Osarsite $(Os, Ru)AsS$

Crystal Data: Monoclinic. *Point Group:* n.d. As polycrystalline intergrowths, granular, to 150 μm.

Physical Properties: Hardness = n.d. VHN = n.d. D(meas.) = n.d. D(calc.) = 8.44

Optical Properties: Opaque. *Color:* Gray in reflected light. *Luster:* Metallic. *Anisotropism:* Weak but distinct in air.
R_1–R_2: n.d.

Cell Data: *Space Group:* n.d. $a = 5.933(1)$ $b = 5.916(2)$ $c = 6.009(2)$ $\beta = 112°21(2)'$ $Z = 4$

X-ray Powder Pattern: Gold Bluff, California, USA.
3.79 (100), 1.892 (100), 1.870 (80), 2.74 (70), 2.78 (60), 2.01 (60), 1.832 (60)

Chemistry:

	(1)	(2)
Os	35.6	37.6
Ru	18.1	10.3
Ir	2.0	0.74
Pd	0.6	
Pt	0.4	
Rh	0.2	
Ni	0.9	3.2
Fe		2.5
Co		2.0
As	30.6	32.6
S	11.5	13.2
Total	99.9	102.14

(1) Gold Bluff, California, USA; by electron microprobe, corresponding to $(Os_{0.49}Ru_{0.47}Ni_{0.04}Ir_{0.03}Pd_{0.02})_{\Sigma=1.05}As_{1.06}S_{0.94}$. (2) Kola Peninsula, Russia; by electron microprobe, corresponding to $(Os_{0.47}Ru_{0.24}Ni_{0.13}Fe_{0.11}Co_{0.08}Ir_{0.01})_{\Sigma=1.04}As_{1.03}S_{0.97}$.

Mineral Group: Arsenopyrite group.

Occurrence: In a platinum-bearing sample of placer sand (Gold Bluff, California, USA).

Association: Irarsite, ruthenarsenite, sperrylite, iridarsenite, osmiridium, anduoite, laurite, ruarsite.

Distribution: In the USA, from Gold Bluff, Humboldt Co., California, USA [TL], and in the Salmon River placers, Goodnews Bay, Alaska. In Russia, from near Zlatoust, Ural Mountains; on the Kola Peninsula; and in the Neozhidannyy Creek placers, Tuva. From the Witwatersrand, Transvaal, South Africa. At Anduo, Tibet, China. From Vourinos, Greece.

Name: For the content of OSmium and ARSenic.

Type Material: National Museum of Natural History, Washington, D.C., USA, 123218.

References: (1) Snetsinger, K.G. (1972) Osarsite, a new osmium–ruthenium sulfarsenide from California. Amer. Mineral., 57, 1029–1036. (2) Cabri, L.J., Ed. (1981) Platinum group elements: mineralogy, geology, recovery. Can. Inst. Min. & Met., 123, 160.