



Illinois 5 Hour Nail Technician CE Course

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Module 1

Sanitation and Sterilization (1 hour)

Module Outline

- (a) Universal Sanitation and Sterilization Precautions
- (b) How to distinguish between disinfectants and antiseptics
- (c) How to sanitize hands and disinfect tools

Key Terms

EPA

sanitize

disinfect

antiseptic

precautions

MRSA

(a) Universal Sanitation and Sterilization Precautions

Learning objectives:

After completing this lesson you will be able to:

- List precautionary elements that will protect the client
- Describe the proper progression of client services when using Foot Spas
- Explain proper cleaning and disinfection procedures for equipment

The United States Environmental Protection Agency has set Universal Sanitation and Sterilization Rules.

One Sanitation and Sterilization Precaution is the Recommended Cleaning and Disinfection Procedures for Foot Spa Basins in Salons

Preventing Pedicure Foot Spa Infections

Guidance from the *EPA* and the Centers for Disease Control and Prevention (CDC)

Outbreaks of skin infections on the legs and feet of patrons following spa pedicures have caused concern about spa safety. Information for customers of salon pedicure foot spas can help reduce the potential for infections associated with pedicure foot spa use.

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: Drain the water from the foot spa basin or bowl and remove any visible debris. (*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*)

Clean the surfaces of the foot spa with soap or detergent, rinse with clean water, and drain.

After cleaning, disinfect the surfaces with an EPA-registered hospital disinfectant 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.

After disinfection, drain and rinse with clean water.

Nightly

For whirlpool foot spas, air-jet basins, "pipe-less" foot spas, and other circulating spas

Remove the filter screen, inlet jets, and all other removable parts from the basin and clean out any debris trapped behind or in them.

Using a brush, scrub these parts with soap or disinfectant (*following cleaning directions*).

Rinse the removed parts with clean water and place them back into the basin apparatus.

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.*)

After disinfection, drain, rinse, and air dry

For simple basins (no circulation)

Drain the basin and remove any visible debris.

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

Rinse and drain.

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.

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
Pseudomonas aeruginosa

The product label should clearly identify an EPA Registration Number.

The label will also specify use sites that are health care related.

Important additional measures

- **Follow your state guidelines and regulations:** Some states require a weekly flush of the whirlpool mechanism with bleach and that the bleach remain in contact for over eight hours. Salons should consult state cosmetology regulations to make sure they are in compliance.
- **Read all labels and instruction manuals:** Always follow label directions for disinfectant products, and consult operating manuals for foot spa basins. Care should be taken to use appropriate doses of products to prevent damage to foot spas.
- **Know the condition of your equipment:** If your whirlpool foot spa has not been regularly cleaned and disinfected, you may need to do more than just the maintenance steps listed above to remove bacterial buildup from the system. Consult the foot spa manufacturer for further information. A higher level EPA-registered disinfectant, such as those labeled "Tuberculocides," may be used initially (refer to the listing of these products on the List. Once the system has been adequately disinfected, regular maintenance with cleaning and use of a hospital disinfectant, as described in this document, may be used.

Related Information

Guideline for Cleaning and Disinfecting Manicuring and Enhancement Equipment

These guidelines outline procedures cleaning (*sanitizing*) and disinfecting all types of equipment used during manicuring and enhancement services including items such as manicuring bowls, pushers, nippers, clippers, abrasive files and buffers.

In the salon, all tools, implements, devices or other pieces of equipment must be properly cleaned and disinfected before it comes into direct contact with a client, as required by the licensing rules and regulations of your region, state or country.

Proper Cleaning and Disinfection

Everything in the salon has either a hard or soft surface. Any surface coming into direct contact with a client's skin is considered contaminated.

All contaminated surfaces must be thoroughly and properly:

- 1) cleaned and then 2) disinfected.

To be considered properly clean, a surface must first be thoroughly scrubbed free of all visible signs of debris or residue. Proper cleaning is the total removal of all visible residue from every surface of tables, tools and equipment, followed by a complete and thorough rinsing with clean water.

Proper cleaning must be performed before continuing with the disinfection step. Proper *disinfection* is the destruction of potentially harmful or infection-causing microorganisms (pathogens) on a pre-cleaned surface.

Disposable (Single Use) items

Items that the manufacturer designs to be disposed of after one use are called “disposable” or “single-use”. These items must be properly disposed of after one use on a single client. Reusing these items is considered an unsanitary, improper and unprofessional practice. Some examples of disposable items are: cotton balls, gauze pads, wooden implements, disposable towels, toe separators, tissues, wooden sticks, arbor bands/ sleeves for electric files and certain abrasive files and buffers. Items damaged during the cleaning and disinfecting process are considered single-use and must be discarded after every client.

Proper Product Application

Some types of products can become contaminated if improperly used. Some examples are: creams, lotions, scrubs, paraffin wax, masks, and oils. These products must always be used in a sanitary manner that prevents contamination. For example, paraffin and nail oils should not be applied with a brush (or spatula) that has touched the skin. These practices may introduce bacteria into the product and cause contamination that can render products unsafe for use.

To avoid product contamination always:

- (a) Dispose of used or remaining product between clients.
- (b) Use single-use disposable implements to remove products from containers for application or remove product with a clean and disinfected spatula and put product to be used into a disposable or disinfect-able service cup.
- (c) Use an applicator bottle or dropper to apply the product.

Proper Disinfection of Multi-Use Tools and Equipment

Some items are designed to be used more than once and are considered to be “multi-use”. Multi-use items are sometimes referred to as “disinfect-able”, which means that the implement can be properly cleaned and disinfected while retaining its usefulness and quality. Multi-use items are designed for use on more than one client, but require proper cleaning and disinfection between each use. Examples of multi-use items include cloth towels, manicure bowls, nippers, pushers and certain abrasive files and buffers.

Hard and non-absorbent items constructed of hard materials that do not absorb liquid, like metal, glass, fiberglass or plastic should be cleaned and disinfected as described below.

Self-disinfecting items that will not support the growth of bacteria, viruses or fungi are application brushes used for nail polish and artificial enhancement application brushes.

Due to the nature of these products, the brushes do not require disinfection and should be cleaned, used and stored only as recommended by the product manufacturer.

Individual Client Packs

Tools/instruments kept in individual packs must be properly cleaned and disinfected after each use. If a client provides their own implements/tools, they must be properly cleaned and disinfected before use. State rules require all tools and equipment to be disinfected before being reused, even if used by the same client! Improperly cleaned and disinfected implements may grow infection/disease-causing organisms before the client returns for their next visit, thereby increasing the risk of infection. Never use air-tight bags or containers for storage as these can promote bacterial growth.

Methods of Proper Cleaning

Proper cleaning requires liquid soap/detergent, water and the use of a clean and disinfected scrub brush to *remove all visible* debris and residue. All items should be scrubbed with a clean and disinfected scrub brush under running water. Cleaning is not disinfection; disinfection is an entirely separate step. Different items are cleaned in different ways. This often depends on what the item is made of and how it was used.

NOTE: the cleaning step must be properly performed before an item can be disinfected. All items must be thoroughly rinsed and dried with clean cloth or paper towels prior to putting them into a disinfectant.

Cleaning (sanitation) Method Examples

- Scrub Brush - Abrasive files, buffers, paddles
- Ultrasonic Cleaner - Metal pushers & nippers
- Acetone Soak -Metal electric file bits used on enhancements
- Washing machine -Cloth towels, linens, chamois
- Towelette/Wipe -Electrical equipment, table tops

Methods of Proper Disinfecting

After proper cleaning, all reusable implements and tools must be disinfected by complete immersion in an appropriate disinfecting solution.

The item must be completely immersed so that all surfaces, including handles, are soaked for the time required on the disinfectant manufacturer's label. In general, U.S. Environmental Protection Agency (EPA) registered disinfectants require 10 minute immersion.

