

# CentriPAK BioProcess Container (BPC)

Next-generation centrifuge container providing a single-use, sterilized, closed system for cell culture separations

As technology and innovation advance within the bioprocessing industry, single-use technologies (SUT) have also made considerable progress in centrifugation. Some of the well-established and known advantages of SUT are lowered costs, reduced contamination risks, decreased facility footprint, increased flexibility, and production throughput efficiency with less cleanup — all resulting in quicker turnaround and increased production capabilities. The innovative concept of the new Thermo Scientific™ CentriPAK™ BioProcess Container (BPC) provides a single-use, sterilized, closed system for centrifugation.

## Key Features

- All CentriPAK BPCs are produced in state-of-the-art facilities with current good manufacturing practices (cGMPs) and assembled in an ISO 7 clean room.
- CentriPAK BPC is prepared for multi-container manifold configurations (total capacity: 10.2 L).
- CentriPAK BPCs are sterilized and single-use and provide a closed system for cell culture separations in bioprocessing industry.
- BPCs are specially designed to work in gentle high-throughput centrifuge applications (up to 4,700rpm/7,187 x g).

## Applications

Commonly used for centrifugation of cell culture (mammalian cells) or fermentation broth (bacterial, yeast) in the bioprocessing industry.



Thermo Scientific CentriPAK BPC is intended for centrifugation in biotechnological applications. CentriPAK BPC is specifically designed for use in combination with Thermo Scientific™ Sorvall™ BIOS 16 Centrifuge with 6 x 2,000 mL and 8 x 2,000 mL Swinging Bucket Rotors.

Thermo Scientific CentriPAK BPC are not approved or intended for, and should not be used for medical, clinical, surgical or other patient-oriented applications.

## Specifications

### CentriPAK BPC

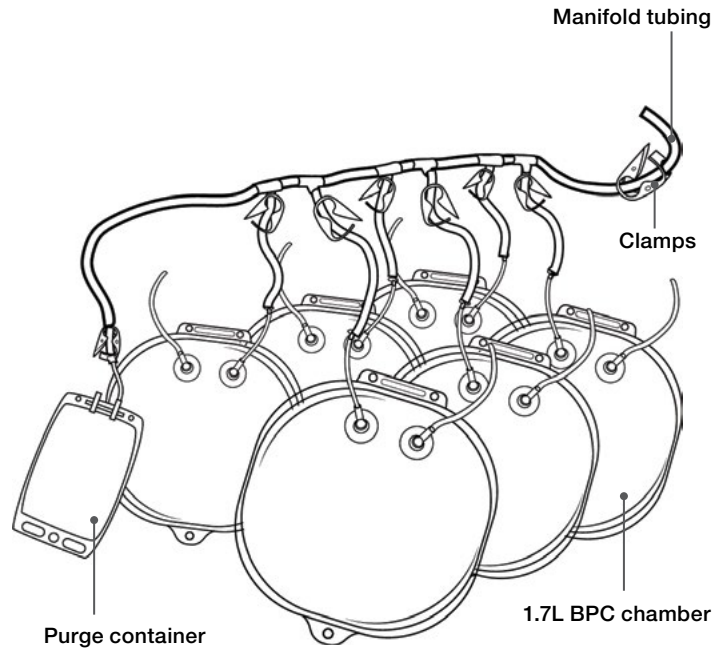
Cat. No.	75003880
Description	6 x 1.7 L harvest manifold (sterilized) for sterilized connect, quick connect, or weld-on 3/8 in. ID, (1/8 in. wall) connection
Package	Set of 2
Material	CX3-9 film
Max. capacity	10.2 L
Lifetime	Single-use

