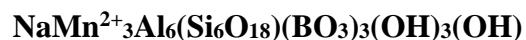


Tsilaisite

Crystal Data: Hexagonal. **Point Group:** 3m. Crystals show elongated {10̄1 0} and {11̄2 0} striated prisms terminated by prominent {0001} and small, minor pyramidal faces.

Physical Properties: *Cleavage:* Imperfect on {10̄1 1} and {11̄2 0}; {0001} parting. *Tenacity:* Brittle. *Fracture:* Subconchoidal. Hardness = ~7 D(calc.) = 3.133 Nonfluorescent.

Optical Properties: Transparent. *Color:* Greenish yellow. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Uniaxial (-). $\omega = 1.645(5)$ $\epsilon = 1.625(5)$ *Pleochroism:* O = pale greenish yellow, E = very pale greenish yellow.

Cell Data: *Space Group:* R3m. $a = 15.9461(5)$ $c = 7.1380(3)$ Z = 3

X-Ray Diffraction Pattern: Grotta d’Oggi, San Pietro in Campo, Elba, Italy.
3.974 (100), 2.942 (94), 2.570 (79), 2.034 (49), 4.205 (41), 6.329 (22), 2.377 (21)

Chemistry:	(1)	(1)	
SiO ₂	33.10	Na ₂ O	2.11
TiO ₂	0.32	K ₂ O	0.03
Al ₂ O ₃	37.10	Li ₂ O	0.81
B ₂ O ₃	10.24	H ₂ O	3.09
MnO	9.60	F	0.79
CaO	0.09	-O=F	0.33
		Total	99.95

(1) Grotta d’Oggi, San Pietro in Campo, Elba, Italy; average electron microprobe analysis supplemented by secondary ion mass spectrometry, optical absorption and IR spectroscopy, and crystal-structure refinement; corresponds to ^X(Na_{0.67}□_{0.30}Ca_{0.02}K_{0.01})^Y(Mn²⁺_{1.34}Al_{1.14}Li_{0.54}Ti_{0.04})^ZAl₆^T(Si_{5.94}Al_{0.06})B_{2.91}O₂₇^V(OH)₃^W[(OH)_{0.39}F_{0.41}O_{0.20}].

Mineral Group: Tourmaline supergroup.

Occurrence: In an aplitic dike in an LCT-type pegmatite.

Association: Quartz, K-feldspar, plagioclase, elbaite, schorl. Tsilaisite, fluotsilaisite and fluor-elbaite are closely related and can occur in the same color-zoned tourmaline crystal.

Distribution: From Grotta d’Oggi, San Pietro in Campo, Elba, Italy.

Name: For the *Tsilaisina* mine in the Sahatany Valley, Madagascar, from where the first Mn-rich tourmalines were described.

Type Material: Museo di Scienze della Terra, settore Mineralogico Petrografico “Carlo Lorenzo Garavelli,” Campus Universitario, Bari, Italy (sample 12/nm).

References: (1) Bosi F., H. Skogby, G. Agrosì, and E. Scandale (2012) Tsilaisite, NaMn₃Al₆(Si₆O₁₈)(BO₃)₃(OH)₃OH, a new mineral species of the tourmaline supergroup from Grotta d’Oggi, San Pietro in Campo, island of Elba, Italy. Amer. Mineral., 97, 989-994. (2) Henry, D.J., M. Novák, F.C. Hawthorne, A. Ertl, B.L. Dutrow, P. Uher, and F. Pezzotta (2011) Nomenclature of the tourmaline-supergroup minerals. Amer. Mineral., 96, 895-913. (3) Bosi, F., G.B. Andreozzi, G. Agrosì, and E. Scandale (2015) Fluor-tsilaisite, NaMn₃Al₆(Si₆O₁₈)(BO₃)₃(OH)₃F, a new tourmaline from San Piero in Campo (Elba, Italy) and new data on tsilaisitic tourmaline from the holotype specimen locality. Mineral. Mag., 79, 89-101.