



Some comments on the partitioning of trace elements and the fractionation of boron isotopes between mica and tourmaline

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Metamorphic tourmaline and mica from the Broken Hill area NSW, Australia, were analyzed with Laser ablation ICPMS and ion probe techniques to investigate the partitioning of trace elements and boron isotopes between these two co-existing phases. The results indicate that most trace elements show partition coefficients close to one, only elements such as Zn, Sr, the light rare earth elements La and Ce, and Th, partition into tourmaline, whereas Rb, Ba, W, Sn, and Nb and Ta are preferentially partitioned into coexisting mica. The ion probe measurements demonstrate that boron isotopes are strongly fractionated between mica and tourmaline, with the white mica being some 10 ‰ lower in $\delta^{11}\text{B}$ than coexisting tourmaline, which is found to be in rather good agreement with previous measurements and predictions from theory.