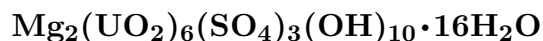


Magnesium-zippeite



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Crystal Data: Orthorhombic. *Point Group:* $2/m$. As fine-grained efflorescences.

Physical Properties: Hardness = ~ 2 $D(\text{meas.}) = > 3.3$ $D(\text{calc.}) = \text{n.d.}$ Radioactive; fluoresces bright yellow under SW and LW UV.

Optical Properties: Semitransparent. *Color:* Yellow-orange to orange-tan.
Optical Class: Biaxial. *Pleochroism:* $X = \text{pale yellow}$; $Y = \text{yellow}$; $Z = \text{dark yellow}$. $\alpha = 1.72$
 $\beta = 1.75$ $\gamma = 1.82$ $2V(\text{meas.}) = \text{Moderate to large}$.

Cell Data: *Space Group:* $C2/c$ (by analogy to zippeite). $a = 8.649(1)$ $b = 14.241(2)$
 $c = 17.696(2)$ $\beta = 104.11(5)^\circ$ $Z = 8$

X-ray Powder Pattern: Lucky Strike No. 2 mine, Utah, USA.
3.58 (10), 7.2 (8), 3.48 (8), 3.11 (6), 2.74 (3), 2.88 (2), 2.52 (2)

Chemistry:	(1)	(2)
SO ₃	5.0	9.94
UO ₃	74.6	71.06
CoO	1.4	
MgO	6.2	3.34
H ₂ O	10.9	15.66
Total	98.1	100.00

(1) Lucky Strike No. 2 mine, Utah, USA; by microchemical analysis; identification primarily established by correspondence of its X-ray powder pattern with that of synthetic material.

(2) $\text{Mg}_2(\text{UO}_2)_6(\text{SO}_4)_3(\text{OH})_{10} \cdot 16\text{H}_2\text{O}$.

Occurrence: A rare post-mine mineral on the walls of mine tunnels.

Association: Sodium-zippeite, gypsum, bieberite, cobaltocalcite, rabbittite (Lucky Strike No. 2 mine, Utah, USA); uranopilite, zippeite, sodium-zippeite, nickel-zippeite, johannite, cuprosklodowskite, sklodowskite, metaschoepite (Jáchymov, Czech Republic).

Distribution: From the Lucky Strike No. 2 mine, Emery Co., Utah, USA. In the Evangelista vein, Jáchymov (Joachimsthal), Czech Republic.

Name: For its content of *magnesium* and relation to *zippeite*.

Type Material: n.d.

References: (1) Frondel, C., J. Ito, R.M. Honea, and A.M. Weeks (1976) Mineralogy of the zippeite group. *Can. Mineral.*, 14, 429–436. (2) Haacke, D.F. and P.A. Williams (1979) The aqueous chemistry of uranium minerals. Part I. Divalent cation zippeite. *Mineral. Mag.*, 43, 539–541. (3) Ondruš, P., F. Veselovský, J. Hloušek, R. Skála, I. Vavřín, J. Frýda, J. Čejka, and A. Gabašová (1997) Secondary minerals of the Jáchymov (Joachimsthal) ore district. *J. Czech Geol. Soc.*, 42(4), 3–76, esp. 31–32.