

Phase Equilibrium of the Ternary System

 $K_2B_4O_7-KBr-H_2O$ at 323 KZHAO Xiang-yang¹, SANG Shi-hua¹, SUN Ming-liang¹(1. College of Materials, Chemistry & Chemical Engineering, Chengdu University of Technology,
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Abstract In this paper, equilibrium relationship and densities of solution in the ternary system $K_2B_4O_7-KBr-H_2O$ at 323 K were studied by isothermal equilibrium method. The experimental results show that the system is a type of simple common saturation and without complex salt and solid solution. Based on the solubility data, the phase diagram of the ternary system was plotted, which consists of one invariant point, two univariant curves and two crystallization fields $K_2B_4O_7 \cdot 4H_2O$ and KBr . The experimental results show that KBr has the salting-out effect on $K_2B_4O_7$. Densities transformation rules were also discussed.

Key words Saltwater system; Phase equilibrium; Potassium borate; Potassium bromide

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