

Ancylite-(La)**Sr(La, Ce)(CO₃)₂(OH)·H₂O**

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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:* $r < v$. $\alpha = 1.640(3)$ $\beta = [1.717]$ $\gamma = 1.731(3)$
 $2V(\text{meas.}) = 70(5)^\circ$

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 ₂ O ₃	25.75	42.69
Ce ₂ O ₃	16.23	
Pr ₂ O ₃	0.10	
Nd ₂ O ₃	0.70	
CaO	1.69	
SrO	24.22	27.16
BaO	0.64	
H ₂ O	7.37	7.08
Total	99.29	100.00

(1) Mt. Kukisvumchorr, Kola Peninsula, Russia; by electron microprobe, average of seven analyses, H₂O by the Penfield method; corresponds to (Sr_{0.89}Ca_{0.11}Ba_{0.02})_{Σ=1.02}(La_{0.60}Ce_{0.38}Nd_{0.02})_{Σ=1.00}(CO₃)_{1.96}(OH)_{1.12}·H₂O. (2) SrLa(CO₃)₂(OH)·H₂O.

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, catapleite, 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)(CO₃)₂(OH)·H₂O – 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}(CO₃)₂(OH)_x(2-x)H₂O. *Amer. Mineral.*, 60, 280–284.

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