Stenonite $(Sr, Ba, Na)_2Al(CO_3)F_5$

Crystal Data: Monoclinic. *Point Group:* $2/m$. Cleavable, massive, to 4 cm.

Physical Properties: *Cleavage:* On {001}, {120}, good. Hardness = ∼3.5
D(meas.) = 3.86(7) D(calc.) = 3.847

Optical Properties: Transparent to translucent. *Color:* White, colorless. *Luster:* Vitreous. *Optical Class:* Biaxial (–). *Orientation:* $X = b$; $Z \wedge c = -32°$. $\alpha = 1.452$ $\beta = 1.527$ $\gamma = 1.538$ 2V(meas.) = 43°

Cell Data: *Space Group:* $P2_1/n$. $a = 5.450(2)$ $b = 8.704(2)$ $c = 13.050(3)$ $\beta = 98.72(2)°$ Z = 4

X-ray Powder Pattern: Ivigtut, Greenland.
6.97 (s), 1.706 (s), 2.158 (ms), 2.291 (m), 1.747 (m), 1.645 (m), 1.590 (m)

Chemistry:

	(1)	(2)
CO_2	16.00	16.80
Al	7.73	7.55
Ca	0.01	
Sr	47.08	49.06
Ba	1.09	
Na	0.58	
F	27.13	26.59
H_2O	n.d.	
Total	99.62	100.00

(1) Ivigtut, Greenland; estimated to contain jarlite 3%. (2) $(Sr, Ba, Na)_2Al(CO_3)F_5$.

Occurrence: A rare mineral in the contact zone between siderite–cryolite and fluorite-rich rocks.

Association: Jarlite, weberite, jørgensonite, thomsenolite, gearksutite, topaz, muscovite, barite, pyrite, siderite, quartz.

Distribution: From the Ivigtut cryolite deposit, southwestern Greenland.

Name: Honors Nicholaus Stenonis (Steno) (1638–1686), Danish scientist, who determined the constancy of interfacial angles of crystals.

Type Material: University of Copenhagen, Copenhagen, Denmark, 1965.16–1965.22, 1981.1016–1981.1018, 1981.1021, 1981.1060. Natural History Museum, Paris, France,; The Natural History Museum, London, England, 1966,536.

References: (1) Pauly, H. (1962) Stenonite, a new carbonate-fluoride from Ivigtut, South Greenland. Medd. Grønland, 169(9), 1–24. (2) (1963) Amer. Mineral., 48, 1178 (abs. ref. 1). (3) Hawthorne, F.C. (1984) The crystal structure of stenonite and the classification of the aluminofluoride minerals. Can. Mineral., 22, 245–251.