

**UNDERSTANDING THE EFFECT OF IONIC LIQUIDS AS ADJUVANTS IN
THE PARTITION OF BIOMOLECULES IN AQUEOUS TWO-PHASE
SYSTEMS FORMED BY POLYMERS AND WEAK SALTING-OUT AGENTS**

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Table S1. Experimental weight fraction data (w) for the systems composed of PEG 400 (w_1) + (NH₄)₂SO₄ (w_2) + H₂O (w_3) + IL at 5wt% at 298 K and atmospheric pressure.

PEG 400		[Ch]Cl		[C ₄ mim]Cl		[C ₄ mpyr]Cl		[C ₄ mpip]Cl		[N ₄₄₄₄]Cl		[P ₄₄₄₄]Cl	
100 w_1	100 w_2	100 w_1	100 w_2	100 w_1	100 w_2	100 w_1	100 w_2	100 w_1	100 w_2	100 w_1	100 w_2	100 w_1	100 w_2
4.973	26.76	74.28	0.3637	73.21	0.3524	73.28	0.6485	75.95	0.7994	70.71	0.2604	73.72	0.7060
6.477	24.91	68.42	1.144	65.49	0.8003	65.61	1.070	62.06	1.324	58.87	0.7306	55.25	1.259
7.827	23.89	61.93	1.710	57.71	1.152	58.66	1.372	57.99	1.840	50.95	1.077	49.98	1.848
8.963	22.93	55.60	2.620	52.40	1.345	54.10	1.634	52.93	2.220	46.83	1.425	45.91	2.143
10.25	22.07	51.12	3.624	49.27	1.874	50.99	2.027	49.45	2.643	44.55	1.754	43.73	2.464
11.54	21.29	46.38	4.317	44.45	3.737	48.65	2.337	47.26	3.121	42.84	2.401	42.17	2.810
12.52	20.53	43.34	5.031	42.70	4.137	46.86	2.679	45.02	3.181	41.20	3.007	40.73	3.122
13.52	19.87	40.51	5.701	41.12	4.539	45.12	2.839	42.81	3.435	39.39	3.538	38.88	3.378
15.54	18.90	37.55	6.607	39.26	5.004	43.99	3.165	41.83	3.872	37.74	4.034	37.95	3.680
16.38	18.28	35.66	7.411	38.01	5.588	42.60	3.817	41.04	4.207	36.18	4.475	36.83	4.084
17.07	17.69	33.35	8.086	36.49	6.108	40.38	4.383	40.23	4.522	34.90	4.773	35.84	4.478
17.91	17.17	31.80	8.815	34.96	6.629	38.66	4.899	39.48	4.842	33.97	5.114	34.86	4.845
19.58	16.43	30.33	9.555	33.39	7.172	37.27	5.252	38.25	5.072	33.12	5.426	33.53	5.195
20.91	15.56	28.82	10.28	32.79	7.473	35.46	5.985	37.57	5.353	32.28	5.725	31.77	5.996
21.53	15.16	27.34	11.08	31.99	7.750	34.28	6.451	36.42	5.545	31.50	5.991	30.73	6.398
22.07	14.75	25.47	11.83	31.29	8.024	33.47	6.932	35.58	5.745	30.76	6.262	29.81	6.769
23.30	14.22	24.22	12.58	30.65	8.296	32.37	7.320	34.99	5.979	30.07	6.507	27.94	7.475
24.56	13.70	22.98	13.35	30.03	8.552	31.39	7.695	34.43	6.226	29.37	6.743	26.29	8.077
25.72	13.22	21.62	13.93	29.25	8.962	30.59	8.115	33.94	6.474	28.71	6.986	25.31	8.510
26.41	12.59	20.63	14.51	28.51	9.354	29.55	8.471	33.51	6.645	27.96	7.283	24.11	9.102
26.75	12.30	19.71	15.07	27.81	9.720	28.88	8.810	33.02	6.882	27.31	7.557	22.44	9.816
12.82	20.61	18.90	15.54	27.13	10.10	28.15	9.176	32.56	7.089	26.69	7.834	21.47	10.27
14.89	19.49	18.09	16.02	26.49	10.44	27.49	9.524	31.93	7.246	26.07	8.063	20.60	10.70

