

Aramus™ Standard Bag Assemblies

User manual



TABLE OF CONTENTS

Introduction 2

Safety 2

Aramus Standard Bag Subassemblies 3

 Bag Description 3

 Removing the Aramus Subassembly
 from its Packaging 3

 Connecting Bags 3

 Filling and Freezing Bags 3

 Storage, Handling, and Shipping 3

Aramus Standard Bag Assemblies 4

 Removing the Full Aramus Assembly
 from its Packaging 4

 Hanging the Full Aramus Assembly 4

 Connecting Bags 4

 Filling and Freezing Bags 4

 Storage, Handling, and Shipping 5

 Specifications for Aramus Assembly
 Standard Components 5

 Configurations 6

 Ordering Information 7

Aramus Secondary Containment 10

 Cassettes and Overwraps 10

 Ordering Information 10

 Blast Freezing Shells 11

 Ordering Information 11

 Plate Freezing Shells 12

 Ordering Information 12

Limited Warranty 13

For More Information 13

Terms and Conditions of Sale 13

INTRODUCTION

Standard Aramus™ single-use 2D bag assemblies are made of a high-grade, gamma-stable fluoropolymer, providing higher purity, greater compatibility, and increased safety for critical process fluids and final products. With a new single-layer technology that contains no curing agents, antioxidants, plasticizers, or adhesives, the number of potential contaminants is greatly reduced. These assemblies offer the widest operating temperature range, making them more durable in frozen applications (to -196°C [-321°F] or lower) without negatively affecting the film.

Additionally, the fluoropolymer film offers universal material compatibility, reducing the risk of material and assembly failure. Aramus single-use assemblies are manufactured in a minimum ISO® Class 7 clean-room using methodologies that go beyond the standard. These assemblies allow for easier validation and provide high purity, performance, quality, and safety for your process.

This user manual describes the instructions for use for the Aramus bag and assemblies.

SAFETY

Before using any Aramus single-use assembly or subassembly, you should read, understand, and follow the instructions in this manual. Save these instructions and make them available to users of this product.

To prevent injury, follow these safety procedures:

- Do not hang bags on anything that cannot support the weight; doing so can cause injury and/or equipment damage from tipping over.
- Do not use the tubing to handle or carry the bags.
- Do not use this product in a manner inconsistent with its intended use.
- Follow all appropriate chemical safety and disposal regulations.
- Wear appropriate personal protective equipment when handling components containing chemicals.
- Over pressurizing this product may cause injury from flying debris and/or exposure to chemicals.
- **DO NOT** overfill this product. Overfilling may lead to a spill and chemical exposure.
- Regularly inspect the product for leaks or other damage.
- Please note that the user shall be solely responsible and liable for validation and use of Aramus bags beyond the range of our specifications for unit operations, applications, and process parameters.

ARAMUS SUBASSEMBLIES

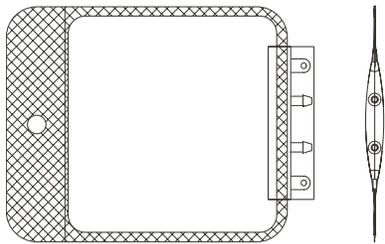
If you ordered the full assembly, skip to *Aramus Standard Bag Assemblies* on page 4.

Entegris offers the Aramus bag assembly in a sub-assembly configuration; meaning without tubing, connectors, or sterilization.

BAG DESCRIPTION

Aramus subassemblies are offered in 2D configurations in various sizes with a 2- or 3-port boat fitment. See Figure 1 for Aramus subassembly bag configuration. See *Ordering Information* on page 9 for the standard part numbers available; customization is available upon request.

