

ART AND IVF

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Introduction to ART and IVF

Assisted Reproductive Technology (ART) mainly refers to In Vitro Fertilization (IVF), which is used to help infertile couples conceive, also known as test-tube baby. The oocytes and sperm are removed and placed in a test tube to fertilize them, and then the fertilized ovum is transferred back to the mother's uterus to develop into a fetus. IVF Petri dishes and culture plates are suitable for the collection of sperm and eggs and preparation of embryos during the IVF process. Specific applications include the preparation and cultivation of spermatozoa or embryos in vitro, gamete intrafallopian transfer (GIFT), intracytoplasmic sperm injection (ICSI), holding of oocytes and spermatozoa during fertilization, or other in vitro reproductive processes, etc.

1

Mature oocyte production

2

Remove oocytes from the ovary

3

Sperm supply

4

Oocytes and sperm are fertilized and incubated in IVF dish with manual intervention

5

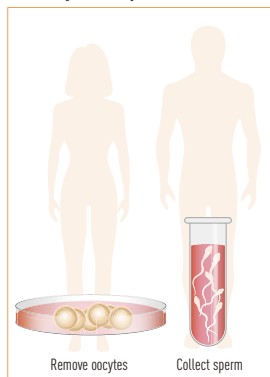
Fertilized oocyte (or embryo/blastocyst) implanted in the uterus

(Note: The above graphic is for reference only. If any doubt, please refer to the authoritative interpretation.)

IVF Key Processes

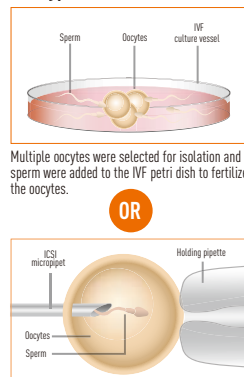
Step 1

Oocyte and sperm collection



Step 2

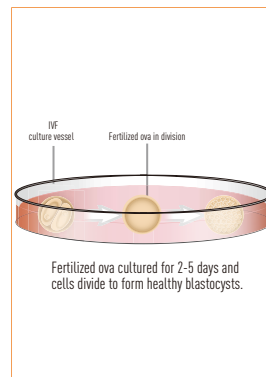
Two types of in vitro fertilization



Another type of fertilization: the process of fertilization through intracytoplasmic sperm injection (ICSI), single sperm injection directly into an oocyte.

Step 3

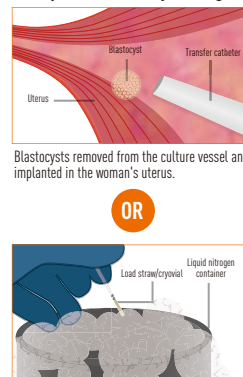
Fertilized ovum culture



Fertilized ova cultured for 2-5 days and cells divide to form healthy blastocysts.

Step 4

Implantation or cryostorage



Oocytes, sperms or blastocysts may be cryopreserved for later use.

(Note: The above graphic is for reference only. If any doubt, please refer to the authoritative interpretation.)

IVF Related Consumables



IVF Special petri dish/Multi-well plate



Micromanipulation pipette



Sperms/Oocytes collection container/Vessel



Sperms/Oocytes/Embryo Cryovial



IVF Petri Dish & Multi-well Dish

- KANGJIAN series of culture dishes for assisted reproduction are manufactured from medical-grade polystyrene in Class 100,000 cleanrooms. These products are intended for the in vitro handling, culture, and storage of human gametes and embryos.
- Following rigorous testing and evaluation, this product series (culture dishes and multi-well dishes) has obtained the Medical Device Registration Certificate of the People's Republic of China (Class II).
- The products have undergone a full set of third-party biocompatibility tests in compliance with ISO 10993 standards, ensuring that the vessels are pyrogen-free, non-embryotoxic, non-cytotoxic, and non-genotoxic, thereby maintaining the viability of sperm and oocytes throughout complex laboratory procedures.
- Products with tissue culture (TC) surface treatment feature a uniform hydrophilic surface, which supports normal cell growth and development. In contrast, non-TC-treated (non-wettable) products such as micromanipulation dishes ensure optimal consistency of culture medium droplets.
- In vitro cytotoxicity test (MTT assay): cell viability $\geq 92\%$. Blastocyst formation rate $\geq 80\%$.
- Sterilized by irradiation, achieving a Sterility Assurance Level (SAL) of 10^{-6} .

