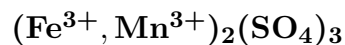


**Mikasaite**

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**Crystal Data:** Hexagonal. *Point Group:*  $\bar{3}$ . Typically in aggregates of porous spherical crystals, to 100  $\mu\text{m}$ .

**Physical Properties:** Hardness = n.d.  $D(\text{meas.}) = \text{n.d.}$   $D(\text{calc.}) = [3.06]$  Deliquescent, dissolving in adsorbed  $\text{H}_2\text{O}$ .

**Optical Properties:** Semitransparent. *Color:* White to pale brown. *Streak:* White to pale brown.

*Optical Class:* Uniaxial (+).  $\omega = 1.504(2)$   $\epsilon = 1.518(3)$

**Cell Data:** *Space Group:*  $[R\bar{3}]$  (by analogy to synthetic  $\text{Fe}_2(\text{SO}_4)_3$ ).  $a = 8.14(1)$   
 $c = 21.99(8)$   $Z = [6]$

**X-ray Powder Pattern:** Ikushunbetsu, Japan.

3.56 (100), 5.99 (28), 4.35 (23), 2.97 (20), 2.72 (20), 2.64 (11), 2.35 (7)

**Chemistry:**

	(1)	(2)	(3)
$\text{SO}_3$	46.8	61.6	60.07
$\text{Al}_2\text{O}_3$	4.3	5.7	
$\text{Fe}_2\text{O}_3$	24.3	32.0	39.93
$\text{Mn}_2\text{O}_3$	0.5	0.7	
$\text{H}_2\text{O}$	23.0		
Total	98.9	100.0	100.00

(1) Ikushunbetsu, Japan; by electron microprobe, average of seven analyses, total Fe as  $\text{Fe}^{3+}$ , total Mn as  $\text{Mn}^{3+}$ ,  $\text{SO}_3$  by wet analysis,  $\text{H}_2\text{O}$  by moisture evolution analyzer, considered as adsorbed. (2) Analysis (1) recalculated to a  $\text{H}_2\text{O}$ -free basis, then corresponding to  $(\text{Fe}_{1.56}\text{Al}_{0.44}\text{Mn}_{0.03})_{\Sigma=2.03}(\text{SO}_4)_{3.00}$ . (2)  $\text{Fe}_2(\text{SO}_4)_3$ .

**Occurrence:** A sublimate around a burning coal-gas escape fracture, formed at  $> 300$  °C.

**Association:** n.d.

**Distribution:** From Ikushunbetsu, near Mikasa, Hokkaido, Japan.

**Name:** For its occurrence near Mikasa, Japan.

**Type Material:** Hokkaido University, Sapporo, Japan.

**References:** (1) Miura, H., K. Niida, and T. Hirama (1994) Mikasaite,  $(\text{Fe}^{3+}, \text{Al})_2(\text{SO}_4)_3$ , a new ferric sulphate mineral from Mikasa City, Hokkaido, Japan. *Mineral. Mag.*, 58, 649–653. (2) (1995) *Amer. Mineral.*, 80, 846 (abs. ref. 1).