2-port Subassembly



3-port Subassembly

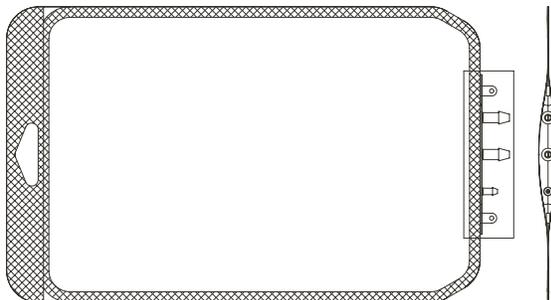


Figure 1. Aramus subassembly bag configurations

REMOVING THE ARAMUS SUBASSEMBLY FROM ITS PACKAGING

CAUTION: DO NOT use anything sharp to remove the Aramus subassembly from its packaging.

1. The Aramus subassemblies will arrive in a corrugated box. **DO NOT** use anything sharp to open the box. Remove packing tape with caution to avoid damaging the contents.

2. There are two sealed bags protecting the Aramus subassembly. To open the outer bag, grip the side of the protective packaging bag and use the “easy tear” notches, Figure 2, to pull in opposite directions, allowing the top section and main body of the packaging to separate and subsequently open the bag. Repeat this procedure to open the inner protective package.

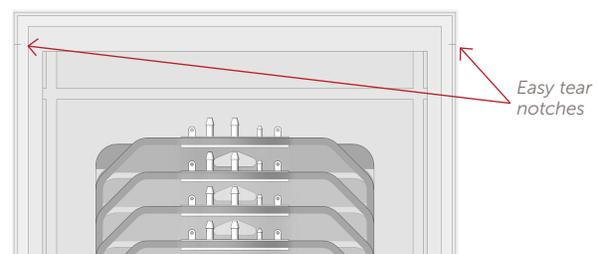


Figure 2. Easy tear notches

CONNECTING BAGS

Attach appropriately sized tubing to the hose barb connections found on the boat fitment. The tubing can then be combined with your desired connecting piece or method.

FILLING AND FREEZING BAGS

The specified Aramus bag volume is the actual fill volume the bag is capable of holding. The bags are rated to 110% of the nominal volume to avoid overfilling. For best freezing, it is recommended that the Aramus bag be laid flat or in a horizontal position and should be filled to no more than the maximum rated volume.

STORAGE, HANDLING, AND SHIPPING

The Aramus subassembly has a recommended storage temperature of 18° to 30°C (64° to 86°F), but due to its material of construction, has a performance temperature rating of -196° to 121°C (-321° to 250°F). Handle with care to avoid dropping and when hanging the bag vertically, ensure that it is hung securely. To reduce the risk of damage, filled bags should be stored, handled, and shipped in a secondary protective container. **DO NOT** use bubble wrap around filled and frozen bags for shipping.

ARAMUS STANDARD BAG ASSEMBLIES

Entegris offers the Aramus bag in a full assembly with your desired configuration of tubing and connectors, delivered sterilized with a Sterility Assurance Level (SAL) of 10^{-6} .

REMOVING THE FULL ARAMUS ASSEMBLY FROM ITS PACKAGING

CAUTION: DO NOT use anything sharp to remove the Aramus assembly from its packaging.

1. The Aramus assembly will arrive in a corrugated box. **DO NOT** use anything sharp to open the box. Remove packing tape with caution to avoid damaging the contents.
2. There are two sealed bags protecting the Aramus assembly. To open the outer bag, grip the side of the protective packaging bag and use the "easy tear" notches, Figure 3, to pull in opposite directions, allowing the top section and main body of the packaging to separate and subsequently open the bag. Repeat this procedure to open the inner protective package.

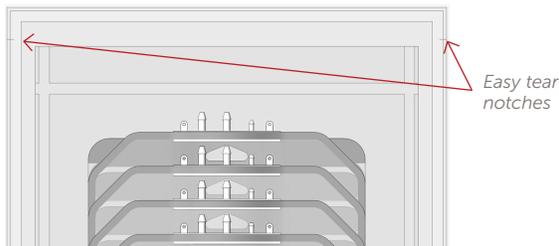


Figure 3. Easy tear notches

HANGING THE FULL ARAMUS ASSEMBLY

The Aramus assembly has a convenient and durable hanging slot, as shown in Figure 4.

