

Crystal Data: Monoclinic. *Point Group:* $2/m$. Crystals are elongated along [001], to 5 mm, showing {110}, {001}, {010}, {100}, {221}, in radiating aggregates; typically fine-grained, forming veins and nodules. *Twining:* On {110}.

Physical Properties: *Cleavage:* On {100}, perfect; on {001} and {221}, distinct. *Fracture:* Interrupted. *Tenacity:* Brittle. Hardness = 3 D(meas.) = 2.32(3) D(calc.) = 2.338 Soluble in H₂O.

Optical Properties: Transparent. *Color:* Cream to pale yellow, with pinkish or greenish tint. *Luster:* Vitreous.

Optical Class: Biaxial (-). *Orientation:* $Z = b$; $X \wedge c = 20^\circ$. *Dispersion:* $r < v$, moderate. $\alpha = 1.415(2)$ $\beta = 1.524(2)$ $\gamma = 1.592(2)$ $2V(\text{meas.}) = 72(1)^\circ$ $2V(\text{calc.}) = 72^\circ$

Cell Data: *Space Group:* $P2_1/a$ (by analogy to synthetic). $a = 10.426(9)$ $b = 5.255(5)$ $c = 3.479(3)$ $\beta = 93.14(8)^\circ$ $Z = 2$

X-ray Powder Pattern: Mt. Alluaiv, Kola Peninsula, Russia. 2.826 (100), 2.602 (56), 2.334 (33), 2.898 (27), 2.041 (14), 5.203 (13), 2.117 (13)

Chemistry:

	(1)	(2)
C ₂ O ₃	53.70	53.75
Na ₂ O	46.24	46.25
Total	99.94	100.00

(1) Mt. Alluaiv, Kola Peninsula, Russia. (2) Na₂(C₂O₄).

Occurrence: In a hydrothermally altered pegmatite in a differentiated alkalic massif.

Association: Aegirine, albite, elpidite, natron, nenadkevichite, taeniolite, sphalerite, pyrite, galena.

Distribution: From Mt. Alluaiv, Lovozero massif, Kola Peninsula, Russia.

Name: For sodium, *natrium*, in the composition, and as a naturally occurring *oxalate*.

Type Material: Mining Institute, St. Petersburg, 2080/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 1522.

References: (1) Khomyakov, A.P. (1996) Natroxalate – Na₂C₂O₄ – a new mineral. Zap. Vses. Mineral. Obshch., 125(1), 126–132 (in Russian with English abs.). (2) (1997) Amer. Mineral., 82, 432 (abs. ref. 1). (3) Reed, D.A. and M.M. Olmstead (1981) Sodium oxalate structure refinement. Acta Cryst., 37, 938–939.