

Arsenmedaite

Crystal Data: Monoclinic. *Point Group:* 2/m. As rough prismatic crystals, to 200 μm .

Physical Properties: *Cleavage:* Good on {100}, parting \perp to elongation.

Fracture: Irregular. *Tenacity:* Brittle. Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.772

Optical Properties: n.d. *Color:* Orange-reddish. *Streak:* White. *Luster:* Vitreous.

Optical Class: n.d. $n(\text{calc.}) = 1.766$

Cell Data: Space Group: $P2_1/n$. $a = 6.7099(3)$ $b = 29.0008(13)$ $c = 7.5668(3)$

$\beta = 95.469(3)^\circ$ $Z = 4$

X-ray Powder Pattern: Calculated pattern.

3.266 (100), 2.612 (98), 2.963 (83), 3.094 (82), 2.953 (79), 3.159 (72), 2.788 (68)

| Chemistry: | (1) | (2) |
|--------------------------------|-------------|-------------|
| V ₂ O ₅ | 1.84 | |
| As ₂ O ₅ | 6.81 | 13.52 |
| SiO ₂ | 38.75 | 35.34 |
| CaO | 0.70 | |
| MnO | 50.28 | 50.08 |
| <u>H₂O</u> | <u>1.42</u> | <u>1.06</u> |
| Total | 99.80 | 100.00 |

(1) Molinello mine, Graveglia Valley, Ne, Genoa, Liguria, Italy; average of 10 electron microprobe analyses supplemented by Raman spectroscopy, (OH)⁻ calculated for electroneutrality; corresponds to $(\text{Mn}_{5.89}\text{Ca}_{0.10})_{\Sigma=5.99}[(\text{As}_{0.49}\text{V}_{0.17})_{\Sigma=0.66}\text{Si}_{5.35}]_{\Sigma=6.01}\text{O}_{17.69}(\text{OH})_{1.31}$. (2) $\text{Mn}^{2+}_6\text{As}^{5+}_5\text{Si}_5\text{O}_{18}(\text{OH})$.

Mineral Group: Medaite group.

Occurrence: A late-stage hydrothermal mineral in quartz veinlets that cut braunite ore bodies hosted by metacherts, which overlay a mafic-ultramafic ophiolitic sequence.

Association: Calcian rhodochrosite, talc, braunite, quartz, calcite, As-rich medaite, ganophyllite.

Distribution: From the Molinello mine, Graveglia Valley, Ne, Genoa, Liguria, Italy.

Name: Indicates the *arsenic* analogue of *medaite*.

Type Material: Natural History Museum, University of Pisa (19901) and the Department of Earth Science, University of Genoa (MO483), Italy.

References: (1) Biagioni, C., D. Belmonte, C. Carbone, R. Cabella, F. Zaccarini, and C. Balestra (2019) Arsenmedaite, $\text{Mn}^{2+}_6\text{As}^{5+}_5\text{Si}_5\text{O}_{18}(\text{OH})$, the arsenic analogue of medaite, from the Molinello mine, Liguria, Italy: occurrence and crystal structure. *Eur. J. Mineral.*, 31(1), 117-126. (2) (2020) *Amer. Mineral.*, 105(7), 1109-1110 (abs. ref. 1).