

Crystal Data: Monoclinic. *Point Group:* 2. As striated prismatic crystals elongated along [010] to 0.3 mm. *Twinning:* Pervasive by 180° rotation about c*.

Physical Properties: *Cleavage:* None. *Tenacity:* Brittle. *Fracture:* Conchoidal. Hardness = 6
D(meas.) = n.d. D(calc.) = 4.14

Optical Properties: Opaque to translucent on thin edges. *Color:* Black to dark reddish brown.
Streak: Reddish brown. *Luster:* Strongly submetallic.
Optical Class: Biaxial. $n(\text{calc.}) = 1.85$ $2V(\text{meas.}) = 68.9(4)^\circ$ *Orientation:* $Y = b$.
Pleochroism: Strong, $X = \text{dark brown}$, $Z = \text{brown}$, $Y = \text{honey brown}$. *Absorption:* $X > Z > Y$.

Cell Data: *Space Group:* P2. $a = 5.3767(10)$ $b = 6.2108(10)$ $c = 10.9389(18)$ $\beta = 94.399(9)^\circ$ $Z = 1$

X-ray Powder Pattern: Kitteln mine, Nordmark ore field, north of Filipstad, Värmland, Sweden.
5.450 (100), 2.591 (91), 2.725 (82), 4.973 (46), 2.033 (43), 1.552 (37), 3.112 (32)

Chemistry:	(1)
Sb ₂ O ₅	18.15
MgO	24.11
MnO	[29.73]
Mn ₂ O ₃	[11.62]
Al ₂ O ₃	0.27
Fe ₂ O ₃	0.45
B ₂ O ₃	[15.27]
Total	99.60

(1) Kitteln mine, Nordmark ore field, north of Filipstad, Värmland, Sweden; average of 17 electron microprobe analyses supplemented by FTIR spectroscopy, B₂O₃ calculated for B = 4 apfu, total Mn as MnO = 40.17 apportioned as MnO and Mn₂O₃; corresponds to $(\text{Sb}^{5+}_{1.02}\text{Mn}^{3+}_{1.34}\text{Al}_{0.05}\text{Fe}^{3+}_{0.05}\text{Mg}_{5.46}\text{Mn}^{2+}_{3.82}\square_{0.26})_{\Sigma=12.00}\text{O}_8(\text{BO}_3)_4$.

Occurrence: A primary skarn mineral.

Association: Hausmannite, tegengrenite, a Mg-analogue of sonolite or jerrygibbsite, calcite.

Distribution: At the Kitteln mine (was dumped there from, supposedly, Östra Mossgruvan or Brattforsgruvan), Nordmark ore field, north of Filipstad, Värmland, Sweden.

Name: Honors Harald O. Folvik (b. 1941), a Norwegian amateur mineralogist with an interest in Långban-type deposits who initially noticed and collected the specimen used for description.

Type Material: Natural History Museum, University of Oslo, Norway (43574) and The Canadian Museum of Nature, Ottawa, Ontario, Canada (CMNMC 87087).

References: (1) Cooper, M.A., G. Raade, N.A. Ball, Y.A. Abdu, F.C. Hawthorne, and R. Rowe (2018) Folvikite, $\text{Sb}^{5+}\text{Mn}^{3+}(\text{Mg}, \text{Mn}^{2+})_{10}\text{O}_8(\text{BO}_3)_4$, a new oxyborate mineral from the Kitteln mine, Nordmark ore district, Värmland, Sweden: Description and crystal structure. *Mineral. Mag.*, 82(4), 821-836. (2) (2021) *Amer. Mineral.*, 106, 160-161 (abs. ref. 1).