

Crystal Data: Hexagonal. *Point Group:* 32. As nearly equidimensional rhombohedral crystals, displaying {11 $\bar{2}$ 0} and {01 $\bar{1}$ 2}, to 4 mm. *Twinning:* Multiple twinning by rotation about [2 $\bar{2}$ 01] and about [0001], common; typically multiply twinned after both laws, involving four, eight, or more individuals.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = > 4
D(meas.) = 2.724(4) D(calc.) = 2.739

Optical Properties: Transparent to opaque. *Color:* Pale to dark brown, yellow, colorless, white, flesh-pink, rose-red. *Streak:* White. *Luster:* Vitreous to porcelainous.
Optical Class: Uniaxial (-). $\omega = 1.609(1)$ $\epsilon = 1.596(1)$

Cell Data: *Space Group:* R32. $a = 10.556(1)$ $c = 15.855(2)$ $Z = 6$

X-ray Powder Pattern: Mont Saint-Hilaire, Canada.
5.28 (100), 6.00 (60), 3.168 (50), 3.046 (40), 1.759 (40), 2.994 (30), 2.639 (30)

Chemistry:	(1)
SiO ₂	42.08
TiO ₂	0.04
ZrO ₂	29.72
Al ₂ O ₃	0.03
FeO	0.03
MnO	0.02
MgO	0.01
CaO	0.20
Na ₂ O	13.43
K ₂ O	0.52
H ₂ O	13.54
Total	99.62

(1) Mont Saint-Hilaire, Canada; by electron microprobe, H₂O by TGA; corresponding to (Na_{1.85}K_{0.05}Ca_{0.02}) $\Sigma=1.92$ Zr_{1.03}Si_{2.99}O_{9.30}•3.21H₂O.

Occurrence: In miarolitic cavities and altered pegmatite dikes in nepheline syenite in an intrusive alkalic gabbro-syenite complex (Mont Saint-Hilaire, Canada).

Association: Catapleiite, elpidite, gaidonnayite, aegirine, analcime, albite, microcline, chlorite, calcite, epididymite, natrolite, fluorite, pyrite, sphalerite, galena (Mont Saint-Hilaire, Canada).

Distribution: In Canada, at Mont Saint-Hilaire, and in the Strange Lake complex, Quebec. From Bratthagen, near Larvik, Norway. On Mt. Alluaiv, Lovozero massif, Kola Peninsula, Russia. At Poços de Caldas, Minas Gerais, Brazil.

Name: For the locality at Mont Saint-Hilaire, Quebec, Canada.

Type Material: Canadian Museum of Nature, Ottawa; Royal Ontario Museum, Toronto, Canada, 34803.

References: (1) Chao, G.Y., D.H. Watkinson, and T.T. Chen (1974) Hilairite, Na₂ZrSi₃O₉•3H₂O, a new mineral from Mont St. Hilaire, Quebec. Can. Mineral., 12, 237–240. (2) Ilyushin, G.D., A.A. Voronkov, N.N. Nevskii, V.V. Ilyukhin, and N.V. Belov (1981) Crystal structure of hilairite, Na₂ZrSi₃O₉•3H₂O. Sov. Phys. Doklady Acad. Nauk SSSR, 260, 1118–1120 (in Russian).

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