

Crystal Data: Monoclinic. *Point Group:* 2/m. Crystals display {100}, {010}, {011} and $\{0\bar{1}1\}$. As bladed crystals to 50 μm , elongated along [001] and flattened on {010}; as globular aggregates to 0.5 mm. *Twining:* Common on {100}.

Physical Properties: *Cleavage:* Perfect on {010}. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = ~2 D(meas.) = n.d. D(calc.) = 4.926

Optical Properties: Transparent. *Color:* Reddish to reddish orange. *Streak:* Pale orange. *Luster:* Vitreous to silky. *Optical Class:* Biaxial (+). $\alpha = 1.740(5)$ $\beta = 1.770(5)$ $\gamma = 1.850(5)$ $2V(\text{meas.}) = 64.6(4)^\circ$ $2V(\text{calc.}) = 65.3^\circ$ *Dispersion:* None. *Pleochroism:* None.

Cell Data: *Space Group:* C2/c. $a = 8.6254(16)$ $b = 14.258(3)$ $c = 17.703(4)$ $\beta = 104.052(18)^\circ$ $Z = 8$

X-ray Powder Pattern: Plavno mine, Jáchymov ore district, Western Bohemia, Czech Republic. 7.133 (100), 3.104 (47), 3.446 (36), 8.59 (27), 3.565 (25), 2.658 (15), 2.865 (14)

Chemistry:	(1)	(2)
K ₂ O	3.77	4.74
MnO	3.75	5.35
NiO	0.21	
ZnO	0.35	
MgO	0.08	
SiO ₂	1.52	
SO ₃	7.93	10.06
UO ₃	59.29	71.91
H ₂ O	[7.40]	7.92
Total	84.30	99.99

(1) Plavno mine, Jáchymov ore district, Western Bohemia, Czech Republic; average of 5 electron microprobe analyses supplemented by Raman spectroscopy, H₂O calculated for charge balance and 3.5 H₂O pfu, low analytical total due to grain size, Si from matrix; corresponds to $\text{K}_{0.77}(\text{Mn}_{0.51}\text{Zn}_{0.04}\text{Ni}_{0.03}\text{Mg}_{0.02})_{\Sigma=0.60}[(\text{UO}_2)_2\text{O}_{1.08}(\text{OH})_{0.92}(\text{SO}_4)_{0.96}(\text{SiO}_4)_{0.24}](\text{H}_2\text{O})_{3.50}$.
 (2) $\text{K}_{0.8}\text{Mn}_{0.6}[(\text{UO}_2)_2\text{O}_2(\text{SO}_4)] \cdot 3.5\text{H}_2\text{O}$.

Mineral Group: Zippeite group.

Occurrence: A secondary alteration mineral formed by hydration-oxidation weathering of uraninite in a hydrothermal Ag-Bi-Co-Ni-U vein deposit.

Association: Marécottite, magnesiozippeite, blatonite, gypsum.

Distribution: From vein no. 13, second level, Vladimír shaft, Plavno mine, eastern Jáchymov ore district, Western Bohemia, Czech Republic.

Name: For the mine in which the first samples were collected.

Type Material: Natural History Museum of Los Angeles County, Los Angeles, California, USA (65588); National Museum in Prague, Department of Mineralogy and Petrology, Czech Republic (PIP 4/2015); and the A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (4740/1).

References: (1) Plášil, J., P. Škácha, J. Sejkora, A.R. Kampf, R. Škoda, J. Čejka, J. Hloušek, A.V. Kasatkin, R. Pavlíček, and K. Babka (2017) Plavnoite, a new K-Mn member of the zippeite group from Jáchymov, Czech Republic. *Eur. J. Mineral.*, 29(1), 117-128. (2) (2017) *Amer. Mineral.*, 102, 1965-1966 (abs. ref. 1).