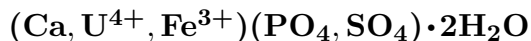


Tristramite



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Crystal Data: Hexagonal. *Point Group:* $6/m\ 2/m\ 2/m$. Acicular to fibrous crystals, to 0.1 mm, in coarse- to fine-grained aggregates, which may be radial or cross-vein.

Physical Properties: Hardness = n.d. $D(\text{meas.}) = 3.8\text{--}4.2$ $D(\text{calc.}) = 4.18$ Radioactive.

Optical Properties: Semitransparent. *Color:* Yellow, greenish yellow; in transmitted light, pale yellow to greenish yellow, showing color banding. *Luster:* Vitreous.

Optical Class: Uniaxial (+); may exhibit anomalous blue birefringence. *Orientation:* Positive elongation. $\omega = 1.644(2)$ $\epsilon = 1.664(2)$

Cell Data: *Space Group:* $P6_222$. $a = 6.913(6)$ $c = 6.422(6)$ $Z = 3$

X-ray Powder Pattern: Wheal Trewavas, England.

2.99 (100), 2.83 (100), 2.14 (50), 1.850 (50), 5.99 (40), 4.37 (40), 3.46 (30)

Chemistry:

	(1)
SO ₃	4.31
P ₂ O ₅	25.09
CO ₂	[1.46]
UO ₂	35.08
Fe ₂ O ₃	5.99
CaO	13.74
H ₂ O	[14.33]
Total	[100.00]

(1) Wheal Trewavas, England; by electron microprobe, total U as UO₂, total Fe as Fe₂O₃, CO₂ for charge balance, H₂O by difference; corresponds to $(\text{Ca}_{0.54}\text{U}_{0.29}\text{Fe}_{0.17})_{\Sigma=1.00}[(\text{PO}_4)_{0.79}(\text{SO}_4)_{0.12}(\text{CO}_3)_{0.07}]_{\Sigma=0.98} \cdot 1.77\text{H}_2\text{O}$.

Mineral Group: Rhabdophane group.

Occurrence: In fractures and cavities in hydrothermal veins.

Association: Uraninite, goethite, digenite, chalcopyrite, pyrite, sphalerite, galena, marcasite, quartz.

Distribution: In England, from Cornwall, at Wheal Trewavas, Breage; Trequeen; Wheal Buller, Redruth; Wheal Damsel, Gwennap; Wheals Providence and Alice, Lelant.

Name: For Sir Tristram, a figure in the Arthurian legend.

Type Material: Institute of Geological Sciences, London; The Natural History Museum, London, England, 1983,201.

References: (1) Atkin, D., I.R. Basham, and J.F.W. Bowles (1983) Tristramite, a new calcium uranium phosphate of the rhabdophane group. *Mineral. Mag.*, 47, 393–396. (2) (1984) *Amer. Mineral.*, 69, 813 (abs. ref. 1).