Hogarthite $(Na,K)_2CaTi_2Si_{10}O_{26}\cdot 8H_2O$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. Crystals are bladed to blocky, to 2 mm, elongated on [100], flattened on {010}, and display {010}, {100} and {001}. As dense, radiating aggregates to 3 mm.

Physical Properties: *Cleavage*: Perfect on {010}. *Fracture*: Hackly to splintery. *Tenacity*: Brittle. Hardness = ~ 4 D(meas.) = n.d. D(calc.) = 2.40(1)

Optical Properties: Transparent to translucent. *Color*: Tan to white to colorless (zoned). *Streak*: White. *Luster*: Satiny to silky to sub-vitreous.
Optical Class: Biaxial (+). α = 1.567(1) β = 1.591(1) γ = 1.618(1) 2V(meas.) = 87(1)° 2V(calc.) = 88(1)° *Orientation*: Y ^ *c* = 15° (in β obtuse); *X* = *b*; *Z* = *a*.

Cell Data: *Space Group*: *C*2/*m*. *a* = 10.1839(5) *b* = 15.8244(6) *c* = 9.1327(7) β = 104.463(2) ° Z = 2

X-ray Powder Pattern: Poudrette quarry, Mont Saint-Hilaire, Quebec, Canada.
7.913 (100), 8.835 (85), 3.514 (80), 6.849 (70), 3.426 (55), 4.336 (45), 5.526 (40)

Chemistry:	(1)	(2)
Na_2O	2.37	6.06
K_2O	2.88	
CaO	6.00	5.48
TiO_2	14.44	15.62
ZrO_2	1.11	
Nb_2O_5	0.78	
SiO_2	59.27	58.75
H_2O	[14.10]	14.09
Total	100.95	100.00

(1) Poudrette quarry, Mont Saint-Hilaire, Quebec, Canada; average of 21 electron microprobe analyses supplemented by FTIR and Raman spectroscopy, H_2O calculated; corresponding to $(Na_{0.78}K_{0.62}\square_{0.51}Ca_{0.09})_{\Sigma=2.00}Ca(Ti_{1.85}Zr_{0.09}Nb_{0.06})_{\Sigma=2.00}Si_{10.09}O_{26}\cdot 8H_2O$.
(2) $Na_2CaTi_2Si_{10}O_{26}\cdot 8H_2O$

Mineral Group: Lemoynite group.

Occurrence: In metasomatically altered marble xenoliths in a breccia zone associated with an alkaline intrusive complex.

Association: Calcite, quartz, haineaultite, labuntsovite-Mn, lemoynite, chabazite, gmelinite-Na.

Distribution: From the Poudrette quarry (level 4), Mont Saint-Hilaire, La-Vallée-du-Richelieu RCM, Montérégie, Quebec, Canada.

Name: Honors Donald D. Hogarth (b. 1929), Professor Emeritus, Department of Earth Sciences, University of Ottawa, in recognition of his contributions to the mineralogy and geology of the Grenville Province in Quebec and Ontario, and to the nomenclature of the pyrochlore group.

Type Material: Canadian Museum of Nature, Ottawa, Ontario, Canada (CMNMC 86086).

References: (1) McDonald, A.M., P. Tarassoff, and G.Y. Chao (2015) Hogarthite, $(Na,K)_2CaTi_2Si_{10}O_{26}\cdot 8H_2O$, a new member of the lemoynite group from Mont Saint-Hilaire, Quebec: Characterization, crystal structure determination, and origin. Can. Mineral., 53(1), 13-30. (2) (2016) Amer. Mineral., 101, 2358-2359 (abs. ref. 1).