Belousovite $KZn(SO_4)Cl$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As irregularly-shaped grains and microcrystalline masses to 0.1 cm.

Physical Properties: *Cleavage*: Perfect on {100}. *Fracture*: Uneven. *Tenacity*: Brittle. Hardness = n.d. D(meas.) = n.d. D(calc.) = 2.89 Water soluble and hydroscopic.

Optical Properties: Transparent. *Color*: Colorless. *Streak*: White. *Luster*: Vitreous. *Optical Class*: Biaxial (+). $\alpha = 1.532(2)$ $\beta = 1.544(2)$ $\gamma = 1.570(2)$ 2V(calc.) = 69.4°

Cell Data: Space Group: $P2_1/c$. $a = 6.8904(5)$ $b = 9.6115(7)$ $c = 8.2144(6)$ $\beta = 96.582(2)°$ Z = 4

X-ray Powder Pattern: Yadovitaya fumarole, Tolbachik volcano, Kamchatka Peninsula, Russia. 6.845 (100), 3.159 (84), 3.640 (71), 3.114 (52), 2.912 (44), 3.122 (41), 2.981 (41)

Chemistry:

	(1)
K_2O	19.55
Rb_2O	0.58
ZnO	34.85
SO_3	34.65
Cl	14.77
$-O = Cl_2$	3.34
Total	101.06

(1) Yadovitaya fumarole, Second scoria cone, Tolbachik volcano, Kamchatka Peninsula, Russia; average of 6 EDS analyses; corresponds to $K_{0.97}Rb_{0.01}Zn_{1.00}S_{1.01}O_{4.03}Cl_{0.97}$.

Occurrence: As sublimates near a volcanic fumarole (~250°C.) vent.

Association: Langbeinite, kamchatkite, euchlorine, anglesite, zincite.

Distribution: From the Yadovitaya fumarole, Second scoria cone, Tolbachik volcano, Kamchatka Peninsula, Russia.

Name: Honors Dr. Alexander Borisovich Belousov (b. 1962), Institute of Volcanology, Russian Academy of Sciences, Petropavlovsk-Kamchatskiy, for his contributions to volcanology.

Type Material: Mineralogical Museum, St. Petersburg State University, St. Petersburg, Russia (1/19665).

References: (1) Siidra, O.I., E.V. Nazarchuk, E.A. Lukina, A.N. Zaitsev, and V.V. Shilovskikh (2018) Belousovite, $KZn(SO_4)Cl$, a new sulfate mineral from the Tolbachik volcano with apophyllite sheet-topology. Mineral. Mag., 82(5), 1079-1088. (2) (2019) Amer. Mineral., 104(5), 779-780 (abs. ref. 1).