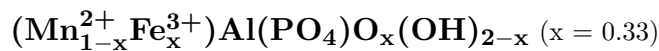


Ernstite

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Crystal Data: Monoclinic. *Point Group:* $2/m$ or m . As crystals, showing {110}, {211}, and $\{\bar{2}11\}$, rare {100} and {010}, to 15 mm, in radial aggregates.

Physical Properties: *Cleavage:* On {100}, very good; on {010}, good. Hardness = 3–3.5
D(meas.) = 3.07 D(calc.) = 3.086

Optical Properties: Semitransparent. *Color:* Yellow-brown.

Optical Class: Biaxial (–). *Pleochroism:* X = yellowish brown; Y = red-brown; Z = pale yellow.

Orientation: Z = b; $Y \wedge c = -4^\circ$. *Dispersion:* $r > v$. $\alpha = 1.678(3)$ $\beta = 1.706(3)$ $\gamma = 1.721(3)$
2V(meas.) = n.d. 2V(calc.) = 74°

Cell Data: *Space Group:* $A2/a$ or Aa . $a = 13.32(1)$ $b = 10.497(5)$ $c = 6.969(4)$
 $\beta = 90^\circ 22(20)'$ Z = 8

X-ray Powder Pattern: Farm Davib-East, Namibia.

2.829 (10), 2.836 (8), 2.438 (5), 4.364 (4), 3.516 (4), 2.424 (4), 2.001 (4)

Chemistry:

	(1)
P ₂ O ₅	29.86
Al ₂ O ₃	24.33
Fe ₂ O ₃	11.83
FeO	0.44
MnO	17.83
MgO	1.01
CaO	0.84
H ₂ O ⁺	13.86
Total	[100.00]

(1) Farm Davib-East, Namibia; recalculated after deduction of SiO₂ 0.48% from an original total of 99.96%; corresponds to $(\text{Mn}_{0.56}^{2+}\text{Fe}_{0.33}^{3+}\text{Mg}_{0.06}\text{Ca}_{0.03}\text{Fe}_{0.01}^{2+})_{\Sigma=0.99}\text{Al}_{1.00}(\text{PO}_4)[\text{O}_{0.33}(\text{OH})_{1.67}]_{\Sigma=2.00}$.

Occurrence: Formed by oxidation of eosphorite in a granite pegmatite (Farm Davib-East, Namibia).

Association: Eosphorite (Farm Davib-East, Namibia).

Distribution: Found on the Farm Davib-East, near Karibib, southern Erongo Mountains, Namibia. At St. John's quarry, near Kapunda, Mount Lofty Ranges, South Australia.

Name: To honor Dr. Theodor K.H. Ernst (1904–1983), Professor of Mineralogy, Erlangen University, Erlangen, Germany.

Type Material: National Museum of Natural History, Washington, D.C., USA, 145620.

References: (1) Seeliger, E. and A. Mücke (1970) Ernstit, ein neues $\text{Mn}^{2+}-\text{Fe}^{3+}-\text{Al}$ -Phosphate und seine Beziehungen zum Eosphorit. Neues Jahrb. Mineral., Monatsh., 289-298 (in German with English abs.). (2) (1971) Amer. Mineral., 56, 637 (abs. ref. 1).