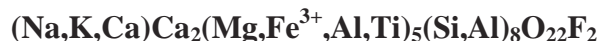


**Fluoro-magnesiohastingsite**

**Crystal Data:** Monoclinic. *Point Group:* 2/m. Crystals prismatic to 3 mm.

**Physical Properties:** *Cleavage:* Perfect on {110}. *Fracture:* n.d. *Tenacity:* Brittle.  
Hardness = 6 D(meas.) = n.d. D(calc.) = 3.18

**Optical Properties:** Transparent. *Color:* Reddish brown to yellowish. *Streak:* Light reddish brown. *Luster:* Vitreous.  
*Optical Class:* Biaxial (+).  $\alpha = 1.642$   $\beta = 1.647$   $\gamma = 1.662$   $2V(\text{meas.}) = 61^\circ$   $2V(\text{calc.}) = 61^\circ$   
*Orientation:*  $Y = b$ ,  $Z \wedge c = 26^\circ$ . *Pleochroism:* Weak;  $X = \text{yellow-brown}$ ,  $Y = Z = \text{light brown}$ .  
*Dispersion:* None.

**Cell Data:** *Space Group:* C2/m.  $a = 9.871(1)$   $b = 8.006(2)$   $c = 5.314(1)$   $\beta = 105.37(1)^\circ$   
 $Z = 2$

**X-ray Powder Pattern:** Dealul Uroi, Apuseni Mountains, Hunedoara county, Romania.  
3.124 (100), 8.421 (61), 3.271 (61), 2.700 (54), 3.377 (44), 2.932 (35), 2.746 (31)

<b>Chemistry:</b>	(1)
SiO <sub>2</sub>	40.77
TiO <sub>2</sub>	1.21
Al <sub>2</sub> O <sub>3</sub>	13.11
Fe <sub>2</sub> O <sub>3</sub>	6.44
MgO	18.7
CaO	13.99
Na <sub>2</sub> O	1.79
K <sub>2</sub> O	1.17
F	4.39
-O = F	1.84
Total	99.73

(1) Dealul Uroi, Apuseni Mountains, Hunedoara county, Romania; average of electron microprobe analyses, absence of OH confirmed by IR spectroscopy; corresponding to  $(\text{Na}_{0.50}\text{K}_{0.22}\text{Ca}_{0.17})_{\Sigma=0.89}\text{Ca}_{2.00}(\text{Mg}_{4.03}\text{Fe}^{3+}_{0.70}\text{Al}_{0.13}\text{Ti}_{0.13})_{\Sigma=4.99}(\text{Si}_{5.89}\text{Al}_{2.11})_{\Sigma=8.00}\text{O}_{22.00}\text{F}_{2.00}$ .

**Mineral Group:** Amphibole group, calcium amphibole subgroup.

**Occurrence:** In small cavities in an altered hematite-rich xenolith in trachyandesite.

**Association:** Titaniferous hematite, augite, phlogopite, enstatite, feldspar, tridymite, titanite, fluorapatite, ilmenite, pseudobrookite.

**Distribution:** From an abandoned quarry at Dealul Uroi, 10 km east of Deva, Apuseni Mountains, Hunedoara county, Romania.

**Name:** Signifies an amphibole in the compositional range of *magnesio-hastingsite* with  $F > \text{Cl, OH}$ .

**Type Material:** Department of Mineralogy, Landesmuseum Joanneum, Graz, Styria, Austria (83854-83855).

**References:** (1) Bojar, H-P. and F. Walter (2006) Fluoro-magnesiohastingsite from Dealul Uroi (Hunedoara county, Romania): Mineral data and crystal structure of a new amphibole end-member. *Eur. J. Mineral.* 118, 503-508. (2) (2007) *Amer. Mineral.*, 92, 703-704 (abs. ref. 1).