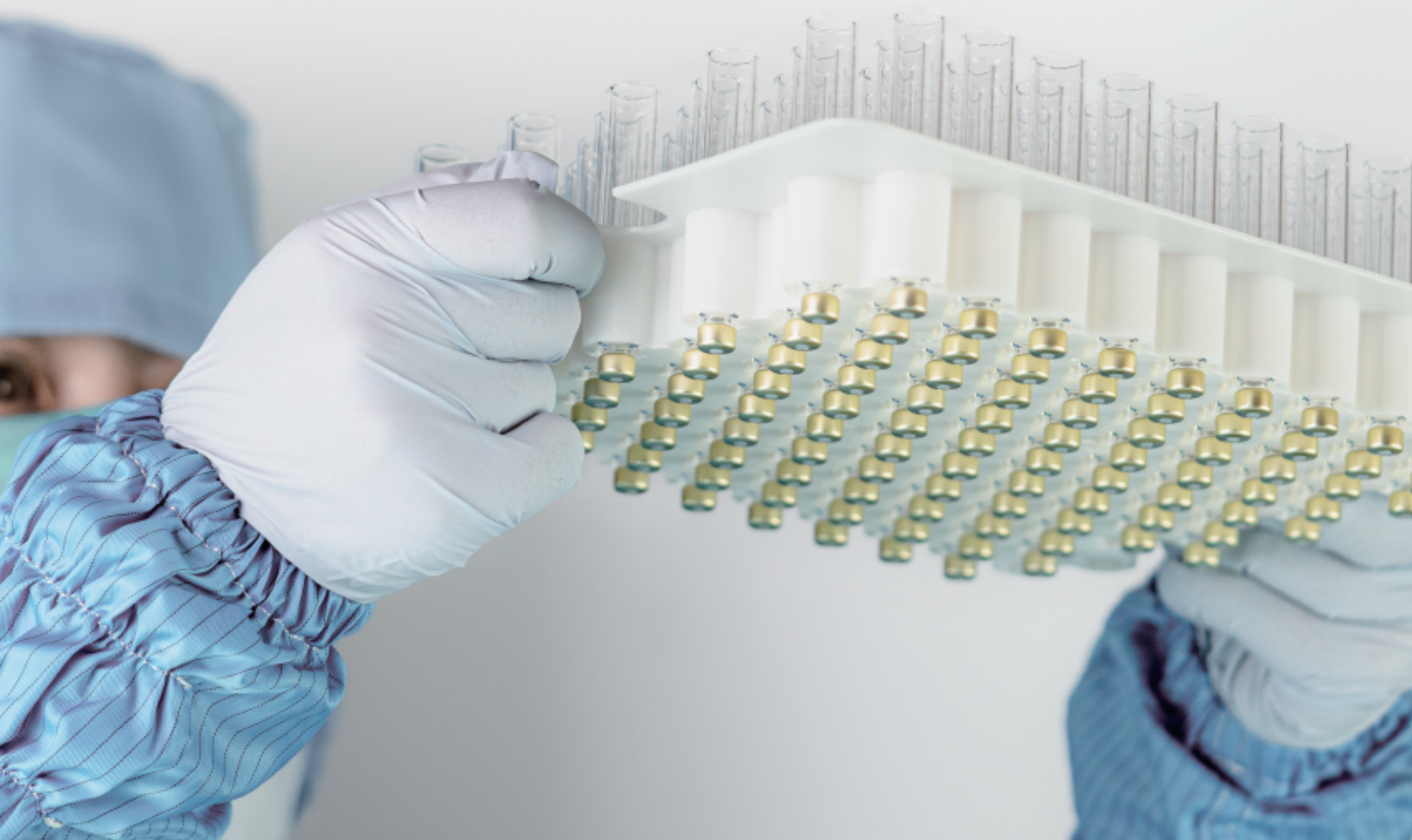


NEST Drug-Device Combo: Smarter, More Targeted Treatment
See what it feels like when innovation is tailored to your needs

NEST



PHARMACEUTICAL DELIVERY SOLUTIONS



www.cell-nest.com

TABLE OF CONTENTS

NEST Drug-Device Combo: Smarter, More Targeted Treatment

Glass Series

RTU Cartridges.....03

Nasal Spray Assembly 07



Launching Soon

Glass Prefilled Syringe Assembly 10

Luer Lock Prefilled Glass Syringe 12



COP/COC Series

Prefillable Vial.....14

Prefilled Syringe.....17



Related Equipment / Others

Filling and Stoppering Machine 21

Stoppering Machine.....22

Quality Assurance 23



ABOUT US

10600 m²

Class 100,000
Cleanshop

3600 m²

Class 10,000
Cleanshop

2300 m²

Pen Injector
Controlled
Workshop

20⁺

Professional
Certifications
and Honors



— Deepening Expertise in Precision Dosing Empowering Global Advancement of Drug-Device Combinations

As the global incidence of chronic diseases continues to rise, the drug delivery device market is experiencing steady growth. Pharmaceutical packaging materials and drug delivery technologies have become key drivers in the intelligent transformation of the healthcare industry.

Wuxi NEST Biotechnology Co., Ltd. has been strategically positioned in the pharmaceutical packaging materials sector since 2018. The company has established a comprehensive R&D, production, sales, and quality management system, focusing on two core drug delivery methods—injection and inhalation. NEST provides global pharmaceutical partners with one-stop drug delivery solutions that comply with cGMP standards.

The company operates 10,600 m² of Class 100,000 cleanrooms, 3,600 m² of Class 10,000 cleanrooms, and 2,300 m² of high-quality controlled production areas, strictly adhering to GMP standards for standardized manufacturing. Leveraging mature processes and professional management, NEST has obtained multiple authoritative certifications, including ISO 9001, ISO 13485, ISO 11137, FDA, and CE. The company holds medical device licenses in multiple countries and ensures product quality through third-party authoritative monitoring across the entire production process.

NEST-RTU

The Premium Choice for Pharmaceutical Packaging Materials

●● Raw Material Selection

The shelf life of a drug depends on material purity, chemical inertness, and the barrier properties of its container. With its in-house mold center, NEST continuously develops new solutions and refines its processes.

Properties	Glass	COC	COP	PP
Gas Permeability	G	M	M	M
Water Vapor Permeability	G	G	G	M
Transparency after Steam Sterilization	G	M+	G	P
Transparency after EO Sterilization	G	G	G	P
Transparency after Gamma Sterilization	G	M+	G	P
pH Change of the Drug	P	G	G	G
Brittleness	P	M	G	G
Precision Moldability / Processability	P	G	G	G
Disposal / Incineration Characteristics	P	G	G	G
High Purity	G	G	G	M

GOOD: G Moderate: M Poor: P

●● Quality Control

Each production line is equipped with a dedicated online camera inspection system, enabling fully automated, 360-degree monitoring and 100% inspection of all products.





Cartridge Assembly

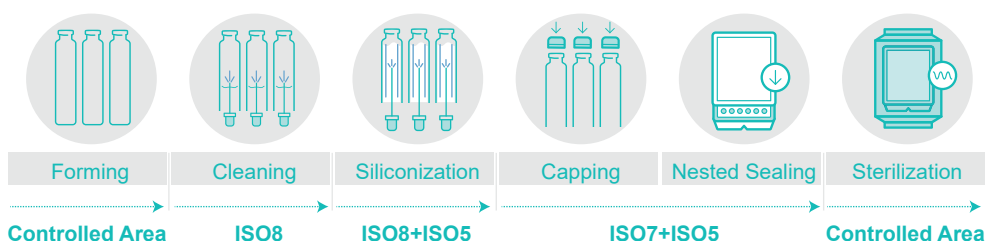
RTU Cartridges

●● Product Qualifications

USA DMF No. 42439

Cartridges, as a new generation of injectable packaging, function like standard containers for drug storage. During use, they are paired with a pen injector and needle. The drug is pre-filled in the cartridge, which is inserted into the pen injector. When activated, the plunger is pushed forward, delivering the medication through the needle into the body.

●● High-quality Controlled Manufacturing Processes and Production Environment



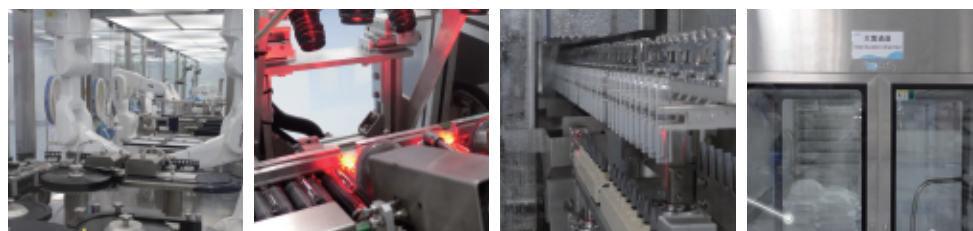
●● Product Introduction

Product Application

Widely used for the storage and injection of insulin, GLP-1 analogs, hormones, and other drugs.



Product Advantages



- Advanced fully automated production lines with localized ISO Class 5 environment.
- 100% multi-angle, high-precision CCD inspection ensures product quality.
- Proprietary cross-linked siliconization with strong silicone bonding, stable gliding performance, and low drug residue.
- One of the first in China to use moist heat sterilization, ensuring more thorough sterilization and higher product safety.



Among the first moist heat sterilized cartridges in China

Zero dead spots, Zero residue, Zero contaminants, Zero risk

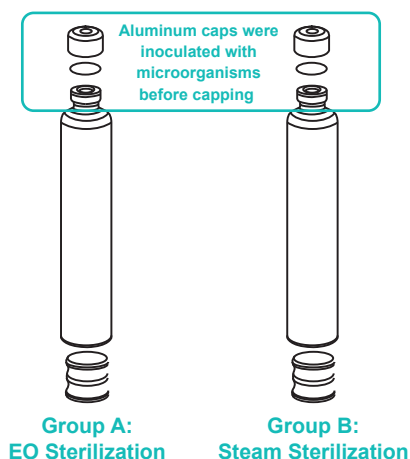
Microbial Challenge Test

Method: Aluminum caps were soaked in microorganisms before capping, then divided into two groups for ethylene oxide sterilization and moist heat sterilization. After removing the caps, sterility was tested for 14 consecutive days following the 2025 Chinese Pharmacopoeia, Volume IV, Section 1101 sterility test method.

