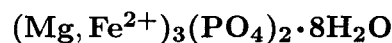


Barićite

Crystal Data: Monoclinic. *Point Group:* $2/m$. As thick plates, parallel to $\{010\}$, to 12 cm.

Physical Properties: *Cleavage:* Perfect on $\{010\}$. *Tenacity:* Flexible in thin flakes.
Hardness = 1.5–2 D(meas.) = 2.35–2.42 D(calc.) = 2.448

Optical Properties: Translucent. *Color:* Colorless to pale blue, varies with iron oxidation.
Streak: White to pale blue, darkening after several days. *Luster:* Vitreous, pearly on $\{010\}$.
Optical Class: Biaxial (+). *Pleochroism:* $X = \text{blue}$; $Y = Z = \text{colorless}$. *Orientation:*
 $X = b$; $Z \wedge c = 28^\circ\text{--}30^\circ$. *Dispersion:* $r < v$, weak. $\alpha = 1.547\text{--}1.554$ $\beta = 1.553\text{--}1.564$
 $\gamma = 1.582\text{--}1.595$ $2V(\text{meas.}) = 55^\circ\text{--}60^\circ$ $2V(\text{calc.}) = 60^\circ$

Cell Data: *Space Group:* $C2/m$. $a = 10.075$ $b = 13.416\text{--}13.434$ $c = 4.622\text{--}4.670$
 $\beta = 104^\circ 22'\text{--}104^\circ 52'$ $Z = 2$

X-ray Powder Pattern: Yukon Territory, Canada.

6.71 (100), 2.699 (70), 2.956 (60), 2.526 (50), 3.196 (40), 2.418 (35), 2.217 (30)

Chemistry:

	(1)	(2)	(3)
P_2O_5	31.28	31.45	31.25
Fe_2O_3	2.77	0.20	
FeO	19.90	15.10	23.72
MnO		2.95	
MgO	15.36	16.40	13.31
H_2O	28.96	30.75	31.72
Total	[98.27]	[96.85]	100.00

(1) Yukon Territory, Canada; $\text{Fe}^{2+}:\text{Fe}^{3+} = 7.98:1$ by TGA, H_2O by TGA; corresponding to $(\text{Mg}_{1.64}\text{Fe}_{1.21}^{2+}\text{Fe}_{0.15}^{3+})_{\Sigma=3.00}(\text{PO}_4)_2(\text{OH})_{0.15} \cdot 7.85\text{H}_2\text{O}$. (2) Marlborough Province, New Zealand; $\text{Fe}^{2+}:\text{Fe}^{3+}$ from (1); correcting from average of three microprobe analyses for Mn and Ca, then corresponding to $(\text{Mg}_{2.04}\text{Fe}_{0.86}^{2+}\text{Mn}_{0.21}\text{Ca}_{0.04}\text{Fe}_{0.01}^{3+})_{\Sigma=3.16}(\text{PO}_4)_{2.04} \cdot 7.90\text{H}_2\text{O}$. (3) $(\text{Mg}, \text{Fe}^{2+})_3(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$ with $\text{Mg}:\text{Fe}^{2+} = 1:1$.

Mineral Group: Vivianite group.

Occurrence: As fracture fillings in sideritic iron formation (Yukon Territory, Canada); as a folded ribbonlike mass in sediment from a raised beach (Marlborough Province, New Zealand).

Association: Siderite, vivianite, lazulite, whiteite, collinsite, childrenite, quartz (Yukon Territory, Canada).

Distribution: From the Big Fish River–Rapid Creek area, Yukon Territory, Canada. In Marlborough Province, New Zealand.

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Type Material: Mineralogical and Petrological Museum, Zagreb, Croatia; Royal Ontario Museum, Toronto, Canada, M34169, M35430; National Museum of Natural History, Washington, D.C., USA, 135698, 137303, 145736.

References: (1) Sturman, B.D. and J.A. Mandarino (1976) Barićite, the magnesium analogue of vivianite, from Yukon Territory, Canada. *Can. Mineral.*, 14, 403–406. (2) (1976) *Amer. Mineral.*, 61, 1053 (abs. concerning ref. 1). (3) Rodgers, K.A. (1987) Baračite [= barićite], a further occurrence. *Neues Jahrb. Mineral., Monatsh.*, 183–192.