Multi-use dish

- ◇ For embryo thawing, embryos microdroplet culture, cumulus cell collection and washing, removal of granulosa cells, etc.
- ◇ Flat bottom, no optical distortion.
- ◇ Optional TC-treatment.
- ◇ Non-embryotoxic, non-pyrogenic, non-cytotoxic, BPA free.
- ◇ Individual peel pack, Sterilized by irradiation (10^{-6} SAL).



KJ506-5



KJ506-4



KJ506-6

REF	MAT	*				Original REF.
KJ506-5	PS	Ø35×13[Dish]	Individual peel pack	500	High wall, wing grip	191-0352
KJ506-4	PS	Ø60×16[Dish]	Individual peel pack	300	Full grip ring, wing grip	191-0601
KJ506-6	PS	Ø90×21[Dish]	Individual peel pack	200	Full grip ring, wing grip	191-0901

*Typical dimensions for reference only. Actual product may vary.

Microscope operation dish

- ◇ Microscopic observation of the morphology of the oocyte and cumulus cell, handling of the peripheral granulosa cell clusters of the oocyte, and single sperm intracytoplasmic injection fertilization operations.
- ◇ Flat bottom, no optical distortion.
- ◇ Promotion of medium droplet formation (Non TC-treated).
- ◇ Non-embryotoxic, non-pyrogenic, non-cytotoxic, BPA free.
- ◇ Individual peel pack, Sterilized by irradiation (10^{-6} SAL).



KJ552

REF	MAT	*				Original REF.
KJ552	PS	Ø50×8.6 [Dish]	Individual peel pack	400	No vents	191-0502

*Typical dimensions for reference only. Actual product may vary.



IVF Petri Dish & Multi-well Dish

Center well dish

- ◇ For the thawing of frozen embryos and the recovery of their biological activity.
- ◇ TC-treated to obtain an excellent hydrophilic surface.
- ◇ Non-embryotoxic, non-pyrogenic, non-cytotoxic, BPA free.
- ◇ Individual peel pack, Sterilized by irradiation (10⁻⁶ SAL).


KJ551

KJ551-1

REF	MAT					Original REF.
KJ551	PS	Ø55×13.5 [Dish]	Individual peel pack	300	Center well, with vents	191-0551
KJ551-1	PS	Ø55×13.5 [Dish]	Individual peel pack	300	Center Well Dish with 2 compartments, with vents, wing grip	191-0552

*Typical dimensions for reference only. Actual product may vary.

IVF 4-Well Dish


KJ553

IVF 5-Well Dish


KJ554

IVF 6-Well Dish


KJ555

- ◇ Our IVF multi-well dishes are available in 4-well, 5-well and 6-well formats. They are used for thawing and resuscitation of gametes, blastocyst culture, cleavage-stage embryo culture, and other related procedures.
- ◇ Ergonomic design enables easy handling and other professional operations while improving safety.
- ◇ Tissue Culture (TC) surface treatment is available as an option, providing a uniform hydrophilic surface that supports normal growth and development.

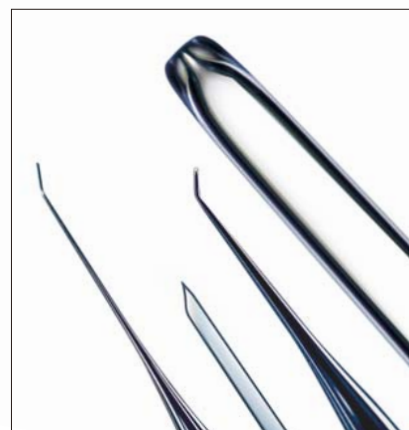
REF	MAT	*				Original REF.
KJ553	PS	4-well, flat bottom, well volume: 1.7mL×4	Individual peel pack	200		192-0041
KJ554	PS	5-well, flat bottom, well volume: 1.6mL×5	Individual peel pack	200		192-0051
KJ555	PS	6-well, flat bottom, well volume: 0.4mL×6	Individual peel pack	200	With Straw Holder	192-0061

*Relevant parameters are for reference only. Actual product may vary.