Remove items after the required time, using clean and disinfected tongs or gloves to avoid skin contact with the disinfectant solution. If required by the instruction label, rinse thoroughly in running water.

Allow items to air dry completely by placing them on top of a clean towel and covering them with another clean towel.

Methods for Proper Storage

All properly cleaned, disinfected and dried implements must be stored in a sanitary manner. A lined drawer is usually adequate, provided it is clean, contains only clean items and is properly labeled.

Store soiled or used items in a properly labeled, covered container separate from clean items. Never use airtight containers or zipper bags – these may promote bacterial growth!

Appropriate Disinfectants

How do you know if a disinfectant product is suitable for professional salon use? Standards and requirements vary from country to country, but in the United States, the EPA registered Hospital disinfectants with bactericidal, fungicidal and virucidal claims on the label are best for use in salons.

Disinfectant products are designed to destroy disease-causing microorganisms (pathogens) on non-living surfaces, such as those described in this document. They are not appropriate for use on living skin and contact with skin should be avoided.

Appropriate salon disinfectants include the following:

- (a) EPA-registered Hospital disinfectants with bactericidal, fungicidal and virucidal claims on the label.
- (b) 10% bleach solution (1 part bleach to 9 parts water)

Contact with Blood, Body Fluid or Unhealthy Conditions

If blood or body fluid comes in contact with any salon surface, the nail professional should put on a pair of clean protective, disposable gloves and use an EPA-registered Hospital liquid disinfectant or a 10% bleach solution to clean up all visible blood or body fluid. In case of an accidental cut, clean with an antiseptic and bandage the cut. Disposable items, such as a cotton-tipped wood stick must be immediately double-bagged and discarded after use, as described at the end of this section. Any non-porous instrument or implement that comes in contact with an unhealthy condition of the nail or skin, blood or body fluid, must be immediately and properly cleaned, then disinfected using an EPA-registered Hospital disinfectant as directed or a 10% bleach solution.

Any porous/absorbent instrument that comes in contact with an unhealthy condition of the nail or skin, blood or body fluid must be immediately double-bagged and discarded in a closed trash container or bio-hazard box.

Some EPA disinfectants are registered for hospital use, but may not say “Hospital” on their label. In these cases, the product label MUST claim effectiveness against *Salmonella choleraesuis*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa*.

Additional Information about Disinfectants and Cleaners

1) Disinfectants must be mixed, used, stored and disposed of according to manufacturer’s label instructions (proper mixing ratio is of the utmost importance to be an effective disinfectant). Some are ready to use and do not require mixing.

2) U.S. Federal Law prohibits the use of EPA-registered disinfectants in a manner that is contrary to its label.

3) Disinfectants must be prepared fresh every day (including spray bottles). Further, they must be replaced immediately if the solution becomes visibly contaminated. Disinfectant solutions will lose their strength upon standing and become ineffective within 24 hours. Use a logbook to record when fresh disinfectant is made.

4) Disinfectants are ineffective if implement/tools are not properly cleaned prior to use.

5) Just spraying disinfectants on tools and equipment is inadequate.

6) Disinfectants can damage or rust some metal tools if improperly used.

7) All disinfectant containers must be properly labeled. Disinfectant solutions prepared in the salon must list on the container: the contents and percentage solution (concentration), and use a logbook to record the date and time of mixing. Check the label for the product's expiration date.

8) All brushes used for cleaning purposes, i.e., nail brushes and electric-file bit cleaning brushes, must be properly cleaned and disinfected between each use.

9) Ultra-violet light cabinets are not suitable replacements for liquid disinfectant solutions. These can be used for storage after properly cleaning and disinfecting implements/tools with a liquid solution.

10) Read all warning labels and precisely follow manufacturer's instructions.

These guidelines are believed to be highly effective and are designed to help avoid unforeseen pitfalls, problems and complications.

These guidelines are not a replacement for local government standards, rules or regulations.

Always consult federal, state and local laws and regulations, which may vary somewhat from these recommendations.

Protect Your Skin!

- Microorganisms in foot spas can enter through the skin; so broken skin (e.g., cuts and abrasions) should not come into contact with foot spa water.
- Do not shave, use hair removal creams, or wax your legs during the 24 hours before receiving treatment in a foot spa.
- Do not use a foot spa if your skin has any open wounds such as bug bites, bruises, scratches, cuts, scabs, poison ivy, etc.

Identifying an Infection

Open wounds appear on the skin of feet and legs. Initially they may look like insect bites, but they increase in size and severity over time, and sometimes result in pus and scarring.

Cause of Infections

Some incidents of foot spa infections have been caused by *Mycobacterium fortuitum*. This organism can occur naturally in water and soil. Other organisms have also been found in footbath systems. The screens and tubes of foot spas are particularly good places for the bacteria to collect and grow, often forming dense layers of cells and proteins called biofilms, which can be very hard to remove.

Patrons should know how the salon cleans and disinfects foot spas.

- Patrons should ask salon workers how the foot spas are maintained and how often.
- A foot spa should be disinfected between each customer, and nightly. The disinfectant needs to work for the full time listed on its label, typically 10 minutes, depending on the type of disinfectant.
- Proper cleaning and disinfection can greatly reduce the risk of getting an infection by reducing the bacteria that can build up in the foot spa system.

Disinfectants used in the foot spa should indicate on the label that they're approved for hospital use.

A disinfectant label should clearly show its uses and that it is EPA-approved.

Salons should use an EPA-registered hospital disinfectant
The label (at right) should list relevant product information, including:
The terms "Disinfectant" and also "Hospital" or "Medical" or "Health Care". This indicates the product can be used as a disinfectant on surfaces in these environments.
The EPA registration number.
Some products may have instructions for both sanitizing and disinfecting footbaths. Pedicurists should follow disinfecting directions.

Do not use the foot spa if you are not sure it is disinfected and safe to use.

(b) How to distinguish between disinfectants and antiseptics

Learning objectives:

After completing this lesson you will be able to:

- Define the terms disinfectant and antiseptic
- Identify precautions with these chemicals
- List their purposes

Disinfectants and Antiseptics

Antiseptic: A substance that inhibits the growth and reproduction of disease-causing microorganisms. For practical purposes, antiseptics are routinely thought of as topical agents, for application to skin and mucous membranes.

Disinfectant: Any chemical agent used chiefly on inanimate objects to destroy or inhibit the growth of harmful organisms.

Purpose

Antiseptics are a diverse class of drugs which are applied to skin surfaces or mucous membranes for their anti-infective effects. 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 oral hygiene.

Antiseptics are also used for disinfection of inanimate objects, including instruments and furniture surfaces.

Commonly used **antiseptics for skin** cleaning include benzalkonium chloride, chlorhexidine, hexachlorophine, iodine compounds, mercury compounds, **alcohol and hydrogen peroxide**. Other agents which have been used for this purpose, but have largely been supplanted by more effective or safer agents, include boric acid and volatile oils such as methyl salicylate.

Chlorhexidine shows a high margin of safety when applied to mucous membranes, and has been used in oral rinses and preoperative total body washes.

Benzalkonium chloride and hexachlorophine are used primarily as hand scrubs or face washes. Benzalkonium may also find application as a disinfecting agent for instruments, and in low concentration as a preservative for drugs including ophthalmic solutions. Benzalkonium chloride is inactivated by organic compounds, including soap, and must not be applied to areas which have not been fully rinsed.

Iodine compounds include tincture of iodine and povidone iodine compounds. Iodine compounds have the broadest spectrum of all topical anti-infectives, with action against bacteria, fungi, viruses, spores, protozoa, and yeasts. Iodine tincture is highly effective, but its alcoholic component is drying and extremely irritating when applied to abraded (scraped or rubbed) skin. Povidone iodine, an organic compound, is less irritating and less toxic, but not as effective. Povidone iodine has been used for hand scrubs and disinfection of surgical sites. Aqueous solutions of iodine have also been used as antiseptic agents, but are less effective than alcoholic solutions and less convenient to use than the povidone iodine compounds.

