

SUPPORTING INFORMATION

Prediction of Viscosity of Imidazolium-based Ionic Liquids at Different Temperatures using Quantitative Structure Property Relationship Approach

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Table S1. IL cation-anion interaction energies generated using COSMO-RS and the predicted viscosity values.

Ionic Liquids	Reference	Set	T/K	$\eta_{exp}/mPa\cdot s$	$\ln \eta_{exp}$	Interaction Energy/kcal·mol ⁻¹						$\ln \eta_{pred}$	$\% \Delta E$
						$E_{MF,Cation}$	$E_{MF,Anion}$	$E_{HB,Cation}$	$E_{HB,Anion}$	$E_{vdW,cation}$	$E_{vdW,Anion}$		
[C4C1im][PF6]	14	Training	273.15	1717.0	7.4483	3.7354	1.3863	-0.4443	-0.4487	-9.0185	-4.2850	7.1907	3.46%
[C4C1im][PF6]	14	Training	278.15	1119.0	7.0202	3.7821	1.4162	-0.4396	-0.4438	-8.9802	-4.2664	6.8148	2.93%
[C6C1im][PF6]	14	Training	278.15	2428.0	7.7948	4.2679	1.6843	-0.4208	-0.4246	-11.0783	-4.2914	7.3697	5.45%
[C6C1im][PF6]	14	Training	293.15	707.0	6.5610	4.4256	1.7793	-0.4049	-0.4081	-10.9269	-4.2319	6.3518	3.19%
[C6C1im][PF6]	14	Training	298.15	481.0	6.1759	4.4769	1.8112	-0.3992	-0.4022	-10.8737	-4.2109	6.0405	2.19%
[C6C1im][PF6]	14	Training	308.15	255.4	5.5428	4.5777	1.8756	-0.3873	-0.3900	-10.7632	-4.1673	5.4559	1.57%
[C6C1im][PF6]	14	Training	313.15	197.0	5.2832	4.6271	1.9079	-0.3811	-0.3836	-10.7062	-4.1448	5.1813	1.93%
[C6C1im][PF6]	14	Training	323.15	121.4	4.7991	4.7242	1.9727	-0.3681	-0.3703	-10.5890	-4.0984	4.6646	2.80%
[C6C1im][PF6]	14	Training	328.15	91.1	4.5120	4.7718	2.0052	-0.3614	-0.3635	-10.5289	-4.0746	4.4215	2.00%
[C6C1im][PF6]	14	Training	338.15	60.0	4.0943	4.8653	2.0703	-0.3474	-0.3492	-10.4061	-4.0260	3.9635	3.20%
[C6C1im][PF6]	14	Training	343.15	48.1	3.8733	4.9112	2.1029	-0.3402	-0.3419	-10.3435	-4.0012	3.7476	3.24%
[C6C1im][PF6]	14	Training	348.15	41.3	3.7209	4.9565	2.1355	-0.3328	-0.3345	-10.2803	-3.9761	3.5400	4.86%
[C8C1im][PF6]	14	Training	273.15	6410.0	8.7656	4.6400	1.8641	-0.4102	-0.4147	-13.2453	-4.3288	8.2148	6.28%
[C8C1im][PF6]	14	Training	278.15	3889.0	8.2659	4.6991	1.8962	-0.4050	-0.4092	-13.1886	-4.3102	7.8492	5.04%
[C8C1im][PF6]	14	Training	293.15	1065.0	6.9707	4.8714	1.9928	-0.3884	-0.3920	-13.0075	-4.2504	6.8427	1.84%
[C8C1im][PF6]	14	Training	313.15	273.0	5.6095	5.0899	2.1219	-0.3641	-0.3669	-12.7435	-4.1629	5.6842	1.33%
[C8C1im][PF6]	14	Training	323.15	159.0	5.0689	5.1946	2.1864	-0.3510	-0.3535	-12.6032	-4.1164	5.1723	2.04%
[C8C1im][PF6]	14	Training	343.15	63.7	4.1542	5.3949	2.3145	-0.3231	-0.3251	-12.3095	-4.0187	4.2624	2.60%
[C8C1im][PF6]	14	Training	363.15	31.0	3.4340	5.5839	2.4412	-0.2937	-0.2952	-12.0029	-3.9167	3.4814	1.38%
[C4C1im][BF4]	14	Training	313.15	53.5	3.9797	5.1829	1.4760	-1.3748	-1.3745	-9.1333	-3.3950	4.5042	13.18%
[C4C1im][BF4]	14	Training	343.15	18.0	2.8904	5.4700	1.5894	-1.2289	-1.2283	-8.8094	-3.2749	3.1259	8.15%
[C4C1im][BF4]	14	Training	363.15	10.7	2.3702	5.6511	1.6686	-1.1215	-1.1208	-8.5822	-3.1902	2.3890	0.79%
[C6C1im][BF4]	14	Training	293.15	314.0	5.7494	5.2149	1.6648	-1.4101	-1.4086	-11.3850	-3.4801	6.0713	5.60%
[C6C1im][BF4]	14	Training	313.15	106.0	4.6634	5.4505	1.7540	-1.3234	-1.3218	-11.1452	-3.4072	4.9614	6.39%
[C6C1im][BF4]	14	Training	323.15	67.9	4.2180	5.5646	1.7990	-1.2762	-1.2745	-11.0183	-3.3685	4.4779	6.16%
[C6C1im][BF4]	14	Training	343.15	31.5	3.4500	5.7849	1.8901	-1.1751	-1.1733	-10.7535	-3.2874	3.6321	5.28%
[C6C1im][BF4]	14	Training	363.15	16.6	2.8094	5.9944	1.9824	-1.0677	-1.0659	-10.4781	-3.2029	2.9224	4.02%
[C8C1im][BF4]	14	Training	278.15	1478.0	7.2984	5.2906	1.8126	-1.4308	-1.4318	-13.6515	-3.5399	7.4408	1.95%
[C8C1im][BF4]	14	Training	298.15	341.0	5.8319	5.5598	1.9144	-1.3489	-1.3492	-13.3892	-3.4725	6.1969	6.26%

[C8C1im][BF4]	14	Training	308.15	188.2	5.2375	5.6901	1.9652	-1.3041	-1.3043	-13.2482	-3.4361	5.6565	8.00%
[C8C1im][BF4]	14	Training	328.15	86.0	4.4543	5.9414	2.0666	-1.2077	-1.2076	-12.9497	-3.3587	4.7136	5.82%
[C2C1im][N(CF3SO2)2]	14	Training	293.15	38.6	3.6533	3.0226	3.1181	-0.7791	-0.7795	-6.8226	-7.7581	3.8790	6.18%
[C2C1im][N(CF3SO2)2]	14	Training	298.15	36.5	3.5973	3.0625	3.1665	-0.7647	-0.7650	-6.7911	-7.7153	3.5934	0.11%
[C2C1im][N(CF3SO2)2]	14	Training	313.15	19.4	2.9653	3.1802	3.3092	-0.7204	-0.7206	-6.6915	-7.5818	2.8114	5.19%
[C4C1im][N(CF3SO2)2]	14	Training	273.15	191.6	5.2554	3.4177	2.9425	-0.8087	-0.8098	-8.9542	-7.9471	5.6066	6.68%
[C4C1im][N(CF3SO2)2]	14	Training	278.15	140.4	4.9445	3.4649	2.9919	-0.7943	-0.7954	-8.9172	-7.9083	5.2665	6.51%
[C6C1im][N(CF3SO2)2]	14	Training	273.15	291.2	5.6740	3.8398	2.9718	-0.7911	-0.7911	-10.9776	-7.9701	5.9549	4.95%
[C6C1im][N(CF3SO2)2]	14	Training	298.15	71.0	4.2621	4.0968	3.2114	-0.7161	-0.7157	-10.7316	-7.7659	4.4203	3.71%
[C6C1im][N(CF3SO2)2]	14	Training	308.15	46.0	3.8286	4.1948	3.3033	-0.6855	-0.6850	-10.6236	-7.6777	3.8984	1.82%
[C6C1im][N(CF3SO2)2]	14	Training	323.15	26.3	3.2677	4.3364	3.4369	-0.6389	-0.6384	-10.4530	-7.5396	3.1980	2.13%
[C6C1im][N(CF3SO2)2]	14	Training	328.15	24.0	3.1781	4.3823	3.4804	-0.6233	-0.6227	-10.3941	-7.4923	2.9843	6.10%
[C6C1im][N(CF3SO2)2]	14	Training	343.15	14.1	2.6440	4.5158	3.6074	-0.5762	-0.5756	-10.2122	-7.3469	2.3954	9.40%
[C8C1im][N(CF3SO2)2]	14	Training	363.15	10.4	2.3428	5.1202	3.7873	-0.4965	-0.4967	-11.8087	-7.1669	2.0644	11.88%
[C4C1im][PF6]	14	Training	293.15	340.5	5.8304	3.9197	1.5082	-0.4245	-0.4280	-8.8581	-4.2071	5.7806	0.85%
[C4C1im][PF6]	14	Training	296.15	245.8	5.5045	3.9468	1.5269	-0.4212	-0.4247	-8.8324	-4.1946	5.5893	1.54%
[C4C1im][PF6]	14	Training	301.15	182.7	5.2078	3.9917	1.5584	-0.4156	-0.4189	-8.7888	-4.1734	5.2812	1.41%
[C4C1im][PF6]	14	Training	308.15	140.6	4.9457	4.0537	1.6030	-0.4074	-0.4105	-8.7261	-4.1428	4.8712	1.51%
[C4C1im][PF6]	14	Training	311.15	104.0	4.6444	4.0801	1.6222	-0.4038	-0.4067	-8.6987	-4.1294	4.7026	1.25%
[C4C1im][PF6]	14	Training	313.15	108.9	4.6904	4.0976	1.6351	-0.4013	-0.4042	-8.6802	-4.1204	4.5926	2.09%
[C4C1im][PF6]	14	Training	323.15	68.8	4.2311	4.1841	1.7000	-0.3885	-0.3910	-8.5858	-4.0742	4.0689	3.83%
[C2C1im][CH3CO2]	14	Training	313.15	61.3	4.1162	8.2002	3.8457	-4.8727	-4.8509	-7.8378	-4.0768	3.7428	9.07%
[C2C1im][CH3CO2]	14	Training	328.15	31.9	3.4618	8.3426	3.9273	-4.5872	-4.5666	-7.7017	-4.0077	3.2770	5.34%
[C2C1im][CH3CO2]	14	Training	338.15	22.3	3.1034	8.4374	3.9827	-4.3854	-4.3657	-7.6077	-3.9598	3.0296	2.38%
[C2C1im][CH3CO2]	14	Training	348.15	16.3	2.7920	8.5318	4.0385	-4.1768	-4.1580	-7.5117	-3.9108	2.8255	1.20%
[C2C1im][N(CN)2]	14	Training	343.15	5.8	1.7558	5.6233	2.0890	-2.1548	-2.1472	-7.3721	-4.4418	1.8416	4.88%
[C2C1im][N(CN)2]	14	Training	348.15	5.3	1.6712	5.6653	2.1146	-2.1008	-2.0934	-7.3285	-4.4191	1.6797	0.50%
[C4C1im][CH3CO2]	14	Training	363.15	17.1	2.8385	8.5580	4.2477	-3.7604	-3.7450	-9.2462	-3.8341	2.7361	3.61%
[C4C1im][N(CF3SO2)2]	14	Training	293.15	63.0	4.1431	3.6036	3.1370	-0.7506	-0.7513	-8.7988	-7.7856	4.3367	4.67%
[C4C1im][N(CF3SO2)2]	14	Training	298.15	49.9	3.9100	3.6487	3.1844	-0.7358	-0.7364	-8.7570	-7.7428	4.0544	3.69%
[C4C1im][N(CF3SO2)2]	14	Training	313.15	27.5	3.3142	3.7810	3.3234	-0.6906	-0.6910	-8.6253	-7.6092	3.2805	1.02%
[C4C1im][CF3CO2]	14	Training	293.15	102.4	4.6289	5.2195	2.2933	-2.9114	-2.8999	-9.2327	-4.2266	4.3292	6.47%
[C4C1im][CF3CO2]	14	Training	298.15	76.9	4.3425	5.2761	2.3257	-2.8555	-2.8441	-9.1882	-4.2060	4.0796	6.05%

