Antiseptics and Disinfectants

This module introduces the proper use of antiseptics and disinfectants in a salon environment. Topics include purposes of disinfection; distinguishing between antiseptics and disinfectants; types of antiseptics; types of disinfectants; proper use of antiseptics and disinfectants; disinfection of salon equipment; and safety issues regarding antiseptics and disinfectants.

Why Disinfect?

Disinfecting is a method of sterilizing an environment. Sterilization refers to any process that effectively kills or eliminates transmissible agents (such as fungi, bacteria, viruses, spore forms, etc.) from a surface, equipment, article of food or medication, or biological culture medium. Sterilization does not, however, remove prions. Sterilization can be achieved through application of heat, chemicals, irradiation, high pressure or filtration.

A **microorganism** or *microbe* is an organism that is microscopic (too small to be visible to the human eye). Microorganisms can include bacteria, fungi, archaea, protists, and even viruses (although there is some debate as to whether viruses should be classified as microorganisms if they are non-living). Microorganisms are often described as single-celled, or **unicellular** organisms; however, some unicellular protists are visible to the human eye, and some multicellular species are microscopic.

Microorganisms live almost everywhere on earth where there is liquid water, including hot springs on the ocean floor and deep inside rocks within the earth's crust. Microorganisms are critical to nutrient recycling in ecosystems as they act as decomposers. As some microorganisms can also fix nitrogen,

they are an important part of the nitrogen cycle. However, pathogenic microbes can invade other organisms and therefore cause disease.

Microbial diseases originate from the invisible transfer of microorganisms through the air, water, food, and from all types of surfaces. Microorganisms are resilient and can remain viable (and infectious) for relatively long periods of time on dry, clean (at least in appearance) surfaces. Infection and disease control is one of the most important aspects of being a professional salon operator or owner. With this in mind, it is imperative to regularly disinfect environmental surfaces and all items and implements that could come into contact with bodily fluids.

Most state laws require only that salons use a low-grade disinfectant, which doesn't kill many pathogens. Salons should disinfect their tools with an autoclave (a machine that uses heat and pressure to destroy pathogens) or a high level of disinfectant. Improperly cleaned nail tools can transmit warts, fungal and yeast infections, hepatitis B and C, and a range of itchy rashes.

Federal and state laws govern what must be done by operators and owners to ensure the safety of the public and that no germs are allowed to spread uncontrolled. By following some very important basic procedures and by providing a clean salon it will be easy to provide your clients with the very best professional care without the fear of your clients becoming infected by a disease agent. It is important to understand that the removal of all disease-causing germs in a salon will be almost impossible, but the control of dangerous levels is the key to providing a safe salon.

Although many consumers do not think that health and safety issues are serious considerations when getting a facial, body wrap, waxing or having their nails done, most beauty treatments involve actions that can be dangerous, if not performed by properly trained and licensed personnel. Bacterial infections, transmission of diseases, adverse reactions to substances and other physical injuries can all be the result of improperly performed treatments.

Definitions

Antiseptics – These are antimicrobial substances that are applied to living tissue/skin to reduce the possibility of infection, sepsis, or putrefaction. They should generally be distinguished from *antibiotics* that destroy microorganisms within the body, and from *disinfectants*, which destroy microorganisms

found on non-living objects. Some antiseptics are true *germicides*, capable of destroying microbes (bacteriocidal), while others are bacteriostatic and only prevent or inhibit their growth. *Antibacterials* are antiseptics that only act against bacteria. Antiseptics are sometimes also referred to as *biocides*. A number of biocides are also used for cleaning purposes; cleaning in these cases refers to the physical removal of foreign material from a surface.

Asepsis – The absence of significant contamination.

Aseptic techniques – These are used to prevent contamination of surgical instruments, medical personnel, and the patient during surgery. Aseptic techniques are also used to prevent bacterial contamination in food industry.

Bactericide - An agent that kills bacteria. Most do not kill endospores.

Bacteriostatic Agent - An agent that inhibits the growth of bacteria, but does not necessarily kill them. Suffix stasis: To stop or steady.

Commercial Sterilization - Heat treatment that kills endospores of *Clostridium botulinum* the causative agent of botulism, in canned food. Does not kill endospores of thermophiles, which are not pathogens and may grow at temperatures above 45^{o}C.

