

**Crystal Data:** Hexagonal. *Point Group:*  $\bar{3} 2/m$ . As thin elongate crystals to 50  $\mu\text{m}$  in isolated oval polyminerale inclusions to 2 cm in rankinite. Also in angular aggregates interstitial to grains in paralava.

**Physical Properties:** *Cleavage:* Good on {0001}. *Tenacity:* n.d. *Fracture:* Irregular. Hardness = n.d. D(meas.) = n.d. D(calc.) = 5.044

**Optical Properties:** Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Uniaxial.  $n(\text{calc.}) = 1.945$  *Pleochroism:* None.

**Cell Data:** *Space Group:*  $R\bar{3}m$ .  $a = 5.784(1)$   $c = 21.132(1)$   $Z = 3$

**X-ray Powder Pattern:** Calculated pattern from synthetic analog. 3.2434 (100), 2.8906 (79), 2.1580 (48), 1.7292 (26), 1.9591 (25), 2.2652 (19), 1.4143 (16)

Chemistry:	(1)	(2)
MoO <sub>3</sub>	n.d.	2.15
CrO <sub>3</sub>	n.d.	0.29
SO <sub>3</sub>	1.17	2.06
V <sub>2</sub> O <sub>5</sub>	26.80	16.42
P <sub>2</sub> O <sub>5</sub>	0.59	7.92
TiO <sub>2</sub>	n.d.	0.30
SiO <sub>2</sub>	0.04	0.21
Fe <sub>2</sub> O <sub>3</sub>	0.04	n.d.
Al <sub>2</sub> O <sub>3</sub>	0.33	0.42
CaO	0.76	0.35
SrO	0.33	n.d.
BaO	69.10	67.56
K <sub>2</sub> O	0.70	2.26
Na <sub>2</sub> O	0.16	0.41
Total	100.03	100.35

(1) Gurim Anticline, near Arad, Negev Desert, Israel; average of 18 electron microprobe analyses supplemented by Raman spectroscopy; corresponds to  $(\text{Ba}_{2.794}\text{K}_{0.092}\text{Ca}_{0.084}\text{Na}_{0.033}\text{Sr}_{0.017})_{\Sigma=3.020}(\text{V}^{5+}_{1.827}\text{S}^{6+}_{0.091}\text{P}^{5+}_{0.05}\text{Al}_{0.040}\text{Si}_{0.005}\text{Fe}^{3+}_{0.05})_{\Sigma=2.017}\text{O}_8$ . (2) Zuk Tamrur, Israel; electron microprobe analyses supplemented by Raman spectroscopy; corresponds to  $(\text{Ba}_{2.577}\text{K}_{0.281}\text{Ca}_{0.036}\text{Na}_{0.077})_{\Sigma=2.971}(\text{V}^{5+}_{1.056}\text{S}^{6+}_{0.150}\text{P}^{5+}_{0.653}\text{Al}_{0.048}\text{Si}_{0.020}\text{Cr}^{6+}_{0.022}\text{Mo}_{0.087}\text{Ti}^{4+}_{0.022})_{\Sigma=2.058}\text{O}_8$  or stated differently Ba<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub> ≈ 32% gurimite, Ba<sub>3</sub>(VO<sub>4</sub>)<sub>2</sub> ≈ 53%, K<sub>2</sub>Ba(SO<sub>4</sub>)<sub>2</sub> ≈ 8%, K<sub>2</sub>Ba(MoO<sub>4</sub>)<sub>2</sub> ≈ 5%.

**Occurrence:** A common accessory mineral in thin veins of paralava cutting gehlenite-flamite hornfels and formed at >1100° C from the relatively fast crystallization of residual melt.

**Association:** Hexacelsian, rankinite, gehlenite, pseudowollastonite, schorlomite, fluorapatite-fluorellestadite, minerals of the zadovite-aradite series, walstromite.

**Distribution:** Found at the Gurim Anticline, near Arad, and at Zuk Tamrur, Negev Desert, Israel.

**Name:** After the geographical region of *Gurim*, Israel, its type locality.

**Type Material:** Museum of Natural History, Bern, Switzerland (NMBE 42103).

**References:** (1) Galuskina, I.O., E.V. Galuskin, Ye. Vanek, K. Prusik, M. Stasiak, P. Dzierzanowski, and M. Murashko (2017) Gurimite, Ba<sub>3</sub>(VO<sub>4</sub>)<sub>2</sub> and hexacelsian, BaAl<sub>2</sub>Si<sub>2</sub>O<sub>8</sub> - two new minerals from schorlomite-rich paralava of the Hatrurim Complex, Negev Desert, Israel. Mineral. Mag., 81(4), 1009-1019. (2) (2018) Amer. Mineral., 103, 2526-2527 (abs. ref. 1).