

# Fukuchilite

# (Cu, Fe)S<sub>2</sub>

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**Crystal Data:** Cubic. *Point Group:*  $[2/m\bar{3}]$ . In a uniform, nearly eutecticlike intergrowth with pyrite and covellite, with grains  $< 1\ \mu\text{m}$ .

**Physical Properties:** Hardness =  $\sim 4$ . VHN = n.d. D(meas.) = 4.86 D(calc.) = 4.90

**Optical Properties:** Opaque. *Color:* Dark brownish gray; in polished section, pinkish brown, very similar to bornite. *Luster:* Submetallic.

R: n.d.

**Cell Data:** *Space Group:*  $Pa\bar{3}$  (by analogy to other pyrite group members).  $a = 5.58$   $Z = 4$

**X-ray Powder Pattern:** Hanawa mine, Japan.

2.789 (vs), 3.21 (s), 1.685 (s), 2.281 (m), 2.497 (w), 1.971 (w), 1.545 (w)

## Chemistry:

	(1)	(2)
Cu	37.9 – 40.6	37.90
Fe	10.5 – 12.9	11.10
S	49.2 – 53.3	51.00
Total		100.00

(1) Hanawa mine, Japan; by X-ray fluorescence, range of analyses. (2) (Cu, Fe)S<sub>2</sub> with Cu:Fe = 3:1.

**Mineral Group:** Pyrite group.

**Occurrence:** In an ore body of gypsum–anhydrite, in interstices of small masses consisting of barite, covellite, and pyrite.

**Association:** Pyrite, covellite, barite, gypsum.

**Distribution:** From the Hanawa mine, Akita Prefecture, Japan.

**Name:** Honors Nobuyo Fukuchi (1877–1934), Japanese mineralogist and geologist, who studied many Japanese Kuroko-type deposits.

**Type Material:** National Science Museum, Tokyo, Japan, M15937; National Museum of Natural History, Washington, D.C., USA, 135971.

**References:** (1) Kajiware, Y. (1969) Fukuchilite, Cu<sub>3</sub>FeS<sub>8</sub>, a new mineral from the Hanawa mine, Akita Prefecture, Japan. Mineral. J. (Japan), 5, 399–416. (2) (1970) Amer. Mineral., 55, 1811 (abs. ref. 1). (3) Shimazaki, H. and L.A. Clark (1970) Synthetic FeS<sub>2</sub>–CuS<sub>2</sub> solid solution and fukuchilite-like minerals. Can. Mineral., 10, 648–664.