[C4C1im][CF3CO2]	14	Training	323.15	24.9	3.2149	5.5550	2.4887	-2.5592	-2.5486	-8.9491	-4.0950	3.0315	5.70%
[C4C1im][CF3CO2]	14	Training	343.15	13.0	2.5649	5.7714	2.6190	-2.3084	-2.2987	-8.7422	-3.9986	2.3914	6.77%
[C8C1im]Cl	14	Training	393.15	81.0	4.3944	9.7182	4.1576	-2.2604	-2.2541	-13.2785	-2.7421	4.4401	1.04%
[C4C1im][NO3]	14	Training	293.15	222.9	5.4065	6.2418	1.9413	-2.6776	-2.6729	-9.7165	-3.1205	5.6646	4.77%
[C4C1im][NO3]	14	Training	298.15	165.3	5.1076	6.2984	1.9618	-2.6328	-2.6281	-9.6651	-3.1033	5.3921	5.57%
[C4C1im][NO3]	14	Training	328.15	36.7	3.6020	6.6319	2.0838	-2.3412	-2.3365	-9.3365	-2.9944	4.0283	11.84%
[C6C1im][NO3]	14	Training	313.15	190.0	5.2470	6.4731	2.2270	-2.4375	-2.4288	-11.4951	-3.0383	4.9029	6.56%
[C6C1im][NO3]	14	Training	323.15	110.0	4.7005	6.6006	2.2769	-2.3360	-2.3276	-11.3614	-3.0014	4.4932	4.41%
[C6C1im][NO3]	14	Training	363.15	23.0	3.1355	7.0902	2.4709	-1.9066	-1.8995	-10.7953	-2.8465	3.2337	3.13%
[C8C1im][NO3]	14	Training	313.15	288.0	5.6630	6.5960	2.4110	-2.3981	-2.3946	-13.5075	-3.0283	5.1924	8.31%
[C8C1im][NO3]	14	Training	343.15	62.0	4.1271	7.0104	2.5813	-2.0796	-2.0759	-13.0263	-2.9153	4.1321	0.12%
[C8C1im][NO3]	14	Training	363.15	30.0	3.4012	7.2739	2.6908	-1.8599	-1.8564	-12.6891	-2.8368	3.5962	5.73%
[C2C1im]Cl	14	Training	323.15	341.0	5.8319	9.9720	3.2886	-3.4796	-3.4681	-8.6102	-2.9926	6.1127	4.82%
[C6C1im][BF4]	14	Training	298.15	220.0	5.3936	5.2747	1.6870	-1.3894	-1.3879	-11.3270	-3.4625	5.7744	7.06%
[C4C1im][ClO4]	14	Training	313.15	85.8	4.4514	4.9426	1.3533	-0.9785	-0.9793	-9.2845	-3.7692	4.5121	1.36%
[C4C1im][ClO4]	14	Training	323.15	57.2	4.0469	5.0375	1.3906	-0.9427	-0.9433	-9.1806	-3.7263	3.9999	1.16%
[C4C1im][ClO4]	14	Training	328.15	47.8	3.8666	5.0842	1.4096	-0.9243	-0.9248	-9.1274	-3.7042	3.7596	2.77%
[C4C1im][ClO4]	14	Training	338.15	34.1	3.5305	5.1758	1.4479	-0.8864	-0.8868	-9.0187	-3.6589	3.3081	6.30%
[C3C1im][N(CF3SO2)2]	36	Test	308.15	30.0	3.4012	3.4704	3.2652	-0.7158	-0.7164	-7.7035	-7.6407	3.3170	2.47%
[C3C1im][PF6]	30	Test	318.15	85.0	4.4427	3.8177	1.4964	-0.4067	-0.4095	-7.6256	-4.0786	3.9697	10.65%
[C3C1im]I	29	Test	358.10	35.0	3.5553	7.7278	2.2686	-1.7067	-1.7030	-9.9484	-4.3610	3.1766	10.65%
[C3C1im][BF4]	31	Test	298.15	103.0	4.6347	4.9236	1.2574	-1.4666	-1.4669	-8.2709	-3.4420	5.1149	10.36%
[C4C1C1im][BF4]	24	Test	313.15	233.0	5.4510	5.8354	1.5748	-0.8289	-0.8266	-9.8346	-3.4098	5.6499	3.65%
[C5C1im][N(CF3SO2)2]	33	Test	323.15	24.0	3.1776	4.1115	3.4259	-0.6476	-0.6478	-9.4922	-7.5288	3.0174	5.04%
[C5C1im][PF6]	34	Test	343.15	43.2	3.7661	4.6451	1.9793	-0.3487	-0.3507	-9.3661	-3.9894	3.4633	8.04%
[C7C1im][PF6]	34	Test	328.15	104.4	4.6482	5.0182	2.1214	-0.3535	-0.3561	-11.5354	-4.0847	4.6877	0.85%
[C10C1im]Cl	27	Test	333.15	780.0	6.6593	8.8945	3.9452	-3.0692	-3.0620	-16.3608	-2.9587	5.8183	12.63%
[C2C1im][CH3SO4]	35	Test	323.15	26.8	3.2888	5.8316	2.9819	-2.1855	-2.1825	-7.5396	-5.1401	3.3865	2.97%
[C2C1im][B(CN)4]	26	Test	293.15	22.1	3.0951	3.5302	2.6856	-1.1780	-1.1749	-7.8099	-8.3538	3.1612	2.13%
[C2C1im][CF3SO3]	26	Test	313.15	26.2	3.2658	4.2586	2.1897	-1.6561	-1.6533	-6.9602	-4.8781	3.1897	2.33%
[C2C1im][C2H5SO4]	23	Test	313.15	49.4	3.9000	5.4237	3.4784	-2.3064	-2.3018	-7.6296	-6.2399	3.3724	13.53%
[C2C1im][CH3SO3]	25	Test	323.15	46.5	3.8403	7.2263	3.8901	-3.1250	-3.1473	-7.6183	-4.6959	4.0963	6.67%
[C4C1im][CH3SO4]	32	Test	328.15	61.0	4.1109	6.0800	3.1692	-2.0542	-2.0518	-9.4599	-5.1034	3.5680	13.21%

[C4C1im][CF3SO3]	22	Test	293.15	128.5	4.8559	4.5232	2.2248	-1.7278	-1.7258	-9.1543	-5.0061	4.7428	2.33%
[C4C1im][CH3SO3]	28	Test	298.15	111.0	4.7095	6.9006	3.8194	-3.3029	-3.3272	-9.8622	-4.8250	5.3333	13.25%
[C4C1im][Br]	29	Test	373.00	57.0	4.0431	8.9727	3.1374	-2.1280	-2.1215	-10.1238	-3.3030	3.9594	2.07%
[C4C1im][C(CN)3]	22	Test	343.15	7.2	1.9727	5.0500	2.7749	-1.3814	-1.3781	-9.2360	-6.0118	1.9795	0.35%
[C4C1im][SCN]	22	Test	353.15	10.7	2.3674	6.2778	1.9959	-1.5884	-1.5820	-10.0410	-4.4310	2.3707	0.14%

Table S2. Full name, abbreviation, and numbering of IL cation and anion.

