Zaccariniite RhNiAs

Crystal Data: Tetragonal. *Point Group*: 4/*m* 2/*m* 2/*m*. As irregular grains to 20 μm.

Physical Properties: *Cleavage*: None. *Fracture*: Irregular. *Tenacity*: Brittle. Hardness = 3.5-4 VHN = 218 (5 g load on synthetic material). D(meas.) = 10.09 D(calc.) = 10.19

Optical Properties: Opaque. *Color*: Gray, white with brownish to pinkish tints in reflected light. *Streak*: Gray. *Luster*: Metallic.
Optical Class: Isotropic. *Bireflectance*: Strong. *Pleochroism*: Strong, white to pinkish brownish white. *Anisotropism*: Moderate to strong, orange to blue–green.
R_1-R_2: (470) 49.4-52.6, (546) 52.4-53.2, (589) 54.2-53.2, (650) 56.6-53.3

Cell Data: *Space Group: P*4/*nmm*. a = 3.5498(1) c = 6.1573(2) Z = 2

X-ray Powder Pattern: Loma Peguera chromitite, Cordillera Central, Dominican Republic. 2.325 (100), 1.776 (80), 1.945 (51), 0.9730 (42), 2.509 (40), 1.256 (40), 1.055 (23)

Chemistry:

	(1)
Rh	41.77
Os	0.51
Ir	0.64
Ru	0.46
Pd	0.34
Ni	23.75
Fe	0.53
As	27.84
S	0.10
Total	96.09

(1) Loma Peguera chromitite, Cordillera Central, Dominican Republic; average of 3 electron microprobe analyses, corresponding to $(Rh_{1.01}Os_{0.01}Ir_{0.01}Ru_{0.01}Pd_{0.01})_{\Sigma=1.05}(Ni_{1.00}Fe_{0.02})_{\Sigma=1.02}(As_{0.92}S_{0.01})_{\Sigma=0.93}$.

Occurrence: A low temperature mineral formed during alteration of ophiolite, now in heavy-mineral concentrate derived from ophiolitic chromitite.

Association: Garutiite, hexaferrum, Ru-Os-Ir-Fe alloys, Ru-Os-Ir-Fe oxygenated compounds, chromite.

Distribution: Loma Peguera chromitite, Loma Caribe peridotite, Cordillera Central, Dominican Republic. From the Koryako-Kamchatskiy region and Nizhny Tagil, Ural-Alaskan chromitites, Urals, Russia. Also from the Chindwin area, Burma; the Onverwacht pipe, Bushveld Complex, South Africa; Thetford mine, Quebec, Canada; the Vourinos chromitites, Greece, and the Kempirsai chromitites, Kazakhstan.

Name: Honors Professor Federica Zaccarini (b. 1962), University of Leoben, Austria, in recognition of her contributions to the mineralogy of platinum-group elements and their deposits.

Type Material: Mineralogical Museum of Leoben, Austria (8241).

References: (1) Vymazalová, A., F. Laufek, M. Drábek, C.J. Stanley, R.J. Baker, R. Bermejo, G. Garuti, O. Thalhammer, J.A. Proenza, and F. Longo (2012) Zaccariniite, RhNiAs, a new platinum-group mineral from Loma Peguera, Dominican Republic. Canadian Mineralogist, 50, 1321-1329. (2) (2014) Amer. Mineral., 99, 875 (abs. ref. 1).