

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As prismatic to acicular crystals to 1 mm. Divergent aggregates resemble anthodites, to 2 mm, or “gypsum flowers”; also as granular sugar-like crusts.

**Physical Properties:** *Cleavage:* None. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = ~ 2  
D(meas.) = 2.30(2) D(calc.) = 2.300

**Optical Properties:** Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous.  
*Optical Class:* Biaxial (+).  $\alpha = 1.522(2)$   $\beta = 1.530(2)$   $\gamma = 1.576(2)$  2V(meas.) = 30(15)°  
2V(calc.) = 46° *Orientation:* Optical axes plane is (010),  $Z \wedge c = 26^\circ$  (synthetic material).

**Cell Data:** *Space Group:* P2<sub>1</sub>/c.  $a = 6.2795(3)$   $b = 10.1397(3)$   $c = 12.0829(7)$   $\beta = 107.732(5)^\circ$   
 $Z = 4$

**X-ray Powder Pattern:** First Scoria cone, Tolbachik volcano, Kamchatka, Russia.  
3.062 (100), 5.986 (43), 5.766 (35), 3.907 (33), 7.62 (30), 2.853 (27), 2.996 (24)

Chemistry:	(1)	(2)
K	14.85	15.84
Tl	4.08	
Zn	25.82	26.48
Cl	41.70	43.08
H <sub>2</sub> O	[14.19]	14.60
Total	100.64	100.00

(1) First Scoria cone, Tolbachik volcano, Kamchatka, Russia; average of 4 electron microprobe analyses supplemented by FTIR spectroscopy, H<sub>2</sub>O calculated from stoichiometry; corresponding to (K<sub>0.96</sub>Tl<sub>0.05</sub>) $\Sigma=1.01$ Zn<sub>1.00</sub>Cl<sub>2.99</sub>·2H<sub>2</sub>O. (2) KZnCl<sub>3</sub>·2H<sub>2</sub>O.

**Occurrence:** Formed as sublimates on basaltic scoria around active volcanic fumaroles and with involvement of meteoric water.

**Association:** Gypsum, ralstonite, opal.

**Distribution:** From the First scoria cone of the Northern Breakthrough of the Great Tolbachik Fissure Eruption, Tolbachik volcano, Kamchatka, Russia.

**Name:** Based on the Greek words, κρύος, for cold or ice, and βόστρυξ, for curl, alludes to the very similar appearance of aggregates of the mineral to ice curls.

**Type Material:** A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (94995).

**References:** (1) I.V. Pekov, N.V. Zubkova, S.N. Britvin, V.O. Yapaskurt, N.V. Chukanov, I.S. Lykova, E.G. Sidorov, and D.Yu. Pushcharovsky (2015) New zinc and potassium chlorides from fumaroles of the Tolbachik volcano, Kamchatka, Russia: Mineral data and crystal chemistry. III. Cryobostrixyte, KZnCl<sub>3</sub>·2H<sub>2</sub>O. Eur. J. Mineral., 27, 805-812. (2) (2016) Amer. Mineral., 101, 1711 (abs. ref. 1).