Crystal Data: Orthorhombic. *Point Group*: *mm*2. As sword-shaped crystals, elongated along [010] and flattened on [100], to 1 mm, or as acicular to hair-like individuals, typically in radial aggregates to 2 mm across.

Physical Properties: *Cleavage*: None. *Tenacity*: Brittle. *Fracture*: Uneven. Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.877

Optical Properties: Transparent. *Color*: Colorless, white, or pale beige. *Streak*: White. *Luster*: Vitreous.
Optical Class: Biaxial (-). α = 1.764(6) β = 1.780(6) γ = 1.792(6) 2V(meas.) = close to 90° 2V(calc.) = 81° *Dispersion*: Distinct, $r < v$. *Orientation*: $X = b$, $Y = a$, $Z = c$.

Cell Data: *Space Group*: $Pna2_1$. a = 13.2681(6) b = 6.6209(3) c = 10.8113(5) Z = 4

X-ray Powder Pattern: Arsenatnaya fumarole, Tolbachik volcano, Kamchatka peninsula, Russia. 5.656 (100), 2.830 (82), 3.171 (50), 2.861 (49), 2.707 (17), 5.930 (16), 2.600 (14)

Chemistry:

	(1)		(1)
Na_2O	0.51	SnO_2	22.01
K_2O	16.27	P_2O_5	0.14
Rb_2O	0.12	V_2O_5	0.19
Al_2O_3	0.26	As_2O_5	40.20
Fe_2O_3	4.33	Sb_2O_5	4.88
SiO_2	0.29	SO_3	0.28
TiO_2	10.17	Total	99.65

(1) Arsenatnaya fumarole, Tolbachik volcano, Kamchatka peninsula, Russia; average electron microprobe and Raman spectroscopic analyses; corresponds to $(K_{1.92}Na_{0.09}Rb_{0.01})_{\Sigma=2.02}(Sn_{0.81}Ti_{0.71}Fe^{3+}_{0.30}Sb^{5+}_{0.17}Al_{0.03})_{\Sigma=2.02}(As_{1.945}Si_{0.03}S_{0.02}P_{0.01}V_{0.01})_{\Sigma=2.015}O_{10}$.

Polymorphism & Series: Continuous isomorphous series with katiarsite.

Occurrence: As sublimates at an active volcanic fumarole.

Association: Sn-bearing katiarsite, badalovite, pansnerite, yurmarinite, achyrophanite, hatertite, arsenatrotitanite, khrenovite, svabite, sanidine, hematite, cassiterite, rutile, aphthitalite-group sulfates.

Distribution: From the Arsenatnaya fumarole, Second scoria cone of the Northern Breakthrough of the Great Tolbachik Fissure Eruption, Tolbachik volcano, Kamchatka peninsula, Far-Eastern Region, Russia.

Name: Honors Russian mineralogist, geochemist, and specialist in studies of ore deposits Professor Georgiy Aleksandrovich *Yurgenson* (b. 1935) for contributions to the mineralogy and geochemistry of tin deposits of the Transbaikal Region, South Siberia and the geochemistry of arsenic in the oxidation zone of ore deposits.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (5419/1; 96702 and 96703).

References: (1) Pekov, I.V., N.V. Zubkova, A.A. Agakhanov, V.O. Yapaskurt, D.I. Belakovskiy, M.F. Vigasina, S.N. Britvin, A.G. Turchkova, E.G. Sidorov, and D.Y. Pushcharovsky (2021) New arsenate minerals from the Arsenatnaya fumarole, Tolbachik volcano, Kamchatka, Russia. XVI. Yurgensonite, $K_2SnTiO_2(AsO_4)_2$, the first natural tin arsenate, and the katiarsite-yurgensonite isomorphous series. Mineral. Mag., 85, 698-707.