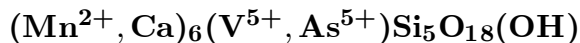


Medaite

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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. *Twinning:* 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° . *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 ₂	38.09
As ₂ O ₅	2.11
V ₂ O ₅	7.44
FeO	0.31
MnO	49.94
CaO	1.30
H ₂ O	[1.09]
Total	[100.28]

(1) Molinello, Italy; by electron microprobe, H₂O 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 H₂O 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, Mn₆[VSi₅O₁₈(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, Mn₆[VSi₅O₁₈(OH)]: the presence of a new kind of heteropolysilicate anion. *Acta Cryst.*, 37, 1972–1978.