

**Crystal Data:** Cubic. *Point Group:*  $\bar{4}3m$ . Crystals are tetrahedral, to 0.5 cm; {111} is typically dull,  $\{\bar{1}11\}$  is bright; may be striated  $\parallel [1\bar{1}0]$ ; commonly massive, compact, granular. *Twining:* Common with [111] as twin axis.

**Physical Properties:** *Fracture:* Uneven to conchoidal. *Tenacity:* Brittle. Hardness = 2.5 VHN = 22–26 (5 g load). D(meas.) = 8.19–8.47 D(calc.) = 8.239

**Optical Properties:** Opaque. *Color:* Steel-gray to brownish lead-gray; in polished section, pale gray. *Streak:* Nearly black. *Luster:* Metallic.

R: (400) 34.5, (420) 35.2, (440) 35.0, (460) 34.0, (480) 32.7, (500) 31.6, (520) 30.6, (540) 29.9, (560) 29.4, (580) 29.0, (600) 28.8, (620) 28.6, (640) 28.5, (660) 28.4, (680) 28.3, (700) 28.2

**Cell Data:** *Space Group:*  $F\bar{4}3m$ .  $a = 6.085$  (synthetic).  $Z = 4$

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

3.51 (100), 2.151 (50), 1.835 (30), 3.04 (16), 1.396 (10), 1.2424 (8), 1.521 (6)

<b>Chemistry:</b>	(1)	(2)	(3)		(1)	(2)	(3)
Hg	69.84	70.4	71.75	S	0.37		
Cu		0.1		insol.	0.06		
Cd	0.34						
Se	29.19	28.9	28.25	Total	99.80	99.4	100.00

(1) Utah, USA. (2) Hope's Nose, England; by electron microprobe. (3) HgSe.

**Occurrence:** In hydrothermal veins with other selenides and calcite.

**Mineral Group:** Sphalerite group.

**Association:** Clausthalite, eucairite, naumannite, klockmannite, umangite, metacinnabar, galena, sphalerite, barite, manganese oxides, calcite.

**Distribution:** In Germany, in the Harz Mountains, from Clausthal [TL], Tilkerode, Lerbach, and Zorge; at Niederschlema, Saxony. From Hope's Nose, Torquay, Devon, England. At Silver Glen, Alva, Scotland. In the Petrovice uranium deposit, near Žďár, and the Předbořice uranium deposit, near Krásna Hora, Czech Republic. From the Zapadno-Ozernoe Cu–Zn deposit, Southern Ural Mountains, Russia. In the La'erma and Qiongmo gold deposits, western Qinling Mountains, Shaanxi Province, China. In Bolivia, at the Pacajake mine, Hiaco, 24 km east-northeast of Colquechaca, Potosí. In Argentina, in the Sierra de Umango, at the Santa Brigida mine, and from Tuminico, Sierra de Cacho, La Rioja Province. In Mexico, at Rio Blanco, Pinal de Arvole, Artiaga district, and the Cadereyta district, Queretaro, Mexico. In the USA, near Marysville, Ohio district, Piute Co., Utah; in California, from New Idria, San Benito Co., California. At Nicholson Bay, Lake Athabasca, Saskatchewan, Canada. From El Sharana, Northern Territories, Australia.

**Name:** To honor Johann Carl Wilhelm Ferdinand Tiemann (1848–1899), chemist of Berlin, Germany, who discovered the mineral.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 217–218. (2) Early, J.W. (1950) Description and synthesis of the selenide minerals. *Amer. Mineral.*, 35, 337–364. (3) ?? (1970) ??title?? *Zeits. Krist.*, 132, 276–287 str MFG ordered (4) (1957) *NBS Circ.* 539, 7, 35. (5) Criddle, A.J. and C.J. Stanley, Eds. (1993) *Quantitative data file for ore minerals*, 3rd ed. Chapman & Hall, London, 575.

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