Suessite $(Fe, Ni)_3Si$

Crystal Data: Cubic. *Point Group:* $4/m\ \overline{3}\ 2/m$. As anhedral interstitial vein fillings, to about 150 μm long; as cubic crystals, skeletal, to 0.3 mm.

Physical Properties: Hardness = n.d. D(meas.) = n.d. D(calc.) = 7.08 Strongly ferromagnetic.

Optical Properties: Opaque. *Color:* Cream-white in reflected light.
Optical Class: Isotropic.
R: (470) 48.5, (546) 51.6, (589) 53.5, (650) 50.0

Cell Data: *Space Group:* $Im3m$. $a = 2.841(2)$ $Z = [0.5]$

X-ray Powder Pattern: North Haig meteorite.
2.005 (10), 1.160 (3), 1.42 (1)

Chemistry:

	(1)	(2)
Fe	84.7	83.1
Cr	0.10	0.04
Co	0.21	0.27
Ni	1.6	4.5
Si	15.3	13.7
P	0.06	0.17
Total	101.97	101.78

(1) North Haig meteorite; by electron microprobe, corresponds to $(Fe_{2.78}Ni_{0.05}Co_{0.01})_{\Sigma=2.84}(Si, P)_{1.00}$. (2) Do.; by electron microprobe, corresponds to $(Fe_{2.98}Ni_{0.15}Co_{0.01})_{\Sigma=3.14}(Si, P)_{1.00}$.

Occurrence: In a highly reduced brecciated meteorite (North Haig meteorite); in amygdaloidal basaltic porphyrite (Chatkal Range, Russia).

Association: Olivine, pigeonite, kamacite, troilite, carbonaceous material (North Haig meteorite); khamrabaevite (Chatkal Range, Russia).

Distribution: In the North Haig olivine-pigeonite achondrite (ureilite) meteorite. From the Ir-Tash stream basin, Arashan Mountains, Chatkal Range, Uzbekistan.

Name: To honor Dr. Hans E. Suess (1909–1993), Austrian-American geochemist, Professor of Chemistry, University of California at San Diego, La Jolla, California, USA, for his work in cosmochemistry and meteoritics.

Type Material: Institute of Meteoritics, University of New Mexico, Albuquerque, New Mexico, USA.

References: (1) Keil, K., J.L. Berkley, and L.H. Fuchs (1982) Suessite, Fe_3Si: a new mineral in the North Haig ureilite. Amer. Mineral., 67, 126–131. (2) Novgorodova, M.I., R.G. Yusupov, M.T. Dmitrieva, A.I. Tsepin, A.V. Sivtsov, and A.I. Gorshkov (1984) Khamrabaevite, (Ti,V,Fe)C, a new mineral. Zap. Vses. Mineral. Obshch., 113, 697–703 (in Russian).