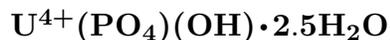


# Vyacheslavite



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**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$  or  $mm2$ . Crystals are lamellar, to 8  $\mu\text{m}$ , in spherulitic to microcrystalline aggregates in veinlets.

**Physical Properties:** *Cleavage:* On {010}. Hardness = n.d.  $D(\text{meas.}) = 4.9(3)$   
 $D(\text{calc.}) = 5.02$  Radioactive.

**Optical Properties:** Semitransparent. *Color:* Green to dark green.  
*Optical Class:* Biaxial (-). *Pleochroism:* Weak; in shades of green. *Orientation:* Positive elongation.  $\alpha = 1.700$   $\beta = 1.726\text{--}1.729$   $\gamma = 1.729\text{--}1.731$   $2V(\text{meas.}) = \text{Small}$ .

**Cell Data:** *Space Group:*  $Cmcm$ ,  $Cmc2_1$ , or  $C2cm$ .  $a = 6.96(1)$   $b = 9.10(1)$   
 $c = 12.38(1)$   $Z = 6$

**X-ray Powder Pattern:** Kyzylkum region, Uzbekistan.  
6.19 (10), 2.69 (7), 4.56 (6), 4.13 (6), 3.68 (5), 2.71 (5), 3.04 (3)

<b>Chemistry:</b>	(1)
	$\text{P}_2\text{O}_5$ 17.0
	$\text{UO}_2$ 68.69
	$\text{CaO}$ 0.53
	$\text{H}_2\text{O}$ [13.78]
	<hr/>
	Total [100.00]

(1) Kyzylkum region, Uzbekistan; by electron microprobe, average of two analyses,  $\text{H}_2\text{O}$  by difference; corresponds to  $(\text{U}_{1.06}^{4+}\text{Ca}_{0.04})_{\Sigma=1.10}(\text{PO}_4)_{0.96}(\text{OH})_{1.32} \cdot 2.5\text{H}_2\text{O}$ .

**Occurrence:** A rare secondary mineral in uranium deposits.

**Association:** Uraninite, ningyoite, sphalerite, covellite, chalcocite, pyrite, quartz.

**Distribution:** From the Dzhantuar and Rudnoye uranium deposits, Auminzatau Mountains, central Kyzylkum region, Uzbekistan.

**Name:** To honor Vyacheslav Gavrilovich Melkov (1911–1991), Russian mineralogist specializing in uranium minerals, Russian Research Institute of Mineral Resources, Moscow, Russia.

**Type Material:** Mining Institute, St. Petersburg, 1692/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 82773.

**References:** (1) Belova, L.N., A.I. Gorshkov, O.A. Ivanova, A.V. Sivtsov, L.I. Lizorkina, and V.A. Boronikhin (1984) Vyacheslavite,  $\text{U}^{4+}(\text{PO}_4)(\text{OH}) \cdot n\text{H}_2\text{O}$ , a new uranium phosphate. *Zap. Vses. Mineral. Obshch.*, 113, 360–365 (in Russian). (2) (1985) *Amer. Mineral.*, 70, 878 (abs. ref. 1). (3) Belova, L.N., A.I. Gorshkov, O.A. Ivanova, A.V. Sivtsov, and V.A. Boronikhin (1984) A new natural phosphate of U(IV). *Doklady Acad. Nauk SSSR*, 273, 1460–1462 (in Russian) [unnamed = vyacheslavite]. (4) (1984) *Amer. Mineral.*, 69, 1195 (abs. ref. 3). (5) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union, 234.