STEP-BY-STEP STERILIZATION

for

BODY ART PROFESSIONALS

Aseptic Technique

ASEPSIS

IS DEFINED AS THE ABSENCE OF GERMS.

Aseptic Technique

The 2 different levels of ASEPTIC TECHNIQUE used in our industry are:

+ MEDICAL ASEPSIS
+ SURGICAL ASEPSIS

Aseptic Technique

MEDICAL ASEPSIS

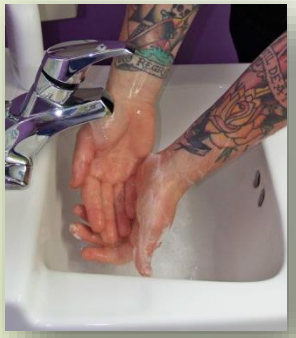
(or "*clean technique*")

INCLUDES PROCEDURES USED TO REDUCE THE NUMBER OF MICROORGANISMS PRESENT & PREVENT THEIR SPREAD.

Aseptic Technique

Examples Include:

- Proper handwashing technique
- Pre-Procedure Skin Preparation
- Proper Disinfection of Surfaces & Tools/Equipment



ASEPTIC TECHNIQUE

SURGICAL ASEPSIS

(OR "*STERILE TECHNIQUE*")

INCLUDES PROCEDURES USED TO ELIMINATE <u>ALL</u> MICROORGANISMS.

Aseptic Technique

Sterilization of tools & equipment is an example of SURGICAL ASEPSIS.

The Five Keys of Asepsis

1. KNOW WHAT IS CLEAN:

- Any item that has been thoroughly washed with a chemical disinfectant is considered clean & decontaminated.
- The task of physically washing removes soil & most microorganisms from the surface of an item.
- A disinfectant will then kill or prevent the growth of any microorganisms that were not removed by physical washing.

The Five Keys of Asepsis

2. Know what is contaminated:

- ALL initial tattoo & body piercing procedures (in addition to some stretching & jewelry insertion procedures) create contaminated waste.
- Any item used on a client or any visibly soiled item is considered contaminated.

The Five Keys of Asepsis

There is no difference between a little or a lot contaminated.

The Five Keys of Asepsis

Items are either

contaminated

or

not contaminated.

The Five Keys of Asepsis

3. KNOW WHAT IS STERILE:

- The creation of a tattoo or body piercing are **NOT** sterile procedures!!
- Proper storage & opening of sterile equipment should be utilized in order to decrease contamination to the sterile field & sterile instruments.

The Five Keys of Asepsis

4. KEEP CLEAN, CONTAMINATED & STERILE ITEMS SEPERATED:

- ➔ It is imperative that dirty, clean & sterile items are kept completely separate from one another.

The Five Keys of Asepsis

- Sterile items must **never** come into contact with non-sterile items, or they are no longer considered sterile.
- Once a clean item comes into contact with a dirty item, it is automatically considered "dirty".

The Five Keys of Asepsis

5. RESOLVE CONTAMINATION IMMEDIATELY:

- If clean technique is broken or cross contamination occurs, **resolve the contamination as soon as possible!**

CLEANING & DECONTAMINATION

For BODY ART PROFESSIONALS

CLEANING & DECONTAMINATION

- **CLEANING** IS THE REMOVAL OF ALL VISIBLE SOIL, DEBRIS & FOREIGN MATERIAL FROM TOOLS & EQUIPMENT.
- **CLEANING** IS AN IMPORTANT **FIRST STEP** IN THE DISINFECTION & STERILIZATION PROCESS.

Cleaning & Decontamination

Decontamination involves the use of physical or chemical procedures to remove, inactivate, or destroy bloodborne pathogens on a surface or item.

Cleaning & Decontamination

The level of decontamination required depends upon:

- What the item was last used for... &
- What the item will be used for next.