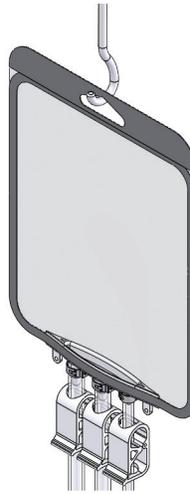


Figure 4. Convenient hanging slot

CONNECTING BAGS

The standard mating hardware offered are Luer connections and MPC connections. Please follow the manufacturer's guidelines when connecting to these components. The pinch clamp must be in the released position to ensure flow within the bag.

FILLING AND FREEZING BAGS

The specified Aramus bag volume is the actual fill volume the bag is capable of holding. The bags are rated to 110% of the nominal volume to avoid overfilling.

For best freezing, it is recommended that the Aramus bag be laid flat or in a horizontal position and should be filled to no more than the maximum rated volume.

STORAGE, HANDLING, AND SHIPPING

The components on the full Aramus assembly are commonly used in the market and have various temperature claims. Entegris has tested the Aramus bag assemblies while using these components.

The Aramus assembly has a recommended storage temperature of 18° to 30°C (64° to 86°F), but due to its material of construction, has a performance temperature rating of -196° to 121°C (-321° to 250°F). Handle with care to avoid dropping and when hanging the bag vertically, ensure that it is hung securely. To reduce the risk of damage, filled bags should be stored, handled, and shipped in a secondary protective container. **DO NOT** use bubble wrap around filled and frozen bags for shipping.

SPECIFICATIONS FOR ARAMUS ASSEMBLY STANDARD COMPONENTS

Specifications for the components found on full Aramus assemblies can be located on the supplier websites:

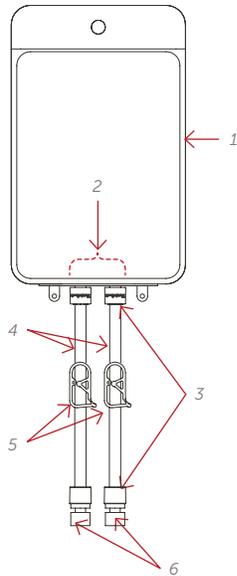
Component supplier	Website
Colder Product Company MPC connections	https://www.cpcworldwide.com/
Saint-Gobain C-Flex® tubing, platinum-cured silicone tubing, BarbLock®, and pinch clamps	https://www.saint-gobain-northamerica.com/business/markets/life-sciences
Oetiker Stepless® clamps	http://www.oetiker.com/
Nordson Medical Luer connections	http://www.nordsonmedical.com/
AdvantaPure AdvantaFlex® and AdvantaSil® tubing	http://www.advantapure.com/

CONFIGURATIONS

Full Aramus bag assemblies are offered in 2D configurations in various sizes with a 2- or 3-port boat fitment and the selected configuration of tubing and

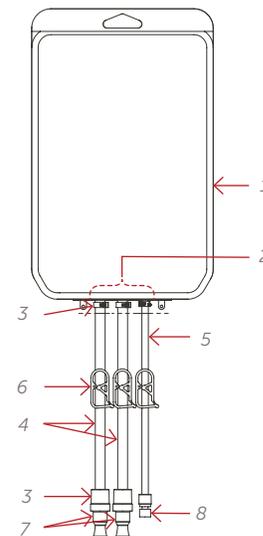
connectors. See *Ordering Information* on page 7 for the standard part numbers available; customization is available upon request.

