

Mereiterite



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Crystal Data: Monoclinic. *Point Group:* $2/m$. Crystals are subhedral, strongly etched, to 1 cm.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Very brittle. Hardness = 2.5–3
D(meas.) = 2.36(1) D(calc.) = 2.358 Soluble in H_2O .

Optical Properties: Transparent. *Color:* Pale yellow. *Luster:* Vitreous to greasy.
Optical Class: Biaxial (+). *Orientation:* $X = b$; $Z \wedge c \simeq 20^\circ$. *Dispersion:* $r > v$, very weak.
 $\alpha = 1.497(1)$ $\beta = 1.501(1)$ $\gamma = 1.509(1)$ $2V(\text{meas.}) = 71^\circ$ $2V(\text{calc.}) = 73^\circ$

Cell Data: *Space Group:* $C2/m$. $a = 11.844(1)$ $b = 9.556(1)$ $c = 9.947(1)$
 $\beta = 94.90(1)^\circ$ $Z = 4$

X-ray Powder Pattern: Laurium, Greece.

3.440 (100), 3.505 (52), 3.490 (49), 3.331 (48), 4.778 (30), 2.405 (30), 3.051 (29)

Chemistry:

	(1)	(2)
SO_3	40.22	40.21
FeO	17.88	18.04
K_2O	22.7	23.65
H_2O	18.0	18.10
Total	98.8	100.00

(1) Laurium, Greece; by electron microprobe, average of three crystals, total Fe as Fe^{2+} , H_2O by TGA; corresponds to $\text{K}_{1.93}\text{Fe}_{1.00}(\text{SO}_4)_{2.00} \cdot 4\text{H}_2\text{O}$. (2) $\text{K}_2\text{Fe}(\text{SO}_4)_2 \cdot 4\text{H}_2\text{O}$.

Occurrence: A rare secondary mineral imbedded in gypsum, formed by decomposition of sulfides in a hydrothermal Pb–Zn–Cu ore deposit.

Association: Gypsum, smithsonite, goethite.

Distribution: From Laurium, Greece.

Name: Honoring Dr. Kurt Helmut Mereiter (1945–), Professor of Mineralogy, Technical University of Vienna, Vienna, Austria, in recognition of his work on iron sulfates.

Type Material: University of Vienna, Vienna, Austria, 6C/18-035#1; National Museum of Natural History, Washington, D.C., USA, 170971.

References: (1) Giester, G. and B. Rieck (1995) Mereiterite, $\text{K}_2\text{Fe}[\text{SO}_4]_2 \cdot 4\text{H}_2\text{O}$, a new leonite-type mineral from the Lavrion mining district, Greece. *Eur. J. Mineral.*, 7, 559–566.
(2) (1996) *Amer. Mineral.*, 81, 251 (abs. ref. 1).