16.51	18.44	17.08	16.48	25.91	10.70	27.13	9.648	31.48	7.437	25.51	8.285	19.79	11.08
17.76	17.53	16.25	17.07	25.28	11.04	26.53	9.959	31.03	7.664	24.96	8.500	18.90	11.54
19.49	16.81	15.68	17.40	24.72	11.36	25.96	10.27	30.62	7.849	24.25	8.837	17.74	12.16
21.24	16.09	14.88	17.77	24.23	11.63	25.44	10.55	30.23	7.981	23.62	9.128	16.57	12.79
22.77	14.96	14.32	18.17	23.67	11.92	24.88	10.85	29.83	8.097	23.01	9.424	15.62	13.32
22.97	14.38	13.76	18.56	23.16	12.22	24.35	11.13	29.41	8.258	22.46	9.673	14.66	13.85
24.70	13.59	13.08	18.89	22.63	12.49	23.94	11.41	29.04	8.369	21.96	9.904	14.01	14.21
26.67	12.58	12.59	19.22	22.04	12.86	23.43	11.68	28.45	8.705	21.46	10.14	13.24	14.63
26.91	12.17	12.18	19.50	21.45	13.24	23.02	11.95	28.10	8.834	20.86	10.45	12.69	14.94
29.24	11.39	11.79	19.77	20.87	13.61	22.64	12.15	27.78	8.960	20.31	10.74	12.05	15.31
29.78	10.93	11.25	20.06	20.36	13.94	22.15	12.46	27.31	9.237	19.75	11.03	11.59	15.56
30.96	10.41	10.85	20.37	19.87	14.25	21.80	12.64	26.99	9.354	19.18	11.33	11.00	15.91
32.24	9.795	10.26	20.76	19.40	14.57	21.25	12.99	26.51	9.654	18.68	11.60	10.62	16.11
33.16	9.441	9.737	21.11	18.97	14.85	20.73	13.29	26.23	9.774	18.08	11.95	10.05	16.45
34.71	8.850	9.225	21.48	18.56	15.10	20.28	13.56	25.70	10.01	17.54	12.25	9.380	16.81
36.76	8.097	8.714	21.87	18.01	15.51	19.81	13.86	25.43	10.08	16.99	12.56	8.980	17.04
38.96	7.210	8.179	22.32	17.62	15.76	19.38	14.14	25.00	10.35	16.49	12.86	8.403	17.36
42.51	6.319	7.606	22.76	17.20	16.06	18.98	14.42	24.61	10.62	15.94	13.19	7.960	17.60
46.77	5.232	6.978	23.33	16.77	16.34	18.59	14.72	24.34	10.70	15.17	13.58	7.496	17.86
51.37	3.807	6.490	23.75	16.32	16.66	18.22	14.94	23.97	10.93	14.67	13.87	7.061	18.11
		5.987	24.24	15.87	16.99	17.88	15.22	23.75	11.01	14.21	14.15	6.591	18.38
		5.486	24.77	15.50	17.25	17.64	15.36	23.38	11.21	13.78	14.39	6.227	18.59
				15.07	17.55	17.30	15.62	23.04	11.39	13.38	14.62		
				14.80	17.73	17.08	15.77	22.67	11.60	12.99	14.85		
				14.43	18.02	16.84	15.91	22.32	11.84	12.62	15.07		
				14.12	18.22	16.52	16.14	21.99	12.06	12.21	15.33		
				13.79	18.48	16.23	16.37	21.69	12.24	11.79	15.59		
				13.52	18.67	15.92	16.58	21.38	12.45	11.49	15.76		

