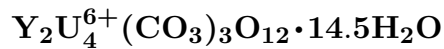


Kamotoite-(Y)

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Crystal Data: Monoclinic, pseudo-orthorhombic. *Point Group:* $2/m$. As wedge-terminated bladed crystals, to 2 cm, striated perpendicular to elongation [100], and as crusts. *Twinning:* By reflection on {001}, common.

Physical Properties: *Cleavage:* {001} and {010}, good. *Tenacity:* Sectile. Hardness = n.d. D(meas.) = 3.93 D(calc.) = 3.94 Radioactive.

Optical Properties: Transparent to translucent. *Color:* Bright lemon-yellow.

Luster: Vitreous.

Optical Class: Biaxial (-). *Pleochroism:* X = colorless; Y = pale yellow-green; Z = bright yellow. *Orientation:* X = b; Z = a; $Y \wedge c = 25^\circ$. *Absorption:* $Z > Y > X$. $\alpha = 1.604(2)$
 $\beta = 1.667(2)$ $\gamma = 1.731(3)$ 2V(meas.) = n.d. 2V(calc.) = 87°

Cell Data: *Space Group:* $P2_1/a$. $a = 21.22(1)$ $b = 12.93(1)$ $c = 12.39(1)$ $\beta = 115.3(1)^\circ$
Z = 4

X-ray Powder Pattern: Kamoto mine, Congo.

6.48 (100), 8.49 (80), 3.054 (60), 3.49 (40), 2.762 (40), 2.132 (40b), 1.749 (40)

Chemistry:

	(1)
UO ₃	63.39
Y ₂ O ₃	6.19
Nd ₂ O ₃	2.36
Sm ₂ O ₃	1.91
Gd ₂ O ₃	2.10
Dy ₂ O ₃	1.64
CO ₂	7.24
H ₂ O	[14.30]
Total	[99.13]

(1) Kamoto mine, Congo; by electron microprobe, average of 19 analyses on several specimens; CO₂ by chromatography, H₂O taken as loss on ignition less CO₂ on separate samples; corresponds to $(\text{Y}_{1.00}\text{Nd}_{0.26}\text{Gd}_{0.22}\text{Sm}_{0.20}\text{Gd}_{0.16})_{\Sigma=1.84}\text{U}_{4.07}(\text{CO}_3)_{3.02}\text{O}_{11.95}\cdot 14.55\text{H}_2\text{O}$.

Occurrence: Formed in the oxidized zone above a uranium-bearing Cu-Co deposit.

Association: Uraninite, uranophane, curite, schoepite, becquerelite, rutherfordine, kasolite, soddyite, schulingite-(Nd), astrocyanite-(Ce), shabaite-(Nd), françoisite-(Nd), masuyite, malachite.

Distribution: From the Kamoto mine, near Kolwezi, Katanga Province, Congo (Shaba Province, Zaire).

Name: For the occurrence at the Kamoto mine, Congo (Zaire), and its *yttrium* content.

Type Material: Royal Museum of Central Africa, Tervuren, Belgium, RMG14025, RMG14350; National Museum of Natural History, Washington, D.C., USA, 163786.

References: (1) Deliens, M. and P. Piret (1986) La kamotoïte-(Y), un nouveau carbonate d'uranyle et de terres rares de Kamoto, Shaba, Zaïre. Bull. Minéral., 109, 643-647 (in French with English abs.). (2) (1988) Amer. Mineral., 73, 191 (abs. ref. 1).