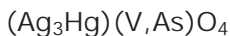


Tillmannsite



TETRAGONAL

Locality: Roua copper occurrences, upper Var valley (Daluis gorge), at the western margin of the Barrot Dome, Alpes-Maritimes, France.

Occurrence: It is a secondary alteration mineral and is associated with pecoraite, vésigniéite, olivenite, kolfanite, janggunitite, chlorargyrite, cuprite, copper, silver, mercurian silver, domeykite, djurleite and algononite in small geodes.

General appearance: Aggregates up to 0.2 mm in diameter made up of pseudo-octahedral crystals up to 50 μm across.

Physical, chemical and crystallographic properties: *Luster:* adamantine. *Diaphaneity:* translucent. *Color:* red to brownish red. *Streak:* brownish red. *Luminescence:* nonfluorescent. *Hardness:* could not be determined. *Tenacity:* very brittle. *Cleavage:* none. *Fracture:* conchoidal. *Density:* could not be measured, 7.71 g/cm³ (calc.). **Crystallography:** Tetragonal, $I\bar{4}$, a 7.727, c 4.648 Å, V 277.5 Å³, $Z = 2$, $c:a = 0.6015$. Morphology: pseudo-octahedral with {111}, {110}, {100}, {101} and minor {001}. Twinning: by contact on (100). **X-ray powder-diffraction data:** 5.45(25)(110), 2.772(100)(211), 2.324(30)(002), 2.254(20)(301), 1.740(15)(411), 1.683(15)(312). **Optical data:** Uniaxial (+), T . 2.3, g . 2.5, pleochroism intense, O orange-brown, E intense red-orange. **Chemical analytical data:** Mean of fourteen sets of electron-microprobe data: Ag 49.82, Hg 30.40, V 5.32, As 4.23, O 9.90, Total 99.67 wt.%. Empirical formula: $\text{Ag}_{2.98}\text{Hg}_{0.98}\text{V}_{0.67}\text{As}_{0.36}\text{O}_{4.00}$. **Relationship to other species:** None apparent.

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Comments: IMA No. 2001–010.

SARP, H., PUSHCHAROVSKY, D.YU., MACLEAN, E.J., TEAT, S.J. & ZUBKOVA, N.V. (2003): Tillmannsite, $(\text{Ag}_3\text{Hg})(\text{V},\text{As})\text{O}_4$, a new mineral: its description and crystal structure. *European Journal of Mineralogy* **15**, 177-180.