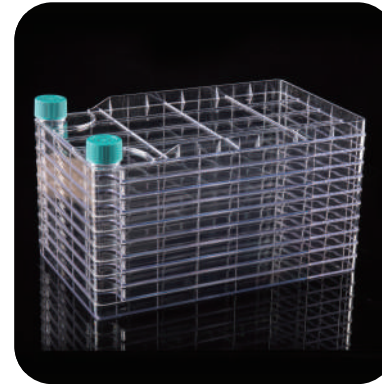
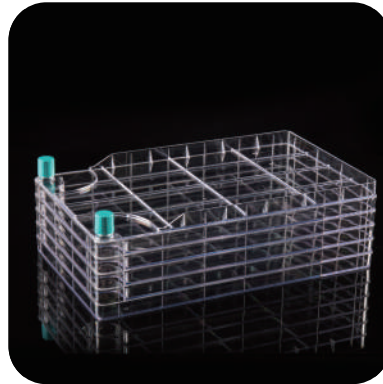
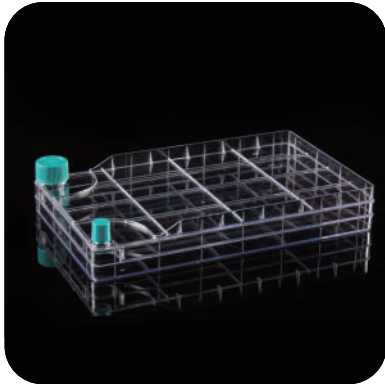
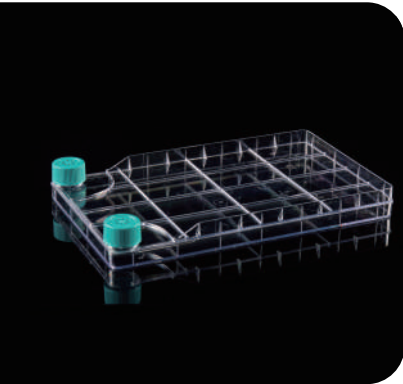


NEST<sup>®</sup>

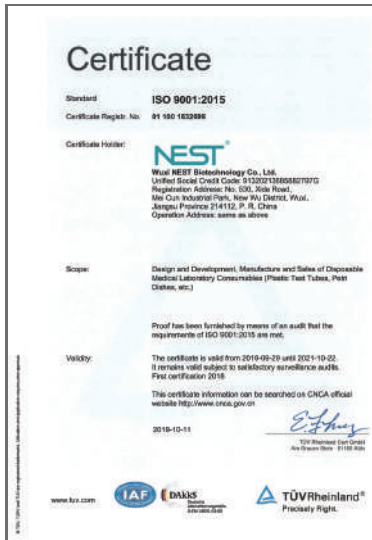


# BioFactory<sup>™</sup>

## High Efficient Erlenmeyer Flask

Wuxi NEST Biotechnology Co.,Ltd.

# Certificates



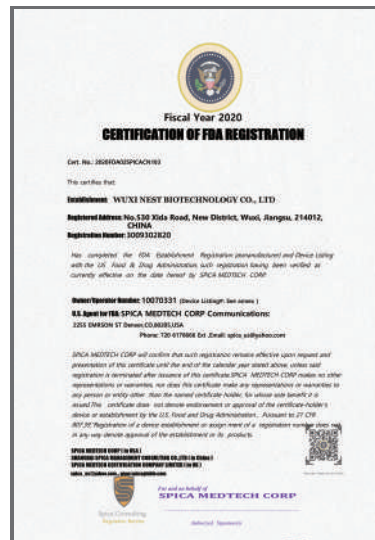
ISO 9001



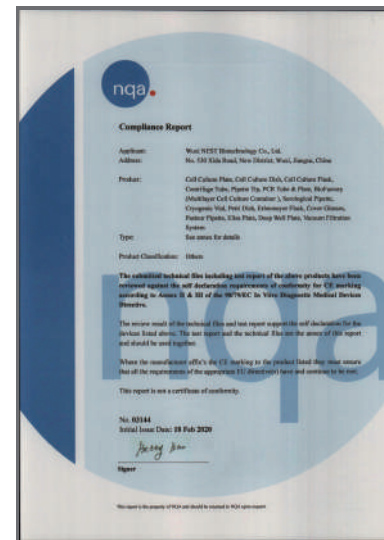
ISO 13485



JSDA



FDA



CE

## A leading life science plastic consumables manufacturer.

Wuxi NEST Biotechnology Co., Ltd. a leading life science plastic consumables manufacturer, who is integrated with R&D production and sales, was established in 2009, located in Wuxi, Jiangsu, China. Our products have been exported to North America, Europe, Japan, Korea, India and other countries, enjoys an excellent reputation nationwide and abroad. Customers are almost all over the world.

2011, NEST passed the standard of quality management system of ISO 9001.

2014, NEST passed the standard of quality management system of ISO 11137.

2016, NEST passed the standard of quality management system of ISO 13485.


2020, NEST obtained the medical device production license.

In addition to these certifications, we also gained CE and FDA standard.

## NEST Scientific Inc. NJ, USA

With the purpose in mind to serve North American and South American customers in a timely and smooth way, NEST Scientific Inc. as a branch of Wuxi NEST Biotechnology Co., Ltd. established in New Jersey, USA in 2013, who are doing wholesale distribution of the laboratory and medical products made in Wuxi factory. Composed by a professional team with rich experience in training and sales skills, can provide professional training, communicate with customers in depth and understand customers' demands more quickly.



A large, teal-colored cloud-like graphic with a white center containing text. The cloud has several rounded, overlapping shapes that create a soft, ethereal effect. The text is centered within the white space.

## Why choose NEST? **Quality Guarantee**

Precision Molding · Production Security · Sterilization Security

# Excellent mold-making ability. NEST

## Excellent mold-making ability——Vanguard Technology (Wuxi) Co., Ltd.

Founded in 2004, Vanguard Technology (Wuxi) Co., Ltd, As a subsidiary of Wuxi NEST Biotechnology Co., Ltd. In charge of provide precise moulds for NEST Biotechnology.

The company has obtained certifications like IATF16949-2016 (ISO16949)/CE/FDA.

- An operating team with experiences over 30 years.
- High precision mould processing equipment imported from Germany, Japan etc.
- Professional mould flow analysis software.

### Representatives of Clients

 ASTON MARTIN	 LEAR CORPORATION	 u-shin	 Valeo	 VAST CHINA	 TRELLEBORG AUTOMOTIVE	 SIEMENS
 KONGSBERG AUTOMOTIVE	 HILTI	 TransNav Mexico	 AS ONE	 MASERATI	 TRW Automotive	 WEGO 威高





