

Crystal Data: Monoclinic. *Point Group:* 2/m. As a waterworn, roughly rectangular prism to ~ 6 mm.

Physical Properties: *Cleavage:* Perfect on {001}; good on {110} and {110}. *Tenacity:* Brittle. *Fracture:* Conchoidal. Hardness = 5 D(meas.) = 8.256(5) D(calc.) = 8.127

Optical Properties: Transparent. *Color:* Orange with red overtone. *Streak:* White. *Luster:* Adamantine.

Optical Class: Biaxial (sign ambiguous). $\alpha(\text{calc.}) = 2.194$ $\beta(\text{calc.}) = 2.268$ $\gamma(\text{calc.}) = 2.350$ $2V(\text{meas.}) = 90(2)^\circ$ *Orientation:* $X = b$, $Y \approx c$, $Z \approx a$. *Pleochroism:* Imperceptible.

Cell Data: *Space Group:* I2/c. $a = 5.4624(4)$ $b = 4.8852(2)$ $c = 11.8520(8)$ $\beta = 101.195(7)^\circ$ $Z = 4$

X-ray Powder Pattern: Mogok, Pyin-Oo-Lwin district, Mandalay division, Burma (Myanmar). 3.266 (100), 2.900 (66), 1.803 (43), 1.5288 (28), 2.678 (24), 1.6264 (23), 2.437 (22)

Chemistry:	(1)	(2)
Bi ₂ O ₃	50.64	59.02
Sb ₂ O ₃	[6.90]	
Sb ₂ O ₅	[42.44]	40.98
Ta ₂ O ₅	0.52	
Total	100.50	100.00

(1) Mogok, Pyin-Oo-Lwin district, Mandalay division, Burma (Myanmar); average of 9 electron microprobe analyses supplemented by Raman and FTIR spectroscopy which show a trace amount of OH/H₂O; Sb₂O₅/Sb₂O₃ apportioned based on the structure; LA-ICP mass spectroscopy indicated TiO₂ 0.09, Nb₂O₅ 0.05, WO₃ 0.09 and UO₂ 0.03 wt. %; corresponds to (Bi³⁺_{0.82}Sb³⁺_{0.18})_{Σ=1.00} (Sb⁵⁺_{0.99}Ta⁵⁺_{0.01})_{Σ=1.00}O₄. (2) Bi³⁺Sb⁵⁺O₄.

Occurrence: Only known from alluvium, the presence of Bi, Sb and small amounts of Ta, as well as trace amounts of Ti, Nb, W and U, suggest an origin in a pegmatite.

Association: Unknown.

Distribution: Found as a waterworn crystal in alluvium at Chaung-gyi-ah-le-ywa (Middle Village at Chaung-gyi), Chaung-gyi (Big Stream) valley, ~5 km north-northeast of Mogok, Pyin-Oo-Lwin district, Mandalay division, Burma (Myanmar).

Name: Honors Dr. Kyaw Thu (b. 1973), a Burmese mineralogist-petrologist-gemologist on the staff of the Geology Department of Yangon University from 1998 to 2005, and has been the owner/operator of the Macle Gem Trade Laboratory since 2003. Dr. Thu found the specimen.

Type Material: Mineral Sciences Department, Natural History Museum of Los Angeles County, Los Angeles, California, USA (a 1.61-carat faceted gem, 65602).

References: (1) Kampf, A.R., G.R. Rossman, Chi Ma, and P.A. Williams (2017) Kyawthuite, Bi³⁺Sb⁵⁺O₄, a new gem mineral from Mogok, Burma (Myanmar). *Mineral. Mag.*, 81(3), 477-484. (2) (2017) *Amer. Mineral.*, 102, 2344 (abs. ref. 1).