Degerming - Mechanical removal of most microbes in a limited area. Example: alcohol swab on skin.

Disinfectant – Are antimicrobial agents that are applied to non-living objects to destroy microorganisms, the process of which is known as disinfection. Disinfectants should generally be distinguished from *antibiotics* that destroy microorganisms within the body, and from *antiseptics*, which destroy microorganisms on living tissue. *Sanitizers* are high level disinfectants that kill over 99.9% of a target microorganism in applicable situations. Bacterial endospores are most resistant to disinfectants, however some viruses and bacteria also possess some tolerance.

Disinfection - Reducing the number of pathogenic microorganisms to the point where they no longer cause diseases. Usually involves the removal of vegetative or non-endospore forming pathogens. May use physical or chemical methods.

Fungicide - An agent that kills fungi.

Germicide - An agent that kills certain microorganisms.

Sanitization – The use of a chemical agent on food-handling equipment to meet public health standards and minimize chances of disease transmission (e.g., hot water and soap).

Sepsis - Comes from the Greek word for decay or putrid. Indicates bacterial contamination.

Sporicide - An agent that kills bacterial endospores of fungal spores.

Sterilization - Killing or removing all forms of microbial life (including endospores) in a material or an object. Heating is the most commonly used method of sterilization. This is different from disinfection, where only organisms that can cause disease are removed by a disinfectant.

Viricide - An agent that inactivates viruses.

Distinguishing between Antiseptics and Disinfectants

Chemicals can be used for sterilization. Although heating provides the most reliable way to rid objects of all transmissible agents, it is not always appropriate, because it will damage heat-sensitive materials such as biological materials, fiber optics, electronics, and many plastics. Low temperature gas sterilizers function by exposing the articles to be sterilized to high concentrations (typically 5 - 10% v/v) of very reactive gases (alkylating agents such as ethylene oxide, and oxidizing agents such as hydrogen peroxide and ozone). Liquid sterilants and high disinfectants typically include oxidizing agents such as hydrogen peroxide and peracetic acid and aldehydes such as glutaraldehyde and more recently o-phthalaldehyde. While the use of gas and liquid chemical sterilants/high level disinfectants avoids the problem of heat damage, users must ensure that article to be sterilized is chemically compatible with the sterilant being used. The manufacturer of the article can provide specific information regarding compatible sterilants. In addition, the use of chemical sterilants poses new challenges for workplace safety. The chemicals used as sterilants are designed to destroy a wide range of pathogens and typically the same properties that make them good sterilants makes them harmful to humans. Employers have a duty to ensure a safe work environment (Occupational Safety and Health Act of 1970, section 5 for United States) and work practices, engineering controls and monitoring should be employed appropriately.

Health care and salon settings use antiseptics and disinfectants extensively for numerous topical as well as hard surface and environmental applications. Most important, antiseptics and disinfectants are essential to disease and infection control and prevention in these settings. However, increased concerns regarding microbial contamination in food and in the general consumer market have led to an increased use of antiseptics and disinfectants by the general public, as well as an increased awareness of the importance of these issues in salons by salon staff, clients, and customers.

Given the varying structure and composition of microorganisms, it is not surprising that different microorganisms react differently to a range of antiseptics and disinfectants. Therefore, it is generally advantageous to distinguish between bacteria, fungi, viruses, protozoa, and prions separately when considering appropriate methods of disinfection and sterilization.

Disinfectants

Disinfection and the use of chemical disinfectants is one key strategy of infection control. *Disinfectant* (bacteriocidal) is the term usually applied to a chemical agent used to destroy harmful microorganisms in the non-sporing or vegetative state.

Disinfectants are usually more caustic and concentrated than antiseptics and are therefore used on inanimate objects to kill pathogenic organisms. Not all disinfectants are antiseptics because an antiseptic additionally must not be so harsh that it damages living tissue. With this constraint imposed on antiseptics, in general antiseptics are either not as cheap or not as effective at killing microbes as disinfectants.

Disinfectants do not necessarily kill all organisms but reduce them to a level, which does not harm health or the quality of perishable goods. Disinfectants are applied to inanimate objects and materials such as instruments and surfaces to control and prevent infection. Disinfectants are not safe for use on human skin especially substances with bleach or cleaning agent.

