Tofflon

High Efficiency Liquid Nitrogen Storage Tank

EXPERTISE IN BIO-PHARMACEUTICAL

Tofflon
Life Science Co.,Ltd.

Founded in 1993, Tofflon Science and Technology Group Co., Ltd. (SZ:300171) is a pioneering Chinese enterprise in the field of biotechnology, with a rich history of 30 years. With annual sales reaching 5.4 billion RMB in 2022 and a global workforce of 5,500 employees, Tofflon has established over 50 offices worldwide, embodying a globalized business and team.

Tofflon Life Sciences Co., Ltd., the flagship subsidiary within the group, plays a pivotal role in their portfolio. It focuses on the research and development of cutting-edge technologies in the biopharmaceutical and life science industries. As a strategic division Tofflon life science provides one-stop solutions and services that integrate bioprocessing equipment, core consumables like sterile bags, culture media, resins to further enquickly and professionally.

- In the realm of cell therapy, we offer complete solutions for the preparation and production of immune cell pipelines, stem cell pipelines, tumor cell vaccines, and more.
- For gene therapy, we provide overall solutions for the research, development, and industrialization of nucleic acid drugs (mRNA/DNA) and viral vector drugs.
- In the field of biological sample banking, we conduct research and development of automatic sample storage management systems to provide comprehensive solutions for cell seed and tissue samples.
- In the consumables sector, we have developed a complete range of products including disposable bags (culture bags, mixing bags, storage bags), bio-reagents (culture media, cryoprotectants, Ficoll, growth factors), resin (GFC, AC, AEX, CEX, HIC, MMC), filtration (microfiltration, deep filtration, TFF, cassette), and hard packaging materials.
- We also focus on disinfection, offering comprehensive solutions for clean room disinfection, surface and external disinfection, infection control, terminal disinfection, and multi-drug resistant microorganism disinfection, ensuring effective environmental disinfection.

Leveraging Tofflon Group's extensive expertise in design, manufacturing, engineering construction, and after-sales service worldwide, Tofflon Life Sciences Division is committed to serving the biopharmaceutical industry with enhanced speed and professionalism.

High Efficiency Liquid Nitrogen Storage Tank

The high efficiency liquid nitrogen storage tank provides the gas-phase or liquid-phase cryogenic environment for biological samples. Low cost, large storage capacity, low liquid nitrogen consumption, simple deployment, wide compatibility and adaptability. This high efficiency liquid nitrogen storage tank comes with a temperature and liquid level monitoring and control system in the tank, which provides operation log recording, authority management, etc., the data can be connected to the SCADA system, and can be connected to the CLC-BIS informatization management system and integrated into a sample information management platform with ultra-low temperature refrigerator, automatic storage equipment, etc.

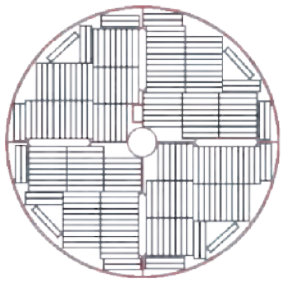
Product features

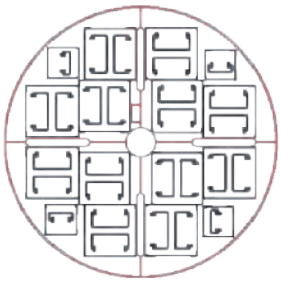
- Compatible with the storage methods of liquid phase and gas phase.
- An external screen to display all parameters in the tank.
- Favorable temperature uniformity: The vacuum insulated stainless steel box structure and the double-layer vacuum insulation design ensure the thermal insulation performance, the temperature difference from the top to the bottom of the cabinet is very small, in the case of gas-phase storage, the temperature in the box is lower than -180°C.
- Stable lid-opening temperature: The excellent design of the lid and the neck ensures that the temperature stability can be maintained inside the cabinet even if it is a long time after the lid is opened by reducing the volatilization rate of liquid nitrogen to ensure safety of the sample. The temperature in the tank is kept lower than -150℃ even if the lid is open for 48 hours.
- Advanced temperature monitor: The microprocessor based temperature monitoring system has a temperature sensor with the accuracy of ± 1℃ to monitor the temperature in real time. The alarm point can be set, and the alarm mute option is available. Standard remote alarm contact and serial communication system.
- Automatic liquid nitrogen filling and liquid level monitoring system: The liquid level monitoring system can be used to monitor the liquid level in real time and automatically make up the liquid nitrogen; the self-diagnosis function ensures the reliable operation of the sensor. The controller can display: high temperature, low temperature, liquid level, liquid nitrogen consumption.
- One-click defogging function, providing sample identification and placement.
- Hot gas bypass function: When filling the liquid nitrogen, the nitrogen in the pipeline is automatically discharged to reduce the effect on the internal temperature of the tank and secure the safety of stored samples.
- The built-in self-test device can work in both automatic and manual modes.
- The control system is programmed and controlled through the display screen, which is simple and convenient.
- The system allows the operator to detect the liquid-phase or gas-phase storage.

