

Crystal Data: Monoclinic. *Point Group:* n.d. As irregular grains or as aggregates, to 100–150 μm , having rough textured surfaces.

Physical Properties: *Tenacity:* Brittle. Hardness = n.d. VHN = 893 (50 g load) low % Os grains; 734 (50 g load) for 14% Os. *D(meas.)* = n.d. *D(calc.)* = 7.08

Optical Properties: Opaque. *Color:* Lead-gray to dark lead-gray; grayish white in polished section. *Streak:* Grayish black. *Luster:* Metallic. *Pleochroism:* Pale yellowish white to pale grayish yellow-white. *Anisotropism:* Distinct, bluish gray to light reddish.

R_1 – R_2 : (480) 43.4, (546) 44.1, (589) 43.8, (656) 45.1

Cell Data: *Space Group:* n.d. $a = 5.931$ $b = 5.915$ $c = 6.003$ $\beta = 112^\circ 27'$ $Z = 4$

X-ray Powder Pattern: Anduo, Tibet, China.

2.77 (100), 1.870 (90), 1.695 (90), 1.890 (70), 1.660 (60), 3.79 (50), 1.580 (50)

| Chemistry: | (1) | (2) |
|------------|--------|--------|
| Ru | 42.45 | 48.58 |
| Os | 5.94 | |
| Ir | 1.67 | |
| Pt | 0.07 | |
| Cu | 0.00 | |
| As | 36.25 | 36.01 |
| Sb | 0.00 | |
| S | 14.08 | 15.41 |
| Total | 100.36 | 100.00 |

(1) Anduo, Tibet, China; by electron microprobe, average of eight analyses of seven grains; corresponding to $(\text{Ru}_{0.91}\text{Os}_{0.05}\text{Ir}_{0.02})_{\Sigma=0.98}\text{As}_{1.05}\text{S}_{0.94}$. (2) RuAsS.

Mineral Group: Arsenopyrite group.

Occurrence: In heavy mineral concentrates and in chromium ore derived from an Alpine-type ultramafic (Anduo, Tibet, China).

Association: Iridosmine, rutheniridosmine, ruthenosmiridium, Pt–Ir alloy, Ru–Fe alloy, osmium, sperrylite, laurite, chromian spinel, pyrite, pyrrhotite, löllingite, magnetite, chalcopyrite, molybdenite, galena, millerite (Anduo, Tibet, China).

Distribution: From the Anduo chromite deposit, northern Tibet, China [TL]. At the Neozhidanny Creek placers, Tuva, Russia. In the Kapitanov chromite deposit, near Zvenyhorodka, Ukraine. From the Kraubath ultramafic massif, Styria, Austria. At the Kelly Lake Ni–Cu sulfide deposit, Sudbury, Ontario, Canada.

Name: For the chemical composition Ruthenium, ARsenic, and Sulfur.

Type Material: Museum of Geology, (Beijing?), China.

References: (1) Yu Tsu-hsiang [Yu Zuxiang] and Hsueh-tsi Chou (1979) Ruarsite, a new mineral. K'ö Hsueh T'ung Pao, 24, 310–316 (in Chinese). (2) (1980) Amer. Mineral., 65, 1068–1069 (abs. ref. 1). (3) Cabri, L.J., Ed. (1981) Platinum group elements: mineralogy, geology, recovery. Can. Inst. Min. & Met., 133.