Instrument Reprocessing

By Joe Tulpinski, Director of Research and Development, Metrex Research

Introduction
In the past several years, much attention has been focused on patient safety and infection prevention. Reports of exposure to inadequately or improperly reprocessed medical devices tell of patient risk of exposure to infection. As information is more freely available to the patient, their awareness has increased. The risk of acquiring such an infection from an inadequately reprocessed medical device is relatively low given the number of such medical devices in use. However, outbreaks due to exposure remain a public health concern.

Reusable medical devices are medical devices that can be reused to diagnose and treat patients. As these devices are used, they become soiled and contaminated with organic matter and microorganisms that must be removed between patients to avoid risk of cross contamination. These reusable devices are reprocessed between patients. Reprocessing is a multistep process that ensures reusable medical devices can be cleaned and disinfected without impairing its function.

We will look at the key steps for the proper reprocessing of reusable medical instruments as it relates to cleaning, disinfection, and storage of a reprocessed instrument.

Cleaning of Used Instruments
The most important step in instrument reprocessing is cleaning. Studies have demonstrated that dirty instruments cannot be effectively disinfected. Cleaning is the removal of visible soil (organic and inorganic material) from instruments and is normally accomplished manually or automatically using water and detergents with or without enzymes. Following the use of a device, gross soil is removed and the device is sent to the central processing area where cleaning will occur. If cleaning is unavoidably delayed, devices can be treated to prevent a hardening of the soil. The surfaces of the instruments can be kept moist by using a gel, spray, or foam intended for this purpose and to begin the break down process of the soil.

When choosing cleaning products or methods, always take into account the special requirements of the device. New devices should be evaluated to ensure that the devices can be effectively cleaned. Sometimes, even when a thorough process is used, some instruments, due to their design, can be deemed unable to be cleaned. Staff involved in instrument reprocessing should follow the manufacturer's instructions and use products that are appropriate for cleaning instruments. Hand soaps, laundry, or dish detergents should not be used to clean instruments. Follow the detergent or enzymatic detergent's manufacturer's instructions for proper dilution and use for optimal cleaning.

The most common type of instrument cleaning is manual cleaning. Manual cleaning is a more flexible method of cleaning in that any type of instrument can be cleaned manually. The down side to manual cleaning is that the consistency of cleaning can vary between technicians and that the employees are at risk of exposure to possible contamination since they are in contact with contaminated instruments. It is for these reasons that a health care facility establishes protocols for instrument cleaning and the disinfection process. A brief overview of the cleaning process is described in Table 1. These procedures should also emphasize that appropriate personal protective equipment (PPE) be worn by the employees when performing instrument cleaning. Additionally, proper training, qualification and re-qualification of the cleaning process should be implemented to ensure consistency between technicians, ensuring consistent outcomes.

When the instruments are received for cleaning, technicians will take the instruments apart prior to cleaning (except when the manufacturer’s instructions say otherwise). The instruments are disassembled, sorted, and allowed to soak. Soaking the instruments makes it easier to remove soil by softening the organic and inorganic matter on the instruments.
Sorting the instruments allows for the separation of sharps and staging for the appropriate cleaning process. Cleaners and enzymatic detergents should be used when compatible. The enzymatic detergents work to break down proteinaceous soils. Detergents dissolve dirt and grease and break down or dissolve oils better than soaps. The detergents contain wetting agents that allow water to flow freely into difficult-to-clean areas like hinges and crevices. Prolonged soaking of instruments or devices in enzymatic detergents can cause damage to an item or cause biofilm to form on the instrument. Always ensure that the detergent or enzymatic detergents are approved by the device manufacturer.

Automated cleaning is another way to reprocess instruments. There are many different types of automated cleaning methods and types of cleaning/decontamination equipment. They include ultrasonics as well as the use of different types of washers/disinfectors. Many of these machines resemble household dish washers. Some automated cleaning systems are device specific. These automated systems for cleaning regulate and monitor the water temperature, detergent or enzymatic dosing and cleaning cycle time. Some of these automatic cleaning systems employ a combination of water jets and ultrasonics to uniformly and thoroughly clean a soiled instrument. Regardless of the automatic washer type or system used, instruments must be prepared for processing (i.e., sorted) before being placed into a washer. The actual preparation should be done in accordance with the washer manufacturer’s instructions and facilities standard operating procedures.

### Choice of Disinfection Process

It is important to choose the correct method of disinfection for the device being reprocessed. In addition to following the device manufacturer's instructions for use, facilities can also follow industry standards. One widely accepted view on the reprocessing of reusable medical devices is a classification system first proposed by Dr. E.H. Spaulding in the early 1970’s. This is a strategy for the reprocessing of contaminated medical devices. This system divides medical devices, equipment, and surgical materials into three categories based on their type and degree of soil drying that may have taken place.

1. **Used** - Instruments that are in use, but not sterile.
2. **Soiled** - Instruments that have been used with visible soil or organic material.
3. **Surgically Contaminated** - Instruments that are soiled with blood, body fluids, or other body substances.

### Table 1: Manual Cleaning of Used Instruments

<table>
<thead>
<tr>
<th>Step</th>
<th>Procedure</th>
<th>Why this is done</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Disassemble used instrument according to manufacturer’s instructions for use.</td>
<td>This is done to eliminate areas that are difficult to clean. These areas can build up organic and inorganic debris over time making disinfection impossible.</td>
</tr>
<tr>
<td>2</td>
<td>Soak the used instruments in warm water for 10 minutes. (Time may vary depending on the soil type and degree of soil drying that has taken place.)</td>
<td>This step softens and loosens much of the soil that may have dried on the instrument between the time it was used and the time cleaning has started.</td>
</tr>
<tr>
<td>3</td>
<td>Completely brush the instrument with a medium-soft bristle brush while it is in the soak bath. To avoid damaging the instrument, follow manufacturers’ recommendations as to the type of brushes to use for cleaning. Brushing should be performed under the surface of the water to minimize aerosolization-cleaning away from the operator.</td>
<td>Brushing is the physical removal of the soil from the instrument. Note: the insides (lumens, channels, etc.) of tubed devices, like dental handpieces or endoscopes should be brushed out as well.</td>
</tr>
<tr>
<td>4</td>
<td>Rinse with clean water</td>
<td>Water can be either deionized water or reverse osmosis water from the facility.</td>
</tr>
</tbody>
</table>

If difficult-to-remove soil remains, another enzyme detergent soak followed by brushing and rinsing should be done.

