

**Crystal Data:** Cubic. *Point Group:*  $4/m\bar{3}2/m$ . Massive, scaly to platy, as exsolution lamellae parallel to {0001} of troilite, and as discrete grains to 500  $\mu\text{m}$  across in kamacite.

**Physical Properties:** *Cleavage:* Distinct. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 5 VHN = 260–303 (100 g load). D(meas.) = 3.81 D(calc.) = 3.842

**Optical Properties:** Opaque. *Color:* Black. *Streak:* Brown. *Luster:* Metallic, brilliant. R: (400) 33.3, (420) 33.2, (440) 33.1, (460) 33.0, (480) 33.1, (500) 33.1, (520) 33.1, (540) 33.0, (560) 33.0, (580) 32.9, (600) 32.8, (620) 32.7, (640) 32.4, (660) 32.3, (680) 32.1, (700) 31.9

**Cell Data:** *Space Group:*  $Fd\bar{3}m$ .  $a = 9.966$   $Z = 8$

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

3.01 (10), 1.77 (10), 3.53 (8), 2.50 (8), 1.92 (8), 1.30 (8), 1.25 (8)

Chemistry:	(1)	(2)	(3)
Fe	20.10	16.7	19.38
Mn		2.8	
Mg		0.06	
Cr	35.91	34.9	36.10
Ti		0.10	
S	42.69	44.3	44.52
Total	98.70	98.86	100.00

(1) Coahuila meteorite; average of three analyses, corresponding to Fe<sub>1.08</sub>Cr<sub>2.08</sub>S<sub>4.00</sub>.

(2) Blithfield meteorite; by electron microprobe, average of 15 analyses; corresponding to (Fe<sub>0.87</sub>Mn<sub>0.15</sub>Mg<sub>0.01</sub>)<sub>Σ=1.03</sub>(Cr<sub>1.94</sub>Ti<sub>0.01</sub>)<sub>Σ=1.95</sub>S<sub>4.00</sub>. (3) FeCr<sub>2</sub>S<sub>4</sub>.

**Mineral Group:** Linnaeite group.

**Occurrence:** In small amounts in many meteorites.

**Association:** Troilite, kamacite, orthoenstatite, plagioclase, alabandite, graphite, schreibersite.

**Distribution:** In iron meteorites, such as the Coahuila [TL], North Chile, and Scottsville hexahedrites, and the Cosby's Creek, Toluca, Cranbourne, and Mundrabilla octahedrites. In stony meteorites, including the Bustee, Mayo Belwa, Norton County, and Cumberland Falls achondrites, the Hvittis and Blythfield enstatite chondrites, and Odessa olivine-bronzite chondrite. Now found in many additional meteorites.

**Name:** For Professor Gabriel Auguste Daubr e (1814–1896), of Paris, France, French meteorite researcher.

**Type Material:** n.d. [??first from the Bolson de Mapimi iron meteorite - where is it?? = Coahuila now, ck??]

**References:** (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 265. (2) Buchwald, V.F. (1977) The mineralogy of iron meteorites. Phil. Trans. Royal Soc. London, A. 286, 453–491. (3) Rubin, A.E. (1984) The Blithfield meteorite and the origin of sulfide-rich, metal-poor clasts and inclusions in brecciated enstatite chondrites. Earth and Planetary Science Letters, 67, 273–283. (4) Lundqvist, D. (1943) The crystal structure of daubr elite. Arkiv Kemi Min. Geol., 17B(12), 1–4. (5) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 135.