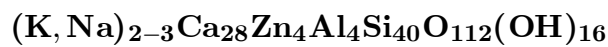


# Minehillite



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**Crystal Data:** Hexagonal. *Point Group:*  $6/m\ 2/m\ 2/m, \bar{6}m2$ , or  $6mm$ . As plates, to 5 mm, forming bands and incrustations.

**Physical Properties:** *Cleavage:* {0001}, perfect. Hardness =  $\sim 4$   $D(\text{meas.}) = 2.93$   
 $D(\text{calc.}) = 2.94$  Fluoresces medium dull violet in SW and duller violet in LW UV.

**Optical Properties:** Transparent. *Color:* Colorless; white in aggregates, gray to black with lead inclusions. *Luster:* Pearly on cleavage, vitreous on fractures.  
*Optical Class:* Uniaxial (-).  $\omega = 1.607(2)$   $\epsilon = 1.604(2)$

**Cell Data:** *Space Group:*  $P6_3/mmc, P\bar{6}2c$ , or  $P6_3mc$ .  $a = 9.77(2)$   $c = 33.01(7)$   $Z = 1$

**X-ray Powder Pattern:** Franklin, New Jersey, USA.  
2.764 (100), 3.35 (90), 1.847 (90), 16.1 (70), 3.07 (70), 3.14 (60), 2.965 (50)

<b>Chemistry:</b>	(1)
	SiO <sub>2</sub> 49.8
	Al <sub>2</sub> O <sub>3</sub> 4.6
	FeO 0.2
	MnO 0.2
	ZnO 8.1
	MgO 0.1
	CaO 32.0
	Na <sub>2</sub> O 0.2
	K <sub>2</sub> O 1.9
	H <sub>2</sub> O 2.84
	<hr/>
	Total 99.9

(1) Franklin, New Jersey, USA; by electron microprobe, H<sub>2</sub>O by the Penfield method; corresponds to  $\text{K}_{1.9}\text{Na}_{0.3}\text{Fe}_{0.1}\text{Mg}_{0.1}\text{Mn}_{0.1}\text{Ca}_{27.5}\text{Zn}_{4.8}\text{Al}_{4.4}\text{Si}_{39.4}\text{O}_{112}(\text{OH})_{15.2}$ .

**Occurrence:** A secondary low-temperature hydrothermal mineral formed by replacement of associated minerals in a metamorphosed stratiform zinc deposit.

**Association:** Microcline, wollastonite, grossular, vesuvianite, margarosanite, calcite, diopside, lead, allanite.

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

**Name:** For Mine Hill, at Franklin, New Jersey, USA, where the Franklin deposit was exposed at the surface.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, C6411, C6412, 150332.

**References:** (1) Dunn, P.J., D.R. Peacor, P.B. Leavens, and F.J. Wicks (1984) Minehillite, a new layer silicate from Franklin, New Jersey, related to reyerite and truscottite. *Amer. Mineral.*, 69, 1150–1155.