### 1.7L BPC chamber

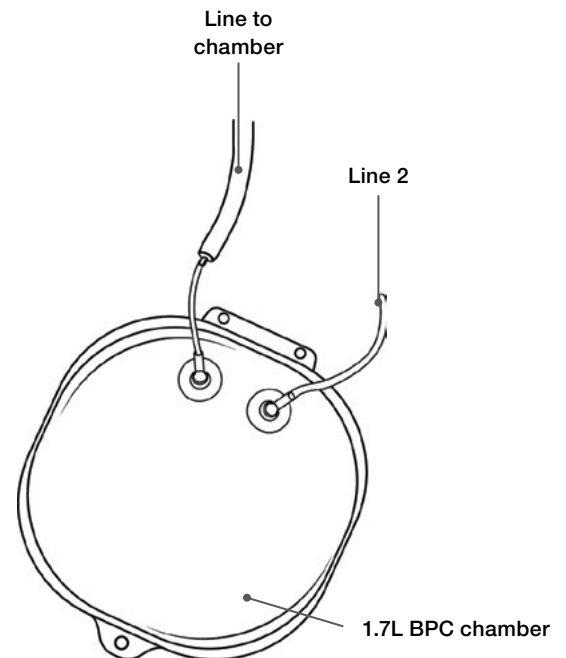
Maximum fill level	1.7 L
Line to chamber	Vinyl end cap, 7/16 in. Tubing: Weldable (TPE) tubing, Length: 25 cm (10 in.), ID x wall: 0.32 cm x 0.16 cm (1/8 in. x 1/16 in.)
Line 2	Tubing: Weldable (TPE) tubing, Length: 36 cm (14 in.), ID x wall: 0.32 cm x 0.16 cm (1/8 in. x 1/16 in.)
Port type	Face port
Connections	Weld-on 1/8 in. ID, (1/16 in. wall) connection
Maximum sample density	1.2 g/mL
Temperature	4°C to 40°C
RPM/G-force	4,700 rpm/7,187 x g
Centrifuge	Thermo Scientific™ Sorvall™ BIOS 16 Centrifuge
Rotor	8 x 2,000 mL and 6 x 2,000 mL

### Manifold

Overall length	Tubing assembly with chambers and connections - 64 in.
Connections	Sterilized connect, quick connect, or 18 in. weldable (TPE) tubing 3/8 in. ID, (1/8 in. wall) connection
Clamps	1/2 in. - 3/4 in. (1.27 cm - 1.9 cm) and 3/16 in. - 3/8 in. (0.47 cm - 0.95 cm)
Purge container	1000mL, 5/32 in. ports (CX5-14 film) Tubing: Weldable (TPE) tubing, Length: 36 cm (14 in.), ID x wall: 0.32 cm x 0.16 cm (1/8 in. x 1/16 in.)



CentriPAK BPC - Six 1.7 L BPC chambers



CentriPAK BPC 1.7 L chamber

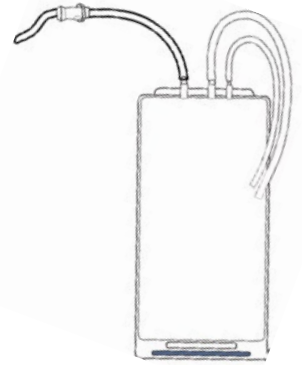
## Specifications

### CentriPAK Labtainer™ BPC

Cat. No.	75003883
Description	10 L Labtainer BPC for collection of supernatant
Package	Set of 2
Material	CX5-14 film
Max. capacity	10 L
Lifetime	Single-Use

### Ports and Manifold

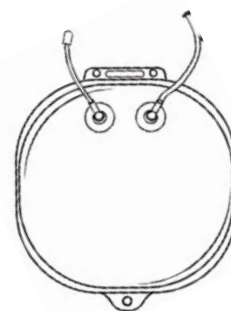
Line 1	<p>Polypropylene end plug 1/8 in. Snapper clamp 3/16 in. - 3/8 in. Tubing: Weldable (TPE) tubing, Length: 30cm (12 in.), ID x wall: 0.32 cm x 0.16 cm (1/8 in. x 1/16 in.) Polypropylene sterile connect 1/4 in. x 1/8 in. Polypropylene sterile connect 1/4 in. x 1/4 in. x 1/8 in. Tubing: Weldable (TPE) tubing, Length: 8cm (3 in.), ID x wall: 0.64 cm x 0.32 cm (1/4 in. x 1/8 in.) Polypropylene sterile connect 1/4 in. x 1/4 in. Tubing: Pharmed BPT, Length: 91cm (36 in.), ID x wall: 0.64 cm x 0.16 cm (1/4 in. x 1/16 in.)</p>
Line 2	<p>Polycarbonate quick connect insert with cap, 1/4 in. Snapper clamp 3/16 in. - 3/8 in. Tubing: Pharmed BPT, Length: 46cm (18 in.), ID x wall: 0.64cm x 0.16cm (1/4 in. x 1/16 in.)</p>
Line 3	<p>Polypropylene end plug 1/8 in. Tubing: Weldable (TPE) tubing, Length: 46 cm (18 in.), ID x wall: 0.32 cm x 0.16 cm (1/8 in. x 1/16 in.) Polypropylene sterile connect 1/4 in. x 1/8 in. Tubing: Weldable (TPE) tubing, Length: 46cm (18 in.), ID x wall: 0.64 cm x 0.32 cm (1/4 in. x 1/8 in.)</p>