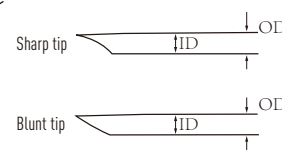
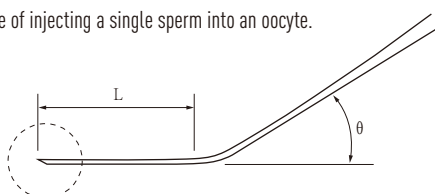
Micromanipulation Needles (for IVF)

- Micromanipulation needles for assisted reproduction are fine tubular and needle-shaped tools used for injection, oocyte holding, stripping, biopsy, assisted hatching, and sperm retrieval during in vitro fertilization (IVF) micromanipulation.
- A micromanipulation needle consists of a needle hub, needle shaft, and needle tip. It is typically made of borosilicate glass or polymer materials such as polycarbonate.
- **Dimensional accuracy:** Parameters including tip diameter, bending angle, and light transmittance are strictly controlled to meet different operational requirements.
- **Mechanical strength:** The needle tip can withstand an axial force of 0.5–1.0 Newtons without deformation or breakage, ensuring operational stability.
- **Surface quality:** Fabricated using laser pulling and ion beam polishing techniques, with a needle tip edge roughness $\leq 0.1\mu\text{m}$ to avoid mechanical damage to cells.
- Tested by a third party for biocompatibility, the product complies with ISO 10993 (general standard for biological evaluation of medical devices) and USP (United States Pharmacopeia) and other relevant standards. It is non-embryotoxic, non-cytotoxic, free of DNase or RNase contamination, endotoxin-free, and heavy metal-free.
- Sterilized by dry heat or autoclaving, achieving a sterility assurance level (SAL) of 10^{-6} . Individually packed in color boxes.



ICSI Injection Needle

This product is intended for intracytoplasmic sperm injection (ICSI), used in the procedure of injecting a single sperm into an oocyte. Two tip configurations are available: sharp tip and blunt tip.

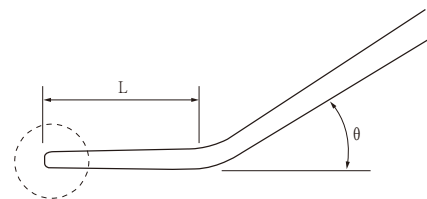
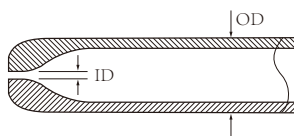


REF	Tip Configuration	Angle $\theta (^{\circ})$	Tip Length L (μm)	Tip Inner Diameter ID (μm)	Tip Outer Diameter OD (μm)	Package	Original REF.
KJ9301	Sharp tip	20/30/35	700/1000	4.0~5.5	5.5~7.0	Individually packed in an orange box	194-101
KJ9302	Blunt tip	20/30/35	700/1000	4.0~5.5	5.5~7.0		194-102

*Typical dimensions for reference only. Actual product may vary.

Oocyte Holding Needle

Used for immobilizing oocytes or embryos during micromanipulation.

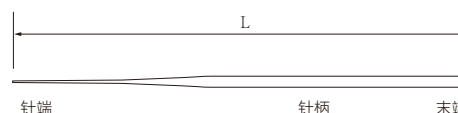


REF	Tip Length L (μm)	Angle $\theta (^{\circ})$	Tip Inner Diameter ID (μm)	Tip Outer Diameter OD (μm)	Package	Original REF.
KJ9303	700	25/30/35	15~25	110~130	Individually packed in a purple box	194-201
KJ9304	1000	25/30/35	15~25	110~130		194-202

*Typical dimensions for reference only. Actual product may vary.

Denuding Needle

Used for removing granulosa cells surrounding oocytes and zygotes, or for transferring oocytes and embryos.



REF	End Diameter (μm)	Length L (mm)	Tip Inner Diameter ID (μm)	Package	Original REF.
KJ9305	1200±100	6.5±0.75	120~129 / 130~139 / 140~149 / 150~159 / 160~169 / 170~179 / 180~199 / 200~249 / 250~299 / 300~365	Individually packed in a blue box	194-301
KJ9306	1500±100				194-302

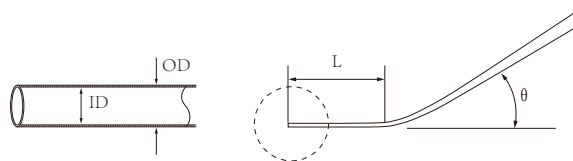
*Typical dimensions for reference only. Actual product may vary.



Micromanipulation Needles (for IVF)

Embryo Biopsy Needle

Used for collecting polar bodies or cells from oocytes or embryos.



