

Cobaltkoritnigite

(Co, Zn)(AsO₃OH)·H₂O

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Crystal Data: Triclinic, pseudomonoclinic (synthetic, and by analogy to koritnigite). *Point Group:* $\bar{1}$. Crystals tabular, to 15 μm .

Physical Properties: *Cleavage:* {010}, perfect; {100}, good. *Hardness* = [2]
D(meas.) = n.d. D(calc.) = [3.46]

Optical Properties: Transparent. *Color:* Deep violet, deep rose-red, *Streak:* White.
Luster: Vitreous.

Optical Class: Biaxial (+). *Pleochroism:* Strong; X = deep violet; Y = reddish violet; Z = bluish violet. *Orientation:* $X \wedge b < 3^\circ$; $Y \wedge a = 12.5(1.0)^\circ$. $\alpha = 1.646(2)$ $\beta = 1.668(2)$
 $\gamma = 1.705(5)$ $2V(\text{meas.}) = 78(2)^\circ$

Cell Data: *Space Group:* $[P\bar{1}]$ (by analogy to koritnigite). $a = 7.95$ $b = 15.83$ $c = 6.67$
 $\alpha = 90.9^\circ$ $\beta = 96.6^\circ$ $\gamma = 90.0^\circ$ $Z = 8$

X-ray Powder Pattern: Saxony, Germany; very close to koritnigite.
7.94 (100), 3.14 (70), 3.82 (50), 3.25 (40), 3.23 (40), 2.461 (40), 2.688 (30)

Chemistry:

	(1)	(2)
As ₂ O ₅	54.63	54.14
FeO	0.45	0.48
CoO	20.55	23.46
NiO	0.25	0.37
CuO	0.50	0.41
ZnO	11.73	9.09
H ₂ O	[12.46]	[12.46]
Total	[100.57]	[100.41]

(1) Saxony, Germany; by electron microprobe, total Fe as FeO, H₂O calculated from stoichiometry; corresponds to (Co_{0.59}Zn_{0.31}Cu_{0.02}Fe_{0.01}Ni_{0.01}) $\Sigma=0.94$ (As_{1.03}O₃OH)·H₂O. (2) Do.; corresponds to (Co_{0.68}Zn_{0.24}Cu_{0.02}Fe_{0.01}Ni_{0.01}) $\Sigma=0.96$ (As_{1.03}O₃OH)·H₂O.

Occurrence: A weathering product of glaucodot (Saxony, Germany); altering from cobaltite (Bauhaus district, Germany).

Association: Erythrite-köttigite, sphaerocobaltite, pitticite, glaucodot, löllingite-safflorite, arsenopyrite, quartz (Saxony, Germany); erythrite, cobaltite, calcite, barite, quartz (Bauhaus district, Germany).

Distribution: In Germany, found on an old specimen from the Erzgebirge, Saxony, probably from the Schwarzenberg district, and at Frohnau, near Annaberg; in the Bauhaus district, Richelsdorf Mountains, Hesse; from the Sophia mine, near Wittichen, in the Rötenbach quarry, near Alpirsbach and in the Anton mine, Heubachtal, near Schiltach, Black Forest. From Jáchymov (Joachimsthal), Czech Republic.

Name: For its relation to *koritnigite* and high *cobalt* content.

Type Material: National Museum of Natural History, Washington, D.C., USA, 148979.

References: (1) Schmetzer, K., W. Horn, and O. Medenbach (1981) Über Kobaltkoritnigite, (Co, Zn)[H₂O][AsO₃OH], ein neues Mineral, und Pitticit, Fe₂O₃·As₂O₅·9–10H₂O, ein röntgenamorphes Fe-Arsenat-Hydrat. Neues Jahrb. Mineral., Monatsh., 257–266 (in German with English abs.). (2) (1982) Amer. Mineral., 67, 414 (abs. ref. 1). (3) Zettler, F., H. Riffel, H. Hess, and P. Keller (1979) Cobalhydrogenarsenat-Monohydrat. Darstellung und Kristallstruktur. Z. Anorg. All. Chemie, 454, 134–144 (in German with English abs.).

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