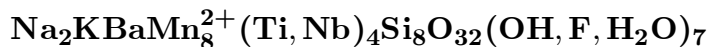


Perraultite

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Crystal Data: Monoclinic. *Point Group:* $2/m$, m , or 2 . Prismatic crystals, flattened on $\{010\}$ and elongated along $[100]$, with $\{001\}$, $\{010\}$, $\{100\}$, and $\{h0l\}$, to 1 mm.*Twinning:* Simple contact twins, with $\{001\}$ as twin and composition plane, common.**Physical Properties:** *Cleavage:* Very good on $\{001\}$. *Fracture:* Uneven to irregular.*Tenacity:* Very brittle. Hardness = ~ 4 D(meas.) = 3.71(5) D(calc.) = 3.808**Optical Properties:** Opaque to translucent, transparent in small fragments. *Color:* Orange-brown. *Streak:* Pale brown. *Luster:* Vitreous on fresh surfaces to slightly waxy on exposed faces.*Optical Class:* Biaxial (-). *Pleochroism:* $X = Y =$ light yellow; $Z =$ dark brown. *Orientation:* $X = b$; $Y \wedge a = 19^\circ$. *Dispersion:* $r < v$, strong. $\alpha = 1.785(2)$ $\beta = 1.81(1)$ $\gamma = 1.82(1)$ $2V(\text{meas.}) = 66(1)^\circ$ $2V(\text{calc.}) = 64^\circ$ **Cell Data:** *Space Group:* $C2/m$, Cm , or $C2$. $a = 10.820(2)$ $b = 13.843(4)$ $c = 20.93(1)$ $\beta = 95.09(2)^\circ$ $Z = 4$ **X-ray Powder Pattern:** Mont Saint-Hilaire, Canada.

3.474 (100), 10.43 (42), 2.606 (40), 3.186 (15), 2.804 (15), 2.867 (13), 3.573 (11)

Chemistry:

	(1)		(1)
SiO ₂	27.32	MgO	0.06
TiO ₂	9.44	BaO	8.88
ZrO ₂	0.12	Na ₂ O	3.52
Al ₂ O ₃	0.03	K ₂ O	2.68
Nb ₂ O ₅	13.35	F	0.84
FeO	1.12	H ₂ O	3.49
MnO	31.14	-O = F ₂	0.35
		Total	101.64

(1) Mont Saint-Hilaire, Canada; by electron microprobe, average of three analyses, H₂O by TGA; corresponds to $\text{Na}_{2.02}\text{K}_{1.00}\text{Ba}_{1.02}(\text{Mn}_{7.73}\text{Fe}_{0.27}\text{Mg}_{0.03})_{\Sigma=8.03}(\text{Ti}_{2.08}\text{Nb}_{1.77}\text{Zr}_{0.02})_{\Sigma=3.87}(\text{Si}_{8.01}\text{Al}_{0.01})_{\Sigma=8.02}\text{O}_{32}[(\text{OH})_{5.62}\text{F}_{0.78}(\text{H}_2\text{O})_{0.60}]_{\Sigma=7.00}$.**Occurrence:** In pegmatite dikes in nepheline syenite in an intrusive alkalic gabbro-syenite complex.**Association:** Kupletskite, catapleite, microcline, albite, aegirine, rhodochrosite, natrolite, tetranatrolite, lorenzenite, polyolithionite, ancylite, fluorite, calcite, pyrochlore.**Distribution:** From Mont Saint-Hilaire, Quebec, Canada.**Name:** To honor Professor Guy Perrault, École Polytechnique, Montreal, Canada, for his work on the mineralogy of Mont Saint-Hilaire.**Type Material:** Canadian Museum of Nature, Ottawa, 50037; Royal Ontario Museum, Toronto, Canada, M41005.**References:** (1) Chao, G.Y. (1991) Perraultite, a new hydrous Na-K-Ba-Mn-Ti-Nb silicate species from Mont Saint-Hilaire, Quebec. *Can. Mineral.*, 29, 355–358. (2) (1991) *Amer. Mineral.*, 76, 2023 (abs. ref. 1). (3) Mandarino, J.A. and V. Anderson (1989) *Monteregian treasures*. Cambridge Univ. Press, 163. (4) Horváth, L. and R.A. Gault (1990) *The mineralogy of Mont Saint-Hilaire, Quebec*. *Mineral. Record*, 21, 284–359, esp. 329. (5) (1991) *Amer. Mineral.*, 76, 300 (abs. refs. 3 and 4).

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