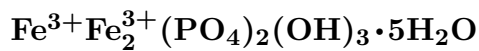


Ferristrunzite



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Crystal Data: Triclinic, pseudomonoclinic. *Point Group:* $\bar{1}$ or 1. Crystals are acicular, rounded and elongated || [001], in subparallel, radial, and matted aggregates, to 3 mm.

Twining: On {110}.

Physical Properties: *Cleavage:* One, probable, parallel X-Z OAP. *Tenacity:* Brittle. Hardness = n.d. D(meas.) = 2.38–2.50 D(calc.) = 2.55

Optical Properties: Semitransparent. *Color:* Light brownish yellow to pale orange.

Streak: Very pale yellow.

Optical Class: Biaxial (+). *Pleochroism:* X = greenish yellow; Z = brownish yellow.

Orientation: $Z \wedge c \simeq 17^\circ$. *Dispersion:* Strong. *Absorption:* $Z > X$. $\alpha = 1.664(4)$ $\beta = [1.698]$ $\gamma = 1.757(5)$ $2V(\text{meas.}) = 77(10)^\circ$

Cell Data: *Space Group:* $P\bar{1}$ or $P1$. $a = 10.01(2)$ $b = 9.73(2)$ $c = 7.334(8)$
 $\alpha = 90.50(12)^\circ$ $\beta = 96.99(10)^\circ$ $\gamma = 116.43(10)^\circ$ $Z = 2$

X-ray Powder Pattern: Blaton, Belgium.

5.34 (100), 8.87 (80), 3.267 (40), 4.20 (30), 3.442 (30), 3.387 (30), 4.48 (20)

Chemistry:

| | (1) | (2) |
|--------------------------------|-------|--------|
| P ₂ O ₅ | 28.2 | 28.47 |
| Fe ₂ O ₃ | 46.3 | 48.04 |
| H ₂ O | 26.0 | 23.49 |
| Total | 100.5 | 100.00 |

(1) Blaton, Belgium; by electron microprobe, total Fe as Fe₂O₃, confirmed by microchemical tests, H₂O by TGA-EGA; corresponds to Fe_{0.92}³⁺Fe_{2.00}³⁺(PO₄)₂(OH)_{2.52}•5H₂O.

(2) Fe₃(PO₄)₂(OH)₃•5H₂O.

Occurrence: A rare secondary mineral in argillaceous and clastic sediments, probably as an oxidation product of strunzite (Blaton, Belgium).

Association: Beraunite, crandallite, diadochite, allophane–evansite, strengite, phosphosiderite, cacoxenite (Blaton, Belgium).

Distribution: From near Blaton, Belgium. In Germany, at Aprath, near Wuppertal, North Rhine-Westphalia; in the Silbergrube quarry, near Waidhaus, Bavaria; from Ventorp, near Arnsberg, North Rhein-Westphalia.

Name: For *ferric* iron in the composition and its relation to *strunzite*.

Type Material: National Museum of Natural History, Washington, D.C., USA, 162499.

References: (1) Peacor, D.R., P.J. Dunn, W.B. Simmons, and R.A. Ramik (1987) Ferristrunzite, a new member of the strunzite group, from Blaton, Belgium. *Neues Jahrb. Mineral., Monatsh.*, 433–440. (2) (1989) *Amer. Mineral.*, 74, 502 (abs. ref. 1). (3) Schertl, H.-P. and H. Heckmann (1988) Mineralparagenese eines neuen Ferristrunzit-Vorkommens bei Wuppertal. *Emser Hefte*, 9(4), 35–40 (in German). (4) Vochten, R. and E. De Grave (1990) Mössbauer- and infrared spectroscopic characterization of ferristrunzite from Blaton, Belgium. *Neues Jahrb. Mineral., Monatsh.*, 176–190. (5) Vochten, R., E. De Grave, K. van Springel, and L. van Haverbeke (1995) Mineralogical and Mössbauerspectroscopic study of some strunzite varieties of the Silbergrube, Waidhaus, Oberpfalz, Germany. *Neues Jahrb. Mineral., Monatsh.*, 11–25.