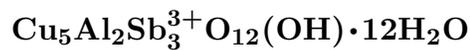


Cyanophyllite



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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As coatings and as spherulitic aggregates of tabular crystals, with dominant $\{001\}$ and bounded by $\{hk0\}$, to 20 μm .

Physical Properties: *Cleavage:* $\{001\}$, perfect; another, $\{100\}$ or $\{010\}$, good to very good. Hardness = ~ 2 D(meas.) = 3.10(10) D(calc.) = 3.12

Optical Properties: Semitransparent. *Color:* Greenish blue, turquoise-blue; colorless in transmitted light. *Luster:* Pearly to silky.

Optical Class: Biaxial (-). *Orientation:* $X = c$. $\alpha = 1.640(2)$ $\beta = 1.664(2)$ $\gamma = 1.675(2)$
2V(meas.) = n.d. 2V(calc.) = 67°

Cell Data: *Space Group:* $Pmmb$. $a = 11.82$ $b = 10.80$ $c = 9.64$ $Z = 1$

X-ray Powder Pattern: Clara mine, Germany.

4.84(10), 9.67 (6), 2.59 (6), 2.44 (5), 4.59 (4), 4.46 (4), 1.917 (4)

Chemistry:

	(1)	(2)
Al_2O_3	8.5	8.77
Sb_2O_3	37.4	37.63
CuO	34.4	34.22
H_2O	19.8	19.38
Total	100.1	100.00

(1) Clara mine, Germany; by AA, Al_2O_3 and Sb_2O_5 average of two analyses, H_2O from weight loss at 200 °C; corresponds to $\text{Cu}_{10.11}\text{Al}_{3.90}\text{Sb}_{6.00}\text{O}_{24.96}\cdot 25.74\text{H}_2\text{O}$.

(2) $\text{Cu}_5\text{Al}_2\text{Sb}_3\text{O}_{12}(\text{OH})\cdot 12\text{H}_2\text{O}$.

Occurrence: A secondary mineral associated with copper mineralization in a hydrothermal polymetallic barite–fluorite deposit.

Association: Chalcophyllite, chrysocolla, brochantite, tripuhyite, quartz, barite.

Distribution: In the Clara mine, near Oberwolfach, Black Forest, Germany.

Name: From the Greek for *blue* and *a leaf*, in allusion to the color and habit.

Type Material: Institute of Mineralogy and Crystal Chemistry, University of Stuttgart, Stuttgart, Germany.

References: (1) Walenta, K. (1981) Cyanophyllit, ein neues Mineral aus der Grube Clara bei Oberwolfach im mittleren Schwarzwald. Chem. Erde, 40, 195–200 (in German with English abs.).
(2) (1981) Amer. Mineral., 66, 1274 (abs. ref. 1).