148	8	1.28	509.9	0.0971	14	3.48	1389.8	0.1466	20	7.84	3138.8	0.0907	26	8.53	3410.1	0.1958
3	0.87	349.4	0.1496	9	1.49	595.1	0.0761	15	3.49	1396.4	0.2808	21	7.85	3138.5	0.1532	27	9.72	3887.6	0.1134
4	1.04	415.1	0.2854	10	3.42	1367.7	0.1038	16	3.51	1402.9	0.1266	22	7.85	3140.2	0.1130				
5	1.06	422.1	0.5945	11	3.44	1374.7	0.2937	17	3.66	1463.3	0.1723	23	7.91	3164.3	0.1067				
6	1.07	429.1	0.3067	12	3.45	1381.7	0.2891	18	3.93	1571.6	0.8349	24	7.92	3166.1	0.1655				

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-16 19:58:11

Acquisition Time (sec)	1.0000	Date	Nov 15 2021	Date Stamp	Nov 15 2021
File Name	d:\Users\Michal\Desktop\MW-5-C13.fid.fid	Frequency (MHz)	100.57	Nucleus	13C
Original Points Count	22322	Points Count	32768	Receiver Gain	56.00
Spectrum Offset (Hz)	9723.9766	Spectrum Type	STANDARD	Sweep Width (Hz)	22321.43
				Temperature (degree C)	25.000



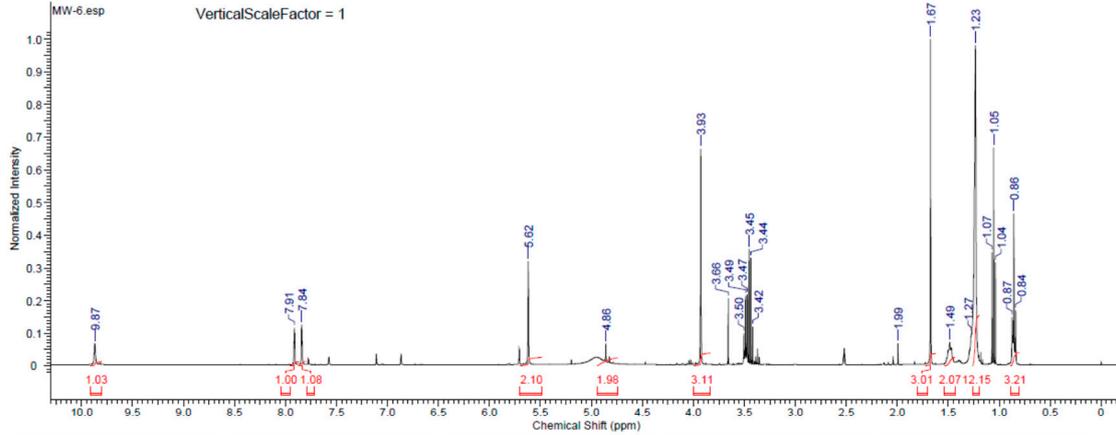
No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	13.92	1399.8	0.8719	5	28.74	2890.4	0.8689	9	31.33	3150.6	0.8498	13	39.71	3993.9	0.3380
2	22.13	2225.5	1.0000	6	28.76	2892.4	0.7821	10	35.87	3607.0	0.5361	14	55.93	5624.8	0.2145
3	25.37	2551.1	0.6765	7	29.00	2916.2	0.8394	11	39.29	3951.7	0.3531	15	69.14	6953.1	0.5650
4	28.71	2886.9	0.6936	8	29.03	2919.0	0.7814	12	39.50	3972.8	0.4079	16	78.03	7846.9	0.4623
												17	121.87	12255.7	0.5875
												18	124.02	12471.7	0.5880
												19	137.64	13842.3	0.3624
												20	165.65	16659.1	0.2037

1-methyl-3-octyloxymethylimidazolium propionate (PR-6):

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-17 18:44:34

Acquisition Time (sec)	4.9999	Date	Nov 16 2021	Date Stamp	Nov 16 2021
File Name	d:\Users\Michal\Desktop\MW-6.fid.fid	Frequency (MHz)	399.91	Nucleus	1H
Original Points Count	32216	Points Count	32768	Receiver Gain	56.00
Spectrum Offset (Hz)	2855.0256	Spectrum Type	STANDARD	Sweep Width (Hz)	6443.30
				Temperature (degree C)	25.000

