Lithium-Bearing Tosudite

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abstract: Lithium-bearing tosudite was found from a brittle clayey part of the Tooho “ roseki ” deposit, Aichi Prefecture, Japan. The chemical composition of the Li bearing tosudite was estimated as SiO_2 41 · 60%, Al_2O_3 · 36 · 40%, Fe_2O_3 1 · 82%, MgO 0 · 29%, CaO 0 · 38%, Li_2O 1 · 04%, Na_2O 0 · 14%, K_2O 0 · 38%, H_2O^+ 11 · 12% and H_2O^- 6 · 87% from the chemical composition of a specimen with associated impurities. The Li-bearing tosudite has the regularly interstratified structure of montmorillonite and dioctahedral chlorite in which Li is present in a gibbsite sheet as shown in the structural formula of interlayer cations $K_{0 \cdot 16}$, $Na_{0 \cdot 09}$, $Ca_{0 \cdot 13}$ + 9 · 60 H_2O; gibbsite sheet $Li_{1 \cdot 36}$, $Mg_{0 \cdot 14}$, $Fe_{0 \cdot 45}$, $Al_{3 \cdot 59}$ $(OH)_{12 \cdot 00}$; silicate layer $Al_{8 \cdot 00}$ $(Si_{13 \cdot 60}, Al_{2 \cdot 40})$ $O_{40 \cdot 00}$ $(OH)_{8 \cdot 00}$. The 29 · 48 Å reflection series of the Li-bearing tosudite moves to 31 · 3 Å after ethylene glycol treatment and to 23 · 3 Å on heating to 500 ° C for 1 hr.

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