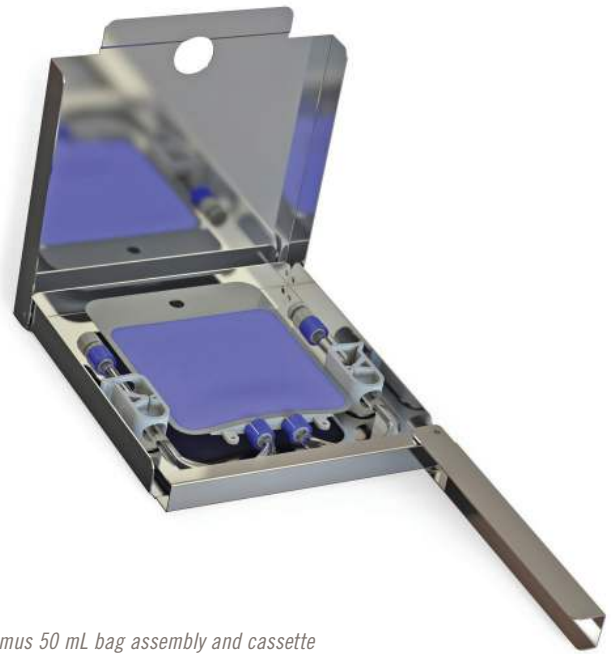


# Cassettes

*Aluminum, LN<sub>2</sub> cassettes provide structure and ease of handling in cryo applications down to -196°C*

Entegris solutions allow you to protect and store your high-value process solutions with reduced risk of product loss, contamination, and compromised quality. Expanding our portfolio further, we offer LN<sub>2</sub> (liquid nitrogen) cassettes for use with Aramus™ single-use bag assemblies. At lower volumes, the Aramus single-use bag assemblies can be combined with LN<sub>2</sub> cassettes to give them rigidity when handled and provide greater protection during freezing, storage, and thawing operations.

Aramus single-use 2D bags are made of a high-grade, gamma-stable fluoropolymer, and provide high purity, exceptional compatibility, and increased safety for critical process fluids and final products. The innovative single-layer technology does not contain curing agents, antioxidants, plasticizers, or adhesives, greatly reducing the potential for process fluid contamination.



*Aramus 50 mL bag assembly and cassette*

## APPLICATIONS

- Cell banking for bioreactor intensification
- Stem cell freezing and storage
- Cryogenic storage of bulk drug or intermediates
- Cryogenic product shipment
- Process sampling and archiving

## FEATURES & BENEFITS

<b>Thin, lightweight aluminum construction</b>	Reduces freezing time, saving valuable freezer space
<b>Rigid, durable construction</b>	Provides structure for stacking or racking cryogenic bags, reducing handling risk
<b>Standard cassette sizes available</b>	Fit in many commercially available freezers and racks Each cassette partners with a corresponding Aramus bag assembly geometry
<b>Customizable Aramus bag assemblies</b>	Allow modified geometries that optimize surface area-to-volume ratios for your application
<b>Low cost accessory</b>	Economical solution for cryogenic shipment and storage

## ORDERING INFORMATION

Cassette part number	Aramus bag size*	Aramus fill volume (in cassette)	Width	Length	Height
SU-FS-0.05-C2	20 mL, 50 mL	10–20 mL, 35–50 mL	16.0 cm (6.30")	20.3 cm (7.98")	2.0 cm (0.80")
SU-FS-0.10-C2	100 mL	50–100 mL	16.1 cm (6.33")	21.3 cm (8.40")	2.0 cm (0.80")
SU-FS-0.25-C2	250 mL	70–200 mL	15.7 cm (6.17")	30.2 cm (11.90")	2.2 cm (0.88")
SU-FS-0.50-C2	500 mL	100–350 mL	19.1 cm (7.50")	30.5 cm (12.00")	2.3 cm (0.91")

\*Additional sizes are available upon request.

## TECHNICAL INFORMATION

Average cooling rates, from 4°C to -40°C (39°F to -40°F), observed with Aramus bags stored in cassettes. Data on rates shown in use with different freezers prior to storage in LN<sub>2</sub> temperatures.

Bag size	Standard lab freezer -80°C (-112°F)		Controlled plate freezer	
	At maximum fill	At minimum fill	At maximum fill	At minimum fill
20 mL	-1.38°C (-2.49°F)/min	-1.28°C (-2.30°F)/min	-0.72°C (-1.30°F)/min	-0.66°C (-1.19°F)/min
50 mL	-0.97°C (-1.74°F)/min	-1.30°C (-2.34°F)/min	-0.63°C (-1.13°F)/min	-0.77°C (-1.39°F)/min
100 mL	-0.83°C (-1.50°F)/min	-1.31°C (-2.35°F)/min	-0.52°C (-0.94°F)/min	-0.80°C (-1.44°F)/min
250 mL	-0.73°C (-1.31°F)/min	-1.30°C (-2.33°F)/min	-0.65°C (-1.16°F)/min	-0.84°C (-1.52°F)/min
500 mL	-0.53°C (-0.95°F)/min	-1.12°C (-2.02°F)/min	-0.64°C (-1.16°F)/min	-0.90°C (-1.61°F)/min

Cassettes shown to increase robustness by maintaining bag integrity post-LN<sub>2</sub> vapor phase storage. Aramus bags in cassettes were frozen in LN<sub>2</sub> vapor for 24 hours and then subjected to 12" drops three times:

Bag size	Fill volume	Drop test result
20 mL	20 mL	Pass (8/8)
50 mL	50 mL	Pass (8/8)
100 mL	100 mL	Pass (8/8)
250 mL	200 mL	Pass (8/8)
500 mL	350 mL	Pass (8/8)

#### FOR MORE INFORMATION

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit [entegris.com](http://entegris.com) and select the [Contact Us](#) link to find the customer service center nearest you.

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