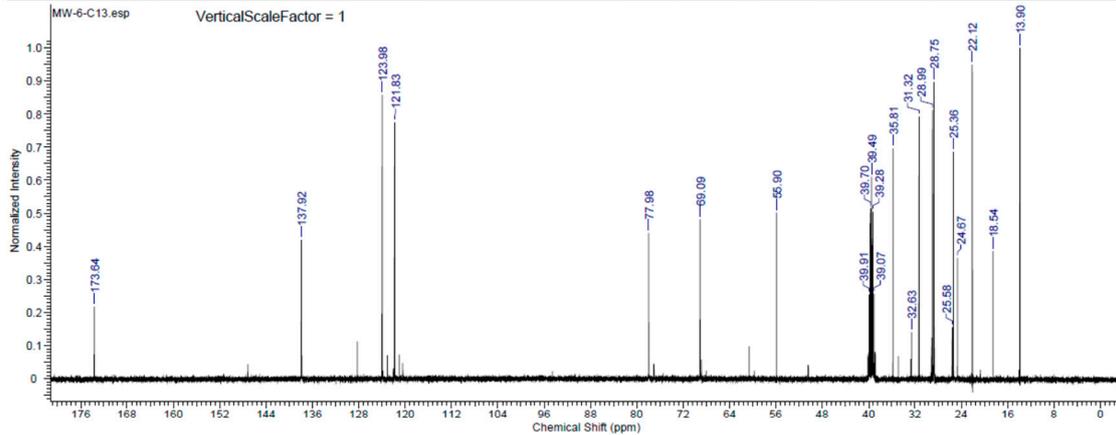


No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	0.84	335.6	0.1698	6	1.07	428.6	0.3482	11	1.99	797.1	0.0695	16	3.49	1394.9	0.2146
2	0.86	342.7	0.4658	7	1.23	493.7	0.9805	12	3.42	1367.3	0.1208	17	3.50	1401.4	0.0993
3	0.87	349.3	0.1487	8	1.27	509.8	0.0981	13	3.44	1374.2	0.3301	18	3.66	1462.7	0.2067
4	1.04	414.6	0.3166	9	1.49	594.2	0.0729	14	3.45	1381.3	0.3575	19	3.93	1570.5	0.6637
5	1.05	421.5	0.6676	10	1.67	669.5	1.0000	15	3.47	1388.2	0.2181	20	4.86	1942.9	0.0670

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-17 18:45:55

Acquisition Time (sec)	1.0000	Date	Nov 16 2021	Date Stamp	Nov 16 2021
File Name	d:\Users\Michal\Desktop\MW-6-C13.fid.fid	Frequency (MHz)	100.57	Nucleus	13C
Original Points Count	22322	Points Count	32768	Receiver Gain	56.00
Spectrum Offset (Hz)	9722.9541	Spectrum Type	STANDARD	Sweep Width (Hz)	22321.43
				Temperature (degree C)	25.000



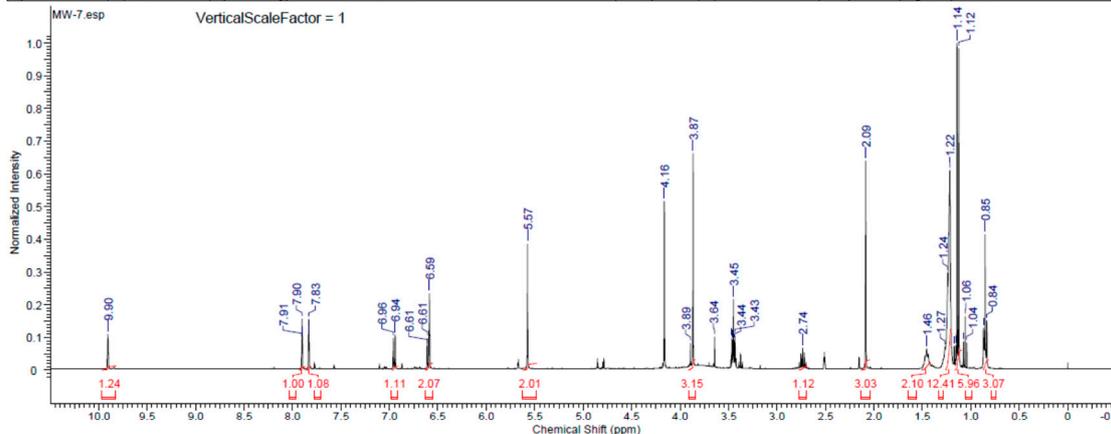
No.	(ppm)	(Hz)	Height												
1	13.90	1398.1	1.0000	7	25.58	2572.6	0.1564	13	29.05	2921.3	0.2286	19	39.49	3971.8	0.6097
2	18.54	1864.8	0.3854	8	28.70	2886.6	0.8958	14	31.32	3149.6	0.7926	20	39.70	3992.9	0.5152
3	22.12	2224.5	0.9493	9	28.73	2889.3	0.8685	15	32.63	3281.0	0.1399	21	39.91	4014.0	0.2550
4	24.67	2480.6	0.3648	10	28.75	2891.4	0.8975	16	35.81	3601.2	0.6958	22	55.90	5621.7	0.5012
5	25.36	2550.1	0.6851	11	28.99	2915.2	0.8110	17	39.07	3929.5	0.2571	23	69.09	6948.0	0.4822
6	25.38	2552.8	0.1214	12	29.02	2917.9	0.7544	18	39.28	3950.7	0.5044	24	77.98	7841.8	0.4405