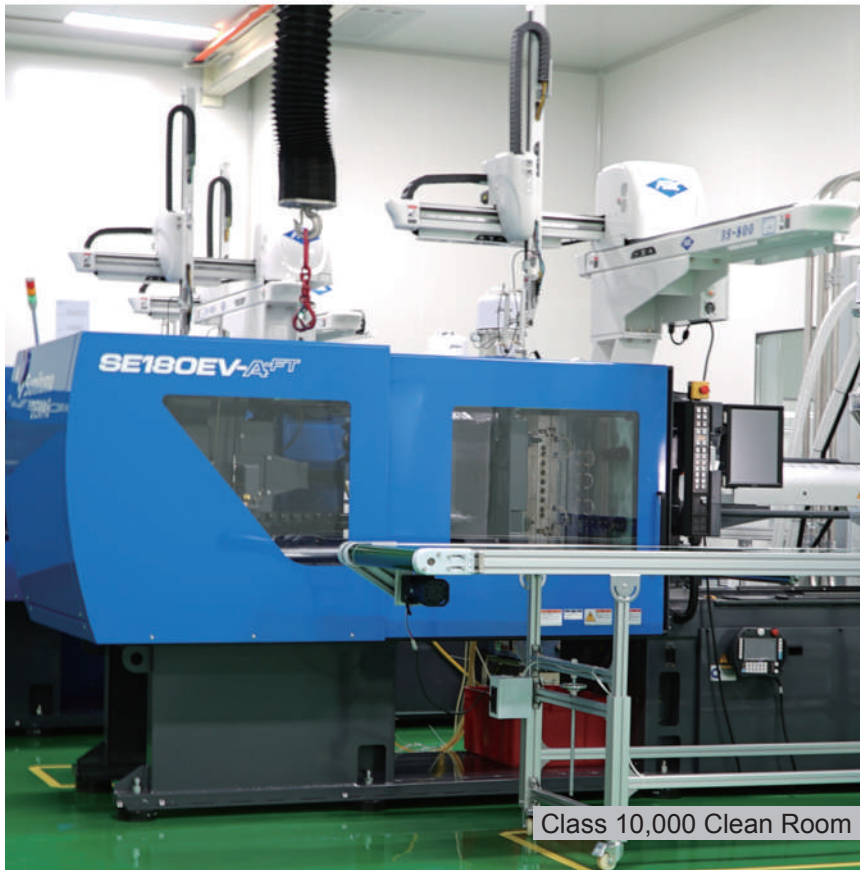
Raw Material Supply Center



Plasma Processor



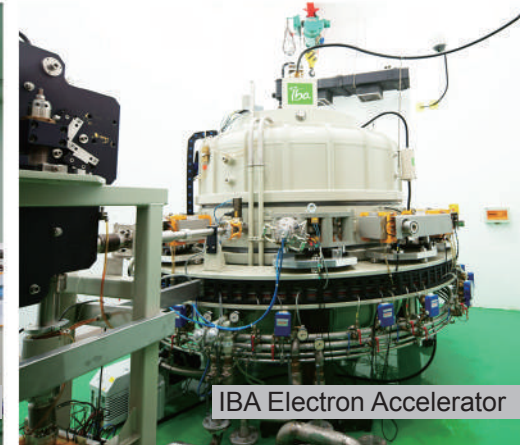
Air Leak Test



Class 10,000 Clean Room



Ultrasonic Welding Machine



IBA Electron Accelerator



Class 10,000 Clean Room

**Injection molding in Class 100,000 clean rooms.**

**All-electric high-speed injection molding machine imported from Japan.**

**Raw material which meet USP Class VI requirements. Production and quality control are performed strictly in accordance with corresponding SOP.**

## Surface Treatment – Tissue Culture Treated

10 years of production experience, ensures more uniform and stable cell attachment.

## Verification for Package Strength

Tests of multiple long-distance express transport challenges, with a breakage rate lower than 3%.

## Verification for Service Life of Product

The requirements of cell growth are still met after 3-year natural aging.

## Test for Biosafety

In accordance with the Complication Of National Standards For Packaging Materials And Containers Directly In Contact With Drugs Of The National Medical Products Administration (Vol. Six), tests for cytotoxicity, sensitization, intra-cutaneous stimulation, acute systemic toxicity, hemolysis, etc. are all performed for the products.

## Test for Physical and Chemical Safety

In accordance with the Complication Of National Standards For Packaging Materials And Containers Directly In Contact With Drugs Of The National Medical Products Administration (Vol. Six), tests for insoluble particles, ignition residues, metal elements, leachables (clarity, color, pH, UV absorption, non-volatile substances, readily oxidized substances, heavy metals) are all performed for the products.

## Cell Growing Test

L-929: mouse fibroblasts

VERO: renal cells of African green monkey

.....

2BS: human embryo lung diploid cells

293T: human renal epithelial cells

## Aseptic Security —Sterilization by Electronic Beam Irradiation

- Introduce the Rhodotron TT200 electron accelerator of the Belgium company, IBA.
- Built an irradiation center at a cost of 50 millions.
- The sterilization process has been certified by the ISO 11137 quality system.

## Advantages of sterilization by electronic beams —Cost less time, Safety without chemical residues.

**Sterilization by electronic beam radiation:** consecutive batch irradiation processing, the sterilization can be completed within only several seconds. The method has advantages like less time consuming, good effects, safety and environment protection and no chemical residues when compared to the traditional cobalt 60 irradiation sterilization and ethylene oxide sterilization systems.

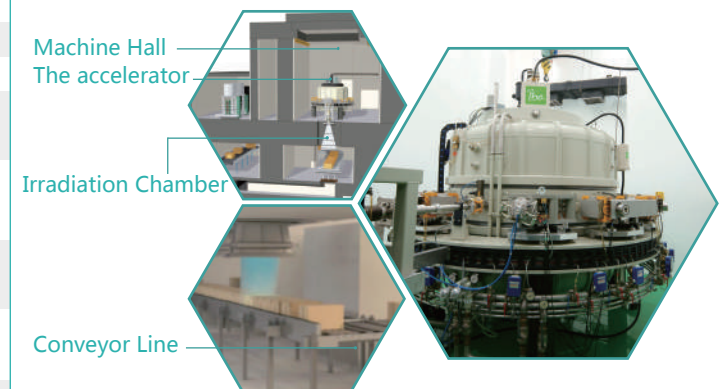
**Sterilization by cobalt 60:** ozone (strong oxidant) will be generated during the sterilization, which may cause damage to the product and the whole process takes a longer time (8-12 hours).

**Ethylene oxide sterilization:** chemical residues and after sterilization, the products should be set aside for 48 hours to let the residual reagents volatilize.

Comparison of Different Sterilization Methods

Item	Irradiation by electron accelerator	Irradiation by cobalt source	Ethylene oxide EO
Processing rate	Fast	Slow	Slow
Penetrability	Strong	Strong	Weak
Quantity of batch processing	Cycling sterilization, can meet the needs of processing for any quantity	Cycling sterilization, cannot be stopped halfway	Depends on the case body, normally less than 30 m <sup>3</sup> /time
Post treatment	Usable immediately after irradiation	Usable immediately after irradiation	Let stand for 48 hours for the residual reagents to volatilize
Safe	Controllable, no irradiation after stopping the machine	Irradiation always exists	EO is inflammable and explosive
Packaging requirements	No	No	Use of special packaging materials
Chemical residue	No	No	Yes

