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THERMODYNAMICS AND CHEMICAL.....

戊二酸在冰醋酸和环己酮、环己醇及五种混合溶剂中的溶解度的测定

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摘要 By using the laser-monitoring technique, solid-liquid equilibrium data of glutaric acid in cyclohexanol, cyclohexanone, their five mixed solvents and acetic acid were measured within the temperature range from 292.15K to 354.60K by dynamic method. Empirical formula and λh equation were used to correlate the solubilities of glutaric acid in eight solvents. The maximal average relative deviations were 1.15% and 2.20% by using the empirical formula and λh equation to correlate the solubility data. The results showed that the empirical formula and λh model could correlate the solubility data of glutaric acid in eight solvents. In addition, the solubility data of glutaric acid in five mixtures (cyclohexanone+cyclohexanol) could be predicted with the NRTL equation utilizing the parameters of the binary systems. The total average relative deviation was 3.60%. The results indicate that the NRTL equation could well predict the solubilities of glutaric acid in the mixed solvents of cyclohexanone and cyclohexanol.

关键词 glutaric acid, solid-liquid equilibrium, solubility, λh equation, NRTL equation
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Solubility of glutaric acid in cyclohexanone, cyclohexanol, their five mixtures and acetic acid

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Abstract By using the laser-monitoring technique, solid-liquid equilibrium data of glutaric acid in cyclohexanol, cyclohexanone, their five mixed solvents and acetic acid were measured within the temperature range from 292.15K to 354.60K by dynamic method. Empirical formula and λh equation were used to correlate the solubilities of glutaric acid in eight solvents. The maximal average relative deviations were 1.15% and 2.20% by using the empirical formula and λh equation to correlate the solubility data. The results showed that the empirical formula and λh model could correlate the solubility data of glutaric acid in eight solvents. In addition, the solubility data of glutaric acid in five mixtures (cyclohexanone+cyclohexanol) could be predicted with the NRTL equation utilizing the parameters of the binary systems. The total average relative deviation was 3.60%. The results indicate that the NRTL equation could well predict the solubilities of glutaric acid in the mixed solvents of cyclohexanone and cyclohexanol.

Key words glutaric acid; solid-liquid equilibrium; solubility; λh equation; NRTL equation

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