13.19	18.91	15.63	16.80	21.07	12.66	11.16	15.96
12.95	19.08	15.35	17.01	20.79	12.84	10.80	16.20
12.65	19.30	15.01	17.28	20.49	13.00	10.33	16.45
12.33	19.55	14.76	17.45	20.22	13.17	10.03	16.64
12.08	19.73	14.51	17.63	19.94	13.35	9.809	16.78
11.87	19.89	14.27	17.81	19.63	13.57	9.425	16.99
11.64	20.07	14.12	17.91	19.32	13.78	9.170	17.16
11.45	20.21	13.85	18.12	19.08	13.92	8.932	17.31
11.23	20.39	13.57	18.32	18.86	14.02	8.711	17.45
10.97	20.58	13.28	18.60	18.61	14.20	8.372	17.65
10.75	20.75	13.08	18.74	18.29	14.46	8.017	17.87
10.52	20.94	12.95	18.81	18.07	14.63	7.693	18.07
10.29	21.13	12.70	19.00	17.82	14.78	7.490	18.22
10.11	21.27	12.51	19.13	17.59	14.96	7.203	18.39
9.935	21.42	12.32	19.26	17.38	15.08	6.913	18.58
9.775	21.54	12.10	19.43	17.16	15.23	6.620	18.78
9.615	21.66	11.93	19.56	16.46	15.75	6.395	18.91
9.456	21.80	11.76	19.70	16.26	15.87	6.145	19.08
9.299	21.94	11.60	19.80	15.91	16.14		
9.135	22.07	11.39	19.97	15.63	16.31		
8.937	22.23	11.14	20.18	15.38	16.51		
8.777	22.37	10.99	20.27	15.21	16.63		
8.625	22.50	10.81	20.41	14.96	16.82		
8.481	22.64	10.63	20.54	14.79	16.95		
8.349	22.74	10.46	20.68	14.60	17.09		
8.206	22.86	10.34	20.79	14.45	17.20		
8.056	23.00	10.22	20.88	14.29	17.29		
7.912	23.13	10.10	20.99	14.08	17.46		

7.771	23.26	9.938	21.10	13.94	17.56
7.639	23.40	9.753	21.26	13.74	17.72
7.536	23.49	9.617	21.37	13.60	17.84
7.402	23.62	9.426	21.51	13.43	17.99
7.281	23.73	9.294	21.64	13.25	18.12
7.145	23.85	9.158	21.74	13.11	18.23
7.014	23.99	9.036	21.85	12.97	18.30
6.892	24.11	8.914	21.93	12.79	18.44
6.771	24.23	8.786	22.02	12.67	18.52
6.649	24.35	8.640	22.14	12.52	18.65
6.505	24.51	8.506	22.27	12.41	18.72
6.367	24.66	8.377	22.39	12.30	18.79
6.234	24.82	8.266	22.47	12.14	18.92
6.062	24.95	8.167	22.56	12.03	18.99
5.823	25.24	8.069	22.65	11.88	19.12
		7.975	22.74	11.75	19.24
		7.887	22.83	11.64	19.31
		7.787	22.90	11.51	19.43
		7.673	23.02	11.37	19.55
		7.563	23.11	11.23	19.65
		7.453	23.20	11.14	19.63
		7.349	23.29	11.04	19.70
		7.248	23.39	10.95	19.77
		7.136	23.51	10.83	19.87
		7.024	23.62	10.74	19.95
		6.910	23.74	10.62	20.06
		6.820	23.82	10.53	20.09
		6.730	23.90	10.42	20.20

6.628	24.01	10.30	20.30
6.473	24.16	10.22	20.34
6.287	24.38	10.11	20.42
6.139	24.52	10.01	20.51
6.011	24.63	9.909	20.60
5.786	24.92	9.759	20.69
5.689	24.98	9.658	20.78
		9.558	20.87
		9.465	20.95
		9.371	21.03
		9.237	21.12
		9.143	21.21
		9.063	21.28
		8.963	21.33
		8.880	21.41
		8.800	21.47
		8.716	21.53
		8.634	21.61
		8.505	21.71
		8.430	21.77
		8.356	21.85
		8.280	21.92
		8.207	21.99
		8.133	22.05
		8.046	22.13
		7.957	22.22
		7.842	22.31
		7.763	22.40