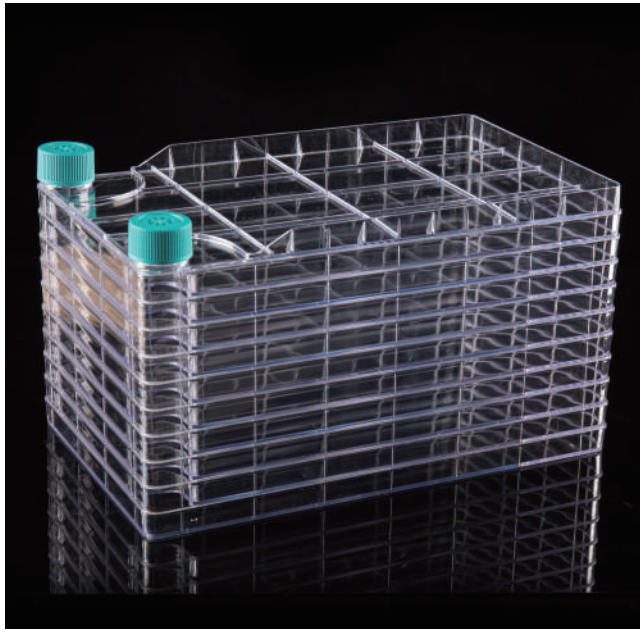
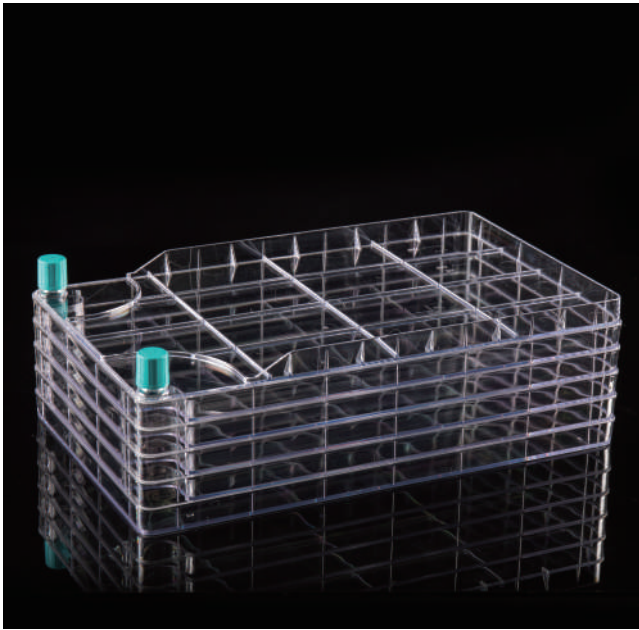
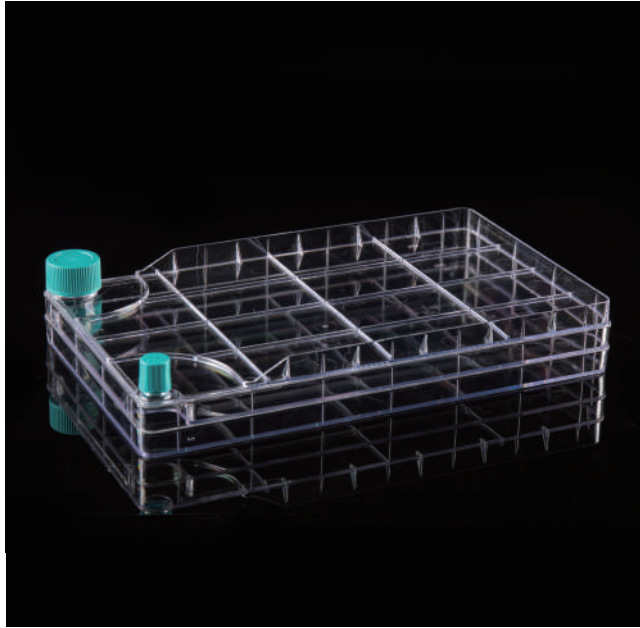
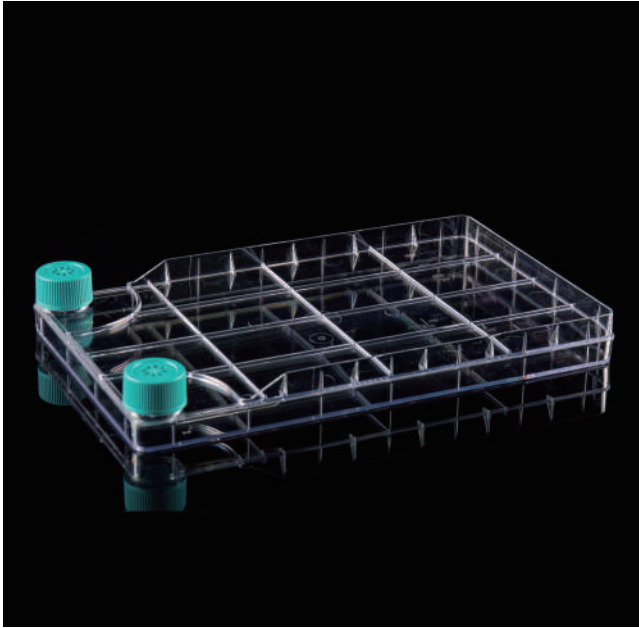
Process of Sterilization







**BioFactory  
BioFactory Accessories  
BioFactory Shaker**



NEST BioFactory™ system is a well-designed cell culture device that utilizes the maximum culture area in a limited space, saving a large amount of space, low-cost to achieve the purpose of expanding production capacity.

NEST BioFactory™ system can be used for industrial scale production such as vaccine, monoclonal antibodies or biopharmaceuticals production, and they are suitable for adherent cell culture.

Specifications: Single layer, 2 layers, 5 layers, 10 layers and 40 layers.

## Features

- Made of high clarity, 100% virgin polystyrene.
- Sterilized by E-beam, SAL=10<sup>-6</sup>.
- Non-Pyrogenic, DNase/Rnase free.
- Individually packaged in double-layer sterile bags.
- TC treated, good for cell attachment and growth.
- Clear lot number for batch traceability.
- Ultrasonic welding without extrinsic ingredients.
- Excellent welding line design can avoid producing particles during welding and make the biofactory stronger (Under Features 7th line).
- Vent caps with 0.22 μm hydrophobic filters for gas exchange without contamination.
- Wide mouth is applicable to pour culture medium directly. Narrow mouth is applicable to operate with the aseptic pipeline.
- Growth kinetics are the same as cells grow in the cell culture flasks. Applicable to large-scale culture adherent cells.
- Large growing area. Just a single operate, you can cultivate a large number of cells and reduce contamination risk.
- Applicable to automatic machine.
- Standardize operations to reduce batch differences.

Layer	Cultivation area (cm <sup>2</sup> )	Length(mm)	Width(mm)	Height (mm)
1	647	335	205	44
2	1279	335	205	61
5	3175	335	205	112
10	6335	335	205	197
40	25295	335	205	712



Cat.No.	Layer	Cultivation Area (cm <sup>2</sup> )	Descriptions	/Case
771001	1	647	<b>2 Wide Vent Caps</b> with extra 16 sterile wide plug seal caps packaged separately	8
771101	2	1,279	<b>2 Wide Vent Caps</b> with extra 16 sterile wide plug seal caps packaged separately	8
771204	5	3,175	<b>2 Wide Vent Caps</b> with extra 8 sterile wide plug seal caps packaged separately	4
771302	10	6,335	<b>2 Wide Vent Caps</b> with extra 12 sterile wide plug seal caps packaged separately	6
771403	40	25,295	<b>2 Wide Vent Caps</b> with extra 4 sterile wide plug seal caps packaged separately	2
772001	1	647	<b>1 Narrow Vent Cap + 1Narrow Plug Seal Cap</b> with extra 8 sterile narrow vent caps & 8 sterile narrow plug seal caps packaged separately	8
772101	2	1,279	<b>1 Narrow Vent Cap + 1Narrow Plug Seal Cap</b> with extra 8 sterile narrow vent caps & 8 sterile narrow plug seal caps packaged separately	8
772204	5	3,175	<b>1 Narrow Vent Cap + 1Narrow Plug Seal Cap</b> with extra 4 sterile narrow vent caps & 4 sterile narrow plug seal caps packaged separately	4
772302	10	6,335	<b>1 Narrow Vent Cap + 1Narrow Plug Seal Cap</b> with extra 6 sterile narrow vent caps & 6 sterile narrow plug seal caps packaged separately	6
772403	40	25,295	<b>1 Narrow Vent Cap + 1Narrow Plug Seal Cap</b> with extra 2 sterile narrow vent caps & 2 sterile narrow plug seal caps packaged separately	2
773001	1	647	<b>1 Wide Vent Cap &amp; 1 Narrow Plug Seal Cap</b> with extra 8 sterile wide plug seal caps & 8 sterile narrow vent caps packaged separately	8
773101	2	1,279	<b>1 Wide Vent Cap &amp; 1 Narrow Plug Seal Cap</b> with extra 8 sterile wide plug seal caps & 8 sterile narrow vent caps packaged separately	8
773204	5	3,175	<b>1 Wide Vent Cap &amp; 1 Narrow Plug Seal Cap</b> with extra 4 sterile wide plug seal caps & 4 sterile narrow vent caps packaged separately	4
773302	10	6,335	<b>1 Wide Vent Cap &amp; 1 Narrow Plug Seal Cap</b> with extra 6 sterile wide plug seal caps & 6 sterile narrow vent caps packaged separately	6
773403	40	25,295	<b>1 Wide Vent Cap &amp; 1 Narrow Plug Seal Cap</b> with extra 2 sterile wide plug seal caps & 2 sterile narrow vent caps packaged separately	2



