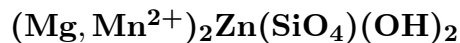


Gerstmannite

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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As mats and sprays of bunched prismatic crystals, to 1 cm; as single crystals typically bounded by {100}, {010}, {110}, lacking terminations.

Physical Properties: *Cleavage:* Good on {010}. *Hardness* = 4.5 *D*(meas.) = 3.68(2)
D(calc.) = 3.66

Optical Properties: Translucent to opaque. *Color:* White to very pale pink. *Streak:* White. *Luster:* Vitreous to subadamantine, silky when matted.

Optical Class: Biaxial (-). *Orientation:* $X = b; Y = c; Z = a$. $\alpha = 1.665(2)$ $\beta = 1.675(2)$
 $\gamma = 1.678(2)$ $2V(\text{meas.}) = 50^\circ\text{--}60^\circ$

Cell Data: *Space Group:* $Bbcm$. $a = 8.185(7)$ $b = 18.65(2)$ $c = 6.256(6)$ $Z = 8$

X-ray Powder Pattern: Sterling Hill, New Jersey, USA.

2.598 (100), 9.326 (85), 3.418 (80), 2.758 (75), 2.332 (75), 2.983 (60), 4.806 (50)

Chemistry:	(1)	(2)	(3)	(4)
SiO ₂	23.9	23.2		22.84
FeO	0.06			
MnO	22.1	21.1		20.22
ZnO	31.7	29.6		30.94
MgO	16.6	19.5		19.15
Na ₂ O	0.04			
H ₂ O			4.12	6.85
Total	94.4	93.4		100.00

(1) Sterling Hill, New Jersey, USA; after deducting 3.93% of calcite as CaCO₃. (2) Do.; by electron microprobe. (3) Do.; H₂O by Penfield method. (4) $(\text{Mg}_{1.25}\text{Mn}_{0.75})_{\Sigma=2.00}\text{ZnSiO}_4(\text{OH})_2$.

Occurrence: In a hydrothermal vein cutting franklinite-willemite ore in a metamorphosed stratiform zinc orebody.

Association: Calcite, manganpyrosomalite, sphalerite.

Distribution: From Sterling Hill, Ogdensburg, Sussex Co., New Jersey, USA.

Name: For Ewald Gerstmann (1918–), mineral collector of Franklin, New Jersey, USA.

Type Material: Harvard University, Cambridge, Massachusetts, 126484; National Museum of Natural History, Washington, D.C., USA, 135926, 137021.

References: (1) Moore, P.B. and T. Araki (1977) Gerstmannite, a new zinc silicate mineral and a novel cubic close-packed oxide structure. *Amer. Mineral.*, 62, 51–59.