

Flurlite**Zn₃Mn²⁺Fe³⁺(PO₄)₃(OH)₂·9H₂O**

Crystal Data: Monoclinic. *Point Group:* 2/m. As platelets to 100 μm; in twisted accordion-like aggregates.

Physical Properties: *Cleavage:* Excellent on {001}. *Fracture:* Irregular. *Tenacity:* Brittle. Hardness = n.d. D(meas.) = 2.89 D(calc.) = 2.84

Optical Properties: Translucent. *Color:* Bright orange-red to dark maroon-red. *Streak:* Buff. *Luster:* Pearly.

Optical Class: Biaxial (-). $\alpha = 1.60(1)$ $\beta = 1.65(1)$ $\gamma = 1.68(1)$ $2V(\text{meas.}) = \text{n.d.}$ $2V(\text{calc.}) = 74^\circ$
Pleochroism: Weak, X = pale yellow, Y = pale orange, Z = orange brown. *Dispersion:* Weak.
Orientation: X ≈ c, Y ≈ a, Z ≈ b.

Cell Data: *Space Group:* P2₁/m. a = 6.3710(13) b = 11.020(2) c = 13.016(3) β = 99.34(3)°
 Z = 2

X-ray Powder Pattern: Hagendorf-Süd pegmatite, Hagendorf, Oberpfalz, Bavaria, Germany. 12.900 (100), 2.763 (35), 4.297 (21), 6.072 (14), 8.375 (10), 5.567 (8), 3.221 (7)

Chemistry:	(1)
ZnO	25.40
MnO	5.28
MgO	0.52
Fe ₂ O ₃	[10.30]
FeO	[7.40]
P ₂ O ₅	27.20
<u>H₂O</u>	<u>[23.10]</u>
Total	99.20

(1) Hagendorf-Süd pegmatite, Hagendorf, Oberpfalz, Bavaria, Germany; average of 7 electron microprobe analyses, FeO/Fe₂O₃ and H₂O from structural analysis; corresponding to (Zn_{2.5}Mn²⁺_{0.6}Fe²⁺_{0.8}Mg_{0.1})_{Σ=4.0}Fe³⁺(PO₄)₃(OH)₂·9H₂O.

Occurrence: A secondary mineral probably formed from the hydrothermal reaction of zinc-bearing fluids with primary Fe-Mn phosphate minerals (triphylite or zwieselite).

Association: Mitridatite, plimerite, beraunite, schoonerite, parascholzite, robertsite.

Distribution: From the Cornelia mine open cut, Hagendorf-Süd pegmatite, Hagendorf, Oberpfalz, Bavaria, Germany.

Name: Honors Mathias von Flurl (1756-1823), the founder of mineralogical and geological studies in Bavaria and author of the first geological map of Bavaria.

Type Material: Museum Victoria, Melbourne, Victoria, Australia (M53238).

References: (1) Grey, I.E., E. Keck, W.G. Mumme, A. Pring, C.M. Macrae, R.W. Gable, and J.R. Price (2015) Flurlite, Zn₃Mn²⁺Fe³⁺(PO₄)₃(OH)₂·9H₂O, a new mineral from the Hagendorf Süd pegmatite, Bavaria, with a schoonerite-related structure. *Mineral. Mag.*, 79(5), 1175-1184.
 (2) (2016) *Amer. Mineral.*, 101, 1921 (abs. ref. 1).