Cleaning & Decontamination

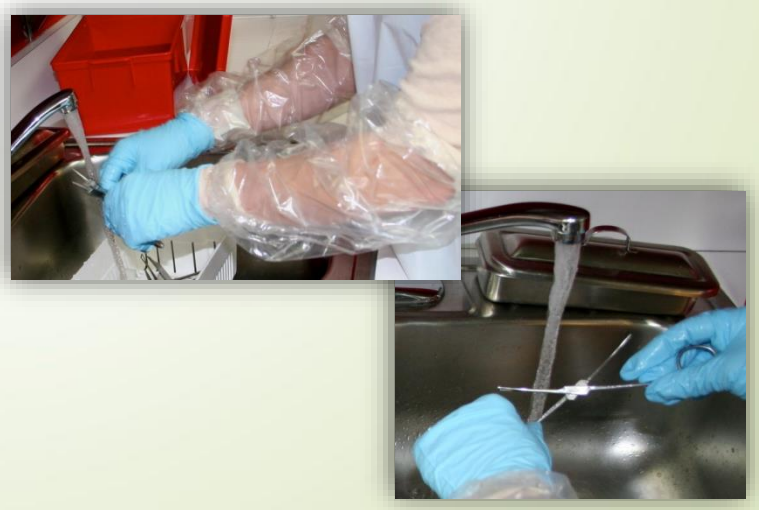
Cleaning & Decontamination must be completed according to established principles & procedures to assure that the sterilization process will be effective.

Cleaning & Decontamination

Failure to properly clean tools & equipment may allow foreign material located in or on the equipment to interfere with the effectiveness of subsequent disinfection & sterilization.

Cleaning & Decontamination

Thorough cleaning is absolutely essential before any item is subjected to disinfection & sterilization.



Cleaning & Decontamination

Soiled tools & equipment furnish an environment for the growth of microorganisms, thus making the ultimate process of disinfection & sterilization more difficult & less effective.

Cleaning & Decontamination

The purpose of cleaning & rinsing is to remove all visible debris from an item & to reduce the number of particulates & microorganisms.

Cleaning & Decontamination

Effective cleaning is a multi-step process that relies on several interrelated factors, including:

- ☑ **Water quality**
- ☑ **Detergent quality & type**
- ☑ **Acceptable washing method**
- ☑ **Proper rinsing & drying**

Cleaning & Decontamination

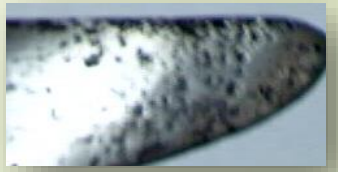
Cleaning is normally accomplished by manual wiping, scrubbing, or brushing – along with the use of mechanical aids.

For example: Cleaning with water & detergents to remove foreign matter.

Cleaning & Decontamination

Gross debris must be removed A.S.A.P. in order to:

- ☑ Reduce the number of microorganisms on the item;
- ☑ Reduce the nutrient material that might support microbial growth;
- ☑ Reduce the potential for environmental contamination by aerosolization or spillage;
- ☑ Minimize damage to equipment & tools from substances such as blood.



Cleaning & Decontamination

REMEMBER:

YOU CAN CLEAN WITHOUT DISINFECTING - BUT YOU CANNOT DISINFECT WITHOUT CLEANING!

Cleaning & Decontamination

The sterilization process cannot produce a sterile instrument if it has not been cleaned & disinfected first!

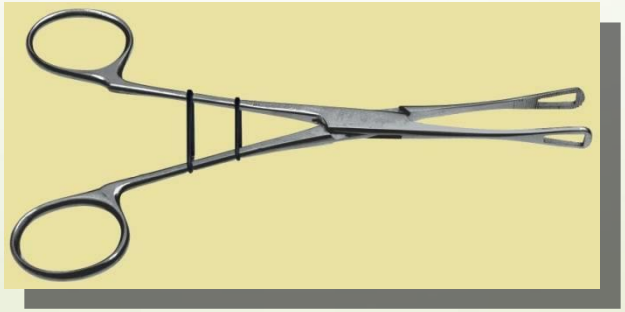
Cleaning & Decontamination

Dead microorganisms in debris left on tools & equipment can create a breeding place for infectious organisms.

Cleaning & Decontamination

Residual debris can also affect an instrument's ability to function properly.

For example: Piercing forceps & other hinged tools may not close properly.



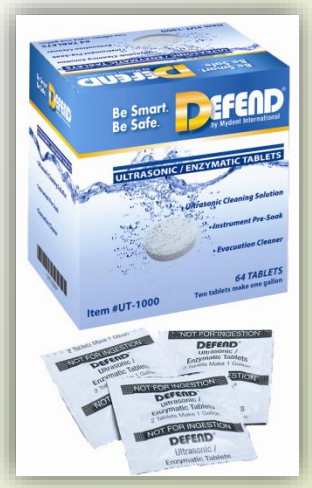
Cleaning & Decontamination

Practitioner safety is extremely important at the time of cleaning & decontamination.

Since the origin of contamination is not known, it must be assumed that every piece of equipment poses a high risk.

Cleaning Agents

Effective cleaning agents have several ideal properties.



