

Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. As idiomorphic crystals to 15 μm with cross sections bound by {110} and {211}.

Physical Properties: *Cleavage:* None. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 7-7.5 VHN = 1080-1240 (10 g load). $D(\text{meas.}) = \text{n.d.}$ $D(\text{calc.}) = 4.48$

Optical Properties: Transparent. *Color:* Pale yellowish. *Streak:* n.d. *Luster:* Vitreous. *Optical Class:* Isotropic. $n(\text{calc.}) = 1.96$

Cell Data: *Space Group:* $Ia\bar{3}d$. $a = 12.50(3)$ $Z = 8$

X-ray Powder Pattern: Calculated pattern.

2.552 (100), 1.670 (96), 2.795 (84), 3.125 (72), 4.419 (35), 1.733 (32), 1.141 (25)

Chemistry:	(1)		(1)
UO ₃	0.58	Y ₂ O ₃	11.02
Sb ₂ O ₅	1.60	La ₂ O ₃	0.26
P ₂ O ₅	0.44	Ce ₂ O ₃	0.87
HfO ₂	0.09	Nd ₂ O ₃	0.78
ZrO ₂	33.00	Sm ₂ O ₃	0.17
TiO ₂	1.60	Gd ₂ O ₃	0.44
SiO ₂	0.38	Dy ₂ O ₃	0.67
Al ₂ O ₃	13.02	Er ₂ O ₃	0.61
Fe ₂ O ₃	14.42	<u>Yb₂O₃</u>	<u>0.53</u>
CaO	18.40	Total	98.88

(1) Daba-Siwaqa area, Transjordan plateau, central Jordan; electron microprobe and Raman spectroscopic analyses; corresponds to $(\text{Ca}_{2.19}\text{Y}_{0.65}\text{Ce}^{3+}_{0.03}\text{Nd}^{3+}_{0.03}\text{Gd}^{3+}_{0.02}\text{Dy}^{3+}_{0.02}\text{Er}^{3+}_{0.02}\text{Yb}^{3+}_{0.02}\text{La}^{3+}_{0.01}\text{Sm}^{3+}_{0.01})_{\Sigma=3.00}(\text{Zr}_{1.79}\text{Ti}^{4+}_{0.13}\text{Sb}^{5+}_{0.07}\text{U}^{6+}_{0.01})_{\Sigma=2.00}(\text{Al}_{1.70}\text{Fe}^{3+}_{1.21}\text{Si}_{0.04}\text{P}^{5+}_{0.04})_{\Sigma=2.99}\text{O}_{12}$.

Polymorphism & Series: Forms series with other members of the bitikleite group.

Mineral Group: Garnet supergroup, bitikleite group.

Occurrence: Formed by pyrometamorphism in a fluorapatite layer (metaphosphorite) hosted by varicolored spurrite marble.

Association: Spurrite, fluorapatite, minerals of the brownmillerite-srebrodolskite series, fluormayenite, lakargiite, baghdadite, hematite, sphalerite, zincite, andradite-grossular series, tululite, vapnikite, minerals of the lime-monteponite series, members of the magnesiochromite-zincochromite series, cuprite, Y-bearing and Y-free perovskite, ellinaite, mcconnellite.

Distribution: From the Tulul Al Hammam pyrometamorphic field, Daba-Siwaqa area, Transjordan plateau, south of Amman, central Jordan.

Name: Honors *Priscilla* Crowell Perkins *Grew*, (b. 1940), Professor Emerita, Department of Earth and Atmospheric Sciences, University of Nebraska-Lincoln and Director Emerita of the State Museum of Natural History, University of Nebraska, USA. Fellow of the Mineralogical Society of America, and recipient in 1999 of the American Geosciences Institute Medal in Memory of Ian Campbell for Superlative Service to the Geosciences.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (97020).

References: (1) Galuskina, I., E. Galuskin, Y. Vapnik, G. Zeliński, and K. Prusik (2021) Priscillagrewite-(Y), (Ca₂Y)Zr₂Al₃O₁₂: A new garnet of the bitikleite group from the Daba-Siwaqa area, the Hatrurim Complex, Jordan. *Amer. Mineral.*, 106, 641-649.