

Margaritasite



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Crystal Data: Monoclinic. *Point Group:* $2/m$. As tabular crystals, to 3 μm , in amoeboid aggregates; typically massive.

Physical Properties: Hardness = n.d. $D(\text{meas.}) = \text{n.d.}$ $D(\text{calc.}) = 5.41$ Radioactive.

Optical Properties: Translucent. *Color:* Yellow; gray in transmitted light.

Optical Class: Biaxial (-). $\alpha = [< 1.83]$ (synthetic). $\beta = 2.49(1)$ $\gamma = > 2.70$

$2V(\text{meas.}) = 45.5^\circ$

Cell Data: *Space Group:* $P2_1/a$. $a = 10.514(3)$ $b = 8.425(3)$ $c = 7.252(5)$ $\beta = 106.01^\circ$
 $Z = 2$

X-ray Powder Pattern: Margaritas deposit, Mexico.

6.965 (100), 3.600 (70), 3.344 (70), 3.489 (60), 3.231 (50), 3.164 (50), 3.129 (35)

Chemistry:

	(1)
UO ₃	58.9
V ₂ O ₅	18.1
Cs ₂ O	18.7
K ₂ O	1.73
H ₂ O	[2.5]
Total	[99.9]

(1) Margaritas deposit, Mexico; by electron microprobe, partial analysis, H₂O by CHN analyzer on a separate sample, recalculated assuming H₂O 2.5%; (H₃O)¹⁺ calculated for charge balance, then corresponding to $[\text{Cs}_{1.31}\text{K}_{0.36}(\text{H}_3\text{O})_{0.15}]_{\Sigma=1.82}(\text{UO}_2)_{2.03}(\text{V}_2\text{O}_8)_{0.98} \cdot \text{H}_2\text{O}$.

Occurrence: As pore fillings and phenocryst casts in felsic volcanic tuffs, which have been altered by high-temperature hydrothermal fluids.

Association: Kaolinite, quartz.

Distribution: An ore at the Margaritas uranium deposit, Peña Blanca district, about 70 km north of Chihuahua City, Chihuahua, Mexico.

Name: For the Margaritas deposit, Mexico, that produced the first specimens.

Type Material: National Museum of Natural History, Washington, D.C., USA, 149090.

References: (1) Wenrich, K.J., P.J. Modreski, R.A. Zielinski, and J.L. Seeley (1982) Margaritasite: a new mineral of hydrothermal origin from the Peña Blanca uranium district, Mexico. *Amer. Mineral.*, 67, 1273–1289.