

Kaňkite**Fe³⁺AsO₄•3.5H₂O**

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Crystal Data: Monoclinic. *Point Group:* n.d. As spherulites and botryoidal crusts of fibrous to elongated tabular spearlike crystals, less than 10 μm .

Physical Properties: *Fracture:* Uneven. Hardness = 2–3 D(meas.) = 2.60–2.70 D(calc.) = 2.732

Optical Properties: Translucent. *Color:* Yellowish green, paler greenish yellow on exposure to air; very pale grayish yellow to pale yellow in transmitted light. *Streak:* Grayish yellow. *Luster:* Dull to vitreous.

Optical Class: Biaxial. *Orientation:* Length-fast. $\alpha = 1.664(2)$ $\beta = \text{n.d.}$ $\gamma = 1.680(2)$ 2V(meas.) = n.d.

Cell Data: *Space Group:* n.d. $a = 18.803(15)$ $b = 17.490(18)$ $c = 7.633(5)$ $\beta = 92.71(5)^\circ$ $Z = 16$

X-ray Powder Pattern: Kaňk, Czech Republic.

12.8 (100), 4.764 (34), 2.630 (29), 7.56 (25), 4.258 (25), 3.697 (22b), 7.22 (21)

Chemistry:

	(1)	(2)	(3)
SO ₃	0.41	2.25	
As ₂ O ₅	43.92	41.11	44.57
Fe ₂ O ₃	31.84	35.02	30.97
H ₂ O ⁺	13.91		
H ₂ O [−]	9.91		
H ₂ O		21.00	24.46
Total	[99.99]	99.38	100.00

(1) Kaňk, Czech Republic; presence of SO₄, AsO₄, and H₂O confirmed by IR; original total 100.40%, after deduction of gypsum and quartz impurities, corresponds to Fe_{1.02}(As_{0.97}S_{0.07})_{Σ=1.04}O₄•3.37H₂O. (2) Suzukura mine, Japan; corresponds to Fe_{1.07}(As_{0.87}S_{0.07})_{Σ=0.94}O₄•2.85H₂O. (3) Fe(AsO₄)•3.5H₂O.

Occurrence: A rare secondary mineral in highly weathered mine dumps containing arsenopyrite (Kaňk, Czech Republic).

Association: Scorodite, pitticite, parascorodite, zýkaite, arsenopyrite, gypsum, “limonite”, quartz (Kaňk, Czech Republic); scorodite, parascorodite, vajdakite, arsenic, pyrite, proustite (Svornost mine, Czech Republic).

Distribution: From the Šafary and Kuntéry mine dumps, near Kaňk, Kutná Hora district, and in the Svornost mine, Jáchymov (Joachimsthal), Czech Republic. In Germany, at Munzig, near Meissen, and at Brand-Erbisdorf, Saxony; from Menzenschwand, Black Forest. In England, at the King’s Wood mine, Buckfastleigh, Devon, and from the South Terras mine, St. Stephen-in-Brannel, Cornwall. At the Suzukura mine, seven km north-northeast of Enzan, Yamanashi Prefecture, Japan.

Name: For the locality that yielded the first specimens, Kaňk, Czech Republic.

Type Material: Charles University, Prague, Czech Republic, 20135; National Museum of Natural History, Washington, D.C., USA, 144939.

References: (1) Čech, F., J. Jansa, and F. Novák (1976) Kaňkite, FeAsO₄•3½H₂O, a new mineral. Neues Jahrb. Mineral., Monatsh., 426–436. (2) (1977) Amer. Mineral., 62, 594 (abs. ref. 1). (3) Kato, A., S. Matsubara, K. Nagashima, I. Nakai, and M. Shimizu (1984) Kaňkite from the Suzukura mine, Enzan city, Yamanashi Prefecture, Japan. Mineral. J. (Japan), 12, 6–14.

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