

Crystal Data: Orthorhombic. *Point Group:* 2/m 2/m 2/m. Crystals short prismatic to tabular, to 0.5 mm.

Physical Properties: *Cleavage:* Perfect on {100}. *Fracture:* Uneven. *Tenacity:* Brittle.
Hardness = 2 D(meas.) = n.d. D(calc.) = 3.62

Optical Properties: Transparent. *Color:* Green. *Streak:* Gray to greenish gray. *Luster:* Strongly vitreous.

Optical Class: Biaxial(+). $\alpha = 1.590(2)$ $\beta = 1.618(4)$ $\gamma = 1.659(2)$ $2V(\text{calc.}) = 81^\circ$
Pleochroism: Moderate, Z = emerald green, X = Y = pale emerald green. *Absorption:* Z > X = Y.

Cell Data: *Space Group:* Pnma. $a = 14.6464(3)$ $b = 11.0786(3)$ $c = 5.6910(14)$ $Z = 4$

X-ray Powder Pattern: Jáchymov ore district, Krušné hory Mts., Czech Republic.
7.330 (100), 6.112 (54), 4.787 (42), 3.080 (41), 5.538 (21), 3.478(20), 3.663 (17)

Chemistry:	(1)	(2)
Y ₂ O ₃	0.75	
SO ₃	31.36	31.88
UO ₂	53.40	53.77
H ₂ O	[14.53]	14.35
Total	100.04	100.00

(1) Jáchymov ore district, Krušné hory Mts., Czech Republic; average of 5 electron microprobe analyses, H₂O calculated from stoichiometry, OH calculated for charge balance, IR and structure analysis show no evidence for OH; corresponding to (U_{0.99}Y_{0.03})_{Σ=1.02} (SO₄)_{1.97}(H₂O)₄ (OH)_{0.11}.

(2) U(SO₄)₂(H₂O)₄.

Occurrence: A secondary mineral on highly altered native arsenic in the oxidation zone of a polymetallic sulfarsenide deposit.

Association: Aresenic, arsenolite, kaatialaite, claudetite, gypsum.

Distribution: Geschieber vein (10th level, Svornost/Einigkeit shaft) at the intersection with the Geier vein structure, Jáchymov (St Joachimsthal) ore district, Krušné hory Mts., Western Bohemia, Czech Republic.

Name: Honors Professor František Běhounek (1898-1973), a Czech nuclear physicist.

Type Material: Mineralogical collection, National Museum, Prague, Czech Republic (P1p 2/2010).

References: (1) Plášil, J., K. Fejfarová, M. Novák, M. Dušek, R. Škoda, J. Hloušek, J. Čejka, J. Majzlan, J. Sejkora, V. Machovič, and D. Talla (2011) Běhounekite, U(SO₄)₂(H₂O)₄, from Jáchymov (St Joachimsthal), Czech Republic: the first natural U⁴⁺ sulphate. *Mineralogical Magazine*, 75, 2739-2753. (2) (2014) *Amer. Mineral.*, 99, 551-552 (abs. ref. 1).