REF	Tip Inner Diameter ID (μm)	Tip Outer Diameter OD (μm)	Tip Length L (μm)	Angle θ (°)	Package	Original REF.
KJ9307	10~15	12.5~22.5	700/1000	25/30/35	Individually packed in a green box	194-401
KJ9308	15~25	17.5~32.5				194-402
KJ9309	25~35	27.5~47.5				194-403

*Typical dimensions for reference only. Actual product may vary.

Pasteur Pipette

- During in vitro fertilization procedures, Pasteur pipettes are used to remove granulosa cells surrounding fertilized eggs or to transfer oocytes/embryos.
- Featuring a smooth surface, slender wall and rounded tip, Pasteur pipettes are made of borosilicate glass without harmful impurities such as lead and cadmium, preventing interference with cytotoxicity, sensitization and other evaluation results.
- They comply with relevant standards including ISO 10993 (general standard for biological evaluation tests) and USP (United States Pharmacopeia).
- Customizable specifications: length 150 mm–230 mm, outer tube diameter 7±0.2 mm, outer capillary diameter 1.4±0.1 mm.
- Products are endotoxin-free, heavy metal-free, DNase-free, RNase-free, sterile and pyrogen-free.
- Available in single or multiple-unit packaging.

KJ9230-1



KJ9230-2



REF	MAT					Original REF.
KJ9230-1	Lead-free glass	Length: 230 mm, Tube outer diameter: 7 mm, Capillary outer diameter: 1.7 mm	20	200	STERILE R	193-2301
KJ9230-2	Lead-free glass	Length: 150 mm, Tube outer diameter: 7 mm, Capillary outer diameter: 1.7 mm	20	200	STERILE R	193-1501

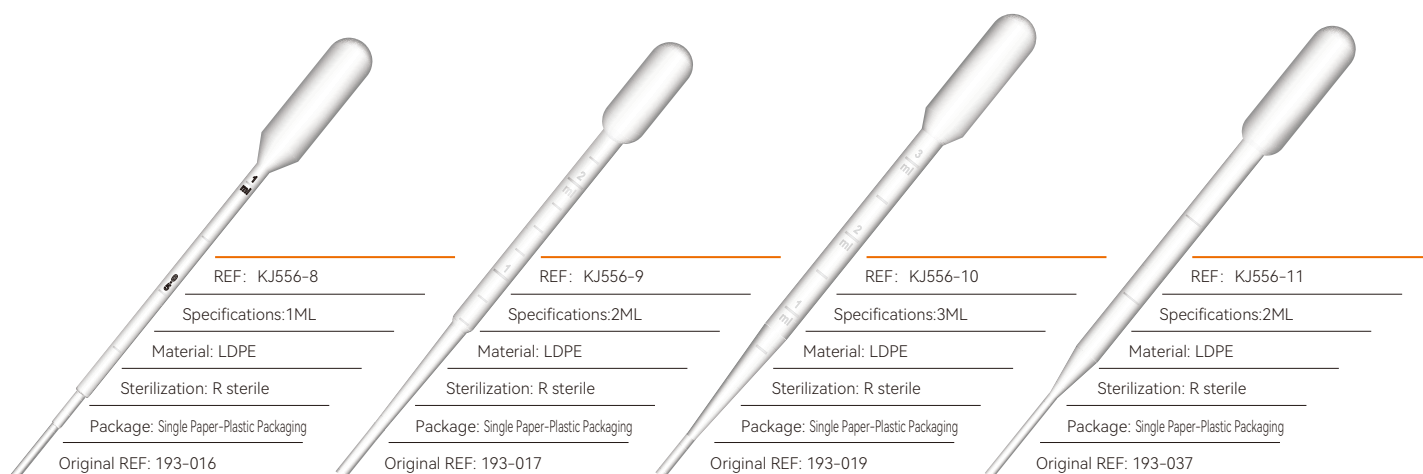
*Typical dimensions for reference only. Actual product may vary.



Semen and Oocyte Collection (Processing) Containers

IVF Pasteur Pipettes

- ◇ Made from medical-grade low-density polyethylene (LDPE), suitable for aspirating, transferring, or sealing small or micro volumes of liquid.
- ◇ Free from embryotoxicity: no pyrogens, cytotoxicity, or genotoxicity, ensuring the vitality of sperm and oocytes during complex experimental processes.
- ◇ Available in single or multiple paper-plastic packaging, sterilized by radiation.