Full Aramus Assembly Configuration Options
2-port: 4 mL, 20 mL, 50 mL, 100 mL, 250 mL



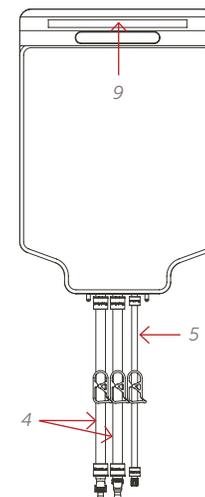
ITEM	DESCRIPTION
1	Aramus fluoropolymer film with slot for hanging
2	Fluoropolymer "boat" fitment with 2 hose barb ports
3	Tubing connection (BarbLock clamp, Oetiker Stepless clamp, or zip ties*)
4	Tubing 1/8" ID x 1/4" OD (AdvantaFlex thermoplastic elastomer [TPE], AdvantaSil silicone, Tygon® silicone, or C-Flex 374 elastomer)
5	Pinch clamps
6	Tubing fittings 1/8" ID (Luer male/female with plugs)

Full Aramus Assembly Configuration Options
3-port: 500 mL, 1 L



ITEM	DESCRIPTION
1	Aramus fluoropolymer film with slot for hanging
2	Fluoropolymer "boat" fitment with 3 hose barb ports
3	Tubing connection (BarbLock clamp, Oetiker Stepless clamp, or zip ties*)
4	Tubing for 500 mL, 1 L, and 2 L is 1/4" ID x 3/8" OD Tubing for 5 L, 10 L, 20 L, and 50 L* is 3/8" ID x 5/8" OD (AdvantaFlex TPE, AdvantaSil silicone, Tygon silicone, or C-Flex 374 elastomer)
5	Tubing for 500 mL, 1 L, and 2 L is 1/8" ID x 1/4" OD Tubing for 5 L, 10 L, 20 L, and 50 L* is 1/4" ID x 3/8" OD (AdvantaFlex TPE, AdvantaSil silicone, Tygon silicone, or C-Flex 374 elastomer)
6	Pinch clamps
7	Tubing fittings (CPC MPC male/female with plugs)
8	Tubing fittings (Luer male/female with plugs)
9	Rod (5 L, 10 L, 20 L, and 50 L*)

Full Aramus Assembly Configuration Options
3-port: 2 L (no rod), 5 L, 10 L, 20 L, 50 L* (with rod)

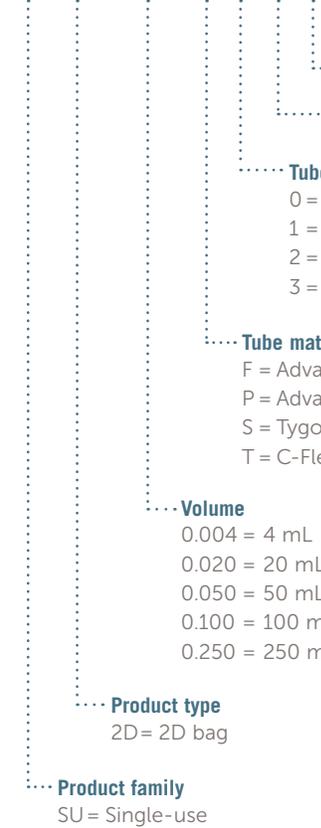


Note: See *Ordering Information* for the standard part numbers available; customization available upon request.
*Not a standard product, but is available upon request.

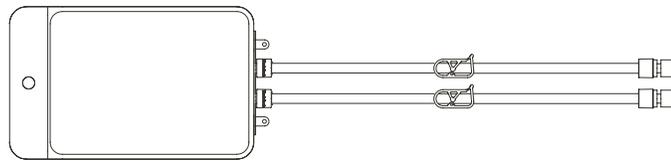
ORDERING INFORMATION

Aramus Standard Bag Assemblies (2-port): part number

SU - 2D -



- Main connectors**
 - L11 = Luer - 1: female 1: female
 - L12 = Luer - 1: female 2: male
 - L22 = Luer - 2: male 2: male
- Tube length**
 - 0 = 6"
 - 1 = 12"
 - 2 = 18"
 - 3 = 24"
- Tube material**
 - F = AdvantaFlex thermoplastic elastomer
 - P = AdvantaSil silicone
 - S = Tygon silicone
 - T = C-Flex 374 elastomer
- Volume**
 - 0.004 = 4 mL
 - 0.020 = 20 mL
 - 0.050 = 50 mL
 - 0.100 = 100 mL
 - 0.250 = 250 mL
- Product type**
 - 2D = 2D bag
- Product family**
 - SU = Single-use
- Fasteners**
 - O = Oetiker SS ear clamps
 - B = BarbLock clamps
 - Z = Zip ties*

