Cleaning and Care of Aesculap

CLEANING

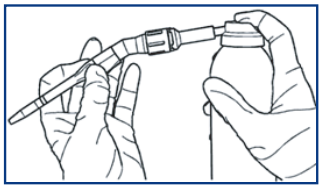
- BATTERIES MUST BE REMOVED PRIOR TO CLEANING AND STERILIZATION.
- Disassemble and clean instruments immediately after use to prevent blood and other debris from drying on to the surface. Blood causes a stain which is difficult to remove and if left on the instrument for an extended period of time will mark and stain which will lead to corrosion.
- Aluminum surfaces will be attacked by alkaline solutions or tap water with higher concentrations of chloride. Therefore, use only distilled water for cleaning the instruments.
- Rinse all cleaning residue thoroughly off the instrument with distilled water. Be aware, normal tap water will leave deposits on the instruments due to the high mineral content.
- Wash instruments with a neutral pH soap (between 7pH – 8pH) for optimal results. The cleaners and cleaning agents you use can also be a cause of corrosion. Strong substances, as well as those containing a chemical make-up of acid or alkaline-base solutions can lead to pitting and staining.
- Do not use Betadine Solution, dish soap, laundry soap, or surgeons hand scrub. These products can cause spotting and corrosion.
- Use only distilled water for washing and rinsing as well as for sterilizing, along with a nylon brush, nylon post scrubber and a low-suddsing, near-neutral detergent.
- Use a nylon cleaning brush for jaw serrations and teeth areas.
- Do not use steel wool, wire brushes, highly abrasive cleaners or detergents as this will damage the protective layer or skin of the instrument.
- Thoroughly dry instruments before wrapping them. Any remaining moisture can result in corrosion.

AESCULAP Maintenance Oil: Sterilit Hi, Sterilit M, Sterilit I, Sterilit mini

Applications

- All Sterilit maintenance oils are validated for steam sterilization up to 356°F/180 °C.
- Sterilit oil should be applied to all joints/moving parts prior to autoclaving the instruments.
- Use ONLY prior to autoclaving instruments.

Properties



- Steam-permeable oil film
- Heat-resistant germs are killed even in critical areas during sterilization
- Lubricating effect
- Corrosion protection

Warnings

- Extremely flammable
- As content of aerosol Sterilit Oilspray is pressurized storage above 122ºF/50ºC can increase pressure and container may burst

Sterilization

- Only sterilize a clean instrument. The most damaging procedure is to allow dried-on debris to become baked-on stains in the autoclave. **Remember, an autoclave does not clean; it will only sterilize.**
- If using reusable instrument wrappers make sure they are rinsed thoroughly to remove all residues of detergents, otherwise staining or corrosion might occur during steam sterilization.
- Sterilization of dissimilar material instruments should be avoided. Chipped or imperfectly plated instruments of dissimilar material will cause rust deposits on each other. These particles promptly oxidize and the instrument will appear to have rusted.

Autoclave

- Maximum temp of 273ºF/134ºC and maximum holding time 18 min. or max temp 250ºF/121ºC and max holding time of 20min.
- Minimum holding time is 5 minutes at the temperatures above.
- These are the maximum temperatures and holding times. Longer holding times may adversely affect the service life of the drill.

Storage

- Instruments may corrode as a result of adverse storage conditions. To prevent this they should be stored in dry and dust-free conditions (closed stacking/storage systems are preferable).
- Major temperature fluctuations should be avoided in order to prevent accumulation of moisture on instrument surfaces.
- If using reusable instrument wrappers or cloth make sure they are properly dry before wrapping instruments for storage. Wet or damp instrument wrappers/cloth will result in corrosion or instruments.

PREVENTING PROBLEMS

Even the finest surgical instruments can become spotted very quickly. Adhering to proper cleaning and sterilization procedures will prevent occurrences of staining and spotting.

Light or dark spots

- Slow evaporation of water condensation on the instrument will cause light or dark spots. Mineral deposits left behind after the water has evaporated are the result of using tap water. The use of distilled or de-mineralized water will eliminate the problem.
- Spots can also be the result of opening the autoclave door before steam has been completely exhausted, which causes a slow drying process.
- During laundering procedures it is important that the detergents are thoroughly rinsed out. Reusable instrument wrappers can have residual chemicals carried onto the instrument surface during steam sterilization.

Rust spots

- It is unlikely that surgical grade metal will rust. What appears as rust is usually residual organic matter or mineral deposits which have been baked on to the surface.
- Never mix instruments of dissimilar material (stainless steel, carbon steel, copper, brass, aluminum). If a plated instrument is chipped or peeled, an electrolytic action will carry particles from the exposed metal on to the surface of the other instruments.
- A rust-colored film on instruments can be caused by the high mineral content of tap water or by the use of water softeners.

Corrosion: The chemical or electrochemical reaction between a metal and its environment that produces a deterioration of the material and its properties.

- Blood, pus, and other secretions contain chloride ions which lead to corrosion. If left on the instruments for any extended period of time (1-4 hours), the instruments will mark and stain, especially if these residues are allowed to dry. Therefore, more care should be taken in cleaning every instrument thoroughly after each use. Excessive moisture left on the surface of the instrument can lead to corrosion.
- Preheat the autoclave; do not rush the drying time. Foreign matters deposited in the autoclave can result in spotting and corrosion of instruments. Inner surfaces of the autoclave should be given a routine maintenance. Wipe down with acetic acid (equal parts of vinegar and distilled water) to remove any impurities.

Pitting: Depressions in the surface of the metal generally attributed to localized chemical attack by a corrosive media.

- When instruments are exposed to saline solutions, blood, iodine, potassium chloride and other compounds pitting might occur. Instruments should be rinsed thoroughly with distilled water immediately after exposure.
- Pitting can also be traced to detergents with a high pH level used for instrument cleaning. Some hydrogen peroxide cleaning solutions have a very high pH level while others are fairly close to the suggested 5pH– 8pH range. It is important to know the pH of your cleaning solution.