

Bubble point measurement in
1-hexyl-3-methylimidazolium([HMIM]) cation
based ionic liquid + CO₂ systems

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This study presents measurements of the solubility of carbon dioxide in some different room temperature ionic liquids. We use 1-hexyl-3-methylimidazolium([HMIM]) cation based ionic liquids, The range of temperature for the experimental measurements is from 303.15K to 373.15K in 10K intervals. The solubility of CO₂ is determined by measured the bubble point pressure at fixed temperature. The experimental data is correlated by PR-EoS and Modified-Joback-Reid Method. The solubility increases with increasing pressure and decreases with increasing temperature for all the ionic liquids. The bubble point pressure increases linearly with increasing the temperature at fixed mole fraction of CO₂.