All disinfectants are also, by their very nature, potentially harmful (even toxic) to humans or animals. They should be treated with appropriate care. Most come with safety instructions printed on the packaging, which should be read in full before using the disinfectant. Most modern household disinfectants contain Bitrex, an exceptionally bitter substance designed to discourage ingestion, as an added safety measure. There is no such thing as a completely non-toxic disinfectant. Disinfectant products work by oxidizing the germs, ing down their cell walls, or otherwise deactivating them. Different ingredients or combinations of ingredients kill different germs. Therefore before choosing any disinfectant, it is important to know what organisms you want to kill. Typically, these organisms are viruses, bacteria, spores, and fungi. You would either need to select a disinfectant that works on the specific germs you are trying to get rid of, or select a broad-spectrum product that works on all of the germs that you might encounter.

Carefully reading and following directions is essential for safe and proper use of disinfectants. Disinfectants must remain at an effective concentration level; a solution that is too weak will be ineffective in destroying pathogenic microorganisms. For example, organic matter (e.g., dirt) can reduce the effectiveness of a disinfectant by:

1) Coating the pathogen and preventing contact of the disinfectant with the pathogen;
2) Forming a chemical bond with the disinfectant rendering it inactive against the pathogen; and/or
3) Reacting chemically with and neutralizing the disinfectant.

Therefore, it is essential to thoroughly wash all products, surfaces, or tools/implements with soap and water before disinfection.

In the United States, disinfectants and sanitizers must be regulated and registered by the Environmental Protection Agency (EPA) before they can be offered for sale. The EPA assigns a registration number for each product and that number must be clearly displayed on every container of the product. The EPA devises sets of rules that govern disinfectants and sanitizers; the rules govern their testing, claims, and directions for proper use. The EPA requires that a disinfectant must completely eliminate all organisms, including bacteria, viruses and fungi, that are listed on its label. A complete elimination of bacteria, (fungi and viruses are generally not included as a claim on a sanitizer label) is not required by the EPA of sanitizers. However, for food contact surfaces, a sanitizer must reduce the bacterial count by 99.999%.

Proper Use of Disinfectants

OSHA requires that salons use an EPA Registered Disinfectant that is designed to kill *Hepatitis B Virus, HIV-1,* and *Tuberculosis* to deal with blood and body fluids.

All implements, equipment, and materials that come in contact with a client must be properly cleaned and disinfected prior to servicing each client. Before any tool or file can be used on a client, it must be cleaned and disinfected. Saving clients' files and implements does not mean those items don't have to be cleaned and disinfected before being used again.

Criteria to consider when choosing a disinfectant:

The ideal disinfectant would offer complete sterilization, without harming other forms of life, be inexpensive, and non-corrosive. Unfortunately ideal disinfectants do not exist. All disinfectants are also, by their very nature, potentially harmful (even toxic) to humans or animals. They should be treated with appropriate care. Most come with safety instructions printed on the packaging, which should be read in full before using the disinfectant. Most modern household disinfectants contain Bitrex, an exceptionally bitter substance designed to discourage ingestion, as an added safety measure. Those that are used indoors should never be mixed with other cleaning products as chemical reactions can occur. Often these are used in hospitals, surgeries, kitchens and bathrooms to kill infectious organisms.

The choice of the disinfectant to be used depends on the particular situation. Some disinfectants have a wide spectrum (kill nearly all microorganisms), whilst others kill a smaller range of disease-causing organisms but are preferred for other properties (they may be non-corrosive, non-toxic, or inexpensive).

The following are some criteria to consider when choosing a disinfectant:

- Cost
- Efficacy (i.e., killing efficiency against viruses, bacteria, fungi). Each disinfectant has unique antimicrobial attributes.
- Degree of contamination. This affects the time required for disinfection and the amount of chemical required.
- Type of chemical. It is important to understand the mode of action in order to select the appropriate disinfectant.
- Amount of protein-containing material present. Protein based materials absorb and inactivate some chemical disinfectants.
- Activity with organic matter (e.g, soap)
- Toxicity to the environment (relative safety to animals and humans)
- Residual activity and effects on fabric and metal.
- Concentration and quantity of chemical. It is important to choose the proper concentration and quantity of chemical that are best used for the disinfection of each situation.
- Solubility (i.e., acidity, alkalinity, pH)
- Contact time and temperature. Sufficient time and appropriate temperature, which is proportional to the degree of contamination, must be allowed for action of the disinfectant.
- Application temperature, pH and interactions with other compounds must be considered.