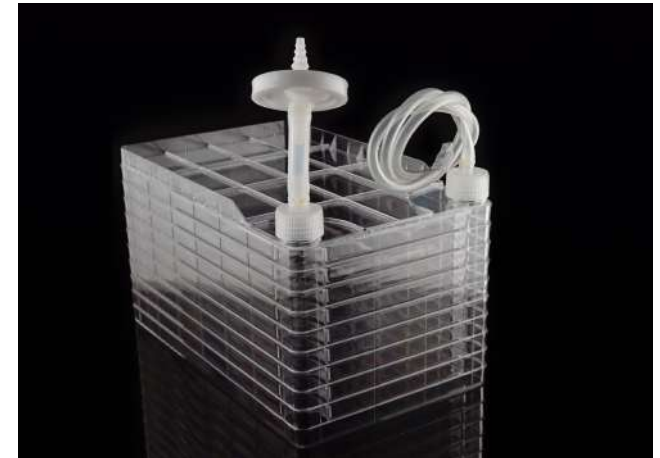
# Biofactor 10 Chamber Pre Installed with a Vent Filter NEST

## Product Introduction

“NEST BioFactory (10 Chambers) with tube” is a BioFactory pre-installed a set of transfer tubes and filter, which can directly transfer culture media and cells to or out of BioFactory in a sterile environment by connecting tubes, without change caps or connect tubes, greatly reduce the risk of exogenous pollution in the drug development and production process, simultaneously omit the operations of tube design, assemble and sterilization, improve the production efficiency.

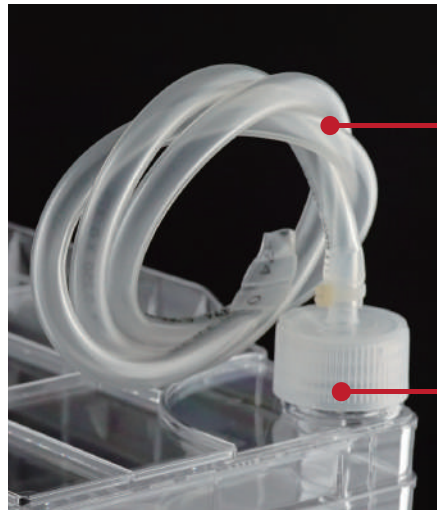
## Features

- Closed liquid transfer, avoiding open operation and reducing the risk of pollution in the process of liquid transfer.
- The liquid inlet tube can be aseptically welded under a normal environment
- High-quality materials and smooth inner wall of the tube, ensuring an excellent transmission performance
- Electron beam sterilization, SAL =  $10^{-6}$
- No endotoxin and no components of animal origin



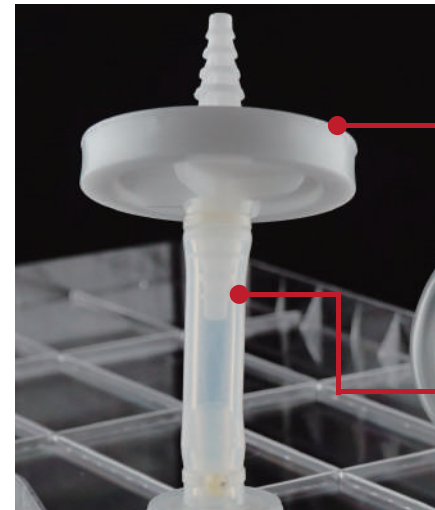
## Biofactor 10 Chamber Pre Installed with a Vent Filter

Cat.No.	Description	/Case
774301	Biofactor 10 Chamber Pre Installed with a Vent Filter (0.22 $\mu\text{m}$ , 62 mm Diameter) and a 80 mm Hose(1/4" ID, 3/8" OD )	2



TPE thermoplastic tube  
Length: 80 cm  
Diameter: 1/4" ID, 3/8" OD

Transfer cap is made of polypropylene plastic.



Filter: 0.22  $\mu\text{m}$  PTFE membrane

Silicone tube  
Length: 8 cm

# BioFactory™ Accessories



**744001 SPT-50 Hose**  
 Inner Dia# 3/8 Inches (9.5 mm) ,  
 Outer Dia# 5/8 Inches (15.9 mm)  
 50 Inches/ 15 meters  
 1 pcs / pack



**746001 C-Flex Welding Hose**  
 Inner Dia# 3/8 Inches (9.5 mm) ,  
 Outer Dia# 5/8 Inches (15.9 mm)  
 50 Inches/ 15 meters  
 1 pcs / pack



**743001 Hose Clamp**  
 Hose clamp for 12-18 mm  
 diameter hose  
 10 pcs / pack



**741001 Adaptor Connector**  
 Adaptor Connector to 3/8  
 Inches (9.5 mm)Hose  
 1 pcs / pack



**751001 Y Shape Connector**  
 Y Shape CPC Connector for  
 Inner Dia #3/8 Hose  
 1 pcs / pack, 5 pcs / cs



**749001 T Shape Connector**  
 T Shape CPC Connector  
 for Inner Dia #3/8 Hose  
 1 pcs / pack, 5 pcs / cs



**742001 Vent Filter**  
 0.22 µm, 62 mm diameter  
 1 pcs / pack, 5 pcs / cs  
**742011 Vent Filter**  
 0.22 µm, 56 mm diameter  
 1 pcs / pack, 5 pcs / cs



**747001 Connector**  
 (Inner Dia #3/8) for Hose to  
 Hose Connecting  
 1 pcs / pack, 5 pcs / cs



Cat.No.	Name	Material	/Pack	/Case
740001	Wide Mouth Seal cap for BioFactory™	HDPE	1	10
740011	Wide Mouth Vent cap for BioFactory™	HDPE	1	10
740101	Narrow Mouth Seal cap for BioFactory™	HDPE	1	10
740111	Narrow Mouth Vent cap for BioFactory™	HDPE	1	10



Cat.No.	Name	Material	spec(mm)		/Pack	/Case
			The inside diameter	The outside diameter		
740201	ADAPTOR CAP WIDE MOUTH TO NARROW MOUTH	HDPE	11.8	14.3	1	10
740301	ADAPTOR CAP WIDE MOUTH TO 3/8 INCHES(9.5 MM)HOSE	HDPE	7.3	11.4	1	10
740302	ADAPTOR CAP WIDE MOUTH TO 3/8 INCHES(9.5 MM)HOSE	PP	7.3	11.4	1	10

740201 740301 740302

# BioFactory™ Accessories NEST



745001



745021



745011

Cat.No.	Name
745001	<b>BioFactory Accessory Lite Package</b> Hose Clamp*1+50 mm Vent Filter*1+15 cm SPT-50 Hose*1+Silicone Ring*2, Sterile, 1/pk, 2/cs
745011	<b>BioFactory Accessory Basic Package</b> Hose Clamp*1+50 mm Vent Filter+15 cm SPT-50 Hose*1+Adaptor Connector*1+Silicone Ring*2, Sterile, 1/pk, 2/cs
745021	<b>BioFactory Accessory Premium Package</b> 2 different Adaptor Caps*1+Hose Clamp*1+Adaptor Connector*1 +50 mm Vent Filter*1+Hose Clamp*1+15 m SPT-50 Hose*1, Individually Wrapped, Sterile, 1/pk, 1/cs