7.678	22.47
7.546	22.59
7.420	22.72
7.303	22.83
7.173	22.97
7.064	23.07
6.928	23.21
6.813	23.33
6.700	23.46
6.571	23.58

Table S2. Parameters A , B and C of Eq. (1) and respective standard deviations (σ) and correlation coefficients (R^2) for ternary and quaternary ATPS.

	$A \pm \sigma$	$B \pm \sigma$	$(C \pm \sigma) \times 10^5$	R^2
Ternary system: PEG 400 + (NH₄)₂SO₄ + H₂O				
PEG 400	100.18 ± 4.07	-0.339 ± 0.015	6.10 ± 0.46	0.9982
Quaternary systems: PEG 400 + (NH₄)₂SO₄ + H₂O + IL at 5 wt%				
[Ch]Cl	90.53 ± 1.81	-0.333 ± 0.010	7.51 ± 0.57	0.9959
[C ₄ mim]Cl	79.91 ± 1.29	-0.323 ± 0.008	6.12 ± 0.33	0.9944
[C ₄ mpyr]Cl	86.25 ± 1.36	-0.361 ± 0.008	5.41 ± 0.32	0.9949
[C ₄ mpip]Cl	92.91 ± 1.46	-0.391 ± 0.007	5.23 ± 0.29	0.9950
[N ₄₄₄₄]Cl	72.95 ± 1.55	-0.339 ± 0.011	13.5 ± 1.03	0.9923
[P ₄₄₄₄]Cl	82.74 ± 3.80	-0.391 ± 0.025	11.7 ± 2.22	0.9842

Table S3. Compositions of the coexisting phases (wt%) for given initial mixture compositions and respective TLL values.

	[PEG] _M	[(NH ₄) ₂ SO ₄] _M	[PEG] _T	[(NH ₄) ₂ SO ₄] _T	[PEG] _B	[(NH ₄) ₂ SO ₄] _B	TLL
Ternary system: PEG 400 + (NH₄)₂SO₄ + H₂O							
PEG 400	25.08	17.96	43.20	5.969	1.363	33.68	50.18
	21.91	18.07	38.26	7.618	2.883	30.22	41.98
Quaternary systems: PEG 400 + (NH₄)₂SO₄ + H₂O + IL 5 wt%							
[Ch]Cl	24.96	17.97	43.34	4.784	0.4212	35.58	52.82
	22.03	17.98	41.45	5.342	1.3587	31.43	47.83
[C ₄ mim]Cl	24.89	18.28	41.35	4.117	0.2437	39.47	54.22
	21.88	18.35	35.50	6.111	0.4244	37.62	47.14
[C ₄ mpyr]Cl	24.96	18.01	41.70	4.020	0.4186	38.52	53.80
	22.05	17.95	35.77	5.813	0.6418	36.88	46.89
[C ₄ mpip]Cl	25.21	17.89	40.63	4.410	0.3005	39.67	53.57
	21.98	17.98	33.79	6.484	0.3581	39.04	46.66
[N ₄₄₄₄]Cl	24.75	18.20	40.55	2.968	0.0004	42.03	56.31
	22.00	18.20	37.73	3.711	0.0042	38.46	51.29
[P ₄₄₄₄]Cl	25.02	18.00	42.88	2.806	0.0059	39.30	56.30
	21.93	18.04	39.26	3.585	0.0294	36.29	51.08

Table S4. Partition coefficients of biomolecules (K_{Biom}) and ILs (K_{IL}) and respective standard deviations (σ) in ternary and quaternary ATPS.

