Kapitsaite-(Y) $Ba_4Y_2Si_8B_4O_{28}F$

Crystal Data: Triclinic. *Point Group*: $\bar{1}$. As elongate grains, to 8 mm, in sheaf-like masses to 3 cm.

Physical Properties: *Cleavage*: None. *Fracture*: Conchoidal. *Tenacity*: Brittle.
Hardness = 5 D(meas.) = 3.74 D(calc.) = 3.80 Fluoresces pale pink in SW UV.

Optical Properties: Transparent to translucent. *Color*: Pale pink. *Streak*: White. *Luster*: Vitreous.
Optical Class: Biaxial (+). $\alpha = 1.624$ $\beta = 1.628$ $\gamma = 1.637$ 2V(meas.) = 69° 2V(calc.) = 68°
Pleochroism: None. *Dispersion*: Weak, $r < v$.

Cell Data: *Space Group*: $I\bar{1}$. $a = 11.181(4)$ $b = 10.850(7)$ $c = 10.252(4)$ $\alpha = 90.64(6)°$
$\beta = 90.05(4)°$ $\gamma = 89.97(7)°$ Z = 2

X-ray Powder Pattern: Darii-Pioz glacier, Alayskiy Range, Garm region, northern Tajikistan.
3.77 (100), 2.90 (90), 2.93 (80), 3.24 (75), 7.80 (70), 3.73 (70), 2.74 (65)

Chemistry:

	(1)		(1)
Na_2O	0.46	Nd_2O_3	0.32
K_2O	0.87	Sm_2O_3	0.36
CaO	3.12	Gd_2O_3	0.64
MnO	0.05	Dy_2O_3	0.70
FeO	0.01	Ho2O3	0.14
BaO	38.18	Er_2O_3	0.36
PbO	1.95	Yb_2O_3	0.20
B_2O_3	8.68	SiO_2	34.98
Al_2O_3	0.04	F	1.40
Y_2O_3	7.93	Cl	0.01
La_2O_3	0.01	-O = (F + Cl)	0.59
Ce_2O_3	0.09	Total	99.94
Pr_2O_3	0.03		

(1) Darii-Pioz glacier, Alayskiy Range, Garm region, northern Tajikistan; average electron microprobe analysis, REE titrometrically, B colorimetrically, Be by atomic absorption spectroscopy; corresponding to $(Ba_{3.55}K_{0.26}Pb_{0.12}Na_{0.07})_{\Sigma=4.00}(Y_{1.00}Ca_{0.79}Na_{0.14}Gd_{0.05}Dy_{0.05}Nd_{0.03}Sm_{0.03}Er_{0.03}Ce_{0.01}Ho_{0.01}Yb_{0.01})_{\Sigma=2.15}(Si_{7.99}Al_{0.01})_{\Sigma=8.00}(B_{3.55}Si_{0.30})_{\Sigma=3.85}O_{27.95}F_{1.05}$.

Mineral Group: Hyalotekite group.

Occurrence: In a boulder of peralkaline pegmatite in the moraine of a glacier.

Association: Quartz, reedmergnerite, leucosphenite, polylithionite, pectolite, pyrochlore, turkestanite, aegirine.

Distribution: From the Darii-Pioz glacier, Alayskiy Range, Garm region, northern Tajikistan.

Name: Honors Russian P'yotr Leonidovich *Kapitsa* (1894-1984), well-known solid-state physicist.

Type Material: A.E. Fersman Mineralogical Museum, Moscow, Russia (89495, 89502, 90423).

References: (1) Pautov, L.A., P.V. Khvorov, E.V. Sokolova, G. Ferraris, G. Ivaldi, and L.F. Bazhenova (2000) Kapitsaite-(Y) $(Ba,K)_4(Y,Ca)_2Si_8(B,Si)_4O_{28}F$ - A new mineral. Zapiski Vseross. Mineral. Obshch., 129(6), 42-49 (in Russian, English abs.). (2) (2001) Amer. Mineral. 86, 1535 (abs. ref. 1) and 87, 768 (Erratum). (3) Mandarino, J.A. (2001) New minerals. Can. Mineral., 39, 1483 (abs. ref. 1).