

Stichtite**Mg₆Cr₂CO₃(OH)₁₆•4H₂O**

Crystal Data: Hexagonal. *Point Group:* $\bar{3} 2/m$ or $6/m 2/m 2/m$. As aggregates of fibers or plates, commonly matted, contorted; as cross-fiber veinlets and micaceous scales.

Physical Properties: *Cleavage:* Perfect on {0001}. *Tenacity:* Laminae flexible, not elastic; greasy feel. Hardness = 1.5-2 D(meas.) = 2.16 D(calc.) = 2.11

Optical Properties: Transparent. *Color:* Lilac to rose-pink; lilac to rose-pink in transmitted light. *Streak:* Very pale lilac to white. *Luster:* Waxy to resinous, somewhat pearly. *Optical Class:* Uniaxial (-); may be anomalously biaxial. $\omega = 1.545(3)$ $\epsilon = 1.518(3)$ $2V(\text{meas.}) = \text{Small}$. *Pleochroism:* Weak; *O* = dark rose-pink to lilac; *E* = light rose-pink to lilac.

Cell Data: *Space Group:* $R\bar{3} m$. $a = 3.09575(3)$ $c = 23.5069(6)$ $Z = 3/8$ (stichtite-3R)
Space Group: $P6_3/mmc$. $a = 3.09689(6)$ $c = 15.6193(8)$ $Z = 1/4$ (stichtite-2H)

X-ray Powder Pattern: Dundas, Tasmania, Australia. (ICDD 14-330)
 7.8 (100), 3.91 (90), 2.60 (40), 2.32 (30), 1.97 (30), 1.54 (20), 1.51 (20)

Chemistry:	(1)	(2)
Al ₂ O ₃	2.30	
Fe ₂ O ₃	4.18	
Cr ₂ O ₃	14.15	23.24
MgO	37.72	36.98
H ₂ O	34.14	33.05
CO ₂	7.15	6.73
Total	[100.00]	100.00

(1) Dundas, Tasmania, Australia; probably intermixed with stichtite-2H, original total of 99.27% recalculated to 100% after deduction of SiO₂ 2.09%, FeO 0.28% as chromite.

(2) Mg₆Cr₂(CO₃)(OH)₁₆•4H₂O.

Polymorphism & Series: Polytypes 3R and 2H (formerly barbertonite).

Mineral Group: Hydrotalcite group.

Occurrence: An alteration product of chromite in serpentinite.

Association: Chromite, antigorite.

Distribution: From Stichtite Hill (2R polytype), near the Adelaide mine, Dundas, Tasmania, and abundant at the Mount Keith Nickel Mine, Western Australia, Australia. In the Kaapsehoop asbestos mine (2H polytype), Kaapsehoop, and the New Amianthus asbestos mine, Stolzburg, Barberton district, Transvaal, and several other places in South Africa. On the Darwendale Farm, Darwendale, Zimbabwe. At Bou Offroich, near Bou Azzer, Morocco. In Scotland, at Cunningsburgh, Shetland Islands. From Långban, Värmland, Sweden. In Russia, from near Tyungur, Kaznakhty Range, and in the Terektinskogo Range, Altai Mountains. In Canada, from Langmuir Township, Ontario, and in the Megantic mine, Black Lake, Quebec. From Campo Formosa, Bahia, Brazil. In the Keonjhar district, Orissa, India.

Name: To honor Robert C. Sticht (1857-1922), formerly General Manager of the Mount Lyell Mining and Railway Company, Tasmania, Australia.

Type Material: National School of Mines, Paris, France.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 655-656. (2) Taylor, H.W.F. (1973) Crystal structures of some double hydroxide minerals. *Mineral. Mag.*, 39, 377-389. (3) Mills, S.J., P.S. Whitfield, S.A. Wilson, J.N. Woodhouse, G.M. Dipple, M. Raudsepp, and C.A. Francis (2011) The crystal structure of stichtite, re-examination of barbertonite, and the nature of polytypism in MgCr hydrotalcites. *Amer. Mineral.*, 96, 179-187.