Cobaltkoritnigite  
(Co, Zn)(AsO$_3$OH) • H$_2$O

Crystal Data:  Triclinic, pseudomonoclinic (synthetic, and by analogy to koritnigite).  
Point Group:  T.  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,  
Optical Class:  Biaxial (+).  Pleochroism:  Strong;  X = deep violet;  Y = reddish violet;  Z = bluish violet.  Orientation:  X ∧ b < 3°;  Y ∧ a = 12.5(1.0)°.  α = 1.646(2)  β = 1.668(2)  γ = 1.705(5)  2V(meas.) = 78(2)°

Cell Data:  Space Group:  [P1] (by analogy to koritnigite).  a = 7.95  b = 15.83  c = 6.67  α = 90.9°  β = 96.6°  γ = 90.0°  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:  
<table>
<thead>
<tr>
<th>Element</th>
<th>Formula</th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>As</td>
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<td>54.63</td>
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<tr>
<td>Fe</td>
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<tr>
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<td>Cu</td>
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<tr>
<td>H$_2$O</td>
<td>H$_2$O</td>
<td>[12.46]</td>
<td>[12.46]</td>
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<tr>
<td>Total</td>
<td></td>
<td>[100.57]</td>
<td>[100.41]</td>
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</tbody>
</table>

(1) Saxony, Germany: by electron microprobe, total Fe as FeO, H$_2$O calculated from stoichiometry; corresponds to (Co$_{0.59}$Zn$_{0.31}$Cu$_{0.02}$Fe$_{0.01}$Ni$_{0.01}$)$_{Σ=0.94}$(As$_{1.03}$O$_3$OH) • H$_2$O.  
(2) Do.; corresponds to (Co$_{0.68}$Zn$_{0.24}$Cu$_{0.02}$Fe$_{0.01}$Ni$_{0.01}$)$_{Σ=0.96}$(As$_{1.03}$O$_3$OH) • H$_2$O.

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

Association:  Erythrite–köttingite, sphaerocobaltite, pitticitte, 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.


References:  
Z. Anorg. All. Chemie, 454, 134–144 (in German with English abs.).

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