Cleaning Agents

They should:

- Be non-abrasive & low-foaming
- Be free-rinsing & non-toxic
- Be biodegradable
- Allow for rapid soil dispersion
- Be effective on all types of soil
- Have a long shelf-life
- Be cost-effective
- Be capable of being monitored for effective concentration and/or use life.

Cleaning Agents

Industry-specific examples of cleaning agents include:

- Water
- Detergents
- Enzymatic Cleaners

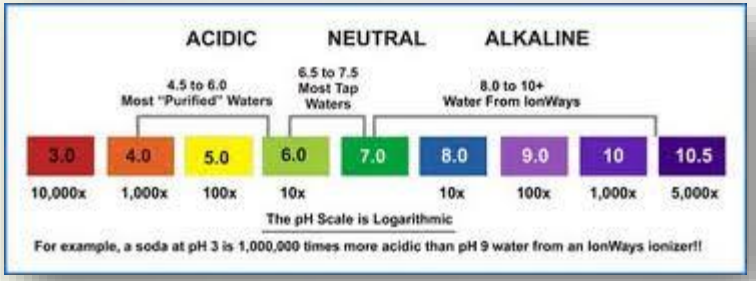
Cleaning Agents

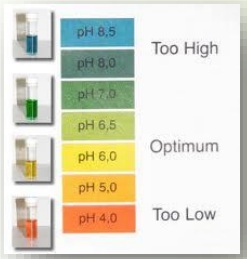
WATER: The relevant measurable characteristics of water are:

- pH Level
- Hardness
- Temperature
- Purity

Cleaning Agents

The pH level of water is important because the effectiveness of detergents & enzymatic cleaners is influenced by pH.





Cleaning agents have optimal pH levels of performance & there are levels where these cleaners are completely inactivated.

Cleaning Agents

Hard water ions, such as calcium & magnesium, can cause deposits or scale formations during the cleaning process because of the inverse solubility.

A final rinse with distilled or de-ionized water will remove mineral deposits.

Cleaning Agents

DETERGENTS are substances that are capable of dislodging, removing & dispersing solid & liquid soils from the surface being cleaned.

Many detergents are formulated for specific applications, such as those used in ultrasonic cleaners.

Cleaning Agents

DETERGENTS SHOULD BE COMPATIBLE WITH THE EQUIPMENT & TOOLS WITH WHICH THEY ARE BEING USED & WITH THE MATERIALS OF WHICH EQUIPMENT & TOOLS ARE CONSTRUCTED.

DETERGENTS SHOULD NOT BE CORROSIVE!

Cleaning Agents

DETERGENTS work by:

- Lowering surface tension so the cleaning liquid can penetrate the soil & the object being cleaned;
- Removing soil & clumps of dirt & dissolving or suspending small particles in the cleaning fluid;
- Keeping soils & dirt clumps is suspension or solution so they can be washed & rinsed away, rather than being re-deposited on the object being cleaned.

DISINFECTION

DISINFECTION IS THE REDUCTION AND/OR REMOVAL OF PATHOGENS BY THE USE OF FRICTION (CLEANING) & THE USE OF AN APPROPRIATE EPA REGISTERED DISINFECTANT.

Disinfection

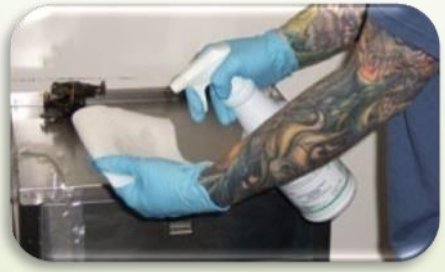
Organic matter & gross debris can completely INACTIVATE disinfectants, so:

- ☑ The area must be **thoroughly cleaned** **BEFORE** proceeding to disinfection.
- ☑ Always **READ** the manufacturer's instructions for proper use of the disinfectant.

Disinfection

The key points of disinfection are:

- ☑ Always clean starting with the cleanest, highest items/areas first & then proceed to the dirtiest, lowest items/areas last.
- ☑ Be conscious of cross-contamination during the cleaning & disinfection process!



EQUIPMENT PROCESSING

For BODY ART PROFESSIONALS

Equipment Processing

It's important to remember that sterilization is a **PROCESS!**

Before sterilizing equipment, the following procedures **MUST** be followed **EXACTLY** to ensure terminal sterilization occurs.

Equipment Processing

Step 1)

Isolate & Transport equipment from the work station to the sterilization room.

