Hematophanite

\( \text{Pb}_4\text{Fe}^{3+}_3\text{O}_8(\text{OH}, \text{Cl}) \)

Crystal Data: Tetragonal. \textit{Point Group}: 4mm. As tablets, thin \( \perp \{001\} \), to 5 mm, and in lamellar to granular aggregates.

Physical Properties: \textit{Cleavage}: \{001\}, good; a parting inclined to \{001\} suspected. 

Hardness = 2–3 \( D(\text{meas.}) = 7.70 \) \( D(\text{calc.}) = 8.186 \)


Optical Class: Uniaxial (–); low birefringence.

Cell Data: \textit{Space Group}: \( P4_{2}mm \). \( a = 3.92 \) \( c = 15.31 \) \( Z = 1 \)


2.76 (100), 2.71 (100), 3.90 (60), 1.590 (60), 3.77 (40), 1.566 (40), 2.24 (35)

Chemistry:

\[
\begin{array}{ccc}
\text{Fe}_2\text{O}_3 & 22.01 & \text{Na}_2\text{O} & 0.38 \\
\text{FeTiO}_3 & 0.20 & \text{K}_2\text{O} & 0.17 \\
\text{FeO} & 0.22 & \text{Cl} & 2.17 \\
\text{MnO} & 0.29 & \text{H}_2\text{O}^+ & 0.73 \\
\text{PbO} & 73.26 & \text{Cl}_2 & 0.49 \\
\text{MgO} & 0.06 & \text{insol.} & 0.42 \\
\text{CaO} & 0.26 & \text{Total} & 99.68 \\
\end{array}
\]

(1) Jakobsberg, Sweden; average of two analyses, corresponding to \((\text{Pb}_{3.59}\text{Na}_{0.13} \text{Ca}_{0.05}\text{K}_{0.01})_{\Sigma=3.81}(\text{Fe}_{3.01}^{3+}\text{Mn}_{0.05}\text{Fe}_{0.05}^{2+}\text{Mg}_{0.05}\text{Ti}_{0.01})_{\Sigma=3.14}\text{O}_{8.49}\text{H}_{0.88}\text{Cl}_{0.67} \).

Occurrence: In a metamorphosed banded Fe–Mn ore deposit in dolostone (Jakobsberg, Sweden).

Association: Plumboferrite, jacobsite, andradite, copper, cuprite, cerussite, calcite (Jakobsberg, Sweden); copper, jacobsite, hematite, damaraite (Kombat mine, Namibia).

Distribution: From Jakobsberg and Långban, Värmland, Sweden. From Reichelsdorf, Hesse, Germany, in slag. In the Kombat Cu–Pb–Ag mine, 49 km south of Tsumeb, Namibia.

Name: From the Greek for \textit{blood} and \textit{visible}, presumably for the blood-red color exhibited in transmitted light.

Type Material: Swedish Museum of Natural History, Stockholm, Sweden.


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