# 1-methyl-3-octyloxymethylimidazolium thymoloxylacetate (TY-7):

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-17 18:45:07

Acquisition Time (sec)	4.9999	Date	Nov 16 2021	Date Stamp	Nov 16 2021
File Name	d:\Users\Michal\Desktop\MW-7 fidfid	Frequency (MHz)	399.91	Nucleus	1H
Original Points Count	32216	Points Count	32768	Pulse Sequence	s2pul
Spectrum Offset (Hz)	2851.3411	Spectrum Type	STANDARD	Sweep Width (Hz)	6443.30
				Temperature (degree C)	25.000

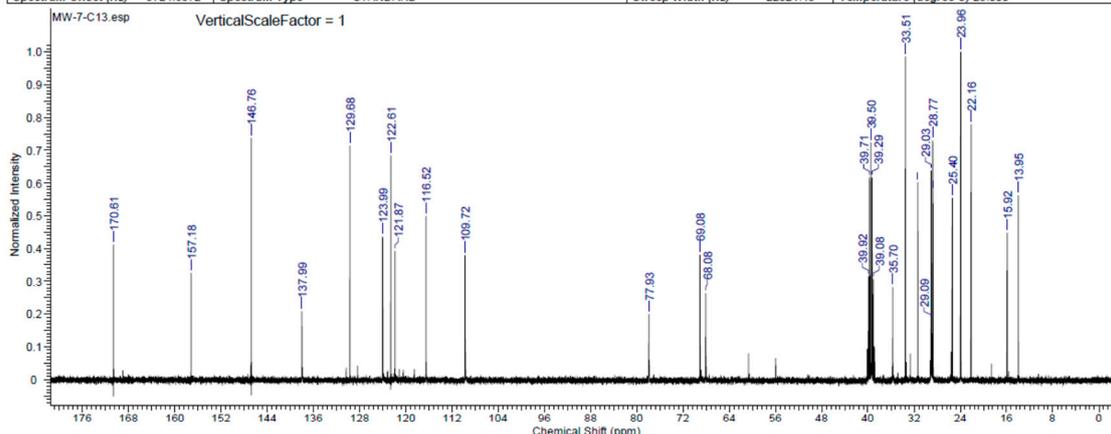


No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	0.84	334.1	0.1511	9	1.15	461.3	0.0754	17	3.43	1373.1	0.1064	25	4.16	1664.7	0.5165	33	7.83	3131.8	0.1557
2	0.85	341.1	0.4144	10	1.17	468.2	0.0741	18	3.44	1376.8	0.0919	26	5.57	2229.5	0.3860	34	7.84	3133.6	0.1084
3	0.87	347.8	0.1293	11	1.22	486.6	0.6108	19	3.45	1379.6	0.2166	27	6.59	2634.2	0.2342	35	7.90	3157.8	0.1039
4	1.04	416.6	0.0844	12	1.24	495.9	0.2981	20	3.46	1383.7	0.0936	28	6.61	2642.0	0.0979	36	7.90	3159.6	0.1564
5	1.06	423.7	0.1646	13	1.27	506.9	0.0706	21	3.47	1386.3	0.0990	29	6.61	2643.6	0.0744	37	7.91	3161.3	0.0939
6	1.08	430.6	0.0864	14	1.46	582.4	0.0638	22	3.64	1457.7	0.1018	30	6.94	2775.5	0.1077	38	9.90	3960.9	0.1108
7	1.12	449.9	0.9842	15	2.09	833.9	0.6394	23	3.87	1546.3	0.6631	31	6.96	2783.0	0.0961				
8	1.14	456.8	1.0000	16	2.74	1094.1	0.0688	24	3.89	1556.8	0.0823	32	7.83	3130.3	0.0850				