Equipment Processing

Step 2)

Rinse equipment & place into an enzymatic pre-cleaner, if necessary.

Equipment Processing

Step 3)

Remove equipment from enzymatic pre-cleaner & rinse thoroughly.

Equipment Processing

Step 4)

Disassemble equipment if necessary.

Equipment Processing

Step 5)

Thoroughly scrub equipment under warm, low-pressure, running water to remove any visible gross debris.

Equipment Processing

Step 6)

Rinse & Dry Equipment

Equipment Processing

Step 7)

Place equipment into a disinfecting tub. Completely submerge equipment in an EPA registered disinfectant per the manufacturer's instructions.

Equipment Processing

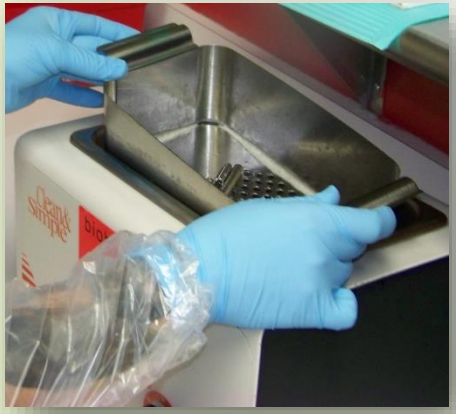
Step 8)

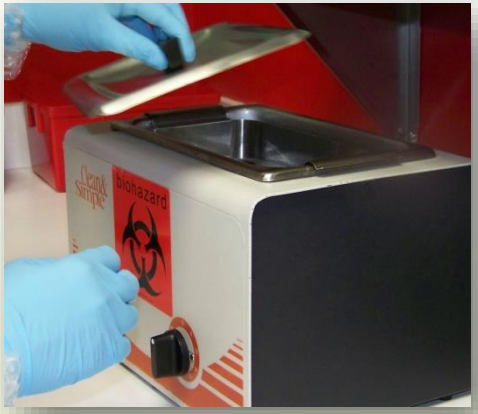
- Remove equipment from disinfectant.
- Thoroughly rinse & dry equipment.

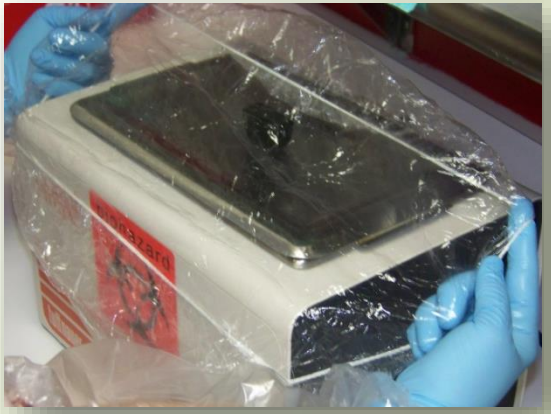
Equipment Processing

Step 9)

Place equipment into an ultrasonic cleaner with appropriate solution & run the unit per the manufacturer's instructions. (usually 15–30 minutes)



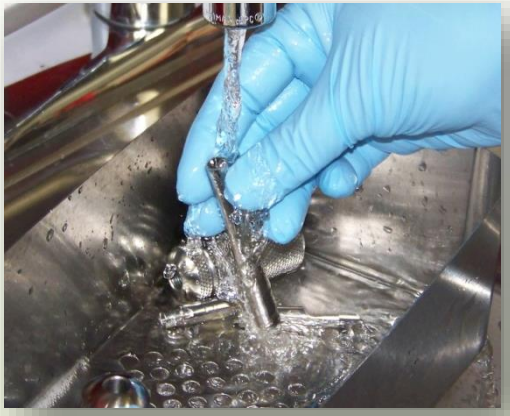




Equipment Processing

Step 10)

- Remove equipment from the ultrasonic cleaner.
- Thoroughly rinse & <u>completely</u> <u>dry</u> equipment.



Equipment Processing

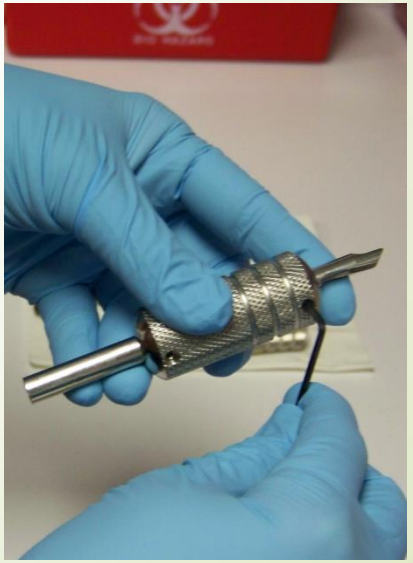
Step 11)

Thoroughly inspect equipment for any leftover ink, lubrication, & debris.

