

Thermo Scientific HyQ BioProcess Container Systems

Large-volume liquid handling systems for
cell culture and bioprocessing

Introduction

Thermo Scientific™ HyQ™ BioProcess Containers address the sterile fluid handling needs for process development and production-scale bioprocess operations. These are constructed using our Thermo Scientific™ Aegis™ 5-14 Film and range in volume from 50 to 2000L with a range of standard configurations for use in many common bioprocess unit operations.

The square-tube design enables many choices for port size, location and quantity. Chambers are available with both top and bottom drain options. Bottom drain ports permit faster discharge of the BPC bag contents and maximum product recovery. Bottom drain chambers also allow for the creation of re-circulation loops—by linking the bottom port tubing to one of the top-positioned ports.

BPC bags are designed to fit the full range of support containers—both square and cylindrical—from 50 to 2000L. Additionally, our bioprocess containers have been validated in shipping volumes from 50 to 1000L using Thermo Scientific™ HyClone™ high-density polyethylene drums, stainless steel Smartainers™, and ALLpaQ™ bins.

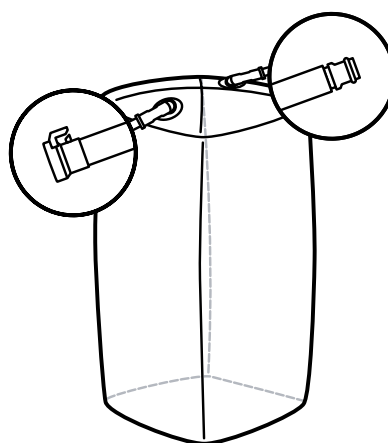
Standard configurations can be customized for optimal fit, form and function using the industry's largest library of qualified components to address process specific applications.

Whether choosing a standard or customized configuration, BPC bags are ideal for:

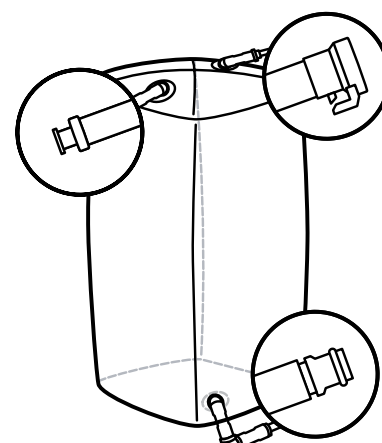
- Dispensing, packaging, and storing cell culture media, buffers, and process liquids
- Hydration and sterilization of process buffers, liquids and culture media
- Bioreactor and fermentation feed and harvest
- Chromatography feed and fraction collection
- Storage and transport of bulk intermediate products, process intermediates, vaccine conjugates and other biological products



A full range of standard designs, sizes, and support containers



Square Tube Design with Top Dispense



Square Tube Design with Bottom Port Dispense (For use with Conical Drums)

Chamber Information:

