Miharaite \( \text{PbCu}_{4}\text{FeBiS}_{6} \)

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Crystal Data: Orthorhombic. Point Group: \( 2/m \ 2/m \ 2/m \) or \( mm2 \). As grains, to 0.3 mm, or irregular masses; as intergrowths with other sulfides.

Physical Properties: Hardness = n.d. VHN = 190–230 (25 g load). \( D(\text{meas.}) = \text{n.d.} \)


Cell Data: Space Group: \( \text{Pbmn}, \text{Pb}2\text{m}, \) or \( \text{Pb}2\text{1} \text{m} \). \( a = 10.854(4) \quad b = 11.985(4) \quad c = 3.871(1) \quad Z = 2 \)

X-ray Powder Pattern: Mihara mine, Japan.
3.03 (100), 3.00 (70), 1.935 (70), 2.18 (50), 3.25 (30), 3.11 (30), 2.70 (30)

Chemistry:

\[
\begin{array}{ccc}
\text{Pb} & 22.72 & 23.10 & 22.56 \\
\text{Cu} & 28.24 & 27.62 & 27.67 \\
\text{Fe} & 6.05 & 6.05 & 6.08 \\
\text{Bi} & 22.75 & 23.54 & 22.75 \\
\text{S} & 20.60 & 20.66 & 20.94 \\
\text{Total} & 100.36 & 100.97 & 100.00
\end{array}
\]

(1) Mihara mine, Japan; by electron microprobe, average of six analyses; corresponds to \( \text{Pb}_{1.01}\text{Cu}_{4.09}\text{Fe}_{1.00}\text{Bi}_{1.00}\text{S}_{5.91} \). (2) Ulsan mine, Korea; by electron microprobe, average of 13 analyses on five grains; corresponds to \( \text{Pb}_{1.03}\text{Cu}_{4.06}\text{Fe}_{1.06}\text{Bi}_{1.04}\text{S}_{5.94} \). (3) PbCu\(_4\)FeBiS\(_6\).

Occurrence: As disseminations in a hedenbergite-garnet-epidote contact metamorphic deposit (Mihara mine, Japan); in a mineralized quartz vein through granite (Imooka mine, Japan); in a bornite vein in copper skarn ore (Ulsan mine, Korea).

Association: Wittichenite, bornite, chalcopyrite, galena.

Distribution: In Japan, in Okayama Prefecture, from the Honpi deposit, Mihara mine [TL], and the Imo-oka mine; in Hyogo Prefecture, in the Akenobe mine. In the Ulsan mine, Kyongsang Province, South Korea. At the Hol Kol Au–Cu mine, about 75 km southeast of Pyongyang, Suan Co., North Korea. From Neves-Corvo, Portugal.

Name: For the type locality at the Mihara mine, Japan.

Type Material: The Institute of Mineralogy, Petrology, and Economic Geology, Faculty of Science, Tohoku University, Sendai, Japan.


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