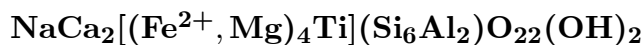


Ferro-kaersutite

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Crystal Data: Monoclinic. *Point Group:* $2/m$. [Prismatic.] *Twinning:* [Simple or multiple twinning $\parallel \{100\}$.]

Physical Properties: *Cleavage:* [Perfect on $\{110\}$, with intersections at 56° and 124° ; partings on $\{100\}$, $\{001\}$.] *Tenacity:* [Brittle.] *Hardness* = [5–6] *D*(meas.) = ~ 3.2 – 3.42 *D*(calc.) = n.d.

Optical Properties: Semitransparent. *Color:* [Dark brown to black.] *Luster:* [Vitreous.] *Optical Class:* [Biaxial (–).] *Pleochroism:* X = yellow; Y = impure green; Z = greenish brown. *Orientation:* [$Y = b$.] *Dispersion:* [$r > v$.] $\alpha = 1.677$ β = n.d. $\gamma = 1.709$ $2V$ (meas.) = 72°

Cell Data: *Space Group:* [$C2/m$.] a = n.d. b = n.d. c = n.d. β = n.d. Z = n.d.

X-ray Powder Pattern: n.d.

Chemistry:

	(1)
SiO ₂	36.95
TiO ₂	6.25
Al ₂ O ₃	15.02
Fe ₂ O ₃	3.62
FeO	19.40
MgO	4.34
CaO	10.25
Na ₂ O	1.34
K ₂ O	1.33
H ₂ O ⁺	1.26
H ₂ O [–]	0.19
Total	[99.95]

(1) Koraput, India; original total given as 99.98%; corresponds to $(\text{Na}_{0.40}\text{K}_{0.26})_{\Sigma=0.66}\text{Ca}_{1.84}(\text{Fe}_{2.51}^{2+}\text{Mg}_{1.00}\text{Ti}_{0.73}\text{Al}_{0.48}\text{Fe}_{0.42}^{3+})_{\Sigma=5.14}(\text{Si}_{5.74}\text{Al}_{2.26})_{\Sigma=8.00}\text{O}_{22}[(\text{OH})_{1.30}\text{O}_{0.70}]_{\Sigma=2.00}$.

Polymorphism & Series: Forms a series with kaersutite.

Mineral Group: Amphibole (calcic) group: $\text{Mg}/(\text{Mg} + \text{Fe}^{2+}) < 0.50$; $\text{Na}_B < 0.67$; $(\text{Ca} + \text{Na})_B \geq 1.34$; $\text{Si} < 6.5$; $\text{Ti} \geq 0.5$.

Occurrence: From syenites, camptonites, and essexites.

Association: Alkaline feldspar, oligoclase, biotite, ilmenite-magnetite.

Distribution: From Koraput, Orissa, India.

Name: For its high *ferrous* iron composition and similarity to *kaersutite*.

Type Material: n.d.

References: (1) Bose, M.K. (1964) Amphiboles in alkaline rocks of Koraput, Orissa. *Mineral. Mag.*, 33, 912–917.