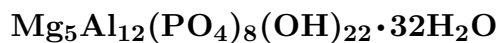


# Aldermanite



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**Crystal Data:** Orthorhombic. *Point Group:* n.d. As talclike flakes, to 0.1 mm.

**Physical Properties:** Hardness = ~2 *D*(meas.) = n.d. *D*(calc.) = 2.0–2.15

**Optical Properties:** Translucent. *Color:* Colorless in transmitted light. *Luster:* Pearly.

*Optical Class:* Biaxial; very low birefringence.  $n = 1.500(5)$

**Cell Data:** *Space Group:* n.d.  $a = 15.000(7)$   $b = 8.330(6)$   $c = 26.60(1)$   $Z = 2$

**X-ray Powder Pattern:** Moculta quarry, Australia.

13.40 (100), 7.98 (80), 5.55 (60), 2.841 (50), 5.70 (30), 4.96 (30), 2.660 (30)

**Chemistry:**

	(1)	(2)
P <sub>2</sub> O <sub>5</sub>	25.9	26.34
Al <sub>2</sub> O <sub>3</sub>	28.4	28.38
MgO	8.4	9.35
CaO	1.2	
H <sub>2</sub> O	36.1	35.93
Total	100.0	100.00

(1) Moculta quarry, Australia; by electron microprobe, average of several analyses, H<sub>2</sub>O by loss on ignition; corresponds to  $(\text{Mg}_{4.53}\text{Ca}_{0.47})_{\Sigma=5.00}\text{Al}_{12.12}(\text{PO}_4)_{7.94}(\text{OH})_{22.5} \cdot 31\text{H}_2\text{O}$ . (2)  $\text{Mg}_5\text{Al}_{12}(\text{PO}_4)_8(\text{OH})_{22} \cdot 32\text{H}_2\text{O}$ .

**Occurrence:** As a secondary mineral in cavities in a brecciated metamorphosed sedimentary phosphate deposit, formed by the alteration of fluellite (Moculta quarry, Australia).

**Association:** Fluellite.

**Distribution:** At the Moculta phosphate quarry, northeast of Angaston, South Australia.

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**Type Material:** C.S.I.R.O. Division of Mineral Chemistry, Melbourne, M636; Museum Victoria, Melbourne, Australia, M34778.

**References:** (1) Harrowfield, I.R., E.R. Segnit, and J.A. Watts (1981) Aldermanite, a new magnesium aluminium phosphate. *Mineral. Mag.*, 44, 59–62. (2) (1981) *Amer. Mineral.*, 66, 1099 (abs. ref. 1).