

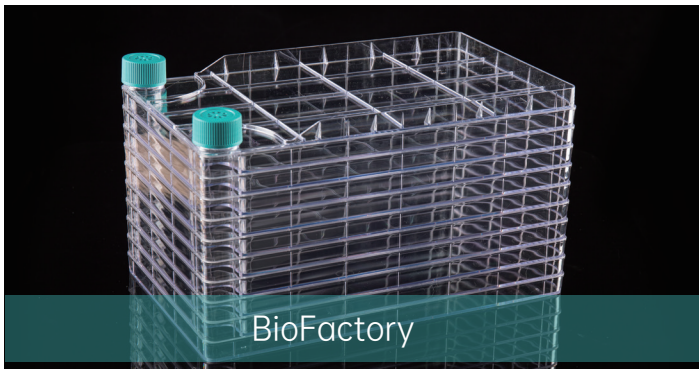
# BioFactory

## Application

- Cell biology research
- Cellular research in the departments of animal and plant sciences and basic medicine
- Large-scale cell culture
- Cell therapy research
- Stem cell research
- Tissue culture
- Biochemistry, Medicine, Microbiology, Genetic engineering
- The production of cell therapy drugs, antibody drugs, vaccines, etc.

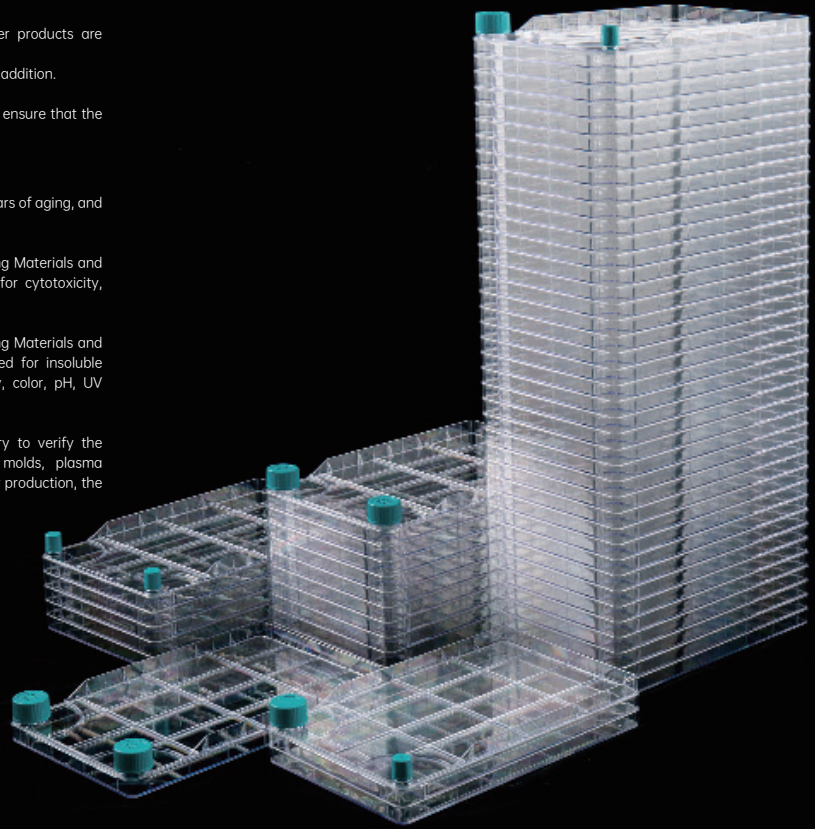
## Main Customers

- Biopharmaceutical factories, pharmaceutical factories, companies in the fields of cell therapy, stem cell tissue engineering, antibody engineering, and medical aesthetics, etc.
- Cell biology laboratories in various colleges, including life science colleges, animal and plant science colleges, veterinary colleges, clinical basic medical colleges, agricultural colleges, etc.
- Third-party medical testing laboratories, experimental technology service companies, etc.



