

## Freeze-Pak™ STS

### Frozen Storage and Transport Solution Bio-Containers

#### Benefits

- Durability for applications requiring storage to  $-80^{\circ}\text{C}$
- Suitable for storage of cellular and non-cellular material



#### Customizable Options

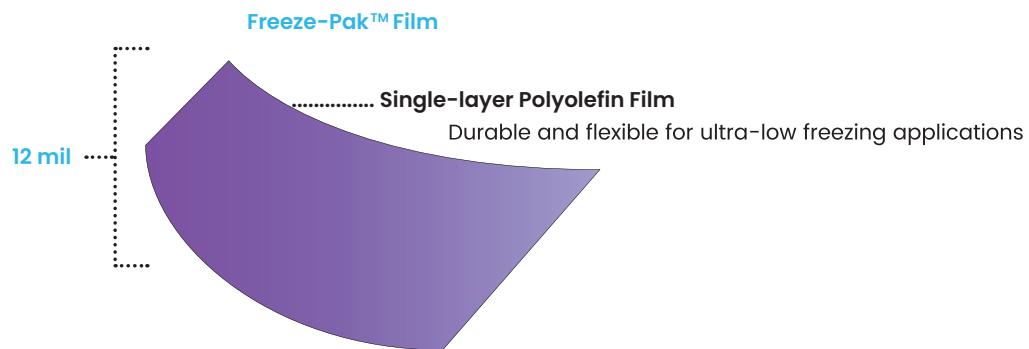
- Connections
- Ports
- Tubing
- Freeze-Pak™ STS Bio-Containers can be used within a custom manifold design

#### Standard Applications

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

## Ordering Information

| Catalog #  | Description  | Max. Vol. at $-80^{\circ}\text{C}$ | 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        |
| FPI1L44    | 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        |
| FPI1L444   | 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        |
| FPI0L844N  | 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        |
| FPI0L6644N | 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) 8" 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 <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    | 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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