Manaksite

\[ \text{KNaMn}^{2+}\text{Si}_4\text{O}_{10} \]

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Crystal Data: Triclinic. Point Group: 1. As grains, to 3 mm, and aggregates, to 5 mm.

Physical Properties: Cleavage: (001), perfect; (010), less perfect. Fracture: Hackly to steplike. Tenacity: Brittle. Hardness = 5 D(meas.) = 2.73(2) D(calc.) = 2.71

Optical Properties: Translucent to transparent. Color: Colorless, cream-white, pale rose. Streak: White. Luster: Vitreous. Optical Class: Biaxial (-). Dispersion: \( r > v \), medium. \( \alpha = 1.540(2) \) \( \beta = 1.551(2) \) \( \gamma = 1.557(2) \). 2V(meas.) = 73°

Cell Data: Space Group: \( \text{P}\overline{1} \). \( a = 6.993(5) \) \( b = 8.219(7) \) \( c = 10.007(9) \) \( \alpha = 105.11(7)^\circ \) \( \beta = 100.76(6)^\circ \) \( \gamma = 114.79(6)^\circ \) \( Z = 2 \)

X-ray Powder Pattern: Lovozero massif, Russia. 3.45 (100), 3.26 (90), 3.05 (80), 6.89 (70), 2.880 (70), 2.715 (70), 2.463 (70)

Chemistry:

\[
\begin{array}{c|c}
\text{Element} & \text{Mole Frac.} \\
\hline
\text{SiO}_2 & 62.0 \\
\text{FeO} & 0.8 \\
\text{MnO} & 17.2 \\
\text{MgO} & 0.3 \\
\text{CaO} & 0.2 \\
\text{SrO} & 0.2 \\
\text{Na}_2\text{O} & 8.9 \\
\text{K}_2\text{O} & 10.8 \\
\hline
\text{Total} & 100.4 \\
\end{array}
\]

(1) Lovozero massif, Russia; by electron microprobe, average of three analyses; corresponds to \( \text{K}_{0.89}\text{Na}_{1.11}\text{Mg}_{0.03}\text{Ca}_{0.01}\text{Sr}_{0.01}(\text{Mn}_{0.94}\text{Fe}_{0.03})_{\Sigma=0.97}\text{Si}_{3.99}\text{O}_{10} \).

Occurrence: In ultra-agpaitic pegmatites in a differentiated alkalic massif.

Association: Nepheline, sodalite, analcime, potassic feldspar, albite, cancrisilite, arfvedsonite, aegirine, ussingite, makatite, grumantite, lomonosovite, villiaumite, additional minor minerals.

Distribution: On Mt. Alluaiv, Lovozero massif, Kola Peninsula, Russia.

Name: For MAnganese; sodium, NAtrium; potassium, Kalium; and Silicon in its composition.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, p575/3.


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