

Crystal Data: Monoclinic. *Point Group:* $2/m$. Lamellar, to 0.5 mm. *Twinning:* On {010}; twin lamellae || [001] commonly observed in thin section.

Physical Properties: Hardness = n.d. VHN = 185 (50 g load). D(meas.) = n.d. D(calc.) = 7.19

Optical Properties: Opaque. *Color:* In polished section, galena-white. *Pleochroism:* Absent in air, absent to weak in oil. *Anisotropism:* Distinct to strong, in pale gray to steel-bluish-black. R₁–R₂: n.d.

Cell Data: *Space Group:* $C2/m$ (subcell). $a = 13.598$ – 13.603 $b = 4.112$
 $c = 25.249$ – 25.248 $\beta = 95.55^\circ$ – 95.59° $Z = 1$

X-ray Powder Pattern: Ivigtut, Greenland.
3.40 (100), 1.754 (90), 2.06 (80), 2.91 (50), 3.62 (40), 3.05 (40), 2.10 (40)

Chemistry:	(1)	(2)	(3)
Ag	8.9	7.04	9.18
Cu	0.2		
Cd		0.51	
Pb	27.7	33.91	28.21
Bi	47.6	41.81	46.24
Sb		0.05	
S	16.5	16.25	16.37
Se		0.04	
Total	100.9	99.61	100.00

(1) Ivigtut, Greenland; by electron microprobe, corresponding to Ag_{4.81}Cu_{0.18}Pb_{7.79}Bi_{13.26}S_{29.96}.
(2) La Roche-Balue quarry, France; by electron microprobe, corresponding to Ag_{3.88}Cd_{0.27}Pb_{9.74}(Bi_{11.90}Sb_{0.02})_{Σ=11.92}(S_{30.16}Se_{0.03})_{Σ=30.19}. (3) Ag₅Pb₈Bi₁₃S₃₀.

Occurrence: Associated with cosalite and as lamellae in galena in the gustavite-galena paragenesis (Ivigtut, Greenland).

Association: Cosalite, galena (Ivigtut, Greenland); gustavite, heyrovskyite, quartz (La Roche-Balue quarry, France).

Distribution: From the Ivigtut cryolite deposit, southwestern Greenland [TL]. In the USA, from near Gabbs, Gabbs district, Nye Co., Nevada; at South Mountain, Owyhee Co., Idaho; and in the Apache Hills, southeast of Hachita, Grant Co., New Mexico. From the Kochbulak gold deposit, Chatkal-Kuramin Mountains, eastern Uzbekistan. At the La Roche-Balue quarry, west of Nantes, Loire Atlantique, France.

Name: For the Vikings, early settlers of Greenland.

Type Material: University of Copenhagen, Copenhagen, Denmark, 1973.236; National Museum of Natural History, Washington, D.C., USA, 136172.

References: (1) Karup-Møller, S. (1977) Mineralogy of some Ag–(Cu)–Pb–Bi sulfide associations. Bull. Geol. Soc. Denmark, 26, 41–68. (2) Makovicky, E. and S. Karup-Møller (1977) Chemistry and crystallography of the lillianite homologous series. Neues Jahrb. Mineral., Abh., 131, 56–82. (3) (1979) Amer. Mineral., 64, 243 (abs. refs. 1 and 2). (4) Makovicky, E., W.G. Mumme, and I.C. Madsen (1992) The crystal structure of vikingite. Neues Jahrb. Mineral., Monatsh., 454–468.

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