Uranopolycrase $(U,Y)(Ti,Nb)_2O_6$

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_2O_5	11.27
Ta_2O_5	5.98
TiO_2	27.36
ThO_2	4.14
UO_2	39.08
Y_2O_3	7.78
Nd_2O_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, titanowodginite, 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).