No	Name	Abbreviations
Cation		
1	1-ethyl-3-methylimidazolium	[C ₂ C ₁ im] ⁺
2	1-propyl-3-methylimidazolium	[C ₃ C ₁ im] ⁺
3	1-butyl-3-methylimidazolium	[C ₄ C ₁ im] ⁺
4	1-pentyl-3-methylimidazolium	[C ₅ C ₁ im] ⁺
5	1-hexyl-3-methylimidazolium	[C ₆ C ₁ im] ⁺
6	1-heptyl-3-methylimidazolium	[C ₇ C ₁ im] ⁺
7	1-octyl-3-methylimidazolium	[C ₈ C ₁ im] ⁺
8	1-nonyl-3-methylimidazolium	[C ₉ C ₁ im] ⁺
9	1-decyl-3-methylimidazolium	[C ₁₀ C ₁ im] ⁺
Anion		
1	Dibutylphosphate	[(C ₄ H ₉ O) ₂ PO ₂] ⁻
2	Bis(salicylato)borate	[BC ₁₄ H ₈ O ₆] ⁻
3	Triiodide	[I ₃] ⁻
4	Salicylate	[C ₇ H ₅ O ₃] ⁻
5	Benzoate	[(C ₆ H ₅)CO ₂] ⁻
6	Diethylphosphate	[(C ₂ H ₅ O) ₂ PO ₂] ⁻
7	Bis(pentafluoroethyl)phosphinate	[PO ₂ (C ₂ F ₅) ₂] ⁻
8	Bis(malonato)borate	[C ₆ H ₄ BO ₈] ⁻
9	Tetrachloroferrate	[FeCl ₄] ⁻
10	Tetracyanoborate	[B(CN) ₄] ⁻
11	Toluene-4-sulfonate(tosylate)	[C ₇ H ₈ SO ₃] ⁻
12	Heptafluorobutanoate	[C ₃ F ₇ CO ₂] ⁻
13	Boron tetrachloride	[BCl ₄] ⁻
14	Butylsulphate	[C ₄ H ₉ SO ₄] ⁻
15	Bis(trifluoromethanesulfonyl)methane	[CH(CF ₃ SO ₂) ₂] ⁻
16	Tricyanomethanide	[C(CN) ₃] ⁻
17	Bis(pentafluoroethylsulfonyl)imide	[N(C ₂ F ₅ SO ₂) ₂] ⁻
18	Ethoxyethylsulphate	[C ₄ H ₉ OSO ₄] ⁻
19	Bis(oxalate)borate	[B(C ₂ O ₄) ₂] ⁻
20	2-(2-Methoxyethoxy)ethylsulphate	[C ₅ OC ₁ SO ₄] ⁻
21	Bis(trifluoromethanesulfonyl)imide	[N(CF ₃ SO ₂) ₂] ⁻
22	Trifluoroacetate	[CF ₃ CO ₂] ⁻
23	Dicyanamide	[N(CN) ₂] ⁻
24	Dimethylphosphate	[(CH ₃ O) ₂ PO ₂] ⁻
25	Trifluoromethanesulfonate	[CF ₃ SO ₃] ⁻
26	Methoxyethylsulphate	[C ₃ H ₇ OSO ₄] ⁻
27	Ethylsulfate	[C ₂ H ₅ SO ₄] ⁻
28	Tris(pentafluoroethyl)trifluorophosphate	[(C ₂ F ₅) ₃ PF ₃] ⁻
29	Thiocyanate	[SCN] ⁻
30	Acetate	[CH ₃ CO ₂] ⁻
31	Hexafluorostibate	[SbF ₆] ⁻
32	Methylsulphate	[CH ₃ SO ₄] ⁻
33	Hexafluorophosphate	[PF ₆] ⁻
34	Hexafluoroarsenate	[AsF ₆] ⁻
35	Perchlorate	[ClO ₄] ⁻
36	Tetrafluoroborate	[BF ₄] ⁻

37	Nitrate	$[\text{NO}_3]^-$
38	Methanesulfonate	$[\text{CH}_3\text{SO}_3]^-$
39	Nitrite	$[\text{NO}_2]^-$
40	Iodide	I^-
41	Bromide	Br^-
42	Chloride	Cl^-

Table S3. Cation-anion interaction energies and predicted viscosity values for 378 ILs at 298.15 K.

Ionic Liquids	Interaction Energy/kcal·mol ⁻¹						<i>ln η_{pred}</i>
	<i>E_{MF,Cation}</i>	<i>E_{MF,Anion}</i>	<i>E_{Hb,Cation}</i>	<i>E_{Hb,Anion}</i>	<i>E_{vdW,cation}</i>	<i>E_{vdW,Anion}</i>	
[C ₂ C ₁ im][(C ₄ H ₉ O) ₂ PO ₂]	5.3290	5.8991	-4.0142	-3.9998	-7.7929	-12.8714	0.4386
[C ₂ C ₁ im][BC ₁₄ H ₈ O ₆]	3.4155	4.6727	-1.7824	-1.7863	-7.8323	-13.2579	0.6607
[C ₂ C ₁ im][I ₃]	2.4236	2.5016	-0.0385	-0.0391	-10.8279	-11.2561	1.6727
[C ₂ C ₁ im][C ₇ H ₅ O ₃]	4.6294	3.1109	-3.1293	-3.1135	-7.8984	-7.4175	2.0798
[C ₂ C ₁ im][(C ₆ H ₅)CO ₂]	6.0319	4.1705	-4.4109	-4.3879	-8.0521	-7.3498	2.3166
[C ₂ C ₁ im][(C ₂ H ₅ O) ₂ PO ₂]	5.9572	5.1074	-4.1132	-4.0987	-7.8014	-8.7684	2.4605
[C ₂ C ₁ im][PO ₂ (C ₂ F ₅) ₂]	3.4181	3.4067	-1.9510	-1.9400	-6.5183	-7.7728	2.5987
[C ₂ C ₁ im][C ₆ H ₄ BO ₈]	4.1540	3.5103	-1.5939	-2.3289	-7.3972	-8.6160	2.7035
[C ₂ C ₁ im][FeCl ₄]	2.2324	2.7273	0.0000	0.0000	-9.3444	-9.4259	2.7191
[C ₂ C ₁ im][B(CN) ₄]	3.5706	2.7234	-1.1540	-1.1510	-7.7698	-8.3153	2.8773
[C ₂ C ₁ im][C ₇ H ₈ SO ₃]	5.1933	4.7062	-2.9357	-2.9315	-7.9006	-8.9272	2.9374
[C ₂ C ₁ im][C ₃ F ₇ CO ₂]	4.2687	3.0588	-2.7002	-2.6879	-6.7466	-6.1720	2.9562
[C ₂ C ₁ im][BCl ₄]	2.6304	1.9601	-0.0308	-0.0323	-9.2989	-8.2675	3.0655
[C ₂ C ₁ im][C ₄ H ₉ SO ₄]	4.7645	4.0408	-2.3697	-2.3654	-7.7430	-8.3630	3.1541
[C ₂ C ₁ im][CH(CF ₃ SO ₂) ₂]	3.0098	3.2357	-0.8883	-0.9855	-6.8082	-8.0236	3.2374
[C ₂ C ₁ im][C(CN) ₃]	4.1128	2.2601	-1.7569	-1.7526	-7.7804	-6.4091	3.2794
[C ₂ C ₁ im][N(C ₂ F ₅ SO ₂) ₂]	2.9954	3.9157	-0.6017	-0.6028	-6.6095	-9.4501	3.2917
[C ₂ C ₁ im][C ₄ H ₉ OSO ₄]	4.9193	4.7697	-2.3796	-2.3771	-7.6943	-8.8639	3.4670
[C ₂ C ₁ im][B(C ₂ O ₄) ₂]	3.2368	2.3346	-0.8393	-0.8401	-7.1675	-6.9746	3.4719
[C ₂ C ₁ im][C ₅ OC ₁ SO ₄]	5.0134	6.0717	-2.4195	-2.4168	-7.6513	-10.3112	3.5765
[C ₂ C ₁ im][N(CF ₃ SO ₂) ₂]	3.0625	3.1665	-0.7647	-0.7650	-6.7911	-7.7153	3.5934
[C ₂ C ₁ im][CF ₃ CO ₂]	4.9735	2.1572	-2.9058	-2.8929	-7.1311	-4.1802	3.6826
[C ₂ C ₁ im][N(CN) ₂]	5.2265	1.8582	-2.6151	-2.6063	-7.7348	-4.6256	3.7506
[C ₂ C ₁ im][(CH ₃ O) ₂ PO ₂]	6.5259	4.5006	-4.0145	-4.0014	-7.8492	-6.5585	3.7589
[C ₂ C ₁ im][CF ₃ SO ₃]	4.1260	2.0942	-1.7509	-1.7482	-7.0652	-4.9565	3.9656
[C ₂ C ₁ im][C ₃ H ₇ OSO ₄]	5.2110	4.4835	-2.3899	-2.3878	-7.6901	-7.8046	4.0387
[C ₂ C ₁ im][C ₂ H ₅ SO ₄]	5.2901	3.3808	-2.4280	-2.4234	-7.7509	-6.3431	4.1019
[C ₂ C ₁ im][(C ₂ F ₅) ₃ PF ₃]	2.6644	4.7464	-0.1231	-0.1236	-6.2459	-9.3451	4.2360
[C ₂ C ₁ im][SCN]	5.6676	1.4374	-2.1431	-2.1334	-8.6735	-4.7101	4.2793

