

Crystal Data: Hexagonal. *Point Group:* 3m. As grains to 1 mm.

Physical Properties: *Cleavage:* None. *Fracture:* n.d. *Tenacity:* n.d. *Hardness* = 5
D(meas.) = 2.67(2) *D(calc.)* = 2.703

Optical Properties: Transparent. *Color:* Brownish orange. *Streak:* White. *Luster:* Vitreous.
Optical Class: Uniaxial (-). $\omega = 1.585(2)$ $\epsilon = 1.584(2)$ *Absorption:* $O > E$.
Pleochroism: Weak; *O* = orange, *E* = grayish pink.

Cell Data: *Space Group:* R3m. $a = 14.1695(6)$ $c = 31.026(1)$ $Z = 3$

X-ray Powder Pattern: Mount Kukisvumchorr, Khibiny massif, Kola Peninsula, Russia.
 2.985 (100), 2.852 (92), 4.371 (89), 1.44 (82), 7.09 (70), 3.805 (47), 6.02 (44)

Chemistry:	(1)
Na ₂ O	3.07
K ₂ O	0.32
CaO	10.63
MnO	3.06
FeO	1.15
La ₂ O ₃	0.79
Ce ₂ O ₃	1.21
Nd ₂ O ₃	0.41
TiO ₂	0.90
ZrO ₂	10.94
Nb ₂ O ₅	1.40
SiO ₂	51.24
SO ₃	1.14
Cl	0.27
H ₂ O	10.9
- O = Cl ₂	0.06
Total	98.27

(1) Mount Kukisvumchorr, Khibiny massif, Kola Peninsula, Russia; average of 5 electron microprobe analyses supplemented by IR spectroscopy, H₂O by gas chromatography; corresponds to $\text{H}_{36.04}(\text{Na}_{3.82}\text{K}_{0.20})(\text{Ca}_{5.65}\text{Ce}_{0.22}\text{La}_{0.14}\text{Nd}_{0.07})(\text{Mn}_{1.285}\text{Fe}_{0.48})(\text{Zr}_{2.645}\text{Ti}_{0.34})\text{Nb}_{0.31}\text{Si}_{25.41}\text{S}_{0.42}\text{Cl}_{0.23}\text{O}_{86.82}$.

Mineral Group: Eudialyte group.

Occurrence: In hydrothermally-altered peralkaline pegmatite.

Association: Aegirine, murmanite, albite, microcline, rhabdophane-(Ce), fluorite, sphalerite, molybdenite.

Distribution: From Mount Kukisvumchorr, Khibiny alkaline massif, Kola Peninsula, Russia.

Name: Honors Russian crystallographer Vladimir Valentinovich Ilyukhin (1934-1982).

Type Material: Geological Museum, Natural History Museum, University of Oslo, Norway (GM 43578).

References: (1) Chukanov, N.V., R.K. Rastsvetaeva, K.A. Rozeneberg, S.M. Aksenov, I.V. Pekov, D.I. Belakovskiy, R. Kristiansen, and K.V. Van (2016) Ilyukhinite $(\text{H}_3\text{O}, \text{Na})_{14}\text{Ca}_6\text{Mn}_2\text{Zr}_3\text{Si}_{26}\text{O}_{72}(\text{OH})_2 \cdot 3\text{H}_2\text{O}$ - a new mineral of eudialyte group. *Zap. Rossiyskogo Mineral. Obsch.*, 145(2), 44-57 (in Russian). (2) (2017) *Amer. Mineral.*, 102, 1962 (abs. ref. 1).