Volume	Top Ports Number and Size	Bottom Ports Number and Size	Dimensions Length x Depth x Height	Support Container Part Number and Description
50L	2 x 2.5cm (1"), 2 x 1.2cm (1/2")	N/A	36.8 x 33 x 41.9cm (14.5 x 13 x 16.5")	SV50076.02, Drum
100L	2 x 2.5cm (1"), 2 x 1.2cm (1/2")	N/A	36.8 x 33 x 76.2cm (14.5 x 13 x 30")	SV50076.03, Drum
200L	2 x 2.5cm (1"), 2 x 1.2cm (1/2")	N/A	48.2 x 44.4 x 88.3cm (19 x 17.5 x 34.8")	SV50076.04, Drum
50L	2 x 2.5cm (1"), 2 x 1.2cm (1/2")	1 x 2.5cm (1")	48.2 x 44.4 x 29.2cm (19 x 17.5 x 11.5")	SV50517.04 or SV50517.08, Drum with Conical Insert
100L	2 x 2.5cm (1"), 2 x 1.2cm (1/2")	1 x 2.5cm (1")	48.2 x 44.4 x 48.2cm (19 x 17.5 x 19")	SV50517.05 or SV50517.09, Drum with Conical Insert
200L	2 x 2.5cm (1"), 2 x 1.2cm (1/2")	1 x 2.5cm (1")	48.2 x 44.4 x 91.4cm (19 x 17.5 x 36")	SV50517.06 or SV50517.10, Drum with Conical Insert
50L	2 x 2.5cm (1")	N/A	36.8 x 33 x 41.9cm (14.5 x 13 x 16.5")	SV50076.02, Drum
100L	2 x 2.5cm (1")	N/A	36.8 x 33 x 76.2cm (14.5 x 13 x 30")	SV50076.03, Drum
200L	2 x 2.5cm (1")	N/A	48.2 x 44.4 x 88.3cm (19 x 17.5 x 34.8")	SV50076.04, Drum
50L	2 x 2.5cm (1")	1 x 2.5cm (1")	48.2 x 44.4 x 29.2cm (19 x 17.5 x 11.5")	SV50517.04 or SV50517.08, Drum with Conical Insert
100L	2 x 2.5cm (1")	1 x 2.5cm (1")	48.2 x 44.4 x 48.2cm (19 x 17.5 x 19")	SV50517.05 or SV50517.09, Drum with Conical Insert
200L	2 x 2.5cm (1")	1 x 2.5cm (1")	48.2 x 44.4 x 91.4cm (19 x 17.5 x 36")	SV50517.06 or SV50517.10, Drum with Conical Insert
500L	2 x 1.2cm (1/2"), 2 x 2.5cm (1")	1 x 2.5cm (1")	119.4 x 78.7 x 66.7cm (47 x 31 x 26.5")	SV50160.02, Smartainer II
1000L	2 x 1.2cm (1/2"), 2 x 2.5cm (1")	1 x 2.5cm (1")	119.4 x 99.1 x 105.4cm (47 x 39 x 41.5")	SV50160.03, Smartainer II
1500L	2 x 1.2cm (1/2"), 2 x 2.5cm (1")	1 x 2.5cm (1")	119.4 x 99.1 x 157.5cm (47 x 39 x 62")	SV50160.04, Smartainer II
200L	3 x 1/2" (1.2cm)	N/A	74.3 x 54 x 48.9cm (29.25 x 21.25 x 19.25")	SV50139.01, Arca/Allpaq Bin 200L
200L	3 x 1/2" (1.2cm)	1 x 1.2cm (1/2")	74.3 x 54 x 48.9cm (29.25 x 21.25 x 19.25")	SV50139.10, Arca/Allpaq Bin 200L Bottom Drain
500L	2 x 2.5cm (1")	1 x 2.5cm (1")	109.2 x 105.4 x 50.8cm (43 x 41.5 x 20")	SV50139.11, Arca/Allpaq Bin 500 L Bottom Drain
1000L	2 x 2.5cm (1")	1 x 2.5cm (1")	109.2 x 105.4 x 96.5cm (43 x 41.5 x 38")	SV50139.06, Arca/Allpaq Bin 1000L Bottom Drain
1000L	3 x 1.2cm (1/2"), 2 x 2.5cm (1")	N/A	109.2 x 105.4 x 96.5cm (43 x 41.5 x 38")	SV50139.02, Arca/Allpaq Bin 1000L
100L	2 x 1.2cm (1/2")	1 x 1.2cm (1/2")	74.3 x 54 x 24.1cm (29.25 x 21.25 x 9.5")	Designed for compatibility with alternate suppliers' bins
200L	2 x 1.2cm (1/2")	1 x 1.2cm (1/2")	74.3 x 54 x 48.9cm (29.25 x 21.25 x 19.25")	
500L	2 x 1.2cm (1/2"), 2 x 2.5cm (1")	1 x 2.5cm (1")	119.4 x 78.7 x 66.7cm (47 x 31 x 26.5")	
1000L	2 x 1.2cm (1/2"), 2 x 2.5cm (1")	1 x 2.5cm (1")	119.4 x 99.1 x 105.4cm (47 x 39 x 41.5")	
1500L	N/A	2 x 1.2cm (1/2")	119.4 x 99.1 x 157.5cm (47 x 39 x 62")	
2000L	N/A	2 x 1.2cm (1/2")	119.4 x 99.1 x 205.7cm (47 x 39 x 81")	

Standard Products

Ordering Information:

