

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. Rarely as pseudocubic to tabular crystals, to 1 cm; fine-grained, compact. *Twinning:* Common on {010}.

Physical Properties: *Cleavage:* Perfect on {110} and $\{\bar{1}\bar{1}0\}$. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 6–7 D(meas.) = 2.457–2.49 D(calc.) = 2.51

Optical Properties: Transparent to translucent. *Color:* Pale pink, lilac-blue, or dark violet-red, may be tarnished on the surface; colorless in thin section. *Streak:* White.

Luster: Slightly greasy to vitreous; slightly pearly on cleavage planes.

Optical Class: Biaxial (+). $\alpha = 1.503\text{--}1.504$ $\beta = 1.506\text{--}1.508$ $\gamma = 1.543\text{--}1.545$

$2V(\text{meas.}) = 32^\circ\text{--}39^\circ$

Cell Data: *Space Group:* $P\bar{1}$. $a = 7.256(3)$ $b = 7.686(3)$ $c = 8.683(3)$ $\alpha = 90^\circ 45(2)'$ $\beta = 99^\circ 45(2)'$ $\gamma = 122^\circ 29(2)'$ $Z = 2$

X-ray Powder Pattern: Locality unknown. (ICDD 14-426). 2.95 (100), 2.69 (100), 6.35 (90), 6.68 (70), 4.92 (70), 4.18 (70), 3.84 (70)

Chemistry:	(1)	(2)	(3)
SiO ₂	58.74	59.22	59.64
Al ₂ O ₃	17.73	17.22	16.87
CaO		0.30	
Na ₂ O	19.91	19.08	20.51
K ₂ O		0.86	
Cl		0.04	
H ₂ O ⁺	4.19	3.40	
H ₂ O ⁻		0.30	
H ₂ O			2.98
S		0.08	
–O = (Cl ₂ , S ₂)		0.06	
Total	100.57	100.44	100.00

(1) Ilímaussaq intrusion, Greenland. (2) Lovozero massif, Russia; average of two analyses; corresponds to (Na_{1.81}K_{0.05}Ca_{0.02})_{Σ=1.88}Al_{1.00}Si_{2.90}O₈(OH)_{1.11}. (3) Na₂AlSi₃O₈(OH).

Occurrence: A secondary mineral in pegmatites associated with sodalite syenite (Ilímaussaq intrusion, Greenland); in sodalite xenoliths in an intrusive alkalic gabbro-syenite complex (Mont Saint-Hilaire, Canada).

Association: Microcline, natrolite, aegirine (Ilímaussaq intrusion, Greenland); natrolite, aegirine, microcline, albite, sodalite (Lovozero massif, Russia); villiaumite, lovozerite, eudialyte, lueshite, griceite, natrophosphate (Mont Saint-Hilaire, Canada).

Distribution: In southern Greenland, on the Kangerdluarssuk Plateau, in the Ilímaussaq intrusion. From a number of places in both the Lovozero and Khibiny massifs, Kola Peninsula, Russia. At Mont Saint-Hilaire, Quebec, Canada.

Name: For Professor Niels Vigo Ussing (1864–1911), of Copenhagen, Denmark.

Type Material: University of Copenhagen, Copenhagen, Denmark, 1970.527.

References: (1) Bøggild, O.B. (1915) Ussingit, ein neues Mineral von Kangerdluarssuk [sic]. Zeits. Krist., 54, 120–126 (in German). (2) Vlasov, K.A., Ed. (1966) Mineralogy of rare elements, v. II, 269–272. (3) Ilyukhin, V.V. and E.I. Semenov (1959) New data on ussingite. Doklady Acad. Nauk SSSR, 129, 1386–1388 (in Russian). (4) Rossi, G., V. Tazzoli and L. Ungaretti (1974) The crystal structure of ussingite. Amer. Mineral., 59, 335–340. (5) Mandarino, J.A. and V. Anderson (1989) Monteregian treasures. Cambridge Univ. Press, 207.

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