

# Freeze-Pak™ STS

## Secondary Shipping Containers



- » Durability for applications requiring storage to  $-80^{\circ}\text{C}$
- » Film retains flexibility while in frozen state
- » Suitable for long-term storage of cellular and non-cellular material
- » Compatible with Freeze-Pak™ STS Secondary Shipping Containers

### Standard Applications

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

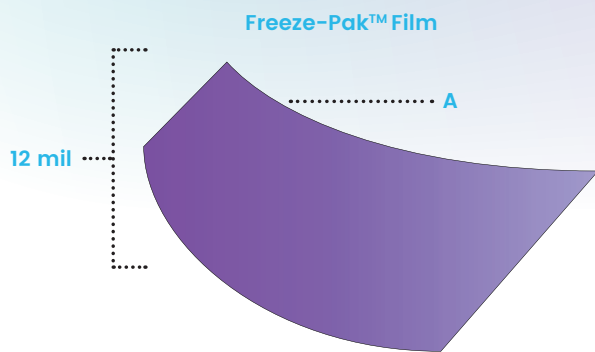
### Customization

- » Ports
- » Tubing
- » Connections
- » Manifolds

## Ordering Information

Product	Catalog #	Description	Max. Vol. at $-80^{\circ}\text{C}$	Case Qty.
FP-ST5 50mL	FP50ML44	1/4" ports (2); 4" EVA tubing with needleless valve, and 8" C-flex tubing with MPC female	42.5 mL	10
	FP50ML444	1/4" ports (3); 4" EVA tubing with needleless valve, and 8" C-flex tubing with MPC (2 lines)	42.5 mL	10
FP-ST5 500mL	FP500ML44	1/4" ports (2); 4" EVA tubing with needleless valve, and 8" C-flex tubing with MPC female	425 mL	10
	FP500ML444	1/4" ports (3); 4" EVA tubing with needleless valve, and 8" C-flex tubing with MPC (2 lines)	425 mL	10
FP-ST5 1L	FP1L44	1/4" ports (2); 4" EVA tubing with needleless valve, and 8" C-flex tubing with MPC female	850 mL	10
	FP1L444	1/4" ports (3); 4" EVA tubing with needleless valve, and 8" C-flex tubing with MPC (2 lines)	850 mL	10
FP-ST5 2L	FP2L44	1/4" ports (2); 4" EVA tubing with needleless valve, and 8" C-flex tubing with MPC female	1.7 L	10
	FP2L444	1/4" ports (3); 4" EVA tubing with needleless valve, and 8" C-flex tubing with MPC (2 lines)	1.7 L	10
FP-ST5 5L	FP5L844N	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	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
FP-ST5 10L	FP10L844N	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	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
FP-ST5 20L	FP20L844N	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	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





**A ..... Single Layer Polyolefin Film**  
Durable and flexible for ultra-low freezing applications

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

Property	Test Protocol	Typical Values
Tensile Strength at Break, MD/TD (psi)	ASTM D882	3200/2900
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°C
Glass Transition Temperature (T <sub>g</sub> )	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	2200
Carbon Dioxide Transmission Rate cm <sup>3</sup> /M <sup>2</sup> /24 hrs @ 23°C, 0% RH	ASTM F2476	9000
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 MPa
Flex Modulus (MPa)	ASTM D790	69.9 MPa
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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