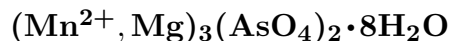


Manganese-hörnesite



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Crystal Data: Monoclinic. *Point Group:* $2/m$. As acicular crystals, flattened on {010}, in stellate radial aggregates, to 0.5 cm.

Physical Properties: *Cleavage:* Perfect on {010}; imperfect on {100}, {201}, $\{\bar{2}01\}$.
Hardness = 1 D(meas.) = 2.64 (impure material). D(calc.) = 2.76

Optical Properties: Transparent to translucent. *Color:* White to colorless. *Streak:* White.
Luster: Silky on cleavages.

Optical Class: Biaxial (+). *Orientation:* $X = b$; $Z \wedge c = 31^\circ$. $\alpha = 1.579$ $\beta = 1.589$
 $\gamma = 1.609$ $2V(\text{meas.}) = 65^\circ\text{--}70^\circ$

Cell Data: *Space Group:* $P2_1/c$. $a = 10.38(5)$ $b = 28.09(5)$ $c = 4.774(50)$ $\beta = 105^\circ 40'$
 $Z = 4$

X-ray Powder Pattern: Långban, Sweden.

7.01 (10), 8.19 (8), 3.02 (7), 2.41 (7), 3.25 (6), 3.09 (6), 2.88 (4)

Chemistry:

	(1)	(2)
As ₂ O ₅	40.78	42.50
CO ₂	1.35	
MnO	22.87	19.67
MgO	9.47	11.18
H ₂ O	25.64	26.65
Total	100.11	100.00

(1) Långban, Sweden; CO₂ and 2.17% MgO from rhodochrosite impurity; corresponds then to (Mn_{1.65}Mg_{1.32})_{Σ=2.97}(AsO₄)_{2.00}•8.02H₂O. (2) (Mn, Mg)₃(AsO₄)₂•8H₂O with Mn:Mg = 1:1.

Occurrence: In fissure veins in skarn in a metamorphosed Fe–Mn orebody (Långban, Sweden).

Association: Rhodochrosite, synadelphite, quartz (Långban, Sweden); adelite, alleghanyite, kraisslite, willemite (Sterling Hill, New Jersey, USA).

Distribution: From Långban, Värmland, Sweden. At Sterling Hill, Ogdensburg, Sussex Co., New Jersey, USA.

Name: For the dominant *manganese* content and its relation to *hörnesite*.

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

References: (1) Gabrielson, O. (1954) Manganiferous hoernesite and manganese-hoernesite from Långban, Sweden. *Arkiv. Mineral. Geol.*, 1(11), 333–337. (2) (1954) *Amer. Mineral.*, 39, 159 (abs. ref. 1).