

**Crystal Data:** Isometric. *Point Group:*  $\bar{4} 3m$ . As rounded grains to 100 μm, or as tetrahedral crystals to 20 μm. As inclusions in ye'elimite.

**Physical Properties:** *Cleavage:* None. *Fracture:* Irregular. *Tenacity:* n.d.  
Hardness = 5.5-6 VHN = 771 (50 g load). D(meas.) = n.d. D(calc.) = 2.745

**Optical Properties:** Transparent. *Color:* Colorless, rarely with greenish to yellowish tint.  
*Streak:* White. *Luster:* Vitreous.  
*Optical Class:* Isotropic.  $n = 1.612(3)$

**Cell Data:** *Space Group:*  $\bar{I}4 3d$ .  $a = 11.9894(2)$   $Z = 2$

**X-ray Powder Pattern:** Jabel Harmun, Palestinian Autonomy, Israel.  
2.681 (100), 4.895 (92), 2.997 (47), 2.447 (43), 2.189 (41), 1.6022 (37), 1.663 (33)

Chemistry:	(1)		(1)
SiO <sub>2</sub>	0.04	SO <sub>3</sub>	0.08
Al <sub>2</sub> O <sub>3</sub>	48.85	P <sub>2</sub> O <sub>5</sub>	0.03
Fe <sub>2</sub> O <sub>3</sub>	1.51	Cl	0.11
MgO	0.11	F	1.83
CaO	46.96	H <sub>2</sub> O	[1.09]
Na <sub>2</sub> O	0.08	$\frac{-O = (F + Cl)_2}{\text{Total}}$	$\frac{0.80}{99.88}$

(1) Jabel Harmun, Palestinian Autonomy, Israel; average electron microprobe analysis supplemented by Raman spectroscopy, H<sub>2</sub>O calculated for charge balance; corresponding to (Ca<sub>11.95</sub>Na<sub>0.04</sub>)<sub>Σ=11.99</sub>(Al<sub>13.68</sub>Fe<sup>3+</sup><sub>0.27</sub>Mg<sub>0.04</sub>Si<sub>0.01</sub>P<sub>0.01</sub>S<sup>6+</sup><sub>0.01</sub>)<sub>Σ=14.02</sub>O<sub>31.42</sub>(OH)<sub>1.73</sub>[□<sub>4.58</sub>F<sub>1.38</sub>Cl<sub>0.04</sub>]<sub>Σ=6</sub>.

**Mineral Group:** Mayenite group.

**Occurrence:** Major constituent of larnite-bearing pyrometamorphic rocks.

**Association:** Larnite, shulamitite, Cr-containing spinel-magnesioferrite series, ye'elimite, periclase, fluorapatite-fluorellestadite, brownmillerite, oldhamite, portlandite, hematite, hillebrandite, afwillite, foshagite, ettringite, katoite, hydrocalumite.

**Distribution:** From Jabel Harmun, near the Palestinian village of Nabi Musa, Judean Desert, Judean Mountains, West Bank, Palestinian Autonomy, Israel.

**Name:** Indicates the fluorine-dominant analog of *mayenite*.

**Type Material:** Museum of Natural History, Bern, Switzerland (NMBE-42094).

**References:** (1) Galuskin, E.V., F. Gfeller, I.O. Galuskina, T. Armbruster, R. Bailau, and V.V. Sharygin (2015) Mayenite supergroup, part I: Recommended nomenclature. *Eur. J. Mineral.*, 27, 99-111. (2) Galuskin, E.V., F. Gfeller, T. Armbruster, I.O. Galuskina, Y. Vapnik, M. Dulski, M. Murashko, P. Dzierzanowski, V.V. Sharygin, S.V. Krivovichev, and R. Wirth (2015) Mayenite supergroup, part III: Fluormayenite, Ca<sub>12</sub>Al<sub>14</sub>O<sub>32</sub>[□<sub>4</sub>F<sub>2</sub>], and fluorkyuygenite, Ca<sub>12</sub>Al<sub>14</sub>O<sub>32</sub>[(H<sub>2</sub>O)<sub>4</sub>F<sub>2</sub>], two new minerals from pyrometamorphic rocks of the Hatrurim Complex, South Levant. *Eur. J. Mineral.*, 27, 123-136. (3) (2016) *Amer. Mineral.*, 101, 1709-1710 (abs. refs. 1 & 2).