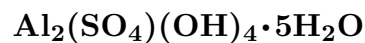


## Meta-aluminite



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**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . Microcrystalline, minute laths, aggregated into nodular to irregular masses.

**Physical Properties:** Hardness = "Soft".  $D(\text{meas.}) = 2.18$   $D(\text{calc.}) = 2.17$

**Optical Properties:** Semitransparent. *Color:* White. *Luster:* Somewhat silky.

*Optical Class:* Biaxial (-). *Orientation:*  $Z = b$ , probable.  $\alpha = 1.497(1)$   $\beta = 1.512(1)$

$\gamma = \sim 1.513$   $2V(\text{meas.}) = \text{Small}$ .

**Cell Data:** *Space Group:*  $P2_1/m$  or  $P2/m$ .  $a = 7.930(3)$   $b = 16.879(4)$   $c = 7.353(5)$   
 $\beta = 106.74(7)^\circ$   $Z = 4$

**X-ray Powder Pattern:** Fuemrole mine, Utah, USA.

4.48 (100), 8.35 (79), 4.36 (67), 6.85 (53), 3.708 (35), 3.596 (34), 3.669 (30)

### Chemistry:

	(1)	(2)
SO <sub>3</sub>	26.26	25.98
Al <sub>2</sub> O <sub>3</sub>	33.59	33.09
H <sub>2</sub> O	40.15	40.93
Total	[100.00]	100.00

(1) Fuemrole mine, Utah, USA; recalculated to 100% from an original total of 100.29% after deduction of Fe<sub>2</sub>O<sub>3</sub> 0.53% and SiO<sub>2</sub> 0.77%; corresponds to Al<sub>2.01</sub>(SO<sub>4</sub>)(OH)<sub>4.00</sub>•5.00H<sub>2</sub>O.

(2) Al<sub>2</sub>(SO<sub>4</sub>)(OH)<sub>4</sub>•5H<sub>2</sub>O.

**Occurrence:** A rare secondary mineral formed by reaction of acid sulfate solutions from oxidizing pyrite reacting with clay minerals (Fuemrole mine, Utah, USA).

**Association:** Gypsum, basaluminite (Fuemrole mine, Utah, USA).

**Distribution:** At the Fuemrole mine, Temple Mountain, Emery Co., Utah, USA. From Newhaven, Sussex, England.

**Name:** The prefix, from the Greek *meta*, indicates a lower hydrate than *aluminite*.

**Type Material:** Harvard University, Cambridge, Massachusetts, USA, 109543.

**References:** (1) Frondel, C. (1968) Meta-aluminite, a new mineral from Temple Mountain, Utah. *Amer. Mineral.*, 53, 717–721. (2) Farkas, L. and P.-E. Werner (1980) Powder diffraction studies on aluminite and meta-aluminite. *Zeits. Krist.*, 151, 141–152.