

Hydrodresserite

BaAl₂(CO₃)₂(OH)₄•3H₂O

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Crystal Data: Triclinic. *Point Group:* $\bar{1}$. Typically as spherical or hemispherical aggregates of divergent crystals, acicular along [001], to 1 mm; individual crystals display prominent {010}, and narrow {2 $\bar{1}$ 0} and {102}.

Physical Properties: *Cleavage:* Perfect on {010} and {2 $\bar{1}$ 0}. *Hardness* = 3–4
D(meas.) = 2.80(2) D(calc.) = 2.817 Easily dehydrates to dresserite.

Optical Properties: Transparent to translucent. *Color:* Colorless. *Streak:* White.
Luster: Vitreous.

Optical Class: Biaxial (–). *Orientation:* X (65°, 88°); Y (–27°, 46°); Z (158.25°, 44.5°)
[with c (0°, 0°) and b* (0°, 90°) using (ϕ, ρ)]. $\alpha = 1.502(2)$ $\beta = 1.594(1)$ $\gamma = 1.595(1)$
2V(meas.) = 17(1)°

Cell Data: *Space Group:* $P\bar{1}$. $a = 9.7545(5)$ $b = 10.4069(5)$ $c = 5.6322(3)$
 $\alpha = 95.695(5)^\circ$ $\beta = 92.273(5)^\circ$ $\gamma = 115.643(4)^\circ$ $Z = 2$

X-ray Powder Pattern: Francon quarry, Canada.
8.52 (10), 3.42 (7), 3.10 (6), 4.26 (5), 8.75 (4), 9.30 (3), 5.32 (3)

Chemistry:	(1)	(2)
CO ₂	21.8	20.31
Al ₂ O ₃	23.7	23.53
BaO	35.0	35.38
H ₂ O	20.3	20.78
Total	100.8	100.00

(1) Francon quarry, Canada; by electron microprobe, corresponding to Ba_{0.98}Al_{1.99}(CO₃)_{2.12}(OH)_{3.68}•2.97H₂O. (2) BaAl₂(CO₃)₂(OH)₄•3H₂O.

Occurrence: Very rare, in vugs in metamorphosed limestone, near the contact zone of a dawsonite-rich silicocarbonatite sill.

Association: Dresserite, weloganite, quartz.

Distribution: From the Francon quarry, Montreal Island, Montreal, Quebec, Canada.

Name: For essential water and characteristic dehydration to *dresserite* under low humidity conditions.

Type Material: Geological Survey of Canada, Ottawa, 13936; Royal Ontario Museum, Toronto, Canada, M34547, M34600.

References: (1) Jambor, J.L., A.P. Sabina, and B.D. Sturman (1977) Hydrodresserite, a new Ba-Al carbonate from a silicocarbonatite sill, Montreal Island, Quebec. *Can. Mineral.*, 15, 399–404. (2) (1979) *Amer. Mineral.*, 64, 654 (abs. ref. 1). (3) Szymański, J.T. (1982) The crystal structure of hydrodresserite, BaAl₂(CO₃)₂(OH)₄•3H₂O. *Can. Mineral.*, 20, 253–262.