Culture Days	Day1	Day2	Day3	Day4	Day5	Day6	Day7	Day8	Day9	Day10	Day11	Day12	Day13	Day14
EO Sterilization	-	+	+	+	+	+	+	+	+	+	+	+	+	+
Steam Sterilization	-	-	-	-	-	-	-	-	-	-	-	-	-	-

"-" indicates no colony growth; "+" indicates colony growth

Test Results: Ethylene oxide sterilization struggled to penetrate the aluminum caps and eliminate microorganisms in the gap between the cap and cartridge, while moist heat sterilization achieved more thorough microbial killing.



Siliconization Process



Cross-linked Siliconization

Cross-linked Siliconization | Performance Upgrade + Dual Effect of Pyrogen Removal

NEST cartridges use a proprietary cross-linked siliconization process. High-temperature baking converts free silicone oil molecules into a fixed state, forming a uniform and stable cross-linked silicon layer on the inner wall. This significantly enhances product performance while effectively removing pyrogens.

The cross-linked silicon layer provides four key benefits:

- **Enhanced safety:** Silicone oil is firmly bound through chemical bonds, greatly reducing shedding and particles, lowering drug contamination and patient risk.
- **Long-lasting performance:** Lubrication remains stable throughout the product's shelf life, ensuring consistent plunger feel and accurate dosing from the first to the last injection.
- **Improved compatibility:** Reduced free silicone oil makes it more suitable for high-value, sensitive protein and biologic drugs.
- **Low drug residue:** The smooth protective layer minimizes contact and adhesion between the drug and glass surface, significantly reducing residual liquid.

Advanced Forming Process



Advanced Forming Process

Stable cartridge dimensions, consistent quality

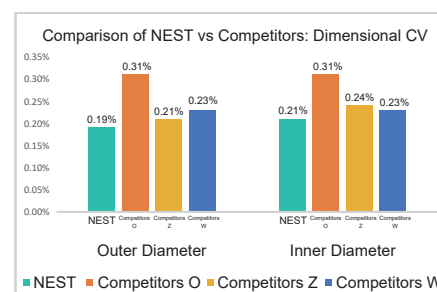
NEST selects high-quality international borosilicate glass tubes and uses advanced Italian Spami forming equipment and processes to ensure precise, consistent cartridge dimensions.

Dimensional Stability Comparison Test

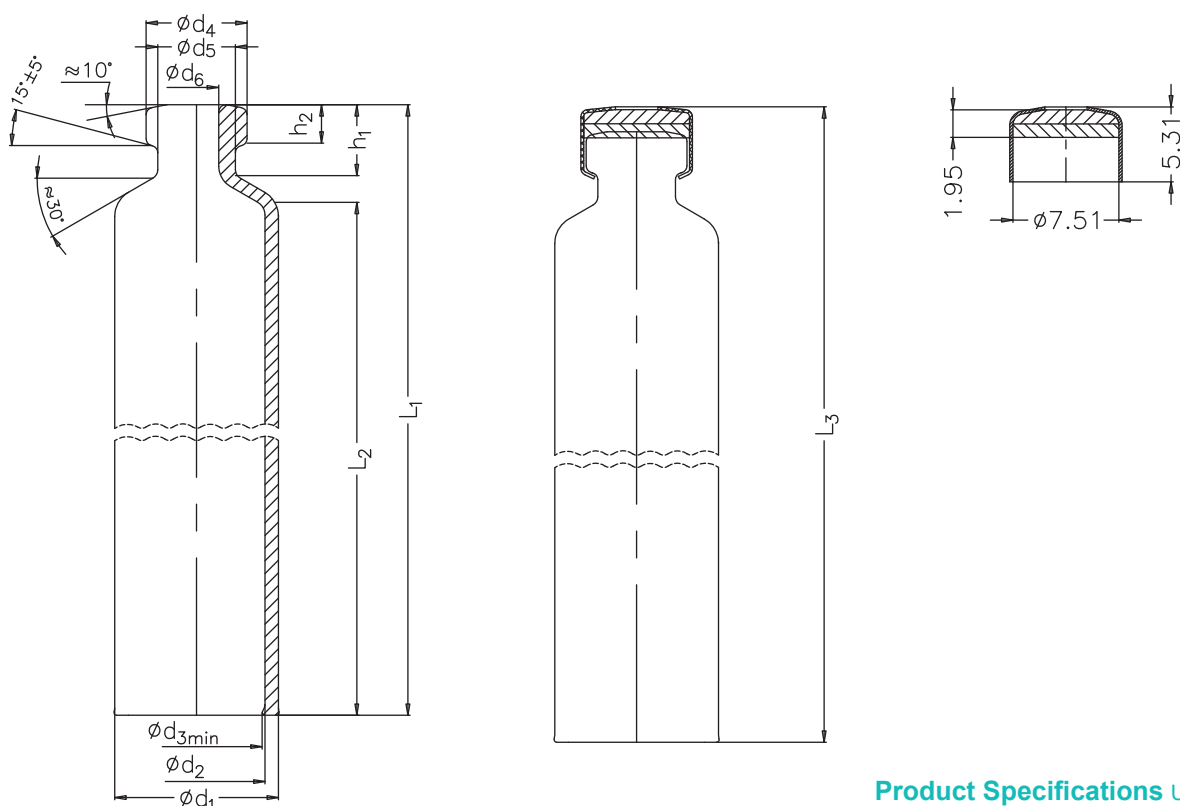
Method: Thirty NEST cartridges and thirty cartridges from three competitors were measured for inner and outer diameters, and the coefficient of variation (CV) was calculated.

Evaluation: CV is the key indicator of dimensional stability—the smaller the CV, the better the consistency and stability.

Conclusion: NEST cartridges demonstrate superior dimensional stability compared with three similar domestic and international competitors.

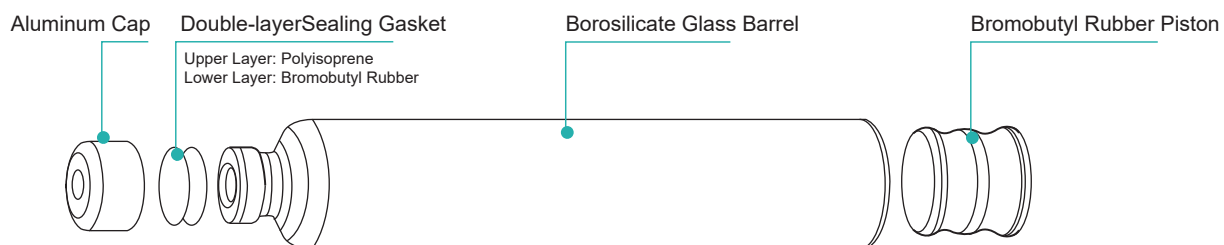


※NEST offers products sterilized by either moist heat or ethylene oxide



Product Specifications Unit (mm)

Volume(mL)	ϕd_1	ϕd_2	ϕd_{3min}	ϕd_4	ϕd_5	ϕd_6	h_1	h_2	L_1	L_2	L_3
1.5	11.6	9.65	9.35	7.15	5.5	3.15	5.0	2.9	42.5	35.7	44.3
2.0	11.6	9.65	9.35	7.15	5.5	3.15	5.0	2.9	46.0	39.2	47.8
3.0	11.6	9.65	9.35	7.15	5.5	3.15	5.0	2.9	62.3	55.5	64.1



Product Components

Component	Material Description	Regulatory Compliance
Glass Barrel	Borosilicate Glass	ISO 720/ISO 4802-1/ISO 13926-1 ISO 11608-3/USP<660> YBB00132004
Aluminum Cap Gasket	Aluminum Polyisoprene, Bromobutyl Rubber	ISO 8872/ISO 13926-3/ISO 11608-3/ISO 8871-1 ISO 8871-4/USP<232>/USP <381> YBB00162004
Piston	Rubber	ISO 13926-2/ISO 11608-3 ISO 8871-1/ISO 8871-4/USP <381> YBB00162004
Silicone Oil	Silicone Oil	Meets the requirements of the USP-NF and EP monographs for dimethyl silicone oil
Nest Box /Plate	PP	ISO 21881/9003-07-0

※Note: NEST can provide stoppers

●● Storage and Transport Recommendations

Packaging Protection

Use appropriate packaging materials and protective measures to ensure secure sealing.

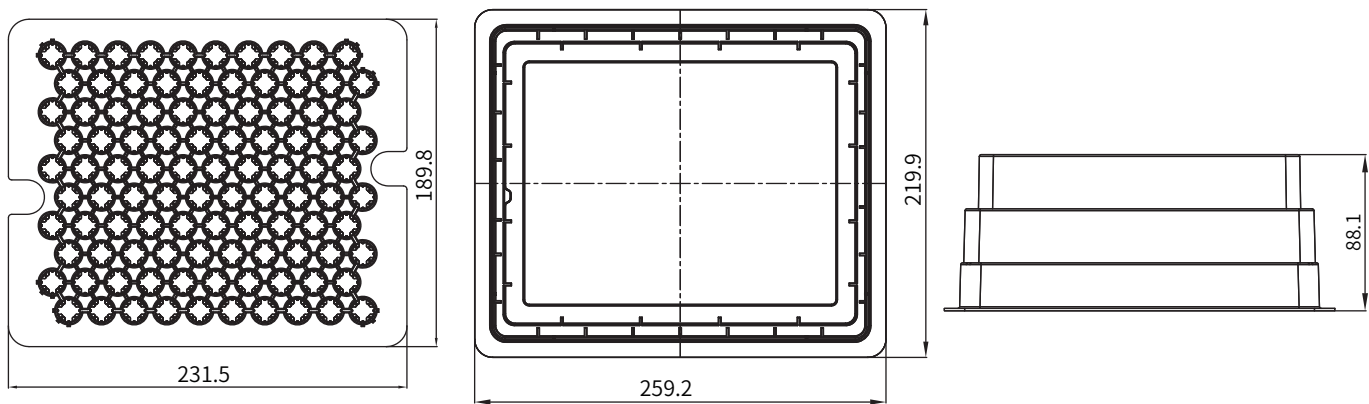
Storage Environment

Avoid exposure to high temperature and humidity, and store separately from toxic, hazardous, or contaminating substances.

