

Labtainer BioProcess Container with ASI 28 film—a reliable EVA BPC

Proven in design and function—get your Labtainer BPC with ASI film in as little as eight weeks

The 2-panel (2D), pillow-style Thermo Scientific™ Labtainer™ BioProcess Containers (BPCs) with Thermo Scientific™ ASI™ 28 ethylene vinyl acetate (EVA) films, and Flexboys™ bags (Sartorius Stedim Biotech) are among the most operationally versatile single-use technology products. The reasons for this versatility include ease-of-use, multiple sizes, customization capabilities, and high reliability. The 2D BPCs are well suited for many bioprocessing unit operations such as sample collection and storage, media or buffer preparation and storage, process liquid feeds, and harvest collection from bioreactors or fermentors.

Labtainer BPC with ASI 28 film features

- Single-web, 4-layer, 12.5 mil film
 - 10 mil EVA fluid contact surface
 - 1 mil low-density polyethylene (LDPE) transition layer
 - 0.5 mil ethylene vinyl alcohol (EVOH) barrier layer
 - 1 mil LDPE outer layer
- Two-panel, pillow-style chambers
- 9 chamber sizes from 100 mL to 50 L
- 3 edge ports: 3.75 mm (1/8 in.), 6.35 mm (1/4 in.), and 9.53 mm (3/8 in.)
- Several sizes and styles stocked for immediate dispatch
- Customizable for optimal performance
- Accessories include cleanroom-ready totes, trays, drums, and carts



SSB S71 (EVA) film specification

Property	Test protocol	Average values
Physical data (post-gamma irradiation, 25–45 kGy)		
Ultimate tensile strength	ISO 527	2,009 psi, 13.85 MPa
Elongation at break	ASTM D882	490%
Toughness	ASTM D882	84.25 MJ/m ³
2% secant modulus	ISO 527	8,086 psi, 55.75 MPa
Tear resistance	ASTM D1004	5.73 lbf, 25.5 N
Flex durability	ASTM F392 C	<0 pinholes
Impact resistance	ISO 7765-2	61.1 lbf, 272 N
Total energy of perforation	ISO 7765-2	4.5 J
O ₂ transmission rate	ASTM D3985 90% RH inside, 50% RH outside, 23°C	<0.645 cc/100 in ² /day, <10 cc/m ² /day
CO ₂ transmission rate	ASTM F2476 0% RH inside, 0% RH outside, 23°C	<2.096 cc/100 in ² /day, <32.5 cc/m ² /day
Water vapor transmission rate	ASTM F1249 100% RH inside, 0% RH outside, 23°C	<0.158 cc/100 in ² /day, <2.45 g/m ² /day
Film gauge	Internal study	0.014 in. (0.36 mm)
Film contact material	N/A	EVA
Temperature range	Internal study	–94°F to 113°F –70°C to 45°C
Sterility assurance level (10 ⁻⁶)	ISO 11137	2.5–4.5 Mrad 25–45 kGy
Biocompatibility data		
USP Class VI (<i>in vivo</i> compatibility)	USP<88>	Pass
Cytotoxicity (<i>in vivo</i> compatibility)	USP<87>	Pass
Bacterial endotoxin	USP<85>, EP<2.6.14>	<0.25 EU/mL
Buffering capacity	USP<661>	Pass
Non-volatile residue	USP<661>	Pass
Residue on ignition	USP<661>	Pass
Heavy metals	USP<661>	Pass
Appearance of solution	EP<3.2.2.1>	Pass
Acidity and alkalinity	EP<3.2.2.1>	Pass
TSE/BSE	EP<5.2.8>	Pass
Reducing substances	EP<3.2.2.1>	Pass
Particulate matter	USP<788>, EP<2.9.19>	Pass
Total organic carbon	USP<643>	Pass
Bioburden	ISO 11737	Pass
EVA copolymer for containers and tubing for parenteral nutrition preparations	EP<3.1.7>	Pass
Appearance of solution	EP<3.2.2.1>	Pass
Acidity and alkalinity	EP<3.2.2.1>	Pass
Reducing substances	EP<3.2.2.1>	Pass

Note: TSE = transmissible spongiform encephalopathy, BSE = bovine spongiform encephalopathy

ASI 28 (EVA) film specification

Property	Test protocol	Average values
Physical data (post-gamma irradiation, 25–40 kGy)		
Ultimate tensile strength	ASTM D882	2,118 psi, 14.6 MPa
Elongation at break	ASTM D882	639%
Toughness	ASTM D882	57.01 MJ/m ³
2% secant modulus	ASTM D882	11,574 psi, 79.8 MPa
Tear strength	ASTM D1004	45.8 lbf, 203.7 N
Flex-crack resistance	ASTM F392	0.3 pinholes
Impact strength	ASTM D7192	43.6 lbf, 194 N
Low-temperature brittleness	ASTM D1790	>–75°F, –59°C
O ₂ transmission rate	ASTM D3985 90% RH inside, 0% RH outside, 23°C	0.28 cc/100 in ² /day, 4.34 cc/m ² /day
CO ₂ transmission rate	Mocon method 100% RH inside, 0% RH outside, 23°C	0.58 cc/100 in ² /day, 8.99 cc/m ² /day
Water vapor transmission rate	ASTM F1249 100% RH inside, 0% RH outside, 23°C	0.11 g/100 in ² /day, 1.705 g/m ² /day
Film gauge	Internal study	0.0125 in. (0.3175 mm)
Film contact material	N/A	EVA
Low-temperature brittleness	ASTM D1790	–80°C
Sterility assurance level (10 ⁻⁶)	ANSI/AAMI/ ISO11137:2006	2.75–4.0 Mrad 27.5–40 kGy
Biocompatibility data (post-gamma irradiation, >50 kGy)		
USP Class VI	USP<88>	Pass
Cytotoxicity	USP<87>	Pass
Bacterial endotoxin	USP<85>	<0.5 EU/mL
Buffering capacity	USP<661>	Pass
Non-volatile residue	USP<661>	Pass
Residue on ignition	USP<661>	Pass
Heavy metals	USP<661>	Pass
Appearance of solution	EP<3.2.2.1>	Pass
Acidity and alkalinity	EP<3.2.2.1>	Pass
Absorbance	EP<3.2.2.1>	Pass
Reducing substances	EP<3.2.2.1>	Pass
Transparency	EP<3.2.2.1>	Pass
ISO10993 (hemolysis, cytotoxicity, intramuscular implant test, intramuscular injection test, acute systemic injection test)	ISO 10993-4 ISO10993-5 ISO 10993-6 ISO10993-10 ISO 10993-11	Pass

References

- Sartorius Flexboy S71 Validation Guide, Publication No. SPT5714-e09032, Order No.: 85034-536-03 | Ver. 03 | 2009.
- ASI 28 Ethyl Vinyl Acetate (EVA) Film, Data sheet MK-00083, 05-20-15.

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