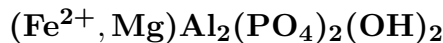


Scorzalite

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Crystal Data: Monoclinic. *Point Group:* $2/m$. Massive, to 7 cm. *Twinning:* Multiple, lamellar.**Physical Properties:** *Cleavage:* On {110}, good; on {101}, indistinct. Hardness = 6
D(meas.) = 3.33 D(calc.) = 3.32**Optical Properties:** Semitransparent. *Color:* Dark blue. *Streak:* White to pale blue.
Luster: Vitreous.*Optical Class:* Biaxial (-). *Pleochroism:* X = colorless; $Y = Z$ = blue. *Orientation:* $Y = b$; $X \simeq c$. *Dispersion:* $r < v$, perceptible. $\alpha = 1.626\text{--}1.645$ $\beta = 1.654\text{--}1.674$ $\gamma = 1.663\text{--}1.680$
 $2V(\text{meas.}) = \text{n.d.}$ $2V(\text{calc.}) = 58^\circ\text{--}62^\circ$ **Cell Data:** *Space Group:* $P2_1/c$. $a = 7.15$ $b = 7.31$ $c = 7.25$ $\beta = 120^\circ 35'$ $Z = 2$ **X-ray Powder Pattern:** Corrego Frio mine, Brazil; nearly identical to lazulite.
3.24 (vs), 3.20 (vs), 3.14 (s), 6.17 (m), 4.72 (m), 3.08 (m), 2.55 (m)

Chemistry:	(1)	(2)		(1)	(2)		(1)	(2)
P ₂ O ₅	42.90	44.64	FeO	14.74	11.30	CaO	0.02	
TiO ₂	0.10		MnO	0.11		H ₂ O	5.86	5.66
Al ₂ O ₃	30.87	32.06	ZnO	0.17				
Fe ₂ O ₃	0.54		MgO	4.23	6.34	Total	99.54	100.00

(1) Corrego Frio mine, Brazil; corresponds to $(\text{Fe}_{0.66}^{2+}\text{Mg}_{0.34}\text{Zn}_{0.01})_{\Sigma=1.01}(\text{Al}_{1.93}\text{Fe}_{0.02}^{3+})_{\Sigma=1.95}(\text{PO}_4)_{1.94}(\text{OH})_{2.08}$. (2) $(\text{Fe}, \text{Mg})\text{Al}_2(\text{PO}_4)_2(\text{OH})_2$ with Fe:Mg = 1:1.**Polymorphism & Series:** Forms a series with lazulite.**Mineral Group:** Lazulite group.**Occurrence:** Typically a secondary mineral in complex zoned granite pegmatites; may occur in kyanite-rich quartzite.**Association:** Souzalite, triphylite, wyllieite, trolleite, apatite, lacroixite, berlinite, tourmaline, muscovite, feldspar, quartz.**Distribution:** From the Corrego Frio pegmatite mine, Divino das Laranjeiras, near Linópolis, Minas Gerais, Brazil. In the USA, at the Victory mine, four km northeast of Custer, Custer Co., and the White Cap mine, three km south of Keystone, Pennington Co., South Dakota; in the Palermo #1 mine, near North Groton, Grafton Co., and the G.E. Smith mine, Newport, New Hampshire; at the Champion mine, Mono Co., California; from McIntyre Creek, about four km west of Glendevy, Larimer Co., Colorado. In the Buranga and Rusororo pegmatites, Gatumba district, Rwanda. At Jebilet, Morocco. From Hålsjöberget, Värmland, and in the Norrö pegmatite, on Rånö Island, Sweden. At Hagendorf, Bavaria, Germany. Other localities are reported, but chemical analyses would be desirable.**Name:** To honor Dr. Evaristo Pena Scorza (1899–?), Chief Mineralogist, Mineral Survey of Brazil, Rio de Janeiro, Brazil.**Type Material:** The Natural History Museum, London, England, 1965,207; Harvard University, Cambridge, Massachusetts, 100679; National Museum of Natural History, Washington, D.C., USA, C5862.**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 908–911. (2) Pecora, W.T. and J.J. Fahey (1949) The Corrego Frio pegmatite, Minas Gerais: scorzalite and souzalite, two new phosphate minerals. *Amer. Mineral.*, 34, 83–93. (3) Pecora, W.T. and J.J. Fahey (1950) The lazulite-scorzalite isomorphous series. *Amer. Mineral.*, 35, 1–18. (4) Lindberg, M.L. and C.L. Christ (1959) Crystal structures of the isostructural minerals lazulite, scorzalite and barbosalite. *Acta Cryst.*, 12, 695–697. (5) Abernathy, S.A. and F.N. Blanchard (1982) Variations in unit cell parameters and in the X-ray diffraction intensity ratio $I(200)/I(100)$ in the lazulite-scorzalite series. *Amer. Mineral.*, 67, 610–614.

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