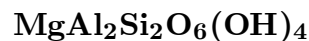


# Magnesiocarpholite



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**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$ . As small acicular to fibrous crystals elongated  $\parallel$  [001], to 5 cm; as crystal aggregates.

**Physical Properties:** Hardness = n.d.  $D(\text{meas.}) = \text{n.d.}$   $D(\text{calc.}) = 2.84\text{--}2.92$

**Optical Properties:** Transparent. *Color:* Light green to grayish; in transmitted light, colorless.

*Optical Class:* Biaxial.  $n = 1.59\text{--}1.60$   $2V(\text{meas.}) = \text{n.d.}$

**Cell Data:** *Space Group:*  $Ccca$ .  $a = 13.714(2)$   $b = 20.079(2)$   $c = 5.105(1)$   $Z = [8]$

**X-ray Powder Pattern:** Vanoise massif, France.

5.66 (100), 5.02 (45), 2.59 (45), 3.42 (25), 2.99 (25), 2.73 (18), 1.89 (15)

## Chemistry:

	(1)	(2)
SiO <sub>2</sub>	38.66	39.9
TiO <sub>2</sub>	1.03	0.15
Al <sub>2</sub> O <sub>3</sub>	28.95	33.1
Fe <sub>2</sub> O <sub>3</sub>	2.88	0.16
FeO	6.08	4.76
MnO	0.0	0.05
MgO	9.10	10.51
CaO	0.29	< 0.02
Na <sub>2</sub> O	0.09	< 0.03
K <sub>2</sub> O	0.18	< 0.01
H <sub>2</sub> O	11.73	10.5
P <sub>2</sub> O <sub>5</sub>	0.30	< 0.02
Total	99.29	99.13

(1) Vanoise massif, France; corresponds to  $(\text{Mg}_{0.7}\text{Fe}_{0.3}^{2+})_{\Sigma=1.0}(\text{Al}_{1.95}\text{Fe}_{0.05}^{3+})_{\Sigma=2.00}\text{Si}_2\text{O}_6(\text{OH})_4$ .

(2) Sfinari, Crete, Greece; by XRF and AA,  $\text{Fe}^{2+}$  by oxidimetry,  $\text{H}_2\text{O}$  by the Penfield method; corresponds to  $(\text{Mg}_{0.80}\text{Fe}_{0.20}^{2+})_{\Sigma=1.00}(\text{Al}_{1.98}\text{Fe}_{0.01}^{3+}\text{Ti}_{0.01})_{\Sigma=2.00}\text{Si}_{2.00}\text{O}_6(\text{OH})_4$ .

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

**Occurrence:** In veins and in schist, quartzite, and metabauxite formed during high-pressure, low-temperature metamorphism (Vanoise, France).

**Association:** Chloritoid, pyrophyllite, paragonite, muscovite, diaspore, chlorite, hematite, quartz.

**Distribution:** From the Vanoise massif, Savoie, France. Found near Sfinari and Sisses, on Crete, Greece.

**Name:** As the *magnesium* analog of *carpholite*.

**Type Material:** n.d.

**References:** (1) Goffé, B., G. Goffé-Urbano, and P. Saliot (1973) Sur la présence d'une variété magnésienne de ferrocapholite en Vanoise (Alpes françaises). *Compt. Rendus Acad. Sci. Paris*, 277, 1965–1968 (in French). (2) Viswanathan, K. and E. Seidel (1979) Crystal chemistry of Fe-Mg-carpholites. *Contr. Mineral. Petrol.*, 70, 41–47. (3) (1980) *Amer. Mineral.*, 65, 406 (abs. refs. 1 and 2). (4) Goffé, B. and P. Saliot (1977) Les associations minéralogiques des roches hyperalumineuses du Dogger de Vanoise. Leur signification dans le métamorphisme régional. *Bull. Minéral.*, 100, 302–309 (in French with English abs.). (5) Viswanathan, K. (1981) The crystal structure of a Mg-rich carpholite. *Amer. Mineral.*, 66, 1080–1085.

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