Keldyshite $Na_2ZrSi_2O_7 \cdot nH_2O$

Crystal Data: Triclinic. *Point Group:* $\overline{1}$. As irregular grains, to 4 mm, or granular aggregates. *Twinning:* Very fine polysynthetic twinning seen under the microscope.

Physical Properties: *Cleavage:* Two poor, intersecting ~90°. *Fracture:* Irregular. *Tenacity:* Very brittle. Hardness = 3.8–4.3 VHN = 157–231 D(meas.) = 3.22–3.30 D(calc.) = 3.26

Optical Properties: Translucent, transparent in thin fragments. *Color:* White; colorless in thin section. *Luster:* Vitreous to greasy.
Optical Class: Biaxial (–). $\alpha = 1.670$ β = n.d. $\gamma = 1.710$ 2V(meas.) = 78°

Cell Data: *Space Group:* $P\overline{1}$. $a = 9.0(1)$ $b = 5.34(2)$ $c = 6.96(3)$ $\alpha = 92(1)°$ $\beta = 116(1)°$ $\gamma = 88(1)°$ Z = 2

X-ray Powder Pattern: Lovozero massif, Russia.
3.97 (10), 4.11 (7), 1.542 (7), 1.097 (6), 1.013 (6), 2.95 (5), 2.66 (5)

Chemistry:

	(1)	(2)
SiO_2	39.39	39.69
TiO_2	0.60	0.32
ZrO_2	40.35	39.53
$Fe_2O_3 + FeO$	0.31	0.26
CaO		1.37
Na_2O	16.03	18.35
K_2O	0.94	trace
H_2O^+	0.95	
H_2O^-	0.35	
Total	98.92	99.52

(1) Lovozero massif, Russia; average of three partial analyses. (2) Do.; corresponds to $(Na_{1.79}Ca_{0.07})_{\Sigma=1.86}(Zr_{0.97}Ti_{0.01}Fe_{0.01})_{\Sigma=0.99}Si_2O_{6.94}$.

Occurrence: A primary mineral in foyaites composed of partly albitized microcline, nepheline, sodalite, aegirine, and alkali amphibole, in a differentiated alkalic massif (Lovozero massif, Russia).

Association: Eudialyte, lorenzenite (Lovozero massif, Russia).

Distribution: In the vicinity of the Tavaiok and Angoundasiok Rivers and on Mt. Alluaiv, Lovozero massif, and at Tachtarvumchorr, Khibiny massif, Kola Peninsula, Russia. From Lågendalen, near Larvik, Norway.

Name: For Russian mathematician Mstislav Vsevolodovich Keldysh (1911–1978), President of the Academy of Sciences, Russia.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 64710, 64711.

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