

Bostwickite

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Crystal Data: Orthorhombic (?). *Point Group:* n.d. As divergent sprays of bladed crystals, commonly composed of tiny microcrystals, to 250 μm ; as radial aggregates and hemispherules of such crystals, to 3 mm.

Physical Properties: Hardness = ~ 1 D(meas.) = 2.93(10) D(calc.) = n.d.

Optical Properties: Semitransparent. *Color:* Dark brownish red. *Streak:* Brownish red.

Luster: Vitreous to submetallic on prism surfaces.

Optical Class: Biaxial (-). *Pleochroism:* Strong; $X = Y$ = red-brown; Z = yellow-brown.

Dispersion: $r < v$, very strong. *Absorption:* $X = Y > Z$. $\alpha = 1.775(5)$ $\beta = 1.798(3)$

$\gamma = 1.800(3)$ $2V(\text{meas.}) = 25^\circ$

Cell Data: *Space Group:* n.d. $Z = \text{n.d.}$

X-ray Powder Pattern: Franklin, New Jersey, USA.

11.3 (100), 2.567 (40), 3.548 (30), 2.898 (30), 2.262 (25), 2.238 (25), 1.470 (25)

Chemistry:

	(1)	(2)
SiO ₂	20.1	21.56
Al ₂ O ₃	1.0	
Fe ₂ O ₃	0.5	
Mn ₂ O ₃	56.3	56.65
As ₂ O ₅	1.0	
MgO	0.9	
CaO	5.1	6.71
H ₂ O	[15.1]	15.08
Total	[100.0]	100.00

(1) Franklin, New Jersey, USA; by electron microprobe, H₂O by difference; corresponds to $(\text{Ca}_{0.76}\text{Mg}_{0.19})_{\Sigma=0.95}(\text{Mn}_{5.97}^{3+}\text{Fe}_{0.05}^{3+})_{\Sigma=6.02}(\text{Si}_{2.80}\text{Al}_{0.16}\text{As}_{0.07}^{5+})_{\Sigma=3.03}\text{O}_{16}\cdot 7.1\text{H}_2\text{O}$.

(2) $\text{CaMn}_6\text{Si}_3\text{O}_{16}\cdot 7\text{H}_2\text{O}$.

Occurrence: In a metamorphosed stratiform zinc deposit, on surfaces of ore and on secondary carbonate minerals.

Association: Franklinite, calcite, fluorite, willemite, kittatinnyite.

Distribution: From Franklin, Sussex Co., New Jersey, USA.

Name: For Richard C. Bostwick, collector of Franklin minerals and expert in mineral fluorescence.

Type Material: Harvard University, Cambridge, Massachusetts, 125617–125620; National Museum of Natural History, Washington, D.C., USA, C4222.

References: (1) Dunn, P.J. and P.B. Leavens (1983) Bostwickite, a new calcium manganese silicate hydrate from Franklin, New Jersey. *Mineral. Mag.*, 47, 387–389. (2) (1984) *Amer. Mineral.*, 69, 810 (abs. ref. 1).