

**Crystal Data:** Cubic. *Point Group:*  $4/m\bar{3}2/m$ . Commonly massive, also fine granular or foliated.

**Physical Properties:** *Cleavage:* {001}, good. *Fracture:* Granular. *Tenacity:* Brittle. Hardness = 2.5–3 VHN = 44–49 (100 g load). D(meas.) = 7.8–8.22 D(calc.) = 8.275

**Optical Properties:** Opaque. *Color:* Lead-gray, bluish; galena-white with a grayish tinge in reflected light. *Streak:* Grayish black. *Luster:* Metallic.

R: (400) 63.4, (420) 63.0, (440) 61.8, (460) 60.1, (480) 58.4, (500) 56.7, (520) 55.3, (540) 54.0, (560) 52.7, (580) 51.6, (600) 50.7, (620) 49.9, (640) 49.4, (660) 48.8, (680) 48.4, (700) 48.2

**Cell Data:** *Space Group:*  $Fm\bar{3}m$ .  $a = 6.1243$   $Z = 4$

**X-ray Powder Pattern:** Synthetic.

3.062 (100), 2.165 (70), 3.536 (30), 1.369 (25), 1.768 (20), 1.846 (18), 1.250 (16)

**Chemistry:**

	(1)	(2)
Pb	70.85	72.34
Co	1.10	
Se	27.99	27.66
Total	99.94	100.00

(1) Clausthal, Germany. (2) PbSe.

**Polymorphism & Series:** Forms a series with galena.

**Occurrence:** Associated in low-sulfur hydrothermal deposits with other selenides, also in mercury deposits. Probably of secondary origin in some deposits.

**Association:** Tiemannite, klockmannite, berzelianite, umangite, gold, stibiopalladinite, uraninite.

**Distribution:** Perhaps the most common selenide. In Germany, from the Charlotte mine, Clausthal, 13 km south-southwest of Goslar [TL], Tilkerode, Lerbach, and Zorge, in the Harz Mountains, and at Schneeberg, Saxony. At Skrikerum, Sweden. From Hope's Nose, Torquay, Devon, England. In the Czech Republic, at Bukov, near Tisnova; in the Petrovice uranium deposit, near Žďár; and the Předbořice uranium deposit, near Krásna Hora. In the USA, in the Blue Range Wilderness Area, Greenlee Co., Arizona; and at the Essex mine, Darwin, Inyo Co., California. In the Goldfields district, Saskatchewan; in the Kidd Creek mine, near Timmins, and the Hemlo gold deposit, Thunder Bay district, Ontario, Canada. In Argentina, from the Sierra de Umango; in the Santa Brigida mine; at Tuminico, Sierra de Cacho; and from Los Llantenes, La Rioja Province, and from Cerro de Cacheuta, Mendoza Province. At the Pacajake mine, Hiaco, 24 km east-northeast of Colquechaca, Potosí, Bolivia. From El Sharana, Northern Territory, Australia. At Tsumeb, Namibia. Other minor occurrences are known.

**Name:** For the locality at Clausthal, Germany.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 204–205. (2) Ramsdell, ?? (1940) ??title?? Amer. Mineral., 25, 281–?? (3) (1955) NBS Circ. 539, 5, 38. (4) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 100.