

Sterilization of ophthalmic (eye) instruments is **extremely critical** because even minor contamination can lead to serious post-operative infections. Below are **standard, widely accepted sterilization guidelines** used in eye OTs.

Pre-Cleaning (Immediately After Use)

1. Rinse Immediately

- Rinse instruments with **distilled or deionized water**.
- Prevents drying of blood, viscoelastic, or tissue debris.

2. Manual Cleaning

- Use **neutral pH enzymatic detergent**.
- Clean with **soft brush or lint-free sponge**.
- Pay special attention to hinges, joints, cannulas, and lumens.

3. Ultrasonic Cleaning (If Applicable)

- Use ophthalmic-safe enzymatic solution.
- Avoid prolonged cycles that may damage delicate micro-instruments.

4. Final Rinse

- Always rinse with **sterile or distilled water** to avoid mineral deposits.

5. Drying

- Dry using lint-free cloth or filtered air.
- Moisture can reduce sterilisation efficiency.

Sterilization Methods

1. Steam Sterilization (Autoclave) – Most Common Standard Cycle

- Temperature: **121°C**
- Pressure: **15 psi**
- Time: **30 minutes**

Flash / Quick Cycle (Emergency Use Only)

- Temperature: **132–134°C**
- Time: **3–10 minutes**
- Should NOT be routine practice.

Suitable For:

- Stainless steel and titanium ophthalmic instruments
- Forceps

- Scissors
- Speculums
- Non-heat sensitive sets

2. Low Temperature Sterilization (For Heat-Sensitive Items)

Used for:

- Phaco handpieces
- Silicone tubing
- Plastic components

Options:

- Hydrogen peroxide plasma sterilization
- Ethylene oxide sterilization (requires aeration time)

Special Care for Ophthalmic Instruments

- Use **separate sets** for eye surgery only.
- Avoid harsh chemicals like:
 - Bleach
 - Strong alkaline cleaners
 - Chlorhexidine residue (can cause toxic anterior segment syndrome – TASS)
- Lubricate hinged instruments using **water-based instrument milk** only.
- Inspect tips under magnification for damage.

Packaging & Storage

- Wrap in sterilization wraps or trays.
- Include chemical indicators in each pack.
- Store in:
 - Dry
 - Dust-free
 - Closed cabinets

Shelf life depends on packaging and storage conditions.

Sterilization Monitoring

1. **Chemical Indicators** – Every cycle
2. **Biological Indicators (Spore Testing)** – Weekly recommended
3. Maintain sterilization log records

Important Safety Notes

- Never reuse single-use ophthalmic items.
- Flush cannulated instruments thoroughly.
- Avoid drying viscoelastic material — extremely difficult to remove later.