**Gibbsite**

\( \text{Al(OH)}_3 \)

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**Crystal Data:** Monoclinic. **Point Group:** 2/\(m\). As pseudohexagonal crystals, tabular on \(\{001\}\), with \(\{101\}, \{110\}\), to 3 cm. Also as lamellar or acicular aggregates, stalactitic, or mammillar; in enamel-like coatings, compact earthy. **Twinning:** Common on \(\{001\}\), less common on \(\{100\}\) and \(\{110\}\); also very common about \([130]\) with \(\{001\}\) of the individuals in parallel.

**Physical Properties:** Cleavage: \{001\}, perfect. Tenacity: Tough. Hardness = 2.5–3.5

\[ \text{D(meas.) = 2.40} \quad \text{D(calc.) = 2.42} \]

Strong argillaceous odor when breathed upon.

**Optical Properties:** Transparent. Color: Colorless, white, gray, pale green, pale red; colorless to brownish in thin section. Luster: Vitreous, pearly on cleavage surfaces, dull in aggregates.

**Cell Data:** Space Group: \(P2_1/n\). \(a = 8.684(1)\)  \(b = 5.078(1)\)  \(c = 9.736(2)\)  \(\beta = 94.54(1)^\circ\)

**Chemistry:**

\[
\begin{align*}
\text{SiO}_2 & : 1.03 \\
\text{Al}_2\text{O}_3 & : 64.92 \\
\text{Fe}_2\text{O}_3 & : \text{trace} \\
\text{MgO} & : \text{trace} \\
\text{CaO} & : 0.17 \\
\text{H}_2\text{O} & : 34.64 \\
\end{align*}
\]

Total 100.24 100.00

(1) Klein-Tresny, Moravia. (2) \(\text{Al(OH)}_3\).

**Polymorphism & Series:** Polymorphous with bayerite, doyleite, and nordstrandite.

**Occurrence:** A typical product of weathering of aluminous minerals, common in lateritic soils and bauxite. Also formed in low-temperature hydrothermal and metamorphic environments, replacing aluminous minerals.

**Association:** Diaspore, böhmite, corundum, kaolinite, goethite.

**Distribution:** Widespread, particularly in bauxite deposits. Some prominent localities are: in the USA, at Richmond, Berkshire Co., Massachusetts; Unionville, Chester Co., Pennsylvania; large crystals from the Champion mine, White Mountains, Mono Co., California; from Toomsboro, Wilkinson Co., Georgia; at Tar Branch, near Winston-Salem, Forsyth Co., North Carolina. Around Saramenha, Ouro Prêto, Minas Gerais, Brazil. From Paramaribo, Surinam. On Eikaholmen and Lille-Arø Islands, Langesundsfjord, and at Tredalen, near Larvik, Norway. Large crystals from Schischimskaya, near Zlatoust, Ural Mountains, Russia. On the Vogelsberg, Hesse, and on the Katzenbuckel, Baden-Württemberg, Germany. In India, many localities, as at Kodikanal, Madras, and Talevadi, near Bombay, Maharashtra. From Dundas, Tasmania, Australia.

**Name:** Honors Colonel George Gibbs (1776–1833), a prominent mineral collector of New Haven, Connecticut, USA.

**Type Material:** n.d.

**References:**


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