

Supporting Information

Guest Gas Enclathration in Semi-clathrates of Tetra-*n*-butyl Ammonium Bromide: Stability Condition and Spectroscopic Analysis

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Table S1. Semi-clathrate Phase Equilibrium Data for the CH₄ + TBAB + Water Systems (original data)

0.6 mol%		3.7 mol%		7.7 mol%	
<i>T</i>	<i>P</i>	<i>T</i>	<i>P</i>	<i>T</i>	<i>P</i>
(K)	(MPa)	(K)	(MPa)	(K)	(MPa)
286.30	2.22	288.70	2.07	287.30	2.44
286.40	2.24	288.80	2.09	287.40	2.46
288.00	3.57	290.50	3.51	288.70	3.68
288.20	3.59	290.60	3.53	288.80	3.70
289.50	5.30	291.90	5.27	290.20	5.25
289.60	5.34	292.10	5.29	290.40	5.27
290.70	7.08	292.90	6.79	291.30	7.18
290.80	7.10	293.00	6.81	291.40	7.22
291.40	8.86	294.10	9.00	292.20	9.16
291.50	8.88	294.20	9.02	292.30	9.18

Table S2. Semi-clathrate Phase Equilibrium Data for the CO₂ + TBAB + Water Systems
(original data)

0.6 mol%		3.7 mol%		7.7 mol%	
<i>T</i>	<i>P</i>	<i>T</i>	<i>P</i>	<i>T</i>	<i>P</i>
(K)	(MPa)	(K)	(MPa)	(K)	(MPa)
285.60	1.33	287.30	1.11	287.00	1.70
285.80	1.37	287.40	1.13	287.10	1.74
287.50	2.33	289.90	2.42	288.30	2.51
287.60	2.35	290.10	2.44	288.50	2.55
288.60	3.33	290.90	3.37	289.70	3.59
288.80	3.35	291.00	3.39	289.80	3.61
289.40	4.24	291.70	4.54	290.10	4.36
289.50	4.26	291.80	4.56	290.30	4.38

Table S3. Semi-clathrate Phase Equilibrium Data for the TBAB + Water System at
Atmospheric Pressure (original data)

Concentration (mol%)	<i>T</i> /K
0.6	279.10
	279.20
3.7	285.20
	285.25
	285.30
7.7	284.25
	284.35