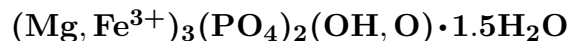


Garyansellite



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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Rare crystals prismatic [100], with prominent {111} and {011}, smaller {101}, to 2 mm; commonly as plates flattened on {010}.

Physical Properties: *Cleavage:* {001}, good. Hardness = 4 D(meas.) = 3.16(4)
D(calc.) = 3.154

Optical Properties: Semitransparent. *Color:* Clove-brown. *Streak:* Brown.

Luster: Vitreous, bronze [sic] on cleavages.

Optical Class: Biaxial (-). *Pleochroism:* $X = Z$ = reddish brown; Y = yellow. *Orientation:* $X = b$; $Y = a$; $Z = c$. *Dispersion:* $r < v$. *Absorption:* $Z = X > Y$. $\alpha = 1.733(2)$ $\beta = 1.757(2)$
 $\gamma = 1.761(2)$ $2V(\text{meas.}) = 55(2)^\circ$ $2V(\text{calc.}) = 44^\circ$

Cell Data: *Space Group:* $Pbna$. $a = 9.452(4)$ $b = 9.890(5)$ $c = 8.198(4)$ $Z = 4$

X-ray Powder Pattern: Rapid Creek, Canada.

3.156 (100), 2.705 (60), 4.93 (50), 3.098 (40), 4.26 (30), 2.535 (30), 2.213 (30)

Chemistry:

	(1)
P ₂ O ₅	38.8
Al ₂ O ₃	0.1
Fe ₂ O ₃	30.5
FeO	0.3
MnO	2.7
MgO	16.0
H ₂ O	11.0
Total	99.4

(1) Rapid Creek, Canada; by electron microprobe, Fe²⁺ by KCr₂O₇ titration, Fe³⁺ by difference, total Mn as MnO, H₂O by DTA/TGA; corresponds to (Mg_{1.45}Fe_{1.39}³⁺Mn_{0.14}Al_{0.01}Fe_{0.01}²⁺)_{Σ=3.00}(PO₄)_{1.99}(OH)_{1.43}•1.52H₂O.

Polymorphism & Series: Forms a series with kryzhanovskite.

Occurrence: A rare low-temperature mineral in fractures in a sedimentary iron formation.

Association: Kryzhanovskite, ludlamite, arrojadite, vivianite, metavivianite, souzalite, quartz.

Distribution: From the east side of Rapid Creek, about one km north of the junction with Lake Creek, Yukon Territory, Canada.

Name: Honors H. Gary Ansell (1943–), Associate Curator, Canadian National Mineral Collection, Geological Survey of Canada, Ottawa, Canada.

Type Material: Royal Ontario Museum, Toronto, Canada, M37306.

References: (1) Sturman, B.D. and P.J. Dunn (1984) Garyansellite, a new mineral from Yukon Territory, Canada. *Amer. Mineral.*, 69, 207–209.