Hydrogen peroxide acts through the liberation of oxygen gas. Although the antibacterial activity of hydrogen peroxide is relatively weak, the liberation of oxygen bubbles produces an effervescent action, which may be useful for wound cleansing through removal of tissue debris. The activity of hydrogen peroxide may be reduced by the presence of blood and pus. The appropriate concentration of hydrogen peroxide for antiseptic use is 3%, although higher concentrations are available.

Precautions

Precautions vary with individual product and use. Consult individualized references.

Hypersensitivity reactions should be considered with organic compounds such as chlorhexidine, benzalkonium and hexachlorophine.

Skin dryness and irritation should be considered with all products, but particularly with those containing alcohol.

Systemic toxicity may result from ingestion of iodine containing compounds or mercury compounds.

Iodine compounds should be used sparingly during pregnancy and lactation due to risk of infant absorption of iodine with alterations in thyroid function.

Alcohols

Alcohols have been appreciated for centuries for their antiseptic qualities. As a chemical group, alcohols possess many features that are desirable for an antiseptic. They have a bactericidal action against vegetative cells. They are relatively inexpensive, usually easily obtainable, and relatively nontoxic with topical application.

Alcohols have a cleansing action, evaporate readily, and are colorless. Their destructive action against spores is much less effective than that against vegetative cells. The greatest amount of work has been done with ethanol.

Phenols

Crude mixtures of cresols (krē'sôl', -söl', -sôl') solubilized by soap or alkali were originally introduced as **Lysol** and are still used as rough disinfectants. They need to be applied at high concentrations, are irritant, and toxic, but they kill bacteria, fungi, and some viruses.

Chlorinated cresols or xylenols are commonly used in practice. These compounds are less active against Staphylococci and Pseudomonas.

Hexachlorophene is a different kind of phenolic antiseptic that acts slowly, but binds strongly to the skin. It was used widely in surgical soaps and antiperspirant preparations. However, absorption through the skin can cause damage to the central nervous system, particularly in infants, and the use of hexachlorophene is now severely restricted.

Phenol no longer plays a significant role as an antibacterial agent, although its use has not been abandoned entirely. Phenols are still used today in drug formulations such as cold-sore creams and liquids, throat lozenges, and washes. Phenol derivatives are also used as preservatives and antimicrobial agents in germicidal soaps and lotions.

Quaternary Ammonium Compounds

Initially, Quaternary Ammonium Compounds were used as an adjunct to surgery, such as in preoperative patient skin treatment, de-germing the hands of the surgical team pre-operatively, and disinfection of surgical instruments.

(c) How to sanitize hands and disinfect tools

Learning objectives:

After completing this lesson you will be able to:

- Describe disease prevention
- Describe the recommended hand washing technique
- List ways to transmit pathogens
- List adverse effects of using hand sanitizers

Hand Washing

Hand washing, when done correctly, is the single most effective way to prevent the spread of communicable diseases. Good hand washing technique is easy to learn and can significantly reduce the spread of infectious diseases among both children and adults.

What types of disease can good hand washing prevent?

- Diseases spread through fecal-oral transmission. Infections which may be transmitted through this route include salmonellosis, shigellosis, hepatitis A, giardiasis, enterovirus, amebiasis, and campylobacteriosis. Because these diseases are spread through the ingestion of even the tiniest particles of fecal material, hand washing after using the toilet cannot be over-emphasized.
- Diseases spread through indirect contact with respiratory secretions. Microorganisms which may be transmitted through this route include influenza, Streptococcus, respiratory syncytial virus (RSV) and the common cold. Because these diseases may be spread indirectly by hands contaminated by respiratory discharges of infected people, illness may be avoided by washing

hands after coughing or sneezing and after shaking hands with an individual who has been coughing and sneezing.

- Diseases may also be spread when hands are contaminated with urine, saliva or other moist body substances. Microorganisms which may be transmitted by one or more of these body substances include cytomegalovirus, typhoid, staphylococcal organisms, and Epstein-barr virus. These germs may be transmitted from person to person or indirectly by contamination of food or inanimate objects such as toys.

What is good hand washing technique?

There is more to hand washing than you think! By rubbing your hands vigorously with soapy water, you pull the dirt and the oily soils free from your skin. The soap lather suspends both the dirt and germs trapped inside and are then quickly washed away.

Follow these four simple steps to keeping hands clean:

- Wet your hands with warm running water.
- Add soap, then rub your hands together, making a soapy lather. Do this away from the running water for at least 15 seconds, being careful not to wash the lather away. Wash the front and back of your hands, as well as between your fingers and under your nails.
- Rinse your hands well under warm running water. Let the water run back into the sink, not down to your elbows.
- Dry hands thoroughly with a clean towel. Then turn off the water with a clean paper towel and dispose in a proper receptacle.

What type of soap should be used?

Any type of soap may be used. However, bar soap should be kept in a self draining holder that is cleaned thoroughly before new bars are put out and liquid soap containers (which must be used in day care centers) should be used until empty and cleaned before refilling. To prevent chapping use a mild soap with warm water; pat rather than rub hands dry; and apply lotion liberally and frequently.

May I use the over-the-counter alcohol gels for washing my hands instead of using soap and water?

These products, which can be found wherever soap is sold, are very effective at killing germs on the hands as long as your hands are not visibly dirty. They should be used when soap and water are not readily available.

To use correctly, apply about a teaspoonful of the alcohol gel on the palm of one hand. Then rub all over both hands, making sure you rub the front, back, and fingernail areas of both hands. Let the alcohol dry, which should take about 30 seconds.

If your hands look dirty but you have no other way to wash your hands, use the gel but wash with soap and water as soon as you can.

History of Hand Washing

The history of hand washing began in the Health Care Sector and has had a profound effect on the Personal Service and Beauty Industry.

For generations, hand washing with soap and water has been considered a measure of personal hygiene.

The concept of cleansing hands with an antiseptic agent probably emerged in the early 19th century. As early as 1822, a French pharmacist demonstrated that solutions containing chlorides of lime or soda could eradicate the foul odors associated with human corpses and that such solutions could be used as disinfectants and antiseptics.

In 1846, Ignaz Semmelweis observed that women whose babies were delivered by students and physicians in the First Clinic at the General Hospital of Vienna consistently had a higher mortality rate than those whose babies were delivered by midwives in the Second Clinic. He noted that physicians who went directly from the autopsy suite to the obstetrics ward had a disagreeable odor on their hands despite washing their hands with soap and water upon entering the obstetrics clinic. He proposed that the puerperal fever that affected so many of these women was caused by "cadaverous particles" transmitted from the autopsy suite to the obstetrics ward via the hands of students and physicians.

Perhaps because of the known deodorizing effect of chlorine compounds, as of May 1847, he insisted that students and physicians clean their hands with a chlorine solution between each patient in the clinic.

The maternal mortality rate in the First Clinic subsequently dropped dramatically and remained low for years. This intervention by Semmelweis represents the first evidence indicating that cleansing heavily contaminated hands with an antiseptic agent between patient contacts may reduce health-care--associated transmission of contagious diseases more effectively than hand washing with plain soap and water.

In 1961, the U. S. Public Health Service produced a training film that demonstrated hand washing techniques recommended for use by health-care workers. At the time, recommendations directed that personnel wash their hands with soap and water for 1--2 minutes before and after patient contact.

Rinsing hands with an antiseptic agent was believed to be less effective than hand washing and was recommended only in emergencies or in areas where sinks were unavailable.

Center for Disease Control

In 1975 and 1985, formal written guidelines on hand washing practices were published by the Center for Disease Control. These guidelines recommended hand washing with non-antimicrobial soap between services to patrons. Use of waterless antiseptic agents (alcohol-based solutions) was recommended only in situations where sinks were not available.

In 1988 and 1995, guidelines for hand washing and hand antisepsis were published by the Association for Professionals in Infection Control. Recommended indications for hand washing were similar to those listed in the CDC guidelines.