IL	$K_{\text{GalAc}} \pm \sigma$	$K_{\text{VanAc}} \pm \sigma$	$K_{\text{Eug}} \pm \sigma$	$K_{\text{Trp}} \pm \sigma$	$K_{\text{Phen}} \pm \sigma$	$K_{\text{Tyr}} \pm \sigma$	$K_{\text{Nic}} \pm \sigma$	$K_{\text{Caf}} \pm \sigma$	$K_{\text{IL}} \pm \sigma$
18 wt% Salt + 25 wt% PEG									
No IL	16 ± 1	42.40 ± 0.03	44 ± 16	7.4 ± 0.3	2.47 ± 0.03	2.3 ± 0.1	2.3 ± 0.3	21 ± 4	-
[Ch]Cl	5.6 ± 0.1	17 ± 2	139 ± 2	4.521 ± 0.004	2.1 ± 0.1	1.71 ± 0.03	2.8 ± 0.1	18 ± 2	2.0 ± 0.1
[C ₄ mim]Cl	13 ± 1	29 ± 3	76 ± 14	7.2 ± 0.4	2.40 ± 0.04	2.3 ± 0.2	3.9 ± 0.5	21 ± 2	3.1 ± 0.1
[C ₄ mpyr]Cl	13.0 ± 0.1	33 ± 3	177 ± 28	6.278 ± 0.005	2.8 ± 0.1	2.39 ± 0.01	2.554 ± 0.003	30 ± 2	4.0 ± 0.1
[C ₄ mpip]Cl	20 ± 1	45 ± 2	123 ± 3	9.0 ± 0.3	3.0 ± 0.1	2.6 ± 0.2	3.33 ± 0.05	30 ± 5	4.2 ± 0.1
[P ₄₄₄₄]Cl	67 ± 4	81 ± 6	162 ± 37	14.2 ± 0.9	2.6 ± 0.2	3.4 ± 0.1	0.35 ± 0.04	51.5 ± 0.5	5.4 ± 0.1
[N ₄₄₄₄]Cl	61 ± 5	69 ± 12	253 ± 56	14.6 ± 0.6	3.12 ± 0.05	2.6 ± 0.1	3.3 ± 0.1	39 ± 4	6.4 ± 0.1
18 wt% Salt + 22 wt% PEG									
No IL	12.1 ± 0.5	24 ± 2	42 ± 6	5.189 ± 0.001	1.87 ± 0.02	1.85 ± 0.01	2.4 ± 0.1	13.54 ± 0.01	-
[Ch]Cl	4.6 ± 0.1	12 ± 1	26 ± 2	3.49 ± 0.01	1.9 ± 0.1	1.16 ± 0.03	2.57 ± 0.05	13.0 ± 0.4	1.9 ± 0.1
[C ₄ mim]Cl	10.7 ± 0.1	21.6 ± 0.3	38.3 ± 0.2	5.3 ± 0.1	2.4 ± 0.2	2.4 ± 0.2	2.8 ± 0.1	13 ± 1	2.6 ± 0.1
[C ₄ mpyr]Cl	9.0 ± 0.2	19 ± 2	70 ± 27	5 ± 1	2.6 ± 0.1	1.17 ± 0.01	2.3 ± 0.2	19 ± 1	3.1 ± 0.1
[C ₄ mpip]Cl	14.0 ± 0.3	26 ± 2	58 ± 6	6.0 ± 0.3	2.7 ± 0.1	1.41 ± 0.01	2.84 ± 0.05	17 ± 1	3.7 ± 0.1
[P ₄₄₄₄]Cl	63 ± 4	52 ± 3	62 ± 20	10.9 ± 0.5	2.8 ± 0.2	2.9 ± 0.2	0.40 ± 0.02	31 ± 2	4.7 ± 0.5
[N ₄₄₄₄]Cl	59 ± 3	49 ± 1	70 ± 12	12 ± 2	2.71 ± 0.05	2.7 ± 0.1	3.2 ± 0.1	38.1 ± 0.5	5.5 ± 0.1

Table S5. Concentration of biomolecules ($[\text{Biom}] / (\text{g}\cdot\text{L}^{-1})$) in top and bottom phases and respective standard deviations (σ) in ternary and quaternary ATPS.

