

Table S1 Summary of relevant experimental information on reported measurements of the density, viscosity and electrical conductivity of alkanolammonium ionic liquids (ILs)

Reference	Ionic Liquid	Synthesis	Water mass fraction w		Instruments			Comments
			before measurements	after	Density	Viscosity	Electrical conductivity	
Bicak <i>J. Mol. Liq.</i> 2005 , <i>116</i> , 15-18.	[HEA]Fmt	open atmosphere, no drying	n.a.	n.a.	n.a.	Canon-Fenske viscometer	WTW Multiline P3 with TetraCon 325 electrode	no temperature given for density value
Kurnia et al. <i>J. Chem. Thermodyn.</i> 2009 , <i>41</i> , 517-521.	[HEA]Ac, [DEA]Ac	educts distilled, N ₂ atmosphere, equimolar amounts of educts used, stir at 50 °C for (24 to 36) h, subsequent thin layer chromatography, subsequent vacuum distillation	< 0.38·10 ⁻⁵	n.a.	Anton Paar Oscillating U-tube (DMA-5000), absolute uncertainty ± 2·10 ⁻² kg·m ⁻³ , calibrated with Millipore water and other ILs, absolute temperature uncertainty ± 0.01 K	cone and plate Brookfield (CAP 2000, L-series), average of three measurements agreeing to within 10 MPa·s, absolute temperature uncertainty ± 0.01 K	not measured	ILs stirred under N ₂ atmosphere, open atmosphere during measurements, no degassing mentioned, viscosity is given in MPa·s: probably typo and mPa·s is meant
Zhao et al. <i>J. Chem. Phys. B</i> 2008 , <i>112</i> , 6923-6936.	[DEA]Ac	amine diluted in solvent (water or methanol), equimolar ratio, solvent removal under vacuum, azeotropic water removal with toluene, final drying	< 0.2·10 ⁻²	n.a.	weigh sample on volumetric flask, relative uncertainty ± 1 %	Schott micro-Ubbelohde capillary viscometer	impedance measurement at 25 °C at (0.1 and 1) MHz with a Solartron 1260 response analyzer	no information about atmosphere during measurements

at 0.03 mbar for 24 h

Cota et al. <i>J. Phys. Chem. B</i> 2007 , <i>111</i> , 12468- 12477.	[HEA]Fmt, [DEA]Fmt, [TEA]Fmt	stir at r.t. for 24 h, heat for 24 h to evaporize unreacted acid, stored at constant humidity, degassing with ultrasound, drying with molecular sieve	n.a.	n.a.	Anton Paar DSA- 5000 vibrational tube, calibration with Millipore water, absolute temperature uncertainty ± 0.01 K	not measured	Jenway model 4150 conductivity/TDS meter, relative uncertainty ± 0.5 %, absolute temperature uncertainty ± 0.5 K	no information about atmosphere during measurements, wrong names for [DEA] and [TEA] given, however educts and molecular weights suggest that [DEA] and [TEA] compounds are meant
Greaves et al. <i>J. Phys. Chem B</i> . 2006 , <i>110</i> , 22479- 22487.	[HEA]Fmt, [HEA]Ac	equimolar amounts of educts used , drying at 0.01 mbar, subsequent freeze drying, formation of amide byproducts determined by NMR	$< 0.55 \cdot 10^{-2}$	n.a.	specific gravity bottle	Carri-Med CSL2 100 Controlled Stress Rheometer, cone and plate method	CDC 104 electrode with CDM 83 conductivity meter, or Inlab r 730-laboratory conductive electrode with Mettler Toledo Seven Multi conductivity meter, calibrated against standards from Mettler Toledo	no information about atmosphere during measurements
Greaves et al. <i>J. Phys. Chem. B</i>	[HEA]Fmt, [DEA]Fmt	equimolar amounts of educts used , drying at 0.01 mbar, subsequent freeze	$< 1.41 \cdot 10^{-2}$	n.a.	n.a.	n.a.	n.a.	no information about atmosphere during measurements, no

2010, 114, 10022- 10031.		drying						temperatures for measurements given
Burrell et al. <i>Phys. Chem. Chem. Phys.</i> 2010, 12, 1571-1577.	[DEA]Fmt, [DEA]Ac	amines purified via fractional distillation, formic acid distilled over CaH ₂ , glacial acetic acid distilled over KMnO ₄ , pre- dried reagents, stoichiometric educt ratios kept at all time during preparation	< 1.25·10 ⁻⁴	n.a.	Anton Paar DMA 4100 M	TA instruments AR-G2 controlled stress cone and plate rheometer	impedance measurement at 25 °C at (0.1 and 1) MHz with a Solartron 1260 response analyzer	no information about atmosphere during measurements, no temperatures given for density and viscosity
Yuan et al. <i>J. Chem. Eng. Data</i> 2007, 52, 596-599.	[HEA]Fmt, [HEA]Ac, [TEA]Ac	amines distilled, reaction of equimolar amounts of educts dissolved in ethanol, subsequent solvent evaporation, stir with activated carbon, filter and final vacuum drying at 50 °C for 48 h	< 1.0·10 ⁻³	n.a.	5 mL pycnometer, absolute uncertainty ± 0.001	NDJ-1 rotary type viscometer, absolute uncertainty ± 1	DDS-307 conductivity meter, absolute uncertainty ± 0.1	All measurements at 298.2 K with absolute uncertainty of ± 0.1 K