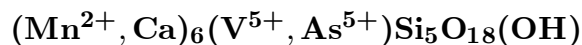


**Medaite**

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**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . As elongated grains, to 1.5 mm, and as granular aggregates, to 1 cm; as oriented lamellae in tiragalloite. *Twining:* Microscopic symmetrical twinning, the twin plane coincident with {100}.

**Physical Properties:** *Cleavage:* Good on {100}; a distinct parting  $\perp$  elongation. *Tenacity:* Brittle. Hardness = n.d.  $D(\text{meas.}) = 3.70(5)$   $D(\text{calc.}) = 3.727$

**Optical Properties:** Translucent in thin fragments; transparent in thin section. *Color:* Brownish red; dark orange to brownish in thin section. *Luster:* Subadamantine. *Optical Class:* Biaxial (+). *Pleochroism:* Faint, from dark to lighter orange. *Orientation:*  $X = a$ ;  $Y = b$ ;  $Z = c$ ;  $X \wedge \perp$  to cleavage =  $3^\circ$ . *Absorption:* Strong.  $\alpha = 1.77(2)$   $\beta = 1.78(1)$   $\gamma = 1.80(2)$   $2V(\text{meas.}) = 71^\circ$

**Cell Data:** *Space Group:*  $P2_1/n$ .  $a = 6.712(1)$   $b = 28.948(8)$   $c = 7.578(2)$   $\beta = 95.4(2)^\circ$   
 $Z = 4$

**X-ray Powder Pattern:** Molinello, Italy.  
3.259 (100), 3.159 (83), 3.097 (70), 2.613 (69), 2.941 (68), 3.009(47), 2.785 (47)

Chemistry:	(1)
SiO <sub>2</sub>	38.09
As <sub>2</sub> O <sub>5</sub>	2.11
V <sub>2</sub> O <sub>5</sub>	7.44
FeO	0.31
MnO	49.94
CaO	1.30
H <sub>2</sub> O	[1.09]
Total	[100.28]

(1) Molinello, Italy; by electron microprobe, H<sub>2</sub>O calculated from crystal structure; corresponds to  $(\text{Mn}_{5.77}^{2+}\text{Ca}_{0.19}\text{Fe}_{0.04})_{\Sigma=6.00}(\text{V}_{0.82}^{5+}\text{As}_{0.18}^{5+})_{\Sigma=1.00}\text{Si}_5\text{O}_{18}(\text{OH})$ .

**Occurrence:** Formed at low temperature and low H<sub>2</sub>O fugacity in veinlets cutting manganese ores.

**Association:** Tiragalloite, braunite, quartz, manganoan calcite, parsettensite, albite (Molinello mine, Italy); palenzonaite, saneroite, pyrobelonite, fanelite, parsettensite, rhodochrosite, kutahorite, aegirine, quartz (Faniel mine, Switzerland).

**Distribution:** From the Molinello manganese mine, near Chiavari, Val Graveglia, Liguria, Italy. At the Faniel mine, Val Ferrera, Graubünden, Switzerland.

**Name:** Honors Dr. Francesco Meda (1926–1977), an amateur mineralogist from Turin, Italy.

**Type Material:** Milan University, Milan; University of Rome, Rome, Italy; University of Oslo, Oslo, Norway.

**References:** (1) Gramaccioli, C.M., W.L. Griffin, and A. Mottana (1982) Medaite, Mn<sub>6</sub>[VSi<sub>5</sub>O<sub>18</sub>(OH)], a new mineral and the first example of vanadatopentasilicate ion. *Amer. Mineral.*, 67, 85–89. (2) Gramaccioli, C.M., G. Liborio, and T. Pilati (1981) Structure of medaite, Mn<sub>6</sub>[VSi<sub>5</sub>O<sub>18</sub>(OH)]: the presence of a new kind of heteropolysilicate anion. *Acta Cryst.*, 37, 1972–1978.