### References

on the potential risk of infection involved in their use. The three categories are critical, semi-critical, and non-critical. This system also established three levels of germicidal activity (high, medium, and low) for disinfection strategies with the three classes of medical devices. Table 2 summarizes the classification and minimum level of disinfection required.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Minimum Level of Disinfection</th>
<th>Patient Contact</th>
<th>Example of Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical devices</td>
<td>Sterilization (High activity)</td>
<td>Devices come into contact with blood or normally sterile tissue</td>
<td>Surgical Retractors, Surgical Forceps or Clamps</td>
</tr>
<tr>
<td>Semi-critical devices</td>
<td>High-level disinfection (Medium activity)</td>
<td>Devices come into contact with mucous membranes</td>
<td>Endoscopes, Vaginal Probes</td>
</tr>
<tr>
<td>Non-critical devices</td>
<td>Hospital or general disinfection (Low activity)</td>
<td>Devices come into contact with unbroken (intact) skin</td>
<td>Stethoscopes, Blood Pressure Cuffs, General Surfaces</td>
</tr>
</tbody>
</table>

Hospital or General Disinfection of Reusable Medical Devices
Typically this type of disinfection may be used for the decontamination process in which the used devices are deemed safe to handle by a reprocessing technician. A hospital disinfectant is one that is EPA registered (having an EPA registration number) and is effective against Staphylococcus aureus, Pseudomonas aeruginosa and Mycobacterium spp. A general disinfectant will also have an EPA registration number, but does not list a claim against Mycobacterium spp. Hospital or general disinfectants do not kill spores.

A hospital or general disinfectant can be used to reprocess non-critical medical devices such as stethoscopes, blood pressure cuffs or other medical device surfaces found in and around a health care facility.

High-Level Disinfection of Reusable Medical Devices
Manual and automated methods
High-level disinfection is the minimum disinfection type used for heat sensitive semi-critical medical devices. Semi-critical devices such as anesthesia or respiratory equipment, endoscopes, and diagnostic probes, come into contact with mucous membranes and are the types of devices that should be high-level disinfected. High-level disinfection destroys all microorganisms with the exception of a high number of bacterial spores.

Chemicals commonly used for high-level disinfection of medical devices are; Glutaraldehyde, ortho-Phthalaldehyde, Peracetic Acid/Hydrogen Peroxide.

Glutaraldehyde
Glutaraldehyde has gained wide acceptance as a high-level disinfectant and liquid chemical sterilant. It kills microorganisms by altering RNA, DNA, and protein synthesis within microorganisms. Glutaraldehyde has excellent biocidal activity. It is easy to use, and does not damage equipment. It is active in the presence of organic matter and is non-corrosive to metals, rubbers, and plastics. Glutaraldehyde can be used in manual and automated reprocessing protocols. The major problem associated with glutaraldehyde is that it is a known respiratory and dermal irritant and sensitizer, and adverse health effects may occur in exposed workers. Glutaraldehyde vapor is required to be monitored in the endoscope reprocessing area. Proper fume management system for glutaraldehyde products is desirable.

Ortho-Phthalaldehyde
Ortho-Phthalaldehyde (OPA) has shown superior biocidal activity (except against bacterial spores) compared to glutaraldehyde, with a shorter contact time. OPA solutions do
not require activation. To achieve high-level disinfection using MetriCide OPA Plus, a minimum of 12 minutes at a minimum of 20°C is required for manual reprocessing; and a minimum of five minutes at 25°C is required for an Automated Endoscope Reprocessor (AER). Rigorous rinsing is required to remove the OPA from the surfaces of the endoscopes. OPA is contraindicated for the reprocessing of endoscopes that will be used on patients with recurrent bladder cancer. OPA was identified as the cause of serious allergic reactions in some bladder cancer patients who underwent repeated cystoscopies. OPA vapor is not required to be monitored in the endoscope reprocessing area. OPA will stain protein and this can uncover inadequate cleaning practices. If staining occurs, the cleaning practices should be revisited.

**Peracetic Acid/Hydrogen Peroxide**

Peracetic acid/Hydrogen Peroxide are oxidizing agents that kill microorganisms by disrupting their cell-wall permeability and by denaturing proteins, enzymes, and other metabolites. Peracetic acid/Hydrogen Peroxide has a rapid, broad-spectrum antimicrobial activity. Peracetic acid (especially at elevated temperature) can be corrosive to some metals but additives and pH modifications can reduce this effect.

A high-level disinfectant (HLD) should be selected based on the following considerations: The area and equipment available, the components that make up the high-level disinfectant, the compatibility with the devices in use, proper ventilation, training, and education of staff.

All high-level disinfectants are dangerous chemicals and need to be handled accordingly. HLDs should not be used as hard surface disinfectants or for routine cleaning. When using a high-level disinfectant for reprocessing, fumes and vapors must be properly managed. Containers containing high-level disinfectants should remain closed or covered except when placing a device in or removing the device out of the solution. Containers must be located in a well-ventilated area or in a fume management system. Fume management systems must be routinely maintained for proper function and documented.

Another aspect to consider in the selection of a high-level disinfecting solution, aside from compatibility, is the use of surfactants in the disinfectant formulation. Surfactants can cause air bubbles that prevent the solution from completely contacting the entire surface of the instrument. Additionally, surfactants can cloud the lenses of lensed instruments.

To ensure that high-level disinfectants are working properly, one must monitor for the Minimum Effective Concentration (MEC) or Minimum Recommended Concentration (MRC) required (the terminology will vary depending on product). Typically this is performed using chemical indicating test strips appropriate for the high-level disinfectant used.

Perform routine testing of the liquid high-level disinfectant to ensure at least the minimum effective concentration (MEC) of the active ingredient. Check the solution before each use and document the result. If the chemical indicator shows that the concentration is less than the minimal effective concentration (or minimal recommended concentration), the solution should be discarded. The liquid high-level disinfectant should be discarded at the end of its reuse life, regardless of the minimal effective concentration or minimal recommended concentration. Upon opening a fresh bottle of test strip and at pre-defined intervals (per facility procedure), a quality assurance test should be performed on the test strips.

If additional liquid high-level disinfectant is added to an AER (or basin, if manually disinfected), the reuse life should be determined by the first use/activation of the original solution (i.e., the practice of “topping off” of a liquid high-level disinfectant pool does not extend its reuse life). Use only test strips indicated for the product and document the test strip expiration date on the product bottle. The test strips will have two expiration dates; the date after opening and the manufacturers’ expiration date.
Sterilization of Reusable Medical Devices

Overview
Steam sterilization is the gold standard when the reusable devices are heat and pressure tolerant. It is the most commonly used process for sterilizing instruments, trays, and cassettes. Steam sterilization is considered safe, fast, and most cost effective when compared to other methods of sterilization. The steam sterilizers come in a variety of sizes and the sterilization cycles can vary among manufacturers. The cycle type depends on the typical application or load type for sterilization. Table 3 summarizes some different cycle types and the typical applications.

Prior to sterilizing instruments, proper and appropriate wrapping or covering must be utilized. Commonly, instruments are placed in materials such as pouches, wraps, or ridged containers. Pouches are commonly used for small, lightweight instruments. Wraps are commonly utilized for instrument trays or cassettes. Ridged containers are commonly used for heavy or layered instrument trays. Care must be observed to ensure that sharp edges or pointed objects do not penetrate this protective packaging. If this occurs, the sterility of the instrument has been compromised.

