

Crystal Data: Cubic. *Point Group:* $\bar{4}3m$. As distorted octahedral crystals, to 1 mm; typically as rosettes of flattened crystals.

Physical Properties: Hardness = ~ 3 $D(\text{meas.}) = 7.19$ $D(\text{calc.}) = 7.13$

Optical Properties: Transparent. *Color:* Straw-yellow, yellowish gray to gray; colorless in transmitted light. *Luster:* [Vitreous.]

Optical Class: Isotropic; may exhibit anomalous birefringence. $n = 2.085$

Cell Data: *Space Group:* $F\bar{4}3m$. $a = 9.5215(5)$ $Z = 4$

X-ray Powder Pattern: Mariposa mine, Texas, USA.

2.872 (10), 2.743 (10), 5.511 (8), 2.371 (7), 1.679 (7), 1.432 (7), 2.178 (6)

Chemistry:	(1)	(2)
SO_4	8.5	10.37
SiO_2	0.2	
N	2.9	3.02
Hg	83.6	86.61
Cl	0.0	
H_2O	0.0	
Total	95.2	100.00

(1) Mariposa mine, Texas, USA; by separate microchemical analyses on several samples, corresponding to $\text{Hg}_{4.1}(\text{SO}_4)_{0.9}\text{N}_{2.0}$. (2) $\text{Hg}_4(\text{SO}_4)\text{N}_2$.

Occurrence: A rare secondary mineral coating fracture surfaces in oxidized portions of a hydrothermal mercury deposit, the nitrogen likely derived from decaying organic matter (Mariposa mine, Texas, USA); in a mercury deposit in silicate-carbonate rock hydrothermally altered from serpentinite (Clear Creek claim, California, USA).

Association: Cinnabar, terlinguaite, montroydite, mercury, calomel, hematite, calcite (Mariposa mine, Texas, USA).

Distribution: In the USA, from the Perry pit, Mariposa mine, Terlingua district, Brewster Co., Texas; on the Clear Creek claim, near the Clear Creek mercury mine, New Idria district, San Benito Co., California.

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Type Material: Harvard University, Cambridge, Massachusetts, 124993; National Museum of Natural History, Washington, D.C., USA, 142886, 142887.

References: (1) Tunell, G., J.J. Fahey, F.W. Daugherty, and G.V. Gibbs (1977) Gianellaite, a new mercury mineral. *Neues Jahrb. Mineral., Monatsh.*, 119–131. (2) (1977) *Amer. Mineral.*, 62, 1057 (abs. ref. 1).