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-17 18:46:37

Acquisition Time (sec)	1.0000	Date	Nov 16 2021	Date Stamp	Nov 16 2021
File Name	d:\Users\Michal\Desktop\MW-7-C13 fidfid	Frequency (MHz)	100.57	Nucleus	13C
Original Points Count	22322	Points Count	32768	Pulse Sequence	s2pul
Spectrum Offset (Hz)	9724.6572	Spectrum Type	STANDARD	Sweep Width (Hz)	22321.43
				Temperature (degree C)	25.000



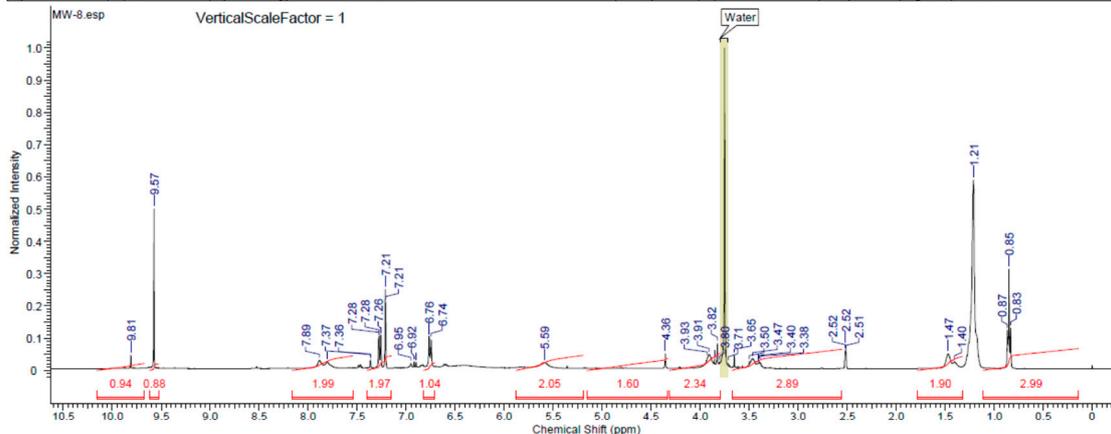
No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	13.95	1403.3	0.5618	8	28.80	2896.5	0.5766	15	35.72	3592.7	0.2018	22	69.08	6947.0	0.3803	29	129.68	13041.8	0.7141
2	15.92	1600.8	0.4479	9	29.03	2919.0	0.6370	16	39.08	3930.6	0.3067	23	77.93	7836.7	0.1992	30	137.99	13877.0	0.2086
3	22.16	2228.9	0.7792	10	29.05	2921.7	0.5702	17	39.29	3951.0	0.6166	24	109.72	11033.6	0.3799	31	138.01	13879.1	0.1905
4	23.96	2409.4	1.0000	11	29.09	2925.1	0.1791	18	39.50	3972.1	0.7230	25	116.52	11717.6	0.4993	32	146.76	14759.2	0.7368
5	25.40	2554.5	0.5543	12	31.36	3153.3	0.6020	19	39.71	3993.2	0.6162	26	121.87	12256.4	0.3920	33	157.18	15806.9	0.3249
6	28.74	2890.4	0.5044	13	33.51	3369.9	0.9856	20	39.92	4014.4	0.3142	27	122.61	12330.0	0.6841	34	170.61	17157.8	0.4107
7	28.77	2893.8	0.7299	14	35.70	3590.6	0.2819	21	68.08	6846.2	0.2637	28	123.99	12469.6	0.4364				

