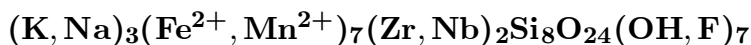


# Zircophyllite



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**Crystal Data:** Triclinic, probable. *Point Group:* n.d. In platy micaceous crystals, to 2 cm.

**Physical Properties:** *Cleavage:* {001}, perfect. *Tenacity:* Extremely brittle.  
Hardness = 4–4.5 D(meas.) = 3.34 D(calc.) = n.d.

**Optical Properties:** Semitransparent. *Color:* Dark brown to nearly black. *Streak:* Pale brown. *Luster:* Vitreous to adamantine.  
*Optical Class:* Biaxial (-). *Pleochroism:* X = Y = dark yellow; Z = brown. *Orientation:* Y = a; X ∧ b = 9°–11°; Z ⊥ {001}. *Dispersion:* r > v, strong. α = 1.708 β = 1.738 γ = 1.747  
2V(meas.) = 62°

**Cell Data:** *Space Group:* n.d. Z = n.d.

**X-ray Powder Pattern:** Korgeredabinsh massif, Russia.  
3.50 (10), 2.80 (7), 2.66 (5), 2.10 (5), 9.80 (4), 3.75 (3), 3.26 (3)

## Chemistry:

	(1)
SiO <sub>2</sub>	32.64
TiO <sub>2</sub>	2.30
ZrO <sub>2</sub>	13.61
HfO <sub>2</sub>	1.2
Nb <sub>2</sub> O <sub>5</sub>	2.30
FeO	18.06
MnO	18.83
CaO	0.94
Na <sub>2</sub> O	1.55
K <sub>2</sub> O	5.61
F	1.20
H <sub>2</sub> O	3.20
-O = F <sub>2</sub>	0.49
Total	99.75

(1) Korgeredabinsh massif, Russia; Hf by spectrographic analysis, traces of Y, Pb, Be, Sr, Ba; corresponds to (K<sub>1.70</sub>Na<sub>0.71</sub>Mn<sub>0.35</sub>Ca<sub>0.24</sub>)<sub>Σ=3.00</sub>(Fe<sub>3.57</sub>Mn<sub>3.43</sub>)<sub>Σ=7.00</sub>(Zr<sub>1.58</sub>Nb<sub>0.25</sub>Ti<sub>0.17</sub>)<sub>Σ=2.00</sub>(Si<sub>7.76</sub>Ti<sub>0.24</sub>)<sub>Σ=8.00</sub>O<sub>24</sub>[(OH)<sub>3.24</sub>O<sub>2.84</sub>F<sub>0.90</sub>]<sub>Σ=6.98</sub>•0.9H<sub>2</sub>O.

**Mineral Group:** Astrophyllite group.

**Occurrence:** In the natrolite zone of alkalic pegmatites.

**Association:** “Aegirine-augite,” leucophanite, fluorite, apatite, apophyllite.

**Distribution:** From the Korgeredaba alkaline massif, Sangilen Upland, southeastern Tuva, Russia.

**Name:** For ZIRCONium in the composition and the Greek for *leaf*, in reference to its foliated, micaceous habit.

**Type Material:** A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia.

**References:** (1) Kapustin, Y.L. (1972) Zircophyllite, the zirconium analogue of astrophyllite. Zap. Vses. Mineral. Obshch., 101, 459–463 (in Russian). (2) (1973) Amer. Mineral., 58, 967 (abs. ref. 1).