Another type of sterilization for the reprocessing of reusable medical devices are low temperature methods of sterilization such as gas, plasma, vapor, or liquid chemicals. These are intended for reusable devices that cannot tolerate high temperatures or pressures. Each process has its advantages and disadvantages. The choice about which sterilization process the health care facility should choose lies with the instrument manufacturer as to what was validated in their instructions for use. For patient safety, the process must be compatible as to not cause damage and must be efficacious to ensure sterility.

Device Storage
Reprocessed instruments should be stored in a manner that reduces the potential for contamination. Sterile instruments should remain in their wrapping until ready for use. Sterile items are considered as such unless the packaging is opened or damaged. Prior to use, a sterile package should be inspected for integrity. If it is suspected that a breach may have occurred with a package, the items should not be used and should be reprocessed.

High-level disinfected instruments such as endoscopes can be hung in appropriate cabinets so they can dry in a timely manner. Reprocessed instruments and devices should be kept clean, dry, and at a constant temperature and out of highly traveled areas of the medical or reprocessing facilities.

It is important that all reprocessed instruments be carefully handled, ensuring that the devices are not crushed, bent, or punctured. When instruments are transported to their place of use, the devices should be protected from various environmental contaminants.

Conclusion
Proper instrument reprocessing following the devices’ instructions for use is an important factor to prevent health care associated infections (HAIs). Careful and thoughtful adherence to process, procedures, and practices ensure successful outcomes. Appropriate cleaning and disinfection selections allow reusable devices to be reused with confidence for both the patient and health care personnel.
Millions of people each year acquire infections while receiving treatment in healthcare organizations, and some of these people never recover. According to the Centers for Disease Control and Prevention (CDC), 1.7 million infections annually are related to healthcare settings, and these infections lead to 99,000 deaths each year. 

Source: APIC

Top 10 Essentials for Effective Instrument Cleaning

Each day, health care facilities’ sterile processing departments manage the preparation of countless surgical instruments for upcoming procedures. If devices are not properly cleaned before they are disinfected and sterilized, tissue, bone, or other organic material can remain in or on the instrument. This was demonstrated in the February 2013 issue of PSO Monthly Brief which explored inadequately reprocessed devices.

Consequences of inadequate reprocessing can be relatively minor, such as a delay in surgery while new instruments are sought if the contamination is identified before a procedure begins, or more significant, such as possible infection.

Healthcare staff members often mistakenly believe that sterilization alone adequately prepares equipment for reuse; this is simply not true. In fact, reprocessing is a multistep practice that includes thorough cleaning as well as disinfection or sterilization. Part of the increase in reprocessing complexity may be contributed to advances in technology. Today’s instruments have complex, movable parts that are difficult to disassemble and clean thoroughly, says Gail Horvath, MSN, BS, RN, CNOR, CRCST, a patient safety analyst at ECRI Institute PSO.

Facility leadership must be aware of processes and challenges within the sterile processing department and view them as part of the delivery of safe patient care. Changes in equipment, personnel, or procedures can affect the organization’s ability to provide properly reprocessed—and safe—instruments. Therefore, ECRI Institute PSO has created a list of its Top 10 Essentials for Effective Instrument Cleaning:

1. Provide adequate trained staff, facilities, and resources for the sterile processing department.
2. Standardize and simplify procedures in all areas where instruments are reprocessed.
3. Monitor the quality of instrument reprocessing through postcleaning inspections.
4. Seek input from reprocessing department staff on instrument and equipment purchases.
5. Limit the operating room’s dependence on immediate-use sterilization.
6. Establish delivery criteria for loaned instruments and prohibit immediate-use sterilization of them.
7. Require regular competency assessments of staff who reprocess instruments.
8. Foster collaboration and teamwork among reprocessing department and operating room staff.
9. Recognize and respect the contribution by reprocessing staff to patient safety and quality care.
10. Encourage prompt reporting of events or near misses involving contaminated instruments.

Source: ECRI Institute
Guidelines & Recommendations

Instrument processing functions should be performed in one central department for safety and cost-effectiveness.

A. Personnel doing the reprocessing should be capable of critical thinking.

B. The supervising organization is responsible for ensuring appropriate training, education, and competency of the staff.

C. Sterilization cycles with little or no dry time are efficacious when used in compliance with validated written instructions provided by the device manufacturers, sterilization equipment manufacturers, and (if applicable) container manufacturers and when done in accordance with professional guidelines.

D. Cleaning, decontamination, and rinsing are critical and users must follow and complete all required processing steps regardless of the sterilization exposure parameters being used.

E. Aseptic transfer from the sterilizer to the point of use is critical to protect items from contamination.

F. Only items sterilized and packaged in materials cleared by the FDA for maintenance of sterility can be stored.

G. The device manufacturer’s written instructions for reprocessing any reusable device must be followed. The cycle parameters required to achieve sterilization are determined by the design of the instrument, the characteristics of the load, the sterilizer capabilities, and the packaging (if used).

H. Survey personnel involved in evaluating organizations that sterilize medical items should be knowledgeable and capable of exercising critical thinking and judgment. The regulatory or accrediting agency should evaluate whether the organization’s leaders ensure that training, education, and resources are provided and the competency of staff is validated.

I. Quality management is important to ensure compliance with processes and relating those processes to outcomes.

J. Sterilization process monitoring is essential to ensure that sterilization practices are efficacious.

K. Examples of process monitoring tools are physical indicators, biological indicators, and chemical indicators.

L. Instrument inventories should be sufficient to meet anticipated surgical volume and permit the time to complete all critical elements of reprocessing.

Source: www.apic.org

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EmPower™ Foam Enzymatic Spray

Foam covers instruments, reducing splashing and messy spills. Breaks down bioburden on instruments to speed up cleaning process. Ready to use.

24-oz Touch-n-Spray Trigger

(176-9974) ......................ea

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Efficiently dissolves organic solids. Noncorrosive and low foaming; safe for instruments.

32 oz

(173-0332) ......................ea

½ gal

(173-9446) ......................ea

1 gal

(173-7048) ......................ea

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MetriCide® 28

2.5% Glutaraldehyde Solution

28-day, long-life, high-level disinfecting and sterilizing solution with activator. Excellent compatibility with a variety of devices. Solution is not corrosive to instruments. Rapid and broad-spectrum kill.

32-oz Bottle

(173-2446) ......................ea

1-gal Bottle

(173-3976) ......................ea

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Benz-All® Germicidal Concentrate

Each 40-cc envelope makes 1 gal of 1:750 solution.

(100-8321) ..........................15/pkg

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Ideal for applications where instrument cleaning is not immediately available.

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(953-9364) ......................ea

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Low-foaming enzymatic cleaner can be used in ultrasonic cleaners, evacuation systems, reproprocessors, and washers/sterilizers. Free-rinsing formula doesn’t leave a film. Patented formulation breaks down 3 times more bioburden than market leaders within 5 minutes. Bacteriostatic to prevent additional microbial growth. Corrosion inhibitor prevents corrosion on metal instruments. 1 oz makes 1 gal of solution.

