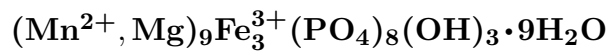


Landesite



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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Massive, replacing reddingite.

Physical Properties: *Cleavage:* Good on $\{100\}$; poor $\perp \{100\}$. Hardness = 3–3.5
D(meas.) = 3.026 D(calc.) = 3.210

Optical Properties: Translucent. *Color:* Yellowish brown; yellowish brown in transmitted light.

Optical Class: Biaxial (–). *Pleochroism:* X = dark brown; Y = light brown; Z = yellow.
Orientation: $Z \perp \{100\}$. $\alpha = 1.720$ $\beta = 1.728$ $\gamma = 1.735$ $2V(\text{meas.}) = \text{Large}$.

Cell Data: *Space Group:* $Pbna$. $a = 9.458(3)$ $b = 10.185(2)$ $c = 8.543(2)$ $Z = 4$

X-ray Powder Pattern: Berry quarry, Maine, USA.

3.207 (100), 5.096 (54), 3.163 (35), 2.758 (29), 4.284 (27), 2.630 (24), 3.090 (23)

Chemistry:

	(1)
P_2O_5	31.94
$\text{Fe}_2\text{O}_3 + \text{FeO}$	13.91
Mn_2O_3	2.69
MnO	33.65
MgO	3.07
CaO	1.39
H_2O	13.60
insol.	0.13
Total	100.38

(1) Berry quarry, Maine, USA; corresponds to $(\text{Mn}_{7.2}^{2+}\text{Mg}_{1.2}\text{Ca}_{0.5})_{\Sigma=8.9}(\text{Fe}_{2.7}^{3+}\text{Mn}_{0.5}^{3+})_{\Sigma=3.2}(\text{PO}_4)_8(\text{OH})_{3.2} \cdot 8.8\text{H}_2\text{O}$.

Occurrence: Replacing reddingite in a complex granite pegmatite (Berry quarry, Maine, USA).

Association: Reddingite, lithiophilite, rhodochrosite, eosphorite, fairfieldite, apatite (Berry quarry, Maine, USA).

Distribution: In the USA, in the Berry quarry, Poland, Androscoggin Co., and the Emmons quarry, Greenwood, Oxford Co., Maine; from Branchville, Fairfield Co., Connecticut. At Hagendorf, Bavaria, Germany.

Name: Honors Dr. Kenneth Knight Landes (1899–1984), Professor of Geology, University of Michigan, Ann Arbor, Michigan, USA, for his study of Maine pegmatites.

Type Material: Harvard University, Cambridge, Massachusetts, USA, 91214.

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