[C ₂ C ₁ im][CH ₃ CO ₂]	8.0583	3.7662	-5.1335	-5.1104	-7.9668	-4.1420	4.3399
[C ₂ C ₁ im][SbF ₆]	2.6381	1.7277	-0.2583	-0.2590	-6.5393	-4.7107	4.5534
[C ₂ C ₁ im][CH ₃ SO ₄]	5.6133	2.8637	-2.3857	-2.3831	-7.7488	-5.2845	4.5976
[C ₂ C ₁ im][PF ₆]	3.2366	1.1572	-0.4506	-0.4540	-6.7236	-4.1355	4.6668
[C ₂ C ₁ im][AsF ₆]	2.9458	1.3423	-0.2706	-0.2716	-6.6371	-4.3543	4.6830
[C ₂ C ₁ im][ClO ₄]	4.4755	0.9275	-1.0877	-1.0886	-7.4026	-3.8333	4.7949
[C ₂ C ₁ im][BF ₄]	4.7901	1.0450	-1.5229	-1.5228	-7.2380	-3.4272	4.8062
[C ₂ C ₁ im][NO ₃]	6.4845	1.6808	-2.7275	-2.7219	-7.6603	-3.1207	5.1764
[C ₂ C ₁ im][CH ₃ SO ₃]	7.0009	3.7645	-3.4061	-3.4294	-7.8316	-4.8269	5.2113
[C ₂ C ₁ im][NO ₂]	7.8508	2.1960	-3.5861	-3.5736	-7.8105	-2.6906	5.7054
[C ₂ C ₁ im]I	7.3762	1.9392	-2.1896	-2.1842	-9.6572	-4.6586	5.7696
[C ₂ C ₁ im]Br	8.7946	2.6406	-3.0002	-2.9908	-9.0315	-3.5689	6.8629
[C ₂ C ₁ im]Cl	9.7386	3.2134	-3.7585	-3.7463	-8.8540	-3.0700	7.2899
[C ₃ C ₁ im][(C ₄ H ₉ O) ₂ PO ₂]	5.4957	5.9063	-3.9488	-3.9375	-8.8396	-12.8721	0.6472
[C ₃ C ₁ im][BC ₁₄ H ₈ O ₆]	3.7298	4.6950	-1.7481	-1.7531	-8.8461	-13.2360	0.9572
[C ₃ C ₁ im][I ₃]	2.9326	2.5170	-0.0369	-0.0375	-11.8670	-11.1757	2.0921
[C ₃ C ₁ im][C ₇ H ₅ O ₃]	4.8624	3.1660	-3.0856	-3.0725	-8.9155	-7.4036	2.3488
[C ₃ C ₁ im][(C ₆ H ₅)CO ₂]	6.1670	4.1889	-4.3503	-4.3316	-9.0699	-7.3359	2.5128
[C ₃ C ₁ im][(C ₂ H ₅ O) ₂ PO ₂]	6.0903	5.1131	-4.0431	-4.0317	-8.8386	-8.7673	2.6515
[C ₃ C ₁ im][PO ₂ (C ₂ F ₅) ₂]	3.6605	3.3519	-1.9252	-1.9159	-7.5193	-7.8049	2.7538
[C ₃ C ₁ im][C ₆ H ₄ BO ₈]	4.4590	3.5964	-1.5541	-2.2820	-8.4147	-8.6118	3.0383
[C ₃ C ₁ im][FeCl ₄]	2.7410	2.6841	0.0000	0.0000	-10.3940	-9.3920	3.0712
[C ₃ C ₁ im][B(CN) ₄]	3.9421	2.8062	-1.1253	-1.1229	-8.7174	-8.2004	3.2973
[C ₃ C ₁ im][C ₇ H ₈ SO ₃]	5.3906	4.7269	-2.8774	-2.8753	-8.9242	-8.9161	3.1745
[C ₃ C ₁ im][C ₃ F ₇ CO ₂]	4.4913	3.0589	-2.6647	-2.6548	-7.7679	-6.1987	3.1493
[C ₃ C ₁ im][BCl ₄]	3.1344	2.0498	-0.0295	-0.0310	-10.3361	-8.2480	3.4982
[C ₃ C ₁ im][C ₄ H ₉ SO ₄]	4.9753	4.0807	-2.3164	-2.3135	-8.7802	-8.3620	3.4027
[C ₃ C ₁ im][CH(CF ₃ SO ₂) ₂]	3.3328	3.2322	-0.8658	-0.9623	-7.8085	-8.0487	3.4835
[C ₃ C ₁ im][C(CN) ₃]	4.4110	2.3714	-1.7198	-1.7167	-8.7474	-6.3373	3.6551
[C ₃ C ₁ im][N(C ₂ F ₅ SO ₂) ₂]	3.2803	3.8793	-0.5864	-0.5878	-7.5722	-9.4708	3.4825
[C ₃ C ₁ im][C ₄ H ₉ OSO ₄]	5.1328	4.7923	-2.3239	-2.3227	-8.7296	-8.8624	3.7089
[C ₃ C ₁ im][B(C ₂ O ₄) ₂]	3.6351	2.4468	-0.8160	-0.8171	-8.1815	-6.9787	3.8599
[C ₃ C ₁ im][C ₅ OC ₁ SO ₄]	5.2419	6.0631	-2.3628	-2.3614	-8.6876	-10.3107	3.8079

[C3C1im][N(CF3SO2)2]	3.3868	3.1711	-0.7454	-0.7462	-7.7797	-7.7290	3.8477
[C3C1im][CF3CO2]	5.1474	2.2501	-2.8655	-2.8551	-8.1714	-4.1957	3.9175
[C3C1im][N(CN)2]	5.3444	2.0001	-2.5669	-2.5601	-8.7230	-4.5851	4.0201
[C3C1im][(CH3O)2PO2]	6.5882	4.5114	-3.9420	-3.9319	-8.8782	-6.5559	3.9089
[C3C1im][CF3SO3]	4.3850	2.1848	-1.7126	-1.7109	-8.0989	-4.9705	4.2561
[C3C1im][C3H7OSO4]	5.3949	4.5038	-2.3321	-2.3313	-8.7219	-7.8025	4.2616
[C3C1im][C2H5SO4]	5.4393	3.4380	-2.3695	-2.3663	-8.7795	-6.3398	4.3276
[C3C1im][(C2F5)3PF3]	2.9379	4.5782	-0.1193	-0.1198	-7.2257	-9.3812	4.3083
[C3C1im][SCN]	5.6806	1.6143	-2.1025	-2.0942	-9.6743	-4.6866	4.4837
[C3C1im][CH3CO2]	7.9350	3.8013	-5.0534	-5.0349	-8.9881	-4.1415	4.3869
[C3C1im][SbF6]	3.1260	1.8436	-0.2469	-0.2477	-7.6046	-4.7483	4.9737
[C3C1im][CH3SO4]	5.7008	2.9406	-2.3250	-2.3238	-8.7713	-5.2800	4.7979
[C3C1im][PF6]	3.6555	1.3690	-0.4303	-0.4338	-7.7856	-4.1669	5.1191
[C3C1im][AsF6]	3.4108	1.5275	-0.2579	-0.2590	-7.7032	-4.3887	5.1381
[C3C1im][ClO4]	4.6555	1.1361	-1.0493	-1.0506	-8.4254	-3.8316	5.1208
[C3C1im][BF4]	4.9236	1.2574	-1.4666	-1.4669	-8.2709	-3.4420	5.1149
[C3C1im][NO3]	6.3676	1.8424	-2.6605	-2.6565	-8.6671	-3.1107	5.3052
[C3C1im][CH3SO3]	6.9437	3.7995	-3.3293	-3.3549	-8.8547	-4.8251	5.3014
[C3C1im][NO2]	7.5549	2.3345	-3.5080	-3.4980	-8.8198	-2.6832	5.7078
[C3C1im]I	7.1401	2.0983	-2.1240	-2.1196	-10.6687	-4.6550	5.8111
[C3C1im]Br	8.4032	2.7675	-2.9240	-2.9165	-10.0480	-3.5692	6.7866
[C3C1im]Cl	9.2799	3.3244	-3.6734	-3.6636	-9.8657	-3.0701	7.1671
[C4C1im][(C4H9O)2PO2]	5.6273	5.8904	-3.9357	-3.9233	-9.8616	-12.8754	0.7565
[C4C1im][BC14H8O6]	3.9787	4.7124	-1.7363	-1.7407	-9.8421	-13.2213	1.1765
[C4C1im][I3]	3.3210	2.5652	-0.0359	-0.0366	-12.8835	-11.1220	2.4360
[C4C1im][C7H5O3]	5.0315	3.2098	-3.0745	-3.0603	-9.9175	-7.3953	2.5279
[C4C1im][(C6H5)CO2]	6.2630	4.1999	-4.3387	-4.3185	-10.0732	-7.3276	2.6206
[C4C1im][(C2H5O)2PO2]	6.1863	5.1023	-4.0270	-4.0144	-9.8538	-8.7682	2.7448
[C4C1im][PO2(C2F5)2]	3.8686	3.3233	-1.9174	-1.9074	-8.5020	-7.8301	2.8875
[C4C1im][C6H4BO8]	4.6824	3.6658	-1.5380	-2.2546	-9.4128	-8.6111	3.2791
[C4C1im][FeCl4]	3.1411	2.6975	0.0000	0.0000	-11.4164	-9.3694	3.3814
[C4C1im][B(CN)4]	4.1987	2.8737	-1.1087	-1.1060	-9.6851	-8.1279	3.5925
[C4C1im][C7H8SO3]	5.5304	4.7308	-2.8600	-2.8570	-9.9304	-8.9105	3.3124

[C4C1im][C3F7CO2]	4.6676	3.0675	-2.6563	-2.6455	-8.7675	-6.2190	3.2905
[C4C1im][BCl4]	3.5109	2.1445	-0.0287	-0.0302	-11.3510	-8.2352	3.8430
[C4C1im][C4H9SO4]	5.1275	4.0996	-2.2973	-2.2937	-9.7958	-8.3637	3.5572
[C4C1im][CH(CF3SO2)2]	3.5966	3.2416	-0.8551	-0.9497	-8.7932	-8.0701	3.6871
[C4C1im][C(CN)3]	4.6117	2.4571	-1.7004	-1.6968	-9.7277	-6.2960	3.9111
[C4C1im][N(C2F5SO2)2]	3.5239	3.8599	-0.5786	-0.5800	-8.5268	-9.4915	3.6482
[C4C1im][C4H9OSO4]	5.2840	4.7946	-2.3039	-2.3021	-9.7431	-8.8643	3.8522
[C4C1im][B(C2O4)2]	3.9326	2.5426	-0.8047	-0.8056	-9.1770	-6.9820	4.1549
[C4C1im][C5OC1SO4]	5.4038	6.0349	-2.3435	-2.3415	-9.7012	-10.3143	3.9361
[C4C1im][N(CF3SO2)2]	3.6487	3.1844	-0.7358	-0.7364	-8.7570	-7.7428	4.0544
[C4C1im][CF3CO2]	5.2761	2.3257	-2.8555	-2.8441	-9.1882	-4.2060	4.0796
[C4C1im][N(CN)2]	5.4255	2.1061	-2.5454	-2.5378	-9.7160	-4.5644	4.2002
[C4C1im][(CH3O)2PO2]	6.6286	4.5093	-3.9230	-3.9118	-9.8885	-6.5551	3.9745
[C4C1im][CF3SO3]	4.5758	2.2598	-1.6966	-1.6945	-9.1104	-4.9808	4.4664
[C4C1im][C3H7OSO4]	5.5218	4.5074	-2.3107	-2.3093	-9.7332	-7.8037	4.3913
[C4C1im][C2H5SO4]	5.5417	3.4749	-2.3470	-2.3432	-9.7896	-6.3389	4.4657
[C4C1im][(C2F5)3PF3]	3.1953	4.4712	-0.1171	-0.1175	-8.1912	-9.4099	4.4131
[C4C1im][SCN]	5.7028	1.7478	-2.0836	-2.0747	-10.6730	-4.6747	4.6345
[C4C1im][CH3CO2]	7.8517	3.8263	-5.0354	-5.0155	-9.9952	-4.1415	4.3854
[C4C1im][SbF6]	3.4929	1.9553	-0.2404	-0.2411	-8.6361	-4.7726	5.3101
[C4C1im][CH3SO4]	5.7608	2.9964	-2.3004	-2.2986	-9.7778	-5.2778	4.9230
[C4C1im][PF6]	3.9648	1.5395	-0.4190	-0.4224	-8.8151	-4.1862	5.4645
[C4C1im][AsF6]	3.7548	1.6824	-0.2507	-0.2517	-8.7351	-4.4104	5.4905
[C4C1im][ClO4]	4.7960	1.2984	-1.0293	-1.0305	-9.4329	-3.8300	5.3671
[C4C1im][BF4]	5.0328	1.4217	-1.4384	-1.4384	-9.2839	-3.4506	5.3454
[C4C1im][NO3]	6.2984	1.9618	-2.6328	-2.6281	-9.6651	-3.1033	5.3921
[C4C1im][CH3SO3]	6.9006	3.8194	-3.3029	-3.3272	-9.8622	-4.8250	5.3333
[C4C1im][NO2]	7.3632	2.4317	-3.4778	-3.4667	-9.8217	-2.6795	5.6975
[C4C1im]I	6.9912	2.2122	-2.0938	-2.0889	-11.6731	-4.6536	5.8396
[C4C1im]Br	8.1475	2.8547	-2.8919	-2.8835	-11.0557	-3.5706	6.7254
[C4C1im]Cl	8.9738	3.3982	-3.6432	-3.6324	-10.8686	-3.0701	7.0610
[C5C1im][(C4H9O)2PO2]	5.7421	5.8610	-3.9129	-3.9002	-10.8870	-12.8787	0.8561
[C5C1im][BC14H8O6]	4.2001	4.7243	-1.7208	-1.7247	-10.8467	-13.2113	1.3751

