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Solubility and thermodynamic properties of maltol in different pure solvents

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ABSTRACT:

By using a static gravimetric method, the solubility of maltol (3-hydroxy-2-methyl-4-pyrone) in thirteen pure solvents was measured over the temperature range from 288.15 K to 323.15 K under atmosphere pressure. The results showed that the solubility of maltol monotonously increased with the rising temperature in all tested pure solvents within the investigated temperature range. Besides, four thermodynamic models including the modified Apelblat equation, the λh equation, the Wilson model and the NRTL model were used to correlate the experimental data and the computational data showed that all the four models could give well correlation results. Finally, the dissolution thermodynamic properties of maltol in thirteen pure solvents were calculated based on the experimental data and the Wilson model.

Keywords: maltol; solubility; thermodynamic models; dissolution thermodynamic properties;

1. Introduction:

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