The 1995 APIC guideline included more detailed discussion of alcohol-based hand rubs and supported their use in more public settings than had been recommended in earlier guidelines.

In 1995 and 1996, the Healthcare Infection Control Practices Advisory Committee recommended that either antimicrobial soap or a waterless antiseptic agent be used. These guidelines also provided recommendations for hand washing and hand antisepsis in other public settings.

Transmission of Pathogens on Hands

Transmission of pathogens from one person to another happens when:

- Organisms present on the patron's skin transfers to the hands of the Salon Professional
- Hand washing or hand antiseptis by the Salon Professional are inadequate or omitted entirely, or the agent used for hand hygiene is inappropriate.
- The contaminated hands of the Salon Professional comes in direct contact with another person, or with an inanimate object that will come into direct contact with a person

Pathogens can be transported from one person to another. The number of organisms present on the skin varies.

Persons with diabetes, patients undergoing dialysis for chronic renal failure, and those with chronic dermatitis are more likely to have colonized organisms. We shed microorganisms daily from normal skin onto nightgowns, bed linen, bedside furniture, and other objects in our environment.

Scientific Study of Hand Washing

Investigators use different methods to study hand washing, antiseptic hand wash, and surgical hand antiseptis protocols.

Differences among the various studies include:

- whether hands are purposely contaminated with bacteria before use of test agents,
- the method used to contaminate fingers or hands,
- the volume of hand-hygiene product applied to the hands,
- the time the product is in contact with the skin,
- the method used to recover bacteria from the skin after the test solution has been used, and
- the method of expressing the effectiveness of the product

Despite these differences, the majority of studies can be placed into one of two major categories:

1. studies focusing on products to remove transient flora and
2. studies involving products that are used to remove resident flora from the hands

The majority of studies of products for removing transient flora from the hands involve artificial contamination of the volunteer's skin with a defined test organism before the volunteer uses a plain soap, an antimicrobial soap, or a waterless antiseptic agent.

In the United States, antiseptic hand wash products are regulated by FDA's Division of Over-the-Counter Drug Products (OTC). Products are evaluated by using a standardized method. Tests are performed in accordance with use directions for the test material.

Plain (Non-Antimicrobial) Soap

Soaps are detergent-based products that contain esterified fatty acids and sodium or potassium hydroxide. They are available in various forms including bar soap, tissue, leaflet, and liquid preparations. Their cleaning activity can be attributed to their detergent properties, which result in removal of dirt, soil, and various organic substances from the hands.

Plain soaps have minimal, if any, antimicrobial activity. However, hand washing with plain soap can remove loosely adherent transient flora. For example, hand washing with plain soap and water for 15 seconds reduces bacterial counts on the skin by 0.6--1.1, whereas washing for 30 seconds reduces counts by 1.8--2.8.

Alcohol-based Hand Cleansers

The majority of alcohol-based hand antiseptics contain either isopropanol, ethanol, n-propanol, or a combination of two of these products.

The majority of studies of alcohols have evaluated individual alcohols in varying concentrations. Other studies have focused on combinations of two alcohols or alcohol solutions containing limited amounts of hexachlorophene, quaternary ammonium compounds, povidone-iodine, triclosan, or chlorhexidine gluconate.

Alcohols, when used in concentrations present in alcohol-based hand rubs, also have activity against several viruses.

For example, 70% isopropanol and 70% ethanol are more effective than medicated soap or nonmedicated soap in reducing viruses on fingers. Products containing 60% ethanol were also found to reduce the presence of viruses.

Other viruses such as hepatitis A and the polio virus may require 70%--80% alcohol to be reliably inactivated. However, both 70% ethanol and a 62% ethanol foam product with emollients reduced hepatitis A virus on whole hands or fingertips more than nonmedicated soap.

Both were equally as effective as antimicrobial soap containing 4% chlorhexidine gluconate in reducing reduced viral counts on hands. In the same study, both 70% ethanol and the 62% ethanol foam product demonstrated greater virucidal activity against polio virus than either non-antimicrobial soap or a 4% chlorhexidine gluconate-containing soap.

However, depending on the alcohol concentration, the amount of time that hands are exposed to the alcohol, and viral variant, alcohol may not be effective against hepatitis A and other viruses. Alcohol can prevent the transfer some pathogens.

Alcohol-based products are more effective for standard hand washing than soap or antimicrobial soaps.

The effectiveness of alcohol-based hand-hygiene products is affected by several factors, including:

- the type of alcohol used
- concentration of alcohol
- contact time
- volume of alcohol used and
- whether the hands are wet when the alcohol is applied

Frequent use of alcohol-based formulations for hand antiseptics can cause drying of the skin unless emollients, humectants, or other skin-conditioning agents are added to the formulations. The drying effect of alcohol can be reduced or eliminated by adding 1%--3% glycerol or other skin-conditioning agents.

Moreover, in several recent prospective trials, alcohol-based rinses or gels containing emollients caused substantially less skin irritation and dryness than the soaps or antimicrobial detergents tested. These studies, which were conducted in clinical settings, used various subjective and objective methods for assessing skin irritation and dryness. Further studies are warranted to establish whether products with different formulations yield similar results.

Alcohols are flammable. As a result, alcohol-based hand rubs should be stored away from high temperatures or flames in accordance with National Fire Protection Agency recommendations.

Chlorhexidine

Chlorhexidine was developed in England in the early 1950s and was introduced into the United States in the 1970s. It has antimicrobial activity. Chlorhexidine's immediate antimicrobial activity occurs more slowly than that of alcohols. Chlorhexidine has good activity against some bacteria, somewhat less activity against other bacteria and fungi. It has activity against some viruses such as herpes simplex virus, HIV, and influenza.

Chloroxylenol

Chloroxylenol is a phenolic compound that has been used as a preservative in cosmetics and other products and as an active agent in antimicrobial soaps. It was developed in Europe in the late 1920s and has been used in the United States since the 1950s. The antimicrobial activity of PCMX is attributable to inactivation of bacterial enzymes and alteration of cell walls. It has good activity against certain organisms and fair activity against some bacteria, and certain viruses.

Hexachlorophene

In the 1950s and early 1960s, emulsions containing 3% hexachlorophene were widely used for hygienic hand washing, as surgical scrubs, and for routine bathing of infants in hospital nurseries. The antimicrobial activity of hexachlorophene results from its ability to inactivate essential enzyme systems in microorganisms. Studies of hexachlorophene as a hygienic hand wash and surgical scrub demonstrated only modest efficacy after a single hand wash. Hexachlorophene has residual activity for several hours after use and gradually reduces bacterial counts on hands after multiple uses. It has a cumulative effect. With repeated use of 3% hexachlorophene preparations, the drug is absorbed through the skin.

Iodine and Iodophors

Iodine has been recognized as an effective antiseptic since the 1800s. However, because iodine often causes irritation and discoloring of skin, iodophors have largely replaced iodine as the active ingredient in antiseptics.

Iodine molecules rapidly penetrate the cell wall of microorganisms and inactivate cells by forming complexes with amino acids and unsaturated fatty acids, resulting in impaired protein synthesis and alteration of cell membranes

The majority of iodophor preparations used for hand hygiene contain 7.5%--10% povidone-iodine. Formulations with lower concentrations also have good antimicrobial activity because dilution can increase free iodine concentrations. However, as the amount of free iodine increases, the degree of skin irritation also may increase.

Quaternary Ammonium Compounds

Quaternary ammonium compounds are the most widely used as antiseptics.

Quaternary ammonium compounds are primarily bacteriostatic and fungistatic, although they are microbicidal against certain organisms at high concentrations.

In the United States, these compounds have been seldom used for hand antiseptics during the last 15--20 years. However, newer hand washing products containing benzalkonium chloride or benzethonium chloride have recently been introduced for use.

