

**Scordariite**

**Crystal Data:** Hexagonal. *Point Group:*  $\bar{3}$ . As pseudo-hexagonal tabular crystals to 0.5 mm.

**Physical Properties:** *Cleavage:* Perfect on {0001}. *Tenacity:* Brittle. *Fracture:* Irregular.  
Hardness = 2-2.5 D(meas.) = n.d. D(calc.) = 2.432 Easily soluble in water.

**Optical Properties:** Transparent. *Color:* Yellowish to brownish. *Streak:* Yellowish.  
*Luster:* Vitreous.

*Optical Class:* Uniaxial (-).  $n(\text{calc.}) = 1.573$  *Pleochroism:* Distinct, pale yellow to yellow.

**Cell Data:** *Space Group:*  $R\bar{3}$ .  $a = 9.7509(4)$   $c = 53.525(2)$   $Z = 3$

**X-ray Powder Pattern:** Monte Arsiccio mine, Stazzema (LU), Apuan Alps, Tuscany, Italy.  
8.3 (s), 2.884 (s), 6.6 (m), 4.22 (m), 3.777 (m), 3.299 (m), 3.189 (m), 8.8 (mw)

Chemistry:	(1)	(2)
SO <sub>3</sub>	47.31	44.14
Al <sub>2</sub> O <sub>3</sub>	0.66	
Fe <sub>2</sub> O <sub>3</sub>	[24.68]	24.47
FeO	[0.69]	
Na <sub>2</sub> O	0.52	
K <sub>2</sub> O	17.36	17.31
H <sub>2</sub> O	[15.06]	14.08
Total	106.28	100.00

(1) Monte Arsiccio mine, Stazzema (LU), Apuan Alps, Tuscany, Italy; average electron microprobe and Raman spectroscopic analyses, Fe<sup>2+</sup>:Fe<sup>3+</sup> from Mössbauer spectroscopy, H<sub>2</sub>O calculated from structure; corresponding to (K<sub>7.50</sub>Na<sub>0.34</sub>) $\Sigma=7.84$ (Fe<sup>3+</sup><sub>6.29</sub>Al<sub>0.26</sub>Fe<sup>2+</sup><sub>0.20</sub>) $\Sigma=6.75$ S<sub>12.02</sub>O<sub>50</sub>•17H<sub>2</sub>O.

(2) K<sub>8</sub>(Fe<sup>3+</sup><sub>0.67</sub>□<sub>0.33</sub>)[Fe<sup>3+</sup><sub>3</sub>O(SO<sub>4</sub>)<sub>6</sub>(H<sub>2</sub>O)<sub>3</sub>]<sub>2</sub>(H<sub>2</sub>O)<sub>11</sub>.

**Occurrence:** From the weathering of a pyrite + baryte + iron oxide (magnetite, hematite, “limonite”) deposit.

**Association:** Giacovazzoite, krausite, gypsum, jarosite, alum-(K), magnanelliite.

**Distribution:** From the Monte Arsiccio mine, Stazzema (LU), Apuan Alps, Tuscany, Italy.

**Name:** Honors Fernando Scordari (b. 1944), retired Professor of Mineralogy, University of Bari, Italy, past president of the Società Italiana di Mineralogia e Petrologia and past vice-president of the European Mineralogical Union. His scientific contributions were to the crystal chemistry of minerals and inorganic compounds, with a particular focus on silicates and sulfates.

**Type Material:** Natural History Museum, University of Pisa, Italy (19893).

**References:** (1) Biagioni, C., L. Bindi, D. Mauro, and U. Hålenius (2019) Crystal chemistry of sulfates from the Apuan Alps (Tuscany, Italy). V. Scordariite, K<sub>8</sub>(Fe<sup>3+</sup><sub>0.67</sub>□<sub>0.33</sub>)[Fe<sup>3+</sup><sub>3</sub>O(SO<sub>4</sub>)<sub>6</sub>(H<sub>2</sub>O)<sub>3</sub>]<sub>2</sub>(H<sub>2</sub>O)<sub>11</sub>: A new metavoltine-related mineral. *Minerals*, 9, 702, 1-13.