# BioFactory™ Versus Rolling Bottles

## Advantages of BioFactory™

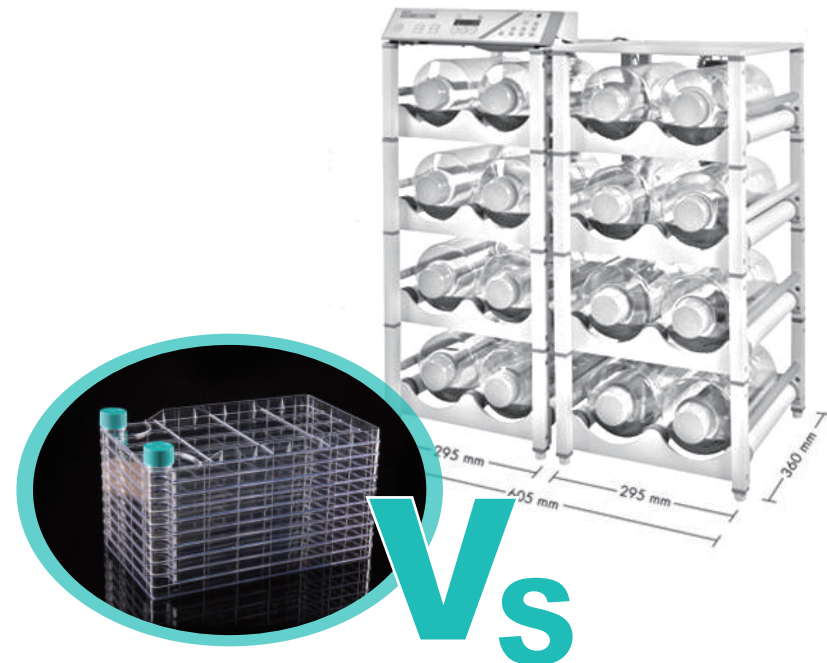
- Large culture area with less space occupied;
- Reduced manual operations to decrease contamination risk;
- Can be operated manually or combined with automated equipment for use;
- Can realize standardized operations to reduce intra-batch difference.

## Disadvantages of Rolling Bottles

- Heavy workload of manual operations;
- High risk of contamination;
- A large amount of washing and verification processes;
- Poor controllability of the production processes with large intra-bottle difference, hard to unify the quality of different batches;
- Large space occupation, hard to rapidly expand the production scale;
- Low level of automation.

## Comparison of Utilization Rate

Compared Items	10-layer BioFactory™	Rolling Bottle
Individual Culture Area	6,335cm <sup>2</sup>	1,800cm <sup>2</sup>
Quantity	16	50
Total Culture Area	10m <sup>2</sup>	9m <sup>2</sup>
Occupied Space	0.216m <sup>3</sup>	0.973m <sup>3</sup>



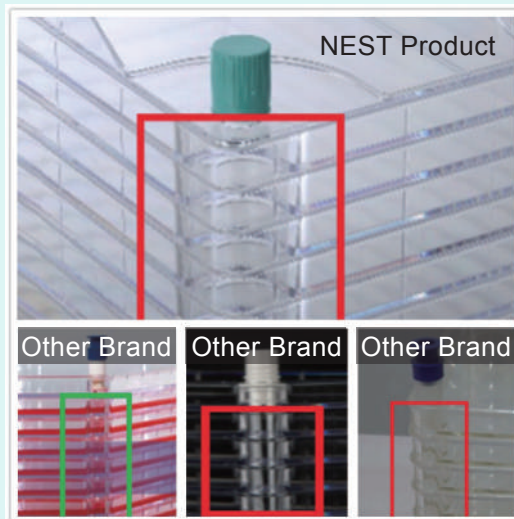


# Design Characteristics of BioFactory™ NEST

1

## Wide Caliber Between Chambers

Cost less time for liquid transfer.



2

## An all in one-mould injection design of mouth and chamber.

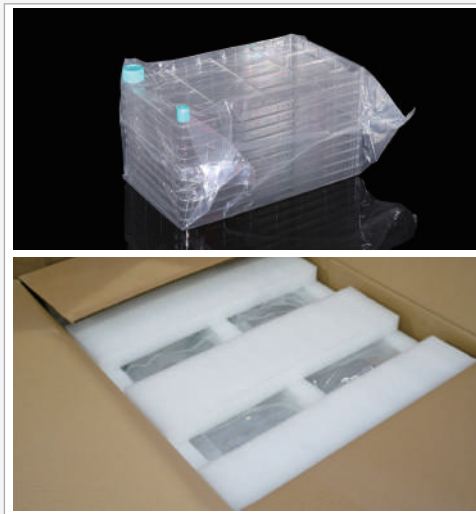
By adopting whole shaped technology, without assembly, chambers connected to the mouth more strongly.



3

## Strong Packaging

Double-layer air-exhausted packaging: meet the use requirements of pharmaceutical clients.  
Built-in protection layer: hard to be damaged, suitable for long-distance transportation.



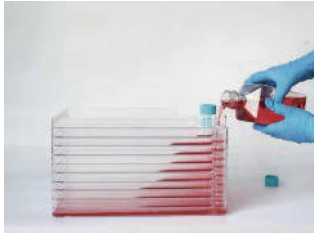
4

## Unique Design of Cap

“Petal” pattern distribution of pores, to enhance gas exchange to facilitate cell culture.



## Cell Culture



Pour the prepared culture medium into the cell factory (Volume suggestion: 150 - 200 mL for each layer).



Lay the cell factory on its side to balance the liquid level.



With the liquid-adding opening upward, the culture medium will be evenly distributed to each layer after standing.



Slowly place the cell factory in a horizontal position.



Incubate in a cell incubator.

## Precautions

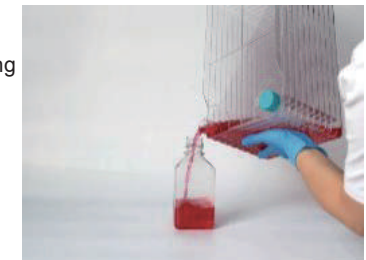
1. Please pre-heat the cell factory and culture medium to the culture temperature: since it takes a long time for a large incubator to reach the set culture temperature, pre-heating the cell factory and culture medium to the culture temperature before starting the experiment may speed up cell attachment and significantly increase cell recovery.
2. Slow operating is required to avoid occurrence of air bubbles caused by sharp shaking: air bubbles may lead to flowing the medium from an upper layer to a lower layer.
3. Avoid spraying the alcohol onto the breathable cover, since alcohol may wet the hydrophobic membrane filter and make it impermeable and consequently affect the gas exchange or causes pressure imbalance during operations.

## Cell Harvest

1. After the culture is completed, pour the culture medium out.
2. Wash the factory with the calcium- and magnesium-free phosphate buffer solution (CMF-PBS) (40-50 ml/layer) and if necessary, repeat the washing process.
3. Digestion: pre-heat the digestion solution (10-40 ml/layer) in advance.
4. Collection: centrifuge for 5 min at 1000 rpm, remove the digestion solution and collect cells.
5. Washing: wash the incubator with CMF-PBS or culture medium after digestion.

