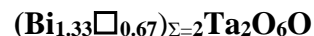


Oxybismutomicrolite

Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. As rough octahedral crystals to 1 mm and equant grains to 2 mm.

Physical Properties: *Cleavage:* None. *Fracture:* Uneven. *Tenacity:* Brittle. *Hardness* = ~5 VHN = 551-689, 609 average (100 g load). *D(meas.)* = 6.98(2) *D(calc.)* = 7.056

Optical Properties: Translucent in thin splinters. *Color:* Black; light gray in reflected light.

Streak: Grayish-white.

Optical Class: Isotropic. *n(calc.)* = 2.184

Cell Data: *Space Group:* $Fd\bar{3}m$. *a* = 10.4746(11) *Z* = 8

X-ray Powder Pattern: Solnechnaya ('Sunny') pegmatite, Central Transbaikalia, Russia.

3.026 (100), 1.854 (33), 2.621 (32), 1.581 (27), 6.051 (12), 3.160 (10), 1.514 (7)

Chemistry:

	(1)		(1)
Na ₂ O	3.45	TiO ₂	3.89
CaO	2.88	SnO ₂	1.77
MnO	0.31	Nb ₂ O ₅	4.50
PbO	0.76	Ta ₂ O ₅	51.08
Bi ₂ O ₃	29.81	F	1.17
ThO ₂	0.18	<u>-O = F</u>	<u>0.49</u>
		Total	99.31

(1) Solnechnaya ('Sunny') pegmatite, Central Transbaikalia, Russia; average of 7 electron microprobe analyses supplemented by FTIR spectroscopy; corresponds to $(\text{Bi}_{0.79}\text{Na}_{0.68}\text{Ca}_{0.32}\text{Mn}_{0.03}\text{Pb}_{0.02}\square_{0.16})_{\Sigma=2.00}(\text{Ta}_{1.42}\text{Ti}_{0.30}\text{Nb}_{0.21}\text{Sn}_{0.07})_{\Sigma=2.00}\text{O}_{6.00}(\text{O}_{0.52}\text{F}_{0.38}\square_{0.10})_{\Sigma=1.00}$.

Mineral Group: Pyrochlore supergroup (general formula - $A_2B_2X_6Y$); microlite group ($B = \text{Ta}^{5+}$).

Occurrence: In complex granitic miarolitic pegmatite, enriched in bismuth.

Association: Albite, lepidolite, elbaite, Bi-rich fluornatromicrolite, bismutotantalite, stibiotantalite.

Distribution: In the Solnechnaya ('Sunny') pegmatite vein, Malkhan pegmatite field, Krasnochikoykiy District, Zabaykalskiy Kray, Central Transbaikalia, Russia.

Name: For a member of the *microlite* group with prefixes to indicate essential oxygen (*oxy*) in the Y site and essential Bi³⁺ (*bismuto*) in the A site.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (5409/1).

References: (1) Kasatkin, A.V., S.N. Britvin, I.S. Peretyazhko, N.V. Chukanov, R. Škoda, and A. A. Agakhanov (2020) Oxybismutomicrolite, a new pyrochlore-supergroup mineral from the Malkhan pegmatite field, Central Transbaikalia, Russia. *Mineral. Mag.*, 84, 444-454.
(2) Atencio, D., M.B. Andrade, A.G. Christy, R. Gieré, and P.M. Kartashov (2010) The pyrochlore supergroup of minerals: nomenclature. *Can. Mineral.*, 48, 673-698.