# 1-methyl-3-octyloxymethylimidazolium vanillinoyacetate (VA-8):

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-19 17:11:30

Acquisition Time (sec)	3.9999	Date	Nov 17 2021	Date Stamp	Nov 17 2021
File Name	d:\Users\Michal\Desktop\MW-8.fid.fid	Frequency (MHz)	399.91	Nucleus	1H
Original Points Count	24752	Points Count	32768	Pulse Sequence	s2pul
Spectrum Offset (Hz)	2746.2166	Spectrum Type	STANDARD	Sweep Width (Hz)	6188.12
				Receiver Gain	20.00
				Solvent	DMSO-d6
				Temperature (degree C)	25.000



No.	(ppm)	Annotation	Layer No.	Created By	Created At	Modified By	Modified At
1	[3.72 .. 3.80]	Water	1	Michal	Pt 2021-11-19 15:40:36		

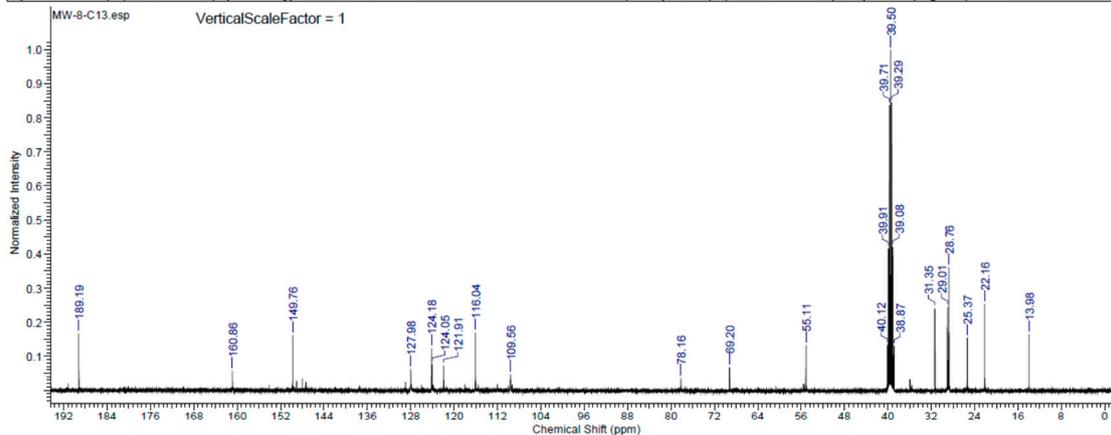
  

No.	(ppm)	(Hz)	Height												
1	0.83	333.0	0.1307	9	2.52	1008.1	0.0609	17	3.80	1520.1	0.0258	25	6.76	2705.3	0.1028
2	0.85	340.0	0.3145	10	3.38	1353.0	0.0255	18	3.82	1529.5	0.0845	26	6.90	2759.0	0.0239
3	0.87	346.4	0.1240	11	3.40	1359.4	0.0271	19	3.86	1541.8	0.0339	27	6.92	2767.3	0.0254
4	1.21	484.4	0.5908	12	3.41	1364.9	0.0211	20	3.91	1563.5	0.0491	28	6.95	2780.1	0.0209
5	1.40	561.7	0.0259	13	3.47	1385.8	0.0362	21	3.93	1570.9	0.0387	29	7.21	2882.9	0.2103
6	1.47	587.9	0.0511	14	3.50	1399.4	0.0267	22	4.36	1741.6	0.0510	30	7.21	2884.7	0.2519
7	2.51	1004.5	0.0583	15	3.65	1460.2	0.0471	23	5.59	2236.4	0.0246	31	7.26	2901.7	0.1101
8	2.52	1006.2	0.0783	16	3.71	1485.2	0.0230	24	6.74	2697.2	0.0956	32	7.26	2903.6	0.1058

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-19 17:11:05

Acquisition Time (sec)	1.1000	Date	Nov 17 2021	Date Stamp	Nov 17 2021
File Name	d:\Users\Michal\Desktop\MW-8-C13.fid.fid	Frequency (MHz)	100.57	Nucleus	13C
Original Points Count	24554	Points Count	32768	Pulse Sequence	s2pul
Spectrum Offset (Hz)	9725.3379	Spectrum Type	STANDARD	Sweep Width (Hz)	22321.43
				Receiver Gain	60.00
				Solvent	DMSO-d6
				Temperature (degree C)	25.000



