

Crystal Data: Hexagonal. *Point Group:* 6/m. As porous, elongate grains to 0.3 mm.

Physical Properties: *Cleavage:* Indistinct || elongation. *Fracture:* Irregular. *Tenacity:* Brittle. Hardness = 4-4.5 VHN = 443 D(meas.) = n.d. D(calc.) = 3.091

Optical Properties: Transparent. *Color:* Off-white with a bluish-greenish hue. *Streak:* White. *Luster:* Vitreous.

Optical Class: Uniaxial (-). $\omega = 1.664(3)$ $\varepsilon = 1.659(3)$

Cell Data: Space Group: $P6_3/m$. $a = 9.6002(2)$ $c = 6.8692(2)$ $Z = 2$

X-ray Powder Pattern: Shadil Khokh volcano, South Ossetia, Georgia.

2.858 (100), 2.771 (99), 2.793 (90), 2.858 (41), 3.435 (38), 1.851 (23), 2.648 (21)

Chemistry:	(1)
CaO	54.43
Na ₂ O	0.07
SO ₃	22.72
SiO ₂	17.67
P ₂ O ₅	0.44
Cl	4.23
F	0.40
OH	[0.49]
$-\text{O} = (\text{F}, \text{Cl})_2$	1.12
Total	99.33

(1) Shadil Khokh volcano, South Ossetia, Georgia; average of 11 electron microprobe analyses supplemented by Raman spectroscopy, OH calculated for charge balance; corresponds to $\text{Ca}_{4.99}\text{Na}_{0.01}(\text{SiO}_4)_{1.51}(\text{SO}_4)_{1.46}(\text{PO}_4)_{0.03}[\text{Cl}_{0.61}(\text{OH})_{0.21}\text{F}_{0.11}]_{\Sigma=0.93}$.

Polymorphism & Series: Hydroxyllestadite and fluorellestadite.

Mineral Group: Apatite supergroup, ellestadite group.

Occurrence: The product of pyrometamorphism and metasomatic alteration under sanidinite facies (larnite sub-facies) of a calcium-silicate xenolith in rhyodacite lava.

Association: Spurrite, larnite, chlormayenite, rondorfite, srebrodolskite, jasmundite, oldhamite.

Distribution: From the NW slope of Shadil Khokh volcano, Greater Caucasus Mountain Range, South Ossetia, Georgia.

Name: Signifies the *chlorine*-end member of the *ellestadite* group.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (4975/1).

References: (1) Środek, D., I.O. Galuskina, E. Galuskin, M. Dulski, M. Książek, J. Kusz, and V. Gazeev (2018) Chlorellestadite, $\text{Ca}_5(\text{SiO}_4)_{1.5}(\text{SO}_4)_{1.5}\text{Cl}$, a new ellestadite-group mineral from the Shadil-Khokh volcano, South Ossetia. Mineral. Petrol., 112(5), 743-752. (2) (2019) Amer. Mineral., 104(5), 780 (abs. ref. 1).