

# Panasqueiraite

# CaMg(PO<sub>4</sub>)(OH, F)

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**Crystal Data:** Monoclinic. *Point Group:* 2/m or m. Anhedronal, to about 1 mm; fine-grained massive, in aggregates.

**Physical Properties:** *Cleavage:* On {010}, poor. *Hardness* = 5 *D*(meas.) = 3.22 *D*(calc.) = 3.21 Blue cathodoluminescence under the electron beam.

**Optical Properties:** Semitransparent. *Color:* Pink. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (+). *Orientation:*  $Z = b$ ;  $X \wedge c = 22^\circ$ .  $\alpha = 1.590(2)$   $\beta = 1.596(2)$   $\gamma = 1.616(2)$   $2V(\text{meas.}) = 51(2)^\circ$

**Cell Data:** *Space Group:* C2/c or Cc.  $a = 6.535(3)$   $b = 8.753(4)$   $c = 6.919(4)$   $\beta = 112.33(4)^\circ$   $Z = 4$

**X-ray Powder Pattern:** Panasqueira, Portugal; nearly identical to isokite. 2.626 (100), 3.02 (86), 3.20 (67), 2.584 (45), 1.722 (33), 2.783 (31), 1.658 (30)

<b>Chemistry:</b>	(1)
P <sub>2</sub> O <sub>5</sub>	39.6
FeO	0.4
MnO	0.0
MgO	22.9
CaO	31.0
F	3.1
OH	[6.7]
–O = (F <sub>2</sub> , OH)	4.4
Total	[99.3]

(1) Panasqueira, Portugal; by electron microprobe, (OH)<sup>1-</sup> calculated from stoichiometry; corresponds to Ca<sub>0.99</sub>(Mg<sub>1.02</sub>Fe<sub>0.01</sub>)<sub>Σ=1.03</sub>(PO<sub>4</sub>)<sub>1.00</sub>[(OH)<sub>0.71</sub>F<sub>0.29</sub>]<sub>Σ=1.00</sub>.

**Occurrence:** A rare mineral in vein selvages in a hydrothermal Sn–W deposit.

**Association:** Fluorapatite, wolfeite, topaz, muscovite, sphalerite, quartz, chalcopyrite, pyrrhotite, siderite, arsenopyrite, chlorite, vivianite, althausite, thadeuite.

**Distribution:** From the Panasqueira Sn–W deposit, Portugal.

**Name:** For Panasqueira, Portugal, the type locality.

**Type Material:** Department of Geological Sciences, University of Michigan, Ann Arbor, Michigan; National Museum of Natural History, Washington, D.C., USA, 144521.

**References:** (1) Isaacs, A.M. and D.R. Peacor (1981) Panasqueiraite, a new mineral: the OH-equivalent of isokite. *Can. Mineral.*, 19, 389–392. (2) (1982) *Amer. Mineral.*, 67, 859 (abs. ref. 1). (3) Isaacs, A.M. and D.R. Peacor (1985) Panasqueiraite, a new mineral: the OH-equivalent of isokite. Erratum. *Can. Mineral.*, 23, 131.