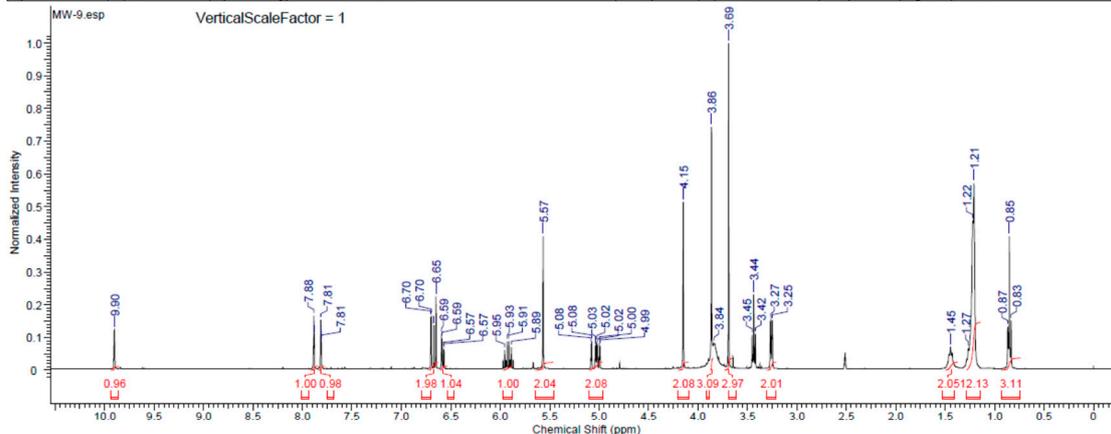
No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	13.98	1406.0	0.1644	7	29.04	2920.3	0.1842	13	39.71	3993.2	0.8377	19	109.56	11017.9	0.0471
2	22.16	2228.2	0.2535	8	31.35	3152.6	0.2411	14	39.91	4013.7	0.4165	20	116.04	11669.9	0.1695
3	25.37	2551.8	0.1544	9	38.87	3908.8	0.1305	15	40.12	4034.8	0.1333	21	121.91	12259.8	0.0725
4	28.70	2886.3	0.1617	10	39.08	3929.9	0.4208	16	55.11	5542.3	0.1317	22	124.05	12475.1	0.0762
5	28.76	2892.4	0.3615	11	39.29	3951.0	0.8443	17	69.20	6959.3	0.0672	23	124.18	12488.0	0.1228
6	29.01	2917.6	0.2439	12	39.50	3972.1	1.0000	18	78.16	7860.5	0.0366	24	127.98	12870.9	0.0628

# 1-methyl-3-octyloxymethylimidazolium eugenolxyacetate (EV-9):

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-19 17:09:52

Acquisition Time (sec)	5.0001	Date	Nov 17 2021	Date Stamp	Nov 17 2021
File Name	d:\Users\Michal\Desktop\MW-9 fidfid	Frequency (MHz)	399.91	Nucleus	1H
Original Points Count	30941	Points Count	32768	Pulse Sequence	s2pul
Spectrum Offset (Hz)	2744.8352	Spectrum Type	STANDARD	Sweep Width (Hz)	6188.12
				Receiver Gain	18.00
				Solvent	DMSO-d6
				Temperature (degree C)	25.000

