

Larosite

$(\text{Cu, Ag})_{21}(\text{Pb, Bi})_2\text{S}_{13}$

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Crystal Data: Orthorhombic. *Point Group:* n.d. As small acicular to flamelike crystals, the largest being about 300 μm long.

Physical Properties: Hardness = n.d. VHN = 87–124 (25 g load); 121–130, 124 average (100 g load). D(meas.) = n.d. D(calc.) = 6.19

Optical Properties: Opaque. *Color:* In polished section, pale buff. *Luster:* Metallic.

Pleochroism: Weak. *Anisotropism:* Moderate, in gray and greenish buff.

R_1 – R_2 : (400) 35.4–36.9, (420) 34.9–36.1, (440) 34.4–35.4, (460) 33.8–34.8, (480) 33.2–33.9, (500) 32.7–33.3, (520) 32.2–32.8, (540) 32.0–32.7, (560) 31.9–32.6, (580) 31.9–32.6, (600) 31.8–32.5, (620) 31.9–32.5, (640) 32.0–32.3, (660) 32.2–32.2, (680) 32.3–32.0, (700) 32.5–31.9

Cell Data: *Space Group:* n.d. $a = 22.15$ $b = 24.03$ $c = 11.67$ $Z = 10$

X-ray Powder Pattern: Foster mine, Canada.

1.982 (100), 2.917 (90), 2.846 (60), 2.471 (60), 3.206 (50), 2.555 (40), 2.162 (40)

Chemistry:

	(1)	(2)
Cu	49.0	46.7
Ag	15.6	20.0
Pb	8.8	8.3
Bi	9.2	7.9
S	19.2	17.2
Total	101.8	100.1

(1) Foster mine, Canada; by electron microprobe, average of two analyses; corresponds to $(\text{Cu}_{16.74}\text{Ag}_{3.14})_{\Sigma=19.88}(\text{Pb}_{0.92}\text{Bi}_{0.96})_{\Sigma=1.88}\text{S}_{13.00}$. (2) Do.; by electron microprobe, corresponds to $(\text{Cu}_{17.81}\text{Ag}_{4.49})_{\Sigma=22.30}(\text{Pb}_{0.97}\text{Bi}_{0.92})_{\Sigma=1.89}\text{S}_{13.00}$.

Occurrence: In the central portion of a layered hydrothermal vein.

Association: Chalcocite, stromeyerite, arsenopyrite, galena, tetrahedrite, polybasite.

Distribution: From the Foster mine, Cobalt, Ontario, Canada [TL].

Name: To honor Frederick Alfred LaRose, Canadian blacksmith, one of the discoverers of silver ore at Cobalt.

Type Material: Canadian Geological Survey, Ottawa, Canada, 12126.

References: (1) Petruk, W. (1972) Larosite, a new copper–lead–bismuth sulfide. *Can. Mineral.*, 11, 886–891. (2) (1974) *Amer. Mineral.*, 59, 382 (abs. ref. 1). (3) Criddle, A.J. and C.J. Stanley, Eds. (1993) *Quantitative data file for ore minerals*, 3rd ed. Chapman & Hall, London, 313.