Equipment Processing

Step 12)

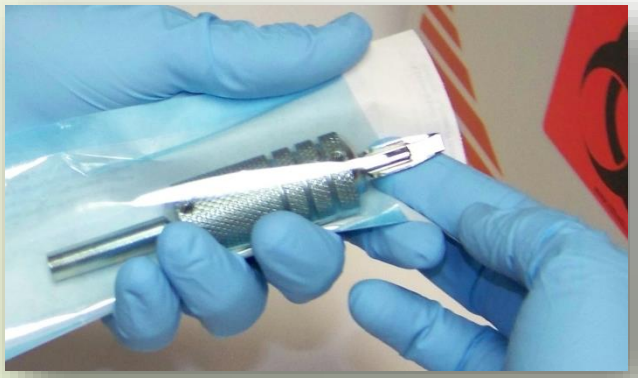
Reassemble equipment if necessary.

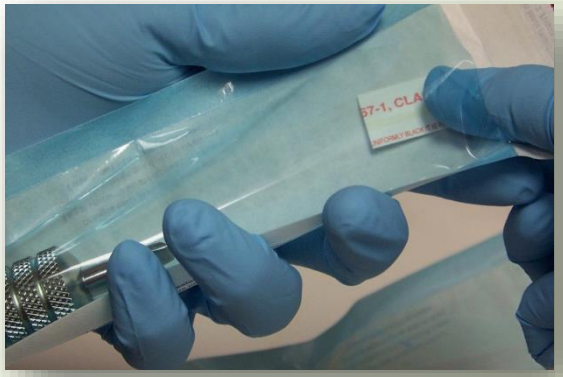


Equipment Processing

Step 13)

Package equipment with internal indicators. Date indicators for the day of autoclaving. (within 24-hours of packaging).

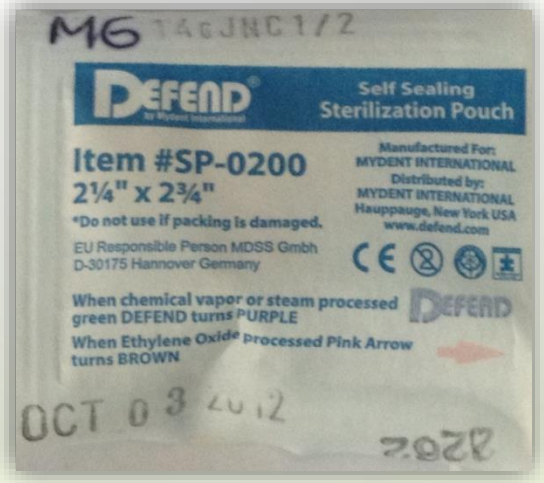




Equipment Processing

Step 14)

Ensure all packages & indicators are properly marked with the equipment description, date & your name or initials.



STERILIZATION

For BODY ART PROFESSIONALS

STERILIZATION

- **STERILIZATION** IS THE HIGHEST LEVEL OF ASEPSIS & CAN BE DEFINED AS THE REMOVAL OF **ALL** MICROORGANISMS, INCLUDING HIGHLY RESISTANT BACTERIAL SPORES.
- **STERILIZATION** IS A PROCESS & SHOULD ONLY BE OBTAINED BY STEAM AUTOCLAVING.

Sterilization

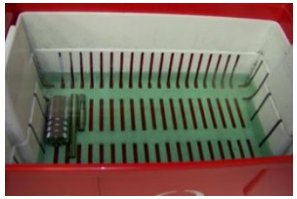
Sterilization is reserved for instruments, jewelry, needles, Nalgene® bottles & other miscellaneous tattoo & body piercing equipment.

