Jarlite $\mathbf{Na(Sr,Na)_7MgAl_6F_{32}(OH,H_2O)_2}$

Crystal Data: Monoclinic. *Point Group:* $2/m$. Crystals tabular on {100} and elongated along [010], with many forms and curved faces, to 1 mm; commonly in flat radiating or spherulitic aggregates, may be entirely spherical; massive.

Physical Properties: *Fracture:* Uneven. Hardness = 4–4.5 D(meas.) = 3.87(1) D(calc.) = 3.80

Optical Properties: Semitransparent. *Color:* Colorless, white to gray; colorless in transmitted light. *Luster:* Vitreous.
Optical Class: Biaxial (–) or (+). *Orientation:* $Y = b$; $X \wedge c = -6(2)^\circ$; $Z \wedge c = 84(2)^\circ$.
$\alpha = 1.429$ $\beta = 1.433$ $\gamma = 1.436$ 2V(meas.) = 90(10)°

Cell Data: *Space Group:* $C2/m$. $a = 15.942(4)$ $b = 10.821(5)$ $c = 7.241(2)$ $\beta = 101.86(2)^\circ$ Z = 2

X-ray Powder Pattern: Ivigtut, Greenland.
2.97 (10), 3.18 (9), 2.15 (7), 3.10 (6), 1.812 (6), 3.62 (4), 3.44 (4)

Chemistry:

	(1)
Na	3.23
Li	0.08
Fe	0.17
Mg	0.90
Ca	0.55
Ba	0.99
Sr	35.60
Al	12.16
F	43.23
H_2O^+	2.91
H_2O^-	0.08
Total	99.90

(1) Ivigtut, Greenland; corresponds to $Na_{1.00}(Sr_{5.67}Na_{0.96}Ca_{0.19}Li_{0.16}Ba_{0.10})_{\Sigma=7.08}Mg_{0.52}(Al_{6.28}Fe_{0.04})_{\Sigma=6.32}F_{31.75}(H_2O)_{2.25}$.

Occurrence: In vugs in a cryolite deposit with other fluorides.

Association: Cryolite, gearksutite, chiolite, thomsenolite, ralstonite, prosopite, stenonite, acuminite, bøgvadite, jørgensenite, fluorite, topaz, barite.

Distribution: From the Ivigtut cryolite deposit, Greenland.

Name: For Carl Frederik Jarl (1872–1951), formerly President of the Danish Cryolite Company, who first noted the mineral.

Type Material: Holotype probably lost; University of Copenhagen, Copenhagen, Denmark; The Natural History Museum, London, England.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 118–119. (2) Hawthorne, F.C. (1983) The crystal structure of jarlite. Can. Mineral., 21, 553–560. (3) Petersen, O.V. and O. Johnsen (1985) The crystal habit of jarlite. Neues Jahrb. Mineral., Monatsh., 543–549. (4) Pauly, H., F.C. Hawthorne, P.C. Burns, and G.D. Ventura (1997) Jørgensenite, $Na_2(Sr,Ba)_{14}Na_2Al_{12}F_{64}(OH,F)_4$, a new aluminofluoride mineral from Ivigtut, Greenland. Can. Mineral., 35, 175–179.