

Crystal Data: Tetragonal. *Point Group:* $\bar{4} 2m$. As crystals to 80 μm ; often epitaxial with fresnoite.

Physical Properties: *Cleavage:* Good on {001}. *Tenacity:* Brittle. *Fracture:* Conchoidal. Hardness = 5 VHN = 527-565, 540 average (25 g load). D(meas.) = n.d. D(calc.) = 4.27

Optical Properties: Transparent. *Color:* Light yellow to lemon-yellow. *Streak:* White. *Luster:* Vitreous.

Optical Class: Uniaxial (-). $\omega = 1.711(2)$ $\epsilon = 1.708(2)$

Cell Data: *Space Group:* $P\bar{4} 2_1m$. $a = 8.2334(14)$ $c = 5.2854(8)$ $Z = 2$

X-Ray Diffraction Pattern: Near Ben Neshер Mount, Hatrurim Basin, Negev Desert, Israel. 3.021 (100), 3.248 (39), 2.147 (22), 2.604 (21), 1.855 (18), 3.913 (15), 1.868 (15)

Chemistry:	(1)
SiO ₂	25.10
Fe ₂ O ₃	[0.07]
Al ₂ O ₃	0.55
BaO	55.23
SrO	0.93
ZnO	0.26
FeO	12.21
MnO	0.28
CaO	2.95
MgO	0.74
K ₂ O	0.16
<u>Na₂O</u>	<u>0.17</u>
Total	98.66

(1) Near Ben Neshер Mount, Hatrurim Basin, Negev Desert, Israel; average electron microprobe analysis supplemented by Raman spectroscopy, Fe₂O₃ calculated for charge balance; corresponds to (Ba_{1.706}Ca_{0.249}Sr_{0.042}Na_{0.026}K_{0.016}) $\Sigma=2.040$ (Fe²⁺_{0.774}Mg_{0.087}Al_{0.051}Fe³⁺_{0.035}Mn²⁺_{0.019}Zn_{0.015}) $\Sigma=0.982$ Si_{1.978}O₇.

Mineral Group: Melilite group.

Occurrence: In intergranular spaces in thin veins of rankinite paralava within pyrometamorphic gehlenite hornfels.

Association: Rankinite, gehlenite, garnet, fresnoite, walstromite, zadovite, gurimite, hexacelsian, celsian.

Distribution: At Gurim Anticline, near Ben Neshер Mount, Hatrurim Basin, Negev Desert, Israel.

Name: For *Ben Neshер* Mount, near where the mineral was first collected.

Type Material: A.E. Fersman Mineralogical Museum, RAS, Moscow, Russia (97004).

References: (1) Krz̄ała, A., B. Krüger, I. Galuskina, Y. Vapnik, and E. Galuskin (2022) Benneshерite, Ba₂Fe²⁺Si₂O₇: A new melilite group mineral from the Hatrurim Basin, Negev Desert, Israel. *Amer. Mineral.*, 107, 138-146. (2) Miyawaki, R., F. Hatert, M. Pasero, and S.J. Mills (2019) New minerals and nomenclature modifications approved in 2019. *Mineral. Mag.*, 83(6), 887-893.