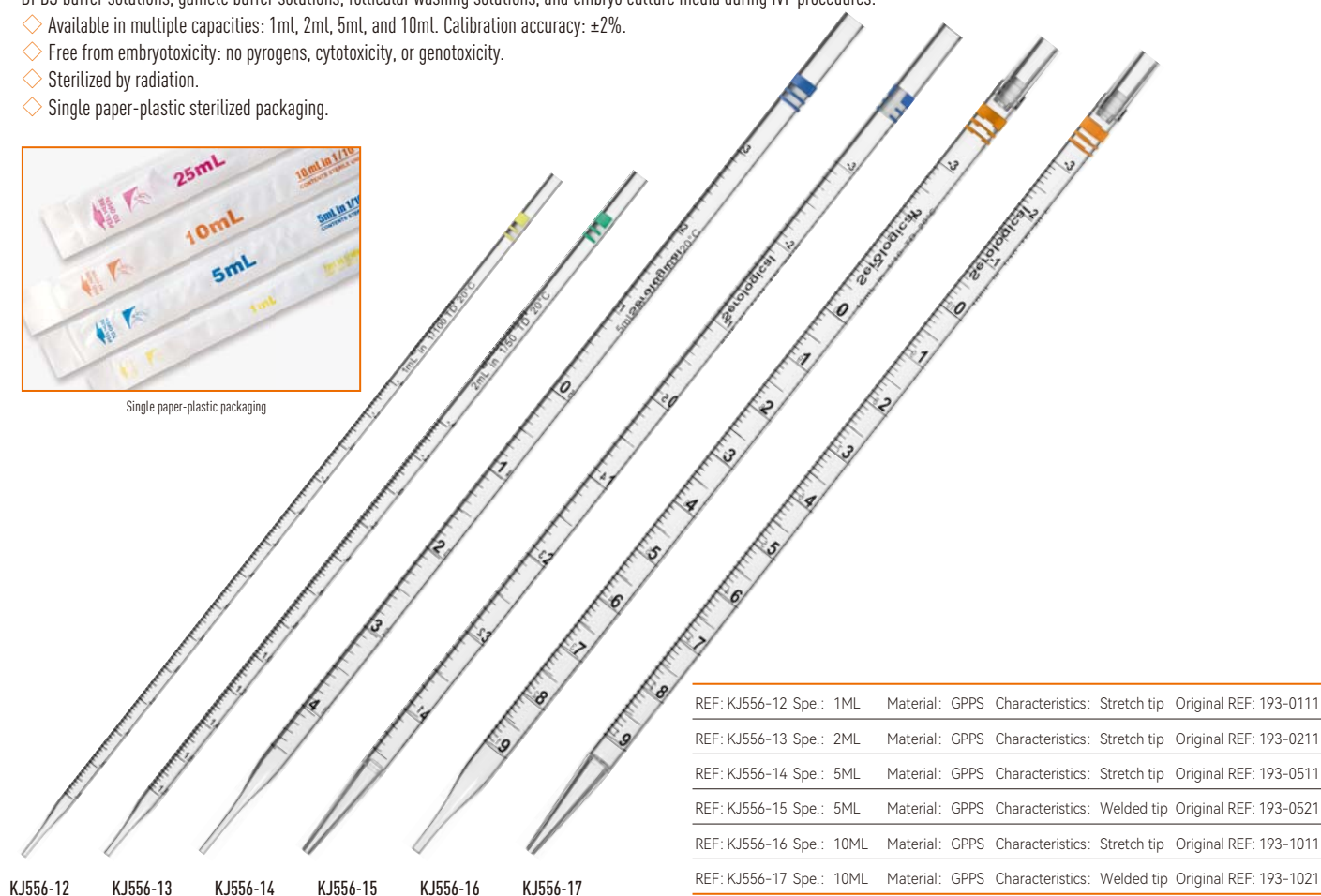


IVF Transfer Pipettes

- ◇ Made from pure polystyrene (GPPS), complying with USP Plastic Class VI standards, manufactured in a class 100,000 cleanroom. These are used to transfer particle cell removal liquids, DPBS buffer solutions, gamete buffer solutions, follicular washing solutions, and embryo culture media during IVF procedures.
- ◇ Available in multiple capacities: 1mL, 2mL, 5mL, and 10mL. Calibration accuracy: $\pm 2\%$.
- ◇ Free from embryotoxicity: no pyrogens, cytotoxicity, or genotoxicity.
- ◇ Sterilized by radiation.
- ◇ Single paper-plastic sterilized packaging.