Transport Protection

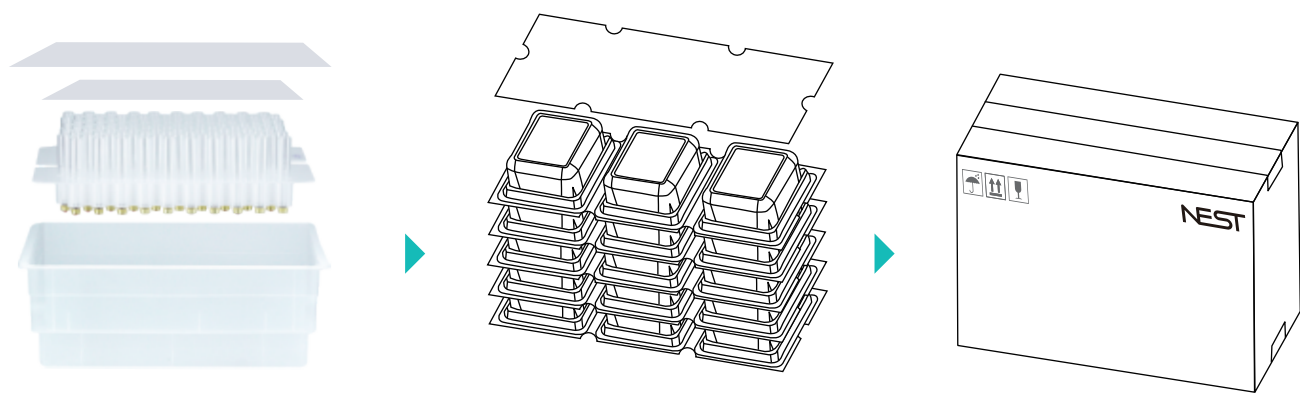
Avoid severe vibration, impact, and excessive pressure to maintain product integrity and sterility.

RTU Nest Plate/Box Unit (mm)



RTU Pre-sterilized, Ready-to-use Packaging

No cleaning or sterilization required, pyrogen-free, compatible with automated unpacking and filling. Nest box packaging prevents bottles from contacting each other, reducing breakage.



RTU Cartridges

Specification	Pcs/pk	Pks/case	Cat.No.
3.0mL	100	15	217232
2.0mL	100	15	Coming Soon
1.5mL	100	15	Coming Soon

RTU Cartridge Accessories

Name	Pcs/bag	bags/case
Piston	100	15
Piston	7000	1

Prefilled Nasal Spray Assembly



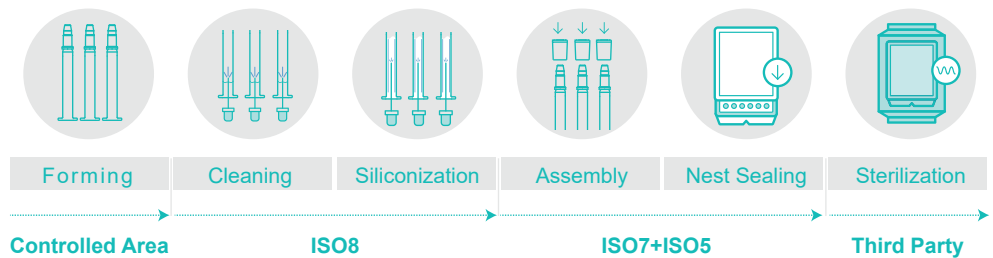
●● Product Qualifications

China CDE: B20230001072 (Status A, activated)
USA DMF No.40922

Patent: CN116077816B
US12311389B2
EP23861667.6

Single-use prefilled spray devices allow long-term, contamination-free storage of vaccines or drugs, eliminating the need to transfer the liquid into a syringe and avoiding drug loss or waste from device residue. During use, the liquid is converted into uniform fine mist particles and sprayed onto patient mucosa (e.g., nasal or oral), achieving the intended drug delivery.

●● High-quality Controlled Manufacturing Processes and Production Environment



●● Product Introduction

Product Advantages



The spray nozzle features a protective cap with an internal seal to ensure tight sealing and prevent contamination



Precision turbine design atomizes the liquid into 10–70 µm droplets



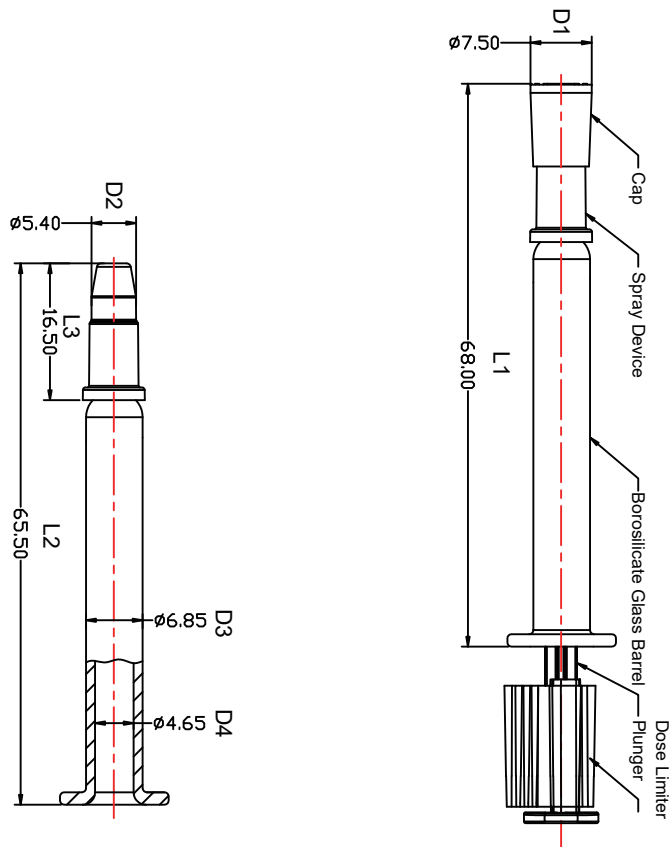
A precise dose-limiting mechanism ensures uniform dosing



Auto-disable feature prevents reuse



Manufactured in GMP-controlled cleanrooms from injection molding through final packaging



Product Specification Unit (mm)

Specification	L1	D1	L2	L3	D2	D3	L2
0.5mL	68.00	φ7.50	65.50	16.50	φ5.40	φ6.85	φ4.65



Product Components

Component	Material Description	Regulatory Compliance
Glass Barrel	Borosilicate Glass	YBB00062004、ISO11040-4
Nasal Spray Device	PC	/
Cap	Polyisoprene	YBB00102004
Plunger	PP	/
Limiter	PP	/
Pison	Halobutyl Rubber	YBB00082004、ISO11040-5
Nest Box	PS	ISO11040-7
Nest Plate	PP	ISO11040-7
Silicone Oil	Silicone Oil	USP-NF and EP monographs for dimethyl silicone oil

※Note: NEST can provide plungers, dose limiters, and pistons

●● Storage and Transport Recommendations

Packaging Protection

Use appropriate packaging materials and protective measures to ensure secure sealing.

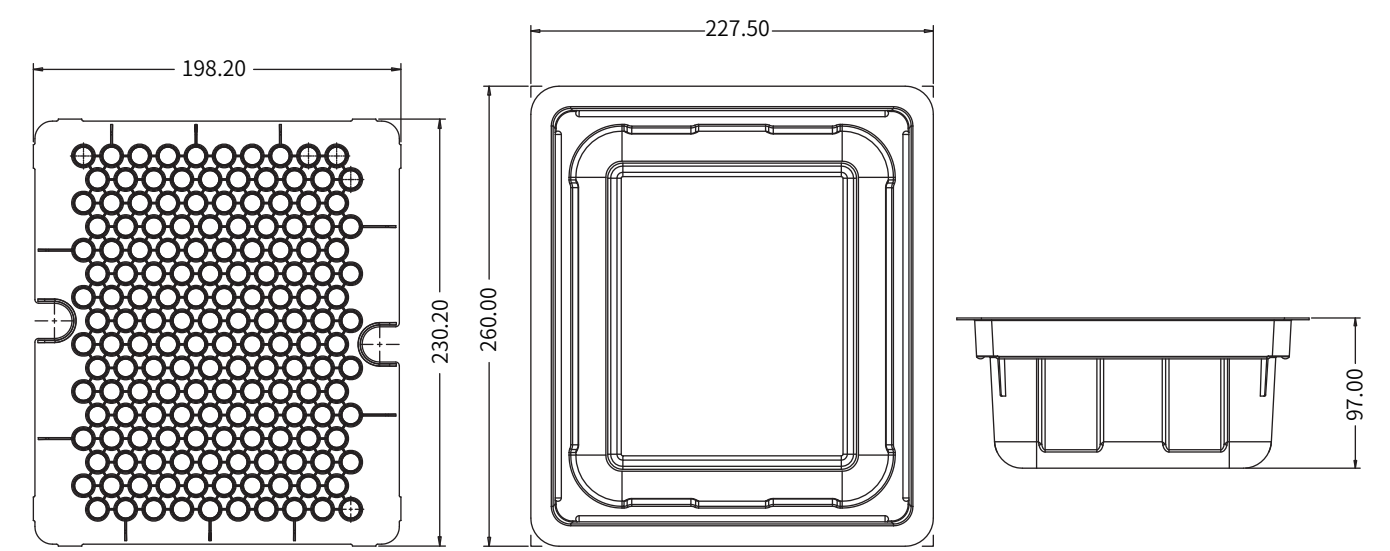
Storage Environment

Avoid exposure to high temperature and humidity, and store separately from toxic, hazardous, or contaminating substances.