[C5C1im][I3]	3.6520	2.6182	-0.0349	-0.0356	-13.9096	-11.0831	2.7362
[C5C1im][C7H5O3]	5.1787	3.2457	-3.0576	-3.0422	-10.9288	-7.3898	2.6922
[C5C1im][(C6H5)CO2]	6.3461	4.2056	-4.3191	-4.2976	-11.0859	-7.3217	2.7243
[C5C1im][(C2H5O)2PO2]	6.2680	5.0810	-4.0008	-3.9881	-10.8745	-8.7692	2.8325
[C5C1im][PO2(C2F5)2]	4.0565	3.3025	-1.9047	-1.8941	-9.4895	-7.8493	3.0218
[C5C1im][C6H4BO8]	4.8810	3.7262	-1.5188	-2.2240	-10.4185	-8.6124	3.4997
[C5C1im][FeCl4]	3.4850	2.7271	0.0000	0.0000	-12.4431	-9.3527	3.6612
[C5C1im][B(CN)4]	4.4182	2.9307	-1.0896	-1.0867	-10.6864	-8.0836	3.8432
[C5C1im][C7H8SO3]	5.6525	4.7271	-2.8356	-2.8325	-10.9444	-8.9070	3.4396
[C5C1im][C3F7CO2]	4.8217	3.0755	-2.6411	-2.6294	-9.7712	-6.2343	3.4268
[C5C1im][BCl4]	3.8309	2.2338	-0.0279	-0.0294	-12.3727	-8.2259	4.1439
[C5C1im][C4H9SO4]	5.2612	4.1088	-2.2723	-2.2688	-10.8169	-8.3656	3.6988
[C5C1im][CH(CF3SO2)2]	3.8324	3.2535	-0.8423	-0.9349	-9.7846	-8.0873	3.8781
[C5C1im][C(CN)3]	4.7856	2.5285	-1.6768	-1.6728	-10.7368	-6.2753	4.1332
[C5C1im][N(C2F5SO2)2]	3.7465	3.8452	-0.5693	-0.5706	-9.4918	-9.5100	3.8060
[C5C1im][C4H9OSO4]	5.4179	4.7890	-2.2784	-2.2767	-10.7622	-8.8667	3.9841
[C5C1im][B(C2O4)2]	4.1906	2.6271	-0.7917	-0.7926	-10.1806	-6.9861	4.4169
[C5C1im][C5OC1SO4]	5.5471	6.0008	-2.3185	-2.3167	-10.7197	-10.3185	4.0534
[C5C1im][N(CF3SO2)2]	3.8824	3.1985	-0.7241	-0.7247	-9.7437	-7.7553	4.2457
[C5C1im][CF3CO2]	5.3897	2.3889	-2.8382	-2.8260	-10.2095	-4.2135	4.2328
[C5C1im][N(CN)2]	5.5082	2.1939	-2.5182	-2.5100	-10.7329	-4.5585	4.3676
[C5C1im][(CH3O)2PO2]	6.6653	4.4991	-3.8945	-3.8833	-10.9062	-6.5546	4.0425
[C5C1im][CF3SO3]	4.7430	2.3245	-1.6761	-1.6739	-10.1267	-4.9882	4.6604
[C5C1im][C3H7OSO4]	5.6359	4.5055	-2.2839	-2.2825	-10.7508	-7.8055	4.5141
[C5C1im][C2H5SO4]	5.6355	3.5025	-2.3190	-2.3152	-10.8071	-6.3386	4.5974
[C5C1im][(C2F5)3PF3]	3.4366	4.3895	-0.1146	-0.1151	-9.1617	-9.4309	4.5290
[C5C1im][SCN]	5.7477	1.8611	-2.0610	-2.0514	-11.6897	-4.6716	4.7869
[C5C1im][CH3CO2]	7.7889	3.8418	-5.0062	-4.9860	-11.0118	-4.1414	4.4039
[C5C1im][SbF6]	3.8059	2.0589	-0.2336	-0.2343	-9.6655	-4.7885	5.6093
[C5C1im][CH3SO4]	5.8237	3.0427	-2.2710	-2.2692	-10.7931	-5.2764	5.0486
[C5C1im][PF6]	4.2324	1.6872	-0.4073	-0.4107	-9.8445	-4.1986	5.7703
[C5C1im][AsF6]	4.0491	1.8186	-0.2433	-0.2443	-9.7656	-4.4243	5.8010
[C5C1im][ClO4]	4.9355	1.4380	-1.0081	-1.0091	-10.4495	-3.8286	5.5988

[C5C1im][BF4]	5.1472	1.5626	-1.4085	-1.4085	-10.3040	-3.4558	5.5673
[C5C1im][NO3]	6.2686	2.0603	-2.6008	-2.5959	-10.6753	-3.0973	5.4957
[C5C1im][CH3SO3]	6.8759	3.8316	-3.2690	-3.2932	-10.8786	-4.8252	5.3807
[C5C1im][NO2]	7.2332	2.5093	-3.4423	-3.4311	-10.8373	-2.6784	5.7203
[C5C1im]I	6.8977	2.3047	-2.0600	-2.0552	-12.6885	-4.6540	5.8944
[C5C1im]Br	7.9610	2.9199	-2.8540	-2.8461	-12.0760	-3.5755	6.7005
[C5C1im]Cl	8.7423	3.4491	-3.6042	-3.5943	-11.8815	-3.0707	6.9990
[C6C1im][(C4H9O)2PO2]	5.8520	5.8366	-3.9046	-3.8847	-11.9098	-12.8825	0.9427
[C6C1im][BC14H8O6]	4.4039	4.7342	-1.7113	-1.7125	-11.8503	-13.2023	1.5543
[C6C1im][I3]	3.9443	2.6624	-0.0342	-0.0348	-14.9325	-11.0475	3.0020
[C6C1im][C7H5O3]	5.3188	3.2800	-3.0468	-3.0265	-11.9394	-7.3846	2.8454
[C6C1im][(C6H5)CO2]	6.4322	4.2157	-4.3090	-4.2793	-12.0975	-7.3159	2.8258
[C6C1im][(C2H5O)2PO2]	6.3509	5.0675	-3.9907	-3.9704	-11.8937	-8.7707	2.9115
[C6C1im][PO2(C2F5)2]	4.2290	3.2860	-1.8956	-1.8821	-10.4790	-7.8672	3.1464
[C6C1im][C6H4BO8]	5.0703	3.7842	-1.5075	-2.1995	-11.4244	-8.6147	3.7036
[C6C1im][FeCl4]	3.7880	2.7527	0.0000	0.0000	-13.4672	-9.3381	3.9093
[C6C1im][B(CN)4]	4.6213	2.9803	-1.0750	-1.0705	-11.6784	-8.0308	4.0779
[C6C1im][C7H8SO3]	5.7717	4.7285	-2.8239	-2.8159	-11.9574	-8.9039	3.5562
[C6C1im][C3F7CO2]	4.9647	3.0859	-2.6319	-2.6159	-10.7752	-6.2483	3.5529
[C6C1im][BCl4]	4.1149	2.3085	-0.0273	-0.0287	-13.3930	-8.2172	4.4099
[C6C1im][C4H9SO4]	5.3908	4.1204	-2.2592	-2.2523	-11.8364	-8.3677	3.8274
[C6C1im][CH(CF3SO2)2]	4.0481	3.2642	-0.8336	-0.9233	-10.7777	-8.1034	4.0512
[C6C1im][C(CN)3]	4.9524	2.5923	-1.6599	-1.6534	-11.7357	-6.2437	4.3445
[C6C1im][N(C2F5SO2)2]	3.9525	3.8321	-0.5628	-0.5634	-10.4599	-9.5265	3.9518
[C6C1im][C4H9OSO4]	5.5491	4.7885	-2.2654	-2.2603	-11.7798	-8.8694	4.1051
[C6C1im][B(C2O4)2]	4.4259	2.7009	-0.7829	-0.7828	-11.1848	-6.9906	4.6517
[C6C1im][C5OC1SO4]	5.6872	5.9756	-2.3066	-2.3013	-11.7366	-10.3232	4.1613
[C6C1im][N(CF3SO2)2]	4.0968	3.2114	-0.7161	-0.7157	-10.7316	-7.7659	4.4203
[C6C1im][CF3CO2]	5.5027	2.4464	-2.8284	-2.8115	-11.2300	-4.2203	4.3757
[C6C1im][N(CN)2]	5.6055	2.2743	-2.5005	-2.4882	-11.7381	-4.5397	4.5380
[C6C1im][(CH3O)2PO2]	6.7135	4.4980	-3.8827	-3.8640	-11.9232	-6.5544	4.1091
[C6C1im][CF3SO3]	4.9012	2.3832	-1.6634	-1.6588	-11.1424	-4.9948	4.8368
[C6C1im][C3H7OSO4]	5.7525	4.5106	-2.2699	-2.2652	-11.7674	-7.8077	4.6303