IL		$[\text{GalAc}] \pm \sigma$	$[\text{VanAc}] \pm \sigma$	$[\text{Eug}] \pm \sigma$	$[\text{Trp}] \pm \sigma$	$[\text{Phen}] \pm \sigma$	$[\text{Tyr}] \pm \sigma$	$[\text{Nic}] \pm \sigma$	$[\text{Caf}] \pm \sigma$
18 wt% Salt + 25 wt% PEG									
No IL	Top	0.49 ± 0.06	0.54 ± 0.04	0.38 ± 0.02	1.07 ± 0.02	2.45 ± 0.02	0.09 ± 0.04	0.85 ± 0.02	1.20 ± 0.06
	Bottom	0.031 ± 0.007	0.013 ± 0.002	0.009 ± 0.004	0.14 ± 0.01	0.99 ± 0.01	0.05 ± 0.02	0.37 ± 0.05	0.06 ± 0.01
[Ch]Cl	Top	0.48 ± 0.03	0.51 ± 0.03	0.24 ± 0.02	0.922 ± 0.003	1.5 ± 0.1	0.085 ± 0.004	0.89 ± 0.05	1.0 ± 0.1
	Bottom	0.086 ± 0.003	0.030 ± 0.001	0.0017 ± 0.0002	0.198 ± 0.001	0.81 ± 0.06	0.050 ± 0.002	0.320 ± 0.003	0.0532 ± 0.0001
[C₄mim]Cl	Top	0.38 ± 0.05	0.42 ± 0.03	0.28 ± 0.01	0.86 ± 0.01	1.96 ± 0.01	0.10 ± 0.01	0.753 ± 0.003	0.88 ± 0.02
	Bottom	0.030 ± 0.008	0.015 ± 0.001	0.0037 ± 0.0008	0.120 ± 0.008	0.82 ± 0.02	0.0452 ± 0.0001	0.19 ± 0.02	0.041 ± 0.003
[C₄mpyr]Cl	Top	0.427 ± 0.005	0.45 ± 0.04	0.267 ± 0.003	0.82 ± 0.03	1.9 ± 0.2	0.102 ± 0.005	0.608 ± 0.001	0.95 ± 0.03
	Bottom	0.0327 ± 0.0001	0.014 ± 0.002	0.0015 ± 0.0002	0.124 ± 0.004	0.76 ± 0.01	0.043 ± 0.002	0.238 ± 0.001	0.032 ± 0.002
[C₄mpip]Cl	Top	0.39 ± 0.05	0.45 ± 0.01	0.295 ± 0.003	0.86 ± 0.02	2.03 ± 0.07	0.09 ± 0.01	0.67 ± 0.01	0.84 ± 0.03
	Bottom	0.020 ± 0.001	0.010 ± 0.001	0.0024 ± 0.0001	0.095 ± 0.002	0.68 ± 0.01	0.0350 ± 0.0005	0.201 ± 0.001	0.028 ± 0.004
[P₄₄₄₄]Cl	Top	0.39 ± 0.05	0.462 ± 0.002	0.28 ± 0.02	0.88 ± 0.05	2.08 ± 0.08	0.08 ± 0.04	0.32 ± 0.04	0.86 ± 0.01
	Bottom	0.0059 ± 0.0003	0.006 ± 0.001	0.0018 ± 0.0005	0.062 ± 0.002	0.79 ± 0.05	0.02 ± 0.01	0.92 ± 0.03	0.0167 ± 0.0004
[N₄₄₄₄]Cl	Top	0.42 ± 0.06	0.448 ± 0.002	0.26 ± 0.01	0.910 ± 0.003	2.0 ± 0.1	0.07 ± 0.04	0.75 ± 0.07	0.87 ± 0.03
	Bottom	0.007 ± 0.002	0.007 ± 0.001	0.0010 ± 0.0002	0.062 ± 0.004	0.65 ± 0.02	0.03 ± 0.01	0.23 ± 0.03	0.022 ± 0.003

