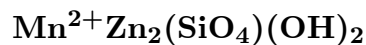


Hodgkinsonite



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Crystal Data: Monoclinic. *Point Group:* $2/m$. As euhedral crystals, stout prismatic and terminated by steep pyramids, also dominated by pyramidal forms, to 2 cm. Granular to massive in veinlets.

Physical Properties: *Cleavage:* Perfect on {001}. *Hardness* = < 5 $D(\text{meas.}) = 4.06\text{--}4.08$
 $D(\text{calc.}) = 4.07$ *Fluoresces* weak pinkish red in LW UV.

Optical Properties: Transparent to translucent. *Color:* Bright pink or red to reddish brown and orange, rarely yellow; black from tarnish or inclusions.

Optical Class: Biaxial (-). *Pleochroism:* In shades of lavender and pale purple. *Orientation:* $Y = b$; $Z \wedge c = 38^\circ$. *Dispersion:* $r > v$, strong. $\alpha = 1.720\text{--}1.724$ $\beta = 1.741\text{--}1.742$ $\gamma = 1.746$
 $2V(\text{meas.}) = 50^\circ\text{--}60^\circ$

Cell Data: *Space Group:* $P2_1/a$. $a = 8.171(2)$ $b = 5.316(2)$ $c = 11.761(2)$
 $\beta = 95^\circ 15(5)'$ $Z = 4$

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

2.864 (100), 2.957 (90), 1.547 (85), 2.567 (65), 1.412 (65), 2.115 (60), 1.594 (60)

Chemistry:

	(1)	(2)	(3)
SiO ₂	19.86	19.6	19.27
FeO		0.2	
MnO	20.68	22.7	22.75
ZnO	52.93	50.9	52.20
MgO	0.04	0.4	
CaO	0.93	0.3	
H ₂ O ⁺	5.77	5.76	5.78
Total	100.21	99.86	100.00

(1) Franklin, New Jersey, USA; average of three analyses. (2) Do.; by electron microprobe, average of eight samples, H₂O by the Penfield method. (3) MnZn₂SiO₄(OH)₂.

Occurrence: As seams in massive willemite-franklinite granular ore in a metamorphosed stratiform zinc deposit (Franklin, New Jersey, USA).

Association: Barite, willemite, franklinite, tephroite, pyrochroite, calcite, manganoan garnet, copper.

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

Name: For H.H. Hodgkinson, Assistant Underground Superintendent of the Franklin mine, who discovered the mineral.

Type Material: Harvard University, Cambridge, Massachusetts, 89875, 89880, 89881; National Museum of Natural History, Washington, D.C., USA, 87231.

References: (1) Palache, C. and W.T. Schaller (1913) Hodgkinsonite, a new mineral from Franklin Furnace, New Jersey. *J. Wash. Acad. Sci.*, 3(19), 474–478. (2) Palache, C. (1935) The minerals of Franklin and Sterling Hill, Sussex County, New Jersey. *U.S. Geol. Sur. Prof. Paper* 180, 108–111. (3) Roberts, W.M.B. and F.M. Quodling (1962) X-ray, optical, and morphological observations on hodgkinsonite from Franklin Furnace. *Mineral. Mag.*, 33, 343–346. (4) Rentzeperis, P.J. (1963) The crystal structure of hodgkinsonite, Zn₂Mn[(OH)₂SiO₄]. *Zeits. Krist.*, 119, 117–138. (5) Dunn, P.J. and R.C. Bostwick (1982) Hodgkinsonite from Franklin and Sterling Hill, New Jersey: a review. *Mineral. Record*, 13, 229–232.

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