

**Ca<sub>2</sub>(Fe<sup>3+</sup>, Mg, Fe<sup>2+</sup>)**

**Pumpellyite-(Fe<sup>3+</sup>)** **(Al, Fe<sup>3+</sup>)<sub>2</sub>(SiO<sub>4</sub>)(Si<sub>2</sub>O<sub>7</sub>)(OH)<sub>2</sub>•H<sub>2</sub>O**

©2001 Mineral Data Publishing, version 1.2

**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.

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

(1) Bulla, Italy; corresponds to (Ca<sub>1.84</sub>Na<sub>0.07</sub>Fe<sub>0.06</sub><sup>2+</sup>)<sub>Σ=1.97</sub>(Fe<sub>0.48</sub><sup>3+</sup>Mg<sub>0.38</sub>Fe<sub>0.14</sub><sup>2+</sup>)<sub>Σ=1.00</sub>(Al<sub>1.78</sub>Fe<sub>0.21</sub><sup>3+</sup>)<sub>Σ=1.99</sub>(Si<sub>2.96</sub>Al<sub>0.04</sub>)<sub>Σ=3.00</sub>O<sub>11</sub>(OH)<sub>2</sub>•1.66H<sub>2</sub>O. (2) Do.; by electron microprobe, H<sub>2</sub>O 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.