

Supplementary materials

Table S1 Experimental p - T data for the binary systems of $[\text{NBu}^n_4][\text{BF}_4] + \text{HFC}$

$x_1 \times 10^3$	T/K	p/MPa	$x_1 \times 10^3$	T/K	p/MPa	$x_1 \times 10^3$	T/K	p/MPa
$[\text{NBu}^n_4][\text{BF}_4](1) + \text{CHF}_3(2)$								
0.82	293.9	4.32	1.59	328.3	12.38	4.83	313.2	10.34
0.82	297.5	4.71	2.44	293.1	4.39	4.83	318.2	11.72
0.82	301.0	5.38	2.44	297.7	5.62	4.83	323.1	13.08
0.82	304.2	6.07	2.44	299.3	6.02	4.83	328.2	14.47
0.82	308.3	7.00	2.44	300.7	6.41	6.90	292.4	4.56
0.82	316.1	8.64	2.44	303.0	7.04	6.90	294.5	5.19
0.82	318.8	9.27	2.44	308.1	8.36	6.90	296.6	5.85
0.82	323.5	10.30	2.44	313.2	9.73	6.90	299.3	6.67
0.82	328.4	11.36	2.44	318.0	10.87	6.90	301.8	7.41
1.59	293.7	4.29	2.44	323.1	12.30	6.90	303.2	7.79
1.59	296.5	4.71	2.44	328.1	13.55	6.90	309.0	9.42
1.59	299.3	5.37	4.83	293.4	4.57	6.90	313.2	10.58
1.59	301.1	5.82	4.83	295.3	5.13	6.90	318.4	11.96
1.59	303.3	6.35	4.83	297.2	5.72	6.90	323.2	13.28
1.59	308.3	7.56	4.83	299.6	6.40	6.90	328.5	14.67
1.59	313.2	8.79	4.83	300.7	6.76			
1.59	318.2	10.00	4.83	303.2	7.50			
1.59	323.2	11.20	4.83	308.0	8.86			
$[\text{NBu}^n_4][\text{BF}_4](1) + \text{CH}_2\text{F}_2(2)$								
1.67	296.5	1.91	2.55	323.2	3.47	3.29	343.5	5.29
1.67	302.7	2.21	2.55	333.2	4.28	3.29	348.0	5.90
1.67	311.5	2.69	2.55	343.0	5.26	3.29	351.2	6.58
1.67	313.0	2.77	2.55	350.8	6.40	3.29	353.2	7.02
1.67	321.2	3.36	2.55	352.1	6.49	3.29	357.9	8.10

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1.67	322.4	3.41	2.55	352.9	6.84	3.29	363.2	9.24
1.67	331.1	4.19	2.55	357.6	7.78	4.17	296.4	1.86
1.67	332.7	4.30	2.55	358.0	7.81	4.17	312.7	2.74
1.67	343.4	5.28	2.55	363.2	8.89	4.17	322.9	3.45
1.67	353.0	6.56	3.29	295.4	1.81	4.17	333.1	4.30
1.67	357.8	7.34	3.29	303.2	2.21	4.17	343.1	5.30
1.67	363.2	8.34	3.29	312.4	2.73	4.17	353.5	7.05
2.55	303.2	2.20	3.29	323.5	3.48	4.17	358.7	8.31
2.55	313.2	2.77	3.29	333.2	4.31	4.17	363.2	9.36

[NBuⁿ₄][BF₄](1) + CH₂FCF₃(2)

1.33	333.7	1.99	2.62	363.4	3.67	3.91	378.2	6.14
1.33	343.0	2.45	2.62	368.0	4.14	3.91	383.0	6.97
1.33	352.9	3.01	2.62	374.5	5.12	5.14	323.2	1.57
1.33	363.0	3.64	2.62	378.2	5.76	5.14	333.4	1.97
1.33	367.9	4.04	2.62	383.2	6.54	5.14	343.2	2.43
1.33	373.8	4.76	3.91	323.7	1.59	5.14	353.4	3.00
1.33	377.7	5.27	3.91	333.3	1.96	5.14	363.4	3.66
1.33	381.9	5.94	3.91	343.5	2.43	5.14	368.2	4.63
2.62	322.5	1.54	3.91	353.5	2.96	5.14	374.3	5.59
2.62	333.6	1.99	3.91	363.6	3.63	5.14	378.2	6.49
2.62	343.6	2.48	3.91	368.2	4.34	5.14	383.2	7.37
2.62	353.6	3.02	3.91	374.4	5.38			

Table S2 Experimental p - T data for the binary systems of $[\text{NBu}^n_4][\text{B}\{3,5\text{-C}_6\text{H}_3(\text{CF}_3)_2\}_4] + \text{HFC}$

$x_1 \times 10^3$	T/K	p/MPa	$x_1 \times 10^3$	T/K	p/MPa	$x_1 \times 10^3$	T/K	p/MPa
$[\text{NBu}^n_4][\text{B}\{3,5\text{-C}_6\text{H}_3(\text{CF}_3)_2\}_4](1) + \text{CH}_2\text{F}_2(2)$								
1.65	296.8	1.86	1.65	333.3	4.26	1.65	353.6	6.77
1.65	302.2	2.13	1.65	342.8	5.19	1.65	358.0	7.60
1.65	312.5	2.70	1.65	348.2	5.84	1.65	363.2	8.69
1.65	323.0	3.47	1.65	350.6	6.22			
$[\text{NBu}^n_4][\text{B}\{3,5\text{-C}_6\text{H}_3(\text{CF}_3)_2\}_4](1) + \text{CH}_2\text{FCF}_3(2)$								
2.58	325.0	1.65	2.58	354.4	2.98	2.58	378.5	5.82
2.58	334.6	2.01	2.58	365.3	3.73	2.58	383.8	6.58
2.58	343.1	2.43	2.58	369.2	4.31			
2.58	346.1	2.56	2.58	374.7	5.16			

Table S3 Experimental p - T data for the binary systems of Na[B{3,5-C₆H₃(CF₃)₂}₄] + HFC

$x_1 \times 10^3$	T/K	p/MPa	$x_1 \times 10^3$	T/K	p/MPa	$x_1 \times 10^3$	T/K	p/MPa
Na[B{3,5-C ₆ H ₃ (CF ₃) ₂ } ₄](1) + CH ₂ F ₂ (2)								
1.62	296.3	1.89	1.62	333.2	4.33	1.62	353.1	6.65
1.62	303.0	2.23	1.62	343.4	5.33	1.62	358.2	7.36
1.62	313.2	2.82	1.62	348.2	5.92	1.62	363.2	8.15
1.62	323.2	3.51	1.62	351.4	6.38			
Na[B{3,5-C ₆ H ₃ (CF ₃) ₂ } ₄](1) + CH ₂ FCF ₃ (2)								
2.59	329.5	1.83	2.59	363.2	3.65	2.59	378.5	5.33
2.59	333.6	1.95	2.59	365.0	3.76	2.59	383.4	5.97
2.59	343.9	2.45	2.59	368.9	4.06			
2.59	353.8	3.02	2.59	374.9	4.85			