

Ca₂(Fe³⁺, Mg, Fe²⁺)

Pumpellyite-(Fe³⁺) **(Al, Fe³⁺)₂(SiO₄)(Si₂O₇)(OH)₂•H₂O**

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Crystal Data: Monoclinic. *Point Group:* 2/*m*. Fibrous.

Physical Properties: Hardness = [~5] (by analogy to the pumpellyite group).
D(meas.) = n.d. D(calc.) = [3.25]

Optical Properties: Semitransparent. *Color:* [Greenish black.] *Luster:* [Vitreous.]
Optical Class: Biaxial. α = n.d. β = 1.713 γ = n.d. 2V(meas.) = n.d.

Cell Data: *Space Group:* n.d. *a* = 8.8340 *b* = 5.9528 *c* = 19.1849 β = 97.451° *Z* = 4

X-ray Powder Pattern: n.d.

Chemistry:

	(1)	(2)
SiO ₂	35.75	36.75
TiO ₂	0.12	0.05
Al ₂ O ₃	18.70	18.81
Fe ₂ O ₃	11.10	13.59
Mn ₂ O ₃		0.03
Cr ₂ O ₃		0.01
FeO	2.80	
MnO	0.05	
MgO	3.12	2.64
CaO	20.72	21.09
Na ₂ O	0.44	0.03
K ₂ O	0.06	
H ₂ O ⁺	6.63	[7.00]
Total	99.49	[100.00]

(1) Bulla, Italy; corresponds to (Ca_{1.84}Na_{0.07}Fe_{0.06}²⁺)_{Σ=1.97}(Fe_{0.48}³⁺Mg_{0.38}Fe_{0.14}²⁺)_{Σ=1.00}(Al_{1.78}Fe_{0.21}³⁺)_{Σ=1.99}(Si_{2.96}Al_{0.04})_{Σ=3.00}O₁₁(OH)₂•1.66H₂O. (2) Do.; by electron microprobe, H₂O fixed at 7%.

Mineral Group: Pumpellyite group.

Occurrence: In altered porphyritic rocks.

Association: Plagioclase, hematite.

Distribution: From Bulla, Trentino-Alto Adige, Italy.

Name: For its membership in the *pumpellyite* group and dominant *ferric iron* content.

Type Material: n.d.

References: (1) Passaglia, E. (1972) Pumpellyite fortemente ferrifera rimvenuta a Bulla (Bolzano). *Period. Mineral.*, 41, 273–280 (in Italian). (2) Passaglia, E. and G. Gottardi (1973) Crystal chemistry and nomenclature of pumpellyites and juldolites. *Can. Mineral.*, 12, 219–223. (3) (1976) *Amer. Mineral.*, 61, 176–177 (abs. ref. 2). (4) Deer, W.A., R.A. Howie, and J. Zussman (1986) *Rock-forming minerals*, (2nd edition), v. 1B, disilicates and ring silicates, 201–247. (5) Artioli, G. (1991) XANES studies of Fe in pumpellyite-group minerals. *Neues Jahrb. Mineral., Monatsh.*, 413–421.