

Hydrotalcite

Mg₆Al₂(CO₃)(OH)₁₆•4H₂O

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Crystal Data: Hexagonal. *Point Group:* $\bar{3} 2/m$. Typically subhedral crystals, platy on {0001}, lamellar-fibrous, rarely euhedral prismatic, to 4 mm; commonly foliated, massive.

Physical Properties: *Cleavage:* {0001}, perfect. *Tenacity:* Flexible but not elastic. Hardness = 2 D(meas.) = 2.03–2.09 D(calc.) = 2.11 Greasy feel.

Optical Properties: Transparent. *Color:* White, may have a brownish tint; colorless in transmitted light. *Streak:* White. *Luster:* Satiny to greasy or waxy. *Optical Class:* Uniaxial (-); may be biaxial due to strain. $\omega = 1.510$ – 1.518 $\epsilon = 1.494$ – 1.504 $2V(\text{meas.}) = \text{Small}$.

Cell Data: *Space Group:* $R\bar{3}m$. $a = 3.054$ – 3.070 $c = 22.81$ – 23.23 $Z = 3/8$

X-ray Powder Pattern: Snarum, Norway; nearly identical to pyroaurite. (ICDD 14-191). 7.69 (100), 3.88 (70), 2.58 (20), 2.30 (20), 1.96 (20), 1.53 (20), 1.50 (20)

Chemistry:	(1)	(2)
Al ₂ O ₃	14.42	16.88
Fe ₂ O ₃	2.44	
MgO	39.52	40.04
H ₂ O	36.28	35.79
CO ₂	7.33	7.29
insol.	0.56	
Total	100.55	100.00

(1) Snarum, Norway; probably intermixed with manasseite. (2) Mg₆Al₂(CO₃)(OH)₁₆•4H₂O.

Polymorphism & Series: Dimorphous with manasseite.

Mineral Group: Hydrotalcite group.

Occurrence: A secondary mineral in serpentinite.

Association: Manasseite, serpentine, dolomite.

Distribution: From Snarum, Norway. At Tonezza, Vicenza, Italy. From Věžná, Czech Republic. Found at Goles, Bosnia-Herzegovina. On Gladner Hill, Styria, Austria. In Canada, from the Kilmar mine, Argenteuil Co., Quebec; numerous other localities are noted but not distinguished from manasseite. In the USA, around Amity, Orange Co., and Somerville, St. Lawrence Co., New York; and at Franklin, Sussex Co., New Jersey; additional localities are known but material may be intermixed with manasseite. Well-crystallized in the Kovdor massif, and in the Vuoriyarvi carbonatite complex, Kola Peninsula, and probably elsewhere in Russia.

Name: As a HYDROUS mineral with a resemblance to *talc*.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 653–655. (2) Allmann, R. and H.P. Jepsen (1969) Die Struktur des Hydrotalkits. Neues Jahrb. Mineral., Monatsh., 544–551 (in German with English abs.).