[C6C1im][C2H5SO4]	5.7349	3.5326	-2.3039	-2.2965	-11.8241	-6.3385	4.7216
[C6C1im][(C2F5)3PF3]	3.6582	4.3155	-0.1127	-0.1130	-10.1368	-9.4516	4.6361
[C6C1im][SCN]	5.8223	1.9649	-2.0463	-2.0336	-12.6986	-4.6601	4.9498
[C6C1im][CH3CO2]	7.7576	3.8632	-4.9945	-4.9636	-12.0278	-4.1410	4.4337
[C6C1im][SbF6]	4.0841	2.1450	-0.2288	-0.2293	-10.6938	-4.8035	5.8711
[C6C1im][CH3SO4]	5.9015	3.0908	-2.2546	-2.2494	-11.8085	-5.2753	5.1724
[C6C1im][PF6]	4.4769	1.8112	-0.3992	-0.4022	-10.8737	-4.2109	6.0405
[C6C1im][AsF6]	4.3138	1.9322	-0.2381	-0.2389	-10.7952	-4.4378	6.0736
[C6C1im][ClO4]	5.0831	1.5610	-0.9940	-0.9939	-11.4672	-3.8275	5.8170
[C6C1im][BF4]	5.2747	1.6870	-1.3894	-1.3879	-11.3270	-3.4625	5.7744
[C6C1im][NO3]	6.2788	2.1515	-2.5823	-2.5733	-11.6871	-3.0917	5.6080
[C6C1im][CH3SO3]	6.8801	3.8528	-3.2530	-3.2708	-11.8950	-4.8253	5.4366
[C6C1im][NO2]	7.1636	2.5847	-3.4226	-3.4052	-11.8493	-2.6725	5.7703
[C6C1im]I	6.8603	2.3930	-2.0409	-2.0330	-13.7023	-4.6515	5.9708
[C6C1im]Br	7.8453	2.9862	-2.8346	-2.8215	-13.0906	-3.5729	6.7104
[C6C1im]Cl	8.5835	3.5026	-3.5875	-3.5703	-12.8956	-3.0704	6.9678
[C7C1im][(C4H9O)2PO2]	5.9601	5.8208	-3.9106	-3.9044	-12.9443	-12.8854	1.0058
[C7C1im][BC14H8O6]	4.5974	4.7477	-1.7100	-1.7162	-12.8676	-13.1940	1.7148
[C7C1im][I3]	4.2144	2.7056	-0.0335	-0.0342	-15.9690	-11.0165	3.2497
[C7C1im][C7H5O3]	5.4521	3.3132	-3.0531	-3.0438	-12.9637	-7.3798	2.9643
[C7C1im][(C6H5)CO2]	6.5148	4.2261	-4.3201	-4.3075	-13.1230	-7.3104	2.8862
[C7C1im][(C2H5O)2PO2]	6.4369	5.0639	-3.9946	-3.9882	-12.9250	-8.7716	2.9714
[C7C1im][PO2(C2F5)2]	4.3886	3.2688	-1.8989	-1.8920	-11.4823	-7.8828	3.2435
[C7C1im][C6H4BO8]	5.2579	3.8501	-1.5011	-2.1867	-12.4437	-8.6171	3.9025
[C7C1im][FeCl4]	4.0671	2.7800	0.0000	0.0000	-14.5037	-9.3253	4.1415
[C7C1im][B(CN)4]	4.8139	3.0280	-1.0669	-1.0656	-12.6881	-7.9849	4.2904
[C7C1im][C7H8SO3]	5.8930	4.7404	-2.8218	-2.8227	-12.9834	-8.9007	3.6626
[C7C1im][C3F7CO2]	5.0983	3.0945	-2.6372	-2.6307	-11.7922	-6.2604	3.6480
[C7C1im][BCl4]	4.3789	2.3796	-0.0268	-0.0283	-14.4265	-8.2095	4.6594
[C7C1im][C4H9SO4]	5.5228	4.1424	-2.2524	-2.2518	-12.8679	-8.3692	3.9524
[C7C1im][CH(CF3SO2)2]	4.2519	3.2780	-0.8281	-0.9183	-11.7849	-8.1176	4.2140
[C7C1im][C(CN)3]	5.1137	2.6529	-1.6521	-1.6508	-12.7513	-6.2170	4.5327
[C7C1im][N(C2F5SO2)2]	4.1481	3.8229	-0.5587	-0.5607	-11.4435	-9.5415	4.0903

[C7C1im][C4H9OSO4]	5.6848	4.8026	-2.2581	-2.2591	-12.8095	-8.8716	4.2275
[C7C1im][B(C2O4)2]	4.6501	2.7757	-0.7768	-0.7786	-12.2029	-6.9950	4.8751
[C7C1im][C5OC1SO4]	5.8318	5.9692	-2.3000	-2.3008	-12.7653	-10.3272	4.2741
[C7C1im][N(CF3SO2)2]	4.3001	3.2276	-0.7109	-0.7124	-11.7342	-7.7753	4.5857
[C7C1im][CF3CO2]	5.6138	2.4987	-2.8333	-2.8265	-12.2628	-4.2261	4.4890
[C7C1im][N(CN)2]	5.7094	2.3500	-2.4967	-2.4929	-12.7590	-4.5243	4.6847
[C7C1im][(CH3O)2PO2]	6.7717	4.5072	-3.8846	-3.8793	-12.9530	-6.5539	4.1621
[C7C1im][CF3SO3]	5.0563	2.4421	-1.6569	-1.6570	-12.1706	-5.0003	5.0010
[C7C1im][C3H7OSO4]	5.8767	4.5314	-2.2618	-2.2632	-12.7963	-7.8093	4.7507
[C7C1im][C2H5SO4]	5.8437	3.5735	-2.2951	-2.2941	-12.8536	-6.3381	4.8469
[C7C1im][(C2F5)3PF3]	3.8671	4.2481	-0.1114	-0.1120	-11.1266	-9.4699	4.7398
[C7C1im][SCN]	5.9135	2.0650	-2.0445	-2.0384	-13.7226	-4.6496	5.1006
[C7C1im][CH3CO2]	7.7417	3.8842	-5.0033	-4.9921	-13.0575	-4.1404	4.4329
[C7C1im][SbF6]	4.3435	2.2263	-0.2244	-0.2252	-11.7331	-4.8162	6.1177
[C7C1im][CH3SO4]	5.9944	3.1486	-2.2447	-2.2456	-12.8369	-5.2740	5.3002
[C7C1im][PF6]	4.7109	1.9278	-0.3918	-0.3954	-11.9142	-4.2213	6.2983
[C7C1im][AsF6]	4.5635	2.0383	-0.2333	-0.2344	-11.8360	-4.4492	6.3317
[C7C1im][ClO4]	5.2399	1.6817	-0.9827	-0.9847	-12.4980	-3.8263	6.0349
[C7C1im][BF4]	5.4154	1.8100	-1.3730	-1.3741	-12.3626	-3.4683	5.9849
[C7C1im][NO3]	6.3178	2.2436	-2.5739	-2.5726	-12.7128	-3.0863	5.7221
[C7C1im][CH3SO3]	6.9081	3.8869	-3.2465	-3.2738	-12.9243	-4.8251	5.4979
[C7C1im][NO2]	7.1329	2.6606	-3.4177	-3.4118	-12.8756	-2.6676	5.8195
[C7C1im]I	6.8623	2.4851	-2.0270	-2.0242	-14.7321	-4.6496	6.0658
[C7C1im]Br	7.7760	3.0550	-2.8242	-2.8198	-14.1205	-3.5714	6.7347
[C7C1im]Cl	8.4737	3.5570	-3.5814	-3.5761	-13.9248	-3.0703	6.9472
[C8C1im][(C4H9O)2PO2]	6.0761	5.8089	-3.8830	-3.8739	-13.9693	-12.8884	1.1253
[C8C1im][BC14H8O6]	4.7846	4.7616	-1.6946	-1.6992	-13.8775	-13.1872	1.8904
[C8C1im][I3]	4.4587	2.7416	-0.0327	-0.0334	-16.9977	-10.9903	3.4723
[C8C1im][C7H5O3]	5.5900	3.3479	-3.0337	-3.0211	-13.9804	-7.3759	3.1247
[C8C1im][(C6H5)CO2]	6.6128	4.2444	-4.2948	-4.2782	-14.1409	-7.3056	3.0160
[C8C1im][(C2H5O)2PO2]	6.5343	5.0633	-3.9650	-3.9557	-13.9478	-8.7727	3.0892
[C8C1im][PO2(C2F5)2]	4.5463	3.2596	-1.8845	-1.8754	-12.4783	-7.8962	3.3712
[C8C1im][C6H4BO8]	5.4403	3.9089	-1.4837	-2.1584	-13.4553	-8.6203	4.1076

