Tetrahedrite-(Hg) $Cu_6(Cu_4Hg_2)Sb_4S_{13}$

Crystal Data: Cubic. *Point Group*: $\bar{4}\,3m$. As anhedral grains or as tetrahedral crystals to 4 mm.

Physical Properties: *Cleavage*: Indistinct. *Tenacity*: Brittle. *Fracture*: Conchoidal.
Hardness = 3.5-4 D(meas.) = n.d. D(calc.) = 5.326

Optical Properties: [Opaque.] *Color*: Black, grayish white with creamy tints in reflected light.
Streak: Black. *Luster*: Metallic.
Optical Class: Isotropic.
R: (470) 32.5, (546) 32.9, (589) 33.2, (650) 30.9

Cell Data: *Space Group: I*$\bar{4}\,3m$. *a* = 10.4725(1) - 10.5057(8) Z = 2

X-Ray Diffraction Pattern: Buca della Vena mine, Stazzema (LU), Apuan Alps, Tuscany, Italy.
3.035 (vs), 1.860 (m), 1.584 (mw), 4.29 (w), 3.716 (w), 2.806 (w), 2.626 (w)

Chemistry:

	(1)	(2)	(3)	(4)
Cu	32.22	32.99	32.83	32.75
Ag	0.40	0.01	0.22	
Fe	0.18	0.76	0.45	
Zn	1.25	0.24	0.33	
Hg	17.68	18.77	19.42	20.67
As		0.25	2.31	
Sb	26.17	25.69	20.43	25.10
Bi			2.74	
S	21.86	22.10	22.09	21.48
Se	0.05			.
Total	99.81	100.81	100.82	100.00

(1) Buca della Vena mine, Stazzema (LU), Apuan Alps, Tuscany, Italy; average electron microprobe analysis; corresponds to $(Cu_{9.44}Ag_{0.07})_{\Sigma=9.51}(Hg_{1.64}Zn_{0.36}Fe_{0.06})_{\Sigma=2.06}Sb_4(S_{12.69}Se_{0.01})_{\Sigma=12.70}$. (2) Jedová hora deposit, Neřežín, Hořovice, Beroun District, Bohemian Region, Czech Republic; average electron microprobe analysis; corresponds to $Cu_{9.69}(Hg_{1.75}Fe_{0.25}Zn_{0.06})_{\Sigma=2.06}(Sb_{3.94}As_{0.06})_{\Sigma=4}S_{12.87}$. (3) Rožňava deposit, Košice Region, Slovakia; average electron microprobe analysis; corresponds to $(Cu_{9.76}Ag_{0.04})_{\Sigma=9.80}(Hg_{1.83}Fe_{0.15}Zn_{0.10})_{\Sigma=2.08}(Sb_{3.17}As_{0.58}Bi_{0.25})_{\Sigma=4}S_{13.01}$. (4) $Cu_6(Cu_4Hg_2)Sb_4S_{13}$.

Mineral Group: Tetrahedrite group.

Occurrence: In metamorphosed (greenschist facies) pyrite ± baryte ± iron-oxide deposits.

Association: Cinnabar, chalcostibite in dolomite veins (Buca della Vena); baryte, chalcopyrite in quartz-siderite-dolomite veins (Jedová hora); in siderite-quartz veins (Rožňava).

Distribution: From the Buca della Vena mine, Stazzema (LU), Apuan Alps, Tuscany, Italy (holotype), at the Jedová hora deposit, Neřežín, Hořovice, Beroun District, Central Bohemian Region, Czech Republic (cotype), and from the Rožňava deposit, Košice Region, Slovakia (cotype).

Name: The (*Hg*)-suffix indicates the mercury analog of *tetrahedrite*-(Zn) and *tetrahedrite*-(Cu).

Type Material: Natural History Museum, University of Pisa, Italy (19895 Buca della Vena), the Department of Mineralogy and Petrology, National Museum, Prague, Czech Republic (P1N9961 Jedová hora and P1N33538 Rožňava).

References: (1) Biagioni, C., J. Sejkora, S. Musetti, D. Velebil, and M. Pasero (2020) Tetrahedrite-(Hg), a new 'old' member of the tetrahedrite group. Mineral. Mag., 84, 584-592. (2) Biagioni, C., L.L. George, N.J. Cook, E. Makovicky, Y. Moëlo, M. Pasero, J. Sejkora, C.J. Stanley, M.D. Welch, and F. Bosi (2020) The tetrahedrite group: Nomenclature and classification. Amer. Mineral., 105, 109-122.