

Crystal Data: Monoclinic. *Point Group:* 2/m. *Twinning:* By 180° rotation on [1 $\bar{1}$ 0] with {11 $\bar{1}$ } composition plane (indicated by single-crystal X-ray diffraction). As bladed crystals flattened on {001} to ~0.2 mm in irregular aggregates to ~0.5 mm.

Physical Properties: *Cleavage:* Perfect on {001}. *Tenacity:* Brittle. *Fracture:* Irregular. Hardness = ~2 D(meas.) = n.d. D(calc.) = 2.463 Non-fluorescent. Easily soluble in room-temperature H₂O and dehydrates readily even at moderate relative humidity.

Optical Properties: Transparent to translucent. *Color:* Pale green-yellow. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial. $\alpha' = 1.513$ $\gamma' = 1.522$ (by analogy to leydetite) $n(\text{calc.}) = 1.512$

Cell Data: *Space Group:* C2/c. $a = 11.3513(3)$ $b = 7.7310(2)$ $c = 21.7957(15)$ $\beta = 102.387(7)^\circ$ $Z = 4$

X-Ray Diffraction Pattern: Markey mine, Red Canyon, San Juan County, Utah, USA. 10.66 (100), 6.31 (78), 5.06 (61), 3.390 (59), 3.193 (50), 5.32 (49), 5.85 (38)

Chemistry:	(1)	(2)
MgO	3.24	5.89
MnO	0.06	
FeO	2.69	
ZnO	1.33	
SO ₃	23.32	23.39
UO ₃	40.69	41.78
H ₂ O	[28.80]	28.95
Total	100.13	100.00

(1) Markey mine, Red Canyon, San Juan County, Utah, USA; average electron microprobe analysis supplemented by Raman spectroscopy, H₂O calculated; corresponds to (Mg_{0.56}Fe_{0.26}Zn_{0.11}Mn_{0.01}) $\Sigma=0.94$ (U_{0.99}O₂)(S_{1.015}O₄)₂·11H₂O. (2) Mg(UO₂)(SO₄)₂·11H₂O.

Occurrence: A secondary phase on asphaltum found in efflorescent crusts on the surfaces of mine walls.

Association: Straßmannite, arsenuranospathite, gypsum, metakahlerite, nováčekite-II, uramarsite.

Distribution: In the Markey mine, Red Canyon, San Juan County, Utah, USA.

Name: Identifies the magnesium-analogue of *leydetite*.

Type Material: Natural History Museum of Los Angeles County, Los Angeles, California, USA (66647, 66648, 66649, and 66650).

References: (1) Kampf, A.R., J. Plášil, A.V. Kasatkin, B.P. Nash, and J. Marty (2019) Magnesioleydetite and straßmannite, two new uranyl sulfate minerals with sheet structures from Red Canyon, Utah. *Mineral. Mag.*, 83, 349-360.