## Precautions

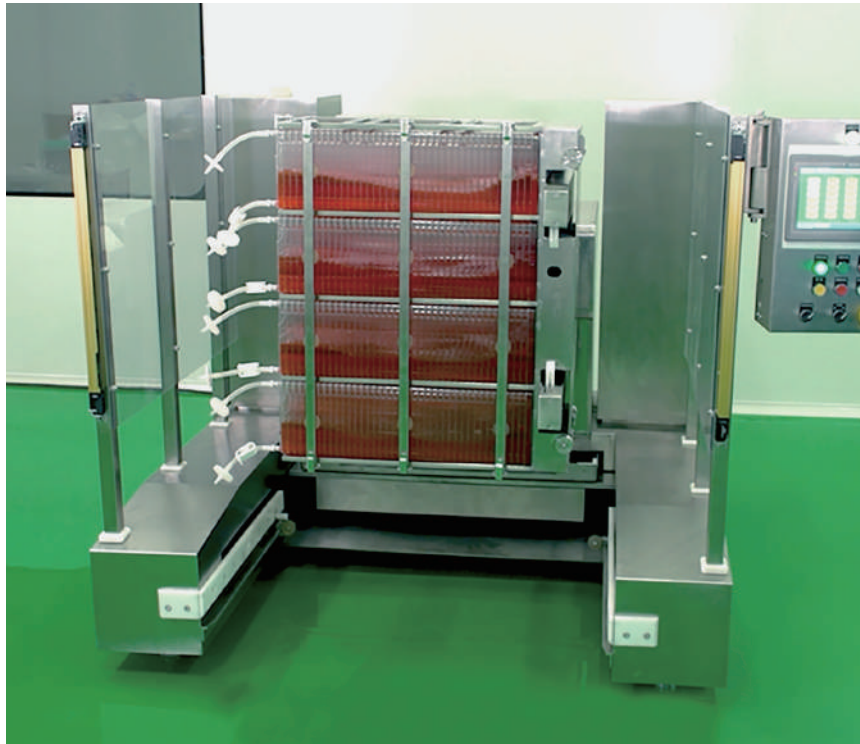
1. Ensure that the culture surface of each layer is completely immersed in the CMF-PBS, and gently shake the cell factory forward and backward to wash off the residual culture medium.
2. Distribute the digestion solution evenly to each layer; gently tilt the incubator forward and backward, left and right to ensure that the digestion solution has completely covered the culture surface; gently tap the incubator to help the cells detach from the surface.
3. Since it is unable to clearly observe the digestion status of the cells in the middle layers of a cell factory, it is recommended to refer to the digestion status of a culture flask or a single-layer cell factory under exactly the same culture conditions. Or, use a dedicated observation platform for multiple-layer cell incubators to observe the growth status of cells in each layer.
4. If there are numerous cells present in the washing solution or the culture layers of the cell factory, it is necessary to wash for multiple times or adjust the procedure of cell digestion.
5. Even a slight deviation of the culture temperature may affect the cell harvest rate, so it is required to pay close attention as to whether or not the culture temperature is exactly the set temperature.



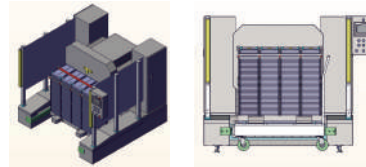
# BioFactory™ Automatic Shaker NEST

Achieve automated and high-efficiency operating of liquid adding, shaking, digesting and liquid pouring-out, etc. for BioFactory™ during large-scale culturing, to reduce heavy manual workload and the errors introduced by human factors.

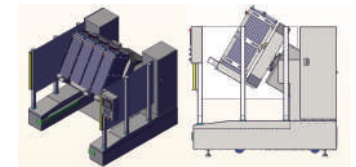
- The whole device is fully made of stainless steel materials, without rubber transmission parts.
- The device is fully electricity-powered; the ACFM is strictly in accordance with the requirements of EU directives; all parts comply with relevant regulations, no compressed gas source required.
- Use a complete set of imported servo motors and imported reducers, with high operating safety factors.
- Noiseless operation is achieved by using imported linear guides and ball screws.



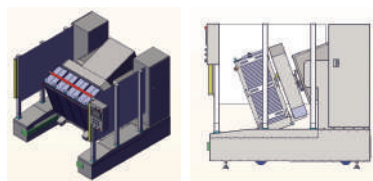
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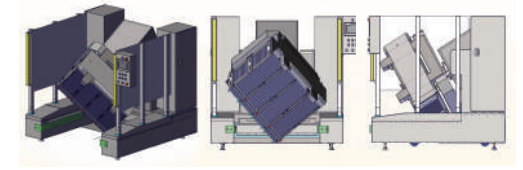
Lean Back: 0-35°



Lean Forward: 0-20°



Left Rotation, Right Rotation It's available to lean back or forward while rotating.



BioFactory™ Handcart



## How to use a microscope to observe the cell growth in a BioFactory™?

1. Use an inverted microscope to observe directly, however, it's only suitable for observing a BioFactory™ with 1-10 layers. The growth status in the bottom layers 1 and 2 can be observed, but only for the cell growth uniformity. It is not suitable for a 40-layer BioFactory™. Please contact the microscope manufacturer for more details.
2. Observe with a microscope dedicated for BioFactory™ observation, which has a lens in two directions for side observation and bottom observation, respectively; the cell size and growth density can be calculated using a size measurement system by observing cell status with a microscope. This model of microscope is suitable for BioFactory™ with any
3. number of layers.

Since the cell growth conditions (surface-capability relationship) of NEST BioFactory™ are the same as those of NEST cell culture flasks, the cell culture flask can be used simultaneously to replace BioFactory™ for observation, or use a 1-layer BioFactory™ for reference.

## How many cells may be inoculated in each type of BioFactory™?

NEST BioFactory™ are made of the same raw materials using same production processes as those of NEST cell culture flasks and the cell surface and growth status are basically the same as that of cell culture flasks. Since each kind of cells have different growth characteristics and different requirements for surface density and environment, for the number of cells that can be inoculated in each type of BioFactory™, it cannot be simply generalized. Users are recommended to determine the number by multiplying the inoculation density per unit area in the cell culture flask with the used culture area of BioFactory™.

## Volumes of various working solutions used in the cell culture.

The BioFactory™ allows large-scale cell culture in a compact space using its multiple-layer stacked structure. How much culture medium should be added in during use? And how much trypsin solution should be added in for cell digestion?

Layer	Culture Area (m <sup>2</sup> )	Volume (mL)	Washing Solution (1XPBS) mL	Digestion solution EDTA (mL)	Digestion Stop Solution (mL)
1	647	150-200	30-40	20	25
2	1279	300-400	60-80	40	50
5	3175	750-1000	150-200	100	125
10	6335	1500-2000	300-400	200	250
40	25295	6000-8000	1200-1600	800	1000

## The BioFactory™ are divided into large-caliber ones and small-caliber ones, what are their respective characteristics?

1. After years of research and development, the NEST BioFactory™ now have a complete product selection and clients may freely choose from BioFactory™ with of two wide caps, with two narrow caps or with one wide cap and one narrow cap according to their operating and use needs.
2. Characteristics of two wide caps: suitable for manual operations of adding and removing liquid, can also be connected with tubing; generally used during the phase of laboratory research.
3. Characteristics two narrow caps: suitable for being connected with tubing to facilitate subsequent process scale-up; generally used for scale production.  
Characteristics of one wide cap and one narrow cap: suitable for tubing connection and manual operations; used for scale production and laboratory research.  
Breathable cap: the inner is covered with a 0.22um hydrophobic film, which is air penetrable and can block bacteria and water, as well as avoid gas bloating caused by adding liquid.



A central teal-colored cloud-like shape with a white text overlay. The shape is surrounded by several lighter, semi-transparent teal shapes of varying sizes and positions, creating a layered, cloud-like effect. The text is centered within the main teal shape.

**Erlenmeyer Flask  
Transfer Cap**

# PC Conical Erlenmeyer Flasks & Mini Bio Reactor Tubes **NEST**



2L PC Erlenmeyer Flasks



3L PC Erlenmeyer Flasks

## Features

- PC Bottle & HDPE Cap.
- Vent caps with 0.2  $\mu\text{m}$  hydrophobic filters for gas exchange without contamination.
- Individually packaged in sterile bags
- Sterilized by E-beam, SAL= $10^{-6}$ .
- Non-Pyrogenic, DNase/Rnase free.

