

Crystal Data: Isometric. *Point Group:* $\bar{4}3m$. As fine-grained polycrystalline aggregates.

Physical Properties: *Cleavage:* Imperfect on {100}. *Fracture:* Irregular. *Tenacity:* Brittle.
D(meas.) = n.d. D(calc.) = 2.676 *Hardness* = n.d.

Optical Properties: Translucent. *Color:* White. *Streak:* n.d. *Luster:* n.d.
Optical Class: Isotropic. $n = 1.565(2)$

Cell Data: *Space Group:* $P\bar{4}3m$. $a = 7.745(1)$ $Z = [1]$ [by analogy to natropharmacoalumite.]

X-ray Powder Pattern: Guanaco, Chile.

7.77 (100), 2.739 (60), 4.48 (50), 3.16 (50), 3.87 (40), 2.335 (40), 2.452 (30)

Chemistry:	(1)	(2)
Na ₂ O	2.52	4.51
K ₂ O	7.5	6.29
Al ₂ O ₃	24.0	27.23
Fe ₂ O ₃	3.9	
CuO	trace	
As ₂ O ₅	44.3	46.03
H ₂ O	20.3	20.45
Total	100.0	100.00

(1) Guanaco, Chile; average of 4 electron microprobe analyses, total Fe as Fe₂O₃, H₂O determined separately; after normalization to 79.7%, corresponds to K_{1.24}(Al_{3.69}Fe_{0.38}³⁺)_{Σ=4.07}(AsO₄)₃(OH)₄•6.5H₂O. (2) KAl₄(AsO₄)₃(OH)₄•6.5H₂O.

Mineral Group: Pharmacosiderite supergroup, pharmocoalumite group.

Occurrence: A secondary mineral with other oxidized arsenates on a museum specimen.

Association: Ceruleite, olivenite, schlossmacherite, mansfieldite, quartz.

Distribution: From the [Emma Luisa gold mine,] Guanaco district, about 100 km east-northeast of Taltal, Antofagasta, Chile.

Name: As the aluminum (*alum*) end-member in the *pharmacosiderite* supergroup.

Type Material: National Museum of Natural History, Washington, D.C., USA, 149527.

References: (1) Schmetzer, K., W. Horn, and H. Bank (1981) Alumopharmakosiderit, KAl₄[(OH)₄(AsO₄)₃]•6.5H₂O, ein neues Mineral. Neues Jahrb. Mineral., Monatsh., 97-102 (in German with English abs.). (2) (1981) Amer. Mineral., 66, 1099 (abs. ref. 1). (3) Rumsey, M.S., S.J. Mills, and J. Spratt (2010) Natropharmacoalumite, NaAl₄[(OH)₄(AsO₄)₃]•4H₂O, a new mineral of the pharmacosiderite supergroup and the renaming of aluminopharmacosiderite to pharmacoalumite. Mineral. Mag., 74, 929-936. (4) (2011) Amer. Mineral., 96, 1656-1657 (abs. ref. 1).