

Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2/m$. As very fine-grained crusts and films on, and complete replacements of, bismuthinite crystals.

Physical Properties: Hardness = n.d. $D(\text{meas.}) = 7.88\text{--}8.34$ $D(\text{calc.}) = 9.21$

Optical Properties: Transparent in thin layers. *Color:* Gray; colorless in transmitted light. *Luster:* Semimetallic to greasy.

Optical Class: Uniaxial; anomalous weak birefringence. $n = 2.213(5)$

Cell Data: *Space Group:* $P4/nmm$ (synthetic). $a = 3.75(1)$ $c = 6.23(1)$ $Z = 2$

X-ray Powder Pattern: Mt. Sherlova, Russia.

1.028–1.025 (10), 0.998 (10), 1.141 (9), 1.108 (9), 1.037 (9), 3.18 (8), 1.614 (8b)

Chemistry:

	(1)	(2)
Bi ₂ O ₃	94.93	95.49
F	4.33	7.79
H ₂ O	0.51	
CO ₂	1.84	
S	0.50	
–O = F ₂	1.82	3.28
–O = S	0.25	
Total	100.04	100.00

(1) Mt. Sherlova, Russia; after deduction of bismuthinite and bismutite, corresponds to Bi_{1.10}O_{1.00}[F_{0.80}(OH)_{0.20}]_{Σ=1.00}. (2) BiOF.

Occurrence: An alteration product of bismuthinite in bismuth-bearing hydrothermal ore deposits in quartz-topaz-siderophyllite greisens cutting a granite pluton (Mt. Sherlova, Russia); in a quartz-muscovite-topaz greisen (Torrington, Australia).

Association: Bismuthinite, bismuth, bismutite, gold (Mt. Sherlova, Russia); bismuthinite (Torrington, Australia).

Distribution: From Mt. Sherlova, Chita region, eastern Transbaikal, Siberia, Russia. At the Fielders Hill mine, near Torrington, New South Wales, Australia. In Japan, from the Ebisu mine, Hirugawa, Gifu Prefecture. In the Moldava fluorite deposit, Krusné Hory Mountains, Czech Republic.

Name: To honor Academician Aleksandr Nikolayevich Zavaritskii (1884–1952), Russian petrographer.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia.

References: (1) Dolomanova, Y.I., V.M. Senderova, and M.T. Yanchenko (1962) Zavaritskite (BiOF), a new oxyfluoride mineral. *Doklady Acad. Nauk SSSR*, 146, 680–682 (in Russian). (2) (1963) *Amer. Mineral.*, 48, 210 (abs. ref. 1).