1-qt Bottle

Makes 32 gallons of solution.

(312-3920) ......................ea

1-gal Bottle

Makes 128 gallons of solution.

(312-1086) ......................ea
With greater attention being placed on the role of the environment in infection prevention, there is a greater focus on sterile processing and its impact on patient safety. The Association for Professionals in Infection Control and Epidemiology (APIC) offers disinfection and sterilization resources to help you ensure that your facility is in compliance with guidelines and regulatory standards for sterile processing. For more information, please visit www.apic.org.

**Cidex Plus® 28-Day Solution**
3.4% alkaline glutaraldehyde solution with an odor suppressant. Built-in corrosion/rust inhibitor. Testable.
- Rapid 20-minute soak time at 25ºC
- Noncorrosive to instruments
- Contains 3.4% glutaraldehyde with odor suppressant
- Effective in the presence of 2% organic soil
- Test strips available to verify minimum effective concentration

1-qt Bottle (555-0498)..............................ea
1-gal Bottle (555-4973)..............................ea

**ENZOL® Enzymatic Detergent**
Low-foaming Presoak and Cleaner
Proteolytic enzyme helps reduce the need for manual cleaning. Fast acting—begins to work in 1 minute. Mild pH formulation.

1-gal Bottle (555-1112)..............................ea

**Cidex® Activated Dialdehyde Solution**
Enables quick instrument turnaround to help maximize scheduling of daily procedures. With its broad kill spectrum, this reliable, high-level disinfectant is effective and safe for a wide variety of medical instruments and devices, including endoscopes. 2.4% alkaline-based glutaraldehyde formula provides superior microbicidal and anticrosion properties versus acid glutaraldehydes. Minimum effective concentration (MEC) is easy to test using Cidex Activated Dialdehyde Solution Test Strips. Activated solution can be reused for up to 14 days, or until otherwise indicated by the test strip.

(555-0126)........................................1½ gal

**Wavicide-01® High-Level Disinfectant**
Wavicide-01® sterilant is a 2.65% glutaraldehyde soaking solution for use with endoscopes and stainless steel surgical instruments. It is ready to use and requires no activation. With a neutral pH of 6.3, it is stable and noncorrosive. Provides 30-day reuse. Use at room temperature.

32 oz (583-4947)..............................ea
1 Gallon (120-3619)..............................ea
DECONTAMINATION LIFE CYCLE

The decontamination life cycle model highlights the extent to which decontamination affects the whole of any healthcare facility and not just those areas processing equipment. Traditionally, decontamination has been the responsibility of the departmental heads of specialist units, for example sterile services, endoscopy units, theatre surgical suites, etc. Management arrangements within health care facilities often divided these functions and made it difficult for a totally coordinated approach to the application of decontamination standards and practices to be achieved.

Effective decontamination requires the attainment of acceptable standards at all stages of the life cycle. Failure to address issues in any of these stages will result in inadequate decontamination. At all stages of reprocessing, the following issues need to be taken into account:

1. The location and activities where decontamination takes place;
2. Instrument reprocessing facilities and equipment at each location;
3. Ensuring that equipment used is validated, maintained, and tested in accordance with manufacturer's guidelines and legislation;
4. The existence of effective management arrangements;
5. The existence of policies and procedures for all aspects of decontamination work.

The aim of decontamination is to make reusable medical devices safe for use on a patient and for staff to handle without presenting an infection hazard.

Source: Depot Health

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Fast-acting high-level disinfectant
- Cost-effective
- Time-saving
- Proven efficiency

For product support and educational in-service kits, contact your ASP Representative or visit www.aspjj.com.

<table>
<thead>
<tr>
<th>Item Code</th>
<th>DESCRIPTION</th>
<th>SIZE</th>
<th>QUANTITY/CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>555-6446</td>
<td>CIDEX® OPA Solution</td>
<td>1-Gallon (3.785 L)</td>
<td>4 Gallons</td>
</tr>
<tr>
<td>555-2497</td>
<td>CIDEX® OPA Test Strips</td>
<td>60 Strips/Bottle</td>
<td>2 Bottles</td>
</tr>
</tbody>
</table>

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Please read and follow the Instructions for Use for important safety information.

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1. PRE-TREAT
Instruments must remain moist to avoid blood, mucus or other bio burden, which may cause damage if allowed to dry on the instrument.
- Enzymatic solutions with neutral pH are preferred to pre-soak/hold instruments
- Never soak instruments overnight/weekend
- Never use disinfectant as a "holding solution"

2. RINSE
Rinse instruments for 30 seconds under warm distilled or demineralized water. Tap water may leave spots on instruments.

3. CLEANING
An instrument may not be successfully sterilized if it is not completely clean. It is important that individuals cleaning instruments wear appropriate personal protective equipment (such as goggles or face shield, mask, gloves and apron).

Follow the steps below to ensure proper cleaning:
- Separate dissimilar metals
- Inspect for functionality
- Apply stain remover (as needed)

ACCEPTED CLEANING METHODS:
- Ultrasonic (most effective)
- Manual
- Automatic Washers

4. RINSE AND DRY
Rinse and dry instruments using surgical towels not treated with bleach or harmful chemicals.

5. LUBRICATE
Lubricant should be non-silicone based and water soluble. Never use industrial lube.

Lubrication:
- Maintains longevity
- Helps prevent spotting, staining, corrosion and sticking/tightness

Lube all metal to metal contact:
- Hinges, box locks, screws and blades
- Lubricate weekly or more often if possible

Types of Lubricant:
Milk = 30 second dip – no rinse
Spray = No rinsing

6. PACKAGE – WRAP
Before wrapping, check all instruments for functionality.
- Separate dissimilar metals
- Instruments must be in the open/unlocked position

Hinges/box locks can fracture during heat expansion if closed.

Wrap instruments in specialized bags, cassettes, surgical towels or containers with an indicator inside.

7. STERILIZATION
- Autoclave – Recommended
- Chemical/Cold Sterilization – Not Recommended
- Dry Heat – Not Recommended
Every Day, Every Patient, Every Time

Guidelines & Recommendations

Storage Recommendations for Autoclaved Medical Instruments
1. Allow packages to dry in the autoclave before handling to avoid contamination.
2. Store packaged sterile instruments in a clean, dry, and dust- and lint-free area (covered or closed cabinets are recommended).
3. Store clean and sterile materials at least 8 to 10 inches above the floor, 18 inches below the ceiling, and 2 inches from the outside walls.
4. Keep like items together—sterile with sterile and clean with clean.
5. Rotate stock with older items being used first.
6. Do not store sterile supplies under sinks or other locations where they may become wet, or on the floor, windowsills or other supply areas than designated shelving or cabinets.
7. Do not store sterile supplies with items not intended for clinical use, e.g., office or cleaning supplies.
8. Do not handle sterile packages unnecessarily to avoid contamination.
9. Items stored and not used within 12 months should be evaluated as to the condition of the packaging as well as the necessity of stocking infrequently used items.

