

Crystal Data: Monoclinic. *Point Group:* 2/m. As subparallel intergrowths of bent lamellae, to 50 μm , and elongated probably along [100].

Physical Properties: *Cleavage:* n.d. *Fracture:* Sub-conchoidal. *Tenacity:* Brittle.
Hardness = 2-3 *D(meas.)* = n.d. *D(calc.)* = 4.77 Soluble in H₂O.

Optical Properties: Translucent. *Color:* Colorless to white. *Streak:* White.

Luster: Adamantine to greasy (on exposure to air).

Optical Class: Biaxial (+). $\alpha = 2.004(2)$ $\beta = 2.010(2)$ $\gamma = 2.024(3)$ $2V(\text{meas.}) = \text{n.d.}$

$2V(\text{calc.}) = 67^\circ$

Cell Data: *Space Group:* P2₁/c. $a = 8.864(8)$ $b = 7.932(8)$ $c = 12.491(11)$ $\beta = 90.153(5)^\circ$ $Z = 4$

X-ray Powder Pattern: Challacollo mine, Atacama Desert, northern Chile.

3.686 (100), 3.609 (49), 2.669 (42), 8.855 (39), 3.961 (31), 2.548 (18), 2.095 (16)

Chemistry:	(1)	(2)
K	5.45	6.4
Pb	66.30	66.1
<u>Cl</u>	<u>28.69</u>	<u>28.2</u>
Total	100.44	100.7

(1) Challacollo mine, Atacama Desert, northern Chile; average of 8 electron microprobe analyses supplemented by IR spectroscopy; corresponds to K_{0.88}Pb_{2.02}Cl_{5.00}. (2) Vesuvius, Italy; average of 7 electron microprobe analyses supplemented by IR spectroscopy; corresponds to K_{0.88}Pb_{2.02}Cl_{5.00}.

Occurrence: A hydrothermal mineral in an epithermal vein-type silver deposit (Chile). Also as a sublimate near volcanic fumaroles (Italy).

Association: Cotunnite, boleite, pseudoboleite, hemimorphite, caracoite, anglesite, nitratine, anhydrite, fluorite.

Distribution: From the Challacollo silver mine, south east of Iquique, Atacama desert, northern Chile. From Vesuvius, Naples, Campania, and La Fossa crater, Vulcano, Aeolian Archipelago, Sicily, Italy.

Name: For the *Challacollo* mine, where the specimens for description of the species were collected.

Type Material: The Mineralogical Museum, University of Hamburg, Germany.

References: (1) Schlüter, J., D. Pohl, and S. Britvin (2005) The new mineral challacolloite, KPb₂Cl₅, the natural occurrence of a technically know laser material. N. Jb. Miner. Abh., 182, 95-101. (2) (2006) Amer. Mineral., 91, 1452-153 (abs. ref. 1). (3) Mitolo D., D. Pinto, A. Garavelli, L. Bindi, and F. Vurro (2009) The role of the minor substitutions in the crystal structure of natural challacolloite, KPb₂Cl₅, and hephaistosite, TIPb₂Cl₅, from Vulcano (Aeolian Archipelago, Italy). Mineralogy and Petrology, 96, 121-128.