

Bariosincosite

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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 = blue; Y = Z = colorless. *Orientation:* X = b; Z \wedge c = 28°–30°. *Dispersion:* r < v, weak. $\alpha = 1.547\text{--}1.554$ $\beta = 1.553\text{--}1.564$ $\gamma = 1.582\text{--}1.595$ 2V(meas.) = 55°–60° 2V(calc.) = 60°**Cell Data:** *Space Group:* C2/m. a = 10.075 b = 13.416–13.434 c = 4.622–4.670 $\beta = 104^\circ 22' \text{--} 104^\circ 52'$ 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 ₂ O ₅	31.28	31.45	31.25
Fe ₂ O ₃	2.77	0.20	
FeO	19.90	15.10	23.72
MnO		2.95	
MgO	15.36	16.40	13.31
H ₂ O	28.96	30.75	31.72
Total	[98.27]	[96.85]	100.00

(1) Yukon Territory, Canada; Fe²⁺:Fe³⁺ = 7.98:1 by TGA, H₂O by TGA; corresponding to (Mg_{1.64}Fe_{1.21}Fe_{0.15}³⁺)_{Σ=3.00}(PO₄)₂(OH)_{0.15}•7.85H₂O. (2) Marlborough Province, New Zealand; Fe²⁺:Fe³⁺ from (1); correcting from average of three microprobe analyses for Mn and Ca, then corresponding to (Mg_{2.04}Fe_{0.86}²⁺Mn_{0.21}Ca_{0.04}Fe_{0.01}³⁺)_{Σ=3.16}(PO₄)_{2.04}•7.90H₂O. (3) (Mg, Fe²⁺)₃(PO₄)₂•8H₂O with Mg:Fe²⁺ = 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.**Name:** Honors Dr. Ljudevit Barić, former Director of the Mineralogical Museum and Professor of Mineralogy, University of Zagreb, Zagreb, Croatia.**Type Material:** Mineralogical and Petrological Musuem, 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) Baračićite [= barićite], a further occurrence. *Neues Jahrb. Mineral., Monatsh.*, 183–192.

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