Zinc-zippeite $Zn_2(UO_2)_6(SO_4)_3(OH)_{10}\cdot 16H_2O$

Crystal Data: Monoclinic (probable). *Point Group:* n.d. Minute curved crystals and in coatings.

Physical Properties: Hardness = n.d. D(meas.) = n.d. D(calc.) = n.d. Radioactive.

Optical Properties: Semitransparent. *Color:* Yellow, orange, reddish brown.
Optical Class: Biaxial (–). *Pleochroism:* X = colorless; Y = pale yellow; Z = yellow.
$\alpha = 1.70$–1.715 $\beta = 1.75$–1.763 $\gamma = > 1.7$ 2V(meas.) = n.d.

Cell Data: *Space Group:* n.d. Z = n.d.

X-ray Powder Pattern: Synthetic.
7.08 (100), 3.54 (50), 3.44 (35), 9.62 (33), 3.100 (26), 2.567 (15), 1.943 (15)

Chemistry:

	(1)	(2)
SO_3	9.69	9.62
UO_3	69.10	68.71
ZnO	3.4	6.52
PbO	1.6	
MgO	0.87	
H_2O	14.26	15.15
insol.	2.1	
Total	101.02	100.00

(1) Hillside mine, Arizona, USA; by microchemical analysis. (2) $Zn_2(UO_2)_6(SO_4)_3(OH)_{10}\cdot 16H_2O$; synthetic material has 8 H_2O essential and 8 H_2O held zeolitically.

Occurrence: In quartzose ore containing uraninite and disseminated sulfides.

Association: Sodium-zippeite, johannite, schröckingerite, bayleyite, gypsum.

Distribution: From the Hillside mine, about 5.5 km north of Bagdad, Eureka district, Yavapai Co., Arizona, USA.

Name: For its content of *zinc* and relation to other *zippeite* group species.

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 zippëite. Mineral. Mag., 43, 539–541.