

# 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) Kajiwara, 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.