

**Crystal Data:** Cubic. *Point Group:*  $4/m\bar{3}2/m$ . In dodecahedral crystals, to 6 mm, and as anhedral grains.

**Physical Properties:** *Fracture:* Subconchoidal. Hardness = 5–5.5 D(meas.) = 3.63(2)  
D(calc.) = 3.78–3.79

**Optical Properties:** Transparent. *Color:* Wine-red; in thin section, wine-red.  
*Streak:* Brownish red. *Luster:* Adamantine.  
*Optical Class:* Isotropic.  $n = 1.965(5)$

**Cell Data:** *Space Group:*  $Ia\bar{3}d$ .  $a = 12.534(2)$   $Z = 8$

**X-ray Powder Pattern:** Molinello mine, Italy.  
2.803 (100), 2.558 (60), 3.132 (55), 1.675 (40), 1.738 (20), 2.673 (19), 5.12 (11)

| Chemistry:              | (1)    |
|-------------------------|--------|
| $\text{As}_2\text{O}_5$ | 5.14   |
| $\text{V}_2\text{O}_5$  | 39.34  |
| $\text{SiO}_2$          | 3.32   |
| $\text{MnO}$            | 25.19  |
| $\text{CaO}$            | 23.70  |
| $\text{Na}_2\text{O}$   | 3.40   |
| Total                   | 100.09 |

(1) Molinello mine, Italy; by electron microprobe, average of three analyses, total Mn as MnO; corresponds to  $\text{Na}_{0.62}\text{Ca}_{2.37}\text{Mn}_{1.99}[(\text{V}_{0.81}\text{Si}_{0.10}\text{As}_{0.08})_{\Sigma=0.99}\text{O}_4]_3$ .

**Occurrence:** A rare mineral in narrow veinlets cutting a manganese deposit hosted within radiolarian cherts (Molinello mine, Italy).

**Association:** Manganoan calcite, saneroite, ganophyllite, axinite (Molinello mine, Italy); medaite, saneroite, pyrobelonite, fianelite, parsettensite, rhodochrosite, kutnohorite, aegirine, quartz (Fianel mine, Switzerland).

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

**Name:** In honor of Professor Andrea Palenzona, amateur mineralogist and discoverer of the mineral.

**Type Material:** University of Genoa, Genoa, Italy; Royal Ontario Museum, Toronto, Canada.

**References:** (1) Basso, R. (1987) The crystal structure of palenzonaite, a new vanadate garnet from Val Graveglia (Northern Apennines, Italy). *Neues Jahrb. Mineral., Monatsh.*, 136–144.  
(2) (1988) *Amer. Mineral.*, 73, 930 (abs. ref. 1).