Sterilization

Before items can be sterilized, they must first be:

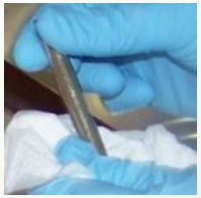
- ✓ Thoroughly cleaned

- ✓ Disinfected



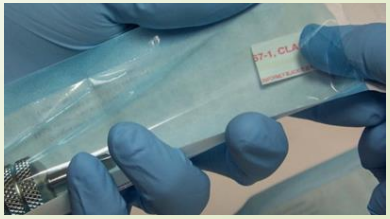
- ✓ Ultrasonically cleaned

- ✓ Dried completely



- and -

- ✓ Properly packaged



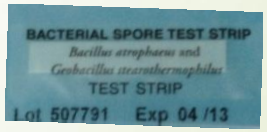
Sterilization

Indicators that monitor the sterilization process for quality control & consistency include:

- ☑ **Mechanical**

- ☑ **Chemical**

- ☑ **Biological**



✓ **All three indicators are required to ensure that terminal sterilization occurs.**

Sterilization

MECHANICAL MONITORING

Mechanical indicators, found on the autoclave & provide assessment of cycle conditions, such as:

- ☑ **Timer**
- ☑ **Temperature gauge**
- ☑ **Pressure gauge**
- ☑ **Printouts**

STERILIZATION

MECHANICAL MONITORING:
TIME

- THE LENGTH OF TIME NECESSARY TO COMPLETE THE CYCLE DEPENDS ON THE ITEM(s) BEING PROCESSED & THE TYPE OF PACKAGING BEING USED.
- ALWAYS REFER TO THE MANUFACTURER'S INSTRUCTIONS!
- THE "STANDARD" CYCLE IS 274^0 FOR 15 MINUTES.

STERILIZATION

MECHANICAL MONITORING:

TEMPERATURE

- THE TEMPERATURE OF THE AUTOCLAVE MUST BE MAINTAINED TO ENSURE THAT ALL ORGANISMS ARE KILLED.
- THE AMOUNT OF TIME THAT THE MACHINE TAKES TO REACH THIS TEMPERATURE MUST BE ADDED TO THE ACTUAL PROCESSING TIME.

STERILIZATION

MECHANICAL MONITORING:

PRESSURE

- ☑ PRESSURE IS NECESSARY TO RAISE THE TEMPERATURE OF THE WATER ABOVE THE BOILING POINT.

MOISTURE / STEAM SATURATION

- ☑ THE FINAL PARAMETER IS MOISTURE OR STEAM SATURATION.
- ☑ THE STEAM IN THE MACHINE MUST REACH 100% RELATIVE HUMIDITY.

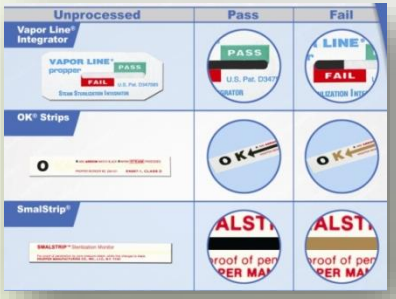
STERILIZATION

HOWEVER, MECHANICAL MONITORING ALONE IS NOT ENOUGH TO ENSURE TERMINAL STERILIZATION.

STERILIZATION

CHEMICAL MONITORING

THE ACTUAL PHYSICAL CONDITIONS INSIDE THE AUTOCLAVE MUST ALSO BE MONITORED. THIS IS ACCOMPLISHED USING CHEMICAL INDICATORS & INTEGRATORS.



Sterilization

INDICATORS: Respond to steam & moist heat. Indicators can be found:

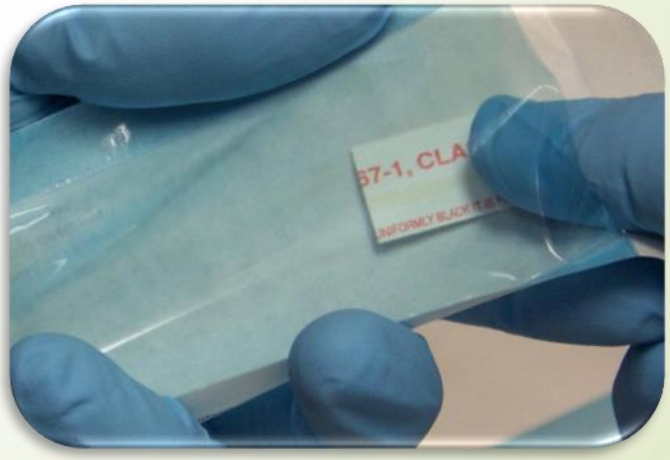
- ✓ On the outside of sterilization pouches & tubing
- ✓ On sterilization tape
- ✓ In strip form designed for placement inside packages to show penetration of steam through the packaging.

STERILIZATION

MOST STEAM STERILIZATION POUCHES NOW HAVE AN INTERNAL INDICATOR INCLUDED IN THE PACKAGING.