## PC Conical Erlenmeyer Flasks

Cat.No.	Volume (L)	Cap Style	Size(mm)			/Case
			Height	Bottleneck Diameter	Bottom Diameter	
785001	2	Seal Cap	285	47	162	6
785011	2	Vent Filter Cap	285	47	162	6
786001	3	Seal Cap	253	62	230	4
786011	3	Vent Filter Cap	253	62	230	4



## Mini Bio Reactor Tubes

This product is a test tube specially used to grow cells. It has good chemical resistance and high mechanical strength. Suitable for any 50ml standard centrifugal device.

## Features

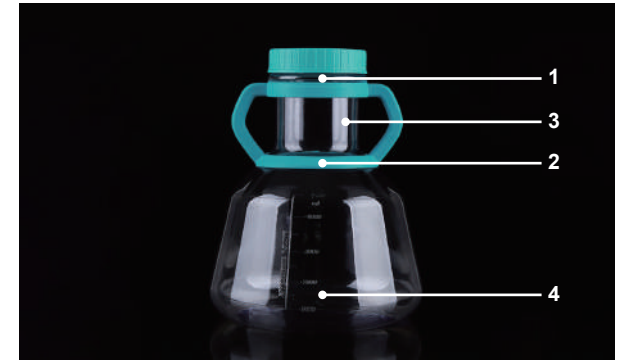
- USP VI Polypropylene and HDPE Vent Caps.
- High transparency, easy to observe.
- Vent caps with 0.22  $\mu\text{m}$  hydrophobic filters for gas exchange without contamination.
- Packaged in sterile, zip-sealable bags.
- Sterilized by E-beam, SAL= $10^{-6}$ .
- Non-Pyrogenic, DNase/Rnase free.
- Can be used for centrifugation.

Cat.No.	Volume (mL)	/Pack	/Case
788211	50	10	100

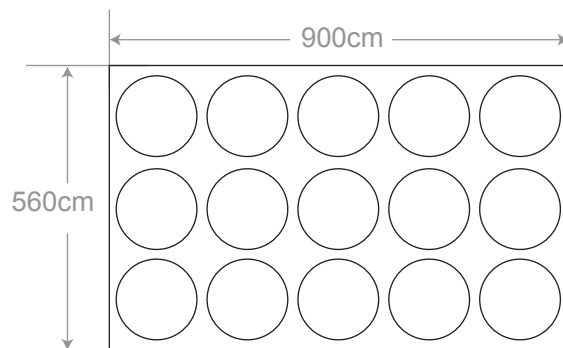
# High Efficient Erlenmeyer Flask NEST

## Design Characteristics of High Efficient Erlenmeyer Flask

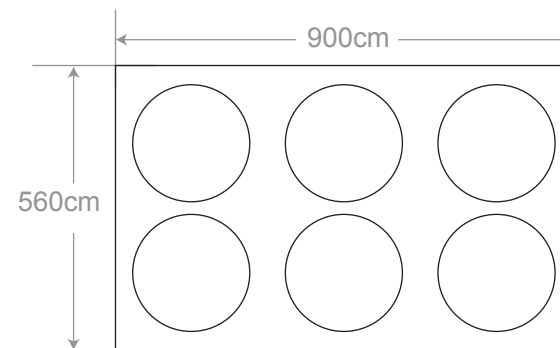
1. The lower edge of the cover is thickened and widened for better leak proofing.
2. The 5L high efficiency erlenmeyer flask is designed with an detachable handle to solve the problem that liquid enters the cavity of the one-piece infected handle as residue. The handle is detachable for flexible application.
3. The designs of 2/3 L flasks are optimized with lengthened neck convenient for customers to grip and can avoid that the hand of the customer is too close to the flask mouth when pouring liquid or holding the flask. Meet the aseptic operating practices of pharmaceutical companies.
4. The bottom area and opening size of the NEST high efficiency erlenmeyer flask are exactly the same as those of the Thomson.



## High Efficient Erlenmeyer Flask VS Conical Erlenmeyer Flask



3L High Efficiency Erlenmeyer Flask



3L Conical Erlenmeyer Flask

### Take 3L high efficient erlenmeyer flask and 3L conical erlenmeyer flask as example:

- For a same shaker, more 3L High Efficiency Erlenmeyer Flask can be placed on to greatly reduce the usage rate of the shaker to reduce the client's R&D costs.
- The amount of foam can be efficiently controlled by low sheer force created by cells (3L high efficiency erlenmeyer flask and 3L conical erlenmeyer flask as example).
- The breathable membrane area of the High Efficiency Erlenmeyer Flask cover is bigger, which enables a higher oxygen flux.
- Equipped with Transfer Cap, more safe and convenient operation.

# High Efficiency Erlenmeyer Flask

NEST



2L PC Erlenmeyer Flasks, High Efficiency



3L PC Erlenmeyer Flasks, High Efficiency



3L Wide Mouth PC Erlenmeyer Flasks  
High Efficiency



5L PC Erlenmeyer Flasks, High Efficiency

## Introduction

High-efficiency, large-volume culture flasks allow cells to show strong viability with large expression amount of proteins in the culture of mammalian cells and insect cells. During the culturing process, the use rate of the shaker is significantly increased, and the survival rate and viability of cells are both dramatically elevated. NEST culture flasks also provide high repeatability, which allows highly inter-batch consistency of cell growth and yield.

## Feature

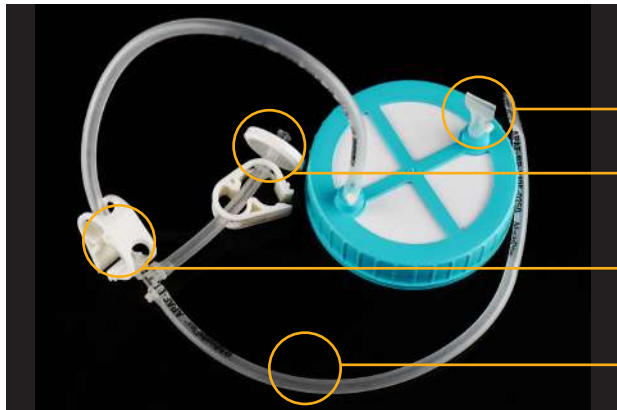
- PC bottle, which meets the USP Class 6 Standard, with high transparency, has strong impact resistance, oxidation resistance and can withstand a high temperature up to 121°C.
- There's a scale made by injection molding on the flask body to facilitate observing the filled liquid volume.
- Sterilized by E-beam, SAL=10<sup>-6</sup>.
- Non-Pyrogenic, DNase/Rnase free.
- Individually packaged in sterile bag.

Cat.No.	Volume ( L )	Cap Style	Size(mm)			/Case
			Height	Bottleneck Diameter	Bottom Diameter	
785101	2	Seal Cap	213.5	67	162	6
785111	2	Vent Filter Cap	213.5	67	162	6
786101	3	Seal Cap	253.5	67	162	4
786111	3	Vent Filter Cap	253.5	67	162	4
787001	5	Seal Cap	285.5	90	230	4
787011	5	Vent Filter Cap	285.5	90	230	4
786501	3L Wide Mouth	Seal Cap	253.5	90	162	4
786511	3L Wide Mouth	Vent Filter Cap	253.5	90	162	4



# 5L Efficient Erlenmeyer Flask (with tube) NEST

Cat.No.	Product Name	Tube Information	Tube Length	/Case
787081	5L Efficient Erlenmeyer Flask (with tube)	TPE Thermoplastic Hose, Hose Diameter: 1/8" ID, 1/4" OD	30 cm + 30 cm	4



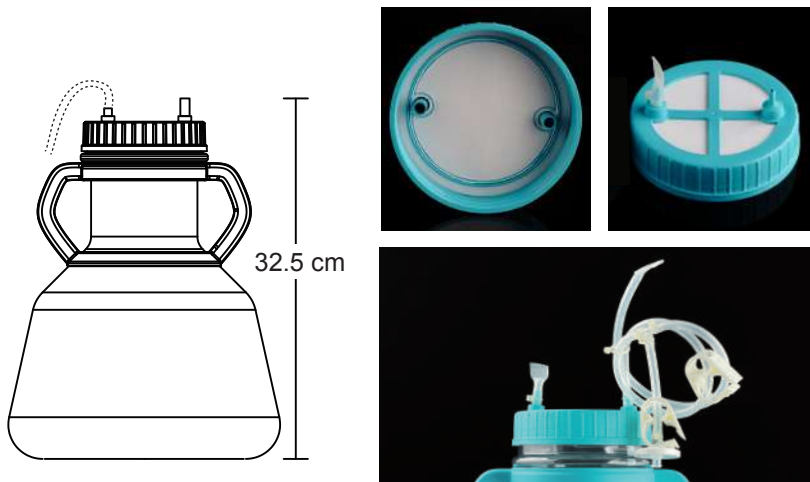
Reserved mouth, have been sealed, for other function demands.