Checklist for Sterility Before Opening Package
1. Check the expiration or sterilization date.
2. Check for the indicator color change.
3. Check how it had been stored.
4. Check the general condition of the wrapper.
5. Check for any holes or moisture damage.

SOURCE:
Centers for Disease Control and Prevention (CDC)
Joint Commission on the Accreditation of Healthcare Organizations (JCAHO)

KimGuard One-Step Sterilization Wrap
Strength: KC200
KC200 is the second of six strength levels in the KimGuard One-Step line. It is often used to package linen towels, packs and gowns, light basin sets, and single instruments. One-Step is made of two sheets of SMS fabric bonded together on the edges, enabling users to wrap and open packages in about half the time of sequential wrap. The SMS fabric delivers barrier and strength properties that help prevent contamination after sterilization.
- Simultaneous (nonsequential) wrap
- One application equivalent to 2 sheets of wrap
- Low-lint SMS fabric
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Each pack contains 100 sheets. Available in the four most commonly used sizes.
- #62018, 18" x 18" (806-8305) ..........480/case
- #62036, 36" x 36" (643-8345) ..........300/case
- #62248, 48" x 48" (303-4845) ..........24/case
- #62654, 54" x 54" (613-6497) ..........24/case
- #62645, 45" x 45" (627-3965) ..........48/case

Order: 1.800.772.4346 8am - 9pm, et | Fax: 1.800.329.9109 24 hours
All healthcare facilities should choose either an event-related or date-related policy for managing the process of “shelf-lives” for the autoclaving of medical instruments. Each health care facility should have a written policy that addresses the shelf-life of packaged sterile items based on the quality of the wrapped material, storage conditions, conditions during transport, and the amount of handling. The processing of instruments requires care be taken to avoid contamination of the instrument(s) during storage; instruments need to be stored in a way to preserve the package; and packages must be examined before use to ensure integrity and dryness.

Source: Centers for Disease Control and Prevention (CDC), Joint Commission on the Accreditation of Healthcare Organizations (JCAHO)

KimGuard One-Step KC500
Sterilization Wrap
- Simultaneous (nonsequential) wrap
- One application equivalent to 2 sheets of wrap
- SMS fabric

3M™ Comply™ Lead Free Steam Indicator Tape
Designed to seal packs and provide visual evidence that packs have been exposed to the steam sterilization process. Indicator tapes are Class 1 process indicators used for exposure monitoring, which assures the operator handling the processed items that the packs have been exposed to the sterilization process without the need to open the pack or check load control records.

#1322-12MM (777-0445)..........................ea
#1322-18MM (777-0446)..........................ea
#1322-24MM (777-0447)..........................ea
#1322-48MM (777-0451)..........................ea

CSR Wrap
Highly permeable sterilization wrap. Outstanding liquid repellancy against water, alcohol, iodine. For use with ETO, steam, gamma radiation, E-beam sterilization technologies. Exceptionally strong.

12” x 12” (107-1428).........................1000/case
15’ x 15’ (107-8142).........................500/case
18” x 18” (108-9992).........................500/case
20” x 20” (107-7093).........................500/case
24” x 24” (108-0896).........................500/case
30” x 30” (108-0898).........................250/case

STERILIZER INDICATOR TAPE
60-yd Rolls
Individually wrapped. Seals autoclave bags, tubing, pouches, and CSR wraps, indicating that sterile conditions have been attained on packages that have been sterilized by steam.

½”
(104-8181).........................ea
3/4”
(104-6133).........................ea
1”
(104-8993).........................ea

Sterilization Tape
Lead-Free, Latex-Free
Consistent with 2008 AORN Latex Guidelines, and because latex can negatively affect both healthcare workers and patients, this steam indicator tape is latex-free as well as lead-free. Lead is not biodegradable, so it is difficult to remove once it enters the environment. Also provides:
- Immediate identification of processed items while securing sterilization packs
- Color-change indicator to verify sterilization exposure
(112-6361).........................ea

Henry Schein®

Crosstex®

SPSmedical has developed a series of educational CD-ROMs on a variety of Infection Control topics that can be used for group or individual training. Each program is presented in a slide presentation and utilizes an abundance of pictures to provide viewers a better understanding of the subject being covered. Accredited through multiple organizations, test questions and a CEU Certificate are included with each program.
- Cleaning, Packaging & Sterilization of Instruments; CEUs 1.0 – 1.5
- Decontamination, You & Biofilms; CEU 1.5
- Selection & Use of Packaging Systems; CEU 1.0
- Steam Sterilization: The Process of Choice; CEUs 1.0 – 1.5

Visit the SPS Medical website for more information and a full listing of programs www.spsmedical.com/education

www.henryschein.com/infectioncontrol
### Superior Instrument Reprocessing Products

**Sterilization Wrap and Durawick™ Towels**

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**Sterilization Wrap**
Durable, water-repellent material allows penetration for various sterilization methods.

**Durawick™ Barrier Towels**
Durawick™ towels were specially created to be used to last through several rounds of tools being placed on them from your ultrasonic cleaning. The top layer of material wicks away moisture, which is then absorbed into the middle layer of the product, keeping your sterilization area clean and sanitary.
Internal/external multi-parameter chemical indicators only change color when all 3 criteria for sterilization have been met... Time / Temperature / Steam

Sure-Check® Sterilization Pouches
Every Load. 2+1 Free! Shipped with order

ConFirm® 10 Hour In-Office Biological Monitoring System
Every Week. Buy 2 Boxes of 25 Indicators, receive an incubator FREE! (See below for details)

Internal/external multi-parameter chemical indicators only change color when all 3 criteria for sterilization have been met... Time / Temperature / Steam

SteamPlus™ Class 5 Integrators
Every Day. Use with your steam sterilization cycles to receive a distinct pass/fail result - allowing you to release non-implant loads before receiving spore test results.

ConFirm® 10 Hour In-Office Biological Monitoring System
A breakthrough in biological monitoring... final results in just 10 hours!

For the best in sterility assurance include a Class 5 Integrator at least once daily.

3M Health Care - Innovative solutions from a trusted supplier - for better health

Sterility Assurance: 3M™ Attest™ Biological Indicator Monitoring Starter Kit #115 (777-0154)

- One roll of 3M™ Comply™ 1322-6N Indicator Tape
- One box 3M™ Attest™ 1252P Biological Indicators (25 each)
- One 3M™ Attest™ 116 Incubator
- One bag 3M™ Comply™ SteriJage™ 1243B Chemical Integrators (100 each)
- One 3M™ Attest™ 1266 Log Book and a Wall Chart

Please contact your Henry Schein sales representative for details on these products and promotions from 3M.

3M™ Attest™ Biological Indicators for 270°F/132°C Gravity Displacement Steam Sterilizers 1261 1265: 24 hour result, blue cap. Biological Indicator for steam 270°F/132°C gravity displacement sterilization cycles. 24 hour result. Blue cap (500 box) Biological Indicator vials are easy to use and interpret with visual color readout. In 24 hours, self-contained biological indicators significantly reduce possibility of contamination, minimizing false positives and assuring more accurate results.

