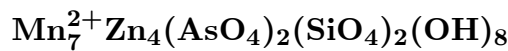


**Kolicite**

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**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$ . As crystals, to 0.5 mm, of pinacoidal habit, predominantly tabular; as fractured grains.

**Physical Properties:** *Fracture:* Even. *Tenacity:* Brittle. Hardness =  $\sim 4.5$   
D(meas.) = 4.17(2) D(calc.) = 4.20

**Optical Properties:** Semitransparent. *Color:* Bright yellowish orange. *Streak:* Light orange. *Luster:* Vitreous.

*Optical Class:* Biaxial (-). *Pleochroism:* Strong; X = colorless or pale yellow; Y = yellowish orange; Z = light yellow. *Orientation:* X = b; Y = c; Z = a. *Dispersion:*  $r < v$ , strong. *Absorption:* Z = Y > X.  $\alpha = 1.779(2)$   $\beta = 1.786(2)$   $\gamma = 1.790(2)$  2V(meas.) =  $78(2)^\circ$  2V(calc.) =  $74^\circ$

**Cell Data:** *Space Group:*  $Cmca$ .  $a = 18.59(3)$   $b = 8.789(5)$   $c = 12.04(1)$   $Z = 4$

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

2.970 (100), 1.540 (70), 3.58 (60), 2.608 (50), 2.815 (40), 2.479 (40), 2.342 (40)

**Chemistry:**

|                                |       |
|--------------------------------|-------|
|                                | (1)   |
| SiO <sub>2</sub>               | 10.4  |
| As <sub>2</sub> O <sub>5</sub> | 18.9  |
| FeO                            | 0.4   |
| MnO                            | 39.2  |
| ZnO                            | 26.0  |
| MgO                            | 0.8   |
| H <sub>2</sub> O               | 5.5   |
| Total                          | 101.2 |

(1) Sterling Hill, New Jersey, USA; by electron microprobe, H<sub>2</sub>O by TGA; corresponds to  $(\text{Mn}_{6.70}\text{Mg}_{0.24}\text{Fe}_{0.06})_{\Sigma=7.00}\text{Zn}_{3.87}(\text{AsO}_4)_2(\text{Si}_{1.05}\text{O}_4)_2(\text{OH})_8$ .

**Occurrence:** Incrusting willemite-franklinite ore from metamorphosed stratiform zinc orebodies.

**Association:** Willemite, franklinite, sonolite, friedelite, holdenite, calcite.

**Distribution:** At Sterling Hill, Ogdensburg, and at Franklin, Sussex Co., New Jersey, USA.

**Name:** For John Kolic, of Rockaway, New Jersey, USA, who first discovered the mineral.

**Type Material:** Harvard University, Cambridge, Massachusetts; National Museum of Natural History, Washington, D.C., USA, 143765.

**References:** (1) Dunn, P.J., D.R. Peacor, and B.D. Sturman (1979) Kolicite, a new manganese zinc silicate arsenate from Sterling Hill, Ogdensburg, New Jersey. *Amer. Mineral.*, 64, 708–712.  
(2) Peacor, D.R. (1980) The crystal structure of kolicite,  $\text{Mn}_7(\text{OH})_4[\text{As}_2\text{Zn}_4\text{Si}_2\text{O}_{16}(\text{OH})_4]$ . *Amer. Mineral.*, 65, 483–487.