No disinfectant works instantaneously. All require a certain amount of contact time to be effective. Temperature and concentration of disinfectant influence the rate of killing of microorganisms. Using the recommended concentration of disinfectants is important. The activity of many disinfectants improves markedly if the temperature is increased.

Comparison of Disinfectants

Alcohols:

- Wide germicidal activity, noncorrosive, poses a fire hazard and irritating to tissues.
- Limited activity in the presence of organic matter and limited residual activity.
- Not effective against bacterial or fungal spores.
- Excellent when used at 70-95 percent concentration for disinfecting instruments, etc.

Aldehydes:

- Wide germicidal activity is both sporicidal and fungicidal, effective against protozoa, is moderately toxic and poses a human health risk if improperly used.
- Slight to moderate efficiency in presence of organic matter.
- Slight residual activity.
- Most of these products are moderately expensive.

Chlorhexidine:

- Wide germicidal activity, but ineffective against some important species.
- Some activity in the presence of organic matter.
- Some residual activity but must be in contact for at least five minutes.
- Fair effectiveness as sporicidal agents.
- Effective at low concentrations for disinfecting objects.
- Low cost but requires frequent applications.
- Nontoxic.

Hypochlorites (Chlorine):

- Provide wide germicidal activity and are relatively nontoxic.

- Limited activity when in the presence of organic matter.
- Poor residual activity and corrosive.
- Fair effectiveness as sporicidal agents.
- Effective at low concentrations for disinfecting objects.
- Low cost, but requires frequent applications.

Iodophors (Iodine):

- Provide wide germicidal activity and are relatively nontoxic.
- Limited activity when in the presence of organic matter.
- Poor residual activity, corrosive, stains fabric and equipment.
- Fair effectiveness as sporicidal agents, but better than chlorine.
- Effective at low concentrations for disinfecting objects.
- Low cost but requires frequent applications.

Oxidizing Agents (Hydrogen Peroxide):

- Moderate to wide germicidal activity, moderately corrosive and limited toxicity.
- Rendered ineffective in the presence of organic matter.
- Poor to limited residual activity.
- Not effective against bacterial or fungal spores.
- More valuable as a cleansing and deodorizing agent and are moderate in cost.

Quaternary Ammonia:

- Wide germicidal range, noncorrosive and low toxicity.
- Reduced efficiency and residual activity in the presence of organic matter.
- Not sporicidal, effective against vegetative bacteria, fungi and viruses, some activity against Cryptosporidium (10 percent Ammonium).
- Limited effectiveness in soaps, detergents and hard water salts.
- Good disinfectant for use on cleaned surfaces and low cost.
- However, according to the U.S. Occupational Safety and Health Administration (OSHA), EPA-approved quaternary ammonium products do not bear a label with kill claims for all the blood borne pathogens regulated by OSHA. Quaternary ammonium [products] are not an appropriate disinfectant for all bloodborne pathogens.

All tools and equipment must be:

- Cleaned and disinfected between each customer.
- After cleaning off all visible debris, completely immerse non-porous tools for 10 minutes in an EPA-registered disinfectant, 10% bleach.
- Leave the disinfectant product on for a 10-minute "kill time" before rinsing.
- Dried with a clean cloth or paper.
- Stored in an Ultraviolet Sanitizer or in a disinfected, dry and covered container.

Safe use of Disinfectants

- Don't use on skin or nails.
- Wear nitrile gloves and chemical resistant goggles when mixing and using disinfectant.
- Measure and mix products accurately.
- Store solution in a marked (nonfood) container with hazard and safety information on label.
- Use tongs or a draining basket to remove implements.
- Seal contaminated wipes or cotton balls in a plastic bag before disposing.
- Wash hands with a bacterial soap.