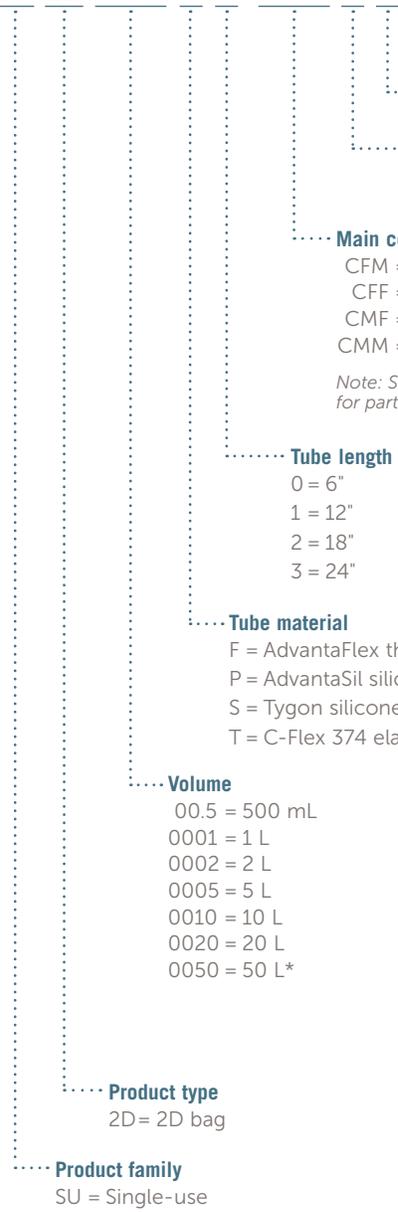


Notes: Assemblies sold sterilized. Assembly temperature performance is component-dependent. Assemblies are individually double-bagged.
 *Not a standard product, but is available upon request.

ORDERING INFORMATION (CONTINUED)

Aramus Standard Bag Assemblies (3-port): part number

SU - 2D -



Sample connectors

- 1 = Luer female
- 2 = Luer male

Main connectors

- CFM = MPC – *A*: female *B*: male
- CFF = MPC – *A*: female *B*: female
- CMF = MPC – *A*: male *B*: female
- CMM = MPC – *A*: male *B*: male

Note: See drawing below for A and B indicators for part numbers

Tube length

- 0 = 6"
- 1 = 12"
- 2 = 18"
- 3 = 24"

Tube material

- F = AdvantaFlex thermoplastic elastomer
- P = AdvantaSil silicone
- S = Tygon silicone
- T = C-Flex 374 elastomer

Volume

- 00.5 = 500 mL
- 0001 = 1 L
- 0002 = 2 L
- 0005 = 5 L
- 0010 = 10 L
- 0020 = 20 L
- 0050 = 50 L*

Product type

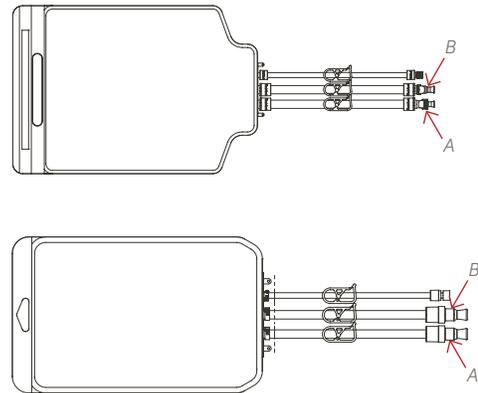
- 2D = 2D bag

Product family

- SU = Single-use

Fasteners

- O = Oetiker SS ear clamps
- B = BarbLock clamps
- Z = Zip ties*



Notes: Assemblies sold sterilized. Assembly temperature performance is component-dependent. Assemblies are individually double-bagged.