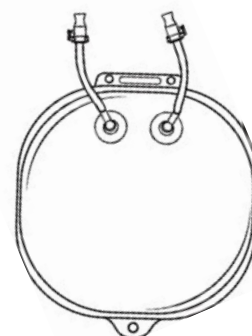
CentriPAK Labtainer BPC

## Specifications

	CentriPAK BPC Single	CentriPAK BPC Single with Quick Connect
Cat. No.	75003885	75003891
Description	1.7 L CentriPAK BPC (sterilized) with two 1/8 in. ID, 1/4 in. OD tubing for weld-on or Luer-lock connection	1.7 L CentriPAK BPC (sterilized) with two 1/4 in. ID with quick connects
Package	Set of 2	Set of 12
Material	CX3-9 film	CX3-9 film
Max. capacity	1.7 L	1.7 L
Lifetime	Single-Use	Single-Use
Line 1	Vinyl end cap, 7/16 in. Polypropylene Luer-Lock Female and Plug, 1/8 in. Tubing: Weldable (TPE) tubing, Length: 15cm (6 in.), ID x wall: 0.32 cm x 0.16 cm (1/8 in. x 1/16 in.)	Polysulfone quick-connect with Insert and Cap 1/4 in. Tubing: Weldable (TPE) tubing, Length: 5cm (2 in.), ID x wall: 0.64 cm x 0.16 cm (1/4 in. x 1/16 in.)
Line 2	Polypropylene end plug 1/8 in. Tubing: Weldable (TPE) tubing, Length: 36 cm (14 in.), ID x wall: 0.32 cm x 0.16 cm (1/8 in. x 1/16 in.)	Polysulfone quick connect with Body and Plug 1/4 in. Tubing: Weldable (TPE) tubing, Length: 5 cm (2 in.), ID x wall: 0.64 cm x 0.16 cm (1/4 in. x 1/16 in.)
Port type	Face port	Face port
Maximum sample density	1.2 g/mL	1.2 g/mL
Temperature	4°C to 40°C	4°C to 40°C
RPM/G-Force	4,700rpm/7,187 x g	4,700rpm/7,187 x g
Centrifuge	Thermo Scientific Sorvall BIOS 16	Thermo Scientific Sorvall BIOS 16
Rotor	8 x 2,000 mL and 6 x 2,000 mL	8 x 2,000 mL and 6 x 2,000 mL



CentriPAK BPC Single



CentriPAK BPC Single with Quick Connect

## BPC films engineered for the most demanding applications

Thermo Scientific films are engineered to meet the most demanding requirements of your bioproduction processes. The films are produced in a cGMP facility and manufactured using animal origin-free components. All fluid contact components used on this product comply with the current revision of EMEA/410/01.

