

Uranopolycrase

(U, Y)(Ti, Nb)₂O₆

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Crystal Data: Orthorhombic; metamict. *Point Group:* $2/m\ 2/m\ 2/m$. Euhedral crystals, elongated along [001], tabular on {100}, with {100}, {010} and {011}, to 0.15 mm, intergrown with uranoan polycrase-(Y).

Physical Properties: *Cleavage:* {100}, good. *Hardness* = n.d. *VHN* = 659 (20 g load). *D*(meas.) = n.d. *D*(calc.) = [6.60] *Radioactive.*

Optical Properties: Opaque. *Color:* Red-brown; in reflected light, pale gray with bluish tint and dark red-brown internal reflections. *Streak:* Brown. *Luster:* Adamantine.

Optical Class: Isotropic.

R: (470) 23.6, (546) 21.5, (589) 22.3, (650) 25.1

Cell Data: *Space Group:* *Pbcn*. $a = 14.51(1)$ $b = 5.558(5)$ $c = 5.173(4)$ $Z = [4]$

X-ray Powder Pattern: San Piero in Campo, Elba, Italy; after heating at 900 °C for ten hours.

2.99 (100), 1.90 (50), 1.48 (40), 1.77 (35), 2.78 (25), 3.21 (12), 1.86 (10)

Chemistry:

	(1)
Nb ₂ O ₅	11.27
Ta ₂ O ₅	5.98
TiO ₂	27.36
ThO ₂	4.14
UO ₂	39.08
Y ₂ O ₃	7.78
Nd ₂ O ₃	0.37
MnO	0.48
CaO	0.22
Total	[96.68]

(1) San Piero in Campo, Elba, Italy; by electron microprobe, original total given as 96.73%; corresponding to $(U_{0.62}Y_{0.29}Th_{0.07}Mn_{0.03}Ca_{0.02}Nd_{0.01})_{\Sigma=1.04}(Ti_{1.46}Nb_{0.36}Ta_{0.12})_{\Sigma=1.94}O_6$.

Occurrence: In a zoned pegmatite vein near the contact with granodiorite.

Association: Uranoan polycrase-(Y), euxenite-(Y), manganocolumbite, titanowodginitite, uranmicrolite, beryl, stilbite, quartz, orthoclase, albite, lepidolite, elbaite.

Distribution: From San Piero in Campo, Elba, Italy.

Name: For its content of URANIUM and relation to *polycrase-(Y)*.

Type Material: University of Pisa, Pisa, Italy.

References: (1) Aurisicchio, C., P. Orlandi, M. Pasero, and N. Perchiazzi (1993) Uranopolycrase, the uranium-dominant analogue of polycrase-(Y), a new mineral from Elba Island, Italy, and its crystal structure. *Eur. J. Mineral.*, 5, 1161–1165. (2) (1994) *Amer. Mineral.*, 79, 766 (abs. ref. 1).