**Crystal Data:** Triclinic, pseudomonoclinic. *Point Group:* 1 or 1.

Crystals are elongated along [010], with large \{001\}, giving a bladelike aspect, with smaller \{100\}, \{102\}, \{010\}, to 1 cm; commonly in radial aggregates. *Twining:* Polysynthetic around [010], composition plane \{001\}, universal.


**Optical Properties:**

- **Color:** Blue-green.
- **Streak:** Pale green.
- **Luster:** Vitreous.
- **Optical Class:** Biaxial (−).
- **Pleochroism:** X = Z = colorless; Y = blue.
- **Orientation:** X(163°, 7°); Y(-77.5°, 86.5°); Z(12.5°, 84°) [using (φ, ρ)].
- **Dispersion:** r>v, very strong.
- **Absorption:** Y > X = Z.
- **α = 1.619(3) β = 1.653(3) γ = 1.660(3) 2V(meas.) = 53(2)° 2V(calc.) = 56°

**Cell Data:** Space Group: \(P\bar{1} or P\bar{1}\). \(a = 11.79(1)\) \(b = 5.11(1)\) \(c = 13.61(1)\) \(α = 90°50(5)′\) \(β = 99°00(5)′\) \(γ = 90°05(5)′\) \(Z = 2\)

**X-ray Powder Pattern:** Yukon Territory, Canada.

3.395 (100), 2.554 (90d), 2.925 (80), 4.761 (60), 3.154 (60d), 3.062 (40), 6.72 (30)

**Chemistry:**

\[
\begin{array}{ccc}
\text{Chemical species} & (1) & (2) \\hline
\text{P}_2\text{O}_5 & 37.23 & 38.05 & \text{MgO} & 6.65 & 8.10 \\
\text{Al}_2\text{O}_3 & 25.51 & 27.33 & \text{CaO} & 0.26 & \\
\text{Fe}_2\text{O}_3 & 3.82 & & \text{H}_2\text{O} & 11.45 & 12.07 \\
\text{FeO} & 14.68 & 14.45 & \text{Total} & 99.91 & 100.00 \\
\text{MnO} & 0.31 & & & & \\
\end{array}
\]

(1) Yukon Territory, Canada; Mg, Ca, Al by AA, P by XRF, H\(_2\)O by TGA; after removal of quartz 7.0%, corresponds to (Fe\(^{2+}\)\(\frac{1}{2}\).Mg\(\frac{1}{2}\).Ca\(\frac{1}{4}\).Mn\(\frac{1}{4}\))\(_{2\Sigma=2}\) \(\Sigma=2\).89(Al\(_{3}\)Fe\(_{\text{III}}\))\(_{2\Sigma=4}\)\(_{\Sigma=4.18}\) \(\text{PO}_4\)_4(\text{OH})\(_{6.32}\)•1.69\(_{\text{H}_2\text{O}}\). Commonly strongly chemically zoned, although optical property variations are not a guide. (2) (Fe\(^{2+}\), Mg\(_{3}\))\(_{\text{Al}_4(\text{PO}_4)\_4(\text{OH})\_6\text{H}_2\text{O}}\) with Fe\(^{2+}\):Mg = 1:1.

**Polymorphism & Series:** Forms a series with souzalite.

**Occurrence:** As low-temperature fracture fillings in phosphate-ironstones (Yukon Territory, Canada); in fractures in tonalite (Bisbee, Arizona, USA).

**Association:** Souzalite, siderite, ludlaniite, oxidized vivianite, arrojadite, kryzhanovskite, quartz (Yukon Territory, Canada); chlorite, calcite, quartz (Bisbee, Arizona, USA).

**Distribution:** From Rapid Creek, Yukon Territory, Canada. In the USA, in large crystals at Bisbee, Cochise Co., Arizona; in New Hampshire, from the G.E. Smith mine, Newport, Sullivan Co. and the Charles Davis pegmatite, Groton, Grafton Co. At the Tsaobismund pegmatite, 60 km south of Karibib, Namibia.

**Name:** Honoring Donald Herbert Gorman (1922– ), Professor of Mineralogy, Department of Geology, University of Toronto, Toronto, Canada.

**Type Material:** Royal Ontario Museum, Toronto, Canada, M35123, M35124, M37368; National Museum of Natural History, Washington, D.C., USA, 137494, 137495, 145741.


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