Transport Protection

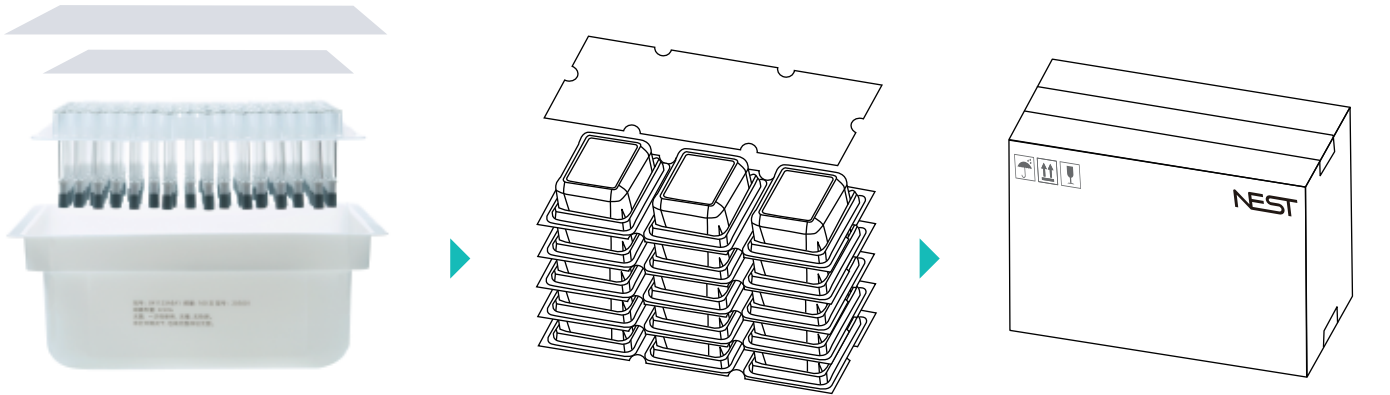
Avoid severe vibration, impact, and excessive pressure to maintain product integrity and sterility.

RTU Nest Box/Plate Unit (mm)



RTU Pre-sterilized, Ready-to-use Packaging

No cleaning or sterilization required, pyrogen-free, compatible with automated unpacking and filling. Nest box packaging prevents bottles from contacting each other, reducing breakage.



Prefilled Nasal Spray Assembly

Specification	Pcs/pk	Pks/case	Cat.No.
0.5mL	160	15	205101

Accessories

Name	Pcs/bag	Bags/case
Plunger	10000	1
Dose Limiter	5000	2
Piston	10000	1

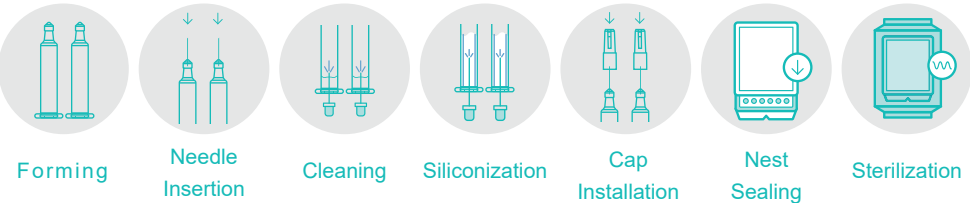
Glass Prefilled Syringe Assembly

COMING
SOON



Prefilled syringes with needles are an integrated drug delivery system combining the medication, syringe, and needle in one unit, ready for immediate use upon opening without the need for drawing up the drug or changing the needle.

High-quality Controlled Manufacturing Process



Product Introduction

Product Applications



- Chemical drug formulations (antibiotics, anesthetics, emergency medications, etc.)
- Vaccines and standard biologics (inactivated vaccines, immunoglobulins, etc.)
- Ophthalmic and local drug formulations (intraocular injections, ophthalmic therapeutics, etc.)
- Peptide hormones, contrast agents, and diagnostic reagents

Product Advantages

Syringes

- Available in three sizes: 1.0 mL, 1.0 mL slim, and 2.25mL
- Made of imported borosilicate glass to ensure drug stability
- Ready-to-use design with pre-attached needle for low contamination
- Fully automated production with minimal particle load
- 100% final product inspection for consistent quality
- Full lifecycle validation for complete traceability



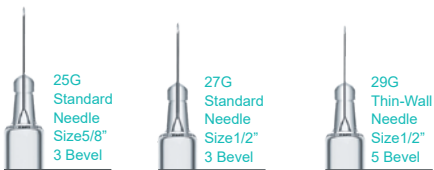
Needle Caps

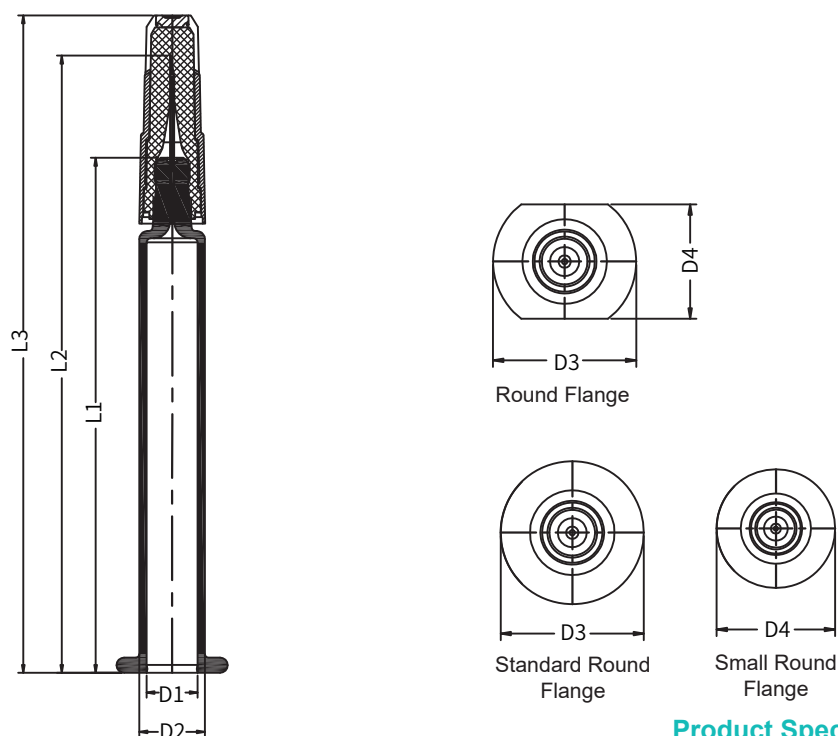
- Made of rubber compliant with YBB00082004, ensuring needle cleanliness
- Available in hard and soft caps for effective sealing and protection



Needles

- Available in various lengths, diameters, and bevel types, made of stainless steel
- Standard and thin-wall options to meet different customer needs





Product Specifications Unit (mm)

Volume (mL)	Needle Type	L1	L2	L3	D1	D2	D3	D4
1.0 Standard	25G(5/8")	46.7	62.5	68.7	φ8.65	φ10.85	φ17.75	φ14.7
1.0 Standard	27G(1/2")	46.7	59.4	63.9	φ8.65	φ10.85	φ17.75	φ14.7
1.0 Standard	29G(1/2")	46.7	59.4	63.9	φ8.65	φ10.85	φ17.75	φ14.7
1.0 Long	25G(5/8")	64.0	79.8	85.7	φ6.35	φ8.15	φ13.8	φ11.0
1.0 Long	27G(1/2")	64.0	76.7	80.9	φ6.35	φ8.15	φ13.8	φ11.0
1.0 Long	29G(1/2")	64.0	76.7	80.9	φ6.35	φ8.15	φ13.8	φ11.0
2.25	25G(5/8")	65.4	81.2	87.3	φ8.65	φ10.85	φ17.75	φ14.7
2.25	27G(1/2")	65.4	78.1	82.5	φ8.65	φ10.85	φ17.75	φ14.7
2.25	29G(1/2")	65.4	78.1	82.5	φ8.65	φ10.85	φ17.75	φ14.7

Product Components



Component	Material Description	Regulatory Compliance
Glass Barrel	Borosilicate Glass	YBB00062004 / ISO 11040-4
Stainless Steel Needle	Austenitic Stainless Steel	YBB00092004 / GB 18457 / ISO9626
Piston	Halobutyl Rubber	YBB00072004 / YBB00082004 ISO 11040-5
Needle Hard Cap	PP + Polyisoprene Rubber	YBB00102004 USP 381
Needle Soft Cap	Polyisoprene Rubber	YBB00102004 USP 381
Plunger	PC	ISO 11040-4
Flange	PC	ISO 11040-4
Nest Box	PS	ISO 11040-7
Nest Plate	PP	ISO 11040-7

※Note: NEST can provide pistons, plungers, and flanges

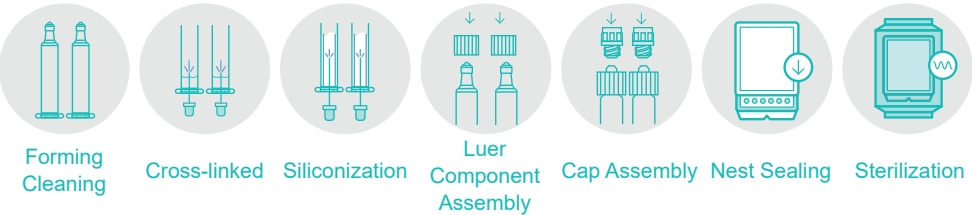
Glass Prefilled Syringe Assembly

COMING
SOON



Luer lock prefilled glass syringes feature a precision Luer lock connection for secure attachment and leak-proof sealing, eliminating the risk of loosening. Made of high-quality glass, they are compatible with various biopharmaceuticals, and the prefilled design ensures accurate dosing and ready-to-use convenience.

