

Thorosteenstrupine**CaMnThSi₄O₁₁(OH)F·6H₂O**

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Crystal Data: Metamict. *Point Group:* n.d. Platy crystals, with rough faces, to 1 cm.**Physical Properties:** *Fracture:* Conchoidal. *Tenacity:* Brittle. *Hardness* = ~4
D(meas.) = 3.02(2) D(calc.) = n.d. Weakly magnetic; radioactive.**Optical Properties:** Opaque, translucent in thin fragments. *Color:* Dark brown, nearly black; reddish brown in transmitted light. *Streak:* Dark brown. *Luster:* Greasy to vitreous.*Optical Class:* Isotropic. *n* = 1.63–1.66**Cell Data:** *Space Group:* n.d. *Z* = n.d.**X-ray Powder Pattern:** Chergien deposit, Russia; after heating at 900° for 30 minutes.

4.08 (10), 3.25 (10), 2.61 (10), 3.06 (9), 2.84 (8), 1.790 (8), 1.940 (7)

Chemistry:

	(1)
SiO ₂	31.87
TiO ₂	0.00
ThO ₂	35.70
Al ₂ O ₃	0.31
RE ₂ O ₃	1.12
Fe ₂ O ₃	0.65
MnO	7.75
MgO	0.00
CaO	8.38
F	2.43
H ₂ O	13.77
P ₂ O ₅	0.00
–O = F ₂	1.02
Total	100.96

(1) Chergien deposit, Russia; by microchemical analysis, corresponding to (Ca_{1.11}Th_{1.01}Mn_{0.81}RE_{0.06}Fe_{0.06}³⁺)_{Σ=3.05}(Si_{3.96}Al_{0.04})_{Σ=4.00}[O_{11.24}(OH)_{0.76}]_{Σ=12.00}F_{0.95}•5.32H₂O.**Occurrence:** In metasomatic veins.**Association:** Microcline, albite, “aegirine-augite,” quartz, fluorite, thorite, miserite.**Distribution:** From the Chergien rare-earth deposit, Turana Mountains, 60 km northwest of Chekunda, eastern Siberia, and on Mt. Karnasurt, Lovozero massif, Kola Peninsula, Russia.**Name:** For *thorium* in the composition and its close relation to *steenstrupine*.**Type Material:** A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 64285.**References:** (1) Kupriyanova, I.I., T.I. Stolyarova, and G.A. Sidorenko (1962) A new thorium silicate – thorosteenstrupine. Zap. Vses. Mineral. Obsch., 91, 325–330 (in Russian). (2) (1963) Amer. Mineral., 48, 433–434 (abs. ref. 1).