A recent study of surgical intensive-care unit personnel found that cleaning hands with antimicrobial wipes containing a quaternary ammonium compound was about as effective as using plain soap and water for hand washing; both were less effective than decontaminating hands with an alcohol-based hand rub.

One laboratory-based study reported that an alcohol-free hand-rub product containing a quaternary ammonium compound was effective in reducing microbial counts on the hands of volunteers.

Triclosan

Triclosan is a nonionic, colorless substance that was developed in the 1960s. It has been incorporated into soaps and into other consumer products. Concentrations of 0.2%--2% have antimicrobial activity. Triclosan has a broad range of antimicrobial activity. It is classified as safe and effective for use as an antiseptic hand wash.

Other Agents

Certain other agents are being evaluated by FDA for use in health-care-related antiseptics. However, the effectiveness of these agents has not been evaluated adequately for use in hand washing preparations.

Irritant Contact Dermatitis Resulting from Hand-Hygiene Measures

Frequency of Irritant Contact Dermatitis

Frequent and repeated use of hand-hygiene products, particularly soaps and other detergents, is a primary cause of chronic irritant contact dermatitis.

This is of great concern to Cosmetologists and all Salon Professionals in the Personal Service Industry.

The potential of detergents to cause skin irritation can vary considerably. Irritation associated with antimicrobial soaps may be caused by the antimicrobial agent or by other ingredients of the formulation. Affected persons often complain of a feeling of dryness or burning; skin that feels rough or even scaling.

Detergents can damage the skin. Irritant contact dermatitis is more commonly reported with iodophors. Other antiseptic agents that can cause irritant contact dermatitis (in order of decreasing frequency) include chlorhexidine, triclosan, and alcohol-based products.

Skin that is damaged by repeated exposure to detergents may be more susceptible to irritation by alcohol-based preparations.

Allergic Contact Dermatitis Associated with Hand-Hygiene Products

Allergic reactions to products applied to the skin may present as delayed type reactions or less commonly as immediate reactions. The most common causes of contact allergies are fragrances and preservatives; emulsifiers are less common causes. Liquid soaps, hand lotions or creams, and may contain ingredients that cause contact allergies.

Allergic reactions to antiseptic agents, including quaternary ammonium compounds, iodine or iodophors, chlorhexidine, triclosan, and alcohols have been reported. Allergic contact dermatitis associated with alcohol-based hand rubs is uncommon.

Allergic reactions to alcohol-based products may represent true allergy to alcohol, allergy to an impurity or aldehyde metabolite, or allergy to another constituent of the product. Allergic contact dermatitis or immediate contact reactions may be caused by ethanol or isopropanol. Allergic reactions can be caused by compounds that may be present as inactive ingredients in alcohol-based hand rubs, including fragrances, benzyl alcohol, stearyl or isostearyl alcohol, phenoxyethanol, myristyl alcohol, propylene glycol, parabens, and benzalkonium chloride.

Proposed Methods for Reducing Adverse Effects of Agents

Potential strategies for minimizing hand-hygiene--related irritant contact dermatitis include reducing the frequency of exposure to irritating agents (particularly detergents), replacing products with high irritation potential with preparations that cause less damage to the skin, and increasing education on hand care.

Hand lotions and creams often contain humectants and various fats and oils that can increase skin hydration and replace altered or depleted skin lipids that contribute to the barrier function of normal skin.

MRSA

Methicillin-Resistant Staphylococcus Aureus

An outbreak of “USA300 strain” MRSA: methicillin-resistant Staphylococcus aureus occurred in a Cosmetologist and 2 of her customers. Eight other persons, who were either infected or colonized, were linked to this outbreak, including a family member, a household contact, and partners of customers.

The CA-MRSA USA300 strain is known to cause outbreaks among population groups, such as:

- native Americans,
- prison inmates,
- military personnel,
- men who have sex with men, and
- competitive sports participants,
- and accounts for 97% of MRSA isolates obtained in emergency departments across the United States from patients with soft tissue infections.

CA-MRSA is associated with invasive infections. The USA300 strain, which is also found in Europe was first isolated in the Netherlands in 2002.

Overall prevalence of MRSA in the Netherlands is low (2%). In 2006, 3.8% of all MRSA isolates sent to the National Institute for Public Health were identified as the USA300 strain. We report an outbreak of the USA300 strain related to a Beauty Salon in the Netherlands, in a:

- Cosmetologist
- A family member
- A household contact and
- Customers and their partners.

The Study of MRSA

In September 2005, a medical microbiologist from the regional medical microbiology laboratory reported to the municipal health department a recurring MRSA infection in a Cosmetologist. From December 2004 onwards, the woman had recurrent infections on the:

- legs,
- buttocks, and
- groin

resulting in treatment to include incision and drainage of lesions. When an abscess developed in the genital area in July 2005, MRSA was cultured from a wound swab.

In December 2005, the Cosmetologist was declared MRSA-free after antimicrobial treatment. Swabs were taken 3 times in 1-week intervals from:

- nose,
- throat,
- perineum, and
- wound

and used for enrichment culture of MRSA.

In March 2006, the woman was tested again for MRSA colonization; test results showed that she had been reinfected or that therapy had failed. The Cosmetologist had eczema. Because of the "hands on" nature of her work, she was advised to temporarily stop providing services to customers.

The municipal health department conducted a risk assessment of the woman's household contacts and the Beauty Salon. The Netherlands does not require that MRSA infections be reported. Therefore, the municipal health department depends upon the consent and full cooperation of index patients and contacts for further investigation of outbreaks.

Consequently, in this instance, household contacts for screening were identified but had not presented themselves for screening. Contacts who had complaints sought treatment at the emergency department, where the observant infection control practitioner and microbiologists related them to the MRSA outbreak.

Nurses obtained specimens by swabbing each patient's nose, throat, and wounds. A case was defined as a patient who had a culture-confirmed MRSA infection during the outbreak period July 2005–December 2006 and a direct epidemiologic link to the index patient.

In April 2006, a salon customer was hospitalized with an abscess of the breast caused by MRSA; in July 2006, another customer who had had boils since February 2006 was found to be MRSA positive. Both customers had been given wax treatments by the Cosmetologist during the period in which she had an infected hair follicle in her armpit.

Swabs taken from this site showed that the beautician was infected with the same MRSA strain as before. Concern arose about the risk for infection to customers through:

- instruments,
- materials (wax), or
- contact with other employees.

The index patient and the other 6 employees of the salon regularly provided services to each another. A nurse and a member of the municipal health department visited the salon in June 2006 to check on hygiene protocols and to advise on preventive measures to reduce risk for further transmission. All working procedures and protocols were investigated, and the salon was advised to clean and disinfect instruments and procedure rooms. More specifically, the health department observed a total waxing procedure performed by the staff.

Ten swabs were taken from:

- used wax,
- wax implements, and
- the treatment room.

All 6 employees were screened and informed about MRSA and the current situation. Arrangements were also made to test 22 regular customers who had received wax treatments by the index patient in the previous 2 months. In the following weeks, these customers were screened at the municipal health office and informed about MRSA. Of the 22 regular customers, 21 completed a questionnaire and 19 were actually screened for MRSA by culturing samples from nose and throats.

All employees and the 19 selected regular customers were negative for MRSA colonization. All environmental swabs were also negative for MRSA. It was noted that the 70% alcohol used to disinfect the skin after waxing was diluted with water because customers had complained about the stinging effect of the alcohol on treated skin. Furthermore, it became apparent that after performing waxing treatments the Cosmetologist would touch the waxed skin of customers with ungloved hands to check for remaining hairs. She did not wash her hands after removing the gloves.

During the outbreak investigation, more background information became available from those who were MRSA colonized or infected and who could be indirectly linked to the beautician or her customers. During the week that the first infected customer was identified (in April 2006), another customer was hospitalized with an abscess in the groin. Unfortunately, no culture was taken from this patient. The partner of the second infected customer was also infected with MRSA that was related to an abscess on his leg. By the end of 2006, a MRSA-positive couple was identified as a contact of the second infected customer. In August 2006 another couple was reported to be MRSA positive; both had abscesses on the thighs. Because no further epidemiologic data could be obtained, whether the couple's infection was linked to the beauty salon is not clear.