### Specifications

Property	Test Protocol	Average Values (CX3-9 film)		Average Values (CX5-14 film)	
<b>Physical data (post-gamma irradiation, 25 - 40 kGy)</b>					
Tensile strength	ASTM D882	4,996 psi	34.4 MPa	4,996 psi	34.4 MPa
Elongation	ASTM D882	1,026%		1,026%	
Yield strength	ASTM D882	820 psi	5.7 MPa	1,238 psi	8.5 Mpa
2% secant modulus	ASTM D882	11,459 psi	79 MPa	37,898 psi	261.3 Mpa
Tensile toughness	ASTM D882	439 lbf-in.	5.0kN-cm	235 lbf-in.	2.7kN-cm
Puncture resistance	ASTM F1306	28 lbf	125 N	26 lbf	116N
Seam strength	ASTM F88	18 lbf/in.	31.5N/cm	31 lbf/in.	54N/cm
O <sub>2</sub> transmission rate	ASTM D3985, 0% relative humidity (RH) outside, 90% RH inside, 23°C	93.4cc/100 in. <sup>2</sup> /day	1448cc/m <sup>2</sup> /day	0.024cc/100 in. <sup>2</sup> /day	0.37cc/m <sup>2</sup> /day
CO <sub>2</sub> transmission rate	MOCONTM method, 0% RH outside, 100% RH inside, 23°C	450cc/100 in. <sup>2</sup> /day	6,968cc/m <sup>2</sup> /day	0.089cc/100 in. <sup>2</sup> /day	1.38cc/m <sup>2</sup> /day
Water vapor transmission rate	ASTM F1249, 0% RH outside, 100% RH inside, 23°C	0.061g/100 in. <sup>2</sup> /day	0.95g/m <sup>2</sup> /day	0.023g/100 in. <sup>2</sup> /day	0.35g/m <sup>2</sup> /day
Haze	ASTM D1003 (outside dry/inside dry)	63%		70%	
Glass transition temperature	ASTM E1640	-17°F	-27°C	-19°F	-28°C
Film gauge		9mil	0.229mm	0.014 in.	0.356mm
Film contact material		Polyethylene		Polyethylene	
Temperature range*		-112°F to 140°F	-80°C to 60°C	-112°F to 140°F	-80°C to 60°C
10 <sup>-6</sup> sterility assurance level	ANSI/AAMI/ISO 11137:2006	2.5–4.0Mrad	25–40kGy	2.5–4.0Mrad	25–40kGy
<b>Biocompatibility data (post-gamma irradiation, &gt;50 kGy)</b>					
USP Class VI	USP <88>	Pass		Pass	
Cytotoxicity	USP <87>	Pass		Pass	
Bacterial endotoxin	USP <85>	0.006EU/mL		0.006EU/mL	
Heavy metals	USP <661>	<1ppm		<1ppm	
Buffering capacity	USP <661>	<1mL		<1mL	
Nonvolatile residue	USP <661>	<1mg		<1mg	
Residue on ignition	USP <661>	<1mg		<1mg	
Hemolysis	ISO 10993-4	Pass		Nonhemolytic	
Appearance	EP <3.2.2.1>	Pass		Pass	
Acidity and alkalinity	EP <3.2.2.1>	Pass		Pass	
Absorbance	EP <3.2.2.1>	0.0055 units		Pass	
Reducing substances	EP <3.2.2.1>	<1mL		Pass	
Transparency	EP <3.2.2.1>	Pass		Pass	

All tests are run post-gamma irradiation unless otherwise noted. \*Subzero conditions require proper support and handling.

## In-process inspections and testing

In-process inspections and testing take place during the manufacturing process to ensure that each production run of the CentriPAK BPC system is being manufactured to the approved specifications. Lot controlled with a minimum of 6 months shelf-time user guarantee.

### Product Testing

Test	Specification	Frequency
Irradiation dose	25 - 40kGy	Each unit
100% visual inspection	Per build specification	Each unit
Endotoxin	USP <85> Aqueous extracts contained >0.25EU/mL as determined by the Limulus Amebocyte Lysate Test (LAL)	Routinely
Particulate	Particulate Matter in Injections Light Obscuration Particulate Count Test (USP <788>)	Routinely
Sterility	ANSI/AAMI/ISO 11137 guidelines provides a minimum Sterility Assurance Level (SAL) of $10^{-6}$	Routinely
EP Testing	EP <3.2.2.1>	Each unit

### Incoming component inspections

Component	Specification
Film	<ul style="list-style-type: none"><li>• Contamination</li><li>• Width dimensions</li><li>• Film thickness</li><li>• Tensile strength</li><li>• Chemical composition using FT-IR spectrometer</li></ul>
Ports, fittings, tubing, and end treatments	<ul style="list-style-type: none"><li>• Appearance and visual inspection</li><li>• Dimensional analysis</li></ul>

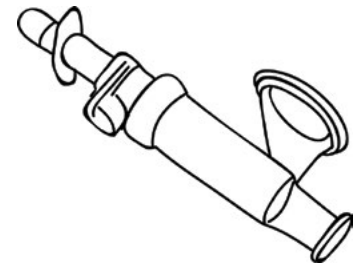
### In-process inspections and testing

Component	Specification
Flexible container chambers	<ul style="list-style-type: none"><li>• Appearance</li><li>• Seam and port seal strength</li><li>• Dimensional analysis</li><li>• Leak and burst testing</li></ul>
Finished flexible containers	<ul style="list-style-type: none"><li>• Correctness</li><li>• Completeness</li><li>• Particulate debris</li><li>• Defects and damage</li><li>• Correct packaging</li></ul>