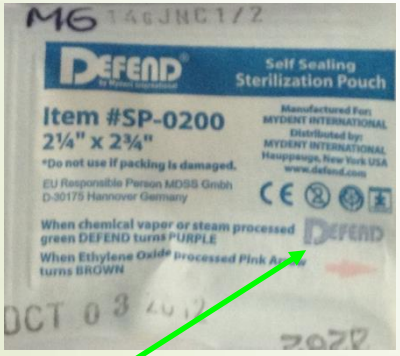
STERILIZATION

IF NOT, AN INDICATOR STRIP SHOULD BE PLACED INSIDE OF EACH PACKAGE BEING STERILIZED.

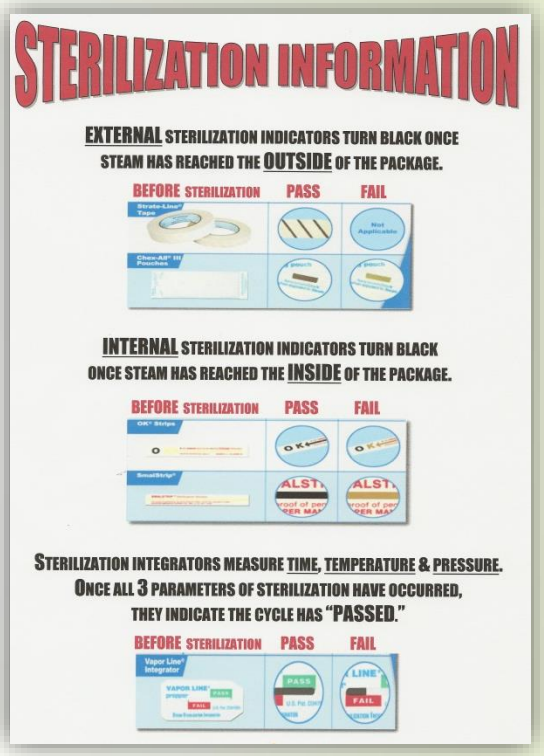


STERILIZATION

Indicator strip inside sterilization package



Chemical indicator on back of sterilization package



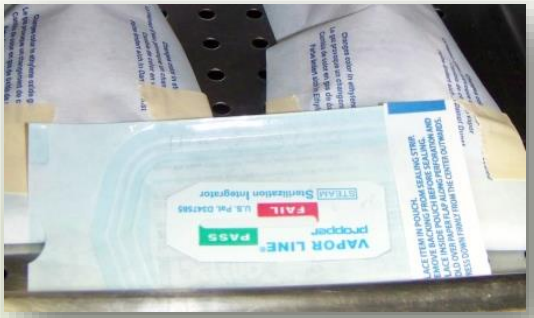
Sign used to illustrate difference between unprocessed and processed indicators and integrators.

STERILIZATION

INTEGRATORS: ARE PROCESS INDICATORS. THEY ARE DESIGNED TO RESPOND TO MORE THAN ONE REQUIRED CONDITION, SUCH AS TIME, TEMPERATURE, PRESSURE & STEAM SATURATION.

STERILIZATION

- ✓ ONE **INTEGRATOR** SHOULD BE RUN WITH EACH AUTOCLAVE LOAD.
- ✓ **INTEGRATORS** MUST BE PACKAGED IDENTICALLY TO THE EQUIPMENT BEING PROCESSED.



STERILIZATION

REMEMBER:

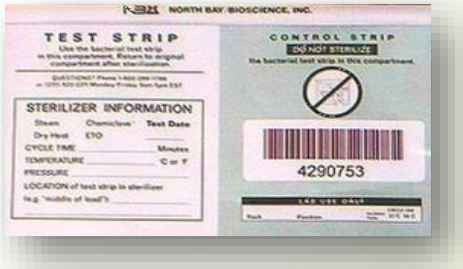
THOUGH INDICATORS & INTEGRATORS ARE USEFUL IN DETERMINING POINT OF USE PROCESS ERRORS, IT IS IMPORTANT TO NOTE THAT THEY DO NOT PROVE STERILIZATION!!

STERILIZATION

BIOLOGICAL MONITORING IS THE ONLY TRUE METHOD OF DETERMINING THE SUCCESS OF THE STERILIZATION PROCESS!

STERILIZATION

BIOLOGICAL MONITORING IS A CONTROL-BASED TEST, COMMONLY REFERRED TO AS A "SPORE TEST".



STERILIZATION

A **SPORE TEST** IS A LIVE SAMPLE OF BACTERIAL SPORES THAT ARE PROCESSED ACCORDING TO PROTOCOL.

