

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. Crystals may be tabular, but also commonly acicular, to 15 cm; radiating fibrous, spheroidal, or columnar; fine-grained, massive.

Twinning: Twin axis [010] with composition plane $\sim\{100\}$, common.

Physical Properties: *Cleavage:* Perfect on $\{100\}$ and $\{001\}$. *Fracture:* Uneven.

Tenacity: Brittle; tough when compact. Hardness = 4.5–5 D(meas.) = 2.84–2.90

D(calc.) = [2.87] May be triboluminescent.

Optical Properties: Translucent to opaque. *Color:* Colorless, whitish, grayish, yellowish; in thin section, colorless. *Luster:* Silky, subvitreous.

Optical Class: Biaxial (+). *Orientation:* $X \wedge c = 10^\circ\text{--}19^\circ$; $Y \wedge a = 10^\circ\text{--}16^\circ$; $Z \wedge b = 2^\circ$.

Dispersion: $r > v$, weak to very strong. $\alpha = 1.592\text{--}1.610$ $\beta = 1.603\text{--}1.615$ $\gamma = 1.630\text{--}1.645$ 2V(meas.) = $50^\circ\text{--}63^\circ$

Cell Data: *Space Group:* $P\bar{1}$. $a = 7.9882(1)$ $b = 7.03996$ $c = 7.0247(1)$ $\alpha = 90.520^\circ$ $\beta = 95.181^\circ$ $\gamma = 102.469^\circ$ $Z = 2$

X-ray Powder Pattern: Bergen Hill, New Jersey, USA.

2.921 (10), 3.10 (8), 3.90 (6), 3.33 (6b), 3.28 (6b), 2.739 (6), 2.600 (6)

Chemistry:

	(1)
SiO ₂	54.18
Fe ₂ O ₃	0.18
FeO	0.42
CaO	33.36
Na ₂ O	8.72
K ₂ O	0.88
H ₂ O	2.74
Total	100.48

(1) Thetford mines, Quebec, Canada; corresponds to $(\text{Na}_{0.93}\text{K}_{0.06})_{\Sigma=0.99}(\text{Ca}_{1.98}\text{Fe}_{0.02}^{2+})_{\Sigma=2.00}(\text{Si}_{2.99}\text{Fe}_{0.01}^{3+})_{\Sigma=3.00}\text{O}_8(\text{OH})_{1.01}$.

Polymorphism & Series: A M2abc polytype exists; forms a series with sérandite.

Occurrence: A primary mineral in nepheline syenites. A hydrothermal mineral in cavities in basalts and diabases; in serpentinites and peridotites; from metamorphosed high-calcium rocks.

Association: Zeolites, datolite, prehnite.

Distribution: Numerous localities. On Mt. Baldo and Mt. Monzoni, Trentino-Alto Adige, Italy. In Germany, from Niederkirchen, near Wolfstein, and Rauschermühle, Rhineland-Palatinate. In Scotland, at Lendalfoot, Ayrshire. From Zlto, Sweden. In Russia, from the Lovozero and Khibiny massifs, Kola Peninsula. In the USA, from Paterson, Passaic Co., and Bergen Hill, Hudson Co., New Jersey; at Magnet Cove, Hot Spring Co., and on Granite Mountain, near Little Rock, Pulaski Co., Arkansas. In Canada, in fine crystals from the Jeffrey mine, Asbestos, and at Mont Saint-Hilaire, Quebec. At Ahmadnagar, Maharashtra, India. From Bou Agraou, High Atlas Mountains, Morocco. At Pilansberg, Transvaal, South Africa.

Name: From the Greek for *compact*, in allusion to its resistance to pulverization.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 373–374.

(2) Deer, W.A., R.A. Howie, and J. Zussman (1978) Rock-forming minerals, (2nd edition), v. 2A, single-chain silicates, 564–574. (3) Hildebrand, F.A. (1953) Minimizing the effects of preferred orientation in X-ray powder diffraction patterns. Amer. Mineral., 38, 1051–1056.

(4) Prewitt, C.T. (1967) Refinement of the structure of pectolite, Ca₂NaHSi₃O₉. Zeits. Krist., 125, 298–316. (5) Müller, W.F. (1976) On stacking disorder and polytypism in pectolite and serandite. Zeits. Krist., 144, 401–408.

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