

Maghrebite**MgAl₂(AsO₄)₂(OH)₂·8H₂O**

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. As fan-shaped aggregates of lozenge-shaped, terminated prismatic crystals to 0.2 mm elongated along [001]; or platy, flattened on [010]. Forms are {010}, {001}, {110}, {120}, and {011}.

Physical Properties: *Cleavage:* Perfect on {010}. *Tenacity:* Brittle. *Fracture:* n.d. Hardness = > 2 D(meas.) = 2.60(1) D(calc.) = 2.46

Optical Properties: Translucent. *Color:* Colorless. *Streak:* n.d. *Luster:* Vitreous. *Optical Class:* Biaxial (-). $\alpha = 1.562(2)$ $\beta = 1.574(2)$ $\gamma = 1.586(2)$ $2V(\text{meas.}) = 87(3)^\circ$ $2V(\text{calc.}) = 89.2^\circ$ *Orientation:* $X \parallel b$; $Y \wedge c = 28.8^\circ$, $Y \wedge a = 25.5^\circ$ *Dispersion:* Medium, $r > v$.

Cell Data: *Space Group:* $P\bar{1}$. $a = 5.436(2)$ $b = 10.500(3)$ $c = 7.075(2)$ $\alpha = 97.701(7)^\circ$ $\beta = 110.295(5)^\circ$ $\gamma = 102.021(6)^\circ$ $Z = 1$

X-Ray Diffraction Pattern: Aghbar mine, Bou Azzer district, Anti-Atlas, Morocco. 9.9 (100), 6.4 (90), 4.90 (80), 3.198 (60), 2.885 (60), 2.622 (60), 4.08 (50)

Chemistry:	(1)	(2)	(3)
As ₂ O ₅	52.52	42.94	43.02
SiO ₂	0.14	0.11	
Al ₂ O ₃	22.51	18.41	19.08
Fe ₂ O ₃	0.90	0.74	
MgO	8.83	7.22	7.53
CaO	0.14	0.11	
CoO	0.23	0.19	
NiO	0.08	0.07	
H ₂ O	[36.94]	[30.21]	30.37
Total	122.29	100.00	100.00

(1) Aghbar mine, Bou Azzer district, Anti-Atlas, Morocco; average electron microprobe analysis, H₂O calculated. (2) Do., normalized; corresponds to (Mg_{0.96}Co_{0.01}Ca_{0.01}) $\Sigma=0.98$ (Al_{1.94}Fe³⁺_{0.06}) $\Sigma=2.00$ (As_{2.01}Si_{0.01}) $\Sigma=2.02$ H_{18.0}O_{18.02}. (3) MgAl₂(AsO₄)₂(OH)₂·8H₂O.

Mineral Group: Laueite group.

Occurrence: From weathering Co-arsenides in a hydrothermal Co-Ni-As-(Cu-U-Mo) vein in an arid environment.

Association: Erythrite, talmessite/roselite- β , wendwilsonite, arseniosiderite, pharmacalumite, cabalzarite.

Distribution: From the Aghbar mine, Bou Azzer district, Anti-Atlas, Morocco.

Name: The word *maghreb*, derived from the Arabic al-maghrib, meaning “region where the sun sets”, originally signified the region between the high ranges of the Atlas Mountains and the Mediterranean Sea. Now it refers collectively to Morocco, Algeria, Tunisia, Libya, and Mauritania.

Type Material: Geology Museum, Lausanne, Switzerland (79792, 79793 and 79794).

References: (1) Meisser, N., J. Brugger, S. Krivovichev, T. Armbruster, and G. Favreau (2012) Description and crystal structure of maghrebite, MgAl₂(AsO₄)₂(OH)₂·8H₂O, from Aghbar, Anti-Atlas, Morocco: first arsenate in the laueite mineral group. *Eur. J. Mineral.*, 24, 717-726. (2) Meisser, N. and J. Brugger (2006) Bouazzerit und Maghrebit, zwei neue Arsenatminerale aus dem Revier Bou Azzer, Marokko. *Lapis Mineralien Mag.*, 31(7), 69-73.