BACILLUS STEAROTHERMOPOLIS IS MOST COMMONLY USED FOR TESTING IN STEAM AUTOCLAVES.

Sterilization

Biological Monitoring

- The total destruction of spores indicates success of the sterilization process.

BIOLOGICAL MONITORING

SPORE TESTS SHOULD BE RUN IN ACCORDANCE TO YOUR LOCAL REGULATIONS & PROCESSED BY A REPUTABLE INDEPENDENT LABORATORY, SUCH AS *MESA LABS, INC.*

BIOLOGICAL MONITORING

THOUGH SOME STATE & LOCAL REGULATIONS SUGGEST SPORE TESTING ONCE A MONTH, **THE MOST COMMON RECOMMENDATION IS TO SPORE TEST ONCE A WEEK.**

SPORE TEST PACKET FROM MESA LABS.

Sterilization

Spore Test Failure

IF A SPORE TEST SHOULD FAIL, **ALL ITEMS** FROM THE TIME OF THE LAST NEGATIVE (PASSED) TEST THROUGH THE DATE OF THE POSITIVE TEST MUST BE PULLED FROM STOCK, REPACKAGED & RE-STERILIZED.

STERILIZATION

IN ORDER TO ATTAIN TERMINAL STERILIZATION, THE PROPER COMBINATION OF TIME, TEMPERATURE, PRESSURE & MOISTURE (STEAM SATURATION) MUST BE ATTAINED INSIDE OF THE AUTOCLAVE.

STERILIZATION

ONCE ALL PARAMETERS HAVE BEEN ACHIEVED, TERMINAL STERILIZATION OCCURS.

TIME + TEMP + PRESSURE + STEAM =

STERILIZATION

STORAGE OF STERILE SUPPLIES

For BODY ART PROFESSIONALS

Storage of Sterile Supplies

- All sterile packages should be visibly dated & stored in covered containers.
- Containers should only be accessed with clean gloves. **NO BARE HANDS!**

Storage of Sterile Supplies

The shelf life of sterile packages can be thought of as either time-related or event-related.

Storage of Sterile Supplies

Time-Related Expiration

- Time-related expiration is based on the processing date.
- Expiration date will vary depending on the type of equipment, packaging materials, handling and/or storage conditions.

Storage of Sterile Supplies

Event-Related Expiration

- Event-related expiration means that the sterility of a package is indefinite, until the integrity of the package is compromised (it becomes wet, torn, etc.) or an event occurs such as dropping it on the floor.

Storage of Sterile Supplies

Sterile supplies must not be crushed or kept stored grouped with rubber bands.

Storage of Sterile Supplies

Storage areas must be maintained to prevent splashing.

For example, items in sterile packages should not be kept near sinks.

Good place to store sterile supplies

NOT a good place to store sterile supplies

Storage of Sterile Supplies

- ☑ Sterile storage must be arranged to facilitate stock rotation.
- ☑ Stock should be rotated according to the principle "FIRST IN = FIRST OUT".

Storage of Sterile Supplies

- ☑ Liquids must be stored below dry sterile goods or in a separate area.
- ☑ Materials must be stored 8”-10” from the floor and 18”-20” from the ceiling.

Storage of Sterile Supplies

Sterile items must not be stored under plumbing valves & traps.

NO!

NO!

NO!

NO!

Storage of Sterile Supplies

NEVER store sterile items near sinks, plumbing, or in any location where there is the risk of becoming wet or soiled.

The presence of moisture allows the passage of microorganisms through packaging, resulting in contamination.

Pre-Sterilized Items

- ☑ Single-use items that are commercially purchased are usually sterilized with **Ethylene Oxide Gas** or **Gamma Radiation**.
- ☑ These single-use items are considered to be sterile so long as the integrity of the packaging has not been compromised.

Pre-Sterilized Items

- ☑ If an expiration date is present & the item is not used within the time frame, check with the distributor to see if they will exchange the item for you.
- ☑ **DO NOT** attempt to re-sterilize the item yourself!!

Pre-Sterilized Items

By re-sterilizing commercially sterilized items, it may compromise the integrity of the product & you will be assuming total liability.

Pre-Sterilized Items

- If a product representative tells you that you can re-sterilize an item, ask for a written statement from the company.
- This statement should include the type of sterilization required, as well as the temperature, length of time, & pressure that should be used.
- Keep this written statement on file.

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SAFE ART WORKS

MODIFY YOUR THINKING