

Distribution of Organic Solutes in Biphasic 1-*n*-Butyl-3-methylimidazolium Methyl Sulfate–Supercritical CO₂ System

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TABLE S1: Normal Melting Point Temperatures and Vapor Pressures of the Solutes

Solute	T_m / K	Reference	Vapor pressure (V) or sublimation pressure (S) at			Reference
			$T = 313 \text{ K}$	$T = 333 \text{ K}$	$T = 353 \text{ K}$	
			$P^{\text{sat}} / \text{Pa}$	$P^{\text{sat}} / \text{Pa}$	$P^{\text{sat}} / \text{Pa}$	
acetophenone	293	<i>i</i>	160 (V)	524 (V)	1470 (V)	<i>ii</i>
aniline	267.13 ^{<i>a</i>}	<i>i</i>	248 (V)	847 (V)	2430 (V)	<i>ii</i>
anisole	250	<i>i</i>	1140 (V)	3320 (V)	8330 (V)	<i>ii</i>
azulene	373	<i>i</i>	7.15 (S)	51.5 (S)	251 (S)	<i>iii</i>
benzil	368.02 ^{<i>a</i>}	<i>i</i>	0.0256 (S)	0.248 (S)	1.86 (S)	<i>ii</i>
benzoic acid	395.52 ^{<i>a</i>}	<i>i</i>	0.605 (S)	5.28 (S)	37.6 (S)	<i>ii</i>
camphor	451.5	<i>i</i>	89.8 (S)	314 (S)	951 (S)	<i>ii</i>
coumarin	343	<i>i</i>	0.545 (S)	4.03 (S)	23.8 (S)	<i>ii</i>
<i>p</i> -cresol	307.94 ^{<i>a</i>}	<i>i</i>	59.9 (V)	250 (V)	853 (V)	<i>ii</i>
<i>N,N</i> -dimethylaniline	275	<i>i</i>	267 (V)	800 (V)	2110 (V)	<i>ii</i>
1-hexanol	225.8 ^{<i>a</i>}	<i>i</i>	332 (V)	1270 (V)	4270 (V)	<i>ii</i>
indole	325	<i>i</i>	6.57 (S)	37.1 (S)	172 (S)	<i>ii</i>
<i>N</i> -methylaniline	216	<i>i</i>	159 (V)	549 (V)	1600 (V)	<i>ii</i>
naphthalene	353.39 ^{<i>a</i>}	<i>i</i>	44.5 (S)	232 (S)	972 (S)	<i>ii</i>
phenol	314.06 ^{<i>a</i>}	<i>i</i>	170 (V)	649 (V)	2030 (V)	<i>ii</i>

1-phenylethanol	293.85	<i>i</i>	91.2 (V)	329 (V)	1000 (V)	<i>ii</i>
2-phenylethanol	254	<i>i</i>	38.8 (V)	148 (V)	476 (V)	<i>ii</i>
pyrene	423.81 ^a	<i>i</i>	0.00353 (S)	0.0332 (S)	0.242 (S)	<i>ii</i>
veratrole	295.65	<i>i</i>	3.54 (V)	16.5 (V)	65.0 (V)	<i>ii</i>

Vapor pressure at $T < T_m$ refers to subcooled liquid solute (estimation from vapor pressure equation in “Reference”).

Sublimation pressure at $T > T_m$ refers to superheated solid solute (estimation from sublimation pressure equation in “Reference”).

^a Triple point temperature.

References to Table S1:

(i) Linstrom, P. J.; Mallard, W. G. (Eds.), NIST Chemistry WebBook, NIST Standard Reference Database Number 69, June 2005, National Institute of Standards and Technology, Gaithersburg MD, 20899 (<http://webbook.nist.gov>); Database accessed on January 7, 2009.

(ii) Dykyj, J.; Repáš, M. *Tlak nasýtenej pary organických zlúčenín (Saturation Vapor Pressure of Organic Compounds)*; Veda: Bratislava, Slovak Republic, 1979.

(iii) Bauder, A.; Günthard, H. H. *Helv. Chim. Acta* **1962**, 45, 1698–1702.

TABLE S2: Mean Values of the Slopes ($\text{dln } k_1/\text{dln } \rho_m)_T$

Solute	$T = 313 \text{ K}$	$T = 333 \text{ K}$	$T = 353 \text{ K}$
acetophenone	-4.375	-3.317	-2.978
aniline		-3.168	-2.921
anisole	-3.560	-2.626	-2.355
azulene	-4.198	-3.737	-3.289
benzil	-5.052	-5.140	-4.749
camphor	-3.346	-3.425	-2.995
coumarin	-4.300	-4.730	-4.237
<i>p</i> -cresol			-3.572
<i>N,N</i> -dimethylaniline	-3.346	-2.794	-2.519
1-hexanol	-3.272	-2.812	-2.506
indole			-3.672
α -ionone	-4.236	-4.027	-3.511
<i>N</i> -methylaniline	-4.013	-3.120	-2.866
naphthalene	-3.704	-3.253	-2.916
1-phenylethanol	-3.530	-3.728	-3.345
2-phenylethanol	-3.953	-3.831	-3.499
pyrene	-4.172	-5.375	-4.945
veratrole	-3.990	-3.685	-3.008