Alumopharmacosiderite $KAl_4(AsO_4)_3(OH)_4 \cdot 6.5H_2O$

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

Physical Properties: Hardness = n.d. D(meas.) = n.d. D(calc.) = 2.676

Optical Properties: Semitransparent. *Color:* White.
Optical Class: Isotropic. $n = 1.565(2)$

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

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)
As_2O_5	44.3	46.03
Al_2O_3	24.0	27.23
Fe_2O_3	3.9	
CuO	trace	
K_2O	7.5	6.29
H_2O	20.3	20.45
Total	100.0	100.00

(1) Guanaco, Chile; by electron microprobe, average of four analyses, total Fe as Fe_2O_3, H_2O determined separately; after normalization to 79.7%, corresponds to $K_{1.24}(Al_{3.69}Fe^{3+}_{0.38})_{\Sigma=4.07}(AsO_4)_3(OH)_4 \cdot 6.5H_2O$. (2) $KAl_4(AsO_4)_3(OH)_4 \cdot 6.5H_2O$.

Occurrence: 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 analog of *pharmacosiderite*.

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

References: (1) Schmetzer, K., W. Horn, and H. Bank (1981) Alumopharmakosiderit, $KAl_4[(OH)_4|(AsO_4)_3] \cdot 6,5H_2O$, ein neues Mineral. Neues Jahrb. Mineral., Monatsh., 97–102 (in German with English abs.). (2) (1981) Amer. Mineral., 66, 1099 (abs. ref. 1).