A total of 45 persons who had been in direct or indirect contact with the beautician were screened for MRSA:

- 3 family members
- 3 roommates
- 11 other persons (including secondary contacts)
- 6 beauty salon employees and
- 22 customers (including regular customers)

Fifteen persons had skin infections and 10 of them were colonized with MRSA

- Cosmetologist
- family member
- roommate
- ex-partner of the roommate
- customers and
- partners of customers

Although skin infections never developed in the Cosmetologist's family members, tests did show MRSA colonization in one of them. The beautician's boyfriend, a native of the United States, had already lived for 2 years in the Netherlands.

Although he had skin lesions, no MRSA was found. The girlfriend of a sport mate who regularly exercised with the partner of a customer was colonized with MRSA at the end of 2006. She had immigrated recently from the United States to the Netherlands, but her first screening test results were negative. The mean age of the patients was 29 years (range 21–40 years).

Eleven people were found to be MRSA positive.

Of these 11:

3 persons with a direct link to the beauty salon (the Cosmetologist and 2 customers)
6 with an indirect link (family member, roommate, ex-partner of roommate, partner of a customer, sport mate of partner of a customer and his partner), and
a couple from whom no epidemiologic data could be obtained were infected with the same MRSA strain as the Cosmetologist.

All MRSA isolates were identical and identified as the well-known CA-MRSA USA300 strain.

All MRSA isolates had identical susceptibility patterns: resistant to oxacillin (and thus to all β -lactam antimicrobial drugs) and erythromycin, and susceptible to rifampicin, ciprofloxacin, gentamicin, clindamycin, vancomycin, teicoplanin, tetracycline, cotrimoxazole, mupirocin, and fusidic acid.

Conclusions

Outbreaks of CA-MRSA strains have been reported with increased frequency. Several reports involved outbreaks among:

competitive sports participants
military personnel
men who have sex with men
prisoners
native Americans
and drug users

Skin treatments in a beauty salon likely led to MRSA transmission as a result of contact with an infected Cosmetologist.

Unless outbreaks occur in a defined group, MRSA remains undetected in the general population because reporting is not mandatory. Although the prevalence of MRSA in the Netherlands is low, local microbiologic laboratories should report outbreaks, when detected, to the local municipal health department for further investigation. More research is necessary to better understand the risk factors involved in these outbreaks.

Module 2

OSHA Regulations (1 hour)

Module Topics

Chemical Labeling
The Hazard Communication Rule
Material Safety Data Sheets
Safety

Key Terms

OSHA
HAZCOM
MSDS
Standard

Learning objectives:

After completing this lesson you will be able to:

- Identify chemical labeling
- Explain the importance of MSDS
- List attributes of MSDS
- Explain OSHA's HAZCOM requirements
- Identify responsibilities of chemical companies
- Identify chemical dangers
- List inclusions of a HAZCOM program

OSHA

Introduction: In this Lesson we will talk about the **Occupational Safety and Health Administration**. We will focus on Chemical labeling, The Hazard Communication Rule, Material Safety Data Sheets, and Safety

How Must Chemicals Be Labeled?

Chemical manufacturers and importers must convey the hazard information they learn from their evaluations to downstream employers by means of labels on containers and material safety data sheets (MSDS).

Also, chemical manufacturers, importers, and distributors must be sure that containers of hazardous chemicals leaving the workplace are labeled, tagged, or marked with the identity of the chemical, appropriate hazard warnings, and the name and address of the manufacturer or other responsible party.

In the workplace, each container must be labeled, tagged, or marked with the identity of hazardous chemicals contained therein, and must show hazard warnings appropriate for employee protection.

The hazard warning can be any type of message, words, pictures, or symbols that provide at least general information regarding the hazards of the chemical(s) in the container and the targeted organs affected, if applicable.

Labels must be legible, in English (plus other languages, if desired), and prominently displayed.

What Are Material Safety Data Sheets, And Why Are They Needed?

The MSDS is a detailed information bulletin prepared by the manufacturer or importer of a chemical that describes

- the physical and chemical properties
- physical and health hazards
- routes of exposure
- precautions for safe handling and use
- emergency and first-aid procedures and control measures

Chemical manufacturers and importers must develop an MSDS for each hazardous chemical they produce or import, and must provide the MSDS automatically at the time of the initial shipment of a hazardous chemical to a downstream distributor or user.

Distributors also must ensure that downstream employers are similarly provided an MSDS. Each MSDS must be in English and include information regarding the specific chemical identity of the hazardous chemical(s) involved and the common names.

In addition, information must be provided on the

physical and chemical characteristics of the hazardous chemical
known acute and chronic health effects and related health information
exposure limits whether the chemical is considered to be a carcinogen
precautionary measures
emergency and first-aid procedures
and the identification (name, address, and telephone number) of the organization responsible for preparing the sheet.

Copies of the MSDS for hazardous chemicals in a given work site are to be readily accessible to employees in that area. As a source of detailed information on hazards, they must be readily available to workers during each work shift. MSDS have no prescribed format.

Any Material Safety Data Sheet Preparation format may be used.

The non-mandatory MSDS form (OSHA 174) also may be used as a guide and a copy can be obtained from OSHA field offices.

Employers must prepare a list of all hazardous chemicals in the workplace. When the list is complete, it should be checked against the collected MSDS that the employer has been sent.

If there are hazardous chemicals used for which no MSDS has been received, the employer must contact the supplier, manufacturer, or importer to obtain the missing MSDS. A record of the contact must be maintained.

What are temporary agency employers required to do to meet HAZCOM requirements?

In meeting the requirements of OSHA's Hazard Communication Standard, the temporary agency employer would, for example, be expected to provide generic hazard training and information concerning categories of chemicals employees may potentially encounter. Host employers would then be responsible for providing site-specific hazard training.

Can MSDS be stored on a computer to meet the accessibility requirements of HAZCOM?

If the employee's work area includes the area where the MSDS can be obtained, then **maintaining MSDS on a computer would be in compliance**. If the MSDS can be accessed only out of the employee's work area, then the employer would be out of compliance.

What are the container labeling requirements under HAZCOM?

Under HCS, the manufacturer, importer, or **distributor is required to label** each container of hazardous chemicals. If the hazardous chemicals are transferred into unmarked containers, these containers must be labeled with the required information, unless the container into which the chemical is transferred is intended for the immediate use of the employee who performed the transfer.

When is the chemical manufacturer required to distribute MSDS?

Hazard information must be transmitted on **Material Safety Data Sheets (MSDS)** that must be distributed to the customer at the time of first shipment of the product. **The Hazard Communication Standard** also requires that MSDS be updated by the chemical manufacturer or importer within three months of learning of "new or significant information" regarding the chemical's hazard potential.

What is considered proper training under the HAZCOM standard?

Employees are to be trained at the time they are assigned to work with a hazardous chemical. The intent of this provision is to have information prior to exposure to prevent the occurrence of adverse health effects. This purpose cannot be met if training is delayed until a later date.

The training provisions of the **HCS** are not satisfied solely by giving employee the data sheets to read. An employer's training program is to be a forum for explaining to employees not only the hazards of the chemicals in their work area, but also how to use the information generated in the hazard communication program.

This can be accomplished in many ways (audiovisuals, classroom instruction, interactive video), and should include an opportunity for employees to ask questions to ensure that they understand the information presented to them.

Training need not be conducted on each specific chemical found in the workplace, but may be conducted by categories of hazard (i/e: carcinogens, sensitizers, acutely toxic agents) that may be encountered by an employee during the course of his duties.

