

Crystal Data: Hexagonal. *Point Group:* 6. As imperfect prismatic to acicular crystals, to 1 mm, elongated and with coarse striation along [001], typically skeletal, with a gear-like cross section. Crystals display {110}, {101}, {100} and {001} with crude terminations, sometimes roundish, and/or “fringed” with epitactic overgrowths of tiny crystals of the same mineral. As open-work radial aggregates to 2 mm.

Physical Properties: *Cleavage:* Perfect on {001}. *Tenacity:* Brittle. *Fracture:* Stepped. Hardness = n.d. D(meas.) = n.d. D(calc.) = 4.748

Optical Properties: Transparent. *Color:* Colorless, white (aggregates). *Streak:* n.d. *Luster:* Vitreous. *Optical Class:* Uniaxial (-). $\omega = 1.649(2)$ $\varepsilon = 1.642(2)$

Cell Data: *Space Group:* P6₃. $a = 18.501(4)$ $c = 8.7114(9)$ $Z = 24$

X-ray Powder Pattern: Arsenatnaya fumarole, Tolbachik volcano, Kamchatka, Russia. 3.179 (100), 2.676 (77), 4.35 (48), 4.64 (45), 3.260 (36), 6.36 (28), 2.770 (26)

Chemistry:	(1)	(2)
K ₂ O	18.98	19.35
CaO	0.14	
MgO	1.20	
CuO	4.41	
ZnO	27.58	33.43
Fe ₂ O ₃	0.15	
P ₂ O ₅	0.50	
As ₂ O ₅	46.67	47.22
Total	99.63	100.00

(1) Arsenatnaya fumarole, Tolbachik volcano, Kamchatka, Russia; average of 7 electron microprobe analyses supplemented by Raman spectroscopy; corresponds to (K_{0.97}Ca_{0.01})_{Σ=0.98}(Zn_{0.82}Cu_{0.13}Mg_{0.07}Fe³⁺_{0.01})_{Σ=1.03}(As_{0.98}P_{0.02})_{Σ=1.00}O₄. (2) KZnAsO₄.

Occurrence: A minor constituent of sublimate incrustations (360-380° C) near a volcanic fumarole.

Association: Shchurovskyite, dmisokolovite, bradaczekite, arsmirandite, tilasite, johillerite, tenorite, hematite, apthitalite, As-bearing orthoclase.

Distribution: From at the Arsenatnaya fumarole, Second scoria cone of the Northern Breakthrough of the Great Tolbachik Fissure Eruption, Tolbachik volcano, Kamchatka, Russia.

Name: An acronym for its essential chemical composition, arsenic (from the Greek *αρμακον*, for *poison*) and *zinc*.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (94378).

References: (1) Pekov, I.V., V.O. Yapaskurt, D.I. Belakovskiy, M.F. Vigasina, N.V. Zubkova, and E.G. Sidorov (2017) New arsenate minerals from the Arsenatnaya fumarole, Tolbachik volcano, Kamchatka, Russia. VII. Pharmazincite, KZnAsO₄. Mineral. Mag., 81(4), 1001-1008. (2) (2018) Amer. Mineral., 103, 335 (abs. ref. 1).