

**Crystal Data:** Hexagonal. *Point Group:* 6/m 2/m 2/m. As prismatic hexagonal composite crystals displaying prominent  $\{10\bar{1}0\}$  and  $\{0001\}$ ; intergrown with Sc-rich milarite.

**Physical Properties:** *Cleavage:* Poor on  $\{0001\}$ . *Fracture:* Conchoidal. *Tenacity:* Brittle. *Hardness* = 6 D(meas.) = n.d. D(calc.) = 2.61

**Optical Properties:** Translucent. *Color:* Grayish white. *Streak:* Colorless. *Luster:* Vitreous. *Optical Class:* Uniaxial (-).  $\omega = 1.556(2)$   $\epsilon = 1.553(2)$  *Pleochroism:* None.

**Cell Data:** *Space Group:* P6/mcc.  $a = 10.097(1)$   $c = 13.991(2)$   $Z = 2$

**X-ray Powder Pattern:** Heftetjern pegmatite, Telemark county, southern Norway. 3.229 (100), 2.880 (80), 4.097 (70), 5.044 (50), 3.504 (50), 7.012 (40), 1.836 (40)

<b>Chemistry:</b>	(1)
SiO <sub>2</sub>	73.32
Al <sub>2</sub> O <sub>3</sub>	0.47
Sc <sub>2</sub> O <sub>3</sub>	6.77
Y <sub>2</sub> O <sub>3</sub>	0.36
FeO	0.26
MnO	1.32
CaO	4.49
K <sub>2</sub> O	4.71
BeO	[7.41]
Total	99.11

(1) Heftetjern pegmatite, Telemark county, southern Norway; average of 10 electron microprobe analyses, corresponds to  $(\text{Sc}_{0.96}\text{Ca}_{0.79}\text{Mn}_{0.18}\text{Fe}_{0.04}\text{Y}_{0.03})_{\Sigma=2.00}\text{K}_{0.98}(\text{Be}_{2.91}\text{Al}_{0.09})_{\Sigma=3.00}\text{Si}_{11.98}\text{O}_{30}$ .

**Polymorphism & Series:** Forms a series with milarite.

**Mineral Group:** Milarite group.

**Occurrence:** In a complex granitic pegmatite.

**Association:** Sc-rich milarite, tourmaline, yttrian milarite, bazzite, thortveitite, kristiansenite, bertrandite.

**Distribution:** From the Heftetjern pegmatite, ~ 4.3 km NW of Tørdal, Telemark county, southern Norway.

**Name:** Honors Ivar Oftedal (1894-1976), former Professor of Mineralogy, Institute of Geology, University of Oslo, for his work on the geochemistry of scandium and on the mineralogy of the Tørdal pegmatites.

**Type Material:** The Canadian Museum of Nature, Ottawa, Ontario, Canada (H04/98) and at the Steiermärkisches Landesmuseum, Graz, Austria.

**References:** (1) Cooper, M.A., F.C. Hawthorne, N.A. Ball, P. Černý, and R. Kristiansen (2006) Oftedalite,  $(\text{Sc,Ca,Mn}^{2+})_2\text{K}(\text{Be,Al})_3\text{Si}_{12}\text{O}_{30}$ , a new member of the milarite group from the Heftetjern pegmatite, Tørdal, Norway: description and crystal structure. *Can. Mineral.*, 44, 943-949. (2) (2006) *Amer. Mineral.*, 91, 1948 (abs. ref. 1).