18 wt% Salt + 22 wt% PEG

No IL	Top	0.53 ± 0.09	0.57 ± 0.03	0.32 ± 0.01	1.04 ± 0.09	2.13 ± 0.08	0.09 ± 0.04	0.96 ± 0.09	1.30 ± 0.03
	Bottom	0.04 ± 0.01	0.04 ± 0.02	0.008 ± 0.001	0.20 ± 0.02	1.14 ± 0.05	0.05 ± 0.02	0.40 ± 0.02	0.096 ± 0.002
[Ch]Cl	Top	0.52 ± 0.03	0.561 ± 0.002	0.31 ± 0.05	0.92 ± 0.01	1.84 ± 0.01	0.0613 ± 0.0001	0.99 ± 0.03	1.15 ± 0.01
	Bottom	0.113 ± 0.004	0.049 ± 0.002	0.012 ± 0.001	0.267 ± 0.004	1.1 ± 0.1	0.053 ± 0.002	0.383 ± 0.004	0.089 ± 0.003
[C₄mim]Cl	Top	0.43 ± 0.07	0.47 ± 0.02	0.3 ± 0.1	0.90 ± 0.03	2.2 ± 0.2	0.11 ± 0.04	0.86 ± 0.04	1.03 ± 0.01
	Bottom	0.041 ± 0.006	0.03 ± 0.02	0.009 ± 0.003	0.171 ± 0.002	0.91 ± 0.02	0.05 ± 0.02	0.31 ± 0.03	0.080 ± 0.003
[C₄mpyr]Cl	Top	0.45 ± 0.02	0.51 ± 0.03	0.27 ± 0.05	0.89 ± 0.01	2.2 ± 0.1	0.112 ± 0.002	0.69 ± 0.03	1.00 ± 0.07
	Bottom	0.049 ± 0.004	0.026 ± 0.001	0.004 ± 0.001	0.17 ± 0.01	0.93 ± 0.02	0.096 ± 0.002	0.299 ± 0.008	0.054 ± 0.008
[C₄mpip]Cl	Top	0.44 ± 0.06	0.46 ± 0.03	0.25 ± 0.01	0.92 ± 0.01	2.3 ± 0.1	0.112 ± 0.005	0.715 ± 0.004	0.91 ± 0.06
	Bottom	0.031 ± 0.003	0.03 ± 0.01	0.0044 ± 0.0003	0.152 ± 0.008	0.87 ± 0.02	0.079 ± 0.004	0.252 ± 0.003	0.055 ± 0.001
[P₄₄₄₄]Cl	Top	0.45 ± 0.05	0.480 ± 0.002	0.28 ± 0.03	0.94 ± 0.03	2.29 ± 0.01	0.10 ± 0.06	0.38 ± 0.07	0.99 ± 0.06
	Bottom	0.007 ± 0.001	0.009 ± 0.001	0.005 ± 0.002	0.087 ± 0.003	0.81 ± 0.07	0.03 ± 0.02	0.9 ± 0.1	0.032 ± 0.004
[N₄₄₄₄]Cl	Top	0.47 ± 0.06	0.50 ± 0.02	0.29 ± 0.05	1.001 ± 0.002	2.20 ± 0.01	0.08 ± 0.04	0.9 ± 0.1	1.0 ± 0.1
	Bottom	0.008 ± 0.002	0.0102 ± 0.0001	0.0042 ± 0.0001	0.09 ± 0.02	0.81 ± 0.02	0.03 ± 0.01	0.28 ± 0.04	0.025 ± 0.002