High-quality Controlled Manufacturing Process



Product Introduction

Product Applications



- Chemical drug formulations (antibiotics, anesthetics, emergency medications, etc.)
- Vaccines and standard biologics (inactivated vaccines, immunoglobulins, etc.)
- Ophthalmic and local drug formulations (intraocular injections, ophthalmic therapeutics, etc.)
- Peptide hormones, contrast agents, and diagnostic reagents

Product Advantages

Syringes

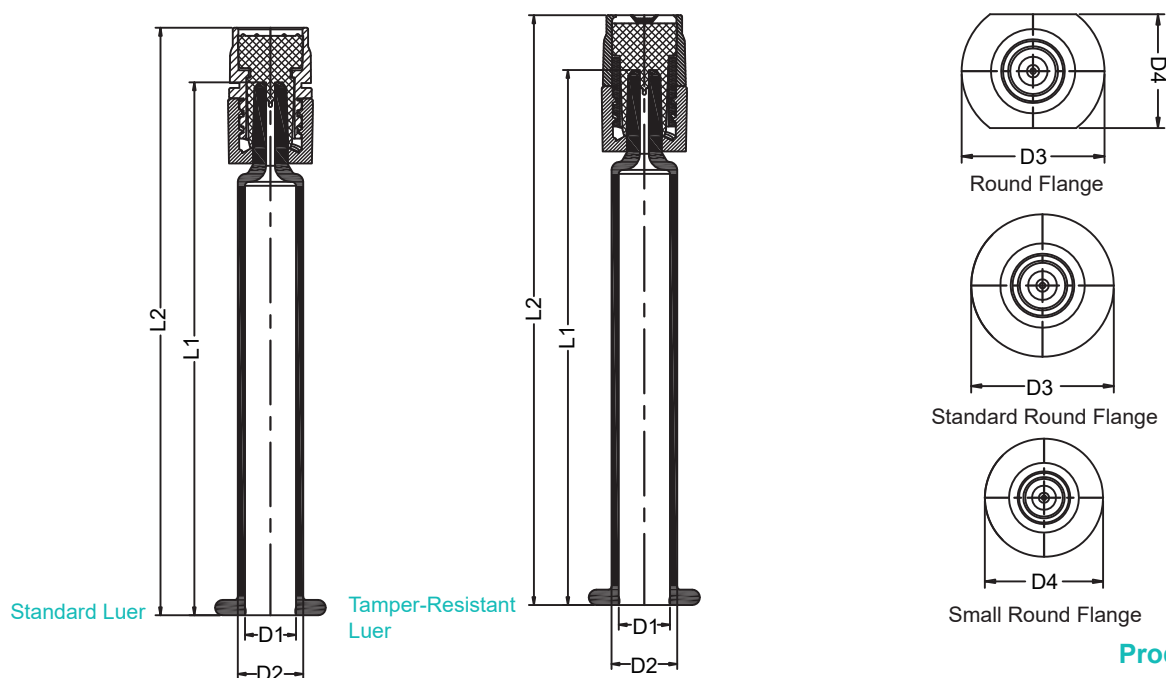
- Available in 1.0 mL slim, 2.25 mL, and 3.0 mL sizes
- Made of imported borosilicate glass to ensure drug stability
- Luer lock design for flexible compatibility with needles and multifunctional connectors
- Fully automated production with minimal particle load
- 100% final product inspection for consistent and reliable quality
- Full lifecycle validation for complete traceability



Luer Lock

- Available in standard Luer lock and tamper-resistant Luer lock options
- Excellent sealing performance, reducing leakage, needle rotation, and dislodgement during injection





Product Specifications

Standard Luer (mm)

Volume (mL)	L1	L2	D1	D2	D3	D3
1.0 Long	65.8	73.2	φ8.65	φ10.85	φ17.75	φ14.7
2.25	66.3	73.7	φ6.35	φ8.15	φ13.8	φ11.0
3.0	83.9	91.3	φ8.65	φ10.85	φ17.75	φ14.7

Tamper-Resistant Luer (mm)

Volume (mL)	L1	L2	D1	D2	D3	D3
1.0 Long	65.8	74.0	φ8.65	φ10.85	φ17.75	φ14.7
2.25	66.3	74.5	φ6.35	φ8.15	φ13.8	φ11.0
3300	83.9	92.1	φ8.65	φ10.85	φ17.75	φ14.7

Product Components



Component	Material Description	Regulatory Compliance
Glass Barrel	Borosilicate Glass	YBB00062004/ISO 11040-4
Piston	Halobutyl Rubber	YBB00072004/YBB00082004 ISO11040-5
Luer Lock (Locking Luer adapter + plastic cap)	Adapter: PC Cap: PP + Halobutyl Rubber	ISO 11040-4 GB/T 1962.2/YY/T 0916.7
Luer Lock (Locking Luer adapter + tamper-resistant cap)	Adapter: PC Cap: PP + Halobutyl Rubber	ISO 11040-4 GB/T 1962.2/YY/T 0916.7
Plunger	PC or PP	/
Flange	PP	/
Nest Box	HIPS	ISO 11040-7
Nest Plate	PP	ISO 11040-7

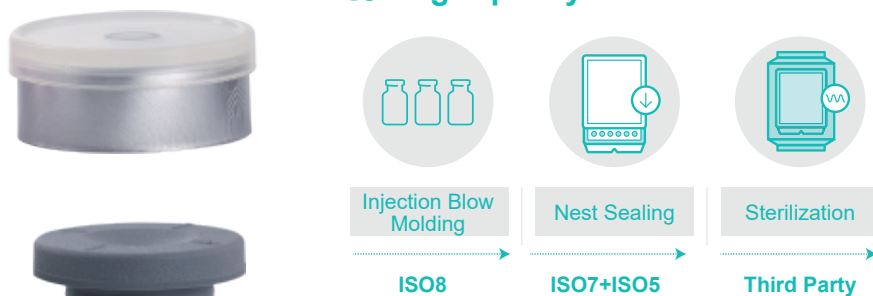
※NEST can provide pistons, plungers, and flanges

COP/COC Prefillable Vial

COP/COC as a high-quality alternative to borosilicate glass, offers excellent material stability and high design flexibility. Its shatter-resistant nature significantly reduces the risk and cost of breakage during transportation and use. In terms of physicochemical properties, COP/COC provides high transparency, high rigidity, and excellent thermal stability (resistant to both high and low temperatures). It also has very low protein adsorption, contains no heavy metals or tungsten extractables, and eliminates the risk of delamination commonly associated with glass. This ensures a safer and more reliable packaging environment for long-term contact with biologic drugs.

COP/COC prefilled vials feature an inert contact surface and have been proven suitable for a wide range of pharmaceutical applications. They provide enhanced packaging safety, especially for manufacturers handling toxic or highly potent drugs.

● High-quality Controlled Manufacturing Process



● Product Introduction

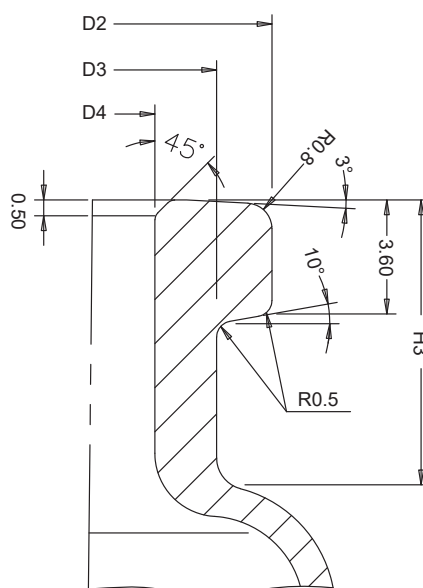
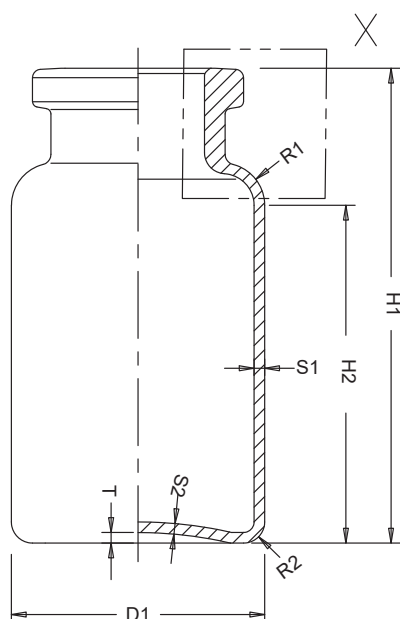
Product Applications

Primarily used for high-value drugs with stringent packaging requirements, such as cell and gene therapies, oncology drugs, and cardiovascular and cerebrovascular treatments.



Product Advantages

- Compliant with ISO 9001, ISO 8362, and YBB standards
- Excellent barrier against water vapor and oxygen
- Outstanding drug stability, low protein adsorption, temperature tolerance: -196 °C to 121 °C
- No release of heavy metal ions or delamination
- High transparency and impact-resistant strength



Product Specifications Unit (mm)

Specif-ication	Recom- ended Fill Volume (mL)	Full Fill Capacity (mL)	D1	D2	D3 (max)	D4	H1	H2 (min)	H3	R1	R2	S1	S2 (min)	T (max)	Weight (g)≈
2R	2	4	16	13	10.5	7	35	22	8	2.5	1.5	1	0.6	0.7	2.6
6R	5	10	22	20	16.5	12.6	40	26	8.5	3.5	2	1	0.7	0.7	4.7
10R	10	13.5	24	20	16.5	12.6	45	30	9	4.0	2	1	0.7	0.7	5.6
20R	20	26	30	20	17.5	12.6	55	35	10	5.5	2.5	1.2	0.7	1	8.6



Product Components

Component	Material Description	Regulatory Compliance
Vial Body	COP	ISO 8362-1
Rubber Stopper	Halobutyl Rubber	YBB00042005 ISO 8362-2
Aluminum Cap	Aluminum	YBB00372003 ISO 8362-3
Nest Box	HIPS	ISO-21882
Nest Plate	POM	ISO-21882

※Note: NEST can provide stoppers and aluminum caps

Storage and Transport Recommendations

Packaging Protection

- Ready-to-use: no cleaning, no sterilization, pyrogen-free, compatible with automated unpacking and filling.
- Nest box packaging: prevents bottles from contacting each other, reducing breakage, and supports automated loading.
- Tray packaging: keeps bottles orderly and stable during transport, reduces collisions and tipping, and improves automated loading efficiency.

