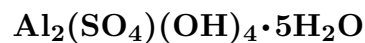


Meta-aluminite



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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 ₃ | 26.26 | 25.98 |
| Al ₂ O ₃ | 33.59 | 33.09 |
| H ₂ 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 Fe₂O₃ 0.53% and SiO₂ 0.77%; corresponds to Al_{2.01}(SO₄)(OH)_{4.00}•5.00H₂O.

(2) Al₂(SO₄)(OH)₄•5H₂O.

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.