

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As non-euhedral crystals to 100 μm.

**Physical Properties:** *Cleavage:* n.d. *Fracture:* n.d. *Tenacity:* Brittle. *Hardness* = 3-3.5  
VHN = 132-147, 137 average (100 g load). *D(meas.)* = n.d. *D(calc.)* = 5.275

**Optical Properties:** [Opaque.] *Color:* Black. *Streak:* Black. *Luster:* Metallic.

*Optical Class:* n.d. Anisotropic. Weakly to moderately birefractant.

*Pleochroism:* Weak, dark gray to dark green.

*R<sub>1</sub>-R<sub>2</sub>:* (471.1) 33.9-40.2, (548.3) 32.5-38.9, (586.6) 31.6-38.0, (652.3) 29.8-36.5

**Cell Data:** Space Group: *P*2<sub>1</sub>/*n*. *a* = 19.1806(18) *b* = 12.7755(14) *c* = 8.1789(10)

*β* = 90.471(11)° *Z* = 2

**X-ray Powder Pattern:** Uchucchacua deposit, Oyon district, Catajambo, Lima Department, Peru.  
3.29 (100), 2.821 (70), 2.045 (50), 3.34 (40), 2.920 (40), 2.678 (35), 3.15 (30)

Chemistry:	(1)	(2)
Cu	0.76	
Ag	8.39	10.17
Mn	3.02	3.45
Pb	24.70	26.03
As	9.54	9.41
Sb	28.87	26.77
S	24.30	24.17
Total	99.58	100.00

(1) Uchucchacua deposit, Oyon district, Catajambo, Lima Department, Peru; average of 5 electron microprobe analyses; corresponds to Cu<sub>0.38</sub>Ag<sub>2.48</sub>Mn<sub>1.75</sub>Pb<sub>3.79</sub>Sb<sub>7.55</sub>As<sub>4.05</sub>S<sub>24.12</sub>.

(2) Ag<sub>3</sub>Mn<sub>2</sub>Pb<sub>4</sub>Sb<sub>7</sub>As<sub>4</sub>S<sub>24</sub>.

**Polymorphism & Series:** Lillianite homologous series.

**Occurrence:** In a hydrothermal vein, lead-zinc-silver deposit of sulfide and sulfosalt minerals, and abundant alabandite and manganese calcium silicates in carbonate rock.

**Association:** Orpiment, tennantite-tetrahedrite, menchettiite, other minerals of the system Pb-Ag-Sb-Mn-As-S, calcite.

**Distribution:** From the Nivel 890, Uchucchacua deposit, Oyon district, Catajambo, Lima Department, Peru.

**Name:** For the region that produced the first specimen, *Oyon* district, Peru.

**Type Material:** National History Museum, University of Florence, Italy (3283/I).

**References:** (1) Bindi, L., C. Biagioni, and F.N. Keutsch (2018) Oyonite, Ag<sub>3</sub>Mn<sub>2</sub>Pb<sub>4</sub>Sb<sub>7</sub>As<sub>4</sub>S<sub>24</sub>, a new member of the lillianite homologous series from the Uchucchacua base-metal deposit, Oyon District, Peru. *Minerals*, 8(5), 192. (2) (2020) *Amer. Mineral.*, 105, 1114 (abs. ref. 1).