

**Crystal Data:** Triclinic, pseudomonoclinic. *Point Group:*  $\bar{1}$ . Needlelike crystals, elongated along [010], flattened  $\parallel$  {001}, showing {100}, {201}, {401}, and {412}, to 5 mm. *Twining:* May be twinned on {001}.

**Physical Properties:** Hardness = n.d.  $D(\text{meas.}) = 5.3$   $D(\text{calc.}) = 5.49$

**Optical Properties:** Transparent. *Color:* Colorless to white. *Optical Class:* Biaxial (-). *Orientation:*  $X \wedge c \simeq 12^\circ$ ;  $Y \wedge a \simeq 8^\circ$ ;  $Z \wedge b \simeq 0^\circ\text{--}14^\circ$ .  $\alpha = \text{n.d.}$   
 $\beta = 2.18\text{--}2.23$   $\gamma = 2.23\text{--}2.26$   $2V(\text{meas.}) = \text{n.d.}$

**Cell Data:** *Space Group:*  $P\bar{1}$ .  $a = 18.92$   $b = 4.03$   $c = 10.31$   $\alpha = \sim 90^\circ$   $\beta = \sim 110^\circ$   
 $\gamma = \sim 90^\circ$   $Z = [2]$

**X-ray Powder Pattern:** Cetine mine, Italy.  
 3.190 (100), 2.677 (60), 3.041 (50), 2.822 (50), 2.598 (30), 2.544 (30), 1.807 (30)

Chemistry:	(1)	(2)
Sb <sub>2</sub> O <sub>3</sub>	87.90	87.54
SbCl <sub>3</sub>	12.10	12.46
H <sub>2</sub> O	0.00	
Total	100.00	100.00

(1) Cetine mine, Italy; by TGA. (2) Sb<sub>8</sub>O<sub>11</sub>Cl<sub>2</sub>.

**Occurrence:** An oxidation product of stibnite in an antimony deposit in highly silicified evaporites.

**Association:** Stibnite, stibiconite, cetineite, peretaite, klebelsbergite, quartz.

**Distribution:** In the Cetine mine, 20 km southwest of Siena, Tuscany, Italy.

**Name:** To honor Ettore Onorato (1899–1971), Italian mineralogist.

**Type Material:** University of Rome, Rome, Italy, 24308.

**References:** (1) Belluomini, M.F., M. Fornaseri, and M. Nicoletti (1968) Onoratoite, a new antimony oxychloride from Cetine di Cotorniano, Rosia (Siena, Italy). *Mineral. Mag.*, 36, 1037–1044. (2) (1969) *Amer. Mineral.*, 54, 1219 (abs. ref. 1). (3) Menchetti, S., C. Sabelli, and R. Trosti-Ferroni (1984) The structures of onoratoite, Sb<sub>8</sub>O<sub>11</sub>Cl<sub>2</sub> and Sb<sub>8</sub>O<sub>11</sub>Cl<sub>2</sub>•6H<sub>2</sub>O. *Acta Cryst.*, C40, 1506–1510.