Technical parameters

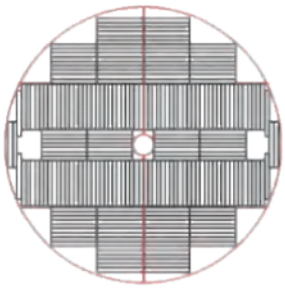
Parameter	Model			
	TYDD-370-320P	TYDD-460-320P	TYDD-800-445P	TYDD-800-445R
Storage capacity	Storage capacity of 1.2mL & 2.0mL tube 15,600 vials	Storage capacity of 1.2mL & 2.0mL tube 19,500 vials	Storage capacity of 1.2mL & 2.0mL tube 39,200 vials	Storage capacity of 1.2mL & 2.0mL tube 42,000 vials
Lifting device	Optional			
Storage environment	Gas-phase liquid nitrogen, top layer ≤-190°C			
Inner diameter (mm)	320		445	
Outer diameter (mm)	815		1,090	
Total height (mm)	1,400	815	1,605	
Net weight (kg)	258	815	355	358
Full-load weight (kg)	559	815	1,004	1,007
Static liquid nitrogen evaporation rate	≤5L/d	≤5L/d	≤7L/d	≤7L/d
Liquid nitrogen supply pressure	0.5bar~1.0bar			
Power supply	230±10%V AC,50/60Hz,10A			

