

Goosecreekite

CaAl₂Si₆O₁₆•5H₂O

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Crystal Data: Monoclinic. *Point Group:* 2. As equant euhedral crystals, highly curved, to 4 cm; in polycrystalline aggregates.

Physical Properties: *Cleavage:* {010}, perfect. Hardness = ~4.5 D(meas.) = 2.21 D(calc.) = 2.23

Optical Properties: Transparent. *Color:* Colorless to white. *Streak:* White.

Luster: Vitreous to pearly on crystal faces.

Optical Class: Biaxial (-). *Orientation:* $Y = b$; $Z \wedge c = 46^\circ$. $\alpha = 1.495(2)$ $\beta = 1.498(2)$
 $\gamma = 1.502(2)$ $2V(\text{meas.}) = 82(5)^\circ$

Cell Data: *Space Group:* $P2_1$. $a = 7.401(3)$ $b = 17.439(36)$ $c = 7.293(3)$
 $\beta = 105.44(4)^\circ$ $Z = 2$

X-ray Powder Pattern: Goose Creek quarry, Virginia, USA.

4.53 (100), 7.19 (50), 5.59 (50), 4.91 (50), 3.350 (40), 3.526 (25), 3.277 (25)

Chemistry:

	(1)
SiO ₂	59.3
Al ₂ O ₃	17.2
CaO	9.3
H ₂ O	15.0
Total	100.8

(1) Goose Creek quarry, Virginia, USA; by electron microprobe, H₂O by DTA-TGA analysis; corresponding to Ca_{1.01}Al_{2.05}Si₆O_{16.09}•5.06H₂O.

Polymorphism & Series: Dimorphous with epistilbite.

Mineral Group: Zeolite group.

Occurrence: A late-stage mineral in vugs and fractures in a Triassic diabase (Goose Creek quarry, Virginia, USA); in cavities in basalt (Nasik, India).

Association: Prehnite, actinolite, chlorite, epidote, babingtonite, quartz, titanite, stilbite, albite, apophyllite (Goose Creek quarry, Virginia, USA); quartz (Nasik, India).

Distribution: In the Goose Creek quarry, Leesburg, Loudoun Co., Virginia, USA. Exceptional crystals from the Pandulena quarry, Nasik, Maharashtra, India. In the Oberbaumühle quarry, Windischeschenbach, Bavaria, Germany.

Name: For the initially described occurrence in the Goose Creek quarry, Virginia, USA.

Type Material: American Museum of Natural History, New York City, New York; Harvard University, Cambridge, Massachusetts, 117087; National Museum of Natural History, Washington, D.C., USA, 145880; Canadian Geological Survey, Ottawa; Royal Ontario Museum, Toronto, Canada; The Natural History Museum, London, England, 1980,579.

References: (1) Dunn, P.J., D.R. Peacor, N. Newberry, and R.A. Ramik (1980) Goosecreekite, a new calcium aluminum silicate hydrate, possibly related to brewsterite and epistilbite. *Can. Mineral.*, 18, 323–327. (2) (1981) *Amer. Mineral.*, 66, 1275 (abs. ref. 1). (3) Rouse, R.C. and D.R. Peacor (1986) Crystal structure of the zeolite mineral goosecreekite CaAl₂Si₆O₁₆•5H₂O. *Amer. Mineral.*, 71, 1494–1501.