Syringe Filter 0.22um PTFE, 1 pcs

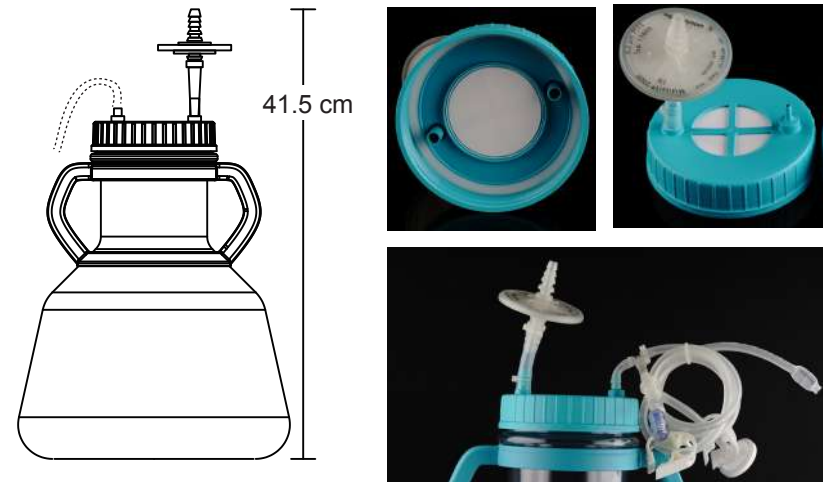
Tube Clamp, 2 pcs

TPE thermoplastic tube, for liquid transfer, can be aseptically welded in conventional environments by professional instrument.

787081 New Product 5L Erlenmeyer Flask with Tube



5L Erlenmeyer Flask and Multi-function Transfer Cap



## Features

- It is pre-installed on the High Efficiency Erlenmeyer Flask, which realizes the closed transfer of liquid and reduces the risk of external contamination during the process of capping and screwing.
- The Transfer Cap comes with a large filter membrane, high oxygen flux, and no external air filter is required to ensure high-density culture of cells, while the overall height is reduced, the applicable range of the shaker is wider, and the utilization rate of the shaker is increased.



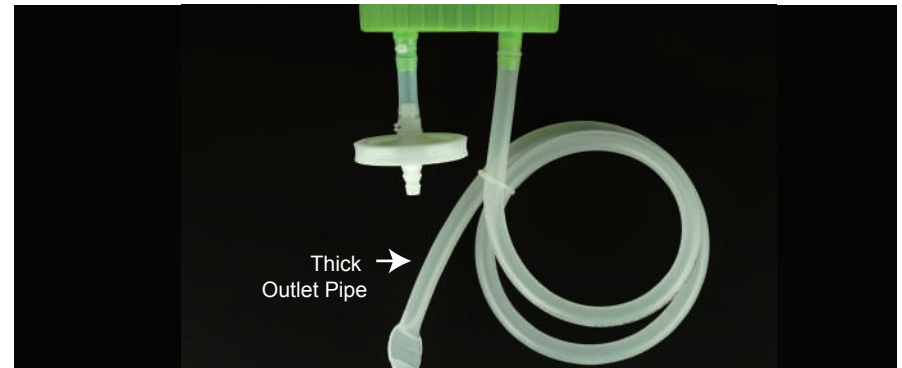
Bi-directional Liquid Transfer Cap



Multifunctional Liquid Transfer Cap



Inverted Liquid Transfer Cap



Inverted Liquid Transfer Cap

## Bi-directional Liquid Transfer Cap

Bi-directional liquid transfer cap is used along with a 2L, 3L or 5L shake flask to connect a liquid inlet tubing with the required device. The liquid transfer is achieved by connection of a peristaltic pump between the erlenmeyer flask and the device. Upon completion of the transfer, the transfer cap can be replaced with a vent cap for culture.

## Multifunctional Liquid Transfer Cap

Unlike the bi-directional liquid transfer cap, the multifunctional transfer cap can be directly placed in an incubator for culture after the liquid transfer is completed. It can reach a large air flux. The sampling part is composed of a sampling nozzle and a one-way valve, which can prevent the liquid from flowing backwards during the sampling process and ensure the aseptic sampling. The liquid inlet tubing is provided with a PTFE needle filter, which solves the issue of liquid remaining in the tubing during the feeding process.

## Inverted Liquid Transfer Cap

The inverted transfer cap is used along with a 2L, 3L or 5L erlenmeyer flask to connect a liquid inlet tubing with the required device. When liquid transfer is required, the liquid is transferred under gravity with the inverted erlenmeyer flask.

## Feature

- Closed system reduces the risks of contamination during liquid transfer.
- The caps and connection points are a one-piece construction, reducing the risks of leakage and media residue.
- A variety of tubing diameters are available and aseptic welding of liquid inlet tubing under normal conditions is supported.
- High-quality materials and smooth inner wall of the tubing provide an excellent transfer performance.
- Sterilized by E-beam, SAL=10<sup>-6</sup>.
- Endotoxin-free, and no ingredients of animal origin.
- Individually packaged in sterile bag.

## Application

- It is applicable to liquid transfer and culture during mass proliferation of bacteria and suspension cells.

Cat.No.	Name	Description of Pipe	Pipe Length (cm)	/Case	
785931	Multifunctional Liquid Transfer Cap for 2L	Thermoplastics Pipes Pipe Diameter: 1/8" ID, 1/4" OD, Pipe Connect: Aseptic welding / Heat-seal	50 cm	4	
786931	Multifunctional Liquid Transfer Cap for 3L		50 cm	4	
787931	Multifunctional Liquid Transfer Cap for 5L, and 3L Wide-mouth		92 cm	4	
785921	Bi-directional Liquid Transfer Cap for 2L		50 cm	4	
786921	Bi-directional Liquid Transfer Cap for 3L		50 cm	4	
787921	Bi-directional Liquid Transfer Cap for 5L, and 3L Wide-mouth		92 cm	4	
785941	Inverted Liquid Transfer Cap for 2L		50 cm	4	
786941	Inverted Liquid Transfer Cap for 3L		50 cm	4	
787941	Inverted Liquid Transfer Cap for 5L, and 3L Wide-mouth		92 cm	4	
785951	Inverted Liquid Transfer Cap for 2L, <b>Thick Outlet Pipe</b>		Thermoplastics Pipes Pipe Diameter: 1/4" ID, 7/16"OD, Pipe Connect: Aseptic welding / Heat-seal	50 cm	4
787951	Inverted Liquid Transfer Cap for 3L, <b>Thick Outlet Pipe</b>			50 cm	4
786951	Inverted Liquid Transfer Cap for 5L, and 3L Wide-mouth, <b>Thick Outlet Pipe</b>			92 cm	4



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