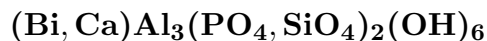


Waylandite



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Crystal Data: Hexagonal. *Point Group:* $\bar{3}2/m$. As crystals, to 0.5 mm; as a compact fine-grained powder forming crusts and veinlets. *Twinning:* Most crystals show twinning, typically cyclic.

Physical Properties: *Fracture:* Uneven (massive). Hardness = 4–5 D(meas.) = n.d. D(calc.) = 4.08

Optical Properties: Translucent. *Color:* Colorless, white, pale blue, pale brown.

Luster: Vitreous to dull.

Optical Class: Uniaxial (+). $\omega = 1.748$ $\epsilon = 1.774$

Cell Data: *Space Group:* $R\bar{3}m$. $a = 6.9744$ – 6.9834 $c = 16.175$ – 16.293 $Z = 3$

X-ray Powder Pattern: Wampewo pegmatite, Uganda.

2.938 (100), 2.173 (100), 1.888 (85), 5.67 (80), 2.200 (80), 1.743 (80), 3.492 (75)

Chemistry:

	(1)	(2)	(3)
P ₂ O ₅	22.15	23.96	24.39
SiO ₂	4.68	0.15	
Al ₂ O ₃	29.27	26.52	26.28
Bi ₂ O ₃	28.28	34.84	40.04
FeO		0.81	
CuO		0.81	
CaO	2.93	0.75	
BaO		1.01	
H ₂ O ⁺	12.34		
H ₂ O ⁻	0.55		
H ₂ O		[11.15]	9.29
Total	100.20	[100.00]	100.00

(1) Wampewo pegmatite, Uganda. (2) Restormel mine, Cornwall, England; by electron microprobe, H₂O by difference. (3) BiAl₃(PO₄)₂(OH)₆.

Mineral Group: Crandallite group.

Occurrence: A rare secondary mineral replacing primary bismuth minerals.

Association: Bismutite (Restormel mine, Cornwall, England); bismutotantalite (Ngusa, Congo).

Distribution: From the Wampewo pegmatite, Gamba Hill, near Kampala, southwest Uganda. At Ngusa, and in the Kobokobo pegmatite, Lusungu River district, Kivu Province, Congo (Zaire). From the Restormel mine, near Lostwithiel; at Wheal Owles and the Levant mine, St. Just; Phoenix mines, near Linkinhorne; and in the Gunheath china clay pit, St. Austell, Cornwall, England. From a dump on the Roter Berg, Schneeberg, Saxony, Germany. At the Rubicon pegmatite, south of Karibib, Namibia. From an undefined deposit in China.

Name: Honors Edgar James Wayland, first Director of the Uganda Geological Survey.

Type Material: n.d.

References: (1) Von Knorring, O. and M.E. Mrose (1963) Westgrenite [= bismutomicrolite] and waylandite, two new bismuth minerals from Uganda. Geol. Soc. Amer. Spec. Paper 73, 256A (abs.). (2) (1963) Amer. Mineral., 48, 216. (abs. ref. 1). (3) Clark, A.M., A.G. Couper, P.G. Embrey, and E.E. Fejer (1986) Waylandite: new data, from an occurrence in Cornwall, with a note on 'agnesite'. Mineral. Mag., 50, 731–733. (4) Bayliss, P. (1986) X-ray powder data for nissonite and waylandite. Powder Diffraction, 1, 331–333.

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