Bukovskýite \( \text{Fe}^{3+}_2(\text{AsO}_4)(\text{SO}_4)(\text{OH})\cdot 7\text{H}_2\text{O} \)

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Crystal Data: Triclinic. Point Group: \( \bar{1} \) or 1. Crystals, needlelike, elongated along [011], to 0.5 mm, showing \{0kl\} forms, terminated by \{100\} and \{30\}, may be in radial groups; generally in aggregates, forming nodules.


\( \alpha = \text{n.d.} \quad \beta = 1.570–1.582 (\beta') \quad \gamma = 1.626–1.631 (\gamma') \quad 2V(\text{meas.}) = \text{n.d.} \)

Cell Data: Space Group: \( \text{P}_{\text{1}} \) or \( \text{P}_1 \). \( a = 10.722(5) \quad b = 14.079(5) \quad c = 10.284(5) \)
\( \alpha = 93.50(4)^\circ \quad \beta = 115.96(4)^\circ \quad \gamma = 90.27(4)^\circ \quad Z = 4 \)

X-ray Powder Pattern: Kaňk, Czech Republic. 9.197 (100), 8.884 (60), 9.625 (43), 3.077 (36), 3.920 (35), 2.458 (23), 5.338 (20)

Chemistry:

\[
\begin{array}{ccc}
\text{SO}_3 & 16.50 & 16.35 \\
\text{As}_2\text{O}_5 & 22.10 & 23.46 \\
\text{Fe}_2\text{O}_3 & 32.42 & 32.60 \\
\text{H}_2\text{O} & 28.12 & 27.59 \\
\hline
\text{Total} & 99.14 & 100.00
\end{array}
\]

(1) Kaňk, Czech Republic; original total given as 99.32%, presence of \( \text{AsO}_4 \), \( \text{SO}_4 \), and \( (\text{OH})\)\(^{\text{I}}\) confirmed by IR; assuming \( \text{H}_2\text{O}^- \ 0.69\% \), corresponds to \( \text{Fe}_{2.00}(\text{AsO}_4)_{0.95}(\text{SO}_4)_{1.02}(\text{OH})_{1.00}\cdot 7\text{H}_2\text{O} \).

(2) \( \text{Fe}_2(\text{AsO}_4)(\text{SO}_4)(\text{OH})\cdot 7\text{H}_2\text{O} \).

Occurrence: A post-mining surficial weathering product of Fe–As sulfides.

Association: Arsenopyrite, pyrite, quartz.

Distribution: Found in dumps of the Kuntery and other mines, Kaňk, 2.5 km north of Kutná Hora, Czech Republic.

Name: To honor Antonín Bukovský (1865–1950), Professor at the secondary school of Kutná Hora, Czech Republic, who first analyzed the mineral.

Type Material: Charles University, 14240; National Museum, Prague, Czech Republic, 53411.


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