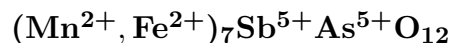


# Manganostibite



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**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$ . As subhedral prismatic grains.

**Physical Properties:** *Fracture:* Uneven. *Hardness* = n.d.  $D(\text{meas.}) = 4.949$   
 $D(\text{calc.}) = 5.00$

**Optical Properties:** Opaque to slightly translucent. *Color:* Coal-black; dark reddish brown in transmitted light. *Streak:* Chocolate-brown. *Luster:* Greasy.  
*Optical Class:* Biaxial (-). *Pleochroism:*  $X = \text{reddish brown}$ ;  $Z = \text{nearly opaque}$ . *Orientation:*  $X = b$ ;  $Z \wedge c = \text{very large}$ .  $\alpha = 1.92(2)$   $\beta = 1.95(2)$   $\gamma = 1.96(2)$   $2V(\text{meas.}) = \text{Very small}$ .

**Cell Data:** *Space Group:*  $Ibmm$ .  $a = 8.727(5)$   $b = 18.847(6)$   $c = 6.062(4)$   $Z = 4$

**X-ray Powder Pattern:** Moss mine, Sweden.  
2.651 (10), 4.965 (6), 4.38 (6), 1.5418 (5), 2.180 (5), 9.313 (4), 4.694 (4)

Chemistry:	(1)	(2)
As <sub>2</sub> O <sub>5</sub>	7.44	11.7
Sb <sub>2</sub> O <sub>5</sub>	24.09	21.8
SiO <sub>2</sub>		3.0
FeO	5.00	1.8
MnO	55.77	61.8
MgO	3.00	2.5
CaO	4.62	
Total	99.92	102.6

(1) Moss mine, Sweden. (2) Brattfors mine, Sweden; by electron microprobe, total Fe as FeO, total Mn as MnO; corresponds to  $(\text{Mn}_{6.34}\text{Mg}_{0.45}\text{Fe}_{0.19})_{\Sigma=6.98}\text{Sb}_{0.98}\text{As}_{0.74}\text{Si}_{0.36}\text{O}_{12}$ .

**Occurrence:** In late-stage hydrothermal veins in manganese deposits in limestone.

**Association:** Hausmannite, sonolite, katoptrite, manganooan humite, garnet.

**Distribution:** In the Moss and Brattfors mines, near Nordmark, Värmland, Sweden.

**Name:** For MANGANese and antimony, STIBium, in the composition.

**Type Material:** Swedish Museum of Natural History, Stockholm, Sweden.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 1027. (2) Moore, P.B. (1967) Contributions to Swedish mineralogy. II. Melanostibite and manganostibite, two unusual antimony minerals. The identity of ferrostibian with långbanite. *Arkiv Mineral. Geol.*, 4(23), 449–458. (3) Moore, P.B. (1970) Manganostibite: a novel cubic close-packed structure type. *Amer. Mineral.*, 55, 1489–1499. (4) Dunn, P.J. (1986) Manganostibite: new chemical data, and its relation to kolicite and holdenite. *Geol. Fören. Förhandl. Stockholm*, 109, 101–102.