

Lecoqite-(Y)**Na₃Y(CO₃)₃·6H₂O**

Crystal Data: Hexagonal. *Point Group:* 6. As capillary to fibrous crystals, to 2.5 cm, with coarse striations along [001]; as compact spray-like masses, often matted, to 2.5 cm.

Physical Properties: *Cleavage:* None observed. *Fracture:* Splintery. *Tenacity:* Flexible, slightly elastic. Hardness = n.d. D(meas.) = n.d. D(calc.) = 2.358

Optical Properties: Transparent. *Color:* Colorless; white in aggregates. *Streak:* White.

Luster: Silky.

Optical Class: Uniaxial (-). $\omega = 1.521(3)$ $\epsilon = 1.497(3)$

Cell Data: *Space Group:* *P*6₃. $a = 11.316(4)$ $c = 5.931(2)$ $Z = 2$

X-ray Powder Pattern: Poudrette dike, Mont Saint-Hilaire, Quebec, Canada. 5.081 (100), 9.82 (57), 3.779 (39), 2.627 (39), 2.471 (37), 2.047 (30), 2.316 (29)

Chemistry:	(1)	(2)
Na ₂ O	19.22	20.84
CaO	0.03	
Y ₂ O ₃	17.95	25.31
Nd ₂ O ₃	0.54	
Sm ₂ O ₃	0.41	
Gd ₂ O ₃	0.75	
Dy ₂ O ₃	3.31	
Ho ₂ O ₃	1.12	
Er ₂ O ₃	3.20	
Yb ₂ O ₃	1.48	
CO ₂	27.0	29.61
H ₂ O	23.4	24.24
Total	98.41	100.00

(1) Poudrette dike, Mont Saint-Hilaire, Quebec, Canada; average of 7 electron microprobe analyses, H₂O by the Alimarin method, CO₂ by selective absorption, IR confirms OH, CO₃, and H₂O, corresponding to Na_{2.94}(Y_{0.755}Dy_{0.085}Er_{0.08}Yb_{0.035}Ho_{0.03}Gd_{0.02}Nd_{0.015}Sm_{0.01})_{Σ=1.03}(CO₃)_{2.91}(OH)_{0.21}(H₂O)_{6.06}. (2) Na₃Y(CO₃)₃·6H₂O.

Occurrence: A late-stage hydrothermal mineral associated with a hyperagpaitic pegmatite.

Association: Microcline, albite, natrolite, gonnardite, aegirine, siderite, elpidite, gaidonnayite, zircon, franconite, dawsonite, rhodochrosite, cryolite, rutile, sphalerite.

Distribution: Poudrette pegmatite dike, Mont Saint-Hilaire, Quebec, Canada.

Name: Honors the French chemist P.É. Lecoq de Boisbaudran (1838–1912) and for the dominant rare earth element in its composition.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow (catalog no. 3761/1); Canadian Museum of Nature, Ottawa, Ontario, Canada (catalog no. CMNMC 86065).

References: (1) Pekov, I.V., N.V. Chukanov, N.V. Zubkova, D.A. Ksenofontov, L. Horváth, A.E. Zadov, and D.Y. Pushcharovsky (2010) Lecoqite-(Y), Na₃Y(CO₃)₃·6H₂O, A new mineral species from Mont Saint-Hilaire, Quebec, Canada. *Can. Mineral.*, 48, 95–104. (2) (2010) *Amer. Mineral.*, 95, 1599 (abs. ref. 1).