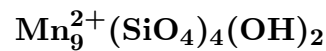


# Jerrygibbsite



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**Crystal Data:** Orthorhombic. *Point Group:*  $mm2$  (probable), or  $2/m\ 2/m\ 2/m$ . As interlocking anhedral crystals, to 2 mm.

**Physical Properties:** *Cleavage:* Imperfect on {001}. *Hardness* =  $\sim 5.5$  *D*(meas.) = 4.00(2) *D*(calc.) = 4.045

**Optical Properties:** Transparent and translucent lamellae alternating  $\parallel$  {001}.

*Color:* Violet-pink, with a brownish tinge; light pink in thin section. *Streak:* Light pink.

*Luster:* Vitreous.

*Optical Class:* Biaxial (-). *Orientation:*  $X = b$ ;  $Y = c$ ;  $Z = a$ . *Dispersion:*  $r > v$ , moderate.  $\alpha = 1.772(4)$   $\beta = 1.783(4)$   $\gamma = 1.789(4)$   $2V(\text{meas.}) = 72^\circ$

**Cell Data:** *Space Group:*  $Pbn2_1$  (probable), or  $Pbnm$ .  $a = 4.875(2)$   $b = 10.709(6)$   $c = 28.18(2)$   $Z = 4$

**X-ray Powder Pattern:** Franklin, New Jersey, USA.

2.557 (100), 1.806 (100), 2.869 (78), 2.752 (49), 2.702 (46), 2.362 (39), 2.661 (34)

<b>Chemistry:</b>	(1)
	SiO <sub>2</sub> 27.1
	FeO 0.3
	MnO 64.1
	ZnO 3.9
	MgO 1.4
	CaO 0.4
	F 0.0
	H <sub>2</sub> O 2.13
	<hr/>
	Total 99.3

(1) Franklin, New Jersey, USA; by electron microprobe, H<sub>2</sub>O by the Penfield method; corresponds to  $(\text{Mn}_{7.86}\text{Zn}_{0.59}\text{Mg}_{0.24}\text{Ca}_{0.16}\text{Fe}_{0.14})_{\Sigma=8.99}(\text{SiO}_4)_4(\text{OH})_2$ .

**Polymorphism & Series:** Dimorphous with sonolite.

**Mineral Group:** Leucophoenicite group.

**Occurrence:** In a metamorphosed stratiform Zn-Mn deposit.

**Association:** Franklinite, willemite, zincite, sonolite, leucophoenicite, tephroite.

**Distribution:** From Franklin, Sussex Co., New Jersey, USA.

**Name:** In honor of Professor Gerald V. Gibbs, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, USA.

**Type Material:** Harvard University, Cambridge, Massachusetts, 125030; National Museum of Natural History, Washington, D.C., USA, C3209, R18772, 149037; The Natural History Museum, London, England 1983,236.

**References:** (1) Dunn, P.J., D.R. Peacor, W.B. Simmons, and E.J. Essene (1984) Jerrygibbsite, a new polymorph of  $\text{Mn}_9(\text{SiO}_4)_4(\text{OH})_2$  from Franklin, New Jersey, with new data on leucophoenicite. *Amer. Mineral.*, 69, 546–552. (2) Kato, T., Y. Ito, and N. Hashimoto (1989) The crystal structures of sonolite and jerrygibbsite. *Neues Jahrb. Mineral., Monatsh.*, 410–430, 1989.