

Crystal Data: Tetragonal. *Point Group:* $\bar{4}2m$. Crystals, tabular, to 1.5 mm.

Physical Properties: *Cleavage:* none discernable. *Fracture:* Uneven.
Tenacity: Brittle. Hardness = 4.5-5 D(meas.) = 2.96(2) D(calc.) = 3.00

Optical Properties: Transparent. *Color:* Light brown. *Streak:* White. *Luster:* Vitreous.
Optical Class: Uniaxial (-). $\omega = 1.635(1)$ $\varepsilon = 1.626(1)$

Cell Data: *Space Group:* $P\bar{4}2_1m$. $a = 7.7620(7)$ $c = 5.0311(5)$ $Z = 2$

X-ray Powder Pattern: Oldoinyo Lengai volcano, northern Tanzania.
2.859 (100), 2.4563 (32), 3.075 (25), 1.7569 (19), 1.8303 (13) 1.7364 (13), 1.3859 (13)

Chemistry:	(1)
SiO ₂	43.73
TiO ₂	0.09
Al ₂ O ₃	8.32
Fe ₂ O ₃	2.14
FeO	4.55
MnO	0.22
MgO	4.36
CaO	30.24
SrO	0.91
Na ₂ O	5.70
<u>K₂O</u>	<u>0.10</u>
Total	100.36

(1) Oldoinyo Lengai volcano, northern Tanzania; average of 8 electron microprobe analyses, corresponding to $(\text{Ca}_{1.48}\text{Na}_{0.50}\text{Sr}_{0.02}\text{K}_{0.01})_{\Sigma=2.01}(\text{Al}_{0.44}\text{Mg}_{0.30}\text{Fe}^{2+}_{0.17}\text{Fe}^{3+}_{0.07}\text{Mn}_{0.01})_{\Sigma=0.99}(\text{Si}_{1.99}\text{Al}_{0.01}\text{O}_7)$.

Mineral Group: Melilite group.

Occurrence: As phenocrysts in olivine-free melilite-nephelinitic ashes and lapilli-tuffs produced by a carbonatite volcano.

Association: Nepheline, aegirine-augite.

Distribution: From Oldoinyo Lengai volcano, northern Tanzania.

Name: For its composition and relationship to other members of the melilite group.

Type Material: Mineralogical Museum, Department of Mineralogy, St. Petersburg State University, St. Petersburg, Russia (OL218, catalog no. 1/19407); the Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (OL244, catalog no. 3823/1).

References: (1) Wiedenmann, D., A.N. Zaitsev, S.N. Britvin, S.V. Krivovichev, and J. Keller (2009) Alumoåkermanite, $(\text{Ca,Na})_2(\text{Al,Mg,Fe}^{2+})(\text{Si}_2\text{O}_7)$, a new mineral from the active carbonatite-nephelinite-phonolite volcano Oldoinyo Lengai, northern Tanzania. *Mineral. Mag.*, 73, 373–384.
(2) (2010) *Amer. Mineral.*, 95, 1357 (abs. ref. 1).