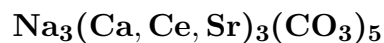


Calcioburbankite



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Crystal Data: Hexagonal. *Point Group:* $6/m\ 2/m\ 2/m$, $6mm$, or $\bar{6}2c$. As imperfect prismatic crystals, elongated along [0001], to 2 cm, with dominant $\{10\bar{1}0\}$; also as equant crystals with $\{10\bar{1}0\}$ and $\{0001\}$ and fibrous terminations.

Physical Properties: *Cleavage:* Indistinct on $\{10\bar{1}0\}$. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 3–4 D(meas.) = 3.45(3) D(calc.) = 3.46

Optical Properties: Translucent. *Color:* Bright orange, pale pink. *Streak:* White. *Luster:* Vitreous, silky.

Optical Class: Uniaxial (-). $\omega = 1.636(1)$ $\epsilon = 1.631(1)$

Cell Data: *Space Group:* $P6_3mmc$, $P6_3mc$, or $P\bar{6}2c$. $a = 10.447(3)$ $c = 6.318(3)$ $Z = 2$

X-ray Powder Pattern: Mont Saint-Hilaire, Canada. 2.601 (10), 2.130 (6), 3.01 (5), 2.509 (5), 1.793 (5), 1.674 (5), 1.613 (5)

Chemistry:

	(1)
CO ₂	[35.13]
La ₂ O ₃	9.30
Ce ₂ O ₃	14.38
Pr ₂ O ₃	1.26
Nd ₂ O ₃	3.76
Sm ₂ O ₃	0.48
CaO	11.81
SrO	7.65
BaO	0.46
Na ₂ O	15.17
Total	[99.40]

(1) Mont Saint-Hilaire, Canada; by electron microprobe, CO₂ calculated from stoichiometry, absence of (OH)¹⁻ and H₂O confirmed by IR; corresponds to Na_{3.07}(Ca_{1.32}Ce_{0.55}Sr_{0.46}La_{0.36}Nd_{0.14}Pr_{0.05}Sm_{0.02}Ba_{0.02})_{Σ=2.92}(CO₃)₅.

Occurrence: A rare late stage mineral associated with an intrusive alkalic gabbro-syenite complex.

Association: Ancylite-(Ce), calcite, donnayite-(Y), fluorapatite, natrolite, pyrite, rhodochrosite, rutile, “chlorite” (vent or altered pegmatite); aegirine, calcite, fluorite, galena, leucophanite, mangan-neptunite, microcline, molybdenite-2H and -3R, narsarsukite, pectolite, pyrite, schairerite, shortite, sodalite, sphalerite, thermonatrite, titanite (marble xenoliths).

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

Name: The *calcium* analog of *burbankite*.

Type Material: Canadian Museum of Nature, Ottawa, Canada, 50804.

References: (1) Van Velthuisen, J., R.A. Gault, and J.D. Grice (1995) Calcioburbankite, Na₃(Ca, REE, Sr)₃(CO₃)₅, a new mineral species from Mont Saint-Hilaire, Quebec, and its relationship to the burbankite group of minerals. *Can. Mineral.*, 33, 1231–1235. (2) (1996) *Amer. Mineral.*, 81, 1013 (abs. ref. 1).