

**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. As acicular crystals, to 3 mm, elongated along [010] and displaying {100} and {001}. *Twinning:* Intimately twinned causing (010) cross-sections to mimic tetragonal symmetry.

**Physical Properties:** *Cleavage:* Good on {010}. *Fracture:* Irregular. *Tenacity:* Brittle. Hardness = ~ 7 VHN = 100 (300 g load). D(meas.) = n.d. D(calc.) = 4.533

**Optical Properties:** Transparent. *Color:* Yellow. *Streak:* Colorless. *Luster:* Vitreous. *Optical Class:* Biaxial (appears uniaxial due to twinning).  $\alpha = 1.82(1)$   $\beta = n.d.$  (due to twinning)  $\gamma = 1.84(1)$  2V = n.d. Under crossed polars, (010) sections display 'hourglass pattern' similar to apophyllite with undulatory extinction.

**Cell Data:** *Space Group:* Pmna.  $a = 12.8252(5)$   $b = 4.6187(2)$   $c = 12.8252(5)$   $Z = 2$

**X-ray Powder Pattern:** Momeik, Myanmar.

3.05 (100), 2.64 (67), 2.54 (60), 4.63 (52), 1.84 (52), 1.87 (33), 4.08 (28)

Chemistry:	(1)		(1)
Li <sub>2</sub> O	0.32	Sm <sub>2</sub> O <sub>3</sub>	0.24
BeO	0.75	Gd <sub>2</sub> O <sub>3</sub>	0.71
B <sub>2</sub> O <sub>3</sub>	24.86	Tb <sub>2</sub> O <sub>3</sub>	0.29
MgO	0.27	Dy <sub>2</sub> O <sub>3</sub>	2.62
Al <sub>2</sub> O <sub>3</sub>	0.56	Ho <sub>2</sub> O <sub>3</sub>	0.53
SiO <sub>2</sub>	11.26	Er <sub>2</sub> O <sub>3</sub>	1.78
CaO	2.02	Tm <sub>2</sub> O <sub>3</sub>	0.33
MnO	22.06	Yb <sub>2</sub> O <sub>3</sub>	2.85
FeO	4.89	Lu <sub>2</sub> O <sub>3</sub>	0.38
Y <sub>2</sub> O <sub>3</sub>	22.32	<u>ThO<sub>2</sub></u>	<u>0.33</u>
ZrO <sub>2</sub>	0.19	Total	99.56

(1) Momeik, Myanmar; laser ablation-inductively coupled plasma-mass spectrometric analysis supplemented by FTIR and Raman spectroscopy; corresponding to  $Y_{2.06}Ln_{0.53}Zr_{0.02}Th_{0.01}Mn_{3.24}Ca_{0.38}Fe_{0.71}Mg_{0.07}Al_{0.11}Li_{0.22}Si_{1.95}B_{7.44}Be_{0.31}O_{24}$ .

**Occurrence:** As inclusions in gemmy phenakite crystals from pockets in granitic pegmatite.

**Association:** Schorl, tusionite, columbite-(Mn), albite, fluorapatite, lazulite.

**Distribution:** From Khetchel, Molo area, Momeik, north of Mogok, Myanmar.

**Name:** Honors mineralogist and gemologist Adolf Peretti (b. 1957), mineralogist and Head of GRS GemResearch Swisslab AG, Switzerland, who first recognized inclusions in phenakite.

**Type Material:** Museum of Natural History, Bern, Switzerland (43035).

**References:** (1) Danisi, R.M., T. Armbruster, E. Libowitzky, H.A.O. Wang, D. Günther, M. Nagashima, E. Reusser, and W. Bieri (2015) Perettiite-(Y),  $Y^{3+}_2Mn^{2+}_4Fe^{2+}[Si_2B_8O_{24}]$ , a new mineral from Momeik, Myanmar. *Eur. J. Mineral.*, 27(6), 793-803. (2) (2016) *Amer. Mineral.*, 101, 1923 (abs. ref. 1).