It is essential to keep in mind that disinfectants are classified as industrial strength cleaners that can be harmful if improperly used. Some tips on safe use of disinfectants include:

- NEVER use a disinfectant on living tissue or to clean your hands
- Wear protective equipment such as gloves and safety goggles while mixing chemicals to be used in disinfectant control
- Use soaking baskets and tongs to insert items in and remove items from disinfectant solutions
- Clearly mark all containers used for storing disinfectants

Items that cannot be disinfected:

Certain salon implements and tools cannot be properly disinfected and should be discarded immediately after each use. These include emery boards, cotton pads, non-metal nail files, nail buffers and wooden sticks.

Antiseptics:

Antisepsis refers to the inhibition or elimination of microbial growth on living tissue such as human skin. ***Antiseptics*** are defined as the naturally occurring or synthetic organic substances that help prevent infection, sepsis, or putrefaction of living tissue by inhibiting selective bacteria or other microorganisms. The name comes from the Greek words anti (against) and sepsis (decay). The discovery of bacteria in the late 17th century paved the way for more fully understanding the nature and uses of antiseptics.

Our skin is an essential barrier to warding off infection and disease. Healthy skin that may have bacteria, viruses, or fungi living on it can see rapid growth in these microorganisms when the skin is broken (e.g., scrape, burn, cut), possibly leading to serious infection or disease unless this growth is stopped. Antiseptics can be applied to the site to prevent infection until the injury can heal.

Purpose of antiseptics

Antiseptics are a diverse class of drugs that are applied to skin surfaces or mucous membranes to keep bacteria from getting into wounds and causing infection. Although antiseptics do not usually kill bacteria, they do weaken them and slow their growth. Their uses include cleansing of skin and wound surfaces after injury, preparation of skin surfaces prior to injections or surgical procedures, and routine disinfection of the oral cavity as part of a program of oral hygiene. Antiseptics are not meant to be used on inanimate objects, such as instruments and surfaces. They usually do not have the same killing power as chemicals used for high-level disinfection of inanimate objects. Therefore, antiseptic solutions should never be used to disinfect inanimate objects, such as instruments and reusable gloves. In addition, items such as pickup forceps, scissors, scalpel blades, and suture needles should never be left soaking in an antiseptic solution.

How Antiseptics Work

For the growth of bacteria there must be a certain food supply, moisture, in most cases oxygen, and a certain minimum temperature. These conditions have been specially studied and applied in connection

with the preserving of food and in the ancient practice of embalming the dead, which is the earliest illustration of the systematic use of antiseptics.

In early inquiries a great point was made of the prevention of putrefaction, and work was done in the way of finding how much of an agent must be added to a given solution, in order that the bacteria accidentally present might not develop. But for various reasons this was an inexact method, and today an antiseptic is judged by its effects on pure cultures of definite pathogenic microbes, and on their vegetative and spore forms. Their standardization has been effected in many instances, and a water solution of phenol of a certain fixed strength is now taken as the standard with which other antiseptics are compared.

Application of antiseptics

The most common and important antiseptics today are hydrogen peroxide, iodine, boric acid and alcohol; they should be allowed to dry completely before the wound is covered.

For example, hydrogen peroxide has been used as an antiseptic and anti-bacterial agent for many years, although its use has decreased in recent years with the popularity of better-smelling and more readily-available over the counter products. While its effectiveness as an antibacterial is relatively weak, hydrogen peroxide works through the liberation of oxygen gas which generates an effervescent action to cleanse the wound by removing tissue debris. When hydrogen peroxide is applied to a wound, it fizzes as oxygen is released. This fizzing action helps loosen and remove dead tissue.

The effectiveness of hydrogen peroxide may be lowered in the presence of blood and/or pus. The appropriate concentration of hydrogen peroxide for antiseptic use is 3%, while a concentration of more than 20% hydrogen peroxide can damage skin and mucous membranes and even possibly lead to infection.

Some alternative antiseptics commonly used on human skin include benzalkonium chloride, chlorhexidine, hexachlorophine, iodine compounds, mercury compounds, and alcohol.

Prior to the application of an antiseptic, a wound must first be thoroughly cleaned with soap and water. When applying an antiseptic to skin, use a circular motion, starting at the center of the site and moving outward in ever-widening concentric circles. This moves dirt away from the wound better than simply

rubbing back and forth. Once the wound has been cleaned and the antiseptic has been applied, the wound, in most cases, should be covered with a clean bandage or dressing to keep the wound free of external contaminants and to keep it moist while it heals (*note:* some antiseptics such as Phenol can actually damage the skin if bandaged. Please follow all medicine directions and physician advice carefully). While, antiseptics are not known to interact with other medicines, their use in conjunction with other topical cream, solution, or ointment should be avoided.

