

### Solubility of carbon dioxide in aqueous solutions of sodium glycinate

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Sodium glycinate was investigated as a new absorbent for carbon dioxide in this study. The solubilities of carbon dioxide ( $\text{CO}_2$  loading) in aqueous 10, 20, and 30 wt % sodium glycinate solutions were measured at 303.15 over 353.15 K and over the partial pressure of carbon dioxide ranging from 0.1 to 200 kPa in an equilibrium cell. Gas phase was analyzed by gas chromatograph and  $\text{N}_2/\text{CO}_2$  ratio can be determined. Chemical solubility can be calculated by virial equation. And the results were plotted as partial pressure of  $\text{CO}_2$  versus  $\text{CO}_2$  loading. The approximate enthalpies of absorption of  $\text{CO}_2$  in aqueous sodium glycinate solution were derived from the solubility data using Gibbs-Helmholtz equation. It was found that sodium glycinate has the higher solubility and lower enthalpies of absorption than those of MEA. Sodium glycinate may be the excellent alternative to MEA in this point of view.