

**Crystal Data:** Isometric. *Point Group:*  $4/m\bar{3}2/m$ . As octahedral crystals to 1.5 mm, some with rhombododecahedral modifications.

**Physical Properties:** *Cleavage:* None. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 4-5  
D(meas.) = n.d. D(calc.) = 6.160

**Optical Properties:** Translucent. *Color:* Colorless. *Streak:* White. *Luster:* Adamantine to resinous.

*Optical Class:* Isotropic.  $n(\text{calc.}) = 1.992$

**Cell Data:** *Space Group:*  $Fd\bar{3}m$ .  $a = 10.4191(6)$   $Z = 8$

**X-ray Powder Pattern:** Volta Grande pegmatite, Nazareno, Minas Gerais, Brazil.  
3.005 (100), 3.138 (83), 5.997 (59), 2.602 (29), 1.589 (25), 1.504 (24), 2.004 (23)

<b>Chemistry:</b>	(1)
Na <sub>2</sub> O	4.68
CaO	11.24
MnO	0.01
SrO	0.04
BaO	0.02
SnO <sub>2</sub>	0.63
UO <sub>2</sub>	0.02
Nb <sub>2</sub> O <sub>5</sub>	3.47
Ta <sub>2</sub> O <sub>5</sub>	76.02
F	2.80
H <sub>2</sub> O	[0.48]
$-\text{O} = \text{F}_2$	1.18
Total	98.23

(1) Volta Grande pegmatite, Nazareno, Minas Gerais, Brazil; average of 6 electron microprobe analyses, H<sub>2</sub>O calculated for charge balance; FTIR spectroscopy confirms OH; corresponding to  $(\text{Ca}_{1.07}\text{Na}_{0.81}\square_{0.12})_{\Sigma=2.00}(\text{Ta}_{1.84}\text{Nb}_{0.14}\text{Sn}_{0.02})_{\Sigma=2.00}[\text{O}_{5.93}(\text{OH})_{0.07}]_{\Sigma=6.00}[\text{F}_{0.79}(\text{OH})_{0.21}]_{\Sigma=1.00}$ .

**Mineral Group:** Pyrochlore supergroup, microlite group.

**Occurrence:** In heavy mineral concentrates from a rare-element granitic pegmatite exceptionally enriched in lithium and rubidium.

**Association:** Microcline, albite, quartz, muscovite, spodumene, "lepidolite," cassiterite, tantalite-(Mn), monazite-(Ce), fluorite, "apatite," beryl, "garnet," epidote, magnetite, gahnite, zircon, "tourmaline," bityite, hydrokenomicrolite, and other unspecified microlite-group minerals.

**Distribution:** From the Volta Grande pegmatite, Nazareno, Minas Gerais, Brazil. Also at the Harding pegmatite, New Mexico, USA.

**Name:** For a member of the *microlite* group with dominant fluorine in the Y structural site and calcium in the A structural site.

**Type Material:** Geology Museum, University of São Paulo, Brazil (DR731).

**References:** (1) Andrade, M.B., D. Atencio, A.I.C. Persiano, and J. Ellena (2013) Fluorcalciomicrolite,  $(\text{Ca,Na},\square)_2\text{Ta}_2\text{O}_6\text{F}$ , a new microlite-group mineral from Volta Grande pegmatite, Nazareno, Minas Gerais, Brazil. *Mineral. Mag.*, 77(7), 2989-2996. (2) (2015) *Amer. Mineral.*, 100, 2357-2360 (abs. ref. 1).