

Centrifuge Tubes



◆ Key Features:

Capacity: 15,10,50ml

- Packaging: Heat sealed zip bag
- Sterility: EO or Gamma
- Inner Pack Qty: 25 pcs
- Case Qty: 500 pcs

◆ Details

- These conical-bottom tubes are made of ultra-clear polypropylene.
- Cap Material: HDPE
- Sterility: EO or Gamma
- Leak-proof.
- Black printed graduations with large marking strip for easy labeling.
- Easy single-hand operation.
- Clear graduations provide easy volume reference.
- Available in non-sterile.
- RNase/DNase free
- Non-Pyrogenic

Universal Instruments
An ISO 9001:2015 Certified Laboratory



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Centrifuge Tubes Features

1 Flat caps for easy labelling and deeper plug seals for better leak resistance.

2 Molded graduations on the conical bottom for the 15ml. Providing precise measurements of small volumes.

3 Flat caps for easy labelling and deeper plug seals for better leak resistance.

4 Large and easy-to-write-on surface for clear labeling of samples. Frosted surface (15ml) allows viewing of the sample.

5 Caps: HDPE
TUBE: PP
Fully recyclable and environmentally-friendly
Made of virgin medical grade PP for the highest quality and lowest extractables.

Rated at maximum RCF of 21,800 xg (15ml) and 14,000 xg (50ml).
Freezable to -80C.
DNase/RNase free and non-pyrogenic.

Physical Properties Testing

◆ Finetech's centrifuge tubes passes **air leakage test** and can reach Maximum RPM of **15,000 rpm**.



◆ During 4°C~25°C the highest RCF can reach **21,800xg**



Biological Properties Testing

◆ Testing has shown **no growth**, indicating **complete sterilization**.

Sterility Test by the Third Party

(National Chung- Hsing University) in Taiwan



fill with Bacterial medium



fill with Fungi medium

	Control Group (The Orange Caps)		Experimental Group (The Blue Caps)	
	Amount of Inspection	Amount of Pollutant	Amount of Inspection	Amount of Pollutant
Bacterial medium	13	0	50	0
Fungi medium	12	0	50	0

※ The medium response clear and sterile, therefore, the test result meets the requirements for sterility standard.

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Sterilization Validation

Sterilization Procedures

I. Centrifuge tube sterilization procedures:

1. Preparation of the biological indicators (BI)
2. Affixed with sterilization indicator label
3. Sterilization conditions
4. Cultivation of biological indicators after sterilization
5. Sterility results

II. Description of sterilization procedures

1. Preparation of the biological indicators (BI): the BI are placed into centrifuge tubes packed to similar packaging method of the product. The BI is sterilized in the same way as the rest of the products. *Using BI can confirm the effects of sterilization 48 hours after sterilization. (Generally, sterility test for sterilization is 7-14 days)

2. **Affixed with sterilization indicator label:** the sterilization indicator labels are placed on the carton of the products to be sterilized. The sterilization labels are "red" before sterilizing by EO and becomes "blue" after sterilization.

3. **Sterilization conditions** Sterilization Gas: Ethylene oxide Sterilization Temperature: $40\pm 3^{\circ}\text{C}$
Vacuum Pressure: $-0.5\text{kg}/\text{cm}^2$ Sterilization Pressure: $1.1\text{ kg}/\text{cm}^2$ Sterilization Time: 10 hours
Amount of Air Removed After Sterilization: 5 times

(Sterilization chamber) (EO sterilization system)

4. **Cultivation of biological indicators after sterilization** A. The biological indicators are filled with *Bacillus subtilis*, which is easy to culture and can clearly determine the results of sterilization. B. Biological indicators' initial color is blue. The bacteria are cultured at $37-40^{\circ}\text{C}$. When there is growth of the bacteria, the color of the BI indicator will turn yellow. C. Biological indicators are sterilized by Ethylene oxide and then cultured. If the sterilization is complete, the *Bacillus subtilis* will die, resulting in no change to the original color, blue.

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5. **Sterility results** The centrifuge tubes were sterilized on 2019-07-02 and the BI were placed in the products to be sterilized. After the sterilization process, the BI were removed and an unsterilized BI was added as a control group. Bacteria were cultured at 37-40 °C for 48 hours. After 48 hours, the BI were taken out and observed for changes in color. The BI subjected to sterilization remained blue while the added unsterilized control changed to yellow. The results showed that Finetech's sterile centrifuge tubes were effectively sterilized through E.O. processing

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