Kamacite α–(Fe, Ni)

Crystal Data: Cubic. *Point Group:* $4/m\ \overline{3}\ 2/m$. As plates and lamellar masses and in regular intergrowth with taenite. May occur in crystals, to 30 cm; in extended plates and ribbons in Widmanstätten bands.

Physical Properties: Hardness = n.d. VHN = 145–165 (100 g load). D(meas.) = n.d. D(calc.) = [7.90] Magnetic.

Optical Properties: Opaque. *Color:* Steel-gray to iron-black. *Luster:* Metallic.
R: n.d.

Cell Data: *Space Group:* $Fm3m$ (disordered phase). a = ∼8.60 Z = 54

X-ray Powder Pattern: Linville nickel-rich ataxite.
2.031 (100), 1.170 (70), 1.967 (60), 1.435 (30), 3.032 (10), 2.953 (10), 1.481 (10)

Chemistry:

	(1)	(2)
Fe	93.75	93.09
Ni	5.43	6.69
Co	0.58	0.25
C		0.02
P	0.19	
S	0.08	
Total	100.03	100.05

(1) North Chile hexahedrite. (2) Welland octahedrite.

Occurrence: A major constituent of iron meteorites (siderites) and present in varying amounts in most other meteorites except certain of the stony meteorites (aerolites).

Association: Taenite, graphite, cohenite, moissanite, schreibersite, troilite, daubréelite, oldhamite, other meteorite minerals.

Distribution: Terrestrial occurrences at Blaafjeld, near Ovifak, Disko Island, Greenland. In Germany, from Bühl, near Weimar, Hesse. On the Putorana Plateau, Taimyr Peninsula, Russia. Otherwise from meteorites.

Name: From the Greek for *shaft* or *lath*.

Type Material: n.d.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 114–116. (2) Ramsden, A.R. and E.N. Cameron (1966) Kamacite and taenite superstructures and a metastable tetragonal phase in iron meteorites. Amer. Mineral., 51, 37–55.