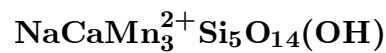


# Marsturite



©2001 Mineral Data Publishing, version 1.2

**Crystal Data:** Triclinic. *Point Group:*  $\bar{1}$  or 1. As imperfectly terminated prismatic crystals, elongated along [010], with pinacoids {100} and {001}, to 2 mm, striated on {001} || [100]; also as crusts.

**Physical Properties:** *Cleavage:* Imperfect on {100} and {001}. *Hardness* = ~6  
D(meas.) = 3.46 D(calc.) = 3.465

**Optical Properties:** Translucent. *Color:* Colorless, white to very light pink. *Luster:* Frosty, on the tips of crystals.

*Optical Class:* Biaxial (+). *Orientation:*  $X \simeq c$ ;  $Z' \wedge b = 4^\circ \perp \{001\}$ ;  $Z' \wedge b = 15^\circ \perp \{100\}$ .  
*Dispersion:*  $r > v$ , very weak.  $\alpha = 1.686(2)$   $\beta = 1.691(1)$   $\gamma = 1.708(1)$   $2V(\text{meas.}) = 60(1)^\circ$   
 $2V(\text{calc.}) = 57.4^\circ$

**Cell Data:** *Space Group:* n.d.  $a = 7.70(1)$   $b = 12.03(3)$   $c = 6.78(1)$   $\alpha = 85.26(35)^\circ$   
 $\beta = 94.10(26)^\circ$   $\gamma = 111.04(12)^\circ$   $Z = 2$

**X-ray Powder Pattern:** Franklin, New Jersey, USA.  
2.725 (100), 2.916 (90), 2.999 (80), 3.18 (40), 1.441 (40), 3.11 (30), 2.219 (30)

Chemistry:	(1)
SiO <sub>2</sub>	48.94
FeO	0.24
MnO	34.16
MgO	0.12
CaO	12.46
Na <sub>2</sub> O	4.08
H <sub>2</sub> O	n.d.
Total	100.00

(1) Franklin, New Jersey, USA; by electron microprobe, average of three analyses; corresponding to  $\text{Na}_{0.81}\text{Ca}_{1.36}(\text{Mn}_{2.96}\text{Fe}_{0.02}\text{Mg}_{0.02})_{\Sigma=3.00}\text{Si}_5\text{O}_{15}$ .

**Occurrence:** Implanted on manganaxinite and epitaxially overgrown on rhodonite in a metamorphosed stratiform zinc deposit (Franklin, New Jersey, USA).

**Association:** Rhodonite, manganaxinite, ganophyllite, willemite, franklinite (Franklin, New Jersey, USA); natronambulite, kôzulate (Tanohata mine, Japan).

**Distribution:** From Franklin, Sussex Co., New Jersey, USA. In the Tanohata mine, Iwate Prefecture, Japan. From the Molinello manganese mine, near Chiavari, Val Graveglia, Liguria, Italy.

**Name:** For MARion STUart, of Bellevue, Idaho, USA, benefactress of fossil and mineral collections in the USA.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, 127923.

**References:** (1) Peacor, D.R., P.J. Dunn, and B.D. Sturman (1978) Marsturite,  $\text{Mn}_3\text{CaNaHSi}_5\text{O}_{15}$ , a new mineral of the nambulite group from Franklin, New Jersey. *Amer. Mineral.*, 63, 1187–1189. (2) Dunn, P.J. and P.B. Leavens (1986) Marsturite epitaxial on rhodonite from Franklin, New Jersey. *Mineral. Record*, 17, 123–125.