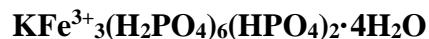


Haigerachite

Crystal Data: Monoclinic. *Point Group:* 2/m. Forms spherules, to 0.2 mm, consisting of scaly crystals to 0.05 mm; rarely as well-developed, thin tabular, six-sided, pseudo-hexagonal crystals flattened on (001), showing {100} and {110}.

Physical Properties: *Cleavage:* Good on {001}. *Fracture:* Uneven. Hardness = 2
D(meas.) = 2.44(1) D(calc.) = 2.445 Soluble in dilute HCl.

Optical Properties: Transparent to translucent. *Color:* White. *Streak:* White. *Luster:* Vitreous.
Optical Class: Biaxial (-). $\alpha = 1.557(2)$ $\beta = 1.598(2)$ $\gamma = 1.602(2)$ $2V(\text{meas.}) = 32(2)^\circ$
 $2V(\text{calc.}) = 34^\circ$ *Orientation:* X \perp (001).

Cell Data: *Space Group:* C2/c [synthetic]. $a = 16.95(3)$ $b = 9.59(2)$ $c = 17.57(3)$ $\beta = 90.85(15)^\circ$
Z = 4

X-ray Powder Pattern: Silberbrünnle mine, central Black Forest, Germany.
8.83 (100), 3.75 (100), 3.02 (90), 3.23 (50), 7.60 (40), 3.30 (40), 3.11 (40)

Chemistry	(1)
K ₂ O	3.79
Na ₂ O	0.34
CaO	0.66
Fe ₂ O ₃	21.66
Al ₂ O ₃	0.66
MnO	0.42
MgO	0.19
P ₂ O ₃	53.39
<u>H₂O</u>	<u>[18.89]</u>
Total	100.00

(1) Silberbrünnle mine, central Black Forest, Germany; electron microprobe analysis, H₂O by difference; corresponds to K_{0.85}Na_{0.12}Ca_{0.12}Fe_{2.85}Al_{0.14}Mn_{0.06}Mg_{0.05}P_{7.91}H_{22.05}O₃₆.

Occurrence: A secondary phosphate formed on a mine dump.

Association: Quartz, pyrite, gypsum, jarosite, diadochite, gengenbachite.

Distribution: From the Silberbrünnle mine dump, upper Haigerachtal, near Gengenbach, central Black Forest, Baden-Württemberg, Germany.

Name: For the village and valley near the mine.

Type Material: Institute of Mineralogy and Crystal Chemistry, University of Stuttgart, and the Staatlichen Museum für Naturkunde, Stuttgart, Germany.

References: (1) Walenta, K. and T. Theye (1999) Haigerachite, a new phosphate mineral from the Silberbrünnle mine near Gengenbach in the central Black Forest. *Aufschluss*, 50, 1-7 (in German, English abs.). (2) (2000) *Amer. Mineral.*, 85, 263-264 (abs. ref. 1).