* Free goods ship with order. Kit-for-kind while Supplies Last. Promotions valid July 15 – October 15, 2013

Buy one 3M™ Attest™ Biological Indicator Monitoring Kit #115 and receive 1 box of 3M™ Attest™ Biological Indicators (1261 or 1262) - 100 indicators per box FREE*
Guidelines & Recommendations

The manufacturer’s written instructions should be used to determine how to replicate the validated cleaning and processing methods. The manufacturer’s written instructions should identify requirements related to:

- Utilities (e.g., type of water, compressed air)
- Cleaning equipment accessories (e.g., adaptors) for creating a proper connection between the instruments and equipment, utilities, and cleaning equipment
- Accessories for cleaning lumens, ports, and internal parts
- Cleaning agents
- Lubricants
- Processing methods

Instruments should be decontaminated in an area separated from locations where clean activities are performed. Cleaning soiled instruments in a scrub sink can contaminate the sink and faucet, which also may be used for clean activities (e.g., hand washing, surgical hand antisepsis). The decontamination area should be physically separate from clean areas and include a door. This area should contain, but not be limited to the following equipment:

- Sinks to manually clean instruments
- Hand washing facilities
- Eye wash station
- Automated equipment consistent with the types of instruments to be decontaminated
- Adaptors and accessories to connect instruments with cleaning equipment and utilities
- Compressed air supply

The design of the decontamination area facilitates the appropriate decontamination of instruments. Having equipment and utilities in place facilitates desired infection control practices.

SOURCE: AORN Recommended Practices Committee

---

**Chex-All® Instant Sealing Pouches**

Self-sealing, see-through pouch provides a hermetic seal. Sterilization indicators are on inside and outside of pouch.

- 3" x 8" (141-7290) ..............250/box
- 3½" x 24" (141-1372) ...........500/case
- 5" x 10" (141-9031) ............250/box
- 5" x 15" (141-3809) ............250/box
- 7" x 12" (141-2723) ............250/box
- 8" x 16" (141-3608) ............125/box
- 9" x 16" (600-7348) ............500/case
- 12" x 18" (141-3347) ............125/box

---

**Duo-Check™ Sterilization Pouches**


- 3½" x 9" (774-0098) ............200/box
- 3½" x 9" (774-0099) ............200/box
- 3½" x 10½" (774-0100) ............200/box
- 3½" x 10" (774-0101) ............200/box
- 3½" x 10½" (774-0104) ............200/box
- 3½" x 10½" (774-0102) ............200/box
- 3½" x 10" (774-0103) ..........100/box
- 5½" x 7½" (312-0686) ............200/box
- 5½" x 7½" (312-1228) ............200/box
- 5½" x 7½" (312-9506) ............200/box
- 5½" x 11" (312-1817) ............200/box
- 7½" x 13" (312-2815) ............200/box
- 10" x 15½" (312-3236) ............200/box
- 11" x 16" (312-0636) ..........100/box
In the United States, there are more than 46 million surgical procedures, and 5 million gastrointestinal endoscopies performed every year. Unfortunately for many patients, procedures too often result in healthcare-associated infections. The reasons? Inadequate cleaning of instruments and devices, improper selection of a disinfecting agent, and failure to follow recommended cleaning and disinfection guidelines procedures.

Self-Seal Sterilization Pouches
Packaging products are manufactured using heavy-gauge, medical-grade paper. Balanced seal strengths facilitate ease of opening while preventing "blowouts" during sterilization. Products are also approved for EO gas and chemical vapor processes. Each pouch features a perforated adhesive seal to minimize errors associated with sealing, a thumb notch for ease of opening, clear poly film for ease of viewing contents, and chemical indicators to show processing has occurred.

**Self-Seal Pouches**
- #SSP-380, 3 3/4" x 5 1/4"
  - (120-1889) 100/box
- #SSP-380, 3 3/4" x 5 1/4"
  - (960-1590) 10/case
- #SSP-381-1, 3 3/4" x 9"
  - (120-9767) 100/box
- #SSP-381, 3 3/4" x 9"
  - (120-2039) 200/box
- #SSP-380-1, 3 3/4" x 10" (218-6623) 200/box
- #SSP-382, 5 1/4" x 10" (120-6578) 200/box
- #SSP-383-1, 7 7/8" x 13" (120-8321) 100/box
- #SSP-383, 7 7/8" x 13" (120-6392) 200/box
- #SSP-387, 8" x 16" (257-2327) 200/box
- #SSP-388-1, 10" x 15" (120-0440) 100/box
- #SSP-389-1, 12" x 15" (120-0441) 100/box
- #SSP-391-1, 12" x 18" (120-0442) 100/box

Roll Stock Tubing
Designed to be cut to any length prior to packaging and then mechanically sealed or taped closed. All tubing is individually packaged in 100' rolls.

**Roll Stock Tubing**
- #RST-002, 2" Roll (608-5573) ea
- #RST-003, 3" Roll (120-3191) 10 rl/ca
- #RST-004, 4" Roll (120-5596) ea
- #RST-006, 6" Roll (608-5515) ea
- #RST-008, 8" Roll (666-5352) ea

Sani-Roll® Sterilization Paper/Plastic Tubing
100' Rolls
See-through, medical-grade tubing with easy-to-read color-changing indicators for use in steam, chemical vapor, or EO sterilization. Extra-thick, medical-grade paper with triple seals for added protection. Blue-tinted plastic aids in the detection of puncture holes. Made in the US. Latex-free.

**Sani-Roll®**
- 2" (141-2630) ea
- 3" (141-3312) ea
- 4" (141-3627) ea
- 6" (141-4058) ea

The Help Center:

**Guide to Selecting and Using MetriCide OPA Plus – YouTube Video**
This video outlines protocols when using MetriCide OPA Plus solution, so that you can protect your patients, your staff, and yourself.
http://www.youtube.com/watch?v=71uu9wu9h6o

**Cleaning Instruments – Educational Articles**
View a listing on various topics of instrument reprocessing and sterilization.
http://www.spsmedical.com/education/educationarticles.html

**Guideline for the Use of High Level Disinfectants and Sterilants for Reprocessing of Flexible Gastrointestinal Endoscopes (2011)**
http://www.sgna.org/Portals/0/HLD.pdf

**Standard of Infection Control in Reprocessing of Flexible Gastrointestinal Endoscopes (2012)**
http://www.sgna.org/Portals/0/sgna_stand_of_infection_control_0712_FINAL.pdf

**Reprocessing of Single-Use Devices - U.S. Food & Drug Administration (FDA) free e-mail subscription service.**

**Steam Sterilization Process Risk Assessment – Webinar CD**
A comprehensive guide to steam sterilization and sterility assurance in health care facilities.

