Ancylite-(La) $Sr(La,Ce)(CO_3)_2(OH)\cdot H_2O$

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Crystals are dipyramidal {111}, with {120}, {101}, platy or short prismatic, faces typically curved, to 2 mm; in druses and uncommonly as skeletal or dendritic aggregates.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 4–4.5 D(meas.) = 3.69(5) D(calc.) = n.d.

Optical Properties: Translucent. *Color:* Colorless, pale yellowish gray, yellowish brown, yellow; colorless to pale yellow in thin section. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (–). *Dispersion:* $r < v$. $\alpha = 1.640(3)$ $\beta = [1.717]$ $\gamma = 1.731(3)$ 2V(meas.) = 70(5)°

Cell Data: *Space Group:* [*Pmcn*] [by analogy to ancylite-(Ce)]. $a = 5.072(3)$ $b = 8.589(3)$ $c = 7.276(3)$ Z = 2

X-ray Powder Pattern: Mt. Kukisvumchorr, Kola Peninsula, Russia; nearly identical to ancylite-(Ce).
2.955 (100), 4.36 (92), 3.705 (90), 2.664 (89), 3.738 (88), 2.358 (87), 2.092 (80)

Chemistry:

	(1)	(2)
CO_2	22.59	23.07
La_2O_3	25.75	42.69
Ce_2O_3	16.23	
Pr_2O_3	0.10	
Nd_2O_3	0.70	
CaO	1.69	
SrO	24.22	27.16
BaO	0.64	
H_2O	7.37	7.08
Total	99.29	100.00

(1) Mt. Kukisvumchorr, Kola Peninsula, Russia; by electron microprobe, average of seven analyses, H_2O by the Penfield method; corresponds to $(Sr_{0.89}Ca_{0.11}Ba_{0.02})_{\Sigma=1.02}(La_{0.60}Ce_{0.38}Nd_{0.02})_{\Sigma=1.00}(CO_3)_{1.96}(OH)_{1.12}\cdot H_2O$. (2) $SrLa(CO_3)_2(OH)\cdot H_2O$.

Occurrence: A rare mineral in nepheline syenites in differentiated alkalic massifs.

Association: Aegirine, astrophyllite, loparite-(Ce), donnayite-(Y), belovite-(Ce), kukharenkoite-(Y), nenadkevichite, "biotite", eudialyte, catapleiite, apophyllite, fluorapatite, calcite. (Mt. Kukisvumchorr, Kola Peninsula, Russia).

Distribution: On Marchenko Peak, northern part of Mt. Kukisvumchorr, Khibiny massif, Kola Peninsula, Russia. In Canada, from near Saint-Amable, Quebec.

Name: For its relation to *ancylite*-(Ce) and its dominant content of *lanthanum*.

Type Material: St. Petersburg Mining Institute, St. Petersburg, 2092/1; Geological Museum, Kola Scientific Center, Apatity, Russia.

References: (1) Yakovenchuk, V.N., Y.P. Men'shikov, Y.A. Pakhomovskii, and G.Y. Ivanyuk (1997) Ancylite-(La), $Sr(La,Ce)(CO_3)_2(OH)\cdot H_2O$ – a new carbonate from a hydrothermal vein at Kukisvumchorr Mountain (Khibiny massif) and its comparison with ancylite-(Ce). Zap. Vses. Mineral. Obshch., 126(1), 96–108 (in Russian with English abs.). (2) (1998) Amer. Mineral., 83, 652 (abs. ref. 1). (3) Dal Negro, A., G. Rossi, and V. Tazzoli (1975) The crystal structure of ancylite, $(RE)_x(Ca,Sr)_{2-x}(CO_3)_2(OH)_x(2-x)H_2O$. Amer. Mineral., 60, 280–284.