

热力学

N-甲酰吗啉与苯的二元等压汽液平衡

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摘要 石化系统、焦化行业, 采用*N*-甲酰吗啉(NFM)溶剂精制芳烃受到极大重视, 但可资利用的基础数据却极为贫乏, 尚无等压汽液平衡数据。用改进的EC-2型汽液平衡釜, 测定了常压下苯-NFM、甲苯-NFM二元体系汽液平衡数据, 并用NRTL和UNIQUAC模型对实验数据进行了关联, 得到了模型相应的二元交互参数。经Herington面积法检验, 上述数据满足热力学一致性要求, 结果较为满意。研究结果填补了该项数据空白, 完全能满足*N*-甲酰吗啉溶剂精制芳烃工程设计的需要。

关键词 [N-甲酰吗啉\(NFM\)](#) [苯](#) [汽液平衡\(VLE\)](#)

分类号

Binary isobaric vapor-liquid equilibrium of *N*-formylmorpholine with benzene

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Abstract

The extraction of aromatics with *N*-formylmorpholine (NFM) has been widely used in petrochemical and coal tar industries. However, the vapor-liquid equilibrium (VLE) data of *N*-formylmorpholine-aromatics systems are very limited, and no isobaric VLE data can be found in literature. The VLE data of benzene-NFM system were determined by using an improved VLE equipment EC-2. The experimental VLE data were correlated with the thermodynamic models NRTL and UNIQUAC, and the corresponding binary interaction parameters for these two models were obtained. The results showed that the VLE data agreed well with the two models, and passed the thermodynamic consistency test of Herington. By comparison with these models from literature, it is found that these two models are more suitable for VLE prediction for NFM systems above 80°C. The VLE data and model parameters obtained are essential for the engineering design of *N*-formylmorpholine-aromatics distillation processes.

Key words [N-formylmorpholine](#) [benzene](#) [binary vapor-liquid equilibrium \(VLE\)](#)

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