

**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$ . As stacks of crystals, platy on {100}, or as blocky cylindrical aggregates of radiating striated crystals, prismatic along [010], showing {100}, {001}, {010}, minor {110}, {011}, {101}, to 1 mm.

**Physical Properties:** *Cleavage:* On {100}, very good; on {010}, good. *Tenacity:* Brittle. Hardness = 4 D(meas.) = > 3.3 D(calc.) = 3.61

**Optical Properties:** Transparent to translucent. *Color:* Colorless to pale beige.

*Streak:* White. *Luster:* Vitreous.

*Optical Class:* Biaxial (-). *Pleochroism:* Weak; X = colorless; Y  $\simeq$  Z = pale brown.

*Orientation:* X = b; Y = a; Z = c.  $\alpha = 1.457(1)$   $\beta = 1.543(1)$   $\gamma = 1.622(1)$

2V(meas.) = 82(1)° 2V(calc.) = 83°

**Cell Data:** *Space Group:*  $Pm\bar{c}n$ .  $a = 6.959(2)$   $b = 9.170(2)$   $c = 6.301(1)$  Z = 4

**X-ray Powder Pattern:** Mont Saint-Hilaire, Canada.

3.477 (100), 5.19 (90), 2.800 (50), 2.087 (50), 2.057 (50), 1.966 (50), 1.849 (50)

**Chemistry:**

	(1)
CO <sub>2</sub>	[19.83]
Y <sub>2</sub> O <sub>3</sub>	45.07
Gd <sub>2</sub> O <sub>3</sub>	0.45
Tb <sub>2</sub> O <sub>3</sub>	0.12
Dy <sub>2</sub> O <sub>3</sub>	2.49
Ho <sub>2</sub> O <sub>3</sub>	0.81
Er <sub>2</sub> O <sub>3</sub>	3.02
Yb <sub>2</sub> O <sub>3</sub>	1.64
CaO	1.86
Na <sub>2</sub> O	12.62
F	17.22
-O = F <sub>2</sub>	7.23
Total	[97.90]

(1) Mont Saint-Hilaire, Canada; by electron microprobe, average of two analyses, CO<sub>2</sub> calculated for stoichiometry; corresponding to (Na<sub>0.90</sub>Ca<sub>0.07</sub>)<sub>Σ=0.97</sub>(Y<sub>0.89</sub>Er<sub>0.04</sub>Dy<sub>0.03</sub>Yb<sub>0.02</sub>Gd<sub>0.01</sub>Ho<sub>0.01</sub>)<sub>Σ=1.00</sub>(CO<sub>3</sub>)F<sub>2.01</sub>.

**Occurrence:** A very rare, late-forming mineral in an altered pegmatite dike in nepheline syenite, part of an alkalic igneous complex.

**Association:** Microcline, aegirine, dawsonite, rhodochrosite, sodalite, natrolite, albite, serandite, siderite, taeniolite, catapleiite, astrophyllite, genthelvite.

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

**Name:** Honors Elsa Horváth (1947–) and László Horváth (1937–), husband and wife collectors of Mont Saint-Hilaire, Canada minerals.

**Type Material:** Canadian Museum of Nature, Ottawa, Canada, 81536.

**References:** (1) Grice, J.C. and G.Y. Chao (1997) Horváthite-(Y), rare-earth fluorocarbonate, a new mineral species from Mont Saint-Hilaire, Quebec. *Can. Mineral.*, 35, 743–749. (2) (1998) *Amer. Mineral.*, 83, 401 (abs. ref. 1).