Safe use of Disinfectants

- Don't use on skin or nails.
- Wear nitrile gloves and chemical resistant goggles when mixing and using disinfectant.
- Measure and mix products accurately.
- Store solution in a marked (nonfood) container with hazard and safety information on label.
- Use tongs or a draining basket to remove implements.
- Seal contaminated wipes or cotton balls in a plastic bag before disposing.
- Wash hands with a bacterial soap.

It is essential to keep in mind that disinfectants are classified as industrial strength cleaners that can be harmful if improperly used. Some tips on safe use of disinfectants include:

- NEVER use a disinfectant on living tissue or to clean your hands
- Wear protective equipment such as gloves and safety goggles while mixing chemicals to be used in disinfectant control
- Use soaking baskets and tongs to insert items in and remove items from disinfectant solutions
- Clearly mark all containers used for storing disinfectants

Companies must be aware that products intended to kill or control germs must be registered as pesticides with the Environmental Protection Agency (EPA). Without EPA registration, we have no information about the effectiveness of these products. This poses a health risk because people may falsely believe the product is preventing infections caused by bacteria or viruses.

Also, every chemical used in the United States must have a **Material Safety Data Sheet (MSDS)** report developed by the manufacturer that developed the chemical. A material safety data sheet (MSDS) is a form containing data regarding the properties of a particular substance. An important component of workplace safety, it is intended to provide workers and emergency personnel with procedures for handling or working with that substance in a safe manner, and includes information such as physical data (melting point, boiling point, flash point, etc.), toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment, and spill handling procedures. The exact format of an MSDS can vary from source to source. MSDS are a widely used system for cataloging information on chemicals. MSDS information may include instructions for the safe use and potential hazards associated with a certain chemical. MSDS can be found anywhere chemicals are being used.

Overall, the risks of spreading infection would be virtually eliminated if operators used disposable instruments, wore rubber gloves, employed proper hand washing and used appropriate sterilization techniques.

Antiseptics and Prevention

Rhinoviruses are the most common viral infective agents in humans, and the causative agent of the common cold. There are over 105 serologic virus types that cause cold symptoms, and rhinoviruses are responsible for approximately 50% of all cases. While there is no cure for the common cold, antiseptic skin cleansers that contain salicylic acid or pyroglutamic acid may help prevent hand-to-hand transmission of rhinovirus.

Precautions with antiseptics

The following precautions should be followed when using antiseptics:

- As a general rule, antiseptics should not be used for longer than one week, and a physician should be consulted if the wound has not healed in that time.
- Only ***minor*** cuts, scrapes, and burns should be treated with antiseptics. Severe burns, cuts, puncture wounds, etc. should be treated by a licensed physician and should not be self-treated with antiseptics. Other conditions inappropriate for antiseptics include sunburns and existing infections.
- Always read the directions carefully as side-effects vary with individual product and use. For example, hypersensitive reactions are possible with organic compounds such as chlorhexidine, benzalkonium and hexachlorophine. Skin dryness and irritation should be carefully considered with antiseptics containing alcohol.
- The ingestion of iodine or mercury-containing products can be poisonous. Iodine-containing products should be used sparingly during pregnancy and lactation due to the risk of infant absorption of iodine.

Recommended Cleaning and Disinfection Procedures for Foot Spa Basins in Salons

Customer precautions - protecting the client

1. **Check the condition of the client's feet and legs:** If open sores or skin wounds are present (including insect bites, scratches, scabbed-over wounds, or any condition that weakens the skin barrier), explain to the client why they should not use the foot bath.
2. **Complete pedicure or wax after the foot bath soak:** Any procedure that risks damage to a client's skin should not be done before soaking feet in the foot spa basin.

