

Ferropyrosmalite

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Crystal Data: Hexagonal. *Point Group:* n.d. As subhedral to euhedral platy crystals, to 1 mm; in radiating crystal aggregates.

Physical Properties: *Cleavage:* {0001}, good. *Hardness* = n.d. *D(meas.)* = n.d. *D(calc.)* = [3.14]

Optical Properties: Semitransparent. *Color:* In transmitted light, colorless. *Optical Class:* Uniaxial (-). $\omega = 1.677(2)$ $\epsilon = 1.652(2)$

Cell Data: *Space Group:* n.d. $a = 13.33(3)$ $c = 7.11(2)$ $Z = [2]$

X-ray Powder Pattern: Pegmont deposit, Australia. 2.675 (10), 7.13 (8), 3.564 (6), 2.243 (6), 1.833 (4), 1.667 (4), 1.513 (4)

Chemistry:	(1)
SiO ₂	34.17
Al ₂ O ₃	0.00
FeO	49.54
MnO	4.36
MgO	0.64
Cl	4.00
H ₂ O	[8.19]
-O = Cl ₂	0.90
Total	[100.00]

(1) Pegmont deposit, Australia; by electron microprobe, H₂O by difference; corresponds to (Fe_{7.14}Mn_{0.64}Mg_{0.16})_{Σ=7.94}Si_{5.89}O_{14.42}[(OH)_{9.41}Cl_{1.17}]_{Σ=10.58}.

Polymorphism & Series: Forms a series with manganpyrosmalite.

Occurrence: Intergrown with sulfides, formed during prograde metamorphism of a stratiform Pb-Zn deposit.

Association: Fayalite, greenalite, galena, sphalerite, clinopyroxene, "hornblende," grunerite, garnet, biotite, magnetite, apatite.

Distribution: From the Pegmont lead-zinc deposit, 175 km southeast of Mt. Isa, Queensland, Australia.

Name: For its high FERROus iron content and relation to *manganpyrosmalite*; *pyrosmalite* from the Greek for *fire* and *odor*, for the odor when heated.

Type Material: n.d.

References: (1) Vaughan, J.P. (1986) The iron end-member of the pyrosmalite series from the Pegmont lead-zinc deposit, Queensland. *Mineral. Mag.*, 50, 527–531. (2) Vaughan, J.P. (1987) Ferropyrosmalite and nomenclature in the pyrosmalite series. *Mineral. Mag.*, 51, 174. (3) (1988) *Amer. Mineral.*, 73, 933–934 (abs. refs. 1 and 2).