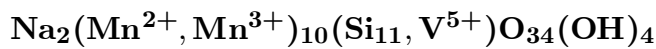


**Saneroite**

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**Crystal Data:** Triclinic. *Point Group:*  $\bar{1}$ . Tabular crystals, rarely prismatic to stocky, to 1 cm, in compact aggregates. *Twinning:* Present.

**Physical Properties:** *Cleavage:* Perfect in two perpendicular directions. Hardness = n.d. D(meas.) = 3.47 D(calc.) = 3.51

**Optical Properties:** Transparent to translucent. *Color:* Bright orange. *Luster:* Resinous to greasy.

*Optical Class:* Biaxial (-). *Pleochroism:* Strong; X = deep orange; Y = lemon-yellow; Z = yellow-orange.  $\alpha = 1.715\text{--}1.725$   $\beta = 1.740\text{--}1.745$   $\gamma = 1.745\text{--}1.750$   $2V(\text{meas.}) = 40^\circ\text{--}48^\circ$

**Cell Data:** *Space Group:*  $P\bar{1}$ .  $a = 9.741(5)$   $b = 9.974(7)$   $c = 9.108(5)$   $\alpha = 92.70(4)^\circ$   $\beta = 117.11(4)^\circ$   $\gamma = 105.30(4)^\circ$   $Z = 1$

**X-ray Powder Pattern:** Val Graveglia, Italy.

3.06 (s), 2.83 (s), 2.70 (s), 3.01 (m), 2.98 (m), 2.62 (m), 2.20 (m)

**Chemistry:**

	(1)
SiO <sub>2</sub>	39.33
Fe <sub>2</sub> O <sub>3</sub>	0.36
As <sub>2</sub> O <sub>5</sub>	0.29
V <sub>2</sub> O <sub>5</sub>	6.60
MnO	40.13
CaO	0.25
Na <sub>2</sub> O	4.53
H <sub>2</sub> O <sup>+</sup>	5.00
Total	96.49

(1) Val Graveglia, Italy; by electron microprobe, average of data collected on two zones of differing color, H<sub>2</sub>O by TGA, valences from crystal structure analysis; corresponds to Na<sub>2.40</sub>(Mn<sub>9.32</sub><sup>2+</sup>Fe<sub>0.07</sub><sup>3+</sup>Ca<sub>0.07</sub>)<sub>Σ=9.46</sub>(Si<sub>10.77</sub>V<sub>1.19</sub><sup>5+</sup>As<sub>0.04</sub><sup>5+</sup>)<sub>Σ=12.00</sub>O<sub>35.30</sub>•4.57H<sub>2</sub>O.

**Occurrence:** In veins in manganese ores associated with low-grade prehnite-pumpellyite facies metamorphic recrystallization of siliceous-hematitic sediments (Val Graveglia, Italy).

**Association:** Quartz, barite, caryopilite, ganophyllite (Val Graveglia, Italy); medaite, palenzonaite, pyrobelonite, fianelite, parsettensite, rhodochrosite, kutahorite, aegirine, quartz (Fianel mine, Switzerland).

**Distribution:** In Italy, at the Gambatesa and Molinello manganese mines, near Chiavari, Val Graveglia, Liguria, Italy. From the Fianel mine, Val Ferrera, Graubünden, Switzerland.

**Name:** For Edoardo Sanero, formerly Professor of Mineralogy at the University of Genoa, Genoa, Italy.

**Type Material:** University of Genoa, Genoa; Municipal Museum of Natural History, Genoa, Italy.

**References:** (1) Lucchetti, G., A.M. Penco, and R. Rinaldi (1981) Saneroite, a new natural hydrated Mn-silicate. *Neues Jahrb. Mineral., Monatsh.*, 4, 161–168. (2) Basso, R. and A. Della Guista (1980) The crystal structure of a new manganese silicate. *Neues Jahrb. Mineral., Abh.*, 138, 333–342. (3) (1981) *Amer. Mineral.*, 66, 1277–1278 (abs. refs. 1 and 2).