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Measurement and Prediction of the Solubility of CO2 in Ester Mixture

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ABSTRACT

The solubility of CO2 in ester mixtures under high pressures are studied in this article. The constant-volume method is used to determine the solubility of CO2 in DMC + diethyl carbonate system, DMC + propyl acetate system, DMC + propylene carbonate system, and DMC + ethylene carbonate system from 282.0 K to 303.0 K. It is found that the solubility of CO2 in four mixed solvents follows the Henry ' s law and the linear compound has a greater ability to dissolve CO2 than the cyclic compound at the same temperature. Furthermore, a modified equation is proposed to fit the solution data and a better equation is obtained in this paper. This will be useful for the future research in the screening of a potential physical solvent for CO2 capture.

KEYWORDS

CO2 Solubility, Eter Mxture,Solubility Prediction

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