

Crystal Data: Orthorhombic. *Point Group:* 2/m 2/m 2/m. As irregular grains or microcrystalline masses.

Physical Properties: *Cleavage:* None. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 2-3
D(meas.) = n.d. D(calc.) = 3.10 Water soluble and hygroscopic.

Optical Properties: Transparent. *Color:* Light grayish blue. *Streak:* White. *Luster:* Vitreous.
Optical Class: Biaxial (+). $\alpha = 1.535(2)$ $\beta = 1.555(2)$ $\gamma = 1.585(2)$ $2V(\text{calc.}) = 79.82^\circ$
Pleochroism: None.

Cell Data: Space Group: *Pbca*. $a = 9.568(2)$ $b = 8.790(2)$ $c = 28.715(8)$ $Z = 4$

X-ray Powder Pattern: Saranchinaitovaya fumarole, Naboko cone, Tolbachik volcano, Russia.
2.939 (100), 3.846 (87), 5.912 (64), 3.393 (62), 2.498 (56), 3.629 (52), 3.000 (44)

Chemistry:	(1)
Na ₂ O	10.77
K ₂ O	0.20
MgO	11.10
CuO	15.38
ZnO	5.61
<u>SO₃</u>	<u>56.42</u>
Total	99.48

(1) Saranchinaitovaya fumarole, Naboko cone, Tolbachik volcano, Kamchatka Peninsula, Russia; average of 10 EDS analyses; corresponds to (Na_{3.93}K_{0.05}) $\Sigma=3.98$ Mg_{3.12}(Cu_{2.19}Zn_{0.78}) $\Sigma=2.97$ S_{7.97}O₃₂.

Occurrence: As sublimes on basaltic scoria near a volcanic fumarole vent (~600-610 °C.).

Association: Anhydrite, saranchinaite, hermannjahnite, euchlorine, thénardite, aphaltalite, hematite.

Distribution: From the Saranchinaitovaya fumarole, Naboko scoria cone, Tolbachik volcano, Kamchatka Peninsula, Russia.

Name: Honors the Itelmens, an ethnic group who are the original inhabitants of the area around Tolbachik volcano and the Kamchatka Peninsula.

Type Material: Mineralogical Museum, St. Petersburg State University, St. Petersburg, Russia (1/19637).

References: (1) Nazarchuk, E.V., O.I. Siidra, A.A. Agakhanov, E.A. Lukina, E.Y. Avdontseva, and G.A. Karpov (2018) Itelmenite, Na₂CuMg₂(SO₄)₄, a new anhydrous sulfate mineral from the Tolbachik volcano. *Mineral. Mag.*, 82(6), 1233-1241. (2) (2019) *Amer. Mineral.*, 104(12), 1868 (abs. ref. 1).