

**Crystal Data:** Cubic. *Point Group:*  $2/m\bar{3}$ . Octahedral crystals common, also cubo-octahedral, to 5 cm; as globular aggregates.

**Physical Properties:** *Cleavage:* Perfect on {001}. *Fracture:* Uneven to subconchoidal. *Tenacity:* Brittle. Hardness = 4 VHN = n.d. D(meas.) = 3.463 D(calc.) = 3.444

**Optical Properties:** Opaque to subtranslucent. *Color:* Reddish brown to brownish black; in polished section grayish white with very pale brownish hue, with red internal reflections; deep red in transmitted light. *Streak:* Brownish red. *Luster:* Metallic-adamantine.

*Optical Class:* Isotropic.  $n = 2.69$  (Li).

R: (400) 24.9, (420) 24.7, (440) 24.6, (460) 24.5, (480) 24.4, (500) 24.3, (520) 24.1, (540) 23.7, (560) 23.3, (580) 22.8, (600) 22.2, (620) 21.6, (640) 21.2, (660) 20.9, (680) 20.7, (700) 20.7

**Cell Data:** *Space Group:*  $Pa\bar{3}$ .  $a = 6.104(2)$   $Z = 4$

**X-ray Powder Pattern:** Raddusa, Sicily, Italy.

3.07 (100), 1.175 (80), 1.843 (70), 0.990 (70), 2.75 (50), 2.51 (50), 2.04 (50)

Chemistry:	(1)	(2)	(3)
Mn	46.47	46.28	46.14
Fe	0.03		
S	53.27	53.51	53.86
SiO <sub>2</sub>	0.16		
Total	99.93	99.79	100.00

(1–2) Raddusa, Sicily, Italy. (3) MnS<sub>2</sub>.

**Mineral Group:** Pyrite group.

**Occurrence:** A low-temperature mineral commonly associated with solfataric waters, in clay deposits rich in sulfur, and from decomposed extrusive rocks.

**Association:** Sulfur, realgar, gypsum, calcite.

**Distribution:** From Slovakia, at Kalinka, near Banská Bystrica (Neusohl) [TL], and at Banská Štiavnica (Schemnitz). From Jezioro and Grzybow, and in the Machow mine, Tarnobrzeg, Poland. In good crystals at the Desticella mine, Raddusa, Sicily, Italy. At the Ronneberg uranium deposit, Gera district, Thuringia, Germany. From the Yazovsk and Podgornensk deposits, Aktyubinsk, Ural Mountains, Russia. In the Lake Wakatipu district, and at Collingwood, New Zealand. In the USA, from Texas, at the Gulf and Big Hill salt domes, Matagorda Co.; the High Island salt dome, Galveston Co.; the Boling salt dome, Wharton Co.; and the Fannett salt dome, Jefferson Co.

**Name:** In honor of Joseph Ritter von Hauer (1778–1863), and his son Franz Ritter von Hauer (1822–1899), Austrian geologists.

**Type Material:** Natural History Museum, Vienna, Austria, A.h.894.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 293–294. (2) Chattopadhyay, T., H.G. von Schnering, R.F.D. Stansfield, and G.J. McIntyre (1992) X-ray and neutron diffraction study of the crystal structure of MnS<sub>2</sub>. *Zeits. Krist.*, 199, 13–24. (3) Berry, L.G. and R.M. Thompson (1962) X-ray powder data for the ore minerals. *Geol. Soc. Amer. Mem.* 85, 89–90. (4) Criddle, A.J. and C.J. Stanley, Eds. (1993) *Quantitative data file for ore minerals*, 3rd ed. Chapman & Hall, London, 221.