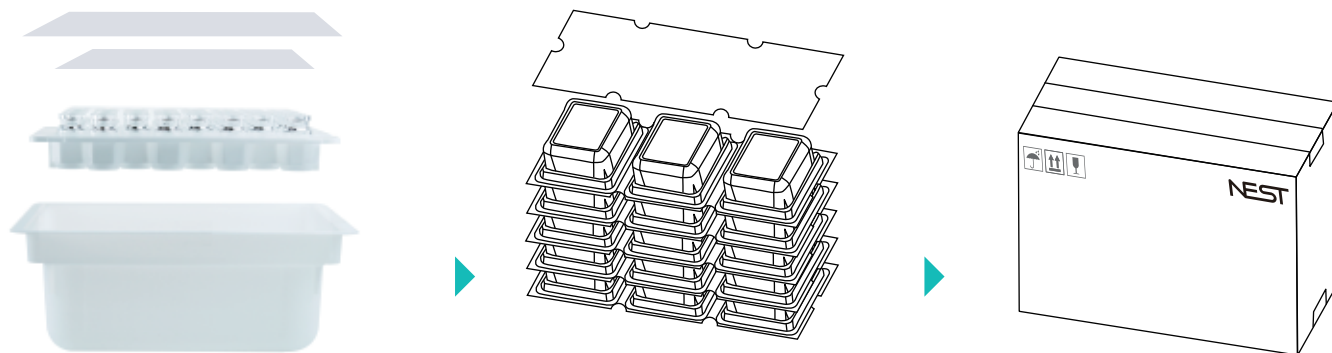
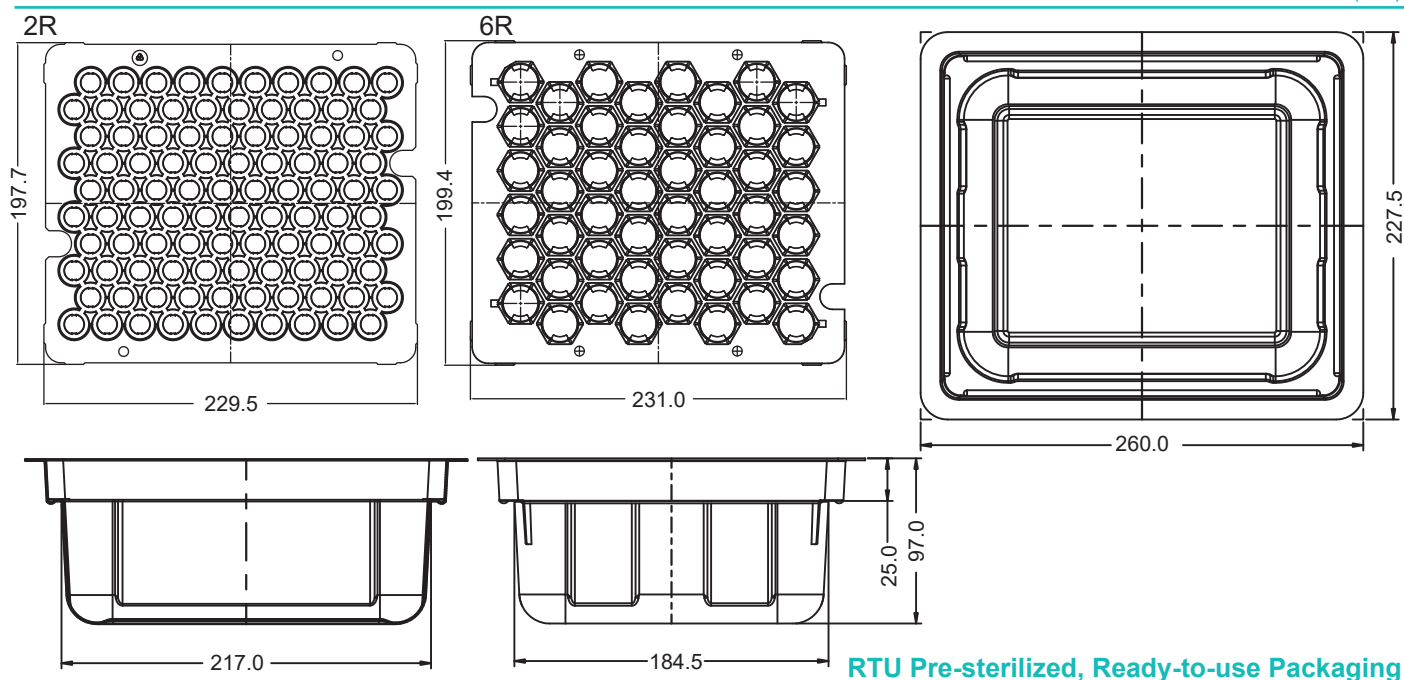
Storage Environment

Avoid high temperature and high humidity, and store separately from toxic, hazardous, or contaminating substances.

Transport Protection

Avoid severe vibration, impact, and excessive pressure to maintain product integrity and sterility.

RTU Nest Box/Plate Unit (mm)



COP/COC Prefillable Vial

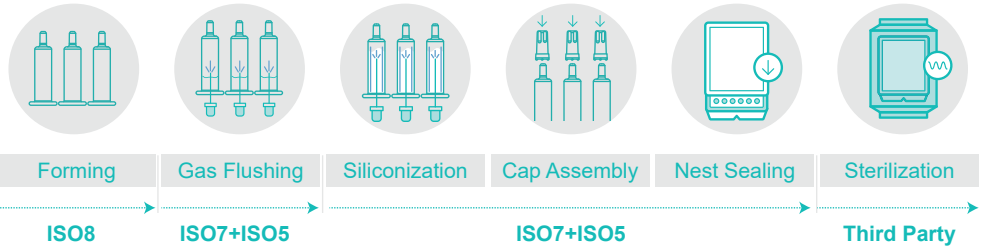
Accessories

Specification	Pcs/pk	Pks/case	COP Cat.No.	COC Cat.No.	Name	Pcs/bag	Bags/case	Cat.No.
2R	100	15	207212	226212	2R Rubber Stopper	8000	1	207232
6R	48	15	207012	226002	6R Rubber Stopper	2500	1	207032
					2R Aluminum Cap	4000	1	207222
					6R Aluminum Cap	2000	1	207042

COP/COC Prefilled Syringe Assembly

COC/COP prefilled syringes are a new type of liquid drug packaging, with the medication preloaded in the container. The syringe features a Luer connection at the tip, allowing injection simply by attaching or twisting on the needle. Compared with traditional glass syringes, they are lighter, more impact-resistant, less prone to breakage, highly transparent, chemically stable, and reduce extractables, enhancing medication safety.

High-quality Controlled Manufacturing Processes and Production Environment



Product Introduction

Product Applications

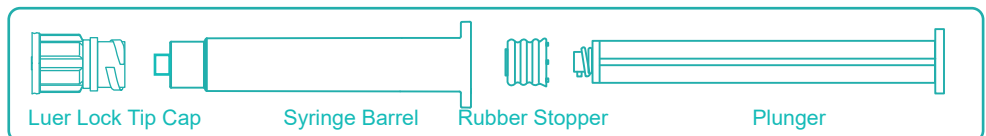


- Biologics (GLP-1, hormones, monoclonal antibodies, etc.)
- High-end therapeutic drugs (antithrombotic agents, intravitreal ophthalmic injections, etc.)
- Vaccines and nucleic acid therapeutics (mRNA vaccines, DNA vaccines, etc.)
- Aesthetic and specialized drug delivery (hyaluronic acid, emergency medications, etc.)

Product Advantages

- Compliant with ISO 9001, YBB, and USP Class VI standards
- Manufactured in GMP-controlled cleanrooms from injection molding to final packaging
- Flange enables easier assembly/disassembly and provides smooth, consistent injection performance
- Plunger rod compatible with high-speed filling lines

Luer Lock Type



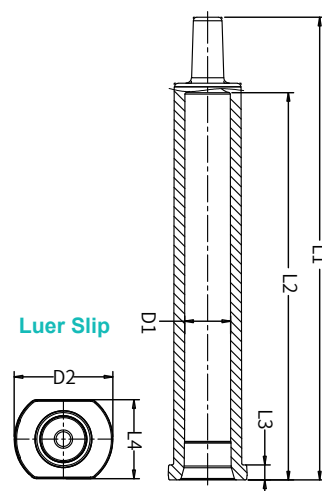
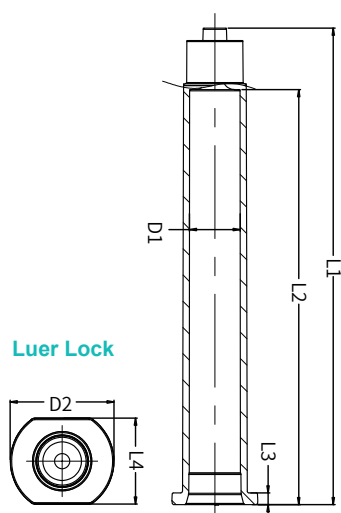
- Available in 1.0 mL, 1.0 mL slim, 2.25 mL, and 3.0 mL sizes
- Luer lock design for flexible compatibility with needles and multifunctional connectors
- Excellent sealing performance, reducing leakage, needle rotation, and dislodgement during injection

Luer Slip Type



- 1.0 mL, threadless design
- 6% taper friction fit
- Mature and stable interface, easy to operate with high connection efficiency





Product Specifications

Luer Lock (mm)

Specification	L1	L2	L3	L4	D1	D2
1.0 mL	64.5	54	2.1	11	φ6.35	φ13.8
1.0 mL Long	80	69.8	2.3	11	φ4.95	φ13.8
2.25 mL	64.5	54	2.1	14.7	φ8.65	φ17.75
3.0 mL	81.4	70.9	2.1	14.7	φ8.65	φ17.75

Luer Slip (mm)

Specification	L1	L2	L3	L4	D1	D2
1.0 mL	64.5	54	2.1	11	φ6.35	φ13.75



Product Components

Component	Material Description	Regulatory Compliance
Barrel	Cyclic Olefin Copolymer (COC)	ISO 80369-7 GB/T 1962.2
Cap	Butyl Rubber	YBB00082004 ISO 11040-6
Plunger	PC/PP	Corporate Standard
Piston	Butyl Rubber	ISO 11040-5
Flange	PP	Corporate Standard
Silicone Oil	Silicone Oil	Dimethyl silicone oil monograph in USP-NF / EP
Nest Box	HIPS	ISO 11040-7
Nest Plate	PP	ISO 11040-7

●● Storage and Transport Recommendations

Packaging Protection

Use appropriate packaging materials and protective measures to ensure secure sealing.

