

Supporting Information to:

The Fractional Walden Rule for Ionic Liquids –
Examples from Recent Measurements and a Critique of
the So-called Ideal KCl Line for the Walden Plot.

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The following Tables S1, S2, and S3 list the temperature-dependent conductivities, viscosities, and densities for investigated ILs respectively, measured as described in the publication.

Table S1. Temperature-dependent conductivity data of discussed ILs.

$\theta / ^\circ\text{C}$	$\kappa / \text{mS}\cdot\text{cm}^{-1}$			
	[EMIM][BF ₄]	[BMIM][BF ₄]	[EMIM][NTf ₂]	[EMIM][DCA]
-35.00	0.4188	-	-	1.5461
-25.00	1.0876	-	0.7050	3.4041
-15.00	2.3327	0.2318	1.4754	6.3051
-5.00	4.3160	0.5477	2.6707	10.352
5.00	7.1684	1.1367	4.3466	15.558
15.00	10.962	2.1159	6.5264	21.886
25.00	15.725	3.5870	9.2098	29.281
30.00	18.466	4.5427	10.736	33.421
40.00	24.658	6.9129	14.139	42.263
50.00	31.759	9.9417	17.989	51.945
60.00	39.698	13.640	22.244	62.359
70.00	48.434	17.999	26.887	73.435
80.00	57.938	23.015	31.890	85.093

Table S2. Temperature-dependent viscosity data of discussed ILs.

$\theta / ^\circ\text{C}$	$\eta / \text{mPa}\cdot\text{s}$			
	[EMIM][BF ₄]	[BMIM][BF ₄]	[EMIM][NTf ₂]	[EMIM][DCA]
-15.00	-	-	-	75.38
-10.00	-	-	175.1	56.81
-5.00	^a 145.0	-	128.8	44.24
0.00	114.1	-	-	35.22
5.00	86.88	-	75.13	28.59
15.00	54.10	-	47.78	19.81
20.00	44.19	141.1	39.07	16.85
25.00	36.17	107.6	32.46	14.50
30.00	30.13	83.30	27.30	12.62
40.00	21.77	52.81	19.97	9.80
50.00	16.35	35.53	15.17	7.83
60.00	12.70	25.11	11.87	6.43
70.00	10.12	18.48	9.54	5.36
80.00	8.23	14.06	7.83	4.55

^a: Value at -4.00 °C.

Table S3. Temperature-dependent density data of discussed ILs.

$\theta / ^\circ\text{C}$	$\rho / \text{g}\cdot\text{cm}^{-3}$			
	[EMIM][BF ₄]	[BMIM][BF ₄]	[EMIM][NTf ₂]	[EMIM][DCA]
25.00	1.2888	1.2024	1.5193	1.1008
30.00	1.2850	1.1986	1.5142	1.0975
40.00	1.2775	1.1916	1.5043	1.0910
50.00	1.2699	1.1845	1.4943	1.0844
60.00	1.2624	1.1773	1.4844	1.0779