

Crystal Data: Monoclinic. *Point Group:* 2/m. As zoned prismatic crystals to 3 mm.

Physical Properties: *Cleavage:* n.d. *Tenacity:* n.d. *Hardness:* = 7-7.5 *D(meas.):* = n.d. *D(calc.):* = 3.78

Optical Properties: Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous to resinous. *Optical Class:* Biaxial (+). $\alpha = 1.722(2)$ $\beta = \text{n.d.}$ $\gamma = 1.734(2)$ *Orientation:* Z = c.

Cell Data: *Space Group:* C2/m. $a = 7.853(6)$ $b = 16.534(9)$ $c = 5.639(5)$ $\beta = 90.00(8)^\circ$

X-ray Powder Pattern: Calculated pattern.

1.391 (100), 2.390 (87), 2.678 (71), 3.001 (61), 1.968 (61), 1.964 (48), 2.363 (46)

Chemistry:	(1)	(2)
SiO ₂	28.47	28.83
Al ₂ O ₃	54.12	54.64
Cr ₂ O ₃		0.34
TiO ₂	0.11	0.14
FeO	1.40	3.37
MgO	0.45	0.23
MnO	0.01	0.19
ZnO	11.82	7.70
NiO		0.39
CoO		0.50
Li ₂ O	0.45	0.66
H ₂ O	[1.96]	.
Total	98.79	96.99

(1) Dora-Maira massif, Italian Western Alps; average of 3 electron microprobe analyses, H₂O calculated; corresponds to $(\square_{3.77}\text{Fe}^{2+}_{0.13}\text{Mg}_{0.10})_{\Sigma=4}(\text{Zn}_{2.45}\square_{0.84}\text{Li}_{0.51}\text{Fe}^{2+}_{0.20})_{\Sigma=4}(\text{Al}_{15.98}\text{Ti}_{0.02})_{\Sigma=16.00}(\square_{1.96}\text{Al}_{1.95}\text{Mg}_{0.09})_{\Sigma=4}\text{Si}_8\text{O}_{40}[\text{O}_{4.33}(\text{OH})_{3.67}]_{\Sigma=8.00}$. (2) Samos, Greece; electron microprobe analysis, Li by SIMS, H₂O not analyzed directly, >4.14 H atoms per 48 oxygens inferred from calculated structural formula.

Occurrence: In metabauxite formed during regional metamorphism.

Association: Kyanite, muscovite, margarite, chloritoid, gahnite, either quartz or diaspore.

Distribution: From the Zermatt Valley, Swiss Western Alps; on the island of Samos, Greece.

Name: The prefix, *zinco*, indicates the zincian analog of *staurolite*.

Type Material: School of Mines, Paris, France (56245).

References: (1) Chopin, C., B. Goffe, L. Ungaretti, and R. Oberti (2003) Magnesio-staurolite and zincostauroilite: 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). (3) Feenstra, A., E. Ockenga, D. Rhede, and M. Wiedenbeck (2003) Li-rich zincostauroilite and its decompression-related breakdown products in a diaspore-bearing metabauxite from East Samos (Greece): An EMP and SIMS study. *Amer. Mineral.*, 88, 789-805.