化工学报 2004 55 (3): 464-467 ISSN: 0438-1157 CN: 11-1946/TQ

热力学

288 K下$Li^+,K^+//CO^{2-}_3,B_4O^{2-}_7$-$H_2O$四元体系的相平衡

殷辉安，桑世华 ，唐明林，曾英

成都理工大学化工与制药系，四川 成都 610059

收稿日期 2003-5-5 修回日期 2003-11-5 网络版发布日期 2008-9-1 接受日期

摘要

关键词 水盐体系 相平衡 硼酸盐 碳酸盐

分类号

EQUILIBRIUM OF QUATERNARY SYSTEM $Li^+,K^+//CO^{2-}_3,B_4O^{2-}_7$-$H_2O$ AT 288 K

YIN Hui’an,SANG Shihua,TANG Minglin,ZENG Ying

Abstract

Solubilities and properties (density, conductivity and pH value) of solutions in the quaternary system $Li^+,K^+//CO^{2-}_3,B_4O^{2-}_7$-$H_2O$ at 288 K were experimentally studied with the isothermal equilibrium method. The phase diagram of the system consisted of two invariant points *E* and *F*, five univariant curves, and four crystallization fields that belonged to $K_2CO_3 \cdot 3/2H_2O$，$Li_2B_4O_7 \cdot 3H_2O$，$K_2B_4O_7 \cdot 4H_2O$ and Li_2CO_3. The composition of the solution corresponding to *E* was $w(CO^{2-}_3)$=2.27 %，$w(B_4O^{2-}_7)$=6.05 %，$w(K^+)$=4.30%，$w(Li^+)$=0.30 % and the equilibrium solids were $Li_2B_4O_7 \cdot 3H_2O$+$K_2B_4O_7 \cdot 4H_2O$+Li_2CO_3;The composition of the solution for *F* was $w(CO^{2-}_3)$=22.45%，$w(B_4O^{2-}_7)$=1.88%，$w(K^+)$=29.96%，$w(Li^+)$=0.03% and the equilibrium solids were $K_2CO_3 \cdot 3/2H_2O$+$K_2B_4O_7 \cdot 4H_2O$+Li_2CO_3. K_2CO_3 possesses strong salting-out effect on $K_2B_4O_7$,Li_2CO_3 and $Li_2B_4O_7$.

Key words salt-water system phase equilibrium borate carbonate

DOI:

通讯作者 桑世华 sangshihua@sina.com