Lintisite

\[ \text{Na}_3\text{LiTi}_2(\text{Si}_2\text{O}_6)_2\text{O}_2 \cdot 2\text{H}_2\text{O} \]

Crystal Data: Monoclinic. Point Group: \(2/m\). Needlelike crystals, elongated along \(\{001\}\), to 5 mm; in fibrous or columnar aggregates. Twinning: Twin axis \([100]\).

Physical Properties: Cleavage: \(\{100\}\) and \(\{010\}\), perfect. Fracture: Splintery.
Tenacity: Elastic. Hardness = 5–6 D(meas.) = 2.77(5) D(calc.) = 2.825 Fluoresces weak yellow in UV.

Optical Class: Biaxial (−). Orientation: \(Y = b\); \(Z \wedge c = 2^\circ\). Dispersion: \(r < v\), strong. 
\(\alpha = 1.672(2)\) \(\beta = 1.739(2)\) \(\gamma = [1.802]\) 
\(2V(\text{meas.}) = 85(1)^\circ\)

Cell Data: Space Group: \(C2/c\). \(a = 28.583(4)\) \(b = 8.600(1)\) \(c = 5.219(1)\) \(\beta = 91.03(2)^\circ\)
\(Z = 4\)

X-ray Powder Pattern: Lovozero massif, Russia. 
14.29 (s), 2.996 (s), 6.39 (m), 4.77 (m), 3.69 (m), 2.744 (m), 2.709 (m)

Chemistry: 

\begin{align*}
\text{SiO}_2 & \quad 44.03 \\
\text{TiO}_2 & \quad 27.68 \\
\text{Nb}_2\text{O}_5 & \quad 1.10 \\
\text{FeO} & \quad 0.28 \\
\text{MnO} & \quad 0.05 \\
\text{Li}_2\text{O} & \quad 2.68 \\
\text{Na}_2\text{O} & \quad 16.72 \\
\text{K}_2\text{O} & \quad 0.03 \\
\text{LOI} & \quad 6.55 \\
\end{align*}

Total 99.12

(1) Lovozero massif, Russia; by electron microprobe, average of four analyses; Li by flame photometry, loss on ignition taken as \(\text{H}_2\text{O}\); corresponding to \(\text{Na}_{2.07}\text{Li}_{0.99}\text{Ti}_{1.91}\text{Nb}_{0.05}\text{Fe}_{0.02}\)_{\Sigma=1.98} \(\text{Si}_{4.03}\text{O}_{14} \cdot 2\text{H}_2\text{O}\).

Occurrence: Coating and replacing lorenzenite in ultra-agpaitic syenite pegmatites in a differentiated alkalic massif (Lovozero massif, Russia); in sodalite xenoliths in an intrusive alkalic gabbro-syenite complex (Mont Saint-Hilaire, Canada).

Association: Lorenzenite, nepheline, sodalite, potassic feldspar, arfvedsonite, aegirine, eudialyte, ussingite, gmelinite (Lovozero massif, Russia); ussingite, natrolite, serandite, aegirine, steenstrupine, sidorenkite, rasvumite, eudialyte, terskite, vuonnemite, vitusite (Mont Saint-Hilaire, Canada).

Distribution: On Mt. Alluaiv, Lovozero massif, Kola Peninsula, Russia. From Mont Saint-Hilaire, Quebec, Canada.

Name: For Lithium, sodium (Natrium), TItanium, and SIlicon in the composition.


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