

## Kahlerite



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**Crystal Data:** Tetragonal. *Point Group:*  $4/m$ . As thin tablets, flattened on {001}, displaying {111}, {021}, {012}, {011}, {010}, to 2 mm.

**Physical Properties:** *Cleavage:* Perfect on {001}. Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.22 Radioactive.

**Optical Properties:** Semitransparent. *Color:* Lemon-yellow to yellowish green.  
*Optical Class:* Uniaxial, nearly, to anomalously biaxial (-).  $\alpha$  = n.d.  $\beta$  = 1.632(5)  
 $\gamma$  = 1.633(5)  $2V(\text{meas.}) = 9^\circ\text{--}33^\circ$

**Cell Data:** *Space Group:*  $P4_2/n$ .  $a = 14.30$   $c = 21.97$   $Z = 8$

**X-ray Powder Pattern:** Synthetic  $\text{Fe}(\text{UO}_2)_2(\text{AsO}_4)_2 \cdot 12\text{H}_2\text{O}$ .  
3.53 (100), 11.1 (80), 5.55 (50), 3.59 (50), 1.603 (40), 1.763 (30), 3.20 (20)

**Chemistry:** (1) Hüttenberg, Austria; qualitative analysis confirms a ferrous uranium arsenate hydrate.

**Mineral Group:** Autunite group.

**Occurrence:** A very rare secondary mineral in the oxidized zone of a uraninite-bearing iron deposit (Hüttenberg, Austria).

**Association:** Arsenosiderite, scorodite, symplectite, pitticite, löllingite (Hüttenberg, Austria); lavendulan, zeunerite, metazeunerite, malachite, cornubite, mixite, tyrolite, wulfenite, metakahlerite (Southwick Cliffs, Scotland).

**Distribution:** From Hüttenberg, Carinthia, Austria. On the Sophia and St. Joseph mine dumps, near Wittichen, and at Menzenschwand, Black Forest, Germany. From the Mas-d'Alary uranium deposit, three km south-southeast of Lodève, Hérault, France. At Southwick Cliffs, near Dalbeattie, Kirkcudbrightshire, Scotland.

**Name:** Honors Dr. Franz Kahler, geologist, Carinthian Landesmuseum, Klagenfurt, Austria.

**Type Material:** Carinthian Landesmuseum, Klagenfurt, Austria; Cambridge University, Cambridge, England.

**References:** (1) Meixner, H. (1953) Kahlerit, ein neues Mineral der Uranglimmergruppe, aus der Hüttenberger Lagerstätte, Kärnten. *Der Karinthin*, 23, 277–280 (in German). (2) (1954) *Amer. Mineral.*, 39, 1038 (abs. ref. 1). (3) Frondel, C. (1958) Systematic mineralogy of uranium and thorium. *U.S. Geol. Sur. Bull.* 1064, 204–205. (4) Walenta, K. (1964) Beiträge zur Kenntnis seltener Arsenatminerale unter besonderer Berücksichtigung von Vorkommen des Schwarzwaldes. 1. Folge. *Tschermaks Mineral. Petrog. Mitt.*, 9, 111–174, esp. 172 (in German).