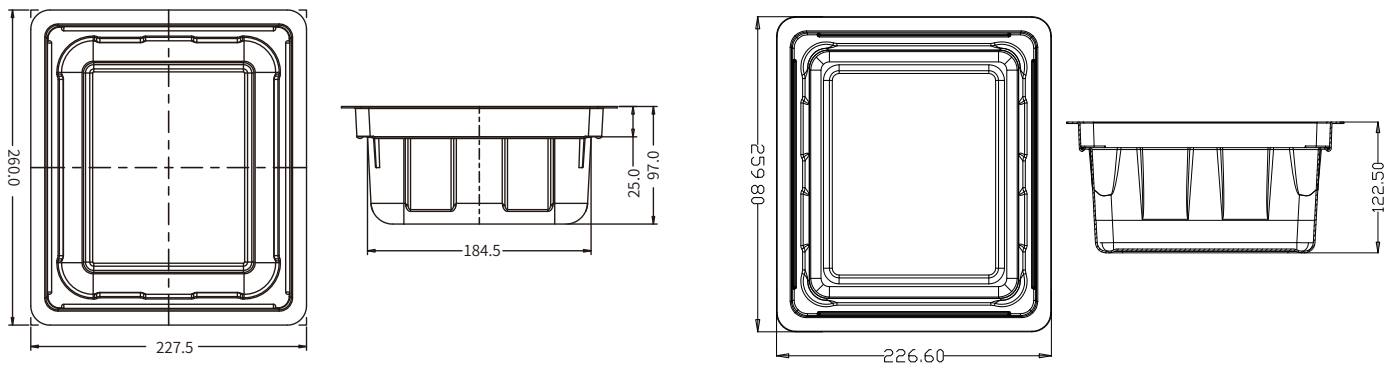
Storage Environment

Avoid exposure to high temperature and humidity, and store separately from toxic, hazardous, or contaminating substances.

Transport Protection

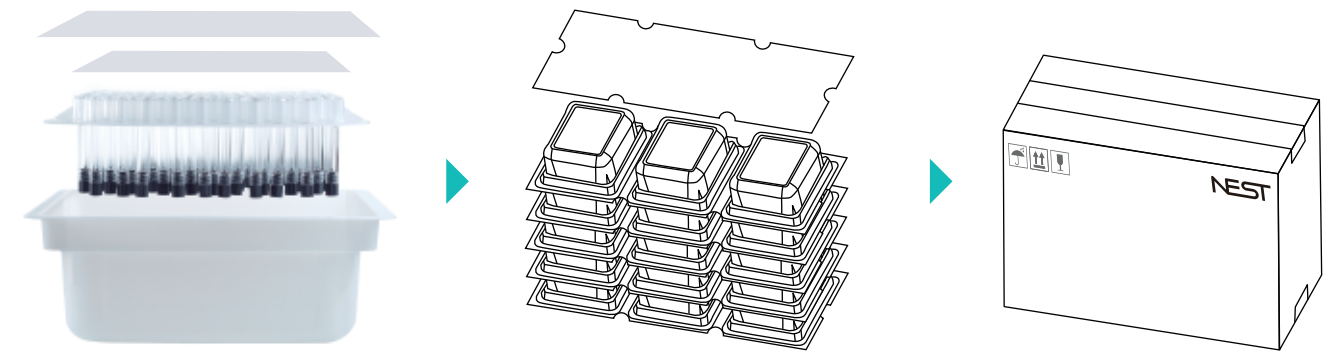
Avoid severe vibration, impact, and excessive pressure to maintain product integrity and sterility.

RTU Nest Box/Plate Unit (mm)



RTU Pre-sterilized, Ready-to-use Packaging

No cleaning or sterilization required, pyrogen-free, compatible with automated unpacking and filling. Nest box packaging prevents bottles from contacting each other, reducing breakage.



COP/COC Prefilled Syringe

Specification	pcs/pk	pks/case	COP Cat.No.	COC Cat.No.
Luer Lock Type 1.0	100	15	205612	235612
Luer Lock Type1.0 Long	100	16	205602	235602
Luer Lock Type 2.25	100	15	205622	235622
Luer Lock Type 3.0	100	16	205632	235642
Luer Slip Type 1.0	100	15	ComingSoon	ComingSoon

Accessories

Name	pcs/bag	bags/case
Plunger 1.0/2.25	5000	1
Plunger 1.0 Long	3500	1
Flange 1.0/2.25	10000	1
Flange 1.0 Long	3500	1
Rubber Stopper	10000	1

Validation Projects

 COP Prefilled Syringe
  Cartridge
  Prefilled Nasal Spray
  COP Prefillable Vial

Product Performance Validation	Batch Testing
Appearance    	Appearance    
Atomization Performance 	Atomization Performance 
Sealing Performance   	Sealing Performance  
Spray Nozzle Bonding Strength 	Spray Nozzle Bonding Strength 
Auto-Disable Test 	Packaging Integrity (Peel Strength)  
Dose Limiter Accuracy 	Piston–Plunger Compatibility Test  
Packaging Integrity (Peel Strength)    	Piston Sliding Performance   
Piston–Plunger Compatibility Test  	Piston Lubricity  
Piston Sliding Performance   	Container Closure Integrity   
Piston Lubricity  	Syringe Residual Volume  
Container Closure Integrity   	Cap Removal Force Test 
Syringe Residual Volume  	Silicone Oil Uniformity  
Cap Removal Force Test  	Particulate Matter    
Silicone Oil Content   	Ethylene Oxide Residuals   
Silicone Oil Uniformity   	Bacterial Endotoxins    
Particulate Matter    	Sterility    
Ethylene Oxide Residuals   	
Luer Taper Connection Inspection 	
Bacterial Endotoxins    	
Sterility    	
Stability    	
Biocompatibility    	
High Temperature and Pressure Resistance Test 	
Freeze Resistance Test 	
Repeated Freeze–Thaw Test 	

Filling and Stoppering Machine



Product Introduction

The filling and stoppering integrated machine combines liquid filling and stopper placement in one unit. This laboratory system is compatible with various packaging materials (such as glass, COC, and COP), including prefilled syringes, cartridges, and vials, enabling aseptic filling and stoppering through a high-precision peristaltic pump and vacuum stoppering technology. The equipment features a compact design, suitable for use in biosafety cabinets, clean benches, and laboratories. Its single-unit filling mode provides flexible operation while reducing container tipping, breakage, and material waste. With an open design and interchangeable modules, it offers strong adaptability. Filling and stoppering parameters can be set as needed, allowing real-time verification of process suitability and supporting data generation for scale-up, making it a practical tool for drug development.

Content	Parameter Description
Dimensions (L × W × H)	≈626 mm×438 mm×664 mm
Weight	≈65 kg
Power Supply	AC110V/60HZ or AC220V/50HZ
Rated Power	1.0kw
Applicable Specifications	1–30 mL vials; 0.5–3.0 mL prefilled syringes; 1–3 mL cartridges (customized structures and software modules available based on specific requirements)
Filling Speed	≈300 pcs/h (based on filling 3 mL cartridges with 3 mL of water at room temperature)
Filling Accuracy	±5% (standard version, based on filling 3 mL cartridges with 3 mL of water at room temperature) / ±2% (high-precision version, based on filling 3 mL cartridges with 3 mL of water at room temperature)
Stoppering Success Rate	≥99.9%(Depending on product quality conditions)

Stoppering Machine



●● Product Introduction

This equipment is mainly used for aseptic filling processes in laboratory product development. It is designed to provide optimal stoppering solutions based on the characteristics of liquid formulations. It is widely applicable for rapid response in R&D samples, small- to medium-scale pilot production, process development, and product validation. It can be used with cartridges, prefilled syringes, and other compatible containers within its operational capacity.

Content	Parameter Description
Dimensions (L × W × H)	≈472 mm×420 mm×640 mm
Weight	≈45 kg
Power Supply	AC110V/60HZ or AC220V/50HZ
Rated Power	0.8kw
Applicable Specifications	0.5–3.0 mL prefilled syringes; 1–3.0 mL cartridges (customized structures and software modules available based on specific requirements)
Default Specifications	3.0 mL cartridges (prefilled volume: 3.1 / 3.2 mL)
Stoppering Speed	≈300 pcs/h (based on filling cartridges with 3.1/3.2 mL of water at room temperature)
Stoppering Success Rate	≥99.9% (Depending on product quality conditions)

Personnel and Quality Inspection Equipment

● Quality Team, R&D Team

1. Professional Team Composition

- A team of 76 professionals proficient in core quality tools such as APQP and FMEA, with multiple system certifications
- Dedicated teams for raw material analysis and product testing

2. Full-Process Quality Control System

- Raw material inspection: physicochemical analysis + component defect assessment
- Product validation: dual functional testing of components and complete units
- Method validation: standardized verification of measurement equipment and testing procedures

3. Standardized Certification System

- International standards: ISO 9001 / IATF 16949 / ISO 13485 certifications
- Professional qualifications: all staff certified through internal auditor training
- Testing standards: customized testing solutions based on customer requirements

4. Closed-Loop Quality Management

Test data → Functional testing team execution → Quality engineer evaluation → Final review by project lead (Quality Engineering Department) (Integrating core elements based on the characteristics of the quality management system, with a focus on specialized division of work and standardized processes)

● Production equipment, processes, and measuring instruments are qualified and validated

zwickiLine Full-Function Tester

Equipped with the testControl II measurement control system and testXpert III software, this device provides precise combined tension-compression-torsion loading for testing key performance indicators of drug-device combination products. It can accurately measure critical parameters such as pen injector dose adjustment torque and prefilled syringe Luer connection anti-rotation performance, meeting industry standards including ISO 11608 and the Chinese Pharmacopoeia.

Spray Pattern and Spray Morphology Analyzer (Spray VIEW)

This specialized instrument is designed for inhalation products (OINDP) and related applications. It provides high-precision characterization of 2D spray pattern distribution, 3D spray geometry, plume dynamics, particle size distribution, and actuation control. Suitable for nasal sprays, oral sprays, and aerosols in R&D and quality control, it complies with FDA, NIST, and GMP requirements.

Spray Particle Size Analyzer (STP5313)

This instrument is based on laser diffraction technology, featuring a wide measurement range of 0.1–2000 µm, high-speed data acquisition at 10 kHz, and 95% high obscuration measurement. It is suitable for dynamic spray particle size characterization in inhalation products, fuel injection, and agricultural spraying applications, and complies with FDA 21 CFR Part 11 and GMP requirements.

