Goosecreekite

\[ \text{CaAl}_2\text{Si}_6\text{O}_{16}\cdot5\text{H}_2\text{O} \]

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 \( \text{D(meas.)} = 2.21 \)
D(calc.) = 2.23

Optical Properties: Transparent. Color: Colorless to white. Streak: White. Luster: Vitreous to pearly on crystal faces. Optical Class: Biaxial (-). Orientation: \( Y = b; Z \cap c = 46^\circ \). \( \alpha = 1.495(2) \) \( \beta = 1.498(2) \)
\( \gamma = 1.502(2) \) \( 2V(\text{meas.}) = 82(5)^\circ \)

Cell Data: Space Group: \( \text{P}2_1_1 \). \( a = 7.401(3) \) \( b = 17.439(36) \) \( c = 7.293(3) \)
\( \beta = 105.44(4)^\circ \) \( \gamma = 108.5(4) \) \( Z = 2 \)

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:

\[
\begin{array}{ll}
\text{SiO}_2 & 59.3 \\
\text{Al}_2\text{O}_3 & 17.2 \\
\text{CaO} & 9.3 \\
\text{H}_2\text{O} & 15.0 \\
\text{Total} & 100.8 \\
\end{array}
\]

(1) Goose Creek quarry, Virginia, USA; by electron microprobe, \( \text{H}_2\text{O} \) by DTA-TGA analysis; corresponding to \( \text{Ca}_{1.01}\text{Al}_{2.00}\text{Si}_6\text{O}_{16.09}\cdot5.06\text{H}_2\text{O} \).

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 Oberbaumühlle quarry, Windischeschenbach, Bavaria, Germany.

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


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