

Kittatinnyite



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Crystal Data: Hexagonal. *Point Group:* $6/m\ 2/m\ 2/m$, $6mm$, or $\bar{6}m2$. As very thin, distorted crystals, to 0.2 mm, flattened on {0001}, and in subparallel aggregates.

Physical Properties: *Cleavage:* {0001}, perfect. *Tenacity:* Brittle. *Hardness* = ~ 4
D(meas.) = 2.61 D(calc.) = 2.62

Optical Properties: Translucent to opaque. *Color:* Bright to golden yellow; in thin section, medium yellow. *Streak:* Light yellow. *Luster:* Vitreous.

Optical Class: Uniaxial (-). *Pleochroism:* Very weak in medium yellow. *Absorption:* $E \geq O$.
 $\omega = 1.727(3)$ $\epsilon = \text{n.d.}$

Cell Data: *Space Group:* $P6_3/mmc$, $P6_3mc$, or $P\bar{6}2c$. $a = 6.498(4)$ $c = 22.78(2)$ $Z = 1$

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

11.2 (100), 5.61 (60), 2.733 (60), 2.822 (50), 2.525 (40), 2.279 (40), 5.03 (30)

Chemistry:

	(1)	(2)
SiO ₂	18.2	18.23
Mn ₂ O ₃	23.6	23.95
As ₂ O ₅	0.8	
FeO	0.0	
MnO	10.6	10.76
CuO	0.0	
ZnO	0.3	
MgO	0.0	
CaO	17.3	17.01
H ₂ O	[29.2]	30.05
Total	[100.0]	100.00

(1) Franklin, New Jersey, USA; by electron microprobe, Mn²⁺:Mn³⁺ from charge balance, H₂O by difference. (2) Ca₄Mn₂²⁺Mn₄³⁺Si₄O₁₆(OH)₈ • 18H₂O.

Occurrence: A secondary mineral coating fractures in a metamorphosed stratiform zinc deposit.

Association: Bostwickite, calcite, franklinite, fluorite.

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

Name: Derived from *kittatinny*, which in the language of the Algonquin Indians meant *endless hills*, in allusion to the topography of the Franklin area.

Type Material: Harvard University, Cambridge, Massachusetts, 113514; National Museum of Natural History, Washington, D.C., USA, C4222.

References: (1) Dunn, P.J. and D.R. Peacor (1983) Kittatinnyite and wallkilldellite, silicate/arsenate analogues containing calcium and manganese, from Franklin and Sterling Hill, New Jersey. *Amer. Mineral.*, 68, 1029–1032.