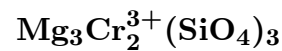


Knorringite



©2001 Mineral Data Publishing, version 1.2

Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. Massive and as minute grains.

Physical Properties: Hardness = ~ 7 $D(\text{meas.}) = 3.756$ $D(\text{calc.}) = 3.852$

Optical Properties: Semitransparent. *Color:* Bluish green, greenish. *Luster:* Vitreous.

Optical Class: Isotropic. $n = 1.803$

Cell Data: *Space Group:* $Ia\bar{3}d$. $a = 11.65$ $Z = 8$

X-ray Powder Pattern: Kao kimberlite pipe, Lesotho.

2.92 (100), 2.61 (100), 2.382 (80), 1.560 (80), 2.489 (60), 2.288 (60), 1.894 (60)

Chemistry:

	(1)	(2)
SiO ₂	39.92	39.78
TiO ₂	0.11	
Al ₂ O ₃	9.74	
Cr ₂ O ₃	17.47	33.54
Fe ₂ O ₃	1.20	
FeO	6.53	
MnO	0.60	
MgO	16.97	26.68
CaO	8.14	
Total	100.68	100.00

(1) Kao kimberlite pipe, Lesotho; by electron microprobe, corresponding to $(\text{Mg}_{1.90}\text{Ca}_{0.66}\text{Fe}_{0.41}^{2+}\text{Mn}_{0.17})_{\Sigma=3.14}(\text{Cr}_{1.04}\text{Al}_{0.86}\text{Fe}_{0.07}^{3+})_{\Sigma=1.97}\text{Si}_{3.01}\text{O}_{12}$. (2) $\text{Mg}_3\text{Cr}_2(\text{SiO}_4)_3$.

Polymorphism & Series: Forms a series with pyrope.

Mineral Group: Garnet group.

Occurrence: A rare component of ultramafic kimberlite nodules (Kao kimberlite pipe, Lesotho).

Association: Olivine, enstatite, chromian diopside, chromian pyrope, chromian spinel, ilmenite, perovskite, zircon, diamond, omphacite, rutile, carbonates, micas (Kao kimberlite pipe, Lesotho).

Distribution: In the Kao kimberlite pipe, Lesotho. From the Red Ledge mine, Nevada Co., California, USA.

Name: To honor Dr. Oleg von Knorring (1915–1994), Department of Earth Sciences, Leeds University, Leeds, England.

Type Material: n.d.

References: (1) Nixon, P.H. and G. Hornung (1968) A new chromium garnet end member, knorringite, from kimberlite. *Amer. Mineral.*, 53, 1833–1840. (2) Nixon, P.H., O. von Knorring, and J.M. Rooke (1963) Kimberlites and associated inclusions of Basutoland: a mineralogical and geochemical study. *Amer. Mineral.*, 48, 1090–1132.