CRYSTAL FEATURES AND GROWTH MECHANISM OF TABULAR BERYL FROM SICHUAN, CHINA

Qi Lijian, Pei Jingcheng and Ye song (China University of Geosciences, Wuhan, 430074, P.R. China)

Colourless and pale blue beryl found in Sichuan, China, belongs to greisen type, and its chemical composition is characterized by a low Fe content ($<0.25\%$) and a high Na content ($>1.35\%$). Most beryl crystals occur in hexagonal tabular and flat shapes, with well-developed $\{10\ \bar{1}1\}$, $\{11\ \bar{2}1\}$ and $\{000\ \bar{1}\}$ faces and poordeveloped or absent $\{10\ \bar{1}0\}$ face. Lozenge, curved triangular and hexagonal stepped screw dislocation rings and unregular stepped growsth structures are common on the crystal faces. The study results show that the sliding vector of screw dislocation, $\vec{b}$, is parallel to the sliding lines. The screw steps resulted from sliding acted as two-dimensional crystal nucleuses, resulting in the increase in the growth rate of beryl crystals in lateral. During the growth of beryl crystals, the periodic variations in screw dislocation, temperature, pressure, pH value and concentration gradient of Na ion resulted in the growth of tabular beryl crystals in Sichuan, China.

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