## Strict product quality supervision

**Production environment**--Class 10,000 clean production workshop  
**Production material**--Strictly selected polystyrene conforming to USP Class VI standard  
**Production Process**--Strictly follow SOP for production and quality control  
 NEST Factory is produced in a dedicated 10,000-class clean room, and other products are produced in a 100,000-class clean room.  
 Exquisite product design, high precision forming, ultrasonic welding, no chemical addition.  
**Surface treatment**--Tissue culture treated  
 The surface of the cell culture container is treated with hydrophilic treatment to ensure that the cells adhere to the surface more evenly and stable with better adsorption capacity.  
**Product expiration date verification**  
 The cell growth surface can still meet the cell growth requirements after three years of aging, and there is no positive result of the sterility test.  
**Biosafety testing**  
 Refer to <<State Food and Drug Administration National Standards for Packaging Materials and Containers in Direct Contact with Drugs (Series 6)>>, The product is tested for cytotoxicity, sensitization, intradermal irritation, acute systemic toxicity and hemolysis.  
**Physical and chemical safety testing**  
 Refer to <<State Food and Drug Administration National Standards for Packaging Materials and Containers in Direct Contact with Drugs (Series 6)>>, The products are tested for insoluble particles, ignition residues, metal elements, and dissolved substances (clarity, color, pH, UV absorbance, non-volatile matter, easy oxides, heavy metals).  
**Process testing**  
 In order to ensure the structure and strength of the product, it is necessary to verify the performance of relevant equipment, such as injectionmolding machines, molds, plasma equipment, welding machines, leakage meter and so on before production. After production, the product should be verified for sealing, strength, dropping and transportation.  
**Cell growth test**  
 Cell growth homogeneity experiment.  
**Cell factory validation test**--Sterility and particle guarantee  
 Product initial bioburden test, irradiation dose setting, dose review, aseptic packaging verification, irradiation process verification, product sterility and particle testing.  
**Applicable cells**  
 VERO, MRC-5, 2BS, 293T, L-929 .....  
**Packaging strength verification**  
 The breakage rate is less than 3% after repeated long distance delivery challenges.  
**Sterility Guarantee**--Imported Rhodotron® TT200 electron accelerator from Belgian IBA company, Self-built irradiation center.  
 The irradiation sterilization process has passed ISO 13485 and ISO 11137 quality system certification.



## 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.
- Clear lot number for batch traceability.



Protocols for BioFactory on Shaker



Protocols for BioFactory

## BioFactory

Layer	Cultivation Area(cm <sup>2</sup> )	Dimension (mm)			/Case	Seal Caps	Vent Filter Caps	Cat.No.		
		Length	Width	Height				2 Wide Plug	2 Narrow Plug	1 Wide + 1 Narrow Plug
1	632	335	205	44	8	16	16	771001	772001	773001
2	1264	335	205	61	8	16	16	771101	772101	773101
5	3160	335	205	112	4	8	8	771204	772204	773204
10	6320	335	205	197	6	12	12	771302	772302	773302
40	25280	335	205	712	2	4	4	771403	772403	773403

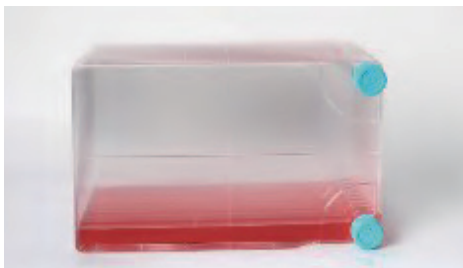
Large mouth design for easy pouring of the medium directly;  
 Small mouth design for easy connection with the feeding systems;  
 Vent Cap : 0.22 μm hydrophobic gas permeable membrane, hindering bacteria and water, can also avoid liquid swelling.

## Guidelines for use

### ● Cell culture



Pour the prepared suspension into the BioFactory™(recommended volume of 150-200 mL per layer).



Turn the BioFactory™ Chamber 90° make sure the liquid at the same horizontal.



Turn the BioFactory™ Chamber 90° so that the filling and venting ports are up (as shown). It is normal for the medium level in the bottom chamber section to be slightly higher.



Gently lower the BioFactory™ Chamber to its normal horizontal incubation position and gently tilt the chamber back and forth until the surface of each chamber is completely covered with medium.