Furthermore, the training must be comprehensible. If the employees receive job instructions in a language other than English, then the training and information to be conveyed under the HCS will also need to be conducted in a foreign language.

Do you need to keep MSDS for commercial products such as Windex and White-Out?

OSHA does not require that MSDS be provided to purchasers of household consumer products when the products are used in the workplace in the same manner that a consumer would use them: when the duration and frequency of use (and therefore exposure) is not greater than what the typical consumer would experience.

This exemption in OSHA regulation is based, however, not upon the chemical manufacturer's intended use of his product, but upon how it actually is used in the workplace.

Employees who are required to work with hazardous chemicals in a manner that results in a duration and frequency of exposure greater than what a normal consumer would experience have a right to know about the properties of those hazardous chemicals.

Is a material safety data sheet (MSDS) required for a non-hazardous chemical?

MSDS that represent non-hazardous chemicals are not covered by the HCS.

OSHA does not require nor encourage employers to maintain MSDS for non-hazardous chemicals.

Consequently, an employer is free to discard MSDS for non-hazardous chemicals.

On December 6, 1991, the Occupational Safety and Health Administration (OSHA) promulgated the **Occupational Exposure to Blood Borne Pathogens Standard**.

This standard is designed to protect approximately 5.6 million workers in the health care and related occupations from the risk of exposure to blood borne pathogens, such as the Human Immunodeficiency Virus (HIV) and the Hepatitis B Virus (HBV).

What Is Hazard Communication, And Why Is a Standard Necessary?

Under the provisions of the Hazard Communication Standard, employers are responsible for informing employees of the hazards and the identities of workplace chemicals to which they are exposed.

About 32 million workers work with and are potentially exposed to one or more chemical hazards.

There are an estimated 650,000 existing chemical products, and hundreds of new ones being introduced annually. This poses a serious problem for exposed workers and their employers.

Chemical exposure may cause or contribute to many serious health effects such as heart ailments, central nervous system, kidney and lung damage, sterility, cancer, burns, and rashes. Some chemicals may also be safety hazards and have the potential to cause fires and explosions and other serious accidents.

Because of the seriousness of these safety and health problems, and because many employers and employees know little or nothing about them, the Occupational Safety and Health Administration issued the Hazard Communication Standard.

The basic goal of the standard is to be sure employers and employees know about work hazards and how to protect themselves; this should help to reduce the incidence of chemical source illness and injuries.

The Hazard Communication Standard establishes uniform requirements to make sure that the hazards of all chemicals imported into, produced, or used in U.S. workplaces are evaluated, and that this hazard information is transmitted to affected employers and exposed employees.

Employers and employees covered by an OSHA-approved state safety and health plan should check with their state agency, which may be enforcing standards and other procedures at least as effective as, but not always identical to, federal requirements.

Why Is a Written Hazard Communication Program Necessary?

A written hazard communication program ensures that all employers receive the information they need to inform and train their employees properly and to design and put in place employee protection programs. It also provides necessary hazard information to employees, so they can participate in, and support, the protective measures in place at their workplaces.

Employers therefore must develop, implement, and maintain at the workplace a written, comprehensive hazard communication program that includes provisions for **container labeling, collection and availability of material safety data sheets, and an employee training program.**

If the workplace has multiple employers on site (for example, a construction site), the rule requires these employers to ensure that information regarding hazards and protective measures be made available to the other employers on site, where appropriate.

In addition, all covered employers must have a written hazard communication program to get hazard information to their employees through labels on containers, MSDS, and training.

The written program does not have to be lengthy or complicated, and some employers may be able to rely on existing hazard communication programs to comply with the above requirements.

The written program must be available to employees, their designated representatives, the Assistant Secretary of Labor for Occupational Safety and Health, and the Director of the National Institute for Occupational Safety and Health.

Material Safety Data Sheets / Identifying Document Content

SECTION I: MANUFACTURER'S NAME AND CONTACT INFORMATION SECTION

Manufacturer's name and address Emergency phone number

II: HAZARDOUS INGREDIENTS/IDENTITY INFORMATION SECTION

Lists hazardous components and safe exposure limits

III: PHYSICAL/CHEMICAL CHARACTERISTICS SECTION

Physical state (gas, liquid, or solid), boiling point, freezing point, vapor pressure, specific gravity

IV: FIRE AND EXPLOSION HAZARD DATA SECTION

Flash point, extinguishing media, special fire fighting procedures, unusual fire and explosion hazards, if any

V: REACTIVITY DATA SECTION

Stability, incompatibility, hazardous decomposition or by-products, if any

VI: HEALTH HAZARD DATA SECTION

Routes of entry/exposure Health hazards Carcinogenicity Signs and symptoms of exposure Medical conditions generally aggravated by exposure

VII: PRECAUTIONS FOR SAFE HANDLING AND USE SECTION

Emergency and First Aid procedures Steps to be taken in case material is released or spilled Waste disposal methods Precautions to be taken in handling and storing

VIII: CONTROL MEASURES

Respiratory protection Ventilation requirements Personal Protective Equipment

SAMPLE MSDS

XYZ Company		Material Safety Data Sheet										
I. Product Claudia's Quick Clean and Shine												
Description Orange liquid, a phenolic odor												
Other Designations		Distributor										
Non-Porous Surface Sanitizer		XYZ Company 123 Drive City, State, Zip										
Emergency Telephone Nos												
For Medical Emergencies call (000) 111-2222 Transportation Emergencies call (000) 222-1111												
II. Health Hazard Data		III. Hazardous Ingredients										
Corrosive... First Aid For: Eye Contact... Skin Contact... Inhalation... Ingestion... HMIS Hazard Scale...		<table border="1"> <thead> <tr> <th><u>Ingredient</u></th> <th><u>Concentration</u></th> <th><u>Worker Exposure Limit</u></th> </tr> </thead> <tbody> <tr> <td>.....</td> <td>.....</td> <td>.....</td> </tr> <tr> <td>.....</td> <td>.....</td> <td>.....</td> </tr> </tbody> </table>		<u>Ingredient</u>	<u>Concentration</u>	<u>Worker Exposure Limit</u>
<u>Ingredient</u>	<u>Concentration</u>	<u>Worker Exposure Limit</u>										
.....										
.....										
IV. Special Protection and Precautions		V. Transportation and Regulatory Data										
Hygienic practices Personal Protection Equipment		Not restricted										
VI. Spill Procedures / Waste Disposal		VII. Reactivity Data										
Spill Procedures Waste Disposal		Stable under normal use										
VIII. Fire and Explosion Data		IX. Physical Data										
Not flammable or explosive		Boiling point Soluble in water										

The following is an OSHA Standard.

OSHA Noise Standard

The Occupational Safety and Health Administration has set standards for noise in the workplace to protect employees.

Part Number: 1910
Part Title: Occupational Safety and Health Standards
Subpart: G
Subpart Title: Occupational Health and Environment Control
Standard Number: 1910.95
Title: Occupational noise exposure.
Appendix: A, B, C, D, E, F, G, H, I

1910.95(a)

Protection against the effects of noise exposure shall be provided when the sound levels exceed those shown in Table G-16 when measured on the A scale of a standard sound level meter at slow response. When noise levels are determined by octave band analysis, the equivalent A-weighted sound level may be determined as follows:

Equivalent sound level contours. Octave band sound pressure levels may be converted to the equivalent A-weighted sound level by plotting them on this graph and noting the A-weighted sound level corresponding to the point of highest penetration into the sound level contours. This equivalent A-weighted sound level, which may differ from the actual A-weighted sound level of the noise, is used to determine exposure limits from Table 1.G-16.

1910.95(b)(1)

When employees are subjected to sound exceeding those listed in Table G-16, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of Table G-16, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table.

1910.95(b)(2)

If the variations in noise level involve maxima at intervals of 1 second or less, it is to be considered continuous.

