

Crystal Data: Orthorhombic, pseudotetragonal. *Point Group:* $2/m\ 2/m\ 2/m$. As bladed or acicular crystals, flattened on $\{010\}$ and elongated along $[001]$, and as flat plates; also as spherulites and radiating fibrous clusters.

Physical Properties: *Cleavage:* Two good prismatic cleavages noted. *Hardness* = < 2
D(meas.) = ~ 4.1 D(calc.) = 4.02 Radioactive.

Optical Properties: Transparent to translucent. *Color:* Yellow. *Luster:* Waxy to silky.
Optical Class: Biaxial (-). *Pleochroism:* X = colorless; Y = pale yellow-green; Z = yellow-green.
Orientation: X = b; Y = c; Z = a. *Dispersion:* $r > v$, strong. $\alpha = 1.596$ $\beta = 1.603$
 $\gamma = 1.606$ $2V(\text{meas.}) = \sim 60^\circ$ $2V(\text{calc.}) = 66^\circ$

Cell Data: *Space Group:* $Pnmb$. $a = 14.26(2)$ $b = 35.88(10)$ $c = 14.20(2)$ $Z = 16$

X-ray Powder Pattern: Thomas Range, Utah, USA.
7.11 (10), 5.57 (9), 8.98 (8), 3.55 (7), 3.30 (7), 2.91 (6), 3.20 (5)

Chemistry:	(1)	(2)
SiO ₂	33.6	32.81
Al ₂ O ₃	0.6	
Fe ₂ O ₃	< 0.1	
UO ₃	51.5	52.06
CaO	1.1	
BaO	1.4	
Na ₂ O	0.7	
K ₂ O	5.5	8.57
H ₂ O ⁺	[5.5]	
H ₂ O ⁻	1.1	
H ₂ O		6.56
CO ₂	0.3	
Total	101.3	100.00

(1) Autunite No. 8 claim, Thomas Range, Utah, USA; H₂O⁺ differenced from total H₂O 6.6% less H₂O⁻. (2) $\text{K}_2(\text{UO}_2)_2\text{Si}_6\text{O}_{15} \cdot 4\text{H}_2\text{O}$.

Occurrence: In "opal" veinlets in rhyolite and agglomerates, as well as in sandstones and limestones.

Association: "Opal," "chalcedony," calcite, gypsum, fluorite, uraninite, thorogummite, uranophane, boltwoodite, carnotite, margaritasite.

Distribution: In the USA, in Utah, at the Autunite No. 8 and Good Will claims, Thomas Range, Juab Co.; in California, from the Coso Mountains, Inyo Co., and in the Red Rock district, Lassen Co.; in New Mexico, from the Jackpile mine, Laguna, Valencia Co.; in Wyoming, in the Silver Cliff mine, near Lusk, Niobrara Co.; and in Nevada, at Teels Marsh, Mineral Co. From the Mammoth mine, near Presidio, Presidio Co., Texas; in Arizona, from the Red Knob claims, Muggins Mountains, Yuma Co. and the Anderson mine, Yavapai Co.; and from the Williams quarry, Easton, Northampton Co., Pennsylvania. At the Margaritas and other mines, Sierra Peña Blanca, Chihuahua, Mexico. In France, from Les Bois-Noirs, Loire. From Rössing, Namibia.

Name: For Dr. Mary Alice Dowse Weeks (1909–1988), mineralogist with the U.S. Geological Survey, noted specialist in the mineralogy of uranium and vanadium.

Type Material: National Museum of Natural History, Washington, D.C., USA, 128713, 115886, 121949.

References: (1) Outerbridge, W.F., M.H. Staatz, R. Meyrowitz, and A.M. Pommer (1960) Weeksite, a new uranium silicate from the Thomas Range, Juab County, Utah. *Amer. Mineral.*, 45, 39–52. (2) Stohl, F.V. and D.K. Smith (1981) The crystal chemistry of the uranyl silicate minerals. *Amer. Mineral.*, 66, 610–625.

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