Put the BioFactory™ into the incubator.



Watch operation video

## Precautions

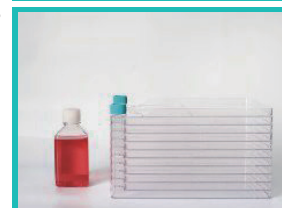
1. Please pre-heat the cell factory and culture medium to the culture temperature: since it takes a long time for a large incubator to reach the set culture temperature, pre-heating the cell factory and culture medium to the culture temperature before starting the experiment may speed up cell attachment 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 alcohol onto the breathable cover, since alcohol may wet the hydrophobic membrane filter and make it impermeable and consequently affect the gas exchange or cause pressure imbalance during operations.

## Cell Harvest

1. After the culture is completed, pour the culture medium out.
2. Wash the factory with the calcium-free 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 mins 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. If there are numerous cells present in the washing solution or the culture layers of the cell factory, it is necessary to wash multiple times or adjust the procedure of cell digestion.
4. Even a slight deviation of the culture temperature may affect the cell harvest rate, so it is required to pay close attention
5. as to whether or not the culture temperature is exactly the set temperature.



## BioFactory™ (Cap with Over cap)



Vented Overcap and Solid Overact can be used directly on the adaptor caps to block dust and bacteria. Vented Overcap is equipped with a 0.22 μm hydrophobic breathable membrane to achieve aseptic ventilation during liquid transfer.

Layer	Description	Comes with Vented Overcap	/Case	Cat.NO.
10	2 Sterile Vented over caps	12	6	771322
40	2 Sterile Vented over caps	4	2	771422

## BioFactory (-20°C Frost Resistance)



The NEST freeze-resistant BioFactory adopts a dispensing technique to glue different layers, thus its freeze resistance is upgraded. It can withstand freezing at -18 ~ -20 °C, and can be repeatedly frozen and thawed three times, with better firmness.

Reminder: Due to the principle of thermal expansion and cold contraction, after the BioFactory uses a sealed cap to fill the culture media and freezes, the bottom or top layer may be slightly deformed. This is an inevitable and normal phenomenon, and there will be no leakage and will not affect normal use.

Layer	Cultivation Area(cm <sup>2</sup> )	Dimension (mm)			Description	Package	Cat.No.
		Length	Width	Height			
10	6320	335	205	201	Double Large mouth, TC , sterile	Double bag package, 1 pc / bag, 6 pcs / case	771392

To customize a NESTBiofactory Closed System Solution that meets your needs, follow these steps:

Generate custom graphics by submitting your request on [www.cell-nest.com](http://www.cell-nest.com)



Step1

- Choose the Layer

1-layer

2-layer

5-layer

10-layer

40-layer

Notes: you may order the transfer cap only

---

Step2

- Choose the cap type

Notes: Compatible with diverse connectors

---

Step3

- Choose the bottle capacity
- Choose the bottle material

1/8" ID, 1/4" OD

1/4" ID, 3/8" OD

Legth (  50    60    80    90    Other )

Inlet and outlet liquid tubing

(  vulcanized silicone tube    P welded tube )

---

Step4

- Choose the bottle capacity
- Choose the bottle material

Membrane (  4.5cm<sup>2</sup>    13.8cm<sup>2</sup>    20cm<sup>2</sup>    Other )

---

Step5

- Choose the connector type

- Luer connector (male and female)
- MPC connector (male and female)
- Heat sealing (no connector)

MPC Connector  
(male/female)

