Mazzettiite $Ag_3HgPbSbTe_5$

Crystal Data: Orthorhombic. *Point Group*: *mm*2 or 2/*m* 2/*m* 2/*m*. As irregular grains, to 200 μm, in sharp contact with altaite.

Physical Properties: *Cleavage:* None. *Tenacity:* Brittle. *Fracture:* n.d. Hardness = 3-3.5 VHN = 101 (25 g load). D(meas.) = n.d. D(calc.) = 9.04

Optical Properties: Opaque. *Color:* Light gray in reflected light. *Pleochroism*: Weak, greenish gray to a slightly darker bluish gray. *Anisotropism*: Moderate. *Streak:* Black. *Luster:* Metallic. *Optical Class:* n.d.
R_1-R_2: (400) 45.1-45.4, (420) 45.2-45.7, (440) 45.4-45.9, (460) 45.6-46.1, (480) 45.9-46.3, (500) 45.9-46.4, (520) 46.0-46.4, (540) 46.0-46.5, (560) 46.2-46.6, (580) 46.3-47.0, (600) 46.4-47.0, (620) 46.4-47.1, (640) 46.5-47.2, (660) 46.3-47.0, (680) 46.2-46.9, (700) 46.0-46.8

Cell Data: Space Group: *Pna*2_1 or *Pnam*. a = 16.495(6) b = 14.762(7) c = 4.506(2) Z = 4

X-ray Powder Pattern: Findley Gulch, Bonanza mining district, Saguache County, Colorado, USA. 3.01 (100), 3.65 (60), 3.17 (60), 2.754 (60), 1.806 (55), 3.26 (50), 2.137 (50), 2.316 (45)

Chemistry:

	(1)	(2)
Pb	14.12	13.90
Ag	21.60	21.70
Hg	13.58	13.45
Sb	8.07	8.16
Te	42.68	42.79
Total	100.05	100.00

(1) Findley Gulch, Saguache County, Colorado, USA; average of 20 electron microprobe analyses, corresponds to $Ag_{2.99}Hg_{1.01}Pb_{1.02}Sb_{0.99}Te_{4.99}$. (2) $Ag_3HgPbSbTe_5$.

Occurrence: A rare mineral in a hydrothermal telluride deposit.

Association: Altaite, galena, quartz.

Distribution: From Findley Gulch, Bonanza mining district, Saguache County, Colorado, USA.

Name: Honors Giuseppe Mazzetti (1942-2003), curator in chief of the Mineralogy Section, Museum of Natural History, University of Florence, Italy.

Type Material: Natural History Museum, University of Florence, Italy (2951/I) and the Mineralogical Collection, Royal Institute of Natural Sciences, Brussels, Belgium (V/876).

References: (1) Luca, B. and C. Cipriani, (2004) Mazzettiite, $Ag_3HgPbSbTe_5$, a new mineral species from Findley Gulch, Saguache county, Colorado, USA. Can. Mineral., 42(6), 1739-1743. (2) (2005) Amer. Mineral., 90, 1229 (abs. ref. 1).