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含钾水盐体系介稳相关系研究 点此下载全文

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摘要：

针对西藏扎布耶盐湖卤水组成，采用等温蒸发法分别研究了含钾四元体系Na + , K + // Cl 7 H 2 O 308.15 K、五元体系K + //Cl - , CO 2- 3 , SO 2- 4, B 4 273.15 K下的介稳相关系。分别测定了上述体系308.15K、273.15 K 时介稳平衡液相组成及密度、pH值。根据实水图。结果表明，本文研究的两个体系均为简单共饱型，无复盐和固溶体生成。其中，四元体系介稳相图由2个晶区组成。平衡固相分别为Na 2 B 4 O 7 •10H 2 O、K 2 B 4 O 7 •4H 2 08.15 K和273.15 K下的介稳相图发现，平衡固相盐的种类及结晶形式均没有发生变化，但结晶区大小产生变化 4 O 7 •10H 2 O结晶区变小，K 2 B 4 O 7 •4H 2 O结晶区变大。五元体系投影线和3个结晶相区。结晶相区分别为K 2 CO 3 •3/2H 2 O、K 2 SO 4 和KCl。K 2 C面积最小，K 2 SO 4 结晶区面积最大。K 2 CO 3 对KCl有较强的盐析作用。

关键词：介稳相平衡 钾 硼酸盐 溶解度

An Experimental Study on Metastable Phase Equilibrium of the Potassium Solid liquic
Fulltext

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Abstract:

In accordance with the composition of the Zabuye salt lake brine, Tibet, the metastable pha quaternary system Na + , K + //Cl - , B 4 O 2- 7 H 2 O at 308.15 K //Cl - , CO 2- 3 , SO 2- 4, B 4 O 2- 7 H 2 O at 273.15 K and physicochemical properties such as density and pH value of equilibrium solutions were determi On the basis of the experimental data, the metastable equilibrium phase diagram and the water dia results show that both the quaternary and quinary systems are of a simple eutectic type, neither solution is formed at research temperatures. In the quaternary system, the phase diagram consists five uninvariant curves, and four crystallization regions. The four crystallization regions corre 4 O 7 •10H 2 O, K 2 B 4 O 7 •4H 2 O, NaCl and KCl, respectively. Compa diagrams of the quaternary system at 273.15 K and 308.15 K, it shows that the crystallization for field of salts have no change, whereas the area of the crystallization field has changed. At 308. field of salt Na 2 B 4 O 7 •10H 2 O becomes smaller, whereas that of salt K 2 O becomes larger.In the quinary system, the projection diagram (saturated with K 2 B 4 O of one invariant point, three univariant curves, and three crystallization fields corresponding t 3 •3/2H 2 O, K 2 SO 4 and KCl(and saturation of K 2 B 4 O 7 •4H field of salt K 2 CO 3 •3/2H 2 O is the smallest, whereas that of salt K 2 SO 2 CO 3 has a strong salting out effect to salt KCl.

Keywords:Metastable phase equilibrium Potassium Borate Solubility