**Surgical Instrument Reprocessing Guidelines – FREE Poster**

www.henryschein.com/infectioncontrol
Ultrasonic cleaning is usually one in a multi-step process that begins with manual cleaning to remove gross debris. This step is performed immediately after the instrument’s use to prevent patient soil from drying. Once manually cleaned, the instrument is then placed in the ultrasonic cleaner. This cleaning step is particularly important for removing fine debris that may not have been removed during manual cleaning.

**Sources:** Infection Control Today
HENRY SCHEIN Brand

Our Henry Schein Brand is a perfect match for health care facilities looking for products that are cost-effective with exceptional value. Our instrument reprocessing product line will help reduce costs and promote better outcomes…
Every Day, Every Patient, Every Time!

HENRY SCHEIN
DUAL-PURPOSE NYLON STERILIZATION TUBING
100' Rolls
Continuous Clear, 6" (101-2227) ea
Continuous Clear, 2" (101-2224) ea
Continuous with Indicator, 6" (101-2223) ea
Continuous Clear, 3" (101-2225) ea
Continuous Clear, 4" (101-2226) ea
Continuous with Indicator, 3" (101-1110) ea
Continuous with Indicator, 2" (101-1111) ea
Continuous with Indicator, 4" (101-2222) ea

HENRY SCHEIN
MAXITEST

Biological Sterilization Monitoring Service:
MaxiTest includes test sets, culturing service, laboratory reports, all postage and handling, and any device concerning sterilization procedures; the lab cultures are completed in 7 days; however, if any test strip cultures positive (spore growth indicating sterilization failure), the office will be telephoned immediately; if the test strips do not culture positive, the office will receive a laboratory report in approximately 2 weeks, indicating sterilization was achieved.

12-Test Package (101-5830) ea
Contains: 12 packets, each containing 2 test strips & 1 control strip.
48-Test Package (101-1253) ea
Contains: 48 packets, each containing 2 test strips & 1 control strip.
Not for export.

HENRY SCHEIN
MAXITEST VALUE TEST PACK

Biological Monitoring System
Used to test steam, dry heat, chemical vapor, and ETO processes. Mail-in service with results reported quarterly. Immediate and confidential notification of test failures. Test results available electronically. Postage not included.
(101-4715) ea
Contains: 52 test packets, each containing 1 test strip & 1 control strip.
Not for export.

HENRY SCHEIN
MAXITEST® VALUE TEST PACK

Contains: 52 test packets, each containing 1 test strip & 1 control strip.

HENRY SCHEIN
MAXITEST® MAXIMA® MULTIPARAMETER SELF-SEAL STERILIZATION POUCHES WITH SURE-CHECK® TECHNOLOGY

23" x 9" (900-4602) 200/box
3½" x 5½" (900-4604) 200/box
3½" x 9" (900-4601) 200/box
5½" x 10" (900-4603) 200/box
7½" x 13" (900-4782) 200/box
12" x 18" (900-4783) 100/box

HENRY SCHEIN
GERMICIDE TRAYS

Dimensions:
10" x 4" x 2¼" Stainless Cover ea
Specify:
Beige (100-8193)
Blue (100-7778)
White (100-8485)
Mauve (101-8195)

Plastic Cover
Opaque Smoke ea
Specify:
White (100-2937)
Beige (100-6126)
Blue (100-7564)
Mauve (101-8196)

HENRY SCHEIN
SURE-CHECK TECHNOLOGY POUCHES WITH DUAL INDICATORS

Superior quality pouch with dual indicators that comply with the recommendations of the CDC for effective sterilization. Preprinted internal and external indicators change color when processed with steam and EtO.

2¾" x 9" (112-4856) ea
3½" x 9" (112-4853) ea
5½" x 10" (112-4854) ea
7½" x 13" (112-4858) ea
10½" x 17" (112-4862) ea
13" x 20" (112-4865) ea

HENRY SCHEIN
MAXICIDE® NS SOLUTION

2.6% Alkaline Glutaraldehyde Solution
Reusable sterilizing and high-level disinfecting 14-day solution. Broad-spectrum kill of pathogenic microorganisms. Specifically designed for scopes and ultrasound transducers. Contains no surfactants.
1-gal Bottle (101-9031) ea

HENRY SCHEIN
MAXICIDE® PLUS

3.4% Glutaraldehyde Solution with Activator
• Sterilization in 10 hours
• 28-day reuse life after activation
• Clear color before activation; turns blue after activation
• Activated solution contains antioxidant and antioxidant ingredients
• Rapid and effective broad-spectrum kill
• Pleasant pine scent
1-qt Bottle (102-5796) ea
1-gal Refill Bottle (102-2865) ea

HENRY SCHEIN
SURGICAL MILK

Super Concentrated
Rust inhibitor and lubricant with bacteriostatic action for surgical instruments. Dilute 1 part milk to 5 parts water. Makes 5½ gal of dip bath.
64-fl-oz Bottle (102-5539) ea

HENRY SCHEIN
MAXI-Zyme

Dual Enzymatic Detergent
• Contains 2 gold-standard proteolytic enzymes for more effective cleaning
• Dissolves and releases blood and tissue; minimizes handling and scrubbing of contaminated items
• 1-gal Bottle (101-9031) ea

www.henryschein.com/infectioncontrol
Guidelines & Recommendations

Understanding Proper Instrument Storage
The correct storage of processed instruments is important to protect them from environmental contamination. The major source of environmental contamination is airborne bacteria and viruses that settle on instruments and equipment. Critical instruments that must be sterile at the time of use must be stored bagged/wrapped until use. However, an efficient way to protect all sterilization critical instruments from environmental contamination is to bag them prior to sterilization and store them in the unopened bag/wrap. Critical instruments/items must be stored in a way that maintains the integrity of packs and prevents contamination from any source. Items required to remain sterile must not be stored in ultraviolet cabinets or disinfectants as these processes will compromise sterility. It is important that critical wrapped instruments are stored in a clean dry area and are subjected to minimal handling before use.

During storage, packs can be contaminated by:
- Over-handling – this can happen through excessive transferring from one place to another or during rotation of instrument packs from over-stocking storage areas or from bundling packs together using rubber bands;
- Moisture – if the pack is placed on a wet bench top, splashed with water, other liquids or aerosols, or
- Penetration – if instruments break through the surface of the pack.

A package is considered to be nonsterile when it:
- Is damaged or open;
- Comes out of the steam sterilizer wet or is placed on a wet surface, or
- Is dropped or placed on a dirty surface.

Storage areas must be dedicated for that purpose only and be free of dust, insects, and vermin. For open shelving, all items must be stored above floor level by at least 250 mm, from ceiling fixtures by at least 400 mm, and protected from direct sunlight. This will facilitate environmental cleaning and allow unrestricted airflow and prevent heating and degradation of the packaging material.

