## Tomamaeite

**Crystal Data**: Cubic. *Point Group*:  $4/m \overline{3} 2/m$ . As anhedral particles to 20  $\mu$ m.

**Physical Properties**: *Cleavage*: n.d. *Tenacity*: n.d. *Fracture*: n.d. Hardness =  $\sim$ 3.5 (estimate) D(meas.) = n.d. D(calc.) = 12.4

**Optical Properties**: Opaque. *Color*: Pale mist-white in reflected light. *Streak*: n.d. *Luster*: Metallic. *Optical Class*: n.d.

**Cell Data**: Space Group:  $Pm\overline{3}m$ . a = 3.683(2) Z = 1

**X-Ray Diffraction Pattern**: Tomamae town, Hokkaido, Japan. 2.123 (100), 1.843 (96), 1.303 (42), 2.596 (35), 1.646 (28)

Chemistry:		(1)	(2)	(3)
	Fe	0.86	0.00	
	Ni	0.12	0.56	
	Cu	51.64	49.25	49.42
	Ru	0.33	0.62	
	Pd	0.06	1.88	
	Os	0.09	0.23	
	Ir	0.08	1.65	
	Pt	47.63	45.52	50.58
	Total	100.91	99.70	100.00

(1) Tomamae coast, Hokkaido, Japan; average EDS analysis; corresponds to  $(Cu_{3.01}Fe_{0.06}Ni_{0.01})_{\Sigma=3.08}$  $(Pt_{0.90}Ru_{0.01}Rh_{<0.01}Pd_{<0.01}Os_{<0.01})_{\Sigma=0.93}$ . (2) Nizhnie Sergi region, Sverdlovsk oblast, Russia; electron microprobe analysis; corresponds to  $Cu_{2.95}Ni_{0.04}Pt_{0.89}Pd_{0.07}Ir_{0.03}Ru_{0.02}$ . (3)  $Cu_3Pt$ .

Mineral Group: The Pt analogue of auricupride.

**Occurrence**: As inclusions in a platinum-group mineral (PGM) grain (Japan); in a native osmium grain from alluvial sediment (Russia). Probably by post-magmatic transformation of the primary PGE mineral assemblage during serpentinization of ultramafic rocks.

**Association**: In Pt-Fe(Cu) alloys such as tulameenite, ferronickelplatinum, tetraferroplatinum, and hongshiite (Japan); osmium (Os<sub>0.36</sub>Ir<sub>0.33</sub>Ru<sub>0.31</sub>), digenite, millerite, magnesiohornblendite, low-Ca pyroxene (Russia).

**Distribution**: On the coast, Tomamae town, Hokkaido, Japan (TL) and elsewhere in Hokkaido, from the Moshosanbetsu River, the Shosanbetsu River, the Ainusawa River, the Kamikinenbetsusawa River, and the Numatapon River; and from the Nizhnie Sergi region, Sverdlovsk oblast, Russia.

Name: For the town in Japan near where the first samples were collected.

Type Material: National Museum of Nature and Science, Tsukuba, Japan (NSM-47328).

**References**: (1) Nishio-Hamane, D. and K. Saito (2022) Platinum-group minerals in the placer deposit in northwestern Hokkaido, Japan: description of a new mineral, tomamaeite. J. Mineral. and Petrolog. Sci., 117(1), 1-16. (2) Sharygin, V.V. and I.G. Mikhailov (2022) Tomamaeite Cu<sub>3</sub>Pt in native osmium from river sediments in the Nizhnie Sergi region, central Urals. Mineralogy, 8, 5-14.