Taeniolite

KLiMg$_2$Si$_4$O$_{10}$F$_2$

Crystal Data: Monoclinic. Point Group: 2/m. Tabular crystals, pseudohexagonal, to 3.5 cm; as individual scales or lamellar, also in cryptocrystalline aggregates. Twinning: Penetration twinning rare.

Physical Properties: Cleavage: {001}, perfect. Tenacity: Foliate flexible, somewhat elastic. Hardness = 2.5–3.5 D(meas.) = 2.83–2.90 D(calc.) = 2.80


Cell Data: Space Group: C2/m. a = 5.254(2) b = 9.110(4) c = 10.187(2) α = 99°:85(4) β = 99.85(4)° Z = 2

X-ray Powder Pattern: Magnet Cove, Arkansas, USA; 1M. 3.34 (100), 10.04 (74), 5.01 (44), 1.999 (35), 3.12 (26), 2.88 (25), 3.60 (17)

Chemistry: (1) (2) (3) (4) (5) (6) (7)

SiO$_2$ 52.2 52.88 53.5 Na$_2$O 1.8 1.22 0.27
TiO$_2$ 2.00 1.06 K$_2$O 11.5 11.38 11.3
Al$_2$O$_3$ 2.7 trace 3.00 F 5.36 6.3
FeO 0.6 1.89 3.35 H$_2$O$^+$ 4.24 [1.30]
MnO 1.38 0.21 H$_2$O$^-$ 2.00
MgO 19.1 17.42 18.3 LiO 8.7
Li$_2$O 3.8 2.44 2.4

Total 100.4 99.96 [100.99]

Polymorphism & Series: 1M, 2M$_1$, 3A polytypes.

Mineral Group: Mica group.

Occurrence: A late-stage mineral in nepheline syenite pegmatites.

Association: Quartz, dickite (Narssassuk, Greenland); natrolite, apatite, neptunite, polythionite, manganoan pectolite (Lovozero massif, Russia); natrolite, pectolite, aegirine, barytolamprophyllite, rasvumite (Coyote Peak, California, USA).

Distribution: From Narssassuk, Greenland. In the Lovozero and Khibiny massifs, Kola Peninsula, and at several poorly defined localities around Lake Baikal, Siberia, Russia. In the USA, at Magnet Cove, Hot Spring Co., Arkansas, and Coyote Peak, near Orick, Humboldt Co., California. From Mont Saint-Hilaire, Quebec, Canada.

Name: From the Greek for ribbon in reference to the mineral’s tabular crystals.

Type Material: University of Copenhagen, Copenhagen, Denmark.


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