

**Gelosaite** **$\text{BiMo}^{6+}_{(2-5x)}\text{Mo}^{5+}_{6x}\text{O}_7(\text{OH})\cdot\text{H}_2\text{O}$  ( $0 < x < 0.4$ )**

**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . Prismatic crystals are elongated along [010] and tabular on {100} to 1 mm. *Twining:* Common by an undetermined twin law.

**Physical Properties:** *Cleavage:* None. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness =  $\sim 3$  D(meas.) = n.d. D(calc.) = 5.114

**Optical Properties:** Transparent. *Color:* Colorless, yellow, yellowish green, pale blue.

*Streak:* White. *Luster:* Adamantine.

*Optical Class:* Anisotropic.  $n(\text{calc.}) = 2.04$  *Pleochroism:* Blue to pale blue (blue varieties).

**Cell Data:** *Space Group:*  $P2_1/n$ .  $a = 5.8505(4)$   $b = 9.0421(6)$   $c = 13.917(1)$   $\beta = 100.42(1)^\circ$   $Z = 4$

**X-ray Powder Pattern:** Su Senargiu, Sardinia, Italy.

4.83 (100), 2.755 (60), 3.015 (50), 2.080 (50), 1.509 (30), 3.30 (25), 3.41 (21)

<b>Chemistry:</b>	(1)	(2)
PbO	0.01	
Bi <sub>2</sub> O <sub>3</sub>	42.87	42.52
Mo <sub>2</sub> O <sub>5</sub>	14.97	
MoO <sub>3</sub>	37.85	52.54
WO <sub>3</sub>	0.02	
H <sub>2</sub> O	[4.85]	4.93
Total	100.57	100.00

(1) Su Senargiu, Sardinia, Italy; electron microprobe analysis, Mo partitioned between Mo<sub>2</sub>O<sub>5</sub> and MoO<sub>3</sub> based on the structure analysis, H<sub>2</sub>O was calculated from stoichiometry; corresponds to BiMo<sup>6+</sup><sub>1.48</sub>Mo<sup>5+</sup><sub>0.62</sub>O<sub>7</sub>(OH)·H<sub>2</sub>O. (2) BiMo<sub>2</sub>O<sub>7</sub>(OH)·H<sub>2</sub>O.

**Occurrence:** A secondary mineral formed in the oxidation zone of bismuth-molybdenum deposits.

**Association:** Sardignaite, ferrimolybdate, koechlinite, wulfenite, muscovite (Sardinia); bismutite, quartz (Australia).

**Distribution:** From Su Senargiu, Sarroch (CA), Sardinia, Italy [TL] and the Old 25 and Wolfram pipes, Kingsgate Bi-Mo deposits, 28 km east of Glen Innes, New England district, northeastern New South Wales, Australia.

**Name:** Honors Mario *Gelosa* (1947-2006) from Porto Torres, Sardinia, who first found the mineral.

**Type Material:** Natural History Museum, University of Pisa, Tuscany, Italy (18910).

**References:** (1) Orlandi, P., F. Demartin, M. Pasero, P. Leverett, P.A. Williams, and D.E. Hibbs (2011) Gelosaite, BiMo<sup>6+</sup><sub>(2-5x)</sub>Mo<sup>5+</sup><sub>6x</sub>O<sub>7</sub>(OH)·H<sub>2</sub>O ( $0 \leq x \leq 0.4$ ), a new mineral from Su Senargiu (CA), Sardinia, Italy, and a second occurrence from Kingsgate, New England, Australia. *Amer. Mineral.*, 96, 268-273.