

Perlialite **$K_9Na(Ca, Sr)Al_{12}Si_{24}O_{72} \cdot 15H_2O$**

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Crystal Data: Hexagonal. *Point Group:* $6/m\ 2/m\ 2/m$. Crystals acicular, in fibrous aggregates, radiating, to 2 cm.

Physical Properties: *Tenacity:* Flexible and elastic. Hardness = 4–5 $D(\text{meas.}) = 2.14$
 $D(\text{calc.}) = 2.15$

Optical Properties: Semitransparent. *Color:* White. *Luster:* Pearly.
Optical Class: Uniaxial (+). $\omega = 1.483(2)$ $\epsilon = 1.488(2)$

Cell Data: *Space Group:* $P6/mmm$. $a = 18.5432(4)$ $c = 7.5310(3)$ $Z = 1$

X-ray Powder Pattern: Khibiny massif, Russia.
16.0 (10), 4.62 (10), 1.306 (10), 3.20 (9), 2.674 (8), 1.548 (8), 6.0 (7)

Chemistry:	(1)
SiO ₂	50.72
TiO ₂	0.01
Al ₂ O ₃	20.13
Fe ₂ O ₃	0.92
FeO	0.21
MgO	0.07
CaO	0.96
SrO	1.65
Na ₂ O	0.98
K ₂ O	14.86
H ₂ O	9.52
Total	100.03

(1) Khibiny massif, Russia; corresponds to $K_{9.07}Na_{0.91}(Ca_{0.49}Sr_{0.46}Fe_{0.08}^{2+})_{\Sigma=1.03}(Al_{11.35}Fe_{0.33}^{3+}Mg_{0.05})_{\Sigma=11.73}Si_{24.27}O_{72.12} \cdot 15.2H_2O$.

Mineral Group: Zeolite group.

Occurrence: In nepheline-microcline and sodalite-astrophyllite veins in nepheline-feldspar and sodalite-microcline pegmatites in a differentiated alkalic massif (Khibiny massif, Russia).

Association: Pectolite, kalsilite, aegirine, wadeite, yuksporite (Khibiny massif, Russia).

Distribution: On Mts. Eveslogchorr and Yukspor, Khibiny massif, Kola Peninsula, and in the Murun massif, southwest of Olekminsk, Yakutia, Russia.

Name: For Liliya ALekseevna PERekrest (1928–), Instructor in Mineralogy, Kirov Mining School, Kirovsk, Russia.

Type Material: Geology Museum, Kola Branch, Academy of Sciences, Apatity, 5773/1–2; Mineralogical Museum, St. Petersburg University, St. Petersburg, 17945, 17953; Mining Institute, St. Petersburg, 1675/1–2; Il'menskii Preserve Museum, Miass, 4971; Vernadsky Geological Museum, Moscow, 57643; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 83417.

References: (1) Men'shikov, Y.P. (1984) Perlialite, $K_9Na(Ca, Sr)[Al_{12}Si_{24}O_{72}] \cdot 15H_2O$ – a new potassium zeolite from the Khibiny massif. *Zap. Vses. Mineral. Obshch.*, 113, 607–612 (in Russian). (2) (1985) *Amer. Mineral.*, 70, 1331 (abs. ref. 1). (3) (1986) *Mineral. Abs.*, 37, 99 (abs. ref. 1). (4) Artoli, G. and Å. Kvick (1990) Synchrotron X-ray Rietveld study of perlialite, the natural counterpart of synthetic zeolite-L. *Eur. J. Mineral.*, 2, 749–759.

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