

SUPPORTING INFORMATION

Absorption of H₂S and CO₂ in Aqueous Solutions of Tertiary-Amine Functionalized Protic Ionic Liquids

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Characterization results

[TMEDA][AcO] ^1H NMR (300 MHz, D_2O , 298.2 K, TMS), δ (ppm): 1.72 (3H, s), 2.40 (12H, s), 2.81 (4H, s); ^{13}C NMR (300 MHz, D_2O , 298.2 K, TMS), δ (ppm): 23.30, 43.53, 53.41, 181.34; Elemental Analysis, calculated for $\text{C}_8\text{H}_{20}\text{N}_2\text{O}_2$: C 54.51 %, H 11.44 %, N 15.89 %, found: C 54.71 %, H 11.22 %, N 16.13 %; MS: 117.19 for $\text{C}_6\text{H}_{17}\text{N}_2^+$ (calculated: 117.14), 59.08 for $\text{C}_2\text{H}_3\text{O}_2^-$ (calculated: 59.01); TGA, decomposition temperature: 438 K.

[TMPDA][AcO] ^1H NMR (300 MHz, D_2O , 298.2 K, TMS), δ (ppm): 1.90 (5H, m), 2.56 (12H, s), 2.79 (4H, t); ^{13}C NMR (300 MHz, D_2O , 298.2 K, TMS), δ (ppm): 21.57, 23.40, 43.22, 55.57, 181.22; Elemental Analysis, calculated for $\text{C}_9\text{H}_{22}\text{N}_2\text{O}_2$: C 56.81 %, H 11.65 %, N 14.72 %, found: C 57.02 %, H 11.66 %, N 14.58 %; MS: 132.10 for $\text{C}_7\text{H}_{19}\text{N}_2^+$ (calculated: 132.16), 59.08 for $\text{C}_2\text{H}_3\text{O}_2^-$ (calculated: 59.01); TGA, decomposition temperature: 441 K.

[BDMAEE][AcO] ^1H NMR (300 MHz, D_2O , 298.2 K, TMS), δ (ppm): 1.92 (3H, s), 2.60 (12H, s), 3.00 (4H, t), 3.76 (4H, t); ^{13}C NMR (300 MHz, D_2O , 298.2 K, TMS), δ (ppm): 23.39, 43.30, 57.07, 65.68, 181.28; Elemental Analysis, calculated for $\text{C}_{10}\text{H}_{24}\text{N}_2\text{O}_3$: C 54.52 %, H 10.98 %, N 12.72 %, found: C 54.63 %, H 11.17 %, N 12.55 %; MS: 161.12 for $\text{C}_8\text{H}_{21}\text{N}_2\text{O}^+$ (calculated: 161.16), 59.08 for $\text{C}_2\text{H}_3\text{O}_2^-$ (calculated: 59.01); TGA, decomposition temperature: 449 K.

[BMEE][AcO] ^1H NMR (300 MHz, D_2O , 298.2 K, TMS), δ (ppm): 1.92 (3H, s), 3.04 (12H, m), 3.79 (4H, t), 3.89 (8H, t); ^{13}C NMR (300 MHz, D_2O , 298.2 K, TMS), δ (ppm): 21.57, 23.40, 43.22, 55.57, 181.22; Elemental Analysis, calculated for $\text{C}_{14}\text{H}_{28}\text{N}_2\text{O}_5$: C 55.24 %, H 9.27 %, N 9.20 %, found: C 54.98 %, H 9.36 %, N 9.43 %; MS: 245.22 for $\text{C}_{12}\text{H}_{25}\text{N}_2\text{O}_3^+$ (calculated: 245.19), 59.08 for $\text{C}_2\text{H}_3\text{O}_2^-$ (calculated: 59.01); TGA, decomposition temperature: 453 K.