

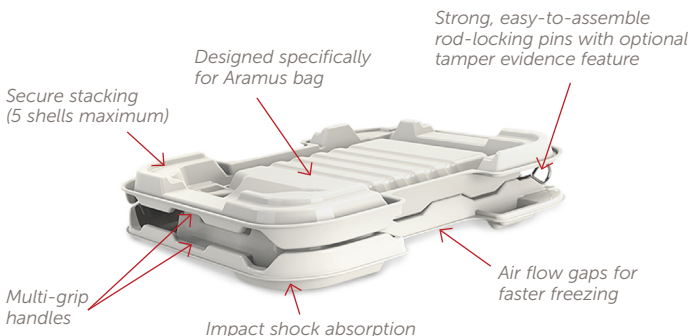
Blast Freezing Shells

Reusable plastic shell solution for use with Aramus™ bag assemblies in bioprocess and cold-chain applications

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.

APPLICATIONS

- Tray for handling Aramus bag assemblies
- Bulk-drug filling and draining
- Bulk-drug freezing and storage
- Bulk-drug shipment
- Cold-chain support



Samples available for advanced application testing.

FEATURES & BENEFITS

Robust design	Provides protection down to -80°C (-112°F)
Versatile	Accommodate up to 12" of tubing with most aseptic connectors. Ability to fill and drain in multiple configurations
Stackable design	Interlocking design provides stability and storage efficiency, saving valuable freezer space
Infrastructure compatibility	Designed for performance optimization in forced air convection freezers, but also fit in most commercially available lab freezers
Ergonomic handle	Multiple handle locations and easy-to-use rod-locking pins designed for use with cryogenic gloves
Reuse	Qualified for 3x reuse and easy cleaning. Composed of materials with existing recycling streams
Shipping	Designed and tested for use with cold chain shipping containers. Contact your Entegris account manager for support in configuring your solution



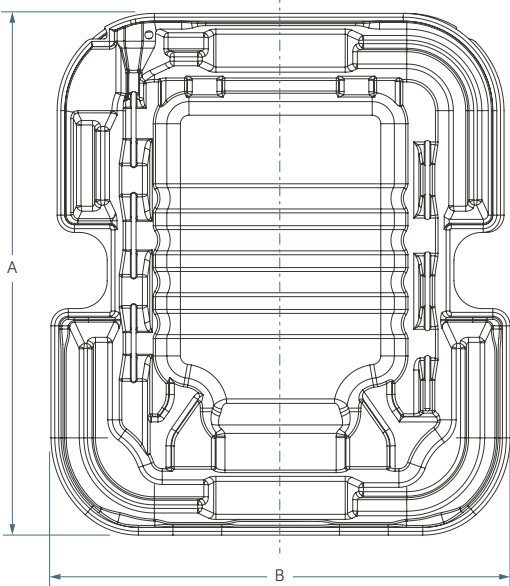
SPECIFICATIONS

Materials of construction	Polycarbonate (PC), stainless-steel	
	Polycarbonate halves are complaint with TSE/BSE, Reach, RoHS, Latex Free, Phthalates Free, and Conflict Minerals Free	
	Rod-locking pins are compliant with TSE/BSE, Latex Free, Phthalates Free, and Conflict Minerals Free	
	Cleaned and double bagged in ISO Class 8 cleanroom	
Estimated operating temperature	-80° to 40°C (-112° to 104°F)	
Fill volume range	2 L shell	Infinitely adjustable from 1 L to 2 L without additional accessories required
	5 L shell	Infinitely adjustable from 2.5 L to 5 L without additional accessories required
Shell weight (empty)	2 L	1.5 kg (3.4 lb)
	5 L	2.2 kg (4.9 lb)

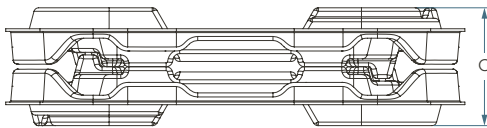
DIMENSIONS

2 L Blast Freezing Shell

Top View

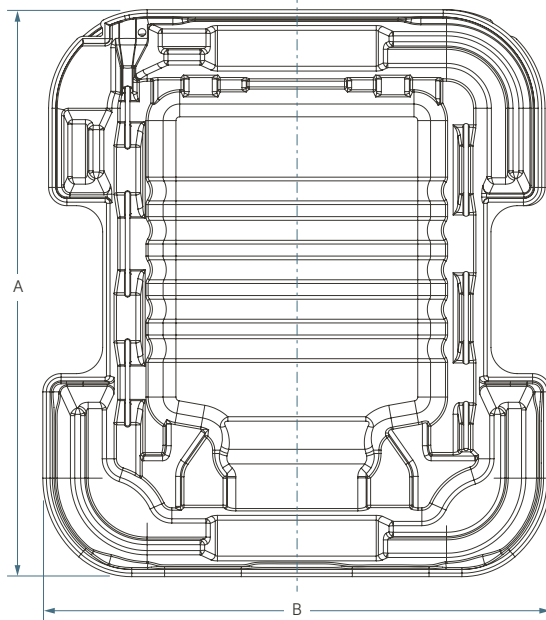


Side View

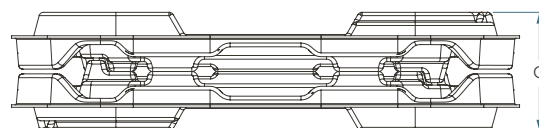


5 L Blast Freezing Shell

Top View



Side View



Size	A	B	C
2 L	505 mm (19.9")	445 mm (17.5")	114 mm (4.5")
5 L	584 mm (23.0")	523 mm (20.6")	122 mm (4.8")

THERMAL PERFORMANCE

2 L Shell Thermal Performance

FREEZER	FLUID VOLUME	TIME 20°C TO -80°C	
Forced Air	2 L	5 H	
	Convection	10 L	8 H
	Freezer	18 L	8 H
Cold Wall	2 L	11 H	
	Freezer 1	10 L	17 H
		48 L	65 H
Cold Wall	2 L	14 H	
	Freezer 2	10 L	23 H
		22 L	33 H
Cold Wall	2 L	13 H	
	Freezer 3	10 L	24 H
		22 L	33 H

5 L Shell Thermal Performance

FREEZER	FLUID VOLUME	TIME 20°C TO -80°C	
Forced Air	5 L	10 H	
	Convection	25 L	13 H
	Freezer	45 L	12 H
Cold Wall	5 L	17 H	
	Freezer 1	25 L	36 H
		50 L	56 H
Cold Wall	5 L	22 H	
	Freezer 2	25 L	44 H
		50 L	89 H
Cold Wall	5 L	23 H	
	Freezer 3	25 L	41 H
		50 L	68 H

ORDERING INFORMATION

Size	Part number	Description	Minimum order quantity and delivery increment
2 L	SU-PB-000S1	Blast Freezing Shell, 2 L Aramus	10
	SU-PB-000S1-SAMP	Sample Blast Freezing Shell, 2 L Aramus	1
5L	SU-PB-000M1	Blast Freezing Shell, 5 L Aramus	5
	SU-PB-000M1-SAMP	Sample Blast Freezing Shell, 5 L Aramus	1

FOR MORE INFORMATION

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