Lovozeroite

\[
\text{Na}_2\text{Ca}([\text{Zr}, \text{Ti}])\text{Si}_6(\text{O}, \text{OH})_{18}
\]

Crystal Data: Monoclinic, pseudohexagonal. Point Group: \(2\). As pseudododecahedral crystals, to 3 mm, and spherical aggregates. In irregular but optically continuous grains, to 3 cm. Twinning: Polysynthetic and penetration, common.


Optical Class: Uniaxial (−) to biaxial (−). Pleochroism: Weak, yellowish to pinkish. \(\epsilon = 1.549\ \alpha = 1.545\ \beta = 1.560\ \gamma = 1.561\ 2V(\text{meas.}) = \text{Small}.

Cell Data: Space Group: \(C2\). \(a = 10.48\ b = 10.20\ c = 7.33\ \beta = 92°30'\ Z = 2\)

X-ray Powder Pattern: Khibiny massif, Russia. 3.21 (100), 5.37 (80), 3.64 (70), 3.32 (70), 7.33 (50), 2.969 (50), 2.635 (50)

Chemistry:

\[
\begin{align*}
\text{SiO}_2 & \quad 52.12 & \text{MgO} & \quad 0.76 \\
\text{TiO}_2 & \quad 1.02 & \text{CaO} & \quad 3.34 \\
\text{ZrO}_2 & \quad 16.54 & \text{SrO} & \quad 0.06 \\
\text{Al}_2\text{O}_3 & \quad 0.40 & \text{Na}_2\text{O} & \quad 3.74 \\
\text{Fe}_2\text{O}_3 & \quad 0.72 & \text{K}_2\text{O} & \quad 1.90 \\
\text{Th}_2\text{O}_3 & \quad 0.56 & \text{H}_2\text{O}^+ & \quad 8.62 \\
\text{MnO} & \quad 3.46 & \text{H}_2\text{O}^- & \quad 6.41 \\
\text{Total} & \quad 99.65 & & \\
\end{align*}
\]

(1) Lovozero massif, Russia; corresponds to \((\text{Na}_{0.87}\text{Ca}_{0.41}\text{Mn}_{0.33}\text{K}_{0.28}\text{Mg}_{0.13}\text{Fe}_{0.06})_{\Sigma=2.08}\)
\((\text{Zr}_{0.92}\text{Ti}_{0.09})_{\Sigma=1.01}([\text{Si}_{2.95}\text{Al}_{0.05}]_{\Sigma=6.00}(\text{O}, \text{OH})_{21.28})\)

Mineral Group: Lovozero group.

Occurrence: In nepheline syenites and associated pegmatites.

Association: Potassic feldspar, nepheline, aegirine, lamprophyllite, eudialyte, murmanite (Kola Peninsula, Russia).

Distribution: In the Lovozero and Khibiny massifs, Kola Peninsula, Russia. From the Ilmaaussaq southern intrusion, Greenland. At Mont Saint-Hilaire, Quebec, Canada.

Name: For the occurrence in the Lovozero massif, Kola Peninsula, Russia.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 42701.


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