

Nanlingite

CaMg₄(As³⁺O₃)₂F₄

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Crystal Data: Hexagonal. *Point Group:* $3m$ or $\bar{3}2/m$. Crystals rarely well-formed, tabular, with {0001} and { $h0\bar{h}l$ }; commonly granular, to 0.2 mm, in dendritic aggregates.

Physical Properties: *Cleavage:* One, imperfect. *Hardness* = 2.3 *VHN* = 107
D(meas.) = 3.927 D(calc.) = 3.925

Optical Properties: Transparent. *Color:* Brownish red to dark brown when oxidized; deep red in transmitted light, with anomalous red interference colors. *Streak:* Pale yellow.
Luster: Vitreous.

Optical Class: Uniaxial (-). $\omega = 1.82$ $\epsilon = 1.78$

Cell Data: *Space Group:* $R\bar{3}m$ or $R\bar{3}m$. $a = 10.24(5)$ $c = 25.76(5)$ $Z = 15$

X-ray Powder Pattern: Nan Ling area, China.

2.78 (10), 8.35 (9), 1.730 (8), 1.699 (8), 2.425 (7), 1.460 (7), 1.104 (6)

Chemistry:

	(1)	(2)
Al ₂ O ₃	0.98	
Fe ₂ O ₃	7.09	
As ₂ O ₃	44.11	43.09
MnO	0.21	
MgO	25.04	35.11
CaO	11.74	12.21
Na ₂ O	1.81	
Li ₂ O	1.22	
F	13.64	16.56
H ₂ O	0.60	
-O = F ₂	5.74	6.97
Total	100.70	100.00

(1) Nan Ling area, China; by wet chemistry supplemented by spectrographic and semiquantitative electron microprobe; when recalculated to 100%, corresponds to (Ca_{0.96}Na_{0.27})_{Σ=1.23}(Mg_{2.83}Fe_{0.41}³⁺Li_{0.37}Al_{0.09}Mn_{0.01})_{Σ=3.71}(AsO₃)_{2.04}F_{3.28}(OH)_{0.30}O_{0.02}. (2) CaMg₄(AsO₃)₂F₄.

Occurrence: Along a contact between greisenized granite and dolomitic limestone.

Association: Fluorite, fluoborite, zinnwaldite, magnesian dolomite, arsenopyrite, pyrrhotite, gahnite, nigerite.

Distribution: From an undisclosed locality [Shizhuyuan, Guangxi Province] in the Nan Ling area, southern China.

Name: For the locality, Nan Ling area, China.

Type Material: n.d.

References: (1) Gu Xiongfei, Ding Kuishou, and Xu Yingnian (1976) A new arsenite mineral from southern China. *Geochemica*, 2, 107–112 (in Chinese with English abs.). (2) (1977) *Amer. Mineral.*, 62, 1058–1059 (abs. ref. 1). (3) (1977) *Mineral. Abs.*, 28, 80–81 (abs. ref. 1).