Layout 370/460

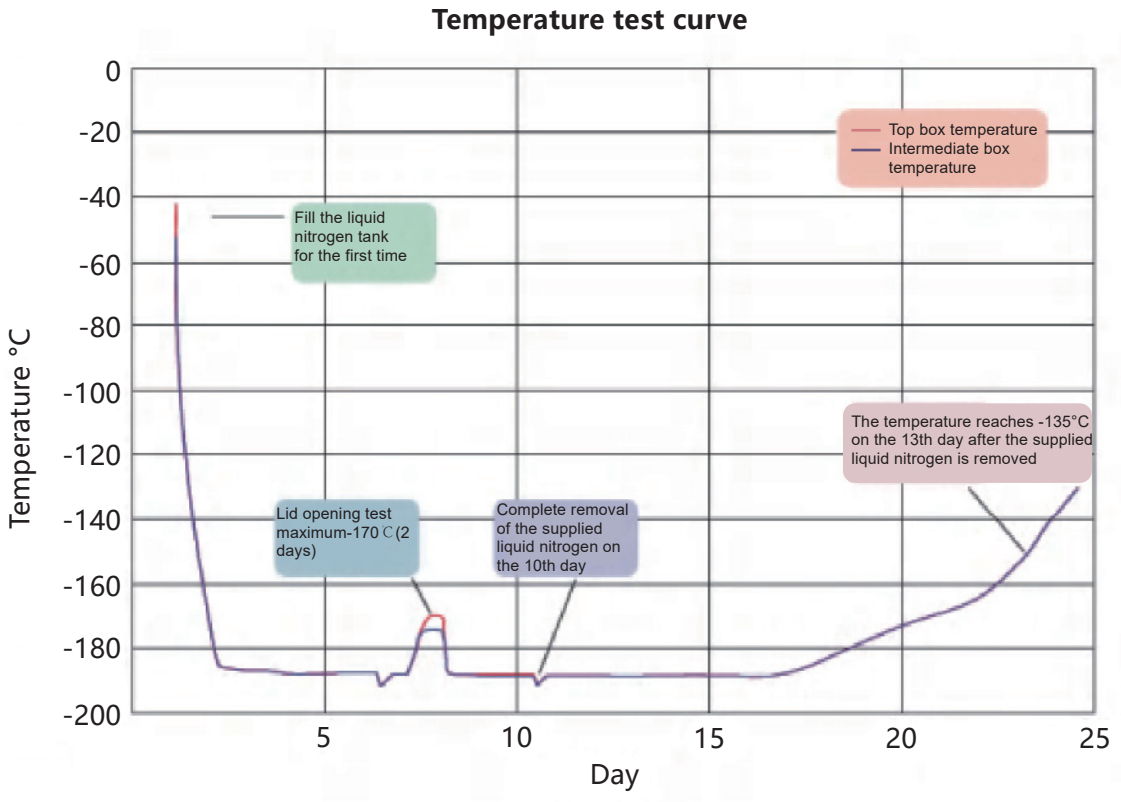




Layout 800



Layout of blood bag rack/square racks



Optional accessories

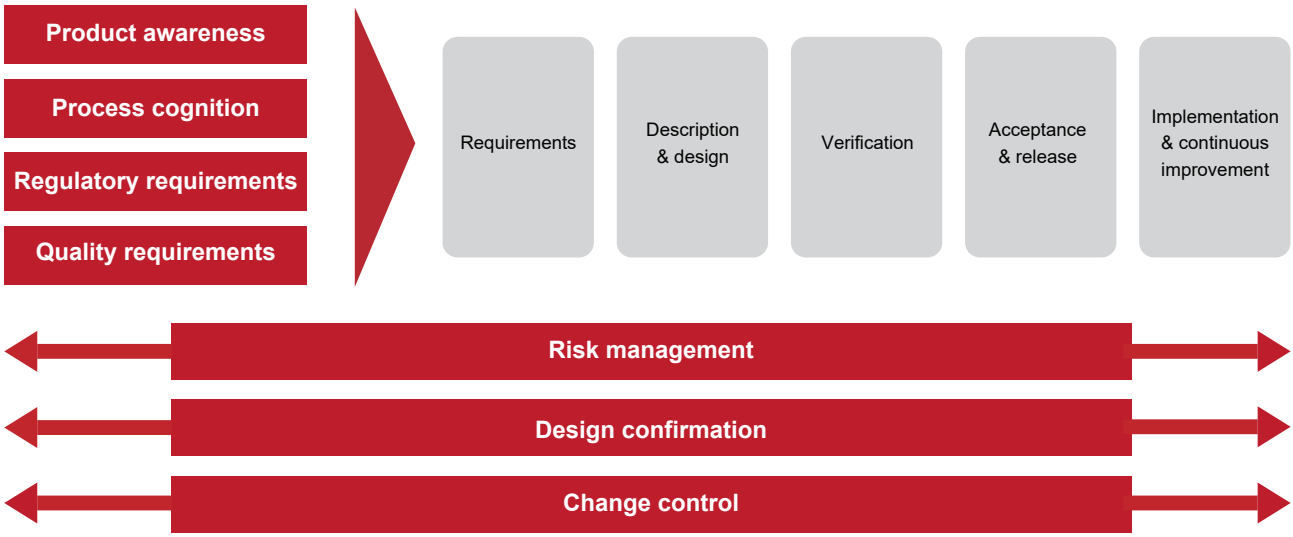
No.	Name	Picture	Description	Maximum system capacity(number of cryogenic racks)
1	Square racks		25 (5*5)-grid cryogenic vial and cryogenic rack, 14 layers	16
2	Square racks		100 (10*10)-grid cryogenic vial an cryogenic rack, 14 layers	24
3	Blood bag racks		50 mL blood bag box blood bag rack, 7 layers	241
4	Blood bag racks		250 mL blood bag box blood bag rack, 4 layers	192

Project Management

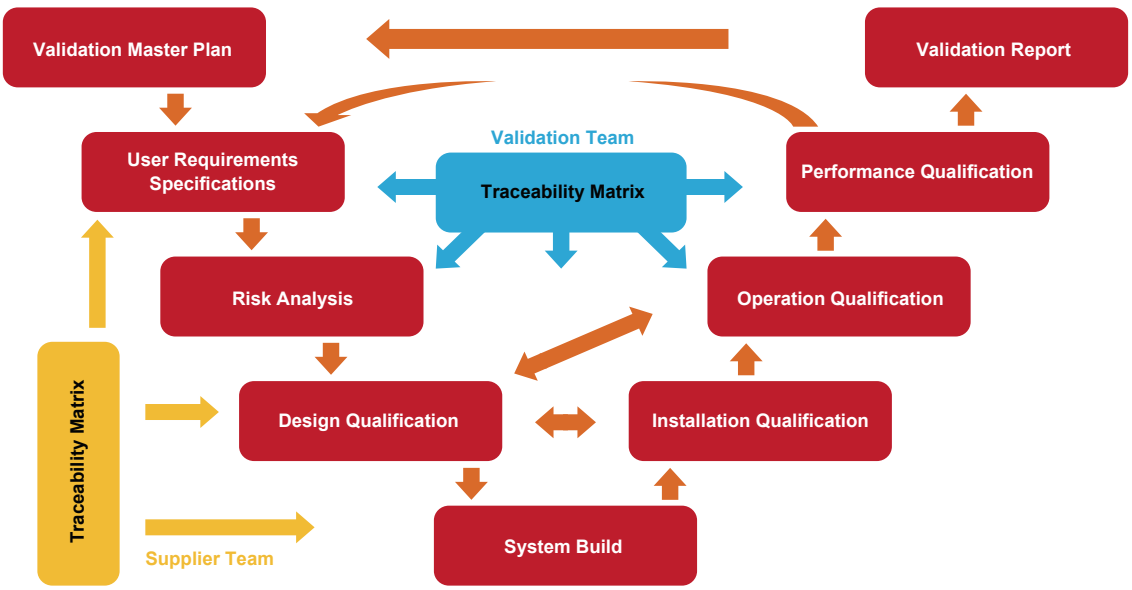
Three main factors determine the success of the project. Our organizational mode has been making constant update and improvement to enable you to fully achieve these goals. Through cooperation with us, you can minimize the direct resources required to manage the selection, purchase, installation, startup and verification of new production equipment.

- Reliable quality
- Short cycle
- Focus on cost

Good Engineering Practice - GEP

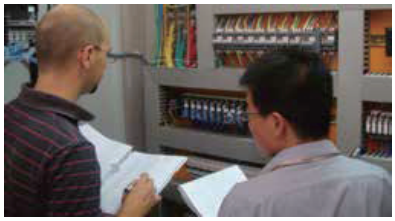


Validation Support



Verification Document System

- Complete document system
- Strict quality guarantee process
- Comply with cGMP confirmation scheme
- Ensure the stability and reliability of product quality



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