Single paper-plastic packaging



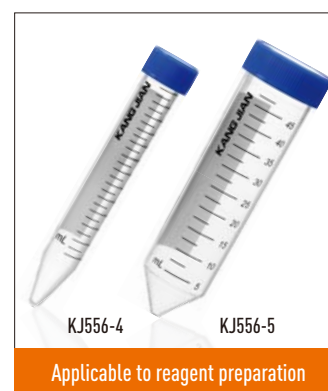


Semen and Oocyte Collection (Processing) Containers

- All containers for the collection and storage of sperm and oocytes are manufactured from polypropylene (PP) raw materials complying with USP Class VI standards in Class 100,000 cleanrooms.
- The products feature a scratch-free surface, uniform wall thickness, clear and legible volume graduations, and a large frosted surface for convenient labeling by laboratory personnel.
- Having undergone a series of third-party biocompatibility tests, the products meet the international standard ISO 10993 for biological evaluation of medical devices, ensuring that the vessels are pyrogen-free, non-embryotoxic, non-cytotoxic and non-genotoxic, so that sperm and oocytes maintain their viability during complex laboratory procedures.
- Each product is individually packaged and sterilized by irradiation, achieving a sterility assurance level (SAL) of 10^{-6} .

Semen/Oocyte Collection Containers

- ◇ Semen collection cups are used for collecting semen from adult males or for preparing reagents.
- ◇ Free from embryotoxicity, pyrogens, cytotoxicity, and genotoxicity.
- ◇ Individually packaged and sterilized by radiation.



REF		MAT		STERILE				Original REF.
KJ556-1	Tube: 7ml	PP	Ø13×83mm	R Sterile	Individual packing	50	Used for semen collection	193-07011
	Collection Funnel	PP	Ø51×52mm	R Sterile				
KJ556-21	Tube: 15ml	PS	Ø16.5×122mm	R Sterile	Individual packing	50	Used for semen collection	193-15011
	Collection Funnel	PP	Ø58×55mm	R Sterile				
KJ556-2	90ml	PP	Ø58×67mm	R Sterile	Individual packing	300	Primarily for semen collection	193-09013
KJ556-3	120ml	PP	Ø64×75mm	R Sterile	Individual packing	250	Primarily for semen collection	193-12013
KJ556-4	15ml	PS/PP	Ø16×120mm	R Sterile	Individual packing	1000	Applicable to reagent preparation and handling	193-1501
KJ556-5	50ml	PP	Ø28×116mm	R Sterile	Individual packing	500	Applicable to reagent preparation and handling	193-5001

*The dimensions only for reference. For accurate data, consult customer service.

Follicular Fluid Collection Tube

- ◇ Used in oocyte retrieval procedures to collect follicular fluid when connected to a vacuum device, serving as temporary storage for the follicular fluid.
- ◇ Free from embryotoxicity, pyrogens, cytotoxicity, and genotoxicity.
- ◇ Individually packed in medical-grade sterile packaging, Sterilized by radiation.





IVF Cryogenic Tubes

- IVF-specific cryotubes are made of polypropylene (PP) complying with USP Class VI standards and manufactured in cleanrooms as disposable laboratory consumables dedicated to storing biological samples.
- They are typically stored in the vapor phase of liquid nitrogen, can withstand low temperatures down to -196°C without cracking, and feature excellent sealing performance.
- The external screw thread reduces the risk of sample contamination and ensures the safety of sperm and oocytes inside the tube.
- The tube body is equipped with a clear marking area for convenient labeling.
- This product is endotoxin-free, contains no chemical substances harmful to embryonic cells, and is DNase-free, RNase-free and pyrogen-free.
- Sterilized by irradiation, achieving a sterility assurance level of 10^{-6} .



Double-shot molding Process for Caps, More Reliable Sealing and Leak Prevention.



Laser-etched QR codes, barcodes, and numeric codes support multi-code identification.

REF						
KJ556-18	0.5ml	HDPE, TPE, PP	$-196\sim 121^{\circ}\text{C}$	$\varnothing 8.9 \times 29\text{mm}$	500	Cryogenic tubes should only be stored in the vapor phase of liquid nitrogen. Do not submerge the tubes in liquid nitrogen, as rapid pressure buildup inside the tube may lead to accidents.
KJ556-19	1ml			$\varnothing 13 \times 31.5\text{mm}$	200	
KJ556-20	2ml			$\varnothing 13 \times 43\text{mm}$	200	

*Typical dimensions for reference only. Actual product may vary.