[C8C1im][FeCl4]	4.3189	2.8029	0.0000	0.0000	-15.5311	-9.3144	4.3510
[C8C1im][B(CN)4]	4.9953	3.0686	-1.0505	-1.0480	-13.6990	-7.9502	4.4965
[C8C1im][C7H8SO3]	6.0202	4.7530	-2.7963	-2.7951	-14.0015	-8.8982	3.8063
[C8C1im][C3F7CO2]	5.2351	3.1086	-2.6186	-2.6094	-12.8011	-6.2709	3.7843
[C8C1im][BCl4]	4.6184	2.4390	-0.0261	-0.0276	-15.4515	-8.2030	4.8836
[C8C1im][C4H9SO4]	5.6577	4.1613	-2.2282	-2.2260	-13.8907	-8.3709	4.1015
[C8C1im][CH(CF3SO2)2]	4.4449	3.2904	-0.8163	-0.9042	-12.7850	-8.1301	4.3780
[C8C1im][C(CN)3]	5.2701	2.7055	-1.6306	-1.6277	-13.7675	-6.1994	4.7268
[C8C1im][N(C2F5SO2)2]	4.3339	3.8142	-0.5503	-0.5519	-12.4226	-9.5556	4.2289
[C8C1im][C4H9OSO4]	5.8232	4.8140	-2.2338	-2.2334	-13.8305	-8.8740	4.3736
[C8C1im][B(C2O4)2]	4.8596	2.8400	-0.7654	-0.7666	-13.2137	-7.0000	5.0885
[C8C1im][C5OC1SO4]	5.9782	5.9623	-2.2763	-2.2757	-13.7851	-10.3314	4.4114
[C8C1im][N(CF3SO2)2]	4.4918	3.2412	-0.7003	-0.7012	-12.7311	-7.7845	4.7490
[C8C1im][CF3CO2]	5.7328	2.5484	-2.8129	-2.8033	-13.2866	-4.2310	4.6429
[C8C1im][N(CN)2]	5.8214	2.4170	-2.4708	-2.4646	-13.7801	-4.5171	4.8583
[C8C1im][(CH3O)2PO2]	6.8470	4.5187	-3.8539	-3.8459	-13.9749	-6.5537	4.2749
[C8C1im][CF3SO3]	5.2095	2.4943	-1.6370	-1.6359	-13.1902	-5.0049	5.1783
[C8C1im][C3H7OSO4]	6.0063	4.5496	-2.2369	-2.2369	-13.8167	-7.8112	4.8964
[C8C1im][C2H5SO4]	5.9602	3.6093	-2.2691	-2.2666	-13.8750	-6.3381	4.9980
[C8C1im][(C2F5)3PF3]	4.0632	4.1887	-0.1093	-0.1098	-12.1095	-9.4850	4.8430
[C8C1im][SCN]	6.0178	2.1523	-2.0263	-2.0179	-14.7437	-4.6451	5.2723
[C8C1im][CH3CO2]	7.7600	3.9103	-4.9703	-4.9553	-14.0798	-4.1398	4.5204
[C8C1im][SbF6]	4.5796	2.2938	-0.2189	-0.2196	-12.7613	-4.8260	6.3418
[C8C1im][CH3SO4]	6.0991	3.1996	-2.2182	-2.2177	-13.8577	-5.2732	5.4546
[C8C1im][PF6]	4.9272	2.0251	-0.3825	-0.3860	-12.9438	-4.2293	6.5347
[C8C1im][AsF6]	4.7920	2.1266	-0.2275	-0.2285	-12.8656	-4.4579	6.5659
[C8C1im][ClO4]	5.3964	1.7844	-0.9654	-0.9668	-13.5208	-3.8253	6.2487
[C8C1im][BF4]	5.5598	1.9144	-1.3489	-1.3492	-13.3892	-3.4725	6.1969
[C8C1im][NO3]	6.3821	2.3238	-2.5464	-2.5431	-13.7317	-3.0816	5.8725
[C8C1im][CH3SO3]	6.9605	3.9183	-3.2147	-3.2393	-13.9461	-4.8250	5.6099
[C8C1im][NO2]	7.1421	2.7282	-3.3868	-3.3780	-13.8964	-2.6642	5.9277
[C8C1im]I	6.8966	2.5641	-1.9989	-1.9950	-15.7543	-4.6487	6.1931
[C8C1im]Br	7.7521	3.1147	-2.7916	-2.7854	-15.1448	-3.5722	6.8140

[C ₈ C _{1im}]Cl	8.4178	3.6057	-3.5462	-3.5388	-14.9466	-3.0704	7.0008
[C ₉ C _{1im}][(C ₄ H ₉ O) ₂ PO ₂]	6.1731	5.7974	-3.8908	-3.8712	-15.0115	-12.8911	1.1961
[C ₉ C _{1im}][BC ₁₄ H ₈ O ₆]	4.9577	4.7754	-1.6881	-1.6902	-14.9061	-13.1808	2.0467
[C ₉ C _{1im}][I ₃]	4.6854	2.7747	-0.0321	-0.0328	-18.0436	-10.9656	3.6802
[C ₉ C _{1im}][C ₇ H ₅ O ₃]	5.7134	3.3818	-3.0299	-3.0118	-15.0154	-7.3722	3.2582
[C ₉ C _{1im}][(C ₆ H ₅)CO ₂]	6.6943	4.2611	-4.3014	-4.2733	-15.1766	-7.3010	3.1012
[C ₉ C _{1im}][(C ₂ H ₅ O) ₂ PO ₂]	6.6142	5.0662	-3.9721	-3.9520	-14.9883	-8.7736	3.1601
[C ₉ C _{1im}][PO ₂ (C ₂ F ₅) ₂]	4.6883	3.2489	-1.8775	-1.8660	-13.4941	-7.9086	3.4798
[C ₉ C _{1im}][C ₆ H ₄ BO ₈]	5.6128	3.9709	-1.4769	-2.1403	-14.4862	-8.6234	4.2965
[C ₉ C _{1im}][FeCl ₄]	4.5519	2.8238	0.0000	0.0000	-16.5762	-9.3045	4.5461
[C ₉ C _{1im}][B(CN) ₄]	5.1675	3.1085	-1.0384	-1.0349	-14.7217	-7.9104	4.6937
[C ₉ C _{1im}][C ₇ H ₈ SO ₃]	6.1315	4.7693	-2.7962	-2.7885	-15.0379	-8.8958	3.9152
[C ₉ C _{1im}][C ₃ F ₇ CO ₂]	5.3544	3.1209	-2.6159	-2.6017	-13.8288	-6.2802	3.8915
[C ₉ C _{1im}][BCl ₄]	4.8415	2.4951	-0.0256	-0.0271	-16.4945	-8.1968	5.0944
[C ₉ C _{1im}][C ₄ H ₉ SO ₄]	5.7787	4.1846	-2.2236	-2.2171	-14.9313	-8.3723	4.2237
[C ₉ C _{1im}][CH(CF ₃ SO ₂) ₂]	4.6240	3.3028	-0.8093	-0.8948	-13.8048	-8.1416	4.5280
[C ₉ C _{1im}][C(CN) ₃]	5.4184	2.7581	-1.6183	-1.6131	-14.7936	-6.1745	4.9093
[C ₉ C _{1im}][N(C ₂ F ₅ SO ₂) ₂]	4.5074	3.8059	-0.5447	-0.5458	-13.4217	-9.5679	4.3576
[C ₉ C _{1im}][C ₄ H ₉ OSO ₄]	5.9497	4.8327	-2.2294	-2.2247	-14.8696	-8.8761	4.4957
[C ₉ C _{1im}][B(C ₂ O ₄) ₂]	5.0565	2.9035	-0.7586	-0.7590	-14.2440	-7.0047	5.2882
[C ₉ C _{1im}][C ₅ OC ₁ SO ₄]	6.1134	5.9652	-2.2728	-2.2679	-14.8231	-10.3352	4.5268
[C ₉ C _{1im}][N(CF ₃ SO ₂) ₂]	4.6707	3.2554	-0.6937	-0.6939	-13.7471	-7.7920	4.9008
[C ₉ C _{1im}][CF ₃ CO ₂]	5.8365	2.5961	-2.8117	-2.7963	-14.3285	-4.2353	4.7652
[C ₉ C _{1im}][N(CN) ₂]	5.9280	2.4845	-2.4619	-2.4512	-14.8087	-4.5004	5.0156
[C ₉ C _{1im}][(CH ₃ O) ₂ PO ₂]	6.9074	4.5348	-3.8604	-3.8417	-15.0146	-6.5535	4.3429
[C ₉ C _{1im}][CF ₃ SO ₃]	5.3492	2.5464	-1.6296	-1.6259	-14.2281	-5.0089	5.3336
[C ₉ C _{1im}][C ₃ H ₇ OSO ₄]	6.1254	4.5760	-2.2320	-2.2277	-14.8554	-7.8129	5.0195
[C ₉ C _{1im}][C ₂ H ₅ SO ₄]	6.0657	3.6506	-2.2636	-2.2567	-14.9147	-6.3379	5.1238
[C ₉ C _{1im}][(C ₂ F ₅) ₃ PF ₃]	4.2438	4.1279	-0.1075	-0.1080	-13.1137	-9.4998	4.9348
[C ₉ C _{1im}][SCN]	6.1220	2.2415	-2.0157	-2.0050	-15.7765	-4.6344	5.4400
[C ₉ C _{1im}][CH ₃ CO ₂]	7.7639	3.9363	-4.9839	-4.9528	-15.1197	-4.1390	4.5518
[C ₉ C _{1im}][SbF ₆]	4.7991	2.3575	-0.2153	-0.2158	-13.8083	-4.8358	6.5505
[C ₉ C _{1im}][CH ₃ SO ₄]	6.1957	3.2560	-2.2119	-2.2071	-14.8969	-5.2722	5.5859

