

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As globules to 0.20 mm, composed of radiating bladed crystals elongated along [001].

**Physical Properties:** *Cleavage:* {100}, perfect. *Tenacity:* n.d.  
Hardness = ~ 4 (by analogy to hochelagaite) D(meas.) = n.d. D(calc.) = 2.878

**Optical Properties:** Transparent to translucent. *Color:* White; colorless in transmitted light.  
*Luster:* Silky.  
*Optical Class:* Biaxial (-).  $\alpha' = \sim 1.72(2) \perp \{100\}$   $\gamma' = \sim 1.82(2)$  along [001]

**Cell Data:** *Space Group:* C2/c.  $a = 21.151(4)$   $b = 6.496(2)$   $c = 12.714(3)$   $\beta = 103.958(3)^\circ$   $Z = 4$

**X-ray Powder Pattern:** Poudrette Quarry, Mont Saint-Hilaire, Québec, Canada.  
10.308 (100), 4.731 (39), 4.832 (38), 3.262 (25), 3.193 (25), 3.108 (24), 4.556 (16)

Chemistry:	(1)	(2)
CaO	7.96	7.48
MgO	0.24	
Al <sub>2</sub> O <sub>3</sub>	0.13	
SiO <sub>2</sub>	1.04	
TiO <sub>2</sub>	3.64	
Nb <sub>2</sub> O <sub>5</sub>	68.07	70.90
H <sub>2</sub> O	[22.96]	21.62
Total	104.04	100.00

(1) Poudrette Quarry, Mont Saint-Hilaire, Québec, Canada; average of 8 SEM-EDS analyses supplemented by Raman and FTIR spectroscopy, H<sub>2</sub>O calculated from structure analysis; corresponds to (Ca<sub>1.00</sub>Mg<sub>0.04</sub>) $\Sigma=1.04$ (Nb<sub>3.62</sub>Ti<sub>0.32</sub>Si<sub>0.12</sub>Al<sub>0.02</sub>) $\Sigma=4.08$ O<sub>10</sub>(OH)<sub>2</sub>·8H<sub>2</sub>O.  
(2) CaNb<sub>4</sub>O<sub>10</sub>(OH)<sub>2</sub>·8H<sub>2</sub>O.

**Mineral Group:** Franconite group.

**Occurrence:** A late-stage mineral, probably developed from a niobium-rich precursor on a fracture surface in fine-grained nepheline syenite.

**Association:** Albite, quartz, muscovite, pyrrhotite, pyrite, ancylite-(Ce), siderite.

**Distribution:** Found in the Poudrette Quarry, Mont Saint-Hilaire, La Vallée-du-Richelieu, Montérégie (formerly Rouville County), Québec, Canada.

**Name:** Honors Charles Hatchett (1765-1847), an English chemist who discovered niobium, a dominant element in charleshatchettite.

**Type Material:** Canadian Museum of Nature, Gatineau, Québec, Canada (CMNMC 86894).

**References:** (1) Haring, M.M.M. and A.M. McDonald (2017) Charleshatchettite, CaNb<sub>4</sub>O<sub>10</sub>(OH)<sub>2</sub>·8H<sub>2</sub>O, a new mineral from Mont Saint-Hilaire, Québec, Canada: Description, crystal-structure determination, and origin. *Amer. Mineral.*, 102, 2333-2340.