

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As compact radial aggregates and spheres to 4 mm, consisting of bladed to prismatic crystals to 2 mm, elongate along [001], showing {100}, {010}, and {001}.

**Physical Properties:** *Cleavage:* Perfect on {100} and {010}, poor on {001}. *Tenacity:* Brittle. *Fracture:* Uneven. Hardness = 3 D(meas.) = 2.47(1) D(calc.) = 2.50 Nonfluorescent.

**Optical Properties:** Transparent to translucent. *Color:* Colorless to white, may have a slightly pink to red tinge, possibly from inclusions of lepidocrocite. *Streak:* White. *Luster:* Vitreous to subadamantine.

*Optical Class:* Biaxial (-).  $a = 1.533(1)$   $\beta = 1.559(1)$   $\gamma = 1.567(1)$   $2V(\text{meas.}) = 63(1)^\circ$   $2V(\text{calc.}) = 57(1)^\circ$  *Dispersion:* Weak,  $r$  and  $v$  crossed. *Orientation:*  $X = b$ ,  $Z \wedge a = 40^\circ$  in obtuse  $\beta$ . Nonpleochroic.

**Cell Data:** *Space Group:* C2/m.  $a = 10.5150(2)$   $b = 16.2534(4)$   $c = 9.1029(3)$   $\beta = 105.462(2)^\circ$   $Z = 2$

**X-ray Powder Pattern:** Poudrette quarry, Mont Saint-Hilaire, Rouville County, Quebec, Canada. 8.132 (100), 5.975 (40), 3.564 (40), 3.974 (35), 3.490 (35), 8.832 (30), 3.693 (30)

<b>Chemistry:</b>	(1)
Na <sub>2</sub> O	7.47
K <sub>2</sub> O	1.29
CaO	0.37
MnO	0.12
Al <sub>2</sub> O <sub>3</sub>	0.04
SiO <sub>2</sub>	54.51
TiO <sub>2</sub>	0.38
ZrO <sub>2</sub>	21.97
Nb <sub>2</sub> O <sub>5</sub>	1.01
H <sub>2</sub> O	[14.72]
Total	101.88

(1) Poudrette quarry, Mont Saint-Hilaire, Rouville County, Quebec, Canada; average electron microprobe analysis supplemented by IR spectroscopy, H<sub>2</sub>O calculated; corresponds to (Na<sub>2.66</sub>K<sub>0.30</sub>Ca<sub>0.07</sub>Mn<sub>0.02</sub>) $\Sigma=3.05$ (Zr<sub>1.96</sub>Nb<sub>0.08</sub>Ti<sub>0.05</sub>) $\Sigma=2.09$ (Si<sub>9.99</sub>Al<sub>0.01</sub>) $\Sigma=10$ O<sub>25.79</sub>•9H<sub>2</sub>O.

**Mineral Group:** Lemoynite group.

**Occurrence:** Late stage in pegmatite cutting nepheline syenite.

**Association:** Microcline, lemoynite, lepidocrocite, galena, sphalerite, calcite, pyrite (in altered pegmatite); biotite, microcline, albite, magnetite, chlorite, zircon (in unaltered pegmatite).

**Distribution:** At the Poudrette quarry, Mont Saint-Hilaire, Rouville County, Quebec, Canada.

**Name:** Alludes to the Na dominance (*natro*) and polymorphic relationship to *lemoynite*.

**Type:** Canadian Museum of Nature, Ottawa, Ontario, Canada (81534).

**References:** (1) McDonald, A.M. and G.Y. Chao (2001) Natrolemoynite, a new hydrated sodium zirconosilicate from Mont Saint-Hilaire, Quebec: description and structure determination. *Can. Mineral.*, 39, 1295-1306. (2) (2002) *Amer. Mineral.*, 87, 997 (abs. ref. 1).