

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As imperfect platy to needlelike crystals; also rimming or in eutectic dendritic intergrowths with iron.

Physical Properties: *Cleavage:* {100}, {010}, and {001}. *Tenacity:* Very brittle. Hardness = 5.5–6 D(meas.) = 7.20–7.65 D(calc.) = 7.68 (synthetic Fe₃C). Strongly magnetic.

Optical Properties: Opaque. *Color:* Tin-white; oxidizes to light bronze then golden yellow. *Luster:* Metallic.

Optical Class: Biaxial.

R_1 – R_2 : (400) 51.8–54.7, (420) 52.6–55.2, (440) 53.2–55.7, (460) 53.8–56.2, (480) 54.4–56.7, (500) 55.0–57.1, (520) 55.6–57.7, (540) 56.2–58.2, (560) 56.8–58.8, (580) 57.4–59.3, (600) 58.0–60.0, (620) 58.7–60.6, (640) 59.3–61.3, (660) 60.0–62.0, (680) 60.8–62.8, (700) 61.6–63.6

Cell Data: *Space Group:* $Pbnm$. $a = 4.518$ $b = 5.069$ $c = 6.736$ $Z = 4$

X-ray Powder Pattern: Synthetic Fe₃C. (ICDD 23-1113). 2.01 (100), 2.06 (70), 2.38 (65), 2.10 (60), 2.02 (60), 1.97 (55), 1.85 (40)

Chemistry:

	(1)	(2)	(3)
Fe	89.81	91.23	93.31
Co	0.69	0.34	
Ni	3.08	0.74	
C	6.42	[6.7]	6.69
P		0.01	
Total	100.00	[99.02]	100.00

(1) Magura meteorite. (2) Kitdlît dike, Disko Island, Greenland; by electron microprobe, C by difference. (3) Fe₃C.

Occurrence: In iron meteorites. Also in terrestrial iron, in mafic volcanic rocks chemically reduced from assimilation of graphite.

Association: Iron, schreibersite, troilite, wüstite.

Distribution: Common in iron meteorites. In Greenland, at Niaqornat (Niakornak) and on Disko Island, near Uivfaq and Kitdlît. At Bühl, near Weimar, Hesse, Germany. From Kopeysk, Chelyabinsk coal basin, Southern Ural Mountains, and in the Ijim massif, western Sayan Mountains, Tuva, Russia. In the Burobaiskii massif, eastern Kazakhstan.

Name: Honors Emil Wilhelm Cohen (1842–1905), Professor of Mineralogy, University of Greifswald, Greifswald, Germany.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 122–123. (2) Ulf-Møller, F. (1985) Solidification history of the Kitdlît Lens: immiscible metal and sulphide liquids from a basaltic dyke on Disko, central West Greenland. *J. Petrol.*, 26, 64–91.