

Nickelaustinite

Ca(Ni, Zn)(AsO₄)(OH)

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Crystal Data: Orthorhombic. *Point Group:* 222. Crystals are flattened on {110}, elongated along [001], commonly fibrous, to 0.3 mm, in radial aggregates.

Physical Properties: *Cleavage:* On {110}, good. Hardness = 4 D(meas.) = n.d.
D(calc.) = 4.27

Optical Properties: Transparent. *Color:* Yellowish green to grass-green. *Streak:* White.
Luster: Silky to subadamantine.

Optical Class: Biaxial (+). *Orientation:* $X = c$. $\alpha = 1.770(2)$ $\beta = \text{n.d.}$ $\gamma = 1.778(3)$ (γ')
2V(meas.) = n.d.

Cell Data: *Space Group:* $P2_12_12_1$. $a = 7.455(3)$ $b = 8.955(3)$ $c = 5.916(2)$ $Z = 4$

X-ray Powder Pattern: Bou Azzar, Morocco.
2.626 (10), 3.151 (9), 2.769 (9), 1.605 (9), 2.577 (8), 2.508 (8), 2.058 (7)

Chemistry:	(1)
	As ₂ O ₅ 43.70
	FeO 0.10
	CoO 1.22
	NiO 20.40
	CuO 0.06
	ZnO 6.88
	MgO 1.00
	CaO 23.32
	H ₂ O [3.32]
	<hr/> Total [100.00]

(1) Bou Azzar, Morocco; by electron microprobe, H₂O by difference; corresponds to Ca_{1.01}(Ni_{0.67}Zn_{0.21}Mg_{0.06}Co_{0.04}Cu_{0.01})_{Σ=0.99}(As_{0.93}O₄)(OH).

Mineral Group: Adelite group.

Occurrence: On dolomite.

Association: Roselite, calcite, dolomite, chalcopyrite, skutterudite.

Distribution: At Bou Azzar, Anti-Atlas Mountains, Morocco.

Name: For the predominance of *nickel* in the composition and relation to *austinite*.

Type Material: National School of Mines, Paris, France.

References: (1) Cesbron, F.P., D. Ginderow, R. Giraud, P. Pelisson, and F. Pillard (1987) La nickelaustinite Ca(Ni, Zn)(AsO₄)(OH): nouvelle espèce minérale du district cobalto-nickelifère de Bou-Azzar, Maroc. Can. Mineral., 25, 401–407 (in French with English abs.). (2) (1988) Amer. Mineral., 73, 930 (abs. ref. 1).