

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. Prismatic crystals elongated along [001] or [100], perhaps the largest of any species, to 50 m and 13,500 t. Cleavable to granular, massive. Commonly exhibits banded perthitic intergrowths from exsolution of albite. *Twining:* Carlsbad, Baveno, and Manebach laws very common; polysynthetic twinning on the Albite and Pericline laws give an orthogonal grid pattern on (001).

Physical Properties: *Cleavage:* Perfect on {001} and {010}, intersecting at $\sim 90^\circ$; partings on {100}, {110}, $\{\bar{1}10\}$, and $\{\bar{2}01\}$. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 6–6.5 D(meas.) = 2.54–2.57 D(calc.) = 2.56

Optical Properties: Transparent to translucent. *Color:* White, pale cream-yellow; red, green, blue; colorless in thin section. *Luster:* Vitreous, pearly on cleavage.

Optical Class: Biaxial (-). *Orientation:* $X \wedge \{001\} = 15^\circ$. *Dispersion:* $r > v$, weak. $\alpha = 1.514\text{--}1.529$ $\beta = 1.518\text{--}1.533$ $\gamma = 1.521\text{--}1.539$ $2V(\text{meas.}) = 66^\circ\text{--}103^\circ$

Cell Data: *Space Group:* $C\bar{1}$. $a = 8.5784$ $b = 12.9600$ $c = 7.2112$ $\alpha = 90^\circ 18'$ $\beta = 115^\circ 58'$ $\gamma = 87^\circ 7.5'$ $Z = 4$

X-ray Powder Pattern: Vigo, Galicia, Spain. (ICDD 19-926). 4.22 (100), 3.26 (80), 3.25 (80), 3.29 (60), 3.70 (40), 3.37 (40), 3.24 (40)

Chemistry:	(1)	(1)
SiO ₂	64.46	Na ₂ O 0.49
Al ₂ O ₃	18.55	K ₂ O 16.07
Fe ₂ O ₃	0.14	<u>H₂O⁺ 0.06</u>
CaO	0.17	Total 99.94

(1) Norra Kärr complex, Sweden; corresponds to $(\text{K}_{0.95}\text{Na}_{0.04}\text{Ca}_{0.01})_{\Sigma=1.00}\text{Al}_{1.01}\text{Si}_{2.98}\text{O}_8$.

Polymorphism & Series: Dimorphous with orthoclase.

Mineral Group: Feldspar (alkali) group; (Si,Al) is completely ordered in low microcline.

Occurrence: Common in plutonic felsic rocks, as granites, granite pegmatites, syenites; in metamorphic rocks of the greenschist and amphibolite facies; in hydrothermal veins. A detrital component in sedimentary rocks and as authigenic overgrowths.

Association: Quartz, sodic plagioclase, muscovite, biotite, “hornblende.”

Distribution: A widespread mineral. Notable occurrences include: at Fredriksvärn, Arendal, and Larvik, Norway. In the Ilmen Mountains, Ural Mountains, and on the Kola Peninsula, Russia. At St. Gotthard, Ticino, Switzerland. On Mt. Greiner, Zillertal, Tirol, Austria. At Baveno, Piedmont, Italy. In the USA, at Amelia, Amelia Co., Virginia; Haddam, Middlesex Co., Connecticut; and Magnet Cove, Hot Spring Co., Arkansas. In Colorado, in the Pikes Peak area, El Paso Co., Crystal Peak, Teller Co., with large crystals from the Devil’s Hole beryl mine, Fremont Co.; in the Black Hills, Pennington and Custer Cos., South Dakota. At Bancroft, Ontario, Canada. From Klein Spitzkopje, Namibia. In Brazil, from Minas Gerais, at Fazenda do Bananal, Salinas, Urucum, and Capelinha. At Ambositra, Madagascar. From Kimpusan, Yamanshi Prefecture, and Tanakamiyama, Otsu, Shiga Prefecture, Japan. At Broken Hill, New South Wales, Australia.

Name: From the Greek for *little* and *inclined*, for the small deviation of the cleavage planes from 90° .

References: (1) Dana, E.S. (1892) Dana’s system of mineralogy, (6th edition), 322–324. (2) Deer, W.A., R.A. Howie, and J. Zussman (1963) Rock-forming minerals, v. 4, framework silicates, 6–93. (3) Phillips, W.R. and D.T. Griffen (1981) Optical mineralogy, 348–351. (4) Mergoil-Daniel, J. and R. Chevalier (1984) Les feldspaths potassiques partiellement ordonnés: structure cristallographique et signification géologique. Bull. Minéral., 107, 401–410 (in French with English abs.). (5) Smith, J.V. and W.L. Brown (1988) Feldspar minerals, (2nd edition), v. I. Springer, 828 pp.

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