Sjögrenite

\[ \text{Mg}_6\text{Fe}^{2+}_2(\text{CO}_3)(\text{OH})_{16} \cdot 4\text{H}_2\text{O} \]

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Crystal Data: Hexagonal. Point Group: 6/m 2/m 2/m. As broad basal plates bounded by rough pyramid and prism faces; commonly intergrown with pyroaurite.

Physical Properties: Cleavage: Perfect on \{0001\}. Tenacity: Laminae flexible, not elastic. Hardness = 2.5 D(meas.) = 2.11(3) D(calc.) = 2.11


Optical Class: Uniaxial (−). Pleochroism: O = pale yellow to brown; E = colorless. \( \omega = 1.573(3) \ \epsilon = 1.550(3) \)

Cell Data: Space Group: \( P6_3/mmc \). \( a = 3.113(3) \ c = 15.61(1) \ Z = 1/4 \)


Chemistry: (1) (2) (3)

\begin{align*}
\text{SiO}_2 & \quad 0.41 & \text{MgO} & \quad 35.44 & \quad 35.9 - 43.1 & \quad 36.55 \\
\text{Al}_2\text{O}_3 & \quad 0.11 & \text{H}_2\text{O} & \quad 33.62 & \quad 32.67 \\
\text{Fe}_2\text{O}_3 & \quad 23.19 & \text{CO}_2 & \quad 7.01 & \quad 6.65 \\
\text{FeO} & \quad 0.10 & \text{LOI} & \quad 40.6 & \quad \ \\
\text{MnO} & \quad 0.28 & \quad \text{Total} & \quad 100.16 & \quad 100.00 \\
\end{align*}

(1) Långban, Sweden; mixture of pyroaurite and sjögrenite. (2) Zlatogor intrusive, Kazakhstan; by electron microprobe, five partial elemental analyses, here converted to oxides. (3) \( \text{Mg}_6\text{Fe}^2_2(\text{CO}_3)(\text{OH})_{16} \cdot 4\text{H}_2\text{O} \)

Polymorphism & Series: Dimorphous with pyroaurite.

Mineral Group: Manasseite group.

Occurrence: In low-temperature hydrothermal veins in a metamorphosed Fe–Mn orebody (Långban, Sweden); in a vein in serpentinized dunite (Zlatogor intrusive, Kazakhstan); in a vein in a metamorphosed stratiform zinc orebody (Sterling Hill, New Jersey, USA).

Association: Pyroaurite, calcite (Långban, Sweden); pokrovskite, magnesite (Zlatogor intrusive, Kazakhstan); pyroaurite, willemite, chlorophoenicite, barite, sphalerite (Sterling Hill, New Jersey, USA).

Distribution: From Långban and Nordmark, Värmland, Sweden. In the Phlogopite mine, Kovdor massif, Kola Peninsula, Russia. From the Zlatogor layered intrusive, northern Kazakhstan. Found at Sterling Hill, Ogdensburg, Sussex Co., New Jersey, USA.

Name: For Stens Anders Hjalmar Sjögren (1856–1922), Swedish mineralogist, Professor of Mineralogy, University of Stockholm, Stockholm, Sweden.

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