Silinaite $NaLiSi_2O_5 \cdot 2H_2O$

Crystal Data: Monoclinic. *Point Group:* $2/m$. Crystals tabular to prismatic, to 2 mm; in fibrous clusters; earthy to chalky massive. *Twinning:* About [110], with composition plane {001}.

Physical Properties: *Cleavage:* {001}, perfect; {010}, good; {110}, distinct. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = ∼4.5 D(meas.) = 2.24(1) D(calc.) = 2.23

Optical Properties: Transparent to translucent, opaque. *Color:* Colorless to white. *Streak:* White. *Luster:* Vitreous to earthy. *Optical Class:* Biaxial (+). *Orientation:* $X = b$; $Y \wedge c = 16°$. *Dispersion:* $r > v$, strong, inclined. $\alpha = 1.515(1)$ $\beta = 1.516(1)$ $\gamma = 1.518(1)$ 2V(meas.) = 64(1)° 2V(calc.) = 71°

Cell Data: *Space Group:* $A2/n$. $a = 5.061(1)$ $b = 8.334(2)$ $c = 14.383(3)$ $\beta = 96.67(2)°$ Z = 4

X-ray Powder Pattern: Mont Saint-Hilaire, Canada. 7.14 (100), 4.14 (100), 2.847 (100), 4.24 (80), 4.02 (80), 2.698 (50), 1.610 (40)

Chemistry:

	(1)
SiO_2	58.54
Al_2O_3	0.01
CaO	0.14
Li_2O	[7.28]
Na_2O	14.96
H_2O	[17.56]
Total	[98.49]

(1) Mont Saint-Hilaire, Canada; by electron microprobe, Li_2O and H_2O calculated from stoichiometry of crystal structure; corresponds to $(Na_{0.99}Ca_{0.01})_{\Sigma=1.00}LiSi_{2.00}O_5 \cdot 2H_2O$.

Occurrence: In sodalite syenite xenoliths in nepheline syenite in an intrusive alkalic gabbro-syenite complex.

Association: Ussingite, terskite-(Ce), sérandite, vuonnemite, halite, villiaumite, thermonatrite, aegirine.

Distribution: At Mont Saint-Hilaire, Quebec, Canada.

Name: For SIlicon, LIthium, and sodium, NAtrium, in the composition.

Type Material: Canadian Museum of Nature, Ottawa, 56467, 56468; Royal Ontario Museum, Toronto, Canada, M44516, M44517.

References: (1) Chao, G.Y., J.D. Grice, and R.A. Gault (1991) Silinaite, a new sodium lithium silicate hydrate mineral from Mont Saint-Hilaire, Quebec. Can. Mineral., 29, 359–362. (2) Grice, J.D. (1991) The crystal structure of silinaite, $NaLiSi_2O_5 \cdot 2H_2O$: a monophyllosilicate. Can. Mineral., 29, 363–367. (3) (1991) Amer. Mineral., 76, 2023–2024 (abs. refs. 1 and 2).