Standard Part Number	Volume	Top Ports Number and Size	Bottom Ports Number and Size	Support Container Part Number and Description
SH30966.01	50L	2 x 2.5cm (1"), 2 x 1.2cm (1/2")	N/A	SV50076.02, HyClone Drum
SH30966.02	100L	2 x 2.5cm (1"), 2 x 1.2cm (1/2")	N/A	SV50076.03, HyClone Drum
SH30966.03	200L	2 x 2.5cm (1"), 2 x 1.2cm (1/2")	N/A	SV50076.04, HyClone Drum
SH30969.01	50L	2 x 2.5cm (1"), 2 x 1.2cm (1/2")	1 x 2.5cm (1")	SV50517.04 or SV50517.08, HyClone Drum with Conical Insert
SH30969.02	100L	2 x 2.5cm (1"), 2 x 1.2cm (1/2")	1 x 2.5cm (1")	SV50517.05 or SV50517.09, HyClone Drum with Conical Insert
SH30969.03	200L	2 x 2.5cm (1"), 2 x 1.2cm (1/2")	1 x 2.5cm (1")	SV50517.06 or SV50517.10, HyClone Drum with Conical Insert
SH30964.01	50L	2 x 2.5cm (1")	N/A	SV50076.02, HyClone Drum
SH30964.02	100L	2 x 2.5cm (1")	N/A	SV50076.03, HyClone Drum
SH30964.03	200L	2 x 2.5cm (1")	N/A	SV50076.04, HyClone Drum
SH30967.01	50L	2 x 2.5cm (1")	1 x 2.5cm (1")	SV50517.04 or SV50517.08, HyClone Drum with Conical Insert
SH30967.02	100L	2 x 2.5cm (1")	1 x 2.5cm (1")	SV50517.05 or SV50517.09, HyClone Drum with Conical Insert
SH30967.03	200L	2 x 2.5cm (1")	1 x 2.5cm (1")	SV50517.06 or SV50517.10, HyClone Drum with Conical Insert
SH30969.04	500L	2 x 1.2cm (1/2"), 2 x 2.5cm (1")	1 x 2.5cm (1")	SV50160.02, Smartainer II
SH30969.05	1000L	2 x 1.2cm (1/2"), 2 x 2.5cm (1")	1 x 2.5cm (1")	SV50160.03, Smartainer II
SH30969.06	1500L	2 x 1.2cm (1/2"), 2 x 2.5cm (1")	1 x 2.5cm (1")	SV50160.04, Smartainer II
SH30977.13	200L	3 x 1.2cm (1/2")	N/A	SV50139.01, Arca/Allpaq Bin 200L
SH30969.11	200L	3 x 1.2cm (1/2")	1 x 1.2cm (1/2")	SV50139.10, Arca/Allpaq Bin 200L Bottom Drain
SH30969.10	500L	2 x 2.5cm (1")	1 x 2.5cm (1")	SV50139.11, Arca/Allpaq Bin 500L Bottom Drain
SH30969.09	1000L	2 x 2.5cm (1")	1 x 2.5cm (1")	SV50139.06, Arca/Allpaq Bin 1000L Bottom Drain

Custom Options

Ordering Information:

Tubing Type	C-Flex™ (clear, white and ADCF), Silicone, PharMed™ or AdvantaFlex™
Tubing Size	Specific Lengths of 3.18 to 25.4mm (1/8 to 1") ID—depending on type of tubing chosen
Connectors	Luer—3.18 to 6.35mm (1/8 to 1/4") ID CPC Quick Connect—6.35 to 19mm (1/4 to 3/4") ID Steam In Place Connector—6.35 to 19mm (1/4 to 3/4") ID Triclamp—3.18 to 25.4mm (1/8" to 1") ID Mini-Triclamp—6.35 to 12.7mm (1/8 to 1/2") ID Aseptic Connection and Aseptic Disconnection Devices: All available sizes of Colder AseptiQuik™, Pall™ Kleenpak™, GE ReadyMate™ DAC
Others	Needle-free sample port (Smartsite™ or Clave™) Filter Capsule (Millipore™, Pall, Sartorius™, Domnick Hunter™, Meissner™)
Dip Tubes	None to Full Length; 6.35 to 12.7mm (1/4 to 1/2") ID

Thermo Scientific HyClone Drums

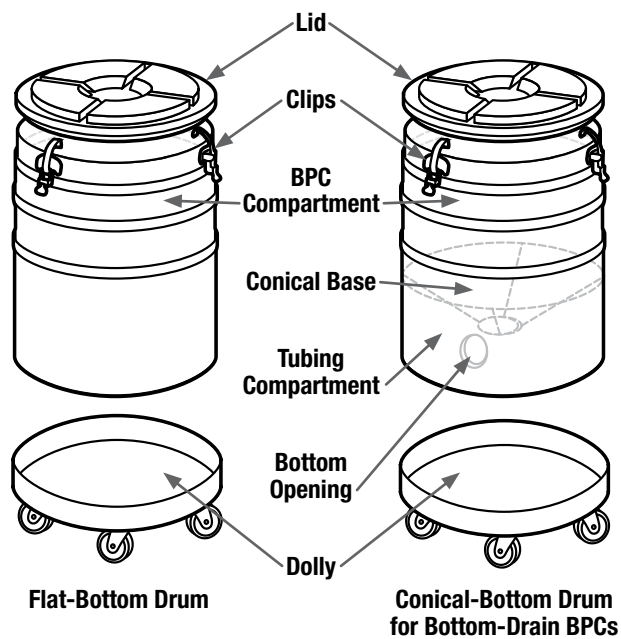
Standard Drums provide an economic, validated shipping system for Thermo Scientific BPC systems.

