Hydroglauberite $Na_{10}Ca_3(SO_4)_8 \cdot 6H_2O$

Crystal Data: Orthorhombic (?). *Point Group:* n.d. As felted aggregates of fibrous crystals, striated ‖ elongation, to 0.1 mm, in dense masses.

Physical Properties: *Cleavage:* Three noted, one of which is parallel to elongation. Hardness = n.d. D(meas.) = 1.510 D(calc.) = n.d. Soluble in H_2O, slightly bitter, salty taste.

Optical Properties: Translucent. *Color:* White. *Luster:* Silky in aggregates. *Optical Class:* Biaxial (–). *Orientation:* Positive elongation, parallel extinction. $\alpha = 1.488$ (α') β = n.d. $\gamma = 1.500$ (γ') 2V(meas.) = n.d.

Cell Data: *Space Group:* n.d. Z = n.d.

X-ray Powder Pattern: Kushkanatau salt deposit, Uzbekistan.
3.08 (100), 9.20 (90), 2.78 (90b), 4.60 (80), 2.90 (70), 4.20 (60), 3.52 (60)

Chemistry:

	(1)	(2)
SO_3	52.16	52.21
MgO	0.00	
CaO	13.59	13.72
Na_2O	25.40	25.26
K_2O	0.19	
Cl	0.58	
H_2O	8.20	8.81
$-O = Cl_2$	[0.13]	
Total	[99.99]	100.00

(1) Kushkanatau salt deposit, Uzbekistan; original total given as 100.12%.
(2) $Na_{10}Ca_3(SO_4)_8 \cdot 6H_2O$.

Occurrence: An uncommon alteration product of glauberite.

Association: Glauberite, halite, mirabilite, polyhalite, thénardite, blödite (Kushkanatau salt deposit, Uzbekistan); gypsum, mirabilite, halite (Salar de Pintados, Chile).

Distribution: From the Kushkanatau salt deposit, lower Amu Darya River, Kara-Kalpakia, Uzbekistan. In the Cesano geothermal field, Latium, Italy. From Kalkberg, near Lüneburg, Lower Saxony, Germany. At the Salar de Pintados, near La Guaica, Tarapacá, Chile. From near San Simon, Cochise Co., Arizona, USA.

Name: For the essential water content and chemical similarity to *glauberite*.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 72170, 72171; National Museum of Natural History, Washington, D.C., USA, 148423.

References: (1) Slyusareva, M.N. (1969) Hydroglauberite, a new mineral of the hydrous sulfate group. Zap. Vses. Mineral. Obshch., 98, 59–62 (in Russian). (2) (1970) Amer. Mineral., 55, 321 (abs. ref. 1). (3) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. Ocean Pictures, Moscow, 98.