

Crystal Data: Monoclinic. *Point Group:* 2 or 2/m. As acicular crystals, to 50 μm , in aggregates; as powdery coatings on löllingite.

Physical Properties: Hardness = n.d. $D(\text{meas.}) = 2.64(2)$ (synthetic). $D(\text{calc.}) = 2.64$ H_2O is variable according to relative humidity; becomes cloudy on exposure to light.

Optical Properties: Semitransparent. *Color:* White, gray, greenish gray to yellow.

Luster: Earthy.

Optical Class: Biaxial (+). *Orientation:* $Z \wedge c \simeq 3^\circ$. $\alpha = 1.573-1.581$ $\beta = 1.573-[1.582]$

$\gamma = 1.626-1.636$ $2V(\text{meas.}) = 13^\circ-15^\circ$

Cell Data: *Space Group:* $P2_1$ or $P2_1/n$ (synthetic $\text{Fe}(\text{H}_2\text{AsO}_4)_3 \cdot 5\text{H}_2\text{O}$). $a = 15.25-15.363$
 $b = 19.60-19.844$ $c = 4.72-4.752$ $\beta = 91.77^\circ-91.90^\circ$ $Z = 4$

X-ray Powder Pattern: Kaatjala pegmatite, Finland.

8.35 (vs), 9.91 (s), 7.72 (s), 6.09 (m), 3.76 (m), 3.53 (m), 3.408 (m)

Chemistry:

	(1)	(2)
As_2O_5	[51.9]	59.9
CO_2	1.73	
As_2O_3	[14.2]	
Al_2O_3	0.58	
Fe_2O_3	11.2	13.8
MgO	0.24	
CaO	3.00	
H_2O	16.2	25.8
Total	[99.05]	99.5

(1) Kaatjala pegmatite, Finland; by AA, As determined after volatilization of arsenolite impurity, H_2O and CO_2 by elemental analyzer; after deduction of small amounts of Ca, Mg, As_2O_3 , CO_2 as impurities, corresponds to $(\text{Fe}_{0.93}\text{Al}_{0.08})_{\Sigma=1.01}(\text{H}_2\text{AsO}_4)_{3.00} \cdot 5.97\text{H}_2\text{O}$. (2) Niederbeerbach, Germany; corresponds to $\text{Fe}_{1.00}(\text{H}_2\text{AsO}_4)_{3.02} \cdot 5.26\text{H}_2\text{O}$.

Occurrence: A secondary mineral in a granite pegmatite (Kaatjala pegmatite, Finland); in an oxidized Ag-As vein in gabbro (Niederbeerbach, Germany).

Association: Arsenolite, löllingite, calcite, gypsum (Kaatjala pegmatite, Finland).

Distribution: From the Kaatjala pegmatite, near Kuortane, Finland. In Germany, at Glasberg, Niederbeerbach, Odenwald, Hesse; Wittichen, Black Forest; St. Andreasberg, Harz Mountains; and Lauta, near Marienberg, Saxony. From Jáchymov (Joachimsthal), Czech Republic. In the U.S. mine, Gold Hill, Tooele Co., Utah, USA.

Name: For the Kaatjala pegmatite, Finland, in which it was first found.

Type Material: Mineralogical-Geological Museum, University of Oslo, Oslo, Norway; The Natural History Museum, London, England.

References: (1) Raade, G., M.H. Mladeck, R. Kristiansen, and V.K. Din (1984) Kaatjalaite, a new ferric arsenate mineral from Finland. *Amer. Mineral.*, 69, 383-387. (2) Schmetzer, K. and O. Medenbach (1986) Kaatjalaite from Nieder-Beerbach, Odenwald – a second occurrence. *Neues Jahrb. Mineral., Monatsh.*, 337-342. (3) Boudjada, A. and J.C. Guitel (1981) Structure cristalline d'un orthoarséniate acide de fer(III) pentahydraté: $\text{Fe}(\text{H}_2\text{AsO}_4)_3 \cdot 5\text{H}_2\text{O}$. *Acta Cryst.*, 37, 1402-1405 (in French with English abs.).