Hedyphane Pb3Ca2(AsO4)3Cl

Crystal Data: Hexagonal. Point Group: \(6/m\). As dipyramidal, tabular, or prismatic crystals, with \{10\{0\}, \{10\{1\}, \{00\{1\}, several modifying forms, to 3 cm; commonly massive.


Cell Data: Space Group: \(P6_3/m\). \(a = 10.053–10.140\) \(c = 7.185–7.284\) \(Z = 2\)

X-ray Powder Pattern: Långban, Sweden. 3.014 (10), 2.929 (8), 1.943 (8), 3.586 (7), 4.135 (5), 8.77 (4), 5.070 (4)

Chemistry: (1) (2) (3)
\[
\begin{align*}
P_2O_5 & \quad 0.4 & \quad 0.2 \\
As_2O_5 & \quad 28.2 & \quad 29.1 & \quad 29.87 \\
PbO & \quad 58.0 & \quad 52.0 & \quad 58.03 \\
CaO & \quad 10.3 & \quad 9.1 & \quad 9.72 \\
SrO & \quad 1.0 & \quad 7.0 \\
BaO & \quad 0.1 & \quad 0.5 \\
Cl & \quad 3.3 & \quad 3.4 & \quad 3.07 \\
\text{Total} & \quad 100.6 & \quad 100.5 & \quad 100.00 \\
\end{align*}
\]

(1) Långban, Sweden; by electron microprobe, corresponding to \(Ca_{2.05}(Pb_{2.90}Sr_{0.10})\Sigma=3.00\) \([AsO_4]_{2.75}(PO_4)_{0.05}\Sigma=2.80Cl_{1.05}\). (2) Franklin, New Jersey, USA; by electron microprobe. (3) \(Pb_3Ca_2(AsO_4)_3Cl\).

Mineral Group: Apatite group.

Occurrence: A rare secondary mineral in metamorphosed manganese deposits (Sweden); in a metamorphosed stratiform zinc orebody (Franklin, New Jersey, USA).

Association: Barite, barylite, rhodonite, hausmannite, bixbyite, phlogopite, amphibole, calcite (Långban, Sweden); barylite, calcite, copper, rhodonite, barite, manganaxinite, willenite, cahnite (Franklin, New Jersey, USA).


Name: From the Greek for beautifully bright, in allusion to the typical luster of specimens.

Type Material: Mining Academy, Freiberg, Germany, 45154; Harvard University, Cambridge, Massachusetts, USA, 90417.


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