

**The Li-bearing pegmatites of the Araçuaí pegmatite district (MG, Brazil): Fluid inclusion study and P,T path of crystallisation.**

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Quartz, tourmaline and beryl from the highly differentiated and zoned LCT-type pegmatites of Urubu, Barreiro, Maxixe and Morro Redondo (MG, Brazil) show a sequence of fluid inclusions starting with i) an aluminosilicate-rich melt $\pm$ CO<sub>2</sub>, followed by ii) CO<sub>2</sub>-rich fluid inclusions with variable, but low H<sub>2</sub>O contents, and ending with iii) H<sub>2</sub>O-type fluid inclusions containing occasional daughter minerals. Such a fluid inclusion sequence demonstrates that crystallisation of the pegmatites starts from a very H<sub>2</sub>O-poor, but CO<sub>2</sub>-bearing aluminosilicate-rich melt which changed with time into a H<sub>2</sub>O-dominated hydrothermal fluid. The fluid evolution and the P,T path of the studied pegmatites are similar to what is given in the literature for other highly differentiated pegmatites.

The change in fluid inclusion composition from aluminosilicate-rich to hydrothermal can be attributed to the early crystallisation of tourmaline which reduces the solubility of water in the silicate melt. The increase in salinity in time could be explained by the incorporation of water in the late (secondary) mica and the late "argillic" alteration of petalite.