

Crystal Data: Monoclinic. *Point Group:* 2/m. As aggregates to 3 cm of grains to 7 mm.

Physical Properties: *Cleavage:* Good on {110} and {100}. *Tenacity:* Brittle. *Fracture:* Uneven. Hardness = 2.5 D(meas.) = 2.38(1) D(calc.) = 2.40 Nonfluorescent.

Optical Properties: Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (-). $\alpha = 1.565(2)$ $\beta = 1.645(2)$ $\gamma = 1.725(4)$ $2V(\text{meas.}) = 88(10)^\circ$ $2V(\text{calc.}) = 87(3)^\circ$ Orientation: $Y = b, Z \wedge c = 40^\circ$ (synthetic).

Cell Data: *Space Group:* I2/m. $a = 6.936(3)$ $b = 7.382(3)$ $c = 7.443(3)$ $\beta = 94.3(1)^\circ$ $Z = 2$

X-ray Powder Pattern: Chelkar salt dome, western Kazakhstan. 2.917 (100), 2.956 (80), 5.062 (70), 4.323 (70b), 4.063 (70b), 4.812 (50), 3.644 (50)

Chemistry:	(1)
C	8.53
H	1.67
Ca	29.43
Cl	24.56
<u>O</u>	<u>[35.81]</u>
Total	100.00

(1) Chelkar salt dome, western Kazakhstan; electron microprobe and selective absorption analyses, H₂O and BeO calculated, O by difference; corresponds to Ca_{2.00}(C₂O₄)_{0.97}Cl_{1.89}(OH)_{0.17}·2.17H₂O.

Occurrence: In a drill-core from evaporite rocks.

Association: Anhydrite, gypsum, halite, bischofite, magnesite, hilgardite.

Distribution: Chelkar salt dome, western Kazakhstan.

Name: Honors mineralogist Margarita Ivanovna *Novgorodova* (b. 1938), Director of the A.E. Fersman Mineralogical Museum, Moscow, Russia.

Type Material: A.E. Fersman Mineralogical Museum, Moscow, Russia (69819 and 69820).

References: (1) Chukanov, N.V., D.I. Belakovskii, R.K. Rastsvetaeva, O.V. Karimova, and A.E. Zadov (2001) Novgorodovaite, Ca₂(C₂O₄)Cl₂·2H₂O, a new mineral. Zap. Vseross. Mineral. Obshch., 130(4), 32-35 (in Russian, English abs.). (2) R.K. Rastsvetaeva, N.V. Chukanov, and Yu.V. Nekrasov (2001) Crystal structure of novgorodovaite Ca₂(C₂O₄)Cl₂·2H₂O. Doklady Akad. Nauk, 381(3), 353-355 (in Russian). (2) (2002) Amer. Mineral., 87, 1511 (abs. refs. 1 and 2). (3) Piro, O.E., G.A. Echeverría, A.C. González-Baró and E.J. Baran (2018) Crystal structure and spectroscopic behavior of synthetic novgorodovaite Ca₂(C₂O₄)Cl₂·2H₂O and its twinned triclinic heptahydrate analog. Physics and Chemistry of Minerals, 45, 185-195.