Kufahrite PtPb

Crystal Data: Hexagonal. *Point Group*: $6/m \ 2/m \ 2/m$. In alteration rims with tetraferroplatinum after isoferroplatinum or as grains to 150 μ m.

Physical Properties: Cleavage: None. Tenacity: Malleable. Fracture: n.d. Hardness = 4 VHN = 262-320, 295 average. D(meas.) = n.d. D(calc.) = 14.80

Optical Properties: Opaque. *Color*: White. *Streak*: n.d. *Luster*: Metallic. *Optical Class*: *Anisotropism*: Moderate, light brown to gray. *Pleochroism*: Weak, white to grayish white. No internal reflections.

R₁-R₂: (470) 47.11-50.26, (546) 52.73-57.14, (589) 55.56-60.59, (650) 57.73-63.27

Cell Data: Space Group: $P6_3/mmc$. a = 4.2492(6) c = 5.486(6) Z = 2

100.16

X-Ray Diffraction Pattern: Ledyanoy Creek placer, Koryak Highlands, Kamchatka, Russia. 2.197 (100), 3.052 (80), 1.528 (35), 2.125 (28), 0.958 (22),1.747 (18), 1.240 (18)

(2) 48.49 51.51

100.00

| Chemistry: | | (1) | |
|------------|----|-------|--|
| - | Pt | 47.51 | |
| | Pb | 45.41 | |
| | Sb | 6.03 | |
| | Rh | 1.21 | |

Total

(1) Ledyanov Creek placer, Koryak Highlands, Kamchatka, Russia; average electron microprobe analysis; corresponds to $(Pt_{0.94}Rh_{0.04})_{\Sigma=0.98}(Pb_{0.83}Sb_{0.19})_{\Sigma=1.02}$. (2) PtPb.

Occurrence: In heavy mineral concentrate from a fluvial placer derived from a Ural-Alaskan-type ultramafic complex.

Association: Isoferroplatinum, tetraferroplatinum, tulameenite, Cr-rich spinel, native iridium, hollingworthite.

Distribution: From the Ledyanoy Creek placer, Koryak Highlands, Kamchatka, Russia.

Name: Honors geologist Fahrid Shakirovitch Kutyev (1943-1993), Institute of Volcanology of USSR Academy of Sciences, who played a key role in the discovery of the Koryak-Kamchatka platinum belt, including the Ledyanov placer platinum deposit.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (5576/1).

References: (1) Sidorov, E.G., A.V. Kutyrev, E.S. Zhitova, A.A. Agakhanov, E.I. Sandimirova, A. Vymazalova, V.M. Chubarov, and A.A. Zolotarev (2021) Kufahrite, PtPb, a new mineral from Ledyanov Creek placer, Galmoenan ultramafic complex, Koryak Highlands, Russia. Mineral. Mag., 85, 254-261.