**Not a standard product, but is available upon request.*

ORDERING INFORMATION (CONTINUED)

Aramus Subassemblies (2-port): part number



Note: Subassemblies sold unsterilized.

Aramus Subassemblies (3-port): part number



Note: Subassemblies sold unsterilized.

**Not a standard product, but is available upon request.*

ARAMUS ASSEMBLY SECONDARY CONTAINMENT

Entegris has a variety of secondary containment options for Aramus single-use bag assemblies to support freezing applications across cell banking, fill and storage of intermediates and bulk drug, and cryogenic shipment.

CASSETTES AND OVERWRAPS

Entegris cassette and overwrap solutions allow you to protect and store your high value product in liquid nitrogen applications. When used with Aramus single-use bag assemblies, our cassette and overwrap solutions reduce risk of product loss, contamination, or compromised quality. The aluminum cassettes provide rigidity during handling and greater protection during freezing, storage, and thawing operations. The EVA overwraps provide a liquid barrier between the Aramus bag and liquid nitrogen, and also act as a mode of secondary containment.



Aramus 50 mL bag assembly and cassette

Ordering Information

Aramus bag chamber size	Recommended cassette PN	Minimum order quantity and order increment	Aramus estimated fill volume (in cassette)	Recommended EVA overwrap	Minimum order quantity and order increment
20 mL	SU-FS-0.05-C2	5	20 mL	SU-OW-01-14-30-S	10
36 mL	SU-FS-0.04-C2	5	36 mL	SU-OW-01-09-18-S	10
50 mL	SU-FS-0.05-C2	5	50 mL	SU-OW-01-14-30-S	10
80 mL	SU-FS-0.08-C2	5	80 mL	SU-OW-01-14-30-S	10
100 mL	SU-FS-0.10-C2	5	100 mL	SU-OW-01-14-30-S	10
250 mL	SU-FS-0.25-C2	5	200 mL	SU-OW-01-14-30-S	10
500 mL	SU-FS-0.50-C2	5	350 mL	SU-OW-01-17-38-S	10
1 L	SU-FS-0001-C2	5	—*	SU-OW-01-20-38-S	10
2 L	SU-FS-0002-C2	5	—*	SU-OW-01-28-50-S	10

**Contact Entegris technical support for additional questions regarding the above information. In addition, contact Entegris to determine the optimal configurations for your specific needs as well as details on instructions for use.*

NOTE: For Aramus assemblies smaller than 20 mL, multiple configurations are possible. Contact your Entegris account manager for help configuring the best solution for your application.

Please reference the *Cassettes User Guide* for product use recommendations.

BLAST FREEZING SHELLS

Entegris blast freezing shells are ideal for those looking to improve handling, efficiency, throughput, and total cost of ownership in bulk-drug substance and cold-chain applications. Our shells are designed for use with Aramus bag assemblies to provide a high-purity, easy-to-use, robust solution. Each shell is comprised of two halves and two rod-locking pins. Shell halves may be used as trays for ergonomic bag handling. Shell design and assembly supports filling or draining in multiple configurations and accommodates standard tubing lengths with common connectors which allows our solution to be easily integrated into your existing process. Entegris freezing shells are optimized for a more rapid and efficient freeze performance in controlled rate freezers that utilize forced air convection, but also accommodate freezing in general lab freezers (static, blast, cold-wall). The shells interlock while stacked, significantly improving space efficiency and stability throughout your cold-chain process. Our standard size offerings are optimal for scale-up and reduce your product loss by assuring your high-value material and intermediates are protected.



