

Crystal Data: Hexagonal. *Point Group:* $\bar{3} 2/m$. As flattened discoidal crystals to 0.5 mm. Pseudo-aciculate morphology is observed in thin sections.

Physical Properties: *Cleavage:* None. *Fracture:* Irregular. *Tenacity:* Brittle. Hardness = 4-4.5 VHN = 331-378, 356 average (50 g load). D(meas.) = n.d. D(calc.) = 3.329

Optical Properties: Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Uniaxial (-). $\omega = 1.650(2)$ $\varepsilon = 1.647(2)$ *Pleochroism:* None.

Cell Data: Space Group: $R\bar{3} m$. $a = 7.1551(6)$ $c = 41.303(3)$ $Z = 3$

X-ray Powder Pattern: Calculated pattern.

3.090 (100), 1.789 (92), 2.822 (82), 2.754 (62), 3.578 (51), 2.743 (51), 1.983 (47)

Chemistry:	(1)	(1)
SO ₃	0.17	CaO 53.84
V ₂ O ₅	0.10	MgO 0.14
P ₂ O ₅	9.83	K ₂ O 0.04
TiO ₂	0.12	Na ₂ O 0.22
SiO ₂	19.87	F 3.17
Al ₂ O ₃	0.12	CO ₂ [0.57]
BaO	12.26	$\frac{-O = F_2}{\text{Total}}$ $\frac{1.33}{99.72}$
FeO	0.32	
MnO	0.29	

(1) Negev Desert, near Arad, Israel; average of 22 electron microprobe analyses supplemented by Raman spectroscopy, CO₂ calculated for charge balance; corresponds to (Ba_{0.98}K_{0.01}Na_{0.01}) $\Sigma=1$ (Ca_{11.77}Na_{0.08}Fe²⁺_{0.06}Mn²⁺_{0.05}Mg_{0.04}) $\Sigma=12$ [(Si_{3.95}Al_{0.03}Ti_{0.02}) $\Sigma=4$ O₁₆][[(P_{1.70}C_{0.16}Si_{0.10}S⁶⁺_{0.03}V_{0.01}) $\Sigma=2$ O₈]F_{2.04}O_{0.96}.

Group: Arcite group of the arcite supergroup.

Occurrence: In recrystallized zones of pyrometamorphic, fine-grained spurrite rocks, the high-temperature alteration products of minerals of an early clinker-like association.

Association: Spurrite, calcite, brownmillerite, shulamite, CO₃-bearing fluorapatite, fluormayenite-fluorkyuygenite, periclase, brucite, barytocalcite, baryte, unidentified Ca-Fe- and Rb-bearing K-Fe sulfides, often overgrown and replaced by stracherite (Negev Desert, near Arad); gehlenite, spinel, fluormayenite, fluorapatite, perovskite (Daba-Siwaqa area); fluormayenite-fluorkyuygenite, brownmillerite, fluorapatite, gehlenite, jasmundite (Ma'ale Adummim).

Distribution: From the Negev Desert, near Arad, Israel; the northern part of the Daba-Siwaqa area, 80 km south of Amman, Jordan; and near Ma'ale Adummim, Palestineian Autonomy.

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Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (4956/1).

References: (1) Galuskin, E.V., B. Krüger, I.O. Galuskina, H. Krüger, Y. Vapnik, J.A. Wojdyla, and M. Murashko (2018) New mineral with modular structure derived from hatrurite from the pyrometamorphic rocks of the Hatrurim Complex: Ariegilatite, BaCa₁₂(SiO₄)₄(PO₄)₂F₂O, from Negev Desert, Israel. *Minerals*, 8(3), 19. (2) (2020) *Amer. Mineral.*, 105(8), 1275 (abs. ref. 1).