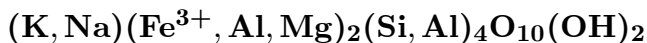


# Glaucosite



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**Crystal Data:** Monoclinic. *Point Group:*  $m$  or  $2/m$ . In grains or pellets composed partly of aggregates of small micaceous crystals.

**Physical Properties:** *Cleavage:* {001}, perfect. *Hardness* = 2 *D*(meas.) = 2.4–2.95 *D*(calc.) = 2.903

**Optical Properties:** Translucent to nearly opaque. *Color:* Grass-green, yellow-green, blue-green; in thin section, green, yellow, olive-green. *Luster:* Dull, glistening. *Optical Class:* Biaxial (-). *Pleochroism:*  $X$  = yellow-green, green;  $Y = Z$  = deeper yellow, bluish green. *Orientation:*  $Y = b$ ;  $Z \simeq a$ ;  $X \wedge a \simeq 10^\circ$ . *Dispersion:*  $r > v$ . *Absorption:*  $Y \simeq Z > X$ .  $\alpha = 1.592\text{--}1.610$   $\beta = 1.614\text{--}1.641$   $\gamma = 1.614\text{--}1.641$   $2V(\text{meas.}) = 0^\circ\text{--}20^\circ$

**Cell Data:** *Space Group:*  $Cm$  or  $C2/m$ .  $a = 5.25\text{--}5.31$   $b = 9.09\text{--}9.19$   $c = 10.03\text{--}10.15$   $\beta = \sim 100^\circ$   $Z = 2$

**X-ray Powder Pattern:** Anzoategni, Venezuela. (ICDD 9-439). 10.1 (100), 2.587 (100), 4.53 (80), 3.33 (60), 2.396 (60), 1.511 (60), 3.63 (40)

| <b>Chemistry:</b>              | (1)   | (2)   | (1)                           | (2)    |        |
|--------------------------------|-------|-------|-------------------------------|--------|--------|
| SiO <sub>2</sub>               | 49.29 | 46.52 | CaO                           | 0.74   | 0.51   |
| TiO <sub>2</sub>               | 0.12  |       | Na <sub>2</sub> O             | 0.12   | 0.19   |
| Al <sub>2</sub> O <sub>3</sub> | 3.17  | 4.61  | K <sub>2</sub> O              | 6.02   | 7.65   |
| Fe <sub>2</sub> O <sub>3</sub> | 21.72 | 24.76 | H <sub>2</sub> O <sup>+</sup> | 7.21   | 5.83   |
| FeO                            | 3.19  | 2.02  | H <sub>2</sub> O <sup>-</sup> | 4.60   | 3.20   |
| MgO                            | 3.85  | 4.65  | P <sub>2</sub> O <sub>5</sub> | 0.32   | 0.08   |
|                                |       |       | <hr/>                         |        |        |
|                                |       |       | Total                         | 100.35 | 100.02 |

(1) Whare Flat, Otago, New Zealand; corresponds to  $(\text{K}_{0.60}\text{Ca}_{0.06}\text{Na}_{0.02})_{\Sigma=0.68}(\text{Fe}^{3+}_{1.27}\text{Mg}_{0.44}\text{Fe}_{0.21}\text{Al}_{0.11})_{\Sigma=2.03}(\text{Si}_{3.82}\text{Al}_{0.18})_{\Sigma=4.00}\text{O}_{10}(\text{OH})_2$ . (2) Makhtesh Ramon, Israel; corresponds to  $(\text{K}_{0.76}\text{Ca}_{0.04}\text{Na}_{0.03})_{\Sigma=0.83}(\text{Fe}^{3+}_{1.33}\text{Mg}_{0.54}\text{Fe}_{0.13}\text{Al}_{0.06})_{\Sigma=2.06}(\text{Si}_{3.64}\text{Al}_{0.36})_{\Sigma=4.00}\text{O}_{10}(\text{OH})_2$ .

**Polymorphism & Series:** 1M polytype.

**Mineral Group:** Mica group.

**Occurrence:** Altered from detrital biotite or other parent materials, by marine diagenesis in shallow water under reducing conditions; especially in loosely consolidated sandstone (greensand), and impure limestone and siltstone.

**Association:** Quartz, feldspars, glaucophane, dolomite, siderite, calcite, ankerite, pyrite, "limonite".

**Distribution:** Worldwide in marine sediments. A few localities for studied material are: on the Otago Peninsula, New Zealand. From the Flinders Ranges and Yorke Peninsula, South Australia. Around Sandwich and Folkestone, Kent, and Hollybush Hill, Worcester, England. At Villers-sur-Mer, Calvados, France. From Verona, Vicenza, Italy. At a number of localities in Israel. From the N'Chwaning mine, near Kuruman, Cape Province, South Africa. In the USA, particularly widespread in Alabama; from Burnet Co., Texas; both on and offshore in several of the coastal counties of California; from Baker Co., Oregon; in the Black Hills of South Dakota.

**Name:** From the Greek *glaucos*, for *bluish green*.

**References:** (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 683–684. (2) Deer, W.A., R.A. Howie, and J. Zussman (1963) Rock-forming minerals, v. 3, sheet silicates, 35–41. (3) Bendor, Y.K. and M. Kastner (1965) Notes on the mineralogy and origin of glaucosite. *J. Sed. Petrol.*, 35, 155–166. (4) Buckley, H.A., J.C. Bevan, K.M. Brown, L.R. Johnson, and V.C. Farmer (1978) Glaucosite and celadonite: two separate mineral species. *Mineral. Mag.*, 42, 373–382.

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