

Crystal Data: Orthorhombic. *Point Group:* 222. As equant, well-formed, isolated or small clusters of pseudocubes to 1 mm, also as overgrowths on ramikite-(Y). Crystals display dominant {100}, {010}, and {001}, and minor {110}, {101}, and {011}; crystal faces striated parallel to the face diagonal.

Physical Properties: *Cleavage:* Very good on {100}, {010}, {001}. *Fracture:* n.d.
Tenacity: Brittle. *Hardness* = ~ 3 *D(meas.)* = n.d. *D(calc.)* = 3.62(1)

Optical Properties: Translucent. *Color:* Colorless, pale pink to purple. *Streak:* White.
Luster: Vitreous.
Optical Class: Biaxial (n.d.). α = n.d. β = 1.601(1) γ = n.d. *2V(meas.)* = n.d.
2V(calc.) = n.d. *Pleochroism:* None. *Dispersion:* None.

Cell Data: *Space Group:* P222. a = 11.167(2) b = 11.164(2) c = 11.162(2) Z = 1

X-ray Powder Pattern: Poudrette pegmatite, Mont Saint-Hilaire, Canada.
2.63 (100), 2.99 (83), 4.56 (57), 3.95 (57), 3.54 (46), 2.149 (42), 2.71 (38)

Chemistry:	(1)	(2)		(1)	(2)
Na ₂ O	12.95	12.81	ZrO ₂	0.67	
CaO	1.15		ThO ₂	0.37	
Y ₂ O ₃	37.32	46.68	P ₂ O ₅	27.29	29.35
Gd ₂ O ₃	0.61		F	4.35	5.24
Dy ₂ O ₃	3.08		–O=F ₂	1.83	2.21
Ho ₂ O ₃	0.67		CO ₂	[5.79]	6.07
Er ₂ O ₃	2.88		H ₂ O	[0.31]	
Tm ₂ O ₃	0.28		Li ₂ O	[1.96]	2.06
Yb ₂ O ₃	1.78		Total	99.75	100.00

(1) Poudrette pegmatite, Mont Saint-Hilaire, Canada; average of 4 electron microprobe analyses, H₂O, CO₂ and Li₂O calculated from stoichiometry and their presence confirmed by LA-ICP-MS and Raman analyses; corresponding to $\text{Li}_4\text{Na}_{12}(\text{Y}_{10.06}\text{Na}_{0.72}\text{Ca}_{0.62}\text{Dy}_{0.50}\text{Er}_{0.46}\text{Yb}_{0.28}\text{Zr}_{0.17}\text{Ho}_{0.11}\text{Gd}_{0.10}\text{Tm}_{0.04}\text{Th}_{0.04}\text{Tb}_{0.02})_{\Sigma=13.12}(\text{PO}_4)_{11.70}(\text{CO}_3)_4[\text{F}_{6.97}(\text{OH})_{1.03}]_{\Sigma=8}$. (2) $\text{Li}_4\text{Na}_{12}\text{Y}_{12}(\text{PO}_4)_{12}(\text{CO}_3)_4\text{F}_8$.

Occurrence: A late-stage product possibly related to the in situ alteration of the pre-existing mineral assemblage present in the core of a zoned peralkaline pegmatite dike encased in a hornfels xenolith.

Association: Ramikite-(Y), albite, rhodochrosite, siderite, chabazite-Na, synchysite-(Ce), sabinaite.

Distribution: From the Poudrette pegmatite, Mont Saint-Hilaire, La Vallée-du-Richelieu, Montérégie (formerly Rouville County), Québec, Canada.

Name: Honors Cynthia Peat (1925-1999), a former X-ray technician at the Royal Ontario Museum, Toronto, Ontario, Canada, an avid mineralogist who spent decades studying and unraveling the complex mineralogy of Mont Saint-Hilaire.

Type Material: The Royal Ontario Museum, Toronto, Ontario, Canada (M53894).

References: (1) McDonald, A.M., M.E. Back, R.A. Gault, and L. Horváth (2013) Peatite-(Y) and ramikite-(Y), two new Na-Li-Y±Zr phosphate-carbonate minerals from the Poudrette pegmatite, Mont Saint-Hilaire, Quebec. *Can. Mineral.*, 51, 569-596. (2) (2014) *Amer. Mineral.*, 99, 2441 (abs. ref. 1).