

Bouazzerite**Bi₆(Mg, Co)₁₁Fe₁₄(AsO₄)₁₈O₁₂(OH)₄·86H₂O**

Crystal Data: Monoclinic. *Point Group:* 2/m. As prismatic {021} crystals to 0.5 mm terminated by {110}.

Physical Properties: *Cleavage:* Good on {021}, fair on {100}. *Tenacity:* Very brittle.
Fracture: Uneven. Hardness = n.d. D(meas.) = n.d. D(calc.) = 2.81

Optical Properties: Translucent. *Color:* Pale apple-green. *Streak:* Colorless. *Luster:* Adamantine.
Optical Class: Biaxial. $n(\text{min.}) = 1.657$ $n(\text{max.}) = 1.660$ (both measured on the (021) cleavage face)
Pleochroism: Very weak, yellow to pale yellow.

Cell Data: *Space Group:* $P2_1/n$. $a = 13.6322(13)$ $b = 30.469(3)$ $c = 18.4671(18)$ $\beta = 91.134(2)^\circ$
 $Z = 2$

X-Ray Diffraction Pattern: Bou Azzer mine, Anti-Atlas, Morocco.
11.79 (100), 10.98 (80), 10.16 (80), 7.900 (80), 12.45 (70), 15.78 (60), 3.414 (40)

Chemistry:	(1)
As ₂ O ₅	35.55
CrO ₃	1.15
SiO ₂	0.35
Bi ₂ O ₃	25.97
Fe ₂ O ₃	18.30
MgO	6.18
CoO	0.65
NiO	0.17
CaO	0.23
<u>H₂O</u>	<u>[30.08]</u>
Total	118.6

(1) Bou Azzer mine, Anti-Atlas, Morocco; average electron microprobe analysis, H₂O calculated; corresponds to Bi_{6.14}Fe_{12.6}Mg_{8.45}Co_{0.48}Ni_{0.12}Ca_{0.23}(As_{17.0}Cr_{0.64}Si_{0.32}) $\Sigma=18.0$ O_{174.6}H₁₈₄.

Occurrence: A product of the weathering of a hydrothermal As-Co-Ni-Ag-Au vein.

Association: Quartz, chalcopyrite, native gold, erythrite, talmessite/roselite-beta, Cr-bearing yukonite, alumopharmacosiderite, powellite, a blue-green copper arsenate related to geminite.

Distribution: From "Filon 7", Bou Azzer mine, Anti-Atlas, Morocco.

Name: For the *Bou Azzer* mine and the similarly named district, Morocco.

Type Material: Geological Museum, Lausanne, Switzerland (MGL 79798 and MGL 79803).

References: (1) Brugger, J., N. Meisser, S. Krivovichev, T. Armbruster, and G. Favreau (2007) Mineralogy and crystal structure of bouazzerite from Bou Azzer, Anti-Atlas, Morocco: Bi-As-Fe nanoclusters containing Fe³⁺ in trigonal prismatic coordination. *Amer. Mineral.*, 92, 1630-1639.