

Crystal Data: Monoclinic. *Point Group:* 2/m. As thin lamellae or as flower-shaped blebs, to 20 μm .

Physical Properties: *Cleavage:* n.d. *Fracture:* n.d. *Tenacity:* n.d. Hardness = n.d.
D(meas.) = n.d. D(calc.) = 6.031

Optical Properties: Opaque. *Color:* Medium gray in reflected light. *Streak:* n.d. *Luster:* n.d.
Optical Class: n.d. *Birefractance:* Moderate (air); strong with bluish and brownish tints (oil).
Anisotropism: Strong in shades of gray with purple and brown tints.

Cell Data: *Space Group:* C2/m. $a = 12.6774(25)$ $b = 3.9140(8)$ $c = 14.7581(30)$
 $\beta = 115.31(3)^\circ$ $Z = 4$

X-ray Powder Pattern: Băița Bihor deposit, Bihor County, Romania.
3.448 (100), 2.731 (77), 2.855 (64), 3.637 (55), 3.644 (54), 3.062 (52), 3.335 (43)

Chemistry:	(1)	(2)
Ag	0.02	
Cu	0.42	
Pb	2.38	
Fe	2.92	
Mn	4.88	9.14
Cd	0.17	
Bi	67.76	69.53
Sb	0.35	
As	0.02	
Te	0.15	
Se	0.15	
S	21.10	21.33
Total	100.32	100.00

(1) Băița Bihor deposit, Bihor County, Romania; average of 20 electron microprobe analyses; corresponds to $(\text{Mn}_{0.541}\text{Fe}_{0.319}\text{Pb}_{0.070}\text{Cu}_{0.040}\text{Cd}_{0.009}\text{Ag}_{0.001})_{\Sigma=0.980}(\text{Bi}_{1.975}\text{Sb}_{0.018})_{\Sigma=1.993}(\text{S}_{4.008}\text{Se}_{0.012}\text{Te}_{0.007})_{\Sigma=4.027}$. (2) MnBi₂S₄.

Occurrence: In a geochemically complex, hydrothermal deposit of Bi-Pb-sulfosalts and Bi-chalcogenides.

Association: Cosalite, bismuthinite, chalcopyrite, tetradymite, gold, sphalerite.

Distribution: From the upper part of the Antoniu ore pipe, Băița Bihor (formerly Rézbánya) skarn deposit, Bihor County, Romania.

Name: Honors Grațian Cioflica (1927-2002), former Professor of Mineralogy and Ore Deposits, University of Bucharest, Romania for his work on the geology and mineralogy of the Băița Bihor skarn deposit.

Type Material: South Australian Museum, Adelaide, Australia (G33937).

References: (1) Ciobanu, C.L., J. Brugger, N.J. Cook, S.J. Mills, P. Elliott, G. Damian, and F. Damian (2014) Grațianite, MnBi₂S₄, a new mineral from the Băița Bihor skarn, Romania. *Amer. Mineral.*, 99, 1063-1070.