Agrinierite $(K_2, Ca, Sr)U_3O_{10}\cdot 4H_2O$

Crystal Data: Orthorhombic, pseudohexagonal. *Point Group:* $2/m\ 2/m\ 2/m$, $mm2$, or 222. Crystals tabular on {001}, pseudohexagonal in section. *Twinning:* Sector twinning with composition plane {110}.

Physical Properties: *Cleavage:* {001}, good. Hardness = n.d. D(meas.) = 5.7 D(calc.) = [5.55]

Optical Properties: Transparent to translucent. *Color:* Orange. *Optical Class:* Biaxial (–). *Orientation:* $X = a$; $Z = b$. α = n.d. $\beta = 2.01$ $\gamma = 2.06$ 2V(meas.) = 55°

Cell Data: *Space Group:* $Cmmm$, $Cm2m$, $Cmm2$, or $C222$. $a = 14.04$ $b = 24.07$ $c = 14.13$ Z = [16]

X-ray Powder Pattern: Margnac mine, France.
7.08 (vvs), 3.128 (vvs), 3.485 (vs), 3.153 (vs), 3.516 (s), 2.023 (s), 6.05 (ms)

Chemistry:

	(1)
UO_3	85.15
CaO	2.20
SrO	2.05
BaO	0.00
K_2O	3.35
H_2O^+	7.45
Total	100.20

(1) Margnac mine, France; by electron microprobe, H_2O by TGA; corresponding to $(Ca_{0.40}K_{0.36}Sr_{0.20})_{\Sigma=0.96}U_{3.00}O_{10}\cdot 4.17H_2O$.

Occurrence: In the oxidation zone of a uranium deposit.

Association: Uranophane, "gummite".

Distribution: From the Margnac mine, Compreignac, Haute-Vienne, France.

Name: For Henri Agrinier (1928–1971), an engineer in the Mineralogy Laboratory of the French Atomic Energy Commission, Paris, France.

Type Material: University of Pierre and Marie Curie, Paris; National School of Mines, Paris, France; National Museum of Natural History, Washington, D.C., USA, 137454.

References: (1) Cesbron, F., W.L. Brown, P. Bariand, and J. Geffroy (1972) Rameauite and agrinierite, two new hydrated complex uranyl oxides from Margnac, France. Mineral. Mag., 38, 781–789. (2) (1973) Amer. Mineral., 58, 805 (abs. ref. 1).