

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Crystals are prismatic, elongated and striated along [001], to 1 cm.

Physical Properties: *Cleavage:* Good on {100} and {010}; also on {230}.
Fracture: Conchoidal to uneven. Hardness = 3–3.5 VHN = n.d. D(meas.) = 7.01
 D(calc.) = 7.03

Optical Properties: Opaque. *Color:* Lead-gray. *Streak:* Black. *Luster:* Metallic.
 R_1 – R_2 : (400) 42.3–46.0, (420) 42.2–45.8, (440) 42.1–45.6, (460) 42.0–45.4, (480) 41.8–45.3, (500) 41.6–45.2, (520) 41.4–45.3, (540) 41.1–45.4, (560) 41.0–45.5, (580) 40.7–45.3, (600) 40.3–45.1, (620) 40.1–45.0, (640) 39.8–44.7, (660) 39.6–44.4, (680) 39.3–44.0, (700) 39.0–43.6

Cell Data: *Space Group:* $Pbnm$. $a = 55.99$ – 56.15 $b = 11.549$ – 11.570 $c = 3.99$ – 4.010
 $Z = 4$

X-ray Powder Pattern: n.d.

Chemistry:	(1)	(2)	(3)
Pb	22.1	21.15	22.57
Cu	6.5	6.25	6.92
Fe	trace		
Bi	53.0	54.67	53.04
Sb		0.39	
S	[18.4]	17.51	17.47
Total	[100.0]	99.97	100.00

(1) Gladhammar, Sweden; S by difference, corresponds to Pb_{2.79}Cu_{2.67}Bi_{6.63}S_{15.00}.
 (2) Silver Miller mine, Canada; by electron microprobe, corresponds to Pb_{2.80}Cu_{2.70}
 (Bi_{7.18}Sb_{0.09})_{Σ=7.27}S_{15.00}. (3) Pb₃Cu₃Bi₇S₁₅.

Occurrence: Of hydrothermal origin.

Association: Krupkaite, other aikinite–bismuthinite series members, bismuth.

Distribution: From Gladhammar, Kalmar, Sweden [TL]. In the Beresovsk district, near Yekaterinburg (Sverdlovsk), Middle Ural Mountains, and at Inkur, Transbaikal, Russia. From Baia Borșa, Baia Mare (Nagybánya), Romania. At the Spissko-Gemerske Rudohorie Mountains, Slovakia. In the Loch Shin monzogranite, near Lairg, Scotland. From the Morro Potosi greisen, Rondonia, ??, Brazil. At Yecora, five km west of Iglesia, Sonora, Mexico. From the Beaver Mountains, near Milford, Beaver Co., Utah, and at Manhattan, Nye Co., Nevada, USA. In Canada, in the Drummond (Silver Miller) mine, three km south of Cobalt, Ontario.

Name: Honors Gustav Lindström (1838–1916), Swedish mineral chemist of the Swedish Museum of Natural History, Stockholm, Sweden.

Type Material: Swedish Museum of Natural History, Stockholm, Sweden.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 459–460. (2) Mumme, W.G., E. Welin, and B.J. Wuensch (1976) Crystal chemistry and proposed nomenclature for sulfosalts intermediate in the system bismuthinite–aikinite (Bi₂S₃–CuPbBiS₃). *Amer. Mineral.*, 61, 15–20. (3) Welin, E. (1966) Notes on the mineralogy of Sweden. 5. Bismuth-bearing sulphosalts from Gladhammar, a revision. *Amer. Mineral.*, 53, 351. (4) Horiuchi, H. and B.J. Wuensch (1977) Lindströmite, Cu₃Pb₃Bi₇S₁₅: its space group and ordering scheme for metal atoms in the crystal structure. *Can. Mineral.*, 15, 527–535. (5) Pring, A. and B.G. Hyde (1987) Structural disorder in lindströmite: a bismuthinite–aikinite derivative. *Can. Mineral.*, 25, 393–399. (6) Pring, A., B.A. Grguric, and A.J. Criddle (1998) Lindströmite from Cobalt, Ontario. *Can. Mineral.*, 36, 1139–1148. (7) Topa, D., E. Makovicky, and W.H. Paar (2002) Composition ranges and exolution pairs for the members of the bismuthinite–aikinite series from Felbertal, Austria. *Can. Mineral.*, 40, 849–869.

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