

**Windhoekite**

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As isolated prismatic crystals to 4 mm capped by epitaxial overgrowths of palygorskite and in radial aggregates to 5 mm.

**Physical Properties:** *Cleavage:* Perfect on {100}. *Tenacity:* Sectile. *Fracture:* n.d. *Hardness* = 2  
D(meas.) = 2.62(2) D(calc.) = 2.630

**Optical Properties:** Translucent. *Color:* Yellowish brown. *Streak:* Beige.

*Luster:* Vitreous or silky.

*Optical Class:* Biaxial (-).  $\alpha = 1.610(3)$   $\beta = 1.662(3)$   $\gamma = 1.671(3)$   $2V(\text{meas.}) = 50(10)^\circ$

$2V(\text{calc.}) = 44^\circ$  *Pleochroism:* Strong, brown to dark brown. *Orientation:*  $X \approx a$ ,  $Z = c$ .

*Absorption:*  $Y \approx Z > X$ .

**Cell Data:** *Space Group:* C2/m.  $a = 14.319(5)$   $b = 17.825(4)$   $c = 5.242(1)$   $\beta = 103.5(2)^\circ$   $Z = 2$

**X-Ray Diffraction Pattern:** Ariskop Quarry, Aris, near Windhoek, Khomas Region, Namibia.  
11.04 (100), 3.486 (11), 4.432 (10), 2.636 (8), 4.133 (6), 2.505 (6), 3.754 (4)

Chemistry:	(1)	(2)
CaO	9.24	10.97
MnO	0.85	
Fe <sub>2</sub> O <sub>3</sub>	23.14	20.86
Al <sub>2</sub> O <sub>3</sub>	0.41	
SiO <sub>2</sub>	46.32	47.03
H <sub>2</sub> O	21.0	21.15
Total	100.96	100.01

(1) Ariskop Quarry, Aris, near Windhoek, Khomas Region, Namibia; average electron microprobe analysis supplemented by IR spectroscopy, H<sub>2</sub>O by gas chromatography; corresponds to  $(\text{Ca}_{1.68}\text{Mn}_{0.12})\text{Fe}^{3+}_{2.96}(\text{Si}_{7.87}\text{Al}_{0.08}\text{O}_{20})(\text{OH})_4 \cdot 10\text{H}_{1.98}\text{O}$ . (2)  $\text{Ca}_2\text{Fe}_{2.67}(\text{Si}_8\text{O}_{20})(\text{OH})_4 \cdot 10\text{H}_2\text{O}$ .

**Mineral Group:** Palygorskite group.

**Occurrence:** In miarolitic cavities in alkaline phonolite.

**Association:** Fluorapophyllite, aegirine, microcline, arisite-(Ce), arisite-(La).

**Distribution:** From the Ariskop Quarry, Aris, near Windhoek, Khomas Region, Namibia.

**Name:** For *Windhoek*, the district of Namibia where the studied samples were collected.

**Type Material:** A.E. Fersman Mineralogical Museum, RAS, Moscow, Russia (4018/1).

**References:** (1) Chukanov, N.V., S.N. Britvin, G. Blass, D.I. Belakovskiy, and K.V. Van (2012) Windhoekite,  $\text{Ca}_2\text{Fe}^{3+}_{3-x}(\text{Si}_8\text{O}_{20})(\text{OH})_4 \cdot 10\text{H}_2\text{O}$ , a new palygorskite-group mineral from the Aris phonolite, Namibia. *Eur. J. Mineral.*, 24, 171-179.