Step by step instructions for disinfecting pedicure foot spa equipment

After Each Client: (this can take place any time after the client's feet are out of the footbath, while feet are massaged, toes are painted, or other opportunities)

1. **Drain** the water from the foot spa basin or bowl and remove any visible debris.
2. **Clean** the surfaces of the foot spa with soap or detergent, rinse with clean water, and drain.
3. **After cleaning, disinfect*** the surfaces with an **EPA-registered hospital disinfectant** (for description) according to the manufacturer's directions on the label. Surfaces must remain wet with the disinfectant for **10 minutes or the time stated on the label,** which may be shorter.

*** For whirlpool foot spas, air-jet basins, "pipe-less" foot spas, and other circulating spas:** It is best to disinfect by filling the basin with clean water, adding the appropriate amount of liquid disinfectant, and turning the unit on to **circulate** the disinfectant for the entire contact time.

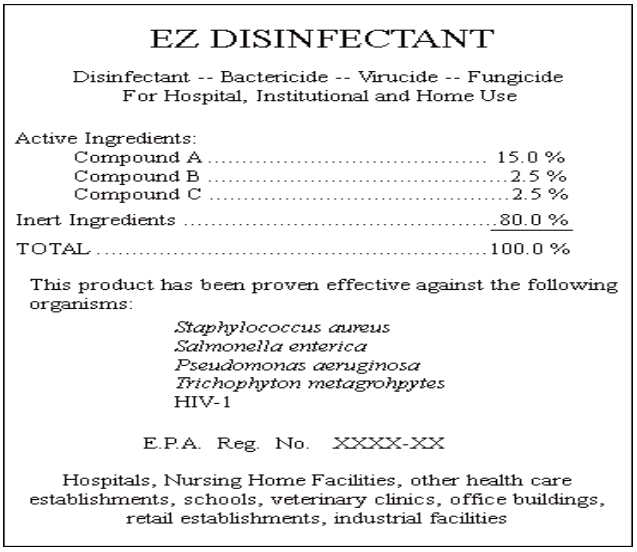
4. After disinfection, **drain and rinse** with clean water.

Nightly:

* Pedicure foot spa chair basin showing the filter screen, inlet jets, and other removable parts that require special attention during the disinfecting process:

- **For whirlpool foot spas, air-jet basins, "pipe-less" foot spas, and other circulating spas:**
    1. **Remove** the filter screen, inlet jets, and all other removable parts from the basin and clean out any debris trapped behind or in them.
    2. Using a brush, **scrub** these parts with soap or disinfectant (following cleaning directions).
    3. **Rinse** the removed parts with clean water and place them back into the basin apparatus.
    4. **Fill** the basin with clean water and add an **EPA-registered hospital disinfectant**, following label directions. Turn the unit on and **circulate** the system with the liquid for 10 minutes, or the label-indicated time if different. (The whirlpool mechanism of the tub must be operating for the entire disinfection period so the piping and internal components that contain hidden bacteria are disinfected.)
    5. **After disinfection, drain, rinse,** and air dry.
- **For simple basins (no circulation):**
    1. **Drain** the basin and remove any visible debris.

2. **Scrub** the bowl with a clean brush and soap or disinfectant (following cleaning directions). **Rinse and drain**.



EZ DISINFECTANT

Disinfectant -- Bactericide -- Virucide -- Fungicide
For Hospital, Institutional and Home Use

Active Ingredients:
Compound A ..... 15.0 %
Compound B ..... 2.5 %
Compound C ..... 2.5 %
Inert Ingredients ..... 80.0 %
TOTAL ..... 100.0 %

This product has been proven effective against the following organisms:

Staphylococcus aureus
Salmonella enterica
Pseudomonas aeruginosa
Trichophyton metagrohpytes
HIV-1

E.P.A. Reg. No. XXXX-XX

Hospitals, Nursing Home Facilities, other health care establishments, schools, veterinary clinics, office buildings, retail establishments, industrial facilities

3. **Disinfect** basin surfaces with and **EPA-registered hospital disinfectant**, following manufacturer's instructions. Surfaces must remain wet with the disinfectant for 10 minutes or the contact time stated on the label.
4. **Drain** the basin, **rinse** with clean water, and let air-dry.

Label information on disinfectant products

The label should clearly state that the product is a hospital or medical disinfectant. It may also list the following organisms:

- *Staphylococcus aureus*
- *Salmonella enterica (formerly S. choleraesuis)*
- *Pseudomonas aeruginosa*

The product label should clearly identify an EPA Registration Number.