Overview

These drums are constructed of linear low density polyethylene (LLDPE) and are available in 50, 100 and 200L sizes. They come in top- or bottom-drain options, and fit a range of standard BPC products and chamber designs. A matching dolly (SV50029.03) is available to add mobility to the system.

Overall Drum Dimensions

Description	Volume	Dimensions	Part Numbers
Flat Bottom Drum	50	45 x 53cm (17.6 x 20.75")	SV50076.02
	100	45 x 79cm (17.6 x 29.75")	SV50076.03
	200	59 x 93cm (23.3 x 44.75")	SV50076.04
Conical Bottom Drum with 10.2cm (4") Bottom Port	50	60 x 58cm (23.5 x 23")	SV50517.08
	100	60 x 76cm (23.5 x 29.75")	SV50517.09
	200	60 x 114cm (23.5 x 44.75")	SV50517.10
Conical Bottom Drum with 4.5cm (1.75") Bottom Port	50	60 x 58cm (23.5 x 23")	SV50517.04
	100	60 x 76cm (23.5 x 29.75")	SV50517.05
	200	60 x 114cm (23.5 x 44.75")	SV50517.06
Dolly	62 x 18cm (24.375 x 7.125")		SV50029.03



Three sizes available with optional bottom drain opening



Cylindrical LLDPE Tanks with Lids

Standard, commercially available top entry cylindrical tanks, for maximum economy for volumes 20 to 300L.

Part Number	Size*	Dimensions (D x H)
SV30133	19L	27.9 x 38.1cm (11 x 15")
SV30111	57L	33 x 68.6cm (13 x 27")
SV30112	113L	45.7 x 76.2cm (18 x 30")
SV30113	208L	55.9 x 91.4cm (22 x 36")
SV30114	303L	61 x 121.9cm (24 x 48")
SV30115	378L	71.1 x 111.8cm (28 x 44")
SV30116	568L	78.7 x 124.5cm (31 x 49")

* Standard BPC configurations are not available for all sizes, but custom configurations can be designed.



Industry Standard Tanks (top access only)



Thermo Scientific™ Smartainer II system available with optional jacketed versions for added temperature control

Smartainer II Specifications

Part Number	Size	Dimensions (W x D x H)	Approx Weight Empty
SV50160.01	200L	79.4 x 59.7 x 79.1cm (31 x 23 x 31")	61.2kg (135lb)
SV50160.02	500L	120.7 x 78.7 x 97.2cm (47 x 31 x 38")	120.2kg (265lb)
SV50160.03	1000L	120.7 x 97.8 x 135cm (47 x 38 x 53")	163.3kg (360lb)
SV50160.04	1500L	120.7 x 97.8 x 175.3cm (47 x 38 x 69")	224.5kg (495lb)
SV50160.05	2000L	120.7 x 97.8 x 223.5cm (47 x 38 x 88")	281.2kg (620lb)

ALLpaQ Containers

As one option to support your liquid handling needs, we have validated a series of plastic vessels to support our BPC containers. These bins have been carefully constructed to meet shipping and handling needs.

ALLpaQ containers have a variety of properties ideal for the delivery of large volume liquid:

- **Cleanable**—Made of polypropylene, these bins are easy to clean.
- **Reusable**—Robust design and sturdy constructions allows for multiple uses.
- **Convenient**—Collapsible walls fold down for easy storage.
- **Stackable**—Easy storage.
- **Bottom Drain**—Bottom drain options available.



200 to 1000L sizes available with optional bottom drain access door



500L validated shipping container

Thermo Scientific HyQ Smartainer Shipper II

- Constructed of 304 stainless steel
- Validated shipping container to fit into Envirotainers for temperature controlled shipping by airplane
- Adjustable dunnage system to enable shipping volumes from 100 to 550L
- Suitable for both top and bottom discharge
- Moveable by forklift or pallet jack

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