

Crystal Data: Hexagonal. *Point Group:* $\bar{3}2/m$. As a rim, to 1 mm, around tsumoite; massive and as aggregates.

Physical Properties: *Cleavage:* Very perfect in one direction. *Tenacity:* Brittle. Hardness = Very soft. VHN = 64–66 (5 g load). D(meas.) = n.d. D(calc.) = 8.13

Optical Properties: Opaque. *Color:* Grayish white. *Luster:* Metallic.

R₁–R₂: (400) —, (420) 51.8–53.8, (440) 51.8–54.1, (460) 52.0–54.7, (480) 52.3–55.3, (500) 52.7–56.0, (520) 53.2–56.7, (540) 53.6–57.3, (560) 53.8–57.8, (580) 53.9–58.0, (600) 53.8–58.0, (620) 53.7–58.0, (640) 53.6–58.0, (660) 53.6–57.9, (680) 53.6–57.9, (700) 53.6–57.8

Cell Data: *Space Group:* $P\bar{3}m1$. $a = 4.316$ $c = 23.43$ $Z = 2$

X-ray Powder Pattern: Burgagylkan deposit or Egerlyakh deposit, Russia.

3.16 (100), 2.32 (60), 2.16 (50), 1.779 (40) 1.367 (40), 4.67 (30), 1.960 (30)

Chemistry:

	(1)	(2)	(3)
Bi	70.1	67.7	68.58
Te	27.0	28.6	27.91
Se	0.5		
S	3.2	3.4	3.51
Total	100.8	99.7	100.00

(1) Burgagylkan deposit or Egerlyakh deposit, Russia; by electron microprobe, corresponding to Bi_{3.08}Te_{1.94}(S_{0.92}Se_{0.06})_{Σ=0.98}. (2) Do.; by electron microprobe, corresponding to Bi_{2.97}Te_{2.06}S_{0.97}. (3) Bi₃Te₂S.

Occurrence: Of hydrothermal origin, with other bismuth tellurides.

Association: Tsumoite, joséite-B.

Distribution: In Russia, from the Burgagylkan Au–Ag deposit, upper Chelomzha River, Magadan district [TL], and the Egerlyakh deposit, Indigirka River basin, northeastern Sakha [TL]. At the Kochbulak gold deposit, Chatkal-Kuramin Mountains, eastern Uzbekistan. In the Pogo Au–As–Bi–Te deposit, 145 km east of Fairbanks, Alaska, USA.

Name: In allusion to the chemical relation to tsumoite.

Type Material: Mining Institute, St. Petersburg, 1369/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 87246.

References: (1) Zav'yalov, E.N. and V.D. Begizov (1982) Sulphotsumoite, Bi₃Te₂S, a new bismuth mineral. Zap. Vses. Mineral. Obsch., 111, 316–320 (in Russian). (2) (1983) Amer. Mineral., 68, 1250 (abs. ref. 1). (3) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. Ocean Pictures, Moscow, 198.