Packaging Peel Force Tester (YBB-03)

The YBB-03 pharmaceutical packaging peel force tester is designed for precise measurement of push and hold forces in pen injectors. It performs tensile, peel, opening, and puncture tests on pharmaceutical packaging materials such as rubber stoppers, combination caps, composite films, aluminum foils, and PVC sheets. The device also measures breakage force and sliding performance of prefilled syringes and ampoules. It is suitable for research institutions, pharmaceutical companies, and inspection and quarantine agencies.

High-Precision Torque Tester (HP-10)

This precision device focuses on measuring cap tightening and opening torque, featuring ±0.5% FS high accuracy, bidirectional measurement, and traceable data. It is suitable for packaging quality control in the medical device, pharmaceutical, and food industries, and can also calibrate electric screwdrivers and torque wrenches, ensuring product sealing and operational safety.

PRO-T Series Automatic Torsion Spring Tester (MAX-T20NM-P-2)

This tester features an embedded computer application and a large-capacity memory, allowing test conditions and data to be easily edited, saved, modified, and retrieved with great convenience.

Gas Chromatograph (8860 Series)

This instrument offers high precision, stability, and throughput, suitable for routine laboratory analysis, industrial quality control, environmental monitoring, food and drug testing, petrochemical analysis, and more. It enables qualitative and quantitative analysis of volatile organic compounds (VOCs), semi-volatile organics, gas components, and hydrocarbons. It is also widely used in the medical device industry for raw material and excipient impurity testing, as well as residual solvent analysis.

Full Industry Chain Structure

● R&D and Mold Manufacturing

NEST has independent mold design and development capabilities. Based on your specific requirements, we can customize and optimize the injection molding layout for pen injectors. Production process parameters are embedded during the development phase, significantly shortening the development cycle.

● Industry Experience and Achievements

- 30 years of technical expertise: Delivered over 300 precision molds
- Cross-industry applications: Serving high-precision needs in life science consumables, medical devices, and more
- 50-member maintenance team: 70% of members have over 10 years of mold maintenance experience
- Their work ensures our precision molds offer excellent repeatability, durability, and short molding cycles.



● Raw Material Assurance

We focus on pharmaceutical glass, cyclic olefin polymers (COP/COC), and medical-grade polymers, mastering modification and molding adaptation technologies. With extensive experience in borosilicate pharmaceutical glass, COP/COC, and medical plastics such as PP and PC, we provide comprehensive material solutions for pharmaceutical-grade packaging and consumables.

Specific Material, Physical, and Chemical Analysis – Incoming Material Control

NEST implements strict supplier qualification and raw material/packaging approval processes, performing detailed material, physical, and chemical analyses. Our laboratory staff are highly skilled, equipped with advanced instruments, and capable of analyzing viscosity, residual moisture, and density to meet customized customer requirements.

The company implements multiple layers of control to ensure all raw materials and packaging meet product specifications:

- Supplier questionnaires
- On-site supplier audits
- Raw material/packaging report review
- Raw material/packaging performance verification
- Batch testing of raw materials/packaging

These measures ensure supply chain stability and product quality. This section also outlines NEST's statements regarding raw material and packaging control.

Raw Material Assurance and Compliance Statement

We focus on pharmaceutical glass, cyclic olefin polymers (COP/COC), and medical-grade polymers, mastering key technologies for material modification and molding adaptation. With extensive experience in borosilicate pharmaceutical glass, COP/COC, and medical plastics such as PP and PC, we provide comprehensive material solutions for pharmaceutical-grade packaging and consumables.

To ensure product safety and compliance, all raw materials used in NEST pharmaceutical packaging materials and related consumables meet the following strict standards:

1. Polymer Material Compliance: Medical-grade polymers such as COP/COC, PP, and PC are supplied with RoHS and REACH compliance reports from the manufacturers. Materials also meet ISO 10993 series biocompatibility standards, ensuring safety for clinical use.
2. Pharmaceutical Glass Compliance: Pharmaceutical glass strictly follows China's Measures for the Administration of Packaging Materials and Containers in Direct Contact with Drugs and related standards (e.g., YBB series), and complies with the EU 2006/42/EC Machinery Directive. Harmful element residues such as arsenic, antimony, lead, and cadmium are tightly controlled to meet global pharmaceutical industry limits.

Regulatory Compliance Commitment:

- RoHS Directive: Strictly comply with the EU Restriction of Hazardous Substances in Electrical and Electronic Equipment (2011/65/EU), rigorously controlling lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE) in products.
- REACH Regulation: Strictly comply with the EU Registration, Evaluation, Authorization, and Restriction of Chemicals (EC 1907/2006), continuously monitoring and evaluating substances of very high concern (SVHC) in raw materials.

Global Warehousing and Logistics Capabilities

● Subsidiary Distribution

The company is committed to providing first-class products and services to global customers. We have established subsidiaries in the United States, the Netherlands, the UAE, and Japan to support our brand's expansion and development in international markets. Our U.S. subsidiary has been deeply engaged in the overseas market for over a decade. With the completion of a newly purchased warehouse in the western United States, we are now successfully providing integrated services for storage, transportation, and sales to our customers.

USA:

USA east: 3 Convery Blvd, Woodbridge, NJ 07095 USA

USA west: 641S 53rd Ave, Phoenix, AZ 85043 USA

Europe:

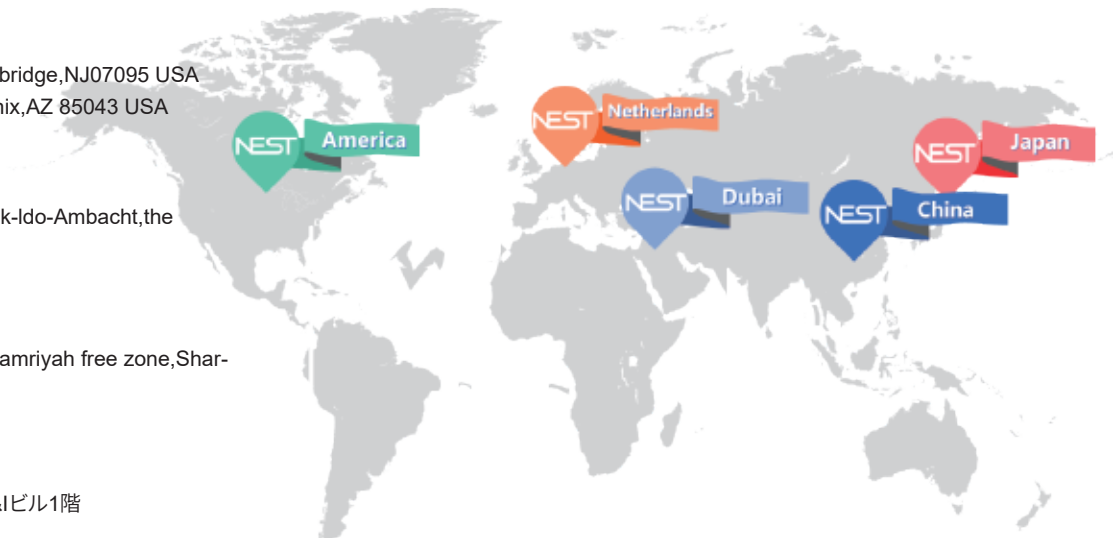
Ecologieweg 10, 3343LM Hendrik-Ido-Ambacht, the Netherlands

Middle east:

Warehouse LV-22D, phase 2 of hamriyah free zone, Sharjah, UAE

Japan:

横浜市都筑区池辺町3513番地B&Iビル1階



● Supply Chain Stability and Lead Time

To ensure supply stability and timely delivery, NEST manages the supply chain and lead time through the following measures:

- Long-Term Supply Contracts: Signing long-term supply contracts with customers to ensure stable supply over a defined period.
- Safety Stock: Maintaining a certain amount of safety stock during production to address unforeseen circumstances.
- Timely Scheduling: Adjusting production schedules based on customer orders and inventory status to ensure on-time delivery

● Traceability

NEST provides the following methods to trace the production and transportation process of products:

- Batch Information: Information for each product batch is recorded in the form of batch numbers, allowing traceability of key process inspection data and test results. Customers can trace the production status of the product using this information.
- Production Records: In NEST's production process, data from each process step, including raw materials, injection molding, and other product processing steps, are retained. This data can be used to trace the production status of the product.
- Sample Retention: A sample is retained from each batch of products, allowing customers to trace the production status of the product.
- Transportation Process Inspection: In addition to the production process, NEST also inspects the product during transportation to ensure that it has not been damaged or experienced quality issues during transit.

● Shelf Life

NEST determines the shelf life of its products by conducting accelerated aging tests according to YY/T 0681.1-2018 or ASTM F1980 standards. For specific details on the testing content, please refer to the shelf life testing section of the product tests. The shelf life is calculated from the time of product production, with the batch number specified in the COA/COC of the accompanying NEST product as the reference. The general shelf life of the product can typically be found in the COA/COC and the product technical documents on the official website.

Unless otherwise stated, the general storage conditions for NEST medical devices and pharmaceutical packaging materials are relative humidity not exceeding 80%, at room temperature (10-30°C), and in a light-protected environment. During transportation, the products should be protected from mechanical impact or contact with sharp objects, avoid direct sunlight and rain, and ensure the packaging remains intact and the product is not contaminated.



USA

NEST Scientific Inc.

Tel: +1-732 381 0268

E-mail: sales@nestscientificusa.com

Website: www.nestscientificusa.com



China

NEST Biotechnology Co., Ltd.

Tel: +86-510-6800 6788

E-mail: info@cell-nest.com

Website: www.cell-nest.com



Netherland

NEST Scientific Europe B.V.

E-mail: info@nestscieu.com

Website: www.nestscieu.com



Japan

NEST Scientific Co.,Ltd.

E-mail: info@nestscijp.com

Website: www.nestscijp.com



United Arab Emirates

Nest Scientific MENA FZE.

E-mail: info@nestsciuae.com

Website: www.nestsciuae.com



Turkey

NEST Scientific Medikal Tic. A.Ş.

E-mail: info@nestscientificturkey.com

Website: www.nestscientificturkey.com



Corporate Address of China:

No. 530, Xida Road, New District, Wuxi, Jiangsu, China



Corporate Address of China:

No. 105, Qunxing Road, Xinwu District, Wuxi, Jiangsu, China



Corporate Address of USA:

3 Convery Blvd, Woodbridge, NJ 07095 USA



NEST



ISO 9001



ISO 13485



ISO 11137



CE