Chloraluminite $AlCl_3 \cdot 6H_2O$

Crystal Data: Hexagonal. *Point Group:* $\overline{3}\ 2/m$. As rhombohedral crystals, showing {0001}, $\{11\overline{2}0\}$, and $\{10\overline{1}1\}$; as crusts, stalactites, compact masses.

Physical Properties: Hardness = Soft. D(meas.) = 1.644 (synthetic). D(calc.) = 1.666 (synthetic). Very soluble in H_2O; deliquescent.

Optical Properties: Transparent. *Color:* Colorless, white, yellow; colorless in transmitted light.
Optical Class: Uniaxial (–). $\omega = 1.560$ $\epsilon = 1.506$

Cell Data: *Space Group:* $R\overline{3}c$. $a = 11.827(6)$ $c = 11.895(3)$ Z = 2

X-ray Powder Pattern: Synthetic.
3.297 (100), 3.246 (55), 2.308 (50), 3.89 (40), 2.764 (40), 3.68 (35), 5.95 (25)

Chemistry: Natural material has not been analyzed.

Occurrence: As crusts around acidic fumaroles (Vesuvius, Italy).

Association: Molysite, chloromagnesite (Vesuvius, Italy); natroalunite, gypsum, anhydrite, pickeringite (Cerro Pintados, Chile).

Distribution: From Vesuvius, Campania, Italy. At Cerro Pintados, 80 km southeast of Iquique, Tarapacá, Chile. On Parícutin volcano, Michoacán, Mexico.

Name: For CHLORine and ALUMINum in its composition.

Type Material: Natural History Museum, Paris, France, 107480.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 50. (2) Mrose, M.E. (1971) New mineral data for hydrated phosphates and sulfates. U.S. Geol. Sur. Prof. Paper 750A, 115. (3) Buchanan, D.R. and P.M. Harris (1968) A neutron and X-ray diffraction investigation of aluminum chloride hexahydrate. Acta Cryst., 24, 954–960. (4) (1957) NBS Circ. 539, 7, 3.