Niveolanite $NaBe(CO_3)(OH) \cdot 1\text{-}2H_2O$

Crystal Data: Tetragonal. *Point Group*: 4/*m* 2/*m* 2/*m*. Typically as fibrous "wool-like"aggregates, to 2 cm; also as aggregates of acicular crystals with tetragonal or octagonal cross-sections, to 1 cm. Crystals elongate parallel to [100] with forms {100} and {100}.

Physical Properties: *Cleavage*: None. *Tenacity*: Brittle (acicular), flexible (fibrous). *Fracture*: Splintery. Hardness = n.d. D(meas.) = n.d. D(calc.) = 1.82 to 2.06 (respectively for less and greater hydration, readily reversible). Weak effervescence in HCL. Readily hygroscopic.

Optical Properties: Transparent. *Color*: Colorless fibers, aggregates snow-white to pearl white. *Streak*: White. *Luster*: Silky.
Optical Class: Uniaxial (+). ω = 1.469(1) ε = 1.502(1)

Cell Data: *Space Group*: *P*4/*mcc*. a = 13.1304(19) c = 5.4189(11) Z = 8

X-ray Powder Pattern: Poudrette Quarry, Mont-Saint Hilaire, Quebec, Canada.
13.01 (100), 3.256 (95), 9.20 (62), 2.489 (60), 2.693 (44), 2.605 (37), 3.611 (34)

Chemistry:

	(1)
Na_2O	19.81
K_2O	0.07
CaO	3.88
BeO	16.65
CO_2	29.81
H_2O	26.93
Total	97.15

(1) Poudrette Quarry, Mont-Saint Hilaire, Quebec, Canada; multiple analyses by electron microprobe, ICP-OES and LOI, H_2O calculated, OH:H_2O by charge balance, OH, H_2O, CO_3 confirmed by IR; corresponding to $(Na_{0.94}Ca_{0.10})_{\Sigma=1.04}Be_{0.98}(CO_3)_{1.00}(OH)_{1.10}\cdot 1.66H_2O$.

Occurrence: A late stage mineral in cavities in the core of a hydrothermally altered peralkaline pegmatite.

Association: Albite, aegirine, natrolite, gonnardite, siderite, petersenite-(Ce), franconite, dawsonite ; more rarely analcime, quartz, eudidymite, catapleiite, gaidonnayite, monazite-(Ce), calcite, adamsite-(Y), shomiokite-(Y), galena, sphalerite, rutile.

Distribution: Poudrette Pegmatite, Poudrette Quarry, Mont-Saint Hilaire, Quebec, Canada.

Name: From the Latin *niveus*, snow white, and *lana*, wool, in allusion to the typical habit.

Type Material: A.E. Fersman Mineralogical Museum of the Russian Academy of Sciences, Moscow, 3631/1, and the Canadian Museum of Nature, Ottawa, CNMMC 86052.

References: (1) Pekov, I.V., N.V. Zubkova, N.V. Chukanov, A.A. Agakhanov, D.I. Belakovskiy, L. Horváth, Y.E. Filinchuk, E.R. Gobechiya, D.Y. Pushcharovsky, and M.K. Rabadanov (2008) Niveolanite, the first natural beryllium carbonate, a new mineral species from Mont Saint-Hilaire, Quebec, Canada. Can. Mineral., 46, 1343–1354. (2) (2009) Amer. Mineral., 94, 1080-1081 (abs. ref. 1).