

Crystal Data: Monoclinic. *Point Group:* 2/m. As complexly terminated, prismatic crystals to 0.3 mm elongated along [100] that display {010}, {001}, {011}, {012} and {021}.

Physical Properties: *Cleavage:* Perfect on {011}. *Fracture:* Irregular. *Tenacity:* Brittle. Hardness = ~ 2 D(meas.) = n.d. D(calc.) = 3.844 Fluoresces bright greenish white under SW & LW UV. Easily soluble in water; slightly deliquescent.

Optical Properties: Transparent. *Color:* Pale greenish yellow. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (+/-). $\alpha = 1.581(1)$ $\beta = 1.588(1)$ $\gamma = 1.595(1)$ $2V(\text{meas.}) = 89.8(8)^\circ$ $2V(\text{calc.}) = 89.6^\circ$ *Orientation:* $X = b$, $Y \approx c$, $Z \approx a$. *Dispersion:* Strong.

Cell Data: *Space Group:* P2₁/c. $a = 6.7475(1)$ $b = 12.5026(3)$ $c = 16.9032(12)$
 $\beta = 90.919(6)^\circ$ $Z = 4$

X-ray Powder Pattern: Green Lizard mine, Red Canyon, San Juan County, Utah, USA. 5.11 (100), 3.373 (50), 5.58 (48), 4.04 (47), 4.86 (44), 6.97 (39), 4.40 (38)

Chemistry:	(1)	(2)
UO ₃	70.49	69.58
SO ₃	19.45	19.47
H ₂ O	[11.02]	10.95
Total	100.96	100.00

(1) Green Lizard mine, Red Canyon, San Juan County, Utah, USA; average of 7 electron microprobe analyses supplemented by FTIR and Raman spectroscopy, H₂O calculated from structure; corresponds to U_{2.01}S_{1.99}O_{12.00}·5H₂O. (2) [(UO₂)(SO₄)(H₂O)₂]₂·H₂O.

Occurrence: In efflorescent crusts formed by hydration-oxidation weathering of primary uranium minerals (esp. uraninite) by acidic solutions derived from the decomposition of associated sulfides.

Association: Calcite, gypsum, plášilite, pyrite, rozenite, sulfur (Green Lizard mine); asphaltum, rietveldite, rhomboclase, römerite (Giveaway-Simplot mine).

Distribution: From the Green Lizard and Giveaway-Simplot mines, Red Canyon, White Canyon mining district, San Juan County, Utah, USA.

Name: Honors the Shumway family. Family members account for the discovery and mining of hundreds of uranium deposits on the Colorado Plateau, USA. Arah E. Shumway (1891-1968) prospected Red Canyon during the 1920s and was one of the first to stake mining claims and mine for uranium. Dan Shumway (b. 1946) was one of the claim stakers for the Green Lizard mine at which shumwayite was first recognized. Dr. Gary L. Shumway (b. 1938), Professor Emeritus of history at the University of California, Fullerton, published on uranium mining and exploration.

Type Material: Natural History Museum of Los Angeles County, Los Angeles, California, USA, (65589, 65590, 65591 and 65592), and the A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (4741/1).

References: (1) Kampf, A.R., J. Plášil, A.V. Kasatkin, J. Marty, J. Čejka, and L. Lapčák (2017) Shumwayite, [(UO₂)(SO₄)(H₂O)₂]₂·H₂O, a new uranyl sulfate mineral from Red Canyon, San Juan County, Utah, USA. *Mineral. Mag.*, 81(2), 273-285. (2) (2017) *Amer. Mineral.*, 102, 1966-1967 (abs. ref. 1).