

Crystal Data: Orthorhombic. *Point Group:* 2/m 2/m 2/m. Lamellar crystals and grains, to a few cm. Crystals display three-fold twinning about the *c* axis.

Physical Properties: *Cleavage:* Present. Hardness = 4.5-5 D(meas.) = 2.77 D(calc.) = 2.746

Optical Properties: Opaque, translucent on thin edges. *Color:* Pale yellow to cream.

Luster: Vitreous to dull.

Optical Class: Uniaxial (+). $\omega = 1.603$ $\epsilon = 1.639$

Cell Data: *Space Group:* Pbnm. $a = 7.378(1)$ $b = 12.779(1)$ $c = 10.096(1)$ $Z = 4$

X-ray Powder Pattern: Burpala massif, Russia; very close to catapleite.
2.96 (100), 3.96 (80), 3.06 (80), 1.975 (80), 1.835 (80), 6.45 (70), 1.740 (70)

Chemistry:	(1)
SiO ₂	44.49
TiO ₂	0.06
ZrO ₂	31.00
Al ₂ O ₃	0.60
RE ₂ O ₃	0.28
Fe ₂ O ₃	0.36
CaO	13.82
Na ₂ O	0.32
K ₂ O	0.10
H ₂ O ⁺	9.15
<u>H₂O⁻</u>	<u>0.18</u>
Total	100.36

(1) Burpala massif, Russia; leading to (Ca_{0.98}Na_{0.04})_{Σ=1.02}Zr_{1.00}(Si_{2.94}Al_{0.04})_{Σ=2.98}O₉•2.01H₂O.

Occurrence: In cavities between crystals of microcline, in syenite pegmatites of a differentiated alkalic massif.

Association: Pyrophanite, pyrochlore, titanian lävenite, loparite-(Ce), kupletskite, RE-apatite, hiortdahlite, calcian seidozerite, leucophane, microcline.

Distribution: In the Burpala massif, about 120 km north of Lake Baikal, eastern Siberia, and from the Afrikanda complex, Kola Peninsula, Russia. At the Golden Horn batholith, Okanogan County, Washington, USA. From Strange Lake, Quebec-Labrador and Ice River, British Columbia, Canada. From the Norra Kärr complex, Småland, Sweden. At Cnoc Rhaonastil, Isle of Islay, Scotland, UK.

Name: For its *calcium* content and close relation to *catapleite*. The change from the original name conforms to International Mineralogical Association guidelines.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia; 7203/5.

References: (1) Portnov, A.M. (1964) Calcium catapleite, a new variety of catapleite. Doklady Acad. Nauk SSSR, 154, 607-609 (in Russian). (2) (1964) Amer. Mineral., 49, 1153 (abs. ref. 1). (3) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. Ocean Pictures, Moscow, 52. (4) Merlino, S., M. Pasero, M. Bellezza, D. Yu. Pushcharovsky, E.R. Gobetchia, N.V. Zubkova, and I.V. Pekov (2004) The crystal structure of calcium catapleite. Can. Mineral. 42, 1037-1045. (5) (2005) Amer. Mineral., 90, 771 (abs. ref. 4).