Clinochrysotile  \[\text{Mg}_3\text{Si}_2\text{O}_5(\text{OH})_4\]

Crystal Data: Monoclinic or triclinic.  
Point Group: n.d.  
Asbestiform, fibrous along [100], curled to cylindrical; also bladed, massive.

Physical Properties:  
Hardness = 2.5  
D(meas.) = 2.53(1)  
D(calc.) = 2.61

Optical Properties: Semitransparent.  
Color: White, pale green to dark green.  
Luster: Silky in fibrous aggregates.

Optical Class: Biaxial (−).  
\[\alpha = 1.569(2) \quad \beta = [1.569] \quad \gamma = 1.570(2) \quad 2V(meas.) = \sim 42^\circ\]

Cell Data:  
Space Group: n.d.  
\[a = 5.3129(9) \quad b = 9.120(3) \quad c = 14.637(2) \quad \beta = 93^\circ.98(6)'/\quad Z = 4\]

X-ray Powder Pattern:  
Butler Estate chrome mine, California, USA.  
7.31 (100), 3.65 (70), 4.57 (50), 1.535 (50), 2.270 (30), 2.205 (30), 2.092 (30)

Chemistry:  
\[
\begin{array}{cccc}
\text{SiO}_2 & 42.2 & 43.37 & \text{MnO} & 0.06 \\
\text{TiO}_2 & 0.002 & & \text{NiO} & 0.04 \\
\text{Al}_2\text{O}_3 & 0.66 & & \text{MgO} & 41.7 & 43.63 \\
\text{Fe}_2\text{O}_3 & 1.2 & & \text{CaO} & 0.01 \\
\text{Cr}_2\text{O}_3 & 0.02 & & \text{H}_2\text{O}^+ & 13.3 & 13.00 \\
\text{FeO} & 0.09 & & \text{H}_2\text{O}^- & 0.95 \\
\hline
\text{Total} & 100.23 & 100.00 \\
\end{array}
\]

(1) Joe No. 5 pit, California, USA.  (2) \text{Mg}_3\text{Si}_2\text{O}_5(\text{OH})_4.

Polymorphism & Series: Polymorphous with antigorite, orthochrysotile, lizardite, and parachrysotile; may also be termed chrysotile-2M\text{c1}.

Mineral Group: Kaolinite-serpentine group.

Occurrence: Intermixed with orthochrysotile in veinlets cutting serpentinite.

Association: Orthochrysotile, lizardite, corundum.

Distribution: Undoubtedly of common occurrence in asbestos deposits, but requires careful characterization for confirmation, which has been accomplished at only a few localities, such as: in the USA, from the Butler Estate chrome mine, Fresno Co., and the Joe No. 5 pit, New Idria, San Benito Co., California; in the Belvidere Mountain quarries, Lowell, Orleans Co., Vermont; and from the Salt River Canyon, near Globe, Gila Co., Arizona. At Thetford Mines, Quebec, Canada. From Quilla, Charsadda Tehsil, Pakistan. In Australia, from Woodseef, New South Wales.

Name: Chrysotile from the Greek for golden and fiber; clino in reference to the mineral’s crystallization in inclined axis crystal systems.

Type Material: n.d.

References:  

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