## Specifications

### CentriPAK BPC Steam-through Adapter

Cat. No.	75003890
Description	Steam-through adapter for connection to a stainless steel culture vessel
Package	Set of 2
Lifetime	Single-Use
Pressure: steam position	Up to 30 psi, 2.07 bar
Pressure: flow position	Up to 20 psi, 1.38 bar
Temperature: steam position	Up to 266°F (130°C) for 60 minutes
Temperature: flow position	39°F to 104°F (4°C to 40°C)
Temperature: typical flow rate	Cv = 4.5 max
Materials connection	Polysulfone (amber tint), USP Class VI, ADCF
Materials seals	Silicone (clear), platinum-cured, USP Class VI, ADCF
Materials tear-away sleeve	Polyethylene sleeve
Tubing sizes	3/8 in. to 1/2 in. ID (9.5mm to 12.7mm ID)

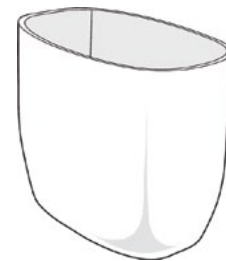


CentriPAK BPC Steam-through Adapter

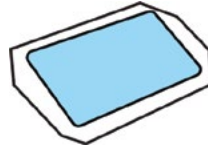
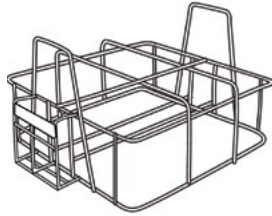
## Specifications

### CentriPAK BPC Adapter

Cat. No.	75003873
Description	CentriPAK BPC Adapter for BIOS 16 2,000 mL Buckets
Package	Set of 2
Material	Polypropylene (PP)
Max. load	2050g
Dimensions, (LxWxH)	18.3 x 10.7 x 16.2 in. (7.2 x 4.21 x 6.38 cm)
Weight	0.24 kg (each)
Temperature	in temperature to 4 - 40°C
G-force	in g-force to max. 7,187 x g
Lifetime	3,000 cycles
Centrifuge	Thermo Scientific™ Sorvall™ BIOS 16
Rotor	8 x 2,000 mL and 6 x 2,000 mL
Autoclavable	20 cycles at 121°C for 20 minutes



CentriPAK BPC Adapter

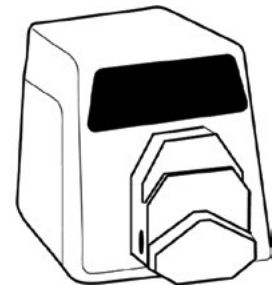


## Ordering Information and Specifications

	<b>CentriPAK BPC Adapter Rack</b>	<b>CentriPAK BPC Chamber Spacer</b>	<b>CentriPAK BPC Clip</b>
Cat. No.	75003889	75003843	75003886
Description	Adapter rack for CentriPAK BPC Adapter (6-place)	Spacer for packing BPC chamber inside adapter	Long clip used with pump for separation of supernatant from pellet
Package	Each	Set of 12	Set of 2
Material	Stainless Steel	Standard PVC	Polyethylene
Dimensions (LxWxH)	54.9 x 21.4 x 16.2cm (21.61 x 8.43 x 6.38 in.)	12.5 x 1 x 19cm (4.9 x 0.39 x 7.4 in.)	25.5 x 1 x 4cm (10 x 0.39 x 1.6 in.)
Weight	3.5kg	0.05kg (each)	0.02kg (each)

## Specifications

<b>CentriPAK BPC Pump</b>	
Cat. No.	20210448
Pump Model No.	07522-20 Masterflex L/S™ Digital Drive, 600rpm; 115/230 VAC
Pump Head No.	77200-50 Masterflex L/S™ Easy-Load™ II Pump Head for Precision Tubing, PPS Housing, CRS Rotor
Description	Peristaltic pump for L/S 17 tubing
Package	Each
Height	20.3 cm (8 in.)
Length	26.7 cm (10.5 in.)
Width	20.3 cm (8 in.)
Electrical requirements	90-260VAC; 50/60Hz; 1 PH; 1.8A/115VAC; 1.1A/230VAC



