

Magnesiostauroelite**Mg(Mg, Li)₃(Al, Mg)₁₈Si₈O₄₄(OH)₄**

Crystal Data: Monoclinic. *Point Group:* 2/m. As anhedral inclusions, to 250 μm , in pyrope megablasts.

Physical Properties: *Cleavage:* n.d. *Tenacity:* n.d. *Hardness* = 7-7.5 *D(meas.)* = n.d. *D(calc.)* = 3.54

Optical Properties: Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous to resinous. *Optical Class:* Biaxial. *n(average)* = 1.709(2) *2V* = $\sim 90^\circ$ Some crystals show a 'tweed' texture under crossed polars.

Cell Data: *Space Group:* C2/m. *a* = 7.8706(5) *b* = 16.5411(16) *c* = 5.6323(3) β = 90.007(4)°

X-ray Powder Pattern: Calculated pattern.

1.968 (100), 1.391 (82), 2.390 (50), 2.678 (38), 2.370 (33), 4.139 (24), 2.356 (24)

Chemistry:	(1)
SiO ₂	30.66
Al ₂ O ₃	57.45
TiO ₂	0.18
FeO	0.72
MgO	7.77
ZnO	0.10
Li ₂ O	0.90
H ₂ O	[2.30]
Total	100.08

(1) Dora-Maira massif, Italian Western Alps; average of 3 electron microprobe analyses, H₂O calculated; corresponds to $(\square_{3.12}\text{Mg}_{0.72}\text{Fe}^{3+}_{0.16})_{\Sigma=4}(\text{Mg}_{1.86}\square_{1.18}\text{Li}_{0.94}\text{Zn}_{0.02})_{\Sigma=4}(\text{Al}_{15.96}\text{Ti}_{0.04})_{\Sigma=16.00}(\square_{1.97}\text{Al}_{1.58}\text{Mg}_{0.45})_{\Sigma=4}(\text{Si}_{7.96}\text{Al}_{0.04})_{\Sigma=8.00}\text{O}_{40}[\text{O}_{4.02}(\text{OH})_{3.98}]_{\Sigma=8.00}$.

Occurrence: From an ultra-high-pressure, coesite-bearing metamorphic terrane.

Association: Talc, clinocllore, rutile, magnesiochloritoid, kyanite, corundum, pyrope.

Distribution: From the Dora-Maira massif, Italian Western Alps.

Name: The prefix, *magnesio*, indicates the magnesium analog of *staurolite*.

Type Material: School of Mines, Paris, France (56244).

References: (1) Chopin, C., B. Goffe, L. Ungaretti, and R. Oberti (2003) Magnesiostauroelite and zincostauroelite: mineral description with a petrogenetic and crystal-chemical update. *Eur. J. Mineral.*, 15, 167-176. (2) (2003) *Amer. Mineral.*, 88, 1626-1627 (abs. ref. 1).