Lithiomarsturite

Crystal Data: Triclinic. Point Group: 1. As nearly equant rhombic to prismatic euhedral crystals, to 3 mm, with \{100\} prominent, \{010\} and \{001\}; divergent bundles of crystals.

Physical Properties: Cleavage \{100\} and \{001\}, good. Tenacity: Brittle. Hardness = \(~6\)

Physical Properties: D(meas.) = 3.32 D(calc.) = 3.27


Optical Properties: Biaxial (-). Orientation: X \& b = -7^\circ; Y \& a = 28^\circ; Z \& c = 6^\circ.

Optical Properties: Dispersion: r > v, moderate. \(\alpha = 1.645(1)\) \(\beta = 1.660(1)\) \(\gamma = 1.666(1)\) 2V(meas.) = 59.9(8)^\circ

Optical Properties: 2V(calc.) = 64^\circ

Cell Data: Space Group: \([\overline{P1}]\) (by analogy to rhodonite). \(a = 7.652(3)\) \(b = 12.119(3)\)

Cell Data: \(c = 6.865(2)\) \(\alpha = 85.41(2)^\circ\) \(\beta = 94.42(3)^\circ\) \(\gamma = 111.51(2)^\circ\) \(Z = 2\)

X-ray Powder Pattern: Foote mine, North Carolina, USA.

X-ray Powder Pattern: 3.01 (100), 3.19 (90), 2.913 (90), 2.744 (60), 3.08 (50), 2.217 (50), 6.79 (20)

Chemistry:

\[
\begin{array}{ll}
\text{SiO}_2 & 51.6 \\
\text{FeO} & 6.9 \\
\text{MnO} & 16.4 \\
\text{MgO} & 0.7 \\
\text{CaO} & 19.1 \\
\text{Li}_2\text{O} & 2.6 \\
\text{H}_2\text{O} & [1.55] \\
\text{Total} & [98.9] \\
\end{array}
\]

Chemistry: (1) Foote mine, North Carolina, USA; by electron microprobe, Li by ion microprobe, H\(_2\)O calculated from stoichiometry; corresponds to Li\(_{1.01}\)Ca\(_{1.98}\)(Mn\(_{1.35}\)Fe\(_{0.56}\)Mg\(_{0.10}\))\(_{\Sigma=2.01}\)H\(_{1.00}\)Si\(_{5}\)O\(_{15}\).

Occurrence: In small vugs within a complex Li-Sn-rich pegmatite.

Association: Tetrawickmanite, brannockite, parsettensite, bavenite, fluorapatite, albite, pyrite.

Distribution: At the Foote mine, Kings Mountain, Cleveland Co., North Carolina, USA.

Name: As the lithium analogue of marsturite.
