

Solubility of Hydrogen Sulfide in [bmim][PF₆]

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New experimental data are presented for the solubility of hydrogen sulfide in the ionic liquid 1-N-butyl-3-methylimidazolium hexafluorophosphate ([bmim][PF₆]) for five temperatures in the range from 298 to 403 K at pressures up to 9.6 MPa. The ionic liquid [bmim][PF₆] is a good solvent for hydrogen sulfide. At 9 MPa the mole fraction H₂S in the liquid is about 0.7. The solubility is a strong function of temperature; at 2 MPa the solubility (mole fraction H₂S) decreases from about 0.84 at 298 K to about 0.2 at 403 K.

The Krichevsky-Kasarnovsky equation was used to correlate the experimental data.