

Adelite

CaMg(AsO₄)(OH)

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Crystal Data: Orthorhombic. *Point Group:* 222. Crystals tabular on {001}, or elongated along [100], showing {100}, {001}, {110}, {011}, {221}, to 5 mm; may be hemispherulitic, commonly granular, massive.

Physical Properties: *Fracture:* Uneven to conchoidal. *Tenacity:* Brittle. Hardness = 5 D(meas.) = 3.71–3.76 D(calc.) = [3.78]

Optical Properties: Translucent to transparent. *Color:* Colorless, white, gray, bluish gray, yellowish gray, yellow, pale green, pinkish brown, brown; colorless in transmitted light. *Luster:* Resinous.

Optical Class: Biaxial (+). *Orientation:* $X = a$; $Y = c$; $Z = b$. *Dispersion:* $r < v$, weak. $\alpha = 1.712$ $\beta = 1.721$ $\gamma = 1.731$ $2V(\text{meas.}) = 68^\circ$ to $\sim 90^\circ$

Cell Data: *Space Group:* $P2_12_12_1$. $a = 7.43$ $b = 8.85$ $c = 5.88$ $Z = 4$

X-ray Powder Pattern: Långban, Sweden.
3.16 (10), 4.13 (7), 2.59 (7), 2.33 (7), 1.609 (7), 4.96 (6), 2.98 (6)

Chemistry:

	(1)	(2)
As ₂ O ₅	50.28	52.17
FeO	0.08	
MnO	0.48	
CuO	0.32	
PbO	2.79	
MgO	17.90	18.30
CaO	24.04	25.45
BaO	0.23	
Cl	trace	
H ₂ O	3.90	4.08
Total	100.02	100.00

(1) Långban, Sweden. (2) CaMg(AsO₄)(OH).

Mineral Group: Adelite group.

Occurrence: A rare mineral in a metamorphosed Fe–Mn orebody (Långban, Sweden); on willemite-franklinite ore from a metamorphosed stratiform zinc orebody (Franklin, New Jersey, USA).

Association: Sarkinite, arsenoclasite, braunite, hedyphane, fredrikssonite (Långban, Sweden); haumannite, magnetite, copper (Kittel mine, Sweden); hodgkinsonite, barite, allactite, rhodochrosite, franklinite, willemite; chlorophoenicite (Franklin, New Jersey, USA); alleghanyite, kraisslite, sphalerite, rhodochrosite, willemite, franklinite; johnbaumite–svabite, zincite, barite, calcite (Sterling Hill, New Jersey, USA).

Distribution: In Sweden, from Långban and at Jakobsberg, Värmland, and in the Kittel mine, Nordmark. At St. Andreasberg, Harz Mountains, Germany. From Sterling Hill, Ogdensburg, and Franklin, Sussex Co., New Jersey, USA.

Name: From the Greek for *indistinct*, as it typically lacks transparency.

References: (1) Dana, E.S. (1899) Dana's system of mineralogy, (6th edition), app. I, 1. (2) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 804–806. (3) Dunn, P.J. (1995) Franklin and Sterling Hill, New Jersey. No publisher, n.p., 655. (4) Welin, E. (1968) X-ray powder data for minerals from Långban and the related mineral deposits of Central Sweden. *Arkiv Mineral. Geol.*, 4(30), 499–541, esp. 501.

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