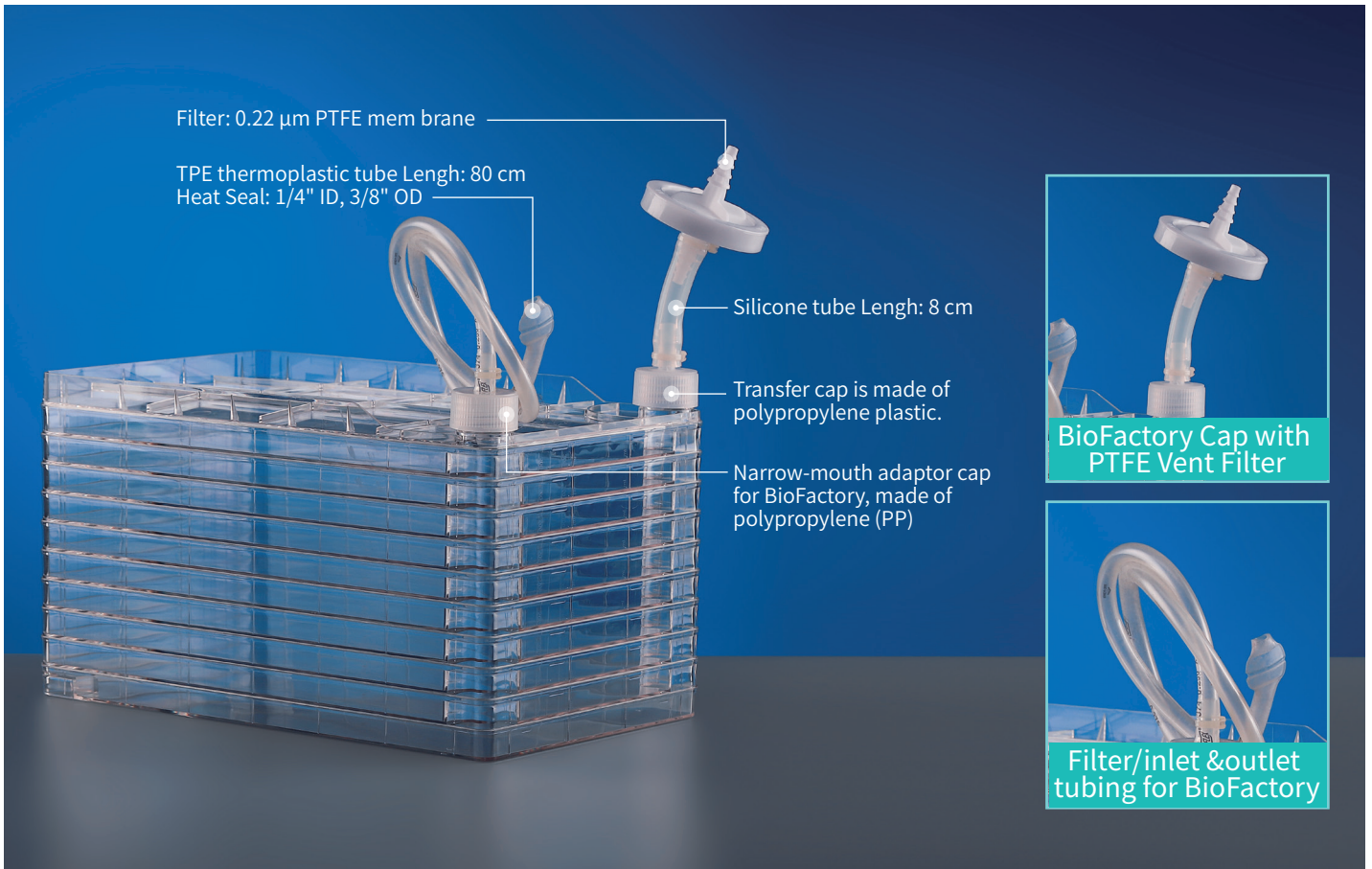
Luer Connector  
(male/female)

Heat Seal  
(no connector)

= Results



Inform our sales or product engineer of your choice if you have completed your selection.



- 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<sup>-6</sup>.
- No endotoxin and no components of animal origin.

Layer	Cultivation Area (cm <sup>2</sup> )	External Liquid Transfer Tube			0.2µm Filter Membrane area	/Case	Cat.No.
		Dia.	Length	Connector			
5	3160	<p>TPE Tube: 1/4" ID, 3/8" OD φ9.53mm φ6.4mm</p>	80 cm	Heat Seal	20 cm <sup>2</sup>	2	C71754-BZD080A
10	6320						C71554-BZD080A