

Crystal Data: Hexagonal. *Point Group:* $\bar{3} 2/m$. As minute crystals, platy on {0001} with hexagonal outline, modified by $\{10\bar{1}0\}$, $\{10\bar{1}1\}$, $\{10\bar{1}2\}$, $\{10\bar{1}3\}$, $\{10\bar{1}5\}$.

Physical Properties: Hardness = n.d. $D(\text{meas.}) = 4.363$ (synthetic). $D(\text{calc.}) = 4.33$
Rapidly decomposed by H_2O , leaving a PbSO_4 residue.

Optical Properties: Semitransparent. *Color:* Colorless or white; colorless in transmitted light.
Luster: Vitreous, pearly on {0001}.
Optical Class: Uniaxial (-), large birefringence. $\omega = 1.712$ $\epsilon = \text{n.d.}$

Cell Data: *Space Group:* $R\bar{3}m$ (synthetic). $a = 5.4950(6)$ $c = 20.849(4)$ $Z = 3$

X-ray Powder Pattern: Synthetic.

3.138 (100), 2.749 (70), 4.333 (45), 6.948 (35), 2.557 (35), 2.068 (35), 2.156 (30)

Chemistry:	(1)	(2)
SO_3	21.80	33.53
PbO	40.65	46.74
Na_2O	2.60	
K_2O	9.10	19.73
NaCl	2.64	
Total	76.79	100.00

(1) Vesuvius, Italy; neglecting NaCl, corresponds to $(\text{K}_{1.36}\text{Na}_{0.59})_{\Sigma=1.95}\text{Pb}_{1.28}(\text{SO}_4)_{1.92}$.

(2) $\text{K}_2\text{Pb}(\text{SO}_4)_2$.

Occurrence: A rare fumarolic sublimate.

Association: Apthitalite, ferronatrite, jarosite, euchlorine, hematite.

Distribution: From Vesuvius, Campania, Italy.

Name: Honors Luigi Palmieri (1807–1896), Italian physicist, Director of the Vesuvius Observatory, Italy.

Type Material: University of Naples, Naples, 17516; Natural History Museum, Paris, France, 107.476, 107.477; The Natural History Museum, London, England, 1927,1049.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 403–404. (2) Bellanca, A. (1946) La struttura della palmierite. Periodico di Mineral, 15(1–3), 5–25 (in Italian). (3) (1977) NBS Mono. 25, 14.