

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)

Chemistry:	(1)
Na ₂ O	4.68
CaO	11.24
MnO	0.01
SrO	0.04
BaO	0.02
SnO ₂	0.63
UO ₂	0.02
Nb ₂ O ₅	3.47
Ta ₂ O ₅	76.02
F	2.80
H ₂ O	[0.48]
<u>-O = F₂</u>	<u>1.18</u>
Total	98.23

(1) Volta Grande pegmatite, Nazareno, Minas Gerais, Brazil; average of 6 electron microprobe analyses, H₂O 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).