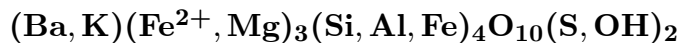


Anandite



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Crystal Data: Monoclinic or orthorhombic. *Point Group:* $2/m$, m , or $2/m\ 2/m\ 2/m$. Poorly developed prism faces give a hexagonal outline to cleavage flakes.

Physical Properties: *Cleavage:* {001}, perfect. *Hardness* = 3–4 *D*(meas.) = 3.94 *D*(calc.) = 3.94

Optical Properties: Nearly opaque. *Color:* Black. *Luster:* Vitreous. *Optical Class:* Biaxial (+). *Pleochroism:* Y = green; Z = brown. *Orientation:* $Y = b$; $Z \wedge a = 8^\circ\text{--}16^\circ$. *Dispersion:* Strong. $\alpha = 1.85(1)$ $\beta = \text{n.d.}$ $\gamma = > 1.88$ $2V(\text{meas.}) = \text{n.d.}$

Cell Data: *Space Group:* $C2/c$ or Cc . $a = 5.412(5)$ $b = 9.434(5)$ $c = 19.953(10)$ $\beta = 94^\circ 52(10)'$ $Z = 2$, or *Space Group:* $Pn\bar{m}n$. $a = 5.439(1)$ $b = 9.509(2)$ $c = 19.878(6)$ $Z = 2$

X-ray Powder Pattern: Wilagedera iron prospect, Sri Lanka. 3.320 (100), 4.995 (85), 2.490 (80), 9.92 (60), 2.716 (50), 2.681 (45), 3.430 (40)

Chemistry:	(1)	(2)		(1)	(2)
SiO ₂	25.20	24.59	Na ₂ O	0.10	0.06
TiO ₂	0.28	0.08	K ₂ O	0.93	0.24
Al ₂ O ₃	4.85	0.80	F		0.12
Fe ₂ O ₃	6.98		Cl		0.91
FeO	33.10	41.73	H ₂ O ⁺	1.98	
MnO	0.66	0.92	H ₂ O ⁻	0.12	
MgO	3.39	2.89	S	2.96	4.25
CaO	0.16	0.00	–O = S, (F, Cl) ₂	1.48	2.38
BaO	20.35	23.05	<hr/>	<hr/>	<hr/>
			Total	99.58	97.26

(1) Wilagedera iron prospect, Sri Lanka. (2) Do.; by electron microprobe; Mössbauer spectroscopy indicates $\text{Fe}^{2+}:\text{Fe}^{3+} = 1.19$.

Polymorphism & Series: 2O, 2M₁, 1M polytypes.

Mineral Group: Mica group.

Occurrence: As monomineralic veinlets and lenses in a banded magnetite deposit capped by banded magnetite-barite rock. The ore zone and associated interbedded calc-schists and gneisses are of metasedimentary origin, of approximately granulite facies grade.

Association: Magnetite, chalcopyrite, pyrite, pyrrhotite, barite.

Distribution: At the Wilagedera iron prospect, North Western Province, Sri Lanka.

Name: Honoring Dr. Ananda Kentush Coomaraswamy (1877–1947), the first Director of the Mineral Survey of Ceylon (Sri Lanka).

Type Material: n.d.

References: (1) Pattiaratchi, D.B., E. Saari, and T.G. Sahama (1967) Anandite, a new barium iron silicate from Wilagedera, North Western Province, Ceylon. *Mineral. Mag.*, 36, 1–4. (2) Filut, M.A., A.C. Rule, and S.W. Bailey (1985) Crystal structure refinement of anandite-2Or, a barium- and sulfur-bearing trioctahedral mica. *Amer. Mineral.*, 70, 1298–1308.