Rusakovite $(Fe^{3+}, Al)_5(VO_4, PO_4)_2(OH)_9 \cdot 3H_2O$

Crystal Data: n.d. *Point Group:* n.d. In splinterlike lamellae, to several μm, veinlets, reniform concretions, and in crusts.

Physical Properties: Hardness = 1.5–2 D(meas.) = 2.73–2.80 D(calc.) = n.d.

Optical Properties: Semitransparent. *Color:* Gold-yellow, yellow-orange, yellowish red. *Streak:* Ocher-yellow. *Luster:* Dull.
Optical Class: Isotropic, or nearly so; weakly birefringent. $n = 1.833(4)$

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

X-ray Powder Pattern: Balasauskandyk deposit, Kazakhstan.
3.21 (10), 2.945 (9), 2.441 (8), 2.140 (7), 1.569 (6), 4.20 (5), 5.17 (4)

Chemistry:

	(1)	(2)
P_2O_5	6.50	5.80
V_2O_5	16.60	16.13
V_2O_4	5.00	5.10
SO_2	1.00	1.70
SiO_2	1.80	2.50
Al_2O_3	5.00	5.50
Fe_2O_3	45.00	43.70
MgO	1.40	trace
CaO	0.30	0.40
H_2O^+	13.30	14.60
H_2O^-	5.00	4.80
Total	100.90	100.23

(1–2) Balasauskandyk deposit, Kazakhstan.

Occurrence: In the oxidized zone of a vanadium-rich carbonaceous shale.

Association: Apatite, collophane, ferric allophane, vanadian mica, iron hydroxides, sulfides of Cu, Zn, Pb, V.

Distribution: From the Balasauskandyk vanadium deposit, northwest Kara-Tau Mountains, southern Kazakhstan.

Name: To honor Mikhail Petrovich Rusakov (1892–1963), Kazakh geologist, Institute of Geosciences, Alma-Ata, Kazakhstan.

Type Material: Mining Institute, St. Petersburg, 1250/2–3; Vernadsky Geological Museum, Moscow, 49848; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 62758.

References: (1) Ankinovich, E.A. (1960) A new vanadium mineral – rusakovite. Zap. Vses. Mineral. Obshch., 89, 440–447 (in Russian). (2) (1960) Amer. Mineral., 45, 1316 (abs. ref. 1). (3) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union, 176–177.