

# Reppiaite



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**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . As striated irregular grains, flattened on {100}, to 300  $\mu\text{m}$ ; in fine-grained aggregates.

**Physical Properties:** Hardness =  $\sim 3$  VHN = 90–110, 100 average (15 g load).  
D(meas.) = 3.92 D(calc.) = 3.91

**Optical Properties:** Transparent. *Color:* Red-orange. *Streak:* Yellow-orange.

*Luster:* Vitreous.

*Optical Class:* Biaxial (-). *Pleochroism:* Very weak; yellow-orange to deep orange. *Dispersion:* Medium.  $\alpha = 1.803(2)$  ( $\alpha'$ )  $\beta = \text{n.d.}$   $\gamma = 1.810(5)$  ( $\gamma'$ )  $2V(\text{meas.}) = \text{Large}$ .

**Cell Data:** *Space Group:*  $C2/m$ .  $a = 9.614(4)$   $b = 9.561(3)$   $c = 5.396(3)$   $\beta = 98.39(1)^\circ$   
 $Z = 2$

**X-ray Powder Pattern:** Gambatesa mine, Italy.

2.680 (VS), 4.76 (S), 3.00 (M), 2.656 (M), 2.155 (M), 1.565 (M), 1.510 (M)

**Chemistry:**

	(1)	(2)
As <sub>2</sub> O <sub>5</sub>	6.87	
V <sub>2</sub> O <sub>5</sub>	25.79	31.77
MnO	61.17	61.94
H <sub>2</sub> O	[6.17]	6.29
Total	[100.00]	100.00

(1) Gambatesa mine, Italy; by electron microprobe, average of ten analyses from two samples,

total Mn as MnO, H<sub>2</sub>O by difference; corresponding to Mn<sub>5.01</sub>[(V<sub>0.82</sub>As<sub>0.18</sub>) $\Sigma=1.00$ O<sub>4</sub>]<sub>2</sub>(OH)<sub>3.98</sub>.

(2) Mn<sub>5</sub>(VO<sub>4</sub>)<sub>2</sub>(OH)<sub>4</sub>.

**Occurrence:** A rare mineral, deposited from V–As-bearing hydrothermal solutions in fractures cutting manganese cherts.

**Association:** Hausmannite, tephroite, Mn–Ca carbonates.

**Distribution:** From the Gambatesa mine, near Reppia, Val Graveglia, Liguria, Italy.

**Name:** For Reppia, Italy, a village near the locality where the mineral was first found.

**Type Material:** University of Genoa, Genoa, Italy.

**References:** (1) Basso, R., G. Lucchetti, L. Zefiro, and A. Palenzona (1992) Reppiaite, Mn<sub>5</sub>(OH)<sub>4</sub>(VO<sub>4</sub>)<sub>2</sub>, a new mineral from Val Graveglia (Northern Apennines, Italy). *Zeits. Krist.*, 201, 223–234. (2) (1993) *Amer. Mineral.*, 78, 452 (abs. ref. 1).