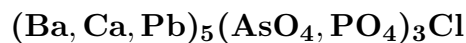


Morelandite

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Crystal Data: Hexagonal. *Point Group:* 6/*m* or 6. As irregular segregations, to 2.5 cm, in calcite.

Physical Properties: *Cleavage:* Poor on {0001}. *Hardness* = 4.5 *D*(meas.) = 5.33
D(calc.) = 5.30

Optical Properties: Translucent. *Color:* Light yellow to gray. *Streak:* White.
Luster: Greasy to vitreous.
Optical Class: Uniaxial (+). $\omega = 1.880(4)$ $\epsilon = 1.884(4)$

Cell Data: *Space Group:* *P*6₃/*m* or *P*6₃. *a* = 10.169(2) *c* = 7.315(2) *Z* = 2

X-ray Powder Pattern: Jakobsberg, Sweden.
3.030 (10), 2.969 (7), 2.935 (6), 3.658 (5), 5.089 (3), 4.175 (3), 1.965 (3)

Chemistry:	(1)
P ₂ O ₅	2.05
As ₂ O ₅	28.11
FeO	0.41
MnO	0.39
PbO	24.85
CaO	8.85
BaO	33.00
F	0.00
Cl	3.69
H ₂ O	trace
-O = Cl ₂	0.83
<hr/> Total	<hr/> 100.52

(1) Jakobsberg, Sweden; by electron microprobe, corresponds to (Ba_{2.25}Ca_{1.65}Pb_{1.16}Fe_{0.06}Mn_{0.06})_{Σ=5.18}[(AsO₄)_{2.56}(PO₄)_{0.30}]_{Σ=2.86}Cl_{1.09}.

Mineral Group: Apatite group.

Occurrence: On a museum specimen from a metamorphosed manganese deposit.

Association: Hausmannite, calcite.

Distribution: From Jakobsberg, Värmland, Sweden.

Name: Honors Grover C. Moreland (1912–1978), Supervisor of sample preparation, Smithsonian Institution, Washington, D.C., USA.

Type Material: Royal Ontario Museum, Toronto, Canada, M35176; Harvard University, Cambridge, Massachusetts, 126607; National Museum of Natural History, Washington, D.C., USA, C4147.

References: (1) Dunn, P.J. and R.C. Rouse (1978) Morelandite, a new barium arsenate chloride member of the apatite group. *Can. Mineral.*, 16, 601–604. (2) (1980) *Amer. Mineral.*, 65, 207 (abs. ref. 1).