

Crystal Data: Monoclinic. *Point Group:* 2/m. Crystals display {010}, {100}, {001}, {110}, {011}, and {101} to 0.3 mm. *Twinning:* Simple and polysynthetic on (010).

Physical Properties: *Cleavage:* Good on {010}. *Fracture:* n.d. *Tenacity:* n.d. Hardness = 6.5 VHN = 366 (50 g load). D(meas.) = n.d. D(calc.) = 2.918; 2.921

Optical Properties: Transparent. *Color:* Colorless; white aggregates. *Streak:* White. *Luster:* Vitreous.

Optical Class: Biaxial (+). $\alpha = 1.621(2)$ $\beta = 1.625(2)$ $\gamma = 1.631(2)$ $2V(\text{meas.}) = 80(5)^\circ$ $2V(\text{calc.}) = 78.7^\circ$ *Dispersion:* $r > v$, medium. *Orientation:* $Z = a$, $X \wedge c = 12(2)^\circ$

Cell Data: *Space Group:* $P2_1/b$. $a = 5.06870(10)$ $b = 11.35790(10)$ $c = 15.4004(2)$ $\alpha = 100.5980(10)^\circ$ $Z = 2$

X-ray Powder Pattern: Calculated pattern.

3.03 (100), 2.82 (79), 2.76 (65), 2.62 (55), 1.91 (53), 3.81 (42), 1.89 (36)

Chemistry:	(1)
SiO ₂	31.10
CaO	65.27
F	3.64
- O = F	1.53
<u>H₂O</u>	<u>0.60</u>
Total	100.61

(1) Upper Chegem caldera, Kabardino-Balkaria, Northern Caucasus, Russia; electron microprobe analysis, supplemented by IR and Raman spectroscopy H₂O calculated for charge balance; corresponds to Ca_{8.998}(SiO₄)_{4.002}[F_{1.481}(OH)_{0.518}]_{Σ=1.999}.

Polymorphism & Series: Forms a series with hydroxyledgrewite.

Mineral Group: Calcium Humite group.

Occurrence: In xenoliths of carbonate-silicate rock altered to sanidinite facies metamorphic rock within ignimbrites.

Association: Bultfonteinite, hillebrandite, jennite, chegemite, larnite, rondorfite, hydroxyllestadite.

Distribution: From the Upper Chegem caldera, Kabardino-Balkaria, Northern Caucasus, Russia.

Name: Honors Edward S. Grew (b. 1944), professor of mineralogy and petrology at the University of Maine, Orono, Maine, USA.

Type Material: Museum of Natural History, Bern, Switzerland (41086) and in the A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (4162/1).

References: (1) Galuskin, E.V., B. Lazic, T. Armbruster, I.O. Galuskina, N.N. Pertsev, V.M. Gazeev, R. Włodyka, M. Dulski, P. Dzierzanowski, A.E. Zadov, and L.S. Dubrovinsky (2012) Edgrewite Ca₉(SiO₄)₄F₂-hydroxyledgrewite Ca₉(SiO₄)₄(OH)₂, a new series of calcium humite-group minerals from altered xenoliths in the ignimbrite of Upper Chegem caldera, Northern Caucasus, Kabardino-Balkaria, Russia. *Amer. Mineral.*, 97, 1998-2006.