SUPPORTING INFORMATION FOR

INFINITE DILUTION ACTIVITY COEFFICIENTS OF SOLUTES DISSOLVED IN TWO TRIHEXYL(TETRADECYL)PHOSPHONIUM IONIC LIQUIDS

Fabrice MUTELET,[a] Dominique ALONSO, [a] Timothy W. STEPHENS,[b] William E. ACREE, Jr.,[b] and Gary A. BAKER[c]

[a] Université de Lorraine, Laboratoire de Réactions et Génie des Procédés (UMR CNRS 7274), 1 rue Grandville, BP 20451 54001 NANCY, FRANCE.

[b] Department of Chemistry, 1155 Union Circle #305070, University of North Texas, DENTON, TEXAS 76203-5017, USA

[c] Department of Chemistry, University of Missouri-Columbia, COLUMBIA, MISSOURI 65211, USA.

Table S1. Density[a] as a Function of Temperature at p = 101.33 kPa for Trihexyl(tetradecyl)phosphonium L-Lactate and Trihexyl(tetradecyl)phosphonium (1S)-(+)-10-Camphorsulfonate

T/K	ρ [g/cm^3]	
	([H_3TdP]$^+$[L-Lact]$^-$)	([H_3TdP]$^+$[+-CS]$^-$)
298.55	0.8948	0.9638
313.45	0.8857	0.9534
323.45	0.8799	0.9461
333.25	0.8745	0.9391

[a] Standard uncertainties are $u(\rho)$ = 0.0002 g·cm^{-3}, $u(T)$ = 0.1 K.

Table S2. Solute Descriptors of the 43 Organic Compounds Included in this Study

Solute	E	S	A	B	L	V
hexane	0.000	0.000	0.000	0.000	2.668	0.9540
heptane	0.000	0.000	0.000	0.000	3.173	1.0949
2,2,4-trimethylpentane	0.000	0.000	0.000	0.000	3.106	1.2358
octane	0.000	0.000	0.000	0.000	3.677	1.2358
nonane	0.000	0.000	0.000	0.000	4.182	1.3767
decane	0.000	0.000	0.000	0.000	4.686	1.5176
undecane	0.000	0.000	0.000	0.000	5.191	1.6590
dodecane	0.000	0.000	0.000	0.000	5.696	1.7990
methylcyclopentane	0.225	0.100	0.000	0.000	2.907	0.8454
cyclohexane	0.310	0.100	0.000	0.000	2.964	0.8454
methylcyclohexane	0.244	0.060	0.000	0.000	3.319	0.9863
benzene	0.610	0.520	0.000	0.140	2.786	0.7164
toluene	0.601	0.520	0.000	0.140	3.325	0.8573
ethylbenzene	0.613	0.510	0.000	0.150	3.778	0.9982
m-xylene	0.623	0.520	0.000	0.160	3.839	0.9982
p-xylene	0.613	0.520	0.000	0.160	3.839	0.9982
o-xylene	0.663	0.560	0.000	0.160	3.939	0.9982
1-hexene	0.080	0.080	0.000	0.070	2.572	0.9110
1-hexyne	0.166	0.220	0.100	0.120	2.510	0.8680
1-heptyne	0.160	0.230	0.090	0.100	3.000	1.0089
2-butanone	0.166	0.700	0.000	0.510	2.287	0.6879
2-pentanone	0.143	0.680	0.000	0.510	2.755	0.8288
3-pentanone	0.154	0.660	0.000	0.510	2.811	0.8288
1,4 dioxane	0.329	0.750	0.000	0.640	2.892	0.6810
methanol	0.278	0.440	0.430	0.470	0.970	0.3082
ethanol	0.246	0.420	0.370	0.480	1.485	0.4491
1-propanol	0.236	0.420	0.370	0.480	2.031	0.5900
2-propanol	0.212	0.360	0.330	0.560	1.764	0.5900
2-methyl-1-propanol	0.217	0.390	0.370	0.480	2.413	0.7309
1-butanol	0.224	0.420	0.370	0.480	2.601	0.7309
diethyl ether	0.041	0.250	0.000	0.450	2.015	0.7309
diisopropyl ether	–0.063	0.170	0.000	0.570	2.501	1.0127
chloroform	0.425	0.490	0.150	0.020	2.480	0.6167
dichloromethane	0.390	0.570	0.100	0.050	2.019	0.4943
tetrachloromethane	0.460	0.380	0.000	0.000	2.823	0.7391
acetonitrile	0.237	0.900	0.070	0.320	1.739	0.4042
nitromethane	0.313	0.950	0.060	0.310	1.892	0.4237
1-nitropropane	0.242	0.950	0.000	0.310	2.894	0.7055
pyridine	0.631	0.840	0.000	0.520	3.022	0.6753
thiophene	0.687	0.570	0.000	0.150	2.819	0.6411

triethylamine	0.101	0.150	0.000	0.790	3.040	1.0538