Oxycalciomicrolite $(Ca, Na)_2(Ta, Nb, Ti)_2O_6(O, F)$

Crystal Data: Cubic. *Point Group*: 4/*m* $\bar{3}$ 2/*m*. As octahedra or cube-rhombohedra to 0.5 mm.

Physical Properties: *Cleavage*: None. *Tenacity*: Brittle. *Fracture*: Conchoidal. Hardness = 5-5.5 D(meas.) = n.d. D(calc.) = 6.333

Optical Properties: Translucent to transparent. *Color*: Brownish yellow to brownish red.
Streak: White. *Luster*: Vitreous to resinous.
Optical Class: Isotropic. *n*(calc.) = 2.037

Cell Data: *Space Group*: *Fd*$\bar{3}$ *m*. *a* = 10.4325(4) Z = 8

X-Ray Diffraction Pattern: Fumal pegmatite, near Nazareno, Minas Gerais, Brazil.
3.011 (100), 6.023 (89), 1.844 (48), 3.145 (44), 1.573 (33), 2.608 (25), 2.008 (14)

Chemistry:

	(1)		(1)
Nb_2O_5	4.12	FeO	0.09
Ta_2O_5	75.77	CaO	15.89
TiO_2	0.38	MnO	0.17
UO_2	0.83	SrO	0.51
ZrO_2	0.03	BaO	0.02
La_2O_3	0.05	Na_2O	0.36
Ce_2O_3	0.18	F	0.75
Yb_2O_3	0.11	$-O = F_2$	0.31
Sm_2O_3	0.02	Total	99.91
SnO	0.94		

(1) Fumal pegmatite, near Nazareno, Minas Gerais, Brazil; average electron microprobe analysis supplemented by IR spectroscopy; corresponds to $^{A}(Ca_{1.57}\square_{0.26}Na_{0.06}Sn_{0.03}Sr_{0.03}U_{0.02}Mn_{0.02}Fe_{0.01}Ce_{0.01})_{\Sigma=2.00}{}^{B}(Ta_{1.79}Nb_{0.18}Ti_{0.03})_{\Sigma=2.00}{}^{X}O_6{}^{Y}[O_{0.64}F_{0.19}\square_{0.17}]_{\Sigma=1.00}$.

Mineral Group: Pyrochlore supergroup, microlite group.

Occurrence: In the saprolite of a weathered granitic pegmatite.

Association: Columbite subgroup minerals, cassiterite, hematite, ilmenite, monazite-(Ce), epidote-group minerals, xenotime-(Y), zircon, beryl, spinel, garnet-group minerals.

Distribution: From the Fumal pegmatite, 18 km north of Nazareno, Minas Gerais, Brazil [TL]; in the Varuträsk pegmatite, northeastern Sweden; in pegmatites of the Vigezzo Valley, western Alps, Italy.

Name: The first prefix, *oxy*, indicates dominant oxygen at the *Y* site, the second prefix, *calcio*, indicates the dominant calcium in the *A* site of a member of the *microlite* subgroup.

Type Material: Geological Museum, University of Rio de Janeiro, Brazil (MN 7601-M).

References: (1) Menezes da Silva, V.H.R., C.A. Ávila, R. Neumann, F.R.L. Faulstich, F.E.A. Alves, F.B. de Almeida, T. Proença Cidade, and S. Siqueira da Cruz Guimarães Sousa (2020) Oxycalciomicrolite, $(Ca,Na)_2(Ta,Nb,Ti)_2O_6(O,F)$, a new member of the microlite group (pyrochlore supergroup) from the Paleoproterozoic São João del Rei Pegmatite Province, Minas Gerais state, Brazil. Mineral. Mag., 84(6), 854-858. (2) (2021) Amer. Mineral., 106, 1187-1191 (abs. ref. 1).