**CentriPAK BPC Pump**



# CentriPAK BioProcess Container

## Ordering Information

### 1. Choose a centrifuge bundle including the centrifuge and the rotor and BPC adapters.



Sorvall BIOS 16 Centrifuge*	Cat. No.
Sorvall BIOS 16 Centrifuge, (200, 208, 220, 230, 240 V $\pm$ 10%; 50/60Hz; single phase) + 6 x 2000 ml rotor + 6 Bucket liners BPD package for CentriPAK	L65007685
Sorvall BIOS 16 Centrifuge, (200, 208, 220, 230, 240 V $\pm$ 10%; 50/60Hz; single phase) + 8 x 2000 ml rotor + 8 Bucket liners BPD package for CentriPAK - L85007685	L85007685
Sorvall BIOS 16 Centrifuge, (380, 400, 415 V $\pm$ 10%; 50Hz; 3 phase) + 6 x 2000 ml rotor + 6 Bucket liners BPD package for CentriPAK	L65007697
Sorvall BIOS 16 Centrifuge, (380, 400, 415 V $\pm$ 10%; 50Hz; 3 phase) + 8 x 2000 ml rotor + 8 Bucket liners BPD package for CentriPAK	L85007697
Sorvall BIOS 16HD Centrifuge, (Heavy Duty) (200, 208, 220, 230, 240 V $\pm$ 10%; 50/60Hz; single phase) + 6 x 2000 ml rotor + 6 Bucket liners BPD package for CentriPAK	L65007696
Sorvall BIOS 16HD Centrifuge, (Heavy Duty) (200, 208, 220, 230, 240 V $\pm$ 10%; 50/60Hz; single phase) + 8 x 2000 ml rotor + 8 Bucket liners BPD package for CentriPAK	L85007696

\* Please consult the Sorvall BIOS brochure for additional information.


### 2. Specifications of rotors (included in bundles listed above):

Sorvall BIOS 16 Rotors	Rotor capacity (places x volume)	Maximum speed	Maximum RCF	Cat. No.
6 x 2,000mL Swinging Bucket Rotor, Oval Buckets	6 x 2,000mL	4700rpm	7187 x g	75003962
8 x 2,000mL Swinging Bucket Rotor, Oval Buckets	8 x 2,000mL	3900rpm	5374 x g	75003982


### 3. Order adapter and spacer

CentriPAK BPC Adapter and Blood Bag Spacer	Description	Quantity	Cat. No.
	CentriPAK BPC Adapter for BIOS 16 2000 mL buckets (included in centrifuge bundles listed above)	Set of 2	75003873
	Spacer for packing BPC chamber inside adapter	Set of 12	75003843





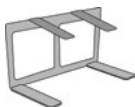


### 4. Order CentriPAK BPC

CentriPAK BPC	Description	Quantity	Cat. No.
	6 x 1.7L harvest manifold (sterilized) for sterilized connect, quick connect, or weld-on 3/8 in. ID, (1/8 in. wall) connection	Set of 2	75003880

### 5. Order CentriPAK Labtainer™ BPC

CentriPAK BPC	Description	Quantity	Cat. No.
	10L Labtainer BPC for collection of supernatant	Set of 2	75003883

## 6. Choose additional optional products

Image	Description	Quantity	Cat. No.
<b>CentriPAK BPC Steam-through Adapter</b>			
	Steam-through adapter for connection to a stainless steel culture vessel	Set of 2	75003890
<b>CentriPAK BPC Single</b>			
	1.7L CentriPAK BPC (sterilized) with two 1/8 in. ID, 1/4 in. OD tubing for weld-on or Luer-Lock connection	Set of 2	75003885
<b>CentriPAK BPC Single with Quick Connect</b>			
	1.7L CentriPAK BPC (sterilized) with two 1/4 in. ID with quick connects	Set of 12	75003891
<b>CentriPAK BPC Adapter Rack (6-place)</b>			
	Adapter rack for CentriPAK BPC Adapter	Each	75003889
<b>CentriPAK BPC Hanging Rack</b>			
	Rack for hanging CentriPAK BPC chambers	Each	75003892
<b>CentriPAK BPC Clip</b>			
	Long clip used with pump for separation of supernatant from pellet	Set of 2	75003886
<b>CentriPAK BPC Pump</b>			
	Peristaltic pump for separation of supernatant from pellet	Each	20210448

For connection and disconnection of tubings the SCD IIB Sterile Tubing Welder from TERUMOBCT (Cat. No. 3NCC986) is recommended.

Find out more at [thermofisher.com/centriPAK](https://www.thermofisher.com/centriPAK)

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