

Adolfpateraite**K(UO₂)(SO₄)(OH)(H₂O)**

Crystal Data: Monoclinic. *Point Group:* 2/m. As hemispherical crystalline aggregates, to 3 mm.

Physical Properties: *Cleavage:* None. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = ~ 2
D(meas.) = n.d. D(calc.) = 4.24 Green fluorescence under LW UV.

Optical Properties: Transparent to translucent. *Color:* Sulfur-yellow to greenish yellow.

Streak: Pale yellow. *Luster:* Vitreous.

Optical Class: Biaxial (n.d.). $\alpha = 1.597(2)$ $\beta = \text{n.d.}$ $\gamma = 1.659(2)$

Pleochroism: X = colorless, Y = n.d., Z = yellow.

Cell Data: *Space Group:* P2₁/c. $a = 8.0462(1)$ $b = 7.9256(1)$ $c = 11.3206(2)$
 $\beta = 107.726(2)^\circ$ $Z = 4$

X-ray Powder Pattern: Svornost shaft, Jáchymov district, western Bohemia, Czech Republic.
5.386 (100), 5.218 (85), 7.658 (76), 3.718 (46), 3.700 (37), 3.489 (27), 2.747 (17)

Chemistry:	(1)	(2)
K ₂ O	9.86	10.70
SO ₃	18.17	18.19
UO ₃	63.66	64.97
H ₂ O	[5.80]	6.14
Total	97.49	100.00

(1) Svornost shaft, Jáchymov district, western Bohemia, Czech Republic; average of 4 electron microprobe analyses, H₂O calculated, presence of OH, H₂O, SO₄ and UO₂²⁺ confirmed by IR and Raman spectroscopy; corresponding to K_{0.94}(UO₂)_{1.00}(SO₄)_{1.02}(OH)_{0.90}(H₂O)_{1.00}.

(2) K(UO₂)(SO₄)(OH)(H₂O).

Occurrence: A secondary mineral in the oxidized zone of a uranium deposit.

Association: Gypsum, schoepite, čejkaite.

Distribution: From the Geschieber vein, fifth level of the Svornost (Einigkeit) shaft, Jáchymov (Sankt Joachimsthal) ore district, western Bohemia, Czech Republic.

Name: Honors Adolf Patera (1819-1894), Czech chemist, mineralogist, and metallurgist, who invented the technology for processing uranium ores from Jáchymov for the production of uranium-based colors.

Type Material: Department of Mineralogy and Petrology, National Museum in Prague, Czech Republic (P1P 3/2011).

References: (1) Plášil, J., J. Hloušek, F. Veselovský, K. Fejfarová, M. Dušek, R. Škoda, M. Novák, J. Čejka, J. Sejkora, and P. Ondruš (2012) Adolfpateraite, K(UO₂)(SO₄)(OH)(H₂O), a new uranyl sulphate mineral from Jáchymov, Czech Republic. *Amer. Mineral.*, 97, 447-454.