Ordering Information

Size	Fill volume range	Part number	Description	Minimum order quantity and delivery increment
2 L	Infinitely adjustable from 1 L to 2 L without additional accessories required	SU-PB-000S1	Blast Freezing Shell, 2 L Aramus	10
		SU-PB-000S1-SAMP	Sample Blast Freezing Shell, 2 L Aramus	1
5L	Infinitely adjustable from 2.5 L to 5 L without additional accessories required	SU-PB-000M1	Blast Freezing Shell, 5 L Aramus	5
		SU-PB-000M1-SAMP	Sample Blast Freezing Shell, 5 L Aramus	1

Please reference the *Blast Freezing Shells User Guide* for product use recommendations.

PLATE FREEZING SHELLS

Entegris plate freezing shells are ideal for those looking to improve handling, efficiency, throughput, and total cost of ownership in bulk-drug substance plate freezing and cold-chain applications. The plate freezing shells are designed for use with Aramus bag assemblies to provide a high-purity, easy-to-use, robust solution. Each shell is comprised of a stainless-steel frame (base and lid) with polyurethane foam inserts for complete bag protection. The lid is easily snapped on/off for quick assembly/ disassembly and may be retained with pushpins for added protection and tamper resistance. Ergonomic handles are designed for use with cryogenic gloves and improved handling while inserting and removing the shells from a plate freezer. The shells can accommodate standard tubing lengths with common connectors, and partial fill can be easily adapted to allow for flexibility in fill volume. Optimized for high volume throughput and consistent freeze profiles in plate freezers, the shells are also stackable which significantly improves space efficiency during storage and shipping. Our standard size offerings are optimal for scale-up and reduce your product loss by assuring your high-value material and intermediates are protected.



Ordering Information

Size	Part number	Description	Minimum order quantity and delivery increment
9.5 L	SU-MP-000L1	Entegris Plate Freezing Shell, 9.5 L Aramus	2
	SU-MP-FF-000L1-50	50% partial fill foam, Entegris Plate Freezing Shell, 9.5 L Aramus	2
	SU-MP-FF-000L1-100	Replacement foam, Entegris Plate Freezing Shell, 9.5 L Aramus	4
11.5 L	SU-MP-000L2	Entegris Plate Freezing Shell, 11.5 L Aramus	2
	SU-MP-FF-000L2-50	50% partial fill foam, Entegris Plate Freezing Shell, 11.5 L Aramus	2
	SU-MP-FF-000L2-100	Replacement foam, Entegris Plate Freezing Shell, 11.5 L Aramus	4
Both Sizes	SU-MP-P-0001	10-pack retainment pins for Entegris Plate Freezing Shells	1

NOTE: Please contact your Entegris account manager for partial foam configuration.

Please reference the *Plate Freezing Shells User Guide* for product use recommendations.

LIMITED WARRANTY

Entegris' products are subject to the Entegris, Inc. General Limited Warranty. To view and print this information, visit entegris.com and select the [Legal & Trademark Notices](#) link in the footer. Entegris does not warrant any failure in the case of customers using unapproved foreign components.

FOR MORE INFORMATION

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

TERMS AND CONDITIONS OF SALE

All purchases are subject to Entegris' Terms and Conditions of Sale. To view and print this information, visit entegris.com and select the [Terms & Conditions](#) link in the footer.



Corporate Headquarters

129 Concord Road
Billerica, MA 01821
USA

Customer Service

Tel +1 952 556 4181
Fax +1 952 556 8022
Toll Free 800 394 4083

Entegris®, the Entegris Rings Design®, and other product names are trademarks of Entegris, Inc. as listed on entegris.com/trademarks. All third-party product names, logos, and company names are trademarks or registered trademarks of their respective owners. Use of them does not imply any affiliation, sponsorship, or endorsement by the trademark owner.

©2017-2026 Entegris, Inc. | All rights reserved. | Printed in the USA | 3750-8434ENT-0126