

## Crystal-rich fluid inclusions study in quartz and spodumene from Zhawulong lithium deposit

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The Zhawulong granitic pegmatite lithium deposit is located in the Ganzi-Songpan orogenic belt. Crystal-rich fluid inclusions are the predominant fluid inclusion populations (FIA) in the spodumene and quartz. Crystal from fluid inclusion of spodumene have been identified to be albite, fluorite, cassiterite, cookeite, magnetite, apatite and aluminosilicate by means of scanning electron microscopy. Crystal from fluid inclusion of quartz have been identified to be spodumene, feldspar, biotite, albite, and silicate (Fig.1, a-c). Crystal from fluid inclusion of spodumene have been identified to be albite, quartz, beryl, fluorite dolomite and aluminosilicate (Fig.1, d-i).

From early spodumene to late quartz, the melts and fluids showed a high content of Na, Si, Al and F, and the decrease of Fe, Mg and Ca. The ore-forming fluid of pegmatite magma showed crystallization differentiation and magma immiscibility characteristics.

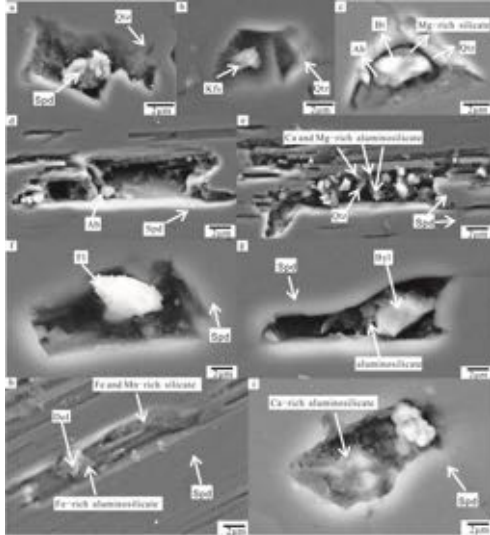


Figure 1 Electron backscattering photographs of crystal-rich inclusions in Spodumene from Zawulong pegmatite vein. Spd-spodumene, Qtz-quartz, Kfs-feldspar, Ab-albite, Bt-biotite, Fl-fluorite, Byl-beryl, Dol-dolomite.