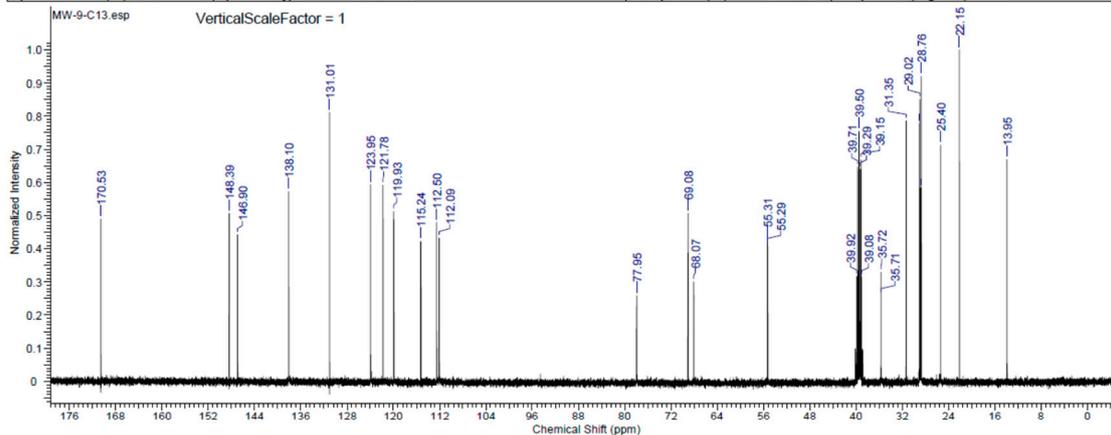


No.	(ppm)	(Hz)	Height																
1	0.83	333.5	0.1522	11	3.44	1374.1	0.2322	21	5.02	2007.3	0.0712	31	5.95	2381.0	0.0616	41	7.81	3124.5	0.1536
2	0.85	340.5	0.4096	12	3.45	1380.7	0.1079	22	5.02	2008.2	0.0882	32	6.57	2626.5	0.0622	42	7.82	3126.0	0.1030
3	0.87	347.1	0.1334	13	3.69	1475.8	1.0000	23	5.03	2012.6	0.0838	33	6.57	2628.6	0.0668	43	7.88	3151.0	0.1073
4	1.21	483.4	0.5718	14	3.84	1534.8	0.0829	24	5.04	2014.8	0.0732	34	6.59	2634.8	0.0973	44	7.88	3152.7	0.1669
5	1.22	488.0	0.4570	15	3.86	1545.0	0.7433	25	5.08	2029.7	0.0884	35	6.59	2636.7	0.1086	45	7.89	3154.5	0.1011
6	1.27	506.3	0.0682	16	4.15	1659.2	0.5149	26	5.08	2031.8	0.0808	36	6.65	2658.6	0.2251	46	9.90	3959.8	0.1231
7	1.45	578.4	0.0711	17	4.99	1996.1	0.0736	27	5.57	2226.0	0.4095	37	6.67	2666.9	0.1364				
8	3.25	1299.5	0.1506	18	4.99	1997.3	0.0675	28	5.89	2354.0	0.0703	38	6.70	2677.9	0.1675				
9	3.27	1306.3	0.1533	19	5.00	1998.4	0.0838	29	5.91	2364.0	0.0891	39	6.70	2679.8	0.1622				
10	3.42	1367.4	0.1106	20	5.02	2006.1	0.0767	30	5.93	2371.0	0.0878	40	7.81	3122.8	0.0887				

This report was created by ACD/NMR Processor Academic Edition. For more information go to [www.acdlabs.com/nmrproc/](http://www.acdlabs.com/nmrproc/)

2021-11-19 17:10:29

Acquisition Time (sec)	1.1000	Date	Nov 17 2021	Date Stamp	Nov 17 2021
File Name	d:\Users\Michal\Desktop\MW-9-C13 fidfid	Frequency (MHz)	100.57	Nucleus	13C
Original Points Count	24554	Points Count	32768	Pulse Sequence	s2pul
Spectrum Offset (Hz)	9724.6572	Spectrum Type	STANDARD	Sweep Width (Hz)	22321.43
				Receiver Gain	56.00
				Solvent	DMSO-d6
				Temperature (degree C)	25.000



No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height	No.	(ppm)	(Hz)	Height
1	13.95	1403.3	0.6699	8	29.05	2921.0	0.7787	15	39.50	3972.1	0.7541	22	77.95	7838.7	0.2591	29	131.01	13175.4	0.8117
2	22.15	2227.5	1.0000	9	31.35	3152.6	0.7870	16	39.71	3993.2	0.6471	23	112.09	11272.7	0.4336	30	138.10	13888.6	0.5737
3	25.40	2554.5	0.7135	10	35.71	3591.3	0.2610	17	39.92	4014.4	0.3170	24	112.50	11313.6	0.4803	31	146.90	14773.5	0.4433
4	28.74	2890.4	0.6191	11	35.72	3592.7	0.3295	18	55.29	5560.7	0.4123	25	115.24	11589.5	0.4227	32	148.39	14922.7	0.5070
5	28.76	2892.4	0.9205	12	39.08	3930.6	0.3154	19	55.31	5562.1	0.4251	26	119.93	12060.9	0.5130	33	170.53	17149.6	0.4906
6	28.80	2896.5	0.5837	13	39.15	3936.7	0.6686	20	68.07	6845.5	0.3006	27	121.78	12246.9	0.5917				
7	29.02	2918.3	0.8508	14	39.29	3951.0	0.6408	21	69.08	6947.0	0.5084	28	123.95	12465.5	0.5945				

