

Crystal Data: Orthorhombic. *Point Group:* $mm2$. As irregular crystals, to 200 μm .

Physical Properties: *Cleavage:* Perfect on {100}, good on {010}. *Tenacity:* Brittle.
Fracture: Irregular. Hardness = 8 D(meas.) = n.d. D(calc.) = 4.170

Optical Properties: Translucent to transparent. *Color:* Green. *Streak:* n.d. *Luster:* Vitreous.
Optical Class: Biaxial (-). $\alpha = 1.80(2)$ $\beta = 1.83(2)$ $\gamma = 1.84(2)$ $2V(\text{calc.}) = 60^\circ$
Pleochroism: $X = \text{light green}$, $Y = \text{light green}$, $Z = \text{colorless}$. *Orientation:* $X = a$, $Y = b$, $Z = c$.

Cell Data: *Space Group:* $Fdd2$. $a = 60.699(4)$ $b = 9.914(1)$ $c = 5.745(1)$ $Z = 8$

X-ray Powder Pattern: Xianghualing sharn, Linwu County, Hunan Province, southern China.
2.931 (100), 2.375 (100), 1.530 (98), 2.028 (52), 3.000 (35), 1.807 (35), 2.430 (30)

Chemistry:	(1)	(2)
Al_2O_3	40.00	38.41
SnO_2	25.96	28.38
MgO	6.57	11.39
CaO	8.56	10.56
FeO	4.83	
B_2O_3	6.53	6.56
BeO	4.37	4.71
ZnO	1.81	
MnO	1.23	
Na_2O	1.13	
TiO_2	0.10	
SiO_2	0.04	
Total	101.12	100.00

(1) Xianghualing sharn, Linwu County, Hunan Province, southern China; average of 6 electron microprobe analyses supplemented by SIM, Raman, and IR spectroscopy; corresponds to $(\text{Ca}_{1.64}\text{Na}_{0.39})_{\Sigma=2.03}(\text{Sn}_{1.85}\text{Zn}_{0.24})_{\Sigma=2.09}(\text{Mg}_{1.75}\text{Fe}_{0.72}\text{Al}_{0.42}\text{Mn}_{0.19}\text{Ti}_{0.01})_{\Sigma=3.09}\text{Al}_8[(\text{B}_{1.01}\text{O}_3)(\text{Be}_{0.94}\text{O}_4)\text{O}_6]_2$.
(2) $\text{Ca}_2\text{Sn}_2\text{Mg}_3\text{Al}_8[(\text{BO}_3)(\text{BeO}_4)\text{O}_6]_2$.

Occurrence: In a hsianghualite-bearing vein in the exocontact of a contact metamorphic rock.

Association: Fluorite, phlogopite, hsianghualite, magnetite, dravite, magnesiotaaffeite-2N'2S, calcite.

Distribution: From the Xianghualing sharn, Linwu County, Hunan Province, southern China.

Name: Honors "Meng Xianmin" (1900-1969), a Chinese geologist, who made significant contributions to our understanding of ore deposits in China.

Type Material: Geological Museum of China, Beijing, People's Republic of China (M13293) and the Laboratory of Mineralogy, University of Liège, Belgium (20395).

References: (1) Rao Can, F. Hatert, F. Dal Bo, Rucheng Wang, Xiangping Gu, and M. Baijot (2017) Mengxianminite ($\text{Ca}_2\text{Sn}_2\text{Mg}_3\text{Al}_8[(\text{BO}_3)(\text{BeO}_4)\text{O}_6]_2$) a new borate mineral from Xianghualing skarn, Hunan Province, China, with a highly unusual chemical combination (B + Be + Sn). *Amer. Mineral.*, 102, 2136-2141.