

Zairite**Bi(Fe³⁺, Al)₃(PO₄)₂(OH)₆**

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Crystal Data: Hexagonal. *Point Group:* $\bar{3}2/m$. As small masses.**Physical Properties:** Hardness = 4.5 D(meas.) = 4.37(5) D(calc.) = 4.42(3)**Optical Properties:** Translucent. *Color:* Green; greenish yellow in transmitted light.*Luster:* Waxy.*Optical Class:* Uniaxial (-). $n = 1.82\text{--}1.83$ **Cell Data:** *Space Group:* $R\bar{3}m$. $a = 7.015(5)$ $c = 16.365(15)$ $Z = 3$ **X-ray Powder Pattern:** Eta-Etu district, Congo.

2.945 (100), 5.710 (95), 3.503 (40), 2.727 (20), 2.851 (15), 2.158 (15), 1.897 (15)

Chemistry:

	(1)	(2)
SO ₃	0.29	
TeO ₃	0.20	
P ₂ O ₅	21.93	21.23
SiO ₂	0.33	
Al ₂ O ₃	5.35	
Fe ₂ O ₃	30.75	35.83
Bi ₂ O ₃	28.71	34.85
CuO	0.82	
ZnO	0.05	
CaO	0.72	
BaO	1.98	
H ₂ O	9.05	8.09
Total	100.18	100.00

(1) Eta-Etu district, Congo; SrO 0.05%–0.10% present but not included in the total, corresponding to (Bi_{0.76}Ba_{0.08}Ca_{0.08}Cu_{0.06})_{Σ=0.98}(Fe_{2.38}Al_{0.65})_{Σ=3.03}[(PO₄)_{1.91}(SiO₄)_{0.03}(SO₄)_{0.02}(TeO₄)_{0.01}]_{Σ=1.97}(OH)₆. (2) BiFe₃(PO₄)₂(OH)₆.

Mineral Group: Crandallite group.**Occurrence:** A rare mineral in the weathering zone of quartz wolframite deposits.**Association:** Bismuth, bismutite, quartz, mica.**Distribution:** From the Eta-Etu district, northern Kivu Province, Congo (Zaire).**Name:** For the country, Zaire (now Congo), where the first specimens were collected.**Type Material:** Royal Museum of Central Africa, Tervuren, Belgium, RMG14065.

References: (1) Van Wambeke, L. (1975) La zairite, un nouveau minéral appartenant à la série de la crandallite. Bull. Soc. fr. Minéral., 98, 351–353 (in French with English abs.). (2) (1977) Amer. Mineral., 62, 174–175 (abs. ref. 1).