

Crystal Data: Monoclinic. *Point Group:* 2/m. As platy tablets; typically as thin fan-like masses to ~1 cm.

Physical Properties: *Cleavage:* None. *Fracture:* Uneven. *Tenacity:* Brittle.
Hardness = 6-6.5 D(meas.) = n.d. D(calc.) = 4.378

Optical Properties: Translucent. *Color:* Bright orange to salmon to brown.
Streak: Reddish brown. *Luster:* Waxy to vitreous.
Optical Class: Biaxial (+). $\alpha = 1.726(1)$ $\beta = 1.731(1)$ $\gamma = 1.752(1)$ $2V(\text{meas.}) = 52(2)^\circ$
 $2V(\text{calc.}) = 53^\circ$

Cell Data: *Space Group:* P2₁/m. $a = 7.5764(5)$ $b = 5.9507(4)$ $c = 8.8050(6)$
 $\beta = 112.551(2)^\circ$ $Z = 2$

X-ray Powder Pattern: Valletta mine, Piedmont, Italy.
3.194 (100), 2.705 (65), 2.981 (51), 2.087 (51), 2.922 (40), 2.743 (31), 1.685 (24)

Chemistry:	(1)	(2)
SrO	29.81	41.68
CaO	7.28	
BaO	1.56	
Al ₂ O ₃	7.07	10.23
Fe ₂ O ₃	2.34	
Mn ₂ O ₃	1.88	
MgO	1.04	
PbO	0.43	
As ₂ O ₅	44.95	46.28
V ₂ O ₅	0.50	
P ₂ O ₅	0.09	
H ₂ O	1.83	1.81
Total	98.78	100.00

(1) Valletta mine, Piedmont, Italy; average of 8 electron microprobe analyses, H₂O calculated from structure refinement, OH⁻ and (AsO₄)³⁻ confirmed by Raman and IR spectroscopy; corresponding to (Sr_{1.41}Ca_{0.64}Ba_{0.05}Pb_{0.01}) $\Sigma=2.11$ (Al_{0.68}Fe³⁺_{0.14}Mn³⁺_{0.12}Mg_{0.13}) $\Sigma=1.07$ [(As_{0.96}V_{0.01}) $\Sigma=0.97$ O₄]₂(OH).

(2) Sr₂Al(AsO₄)₂(OH).

Occurrence: From a small Fe-Mn-As deposit in metamorphosed quartzites (high-P, low-T blueschist facies).

Association: Aegirine, adelite, barite, braunite, hematite, quartz, tilasite.

Distribution: Found on the dumps of the Valletta mine, Valletta Valley, Canosio municipality, Maira Valley, Cuneo province, Piedmont, Italy.

Name: For the informal appellation of the Province where the Valletta mine is located - called "la Granda" (the Big One) for its considerable areal extent, one of the biggest in Italy.

Type Material: At the Museo Regionale di Scienze Naturali di Torino, Sezione di Mineralogia, Petrografia e Geologia, Torino, Italy (# M/15999), and the mineralogical collection, Museo Civico Archeologico e di Scienze Naturali "Federico Eusebio", Alba, Cuneo, Italy (#G. 1723 prog. 505).

References: (1) Cámara, F., M.E. Ciriotti, E. Bittarello, F. Nestola, F. Massimi, F. Radica, E. Costa, P. Benna, and G.C. Piccoli (2014) Arsenic-bearing new mineral species from Valletta mine, Maira Valley, Piedmont, Italy: I. Grandaitite, Sr₂Al(AsO₄)₂(OH), description and crystal structure. *Mineral. Mag.*, 78(3), 757-774. (2) (2015) *Amer. Mineral.*, 100, 335 (abs. ref. 1).