Infectious Control Q3-WEB_Layout 1  7/18/13  10:05 AM  Page 20

Every Day, Every Patient, Every Time

3M™ Attest™ 1291 Rapid Readout Biological Indicators
Self-contained biological indicator for 270°F/132°C gravity steam cycles consisting of a Geobacillus stearothermophilus spore strip; sealed glass ampule with growth medium and dual indicator system; blue color-coded cap with holes for sterilant penetration and a hydrophobic filter as a bacterial barrier; and a chemical indicator on the label that changes from rose to brown when processed. After sterilization, the vial is “crushed” to join the growth media with the processed spore strip. The BI is incubated for 1 hour in the 3M™ Attest™ 290 series auto-reader for a fluorescent reading. A red light indicates a positive result or sterilization failure.
(777-3276) ........................................ 50/box

3M™ Comply™ (SteriGage™) Chemical Integrator 1243A
An ANSI/AAMI/ISO 11140-1:2005 Class 5 Integrating Indicator for use in determining whether the sterilization process conditions were met inside each pack. Can be used in all 250°F-275°F sterilization cycles.
(777-9032) ........................................ 500/pkg

ProSure™ Mailers
Kits for Steam or Dry-Heat Sterilization
(436-4128) ........................................ 12/box
(991-3994) ........................................ 26/box
(331-2136) ........................................ 52/box

ProSpore™ Indicator with Crusher
(833-9786) ................................................ ea

3M™ Comply™ SteriGage™ Integrator
Designed to monitor exposure to steam or EO conditions in a pack. Provides a visual accept/reject readout to determine that the sterilant has penetrated to the point of placement in the pack and confirms that sufficient exposure conditions occurred.
(220-1989) 2 x .75 .................................. 100/box
To ensure that instruments and supplies are sterile when used, monitoring of the sterilization process is essential and requires administrative monitoring. Work practices must be supervised. Written policies and procedures must be strictly followed by all personnel responsible and accountable for sterilizing and disinfecting items, and for handling sterile supplies. If sterility cannot be achieved or maintained, the system has failed.

Source: University of Rochester University Medical Center

The Help Center:

Administrative Monitoring
Work practices must be supervised. Written policies and procedures must be strictly followed by all personnel responsible and accountable for sterilizing and disinfecting items, and for handling sterile supplies. If sterility cannot be achieved or maintained, the system has failed. Policies and procedures pertain to:

1. Decontaminating, terminally sterilizing, and cleaning all reusable items; disposing of disposable items.
2. Packaging and labeling of items.
3. Loading and unloading the sterilizer.
4. Operating the sterilizer.
5. Monitoring and maintaining records of each cycle.
6. Adhering to safety precautions and preventive maintenance protocol.
7. Storing of sterile items.
8. Handling sterile items ready for use.
9. Making sterile transfer to a sterile field.

Helpful Tips for Instrument Processing Areas

- Every designated health care professional should have a personal set of heavy-duty utility gloves, disinfected and evaluated for cracks and integrity daily. This will help with compliance and guard against sharps injuries.
- To prevent having to change gloves, keep a spare set of clean cotton forceps or a set of tongs to open and take things out of drawers and cupboards.
- Keep sterilization pouches in an open, easy-to-access location to eliminate the risk of cross contamination from opening drawers and cupboards.
- Having the sterilizer divide the room between clean and dirty (one side is the dirty side, one side is the clean side) is a simple way to help everyone understand the concept.
- An instrument-management system that includes procedure tubs and cassettes is the most efficient and organized way to manage instruments and consumable products, and saves time.
- Procedure tubs and cassettes limit exposure to pathogens and sharps injuries.
SPSmedical Biological Indicators for Steam Processes

**PROCESSING**

1. Note the sterilizer number, load number and processing date on the BI label.

2. Place the BI inside an instrument tray, peel pouch or AAMI challenge pack, whichever is representative of the load being processed.

3. Test the most challenging area in the sterilizer (i.e. bottom shelf near the door, over the drain of a large sterilizer or on the middle shelf of a smaller sterilizer).

4. Process the load according to the sterilizer manufacturer’s instructions.

5. Retrieve the BI and confirm the chemical indicator printed on the label has turned BROWN. Wait 10 minutes before crushing. Failure to do so could cause the glass ampule inside the BI vial to burst which may result in injury. For this reason, safety glasses should be worn when handling and crushing a processed BI.

**ACTIVATION and INCUBATION**

1. Activate the processed BI by crushing the inner glass media tube using a built in vial crusher (if available) or separate vial crusher device.

2. Incubate at 55°C – 60°C for 24 hours checking for spore growth (visual color change from purple to yellow) at regular intervals (i.e. 8, 12 and 18 hours).

**TEST RESULTS**

Record negative (no spore growth) results after full incubation in a sterilizer record notebook. No color change in the purple media after processing indicates proper sterilization.

Any positive result (growth indicated by purple to yellow color change), should be reported immediately to a supervisor and the sterilizer taken out of service until resolved.

**STORAGE and DISPOSAL**

1. Store between 60°F and 80°F and 30-70% relative humidity.
2. Do not store near sterilants or other chemicals. Do not refrigerate.
3. Do not use beyond stated shelf-life which is indicated on each box.
4. Negative (no growth) BIs can be disposed of as normal waste; however, positive BIs (growth) should be autoclaved at 250°F/121°C for at least 30 minutes prior to disposal.

**USE of CONTROLS**

- As a Control, an unprocessed BI (from the same lot) should be crushed and incubated each time the sterilizer is tested. Positive results are expected and should be reported.
- The use of a Control verifies that the BI is viable and the incubator is working properly.

6789 W. Henrietta Road • Rush, NY 14543 USA • (800) 722-1529 • www.spsmedical.com

Order: 1.800.772.4346 8am – 9pm, et | Fax: 1.800.329.9109 24 hours
Rapicide® OPA/28
HIGH-LEVEL DISINFECTANT

Buy 3 OPA Gallon Bottles
Get 1 FREE*

The Fastest and Longest Lasting OPA on the Market Today!

The RAPIDIDE OPA/28 Advantage

BY THE NUMBERS

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WORKS FASTER
Take quicker action against microorganisms

High-level disinfects devices manually in just 10 minutes at room temperature (20°C, minimum), to achieve bactocidal, fungicidal and tuberculocidal kills. Studies indicate Rapicide OPA/28 effectively inactivates:

- MRSA
- VRE
- TB
- Hepatitis Viruses
- HIV

O-PA’s faster manual disinfection allows you to reprocess every extra scope for every disinfecation cycle!

LASTS LONGER
Use for up to 28 days

It’s important for healthcare providers to manage budgets carefully while still delivering high-quality patient care. Rapicide OPA/28 has been tested to provide 84 reuse cycles* along with a reuse period of up to 28 days – twice the reuse period of other OPA brands.

*Minimum recommended concentration

To Order or Contact your Sales Consultant for more information:
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Together, a winning combination of cleaning and high-level disinfection.

Start your cleaning process off with EmPower® dual enzymatic detergent then hand off the instrument to MetriCide® OPA Plus high-level disinfectant. This powerful combination has been engineered to work safely together to maximize instrument reprocessing performance.

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