

热力学

## R23+R116系汽液相平衡的测量与数据拟合

张宇, 公茂琼, 吴剑峰

中国科学院理化技术研究所

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摘要

利用气相循环法的实验装置测量了R23(三氟甲烷)+R116(六氟乙烷)二元体系在5个温度(194.33, 199.71, 214.90, 229.63, 244.94 K)下的汽液相平衡数据, 利用Peng-Robinson(PR)状态方程和Soave-Redlich-Kwong(SRK)状态方程分别与Huron-Vidal(HV)混合规则相结合的两个模型对实验数据进行关联, 提出了模型参数的关联式, 并将两个模型的计算结果进行对比。结果表明: PR-HV模型对此二元系的关联结果较好, 其压力计算值与实验值的相对偏差的平均值为0.29%, 摩尔分数计算值与实验值的绝对偏差的平均值为0.0006。

关键词

[三氟甲烷](#) [六氟乙烷](#) [汽液相平衡](#)

分类号

## Vapor liquid equilibrium measurement and correlation for R23 + R116 system

ZHANG Yu, GONG Maoqiong, WU Jianfeng

### Abstract

Vapor-liquid equilibrium (VLE) data for the R23 (trifluoromethane) + R116 (hexafluoroethane) system were measured at temperatures of 194.33, 199.71, 214.90, 229.63, 244.94K. The measurements were performed with an apparatus based on the recirculation method. All experimental data were correlated with two theoretical models of the Peng-Robinson (PR) and the Soave-Redlich-Kwong equations of state, both using the Huron-Vidal (HV) mixing rule. The adjustable parameters of the two models were regressed and the calculated results with the two models were compared with the experimental data. The results showed that the PR-HV model was more suitable for expressing the VLE behavior of the R23 +R116 system. The average relative deviation of the calculated pressure from the experimental data was 0.29%, and the average absolute deviation of the calculated vapor mole fraction from the experimental data was 0.0006.

### Key words

[trifluoromethane](#) [hexafluoroethane](#) [vapor-liquid equilibrium](#)

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通讯作者 张宇 [zhangyu97@163.com](mailto:zhangyu97@163.com)

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