[C ₉ C _{1im}][PF ₆]	5.1303	2.1180	-0.3767	-0.3798	-13.9924	-4.2375	6.7555
[C ₉ C _{1im}][AsF ₆]	5.0057	2.2103	-0.2237	-0.2245	-13.9141	-4.4668	6.7848
[C ₉ C _{1im}][ClO ₄]	5.5468	1.8860	-0.9560	-0.9563	-14.5623	-3.8244	6.4491
[C ₉ C _{1im}][BF ₄]	5.6976	2.0180	-1.3370	-1.3356	-14.4355	-3.4777	6.3900
[C ₉ C _{1im}][NO ₃]	6.4420	2.4056	-2.5394	-2.5312	-14.7697	-3.0774	5.9990
[C ₉ C _{1im}][CH ₃ SO ₃]	7.0034	3.9568	-3.2151	-3.2313	-14.9862	-4.8248	5.6868
[C ₉ C _{1im}][NO ₂]	7.1498	2.7987	-3.3832	-3.3667	-14.9327	-2.6581	6.0097
[C ₉ C _{1im}]I	6.9315	2.6471	-1.9919	-1.9839	-16.7940	-4.6461	6.3021
[C ₉ C _{1im}]Br	7.7286	3.1789	-2.7904	-2.7769	-16.1830	-3.5679	6.8667
[C ₉ C _{1im}]Cl	8.3568	3.6569	-3.5526	-3.5344	-15.9874	-3.0700	7.0104
[C ₁₀ C _{1im}][(C ₄ H ₉ O) ₂ PO ₂]	6.2979	5.8041	-3.8442	-3.8356	-16.0384	-12.8938	1.3482
[C ₁₀ C _{1im}][BC ₁₄ H ₈ O ₆]	5.1334	4.7932	-1.6663	-1.6708	-15.9195	-13.1744	2.2221
[C ₁₀ C _{1im}][I ₃]	4.8958	2.8011	-0.0312	-0.0319	-19.0736	-10.9432	3.8714
[C ₁₀ C _{1im}][C ₇ H ₅ O ₃]	5.8519	3.4200	-3.0010	-2.9890	-16.0355	-7.3683	3.4270
[C ₁₀ C _{1im}][(C ₆ H ₅)CO ₂]	6.8055	4.2917	-4.2587	-4.2427	-16.1979	-7.2962	3.2593
[C ₁₀ C _{1im}][(C ₂ H ₅ O) ₂ PO ₂]	6.7265	5.0833	-3.9232	-3.9144	-16.0136	-8.7746	3.3142
[C ₁₀ C _{1im}][PO ₂ (C ₂ F ₅) ₂]	4.8359	3.2458	-1.8574	-1.8487	-14.4970	-7.9206	3.6095
[C ₁₀ C _{1im}][C ₆ H ₄ BO ₈]	5.7888	4.0290	-1.4534	-2.1104	-15.5020	-8.6267	4.5013
[C ₁₀ C _{1im}][FeCl ₄]	4.7668	2.8394	0.0000	0.0000	-17.6054	-9.2954	4.7246
[C ₁₀ C _{1im}][B(CN) ₄]	5.3350	3.1442	-1.0194	-1.0171	-15.7338	-7.8766	4.8882
[C ₁₀ C _{1im}][C ₇ H ₈ SO ₃]	6.2665	4.7945	-2.7574	-2.7565	-16.0589	-8.8931	4.0832
[C ₁₀ C _{1im}][C ₃ F ₇ CO ₂]	5.4894	3.1409	-2.5880	-2.5793	-14.8428	-6.2894	4.0375
[C ₁₀ C _{1im}][BCl ₄]	5.0494	2.5408	-0.0249	-0.0264	-17.5219	-8.1912	5.2876
[C ₁₀ C _{1im}][C ₄ H ₉ SO ₄]	5.9181	4.2123	-2.1892	-2.1872	-15.9565	-8.3737	4.3905
[C ₁₀ C _{1im}][CH(CF ₃ SO ₂) ₂]	4.7996	3.3155	-0.7942	-0.8793	-14.8112	-8.1526	4.6841
[C ₁₀ C _{1im}][C(CN) ₃]	5.5689	2.8056	-1.5921	-1.5895	-15.8116	-6.1565	5.0991
[C ₁₀ C _{1im}][N(C ₂ F ₅ SO ₂) ₂]	4.6763	3.7994	-0.5342	-0.5358	-14.4095	-9.5805	4.4892
[C ₁₀ C _{1im}][C ₄ H ₉ OSO ₄]	6.0933	4.8557	-2.1948	-2.1946	-15.8932	-8.8783	4.6619
[C ₁₀ C _{1im}][B(C ₂ O ₄) ₂]	5.2468	2.9592	-0.7443	-0.7456	-15.2594	-7.0094	5.4854
[C ₁₀ C _{1im}][C ₅ OC ₁ SO ₄]	6.2645	5.9746	-2.2384	-2.2380	-15.8454	-10.3390	4.6876
[C ₁₀ C _{1im}][N(CF ₃ SO ₂) ₂]	4.8450	3.2686	-0.6804	-0.6814	-14.7507	-7.8001	5.0552
[C ₁₀ C _{1im}][CF ₃ CO ₂]	5.9614	2.6446	-2.7806	-2.7714	-15.3554	-4.2398	4.9298
[C ₁₀ C _{1im}][N(CN) ₂]	6.0495	2.5461	-2.4285	-2.4226	-15.8320	-4.4924	5.1970

[C ₁₀ C ₁₁ im][(CH ₃ O) ₂ PO ₂]	7.0055	4.5624	-3.8110	-3.8035	-16.0396	-6.5533	4.4957
[C ₁₀ C ₁₁ im][CF ₃ SO ₃]	5.4988	2.5954	-1.6031	-1.6022	-15.2512	-5.0129	5.5121
[C ₁₀ C ₁₁ im][C ₃ H ₇ OSO ₄]	6.2636	4.6056	-2.1970	-2.1971	-15.8786	-7.8145	5.1874
[C ₁₀ C ₁₁ im][C ₂ H ₅ SO ₄]	6.1934	3.6930	-2.2275	-2.2252	-15.9390	-6.3378	5.2953
[C ₁₀ C ₁₁ im][(C ₂ F ₅) ₃ PF ₃]	4.4158	4.0734	-0.1051	-0.1056	-14.1052	-9.5135	5.0262
[C ₁₀ C ₁₁ im][SCN]	6.2412	2.3192	-1.9930	-1.9850	-16.8006	-4.6293	5.6182
[C ₁₀ C ₁₁ im][CH ₃ CO ₂]	7.8219	3.9753	-4.9267	-4.9124	-16.1455	-4.1383	4.6912
[C ₁₀ C ₁₁ im][SbF ₆]	5.0046	2.4089	-0.2092	-0.2099	-14.8388	-4.8443	6.7442
[C ₁₀ C ₁₁ im][CH ₃ SO ₄]	6.3166	3.3106	-2.1759	-2.1755	-15.9209	-5.2715	5.7614
[C ₁₀ C ₁₁ im][PF ₆]	5.3243	2.1947	-0.3665	-0.3698	-15.0244	-4.2447	6.9642
[C ₁₀ C ₁₁ im][AsF ₆]	5.2071	2.2787	-0.2173	-0.2182	-14.9459	-4.4745	6.9882
[C ₁₀ C ₁₁ im][ClO ₄]	5.7029	1.9734	-0.9354	-0.9369	-15.5885	-3.8237	6.6548
[C ₁₀ C ₁₁ im][BF ₄]	5.8463	2.1073	-1.3081	-1.3085	-15.4655	-3.4817	6.5987
[C ₁₀ C ₁₁ im][NO ₃]	6.5367	2.4815	-2.5021	-2.4991	-15.7925	-3.0732	6.1741
[C ₁₀ C ₁₁ im][CH ₃ SO ₃]	7.0888	4.0003	-3.1679	-3.1920	-16.0112	-4.8246	5.8413
[C ₁₀ C ₁₁ im][NO ₂]	7.2077	2.8672	-3.3391	-3.3308	-15.9564	-2.6541	6.1609
[C ₁₀ C ₁₁ im]I	7.0074	2.7235	-1.9557	-1.9518	-17.8200	-4.6448	6.4627
[C ₁₀ C ₁₁ im]Br	7.7640	3.2423	-2.7452	-2.7392	-17.2106	-3.5678	6.9985
[C ₁₀ C ₁₁ im]Cl	8.3709	3.7131	-3.4995	-3.4924	-17.0136	-3.0701	7.1298

Table S4. Experimental viscosity and predicted viscosity values from COSMO model, model by Gharagheizi et al., model by Yan et al. and present work for 2 ILs at 0.1 MPa.

Ionic Liquids	T/K	$\ln \eta_{exp}$	$\ln \eta_{pred, COSMO}$	$\ln \eta_{pred, Gharagheizi et al.}$	$\ln \eta_{pred, Yan et al.}$	$\ln \eta_{pred, present work}$
[C4C1im][N(CF ₃ SO ₂) ₂]	273.15	5.2554	5.5527	5.2225	5.3092	5.6066
[C4C1im][N(CF ₃ SO ₂) ₂]	278.15	4.9445	5.2499	4.9746	5.0416	5.2665
[C4C1im][N(CF ₃ SO ₂) ₂]	283.15	4.6644	4.9641	4.7306	4.7868	4.9420
[C4C1im][N(CF ₃ SO ₂) ₂]	288.15	4.4018	4.6940	4.4911	4.5442	4.6323
[C4C1im][N(CF ₃ SO ₂) ₂]	293.15	4.1558	4.4386	4.2564	4.3131	4.3367
[C4C1im][N(CF ₃ SO ₂) ₂]	298.15	3.9318	4.1968	4.0270	4.0931	4.0544
[C4C1im][N(CF ₃ SO ₂) ₂]	303.15	3.7257	3.9678	3.8034	3.8835	3.7846
[C4C1im][N(CF ₃ SO ₂) ₂]	313.15	3.3499	3.5445	3.3747	3.4935	3.2804
[C4C1im][N(CF ₃ SO ₂) ₂]	323.15	3.0253	3.1629	2.9731	3.1396	2.8194
[C4C1im][PF ₆]	273.15	7.4483	6.6764	6.7468	7.2625	7.1907
[C4C1im][PF ₆]	278.15	7.0202	6.3601	6.4989	6.9039	6.8148
[C4C1im][PF ₆]	283.15	6.6267	6.0616	6.2549	6.5632	6.4550
[C4C1im][PF ₆]	288.15	6.2558	5.7794	6.0154	6.2396	6.1105
[C4C1im][PF ₆]	293.15	5.9108	5.5126	5.7807	5.9321	5.7806
[C4C1im][PF ₆]	303.15	5.3083	5.0209	5.3277	5.3625	5.1616
[C4C1im][PF ₆]	308.15	5.0651	4.7940	5.1101	5.0989	4.8712
[C4C1im][PF ₆]	313.15	4.7875	4.5788	4.8990	4.8485	4.5926
[C4C1im][PF ₆]	323.15	4.3054	4.1801	4.4974	4.3850	4.0689