

## Freeze-Pak™ STS

### Frozen Storage and Transport Solution Bio-Containers

#### Benefits

- Durability for applications requiring storage to -80°C
- Suitable for storage of cellular and non-cellular material



FP5L6644N

FP50ML444

#### Customizable Options

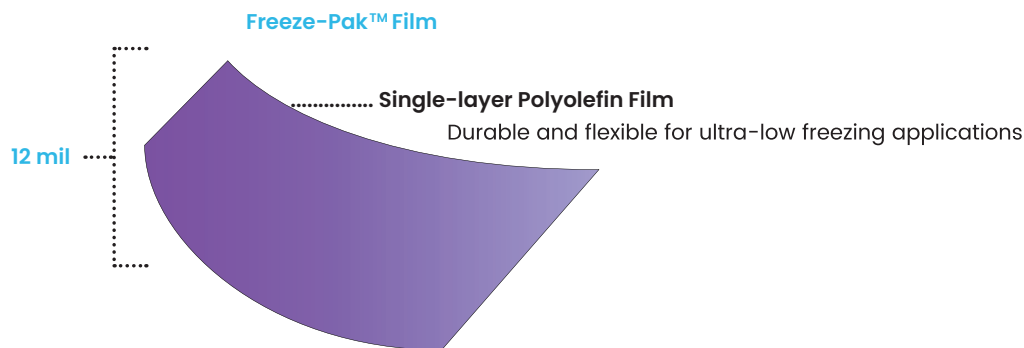
- Connections
- Ports
- Tubing
- Freeze-Pak™ STS Bio-Containers can be used within a custom manifold design

#### Standard Applications

- Bulk intermediate and final fill
- Bioprocessing
- Cell banking
- Regenerative medicine

## Ordering Information

Catalog #	Description	Max. Vol. at -80°C	Case Qty.
FP50ML44	50 mL max. fill volume, 1/4" ports (2); 4" EVA tubing with needleless valve and 8" C-Flex® tubing with MPC female	42.5 mL	10
FP50ML444	50 mL max. fill volume, 1/4" ports (3); 4" EVA tubing with needleless valve and 8" C-Flex® tubing with MPC (2 lines)	42.5 mL	10
FP500ML44	500 mL max. fill volume, 1/4" ports (2); 4" EVA tubing with needleless valve and 8" C-Flex® tubing with MPC female	425 mL	10
FP500ML444	500 mL max. fill volume, 1/4" ports (3); 4" EVA tubing with needleless valve and 8" C-Flex® tubing with MPC (2 lines)	425 mL	10
FP1L44	1 L max. fill volume, 1/4" ports (2); 4" EVA tubing with needleless valve and 8" C-Flex® tubing with MPC female	850 mL	10
FP1L444	1 L max. fill volume, 1/4" ports (3); 4" EVA tubing with needleless valve and 8" C-Flex® tubing with MPC (2 lines)	850 mL	10
FP2L44	2 L max. fill volume, 1/4" ports (2); 4" EVA tubing with needleless valve and 8" C-Flex® tubing with MPC female	1.7 L	10
FP2L444	2 L max. fill volume, 1/4" ports (3); 4" EVA tubing with needleless valve and 8" C-Flex® tubing with MPC (2 lines)	1.7 L	10
FP5L844N	5 L max. fill volume, 3 ports; 1/4" (2), 4" EVA tubing with needleless valve and 8" C-Flex® with plug; 1/2" (1) 9" C-Flex tubing with MPC	4.25 L	15
FP5L6644N	5 L max. fill volume, 4 ports; 1/4" (2), 4" EVA tubing with needleless valve and 8" C-Flex® with plug; 3/8" (2) 9" C-Flex tubing with MPC	4.25 L	15
FP10L844N	10 L max. fill volume, 3 ports; 1/4" (2), 4" EVA tubing with needleless valve and 8" C-Flex® with plug; 1/2" (1) 9" C-Flex tubing with MPC	8.5 L	15
FP10L6644N	10 L max. fill volume, 4 ports; 1/4" (2), 4" EVA tubing with needleless valve and 8" C-Flex® with plug; 3/8" (2) 9" C-Flex tubing with MPC	8.5 L	15
FP20L844N	20 L max. fill volume, 3 ports; 1/4" (2), 4" EVA tubing with needleless valve and 8" C-Flex® with plug; 1/2" (1) 9" C-Flex tubing with MPC	17.0 L	15
FP20L6644N	20 L max. fill volume, 4 ports; 1/4" (2), 4" EVA tubing with needleless valve and 8" C-Flex® with plug; 3/8" (2) 9" C-Flex tubing with MPC	17.0 L	15



## Film Physical Test Data (pre-gamma irradiation)

Property	Test Protocol	Typical Value(s)
Tensile Strength at Break, MD/TD (psi)	ASTM D882	3,200/2,900
Elongation at Break, MD/TD (%)	ASTM D882	650/700
Modulus at 100% Elongation, MD/TD (psi)	ASTM D882	550/500
Tear Resistance, MD/TD (lbf/in.)	ASTM D1004	200/250
Low Temp. Brittleness (Masland) (°C)	ASTM D1790	Below -100
Glass Transition Temperature ( $T_g$ )	DSC	-48°C
Specific Gravity (g/cm <sup>3</sup> )	ASTM D792	0.92
Particulates	USP <788>	Pass
Oxygen Transmission Rate (cm <sup>3</sup> /M <sup>2</sup> /24 hrs @ 23°C, 0% RH)	ASTM D3985	2,200
Carbon Dioxide Transmission Rate (cm <sup>3</sup> /M <sup>2</sup> /24 hrs @ 23°C, 0% RH)	ASTM F2476	9,000
Moisture Vapor Transmission (g/M <sup>2</sup> /24 hrs @ 23°C)	ASTM F1249	3.9

Test performed on 0.014" film

## Port/Handle Physical Test Data (pre-gamma irradiation)

Property	Test Protocol	Typical Value
Tensile Strength (MPa)	ASTM D638	12.9
Flex Modulus (MPa)	ASTM D790	69.9
Mooney Viscosity	ASTM D1646	<5
Durometer Hardness, Shore A	ASTM D2240	94
Melt Index (dg/min)	ASTM D1238	30
Tg (Glass Transition)	DSC	-44°C

## Final Container Biocompatibility Test Data (post-gamma irradiation)

Property	Test Protocol	Typical Value
USP Class VI	USP <88>	Pass
Cytotoxicity	USP <87> / ISO 10993-5	Pass
Hemolysis	ISO 10993-4	Pass

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