

Schmidite

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As laths elongated along [100] and flattened on {010} to 0.5 mm, in radiating sprays.

Physical Properties: *Cleavage:* Perfect on {010}. *Tenacity:* Brittle. *Fracture:* n.d. Hardness = n.d. $D(\text{meas.}) = <2.89$ $D(\text{calc.}) = 2.82$

Optical Properties: [Translucent.] *Color:* Orange-brown to copper-red. *Streak:* n.d. *Luster:* n.d. *Optical Class:* Biaxial (+). $\alpha = 1.642(2)$ $\beta = 1.680(1)$ $\gamma = 1.735(2)$ $2V(\text{meas.}) = 81.4(8)^\circ$ $2V(\text{calc.}) = 81.8^\circ$ *Pleochroism:* $X = \text{light brown}$, $Y = \text{medium brown}$, $Z = \text{dark red-brown}$. *Absorption:* $X < Y < Z$. *Orientation:* $X = b$, $Y = c$, $Z = a$.

Cell Data: *Space Group:* $Pmab$. $a = 11.059(1)$ $b = 25.452(1)$ $c = 6.427(1)$ $Z = 4$

X-Ray Diffraction Pattern: Hagendorf-Süd pegmatite, Hagendorf, Oberpfalz, Bavaria, Germany. 12.73 (100), 2.761 (98), 8.347 (39), 3.174 (33), 5.514 (32), 3.753 (32), 5.424 (26)

Chemistry:	(1)
FeO	0.4
MgO	0.3
Fe ₂ O ₃	23.5
MnO	9.0
ZnO	15.5
P ₂ O ₅	27.6
H ₂ O	23.3
Total	99.6

(1) Hagendorf-Süd pegmatite, Hagendorf, Oberpfalz, Bavaria, Germany; average electron microprobe analysis, H₂O by TGA and FeO/Fe₂O₃ from Mössbauer spectroscopy; corresponding to $\text{Zn}_{1.47}\text{Mn}^{2+}_{0.98}\text{Mg}_{0.05}\text{Fe}^{2+}_{0.04}\text{Fe}^{3+}_{2.27}(\text{PO}_4)_3(\text{OH})_{2.89}(\text{H}_2\text{O})_{8.54}$.

Mineral Group: Schoonerite group. $M1 = M2 = (\text{Fe}^{3+}_{0.5}\text{Mn}^{2+}_{0.5})$ and $M3 = \text{Zn}$.

Occurrence: On and near altered phosphophyllite in a corroded triphylite nodule in granitic pegmatite.

Association: Phosphophyllite, vivianite, zwieselite, apatite, laueite, whitmoreite, jahnsite-subgroup minerals, mitridatite, scholzite-parascholzite, stewartite, zincostrunzite, hopeite, parahopeite.

Distribution: From the Hagendorf-Süd pegmatite, Hagendorf, Oberpfalz, Bavaria, Germany.

Name: Honors Dr. Hans *Schmid* (1925-2013), mining engineer, geologist, and discoverer of a large commercial triphylite deposit in the Hagendorf-Süd pegmatite.

Type Material: Museums Victoria, Melbourne, Australia (M53810 and M53811).

References: (1) Grey, I.E., E. Keck, A.R. Kampf, J.D. Cashion, C.M. MacRae, and A.M. Glenn (2019) Schmidite and wildenauerite, two new schoonerite-group minerals from the Hagendorf-Süd pegmatite, Oberpfalz, Bavaria. *Mineral. Mag.*, 83, 181-190. (2) Grey, I.E., A.R. Kampf, E. Keck, C.M. MacRae, J.D. Cashion, and Y. Gozukara (2018) Crystal chemistry of schoonerite-group minerals. *Eur. J. Mineral.*, 30, 621-634.