

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.