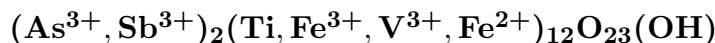


Hemloite



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Crystal Data: Triclinic. *Point Group:* $\bar{1}$. As subhedral to anhedral grains, to 600 μm .

Physical Properties: *Fracture:* Curved to irregular. Hardness = 6.5–7 VHN = 858–967, 913 average (100 g load). D(meas.) = n.d. D(calc.) = 4.613

Optical Properties: Opaque. *Color:* Black; gray in reflected light. *Streak:* Black. *Luster:* Metallic to submetallic.

Optical Class: Biaxial. *Dispersion:* Weak. *Anisotropism:* Very weak; dark gray to dark brown.

R_1 – R_2 : (400) 18.9–20.5, (420) 18.6–19.8, (440) 18.2–19.1, (460) 17.8–18.7, (480) 17.6–18.4, (500) 17.4–18.2, (520) 17.2–18.0, (540) 17.1–17.8, (560) 17.0–17.7, (580) 17.0–17.6, (600) 16.9–17.5, (620) 16.9–17.4, (640) 16.8–17.4, (660) 16.8–17.3, (680) 16.8–17.3, (700) 16.8–17.2

Cell Data: *Space Group:* $P\bar{1}$. $a = 7.158(1)$ $b = 7.552(1)$ $c = 16.014(3)$ $\alpha = 89.06(1)^\circ$
 $\beta = 104.32(2)^\circ$ $\gamma = 84.97(1)^\circ$ $Z = 2$

X-ray Powder Pattern: Hemlo deposit, Canada.

2.924 (100), 2.722 (90), 2.665 (90), 2.799 (80), 3.045 (70), 2.498 (70), 1.774 (60)

Chemistry:

	(1)
TiO ₂	39.0
Al ₂ O ₃	1.3
Fe ₂ O ₃	27.0
V ₂ O ₃	12.7
As ₂ O ₃	12.0
Sb ₂ O ₃	5.7
Total	97.7

(1) Hemlo deposit, Canada; by electron microprobe, $\text{Fe}^{2+}:\text{Fe}^{3+}$ and OH calculated from charge balance; corresponds to $(\text{As}_{1.42}^{3+}\text{Sb}_{0.46}^{3+})_{\Sigma=1.88}(\text{Ti}_{5.74}\text{Fe}_{3.60}^{3+}\text{V}_{2.00}^{3+}\text{Fe}_{0.38}^{2+}\text{Al}_{0.30})_{\Sigma=12.02}\text{O}_{23}(\text{OH})$.

Occurrence: In a hydrothermal gold deposit.

Association: Quartz, barian microcline, pyrite, molybdenite, sphalerite, arsenopyrite, vanadian muscovite, rutile, titanite.

Distribution: From the Hemlo gold deposit, in the Page-Williams mine, three km east of Hemlo, Thunder Bay district, Ontario, Canada.

Name: For the Hemlo deposit, Ontario, Canada, where it occurs.

Type Material: The Natural History Museum, London, England, 1986,512 and E.1210; Canadian Geological Survey, Ottawa, Canada, 65544.

References: (1) Harris, D.C., B.F. Hoskins, I.E. Grey, A.J. Criddle, and C.J. Stanley (1989) Hemloite $(\text{As}, \text{Sb})_2(\text{Ti}, \text{V}, \text{Fe}, \text{Al})_{12}\text{O}_{23}\text{OH}$: a new mineral from the Hemlo gold deposit, Hemlo, Ontario, and its crystal structure. Can. Mineral., 27, 427–440. (2) (1990) Amer. Mineral., 75, 1432–1433 (abs. ref. 1).