

Crystal Data: Hexagonal. *Point Group:* 6mm. As hexagonal plates, to 5 mm, platy to elongated on [10*0], rounded; polytypes are commonly syntactically intergrown.

Physical Properties: *Cleavage:* {0001}, poor. *Fracture:* Conchoidal. Hardness = 9.5
D(meas.) = 3.1-3.29 D(calc.) = 3.21

Optical Properties: Transparent. *Color:* Green, emerald-green, blue-green, deep blue, blue-black, black; rarely pale green, yellow, or colorless; may be zoned. *Luster:* Metallic to adamantine.
Optical Class: Uniaxial (+). $\omega = 2.654$ $\varepsilon = 2.697$ *Pleochroism:* Weak; *O* = light blue; *E* = deep indigo.

Cell Data: *Space Group:* $P6_3mc$ (synthetic, 6H polytype). $a = 3.073$ $c = 15.08$ $Z = 6$

X-ray Powder Pattern: Synthetic (6H).

2.511 (100), 2.621 (40), 1.311 (40), 1.537 (35), 2.352 (20), 1.286 (15), 1.087 (15)

Chemistry:	(1)	(2)	(3)
Si	68.54	70.01	70.05
C	31.00	29.99	29.95
Total	99.54	100.00	100.00

(1) Udachnaya kimberlite, Russia; by electron microprobe. (2) Metaxades, Greece; by electron microprobe. (3) SiC.

Polymorphism & Series: Polytypes 2H, 3C, 4H, 5H, 6H, 10R, 15R, 33R have been noted (of 74 known to exist).

Occurrence: Rare: formed in an iron meteorite; as inclusions in diamond; in diamondiferous kimberlites and lamproites, and in eclogite; in volcanic breccias and rhyolite; in alluvium.

Association: Iron, diamond (Canyon Diablo); quartz, diamond (Fuxian, China); garnet, coesite, clinopyroxene, quartz, rutile, graphite, pyrrhotite, cobaltian pyrite (Udachnaya kimberlite, Russia).

Distribution: In the Canyon Diablo meteorite, USA. From the Sevan-Amasii ophiolite, Dzoraget River, Armenia. Around Metaxades, Greece. In China, from near Fuxian, Liaoning Province, and in the Hong district, Tibet. From the Udachnaya, Mir, and Aikhal diamond mines, and elsewhere in Sakha, Russia. In the Argyle diamond mine, Kimberley district, Western Australia. At a beach along the Turkish coast of the Mediterranean Sea, ~150 km NW from Izmir (most likely derived from Tertiary volcanic rocks outcropping in the area).

Name: For Ferdinand F. Henri *Moissan* (1852-1907), French chemist, who noted the species in the Canyon Diablo meteorite.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 123-124. (2) Gevorkyan, R.G., G.A. Gurkina, and F.V. Kaminskii (1974) New type of natural moissanite from Armenia. *Zap. Vses. Mineral. Obshch.*, 7, 106-110 (in Russian). (3) Leung, I., W. Guo, I. Friedman, and J. Gleason (1990) Natural occurrence of silicon carbide in a diamondiferous kimberlite from Fuxian. *Nature*, 346, 352-354. (4) Marshintsev, V.K. (1990) Natural silicon carbide in kimberlitic rocks of Yakutia [Sakha]. *Mineral. Zhurnal*, 12(3), 17-26 (in Russian). (5) Filippidis, A. (1993) New find of moissanite in the Metaxades zeolite-bearing volcanoclastic rocks, Thrace county, Greece. *Neues Jahrb. Mineral., Monatsh.*, 521-527. (6) Mathez, E.A., R.A. Fogel, I.D. Hutcheon, and V.K. Marshintsev (1995) Carbon isotopic composition and origin of SiC from kimberlites of Yakutia [Sakha], Russia. *Geochim. Cosmochim. Acta*, 59, 781-791. (7) Hannam, A.L. and P.T.B. Shaffer (1969) Revised X-ray diffraction line intensities for silicon carbide polytypes. *J. Appl. Cryst.*, 2, 45-48. (8) Di Pierro, S., E. Gnos, B.H. Grobety, T. Armbruster, S.M. Bernasconi, and P. Ulmer (2003) Rock-forming moissanite (natural α -silicon carbide). *Amer. Mineral.*, 88, 1817-1821 [4H, 6H, 15R polytypes]. (8) Di Pierro, S. and E. Gnos (2016) Ca-Al-silicate inclusions in natural moissanite (SiC), *Amer. Mineral.*, 101, 1817-1821.