TABLE G-16 - PERMISSIBLE NOISE EXPOSURES (1)

Duration per day, hours	Sound level dBA slow response
8.....	90
6.....	92
4.....	95
3.....	97
2.....	100
1 1/2	102
1.....	105
1/2	110
1/4 or less.....	115

Footnote(1) When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: $C(1)/T(1) + C(2)/T(2) + \dots + C(n)/T(n)$ exceeds unity, then, the mixed exposure should be considered to exceed the limit value. Cn indicates the total time of exposure at a specified noise level, and Tn indicates the total time of exposure permitted at that level. Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

1910.95(c)

"Hearing conservation program."

1910.95(c)(1)

The employer shall administer a continuing, effective hearing conservation program, as described in paragraphs (c) through (o) of this section, whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level (TWA) of 85 decibels measured on the A scale (slow response) or, equivalently, a dose of fifty percent. For purposes of the hearing conservation program, employee noise exposures shall be computed in accordance with appendix A and Table G-16a, and without regard to any attenuation provided by the use of personal protective equipment.

1910.95(c)(2)

For purposes of paragraphs (c) through (n) of this section, an 8-hour time-weighted average of 85 decibels or a dose of fifty percent shall also be referred to as the action level.

1910.95(d)

"Monitoring."

1910.95(d)(1)

When information indicates that any employee's exposure may equal or exceed an 8-hour time-weighted average of 85 decibels, the employer shall develop and implement a monitoring program.

1910.95(d)(1)(i)

The sampling strategy shall be designed to identify employees for inclusion in the hearing conservation program and to enable the proper selection of hearing protectors.

1910.95(d)(1)(ii)

Where circumstances such as high worker mobility, significant variations in sound level, or a significant component of impulse noise make area monitoring generally inappropriate, the employer shall use representative personal sampling to comply with the monitoring requirements of this paragraph unless the employer can show that area sampling produces equivalent results.

1910.95(d)(2)(i)

All continuous, intermittent and impulsive sound levels from 80 decibels to 130 decibels shall be integrated into the noise measurements.

1910.95(d)(2)(ii)

Instruments used to measure employee noise exposure shall be calibrated to ensure measurement accuracy.

1910.95(d)(3)

Monitoring shall be repeated whenever a change in production, process, equipment or controls increases noise exposures to the extent that:

1910.95(d)(3)(i)

Additional employees may be exposed at or above the action level; or

1910.95(d)(3)(ii)

The attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet the requirements of paragraph (j) of this section.

1910.95(e)

"Employee notification." The employer shall notify each employee exposed at or above an 8-hour time-weighted average of 85 decibels of the results of the monitoring.

1910.95(f)

"Observation of monitoring." The employer shall provide affected employees or their representatives with an opportunity to observe any noise measurements conducted pursuant to this section.

1910.95(g)

"Audiometric testing program."

1910.95(g)(1)

The employer shall establish and maintain an audiometric testing program as provided in this paragraph by making audiometric testing available to all employees whose exposures equal or exceed an 8-hour time-weighted average of 85 decibels.

1910.95(g)(2)

The program shall be provided at no cost to employees.

1910.95(g)(3)

Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation, or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining and checking calibration and proper functioning of the audiometers being used. A technician who operates microprocessor audiometers does not need to be certified. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or physician.

1910.95(g)(4)

All audiograms obtained pursuant to this section shall meet the requirements of Appendix C: "Audiometric Measuring Instruments."

1910.95(g)(5)

"Baseline audiogram."

1910.95(g)(5)(i)

Within 6 months of an employee's first exposure at or above the action level, the employer shall establish a valid baseline audiogram against which subsequent audiograms can be compared.

1910.95(g)(5)(ii)

"Mobile test van exception." Where mobile test vans are used to meet the audiometric testing obligation, the employer shall obtain a valid baseline audiogram within 1 year of an employee's first exposure at or above the action level. Where baseline audiograms are obtained more than 6 months after the employee's first exposure at or above the action level, employees shall wear hearing protectors for any period exceeding six months after first exposure until the baseline audiogram is obtained.

1910.95(g)(5)(iii)

Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise. Hearing protectors may be used as a substitute for the requirement that baseline audiograms be preceded by 14 hours without exposure to workplace noise.

1910.95(g)(5)(iv)

The employer shall notify employees of the need to avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination.

1910.95(g)(6)

"Annual audiogram." At least annually after obtaining the baseline audiogram, the employer shall obtain a new audiogram for each employee exposed at or above an 8-hour time-weighted average of 85 decibels.

1910.95(g)(7)

"Evaluation of audiogram."

1910.95(g)(7)(i)

Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift as defined in paragraph (g)(10) of this section has occurred. This comparison may be done by a technician.

1910.95(g)(7)(ii)

If the annual audiogram shows that an employee has suffered a standard threshold shift, the employer may obtain a retest within 30 days and consider the results of the retest as the annual audiogram.

1910.95(g)(7)(iii)

The audiologist, otolaryngologist, or physician shall review problem audiograms and shall determine whether there is a need for further evaluation. The employer shall provide to the person performing this evaluation the following information:

1910.95(g)(7)(iii)(A)

A copy of the requirements for hearing conservation as set forth in paragraphs (c) through (n) of this section;

1910.95(g)(7)(iii)(B)

The baseline audiogram and most recent audiogram of the employee to be evaluated;

1910.95(g)(7)(iii)(C)

Measurements of background sound pressure levels in the audiometric test room as required in Appendix D: Audiometric Test Rooms.

1910.95(g)(7)(iii)(D)

Records of audiometer calibrations required by paragraph (h)(5) of this section.

1910.95(g)(8)

"Follow-up procedures."

1910.95(g)(8)(i)

If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift as defined in paragraph (g)(10) of this section has occurred, the employee shall be informed of this fact in writing, within 21 days of the determination.

1910.95(g)(8)(ii)

Unless a physician determines that the standard threshold shift is not work related or aggravated by occupational noise exposure, the employer shall ensure that the following steps are taken when a standard threshold shift occurs:

1910.95(g)(8)(ii)(A)

Employees not using hearing protectors shall be fitted with hearing protectors, trained in their use and care, and required to use them.

1910.95(g)(8)(ii)(B)

Employees already using hearing protectors shall be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.

1910.95(g)(8)(ii)(C)

The employee shall be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if the employer suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.

1910.95(g)(8)(ii)(D)

The employee is informed of the need for an otological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected.

1910.95(g)(8)(iii)

If subsequent audiometric testing of an employee whose exposure to noise is less than an 8-hour TWA of 90 decibels indicates that a standard threshold shift is not persistent, the employer:

1910.95(g)(8)(iii)(A)

Shall inform the employee of the new audiometric interpretation; and

1910.95(g)(8)(iii)(B)

May discontinue the required use of hearing protectors for that employee.

1910.95(g)(9)

"Revised baseline." An annual audiogram may be substituted for the baseline audiogram when, in the judgment of the audiologist, otolaryngologist or physician who is evaluating the audiogram:

1910.95(g)(9)(i)

The standard threshold shift revealed by the audiogram is persistent; or

1910.95(g)(9)(ii)

The hearing threshold shown in the annual audiogram indicates significant improvement over the baseline audiogram.

1910.95(g)(10)

"Standard threshold shift."

1910.95(g)(10)(i)

As used in this section, a standard threshold shift is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear.

1910.95(g)(10)(ii)

In determining whether a standard threshold shift has occurred, allowance may be made for the contribution of aging (presbycusis) to the change in hearing level by correcting the annual audiogram according to the procedure described in Appendix F: "Calculation and Application of Age Correction to Audiograms."

1910.95(h)

"Audiometric test requirements."

1910.95(h)(1)

Audiometric tests shall be pure tone, air conduction, hearing threshold examinations, with test frequencies including as a minimum 500, 1000, 2000, 3000, 4000, and 6000 Hz. Tests at each frequency shall be taken separately for each ear.

1910.95(h)(2)

Audiometric tests shall be conducted with audiometers (including microprocessor audiometers) that meet the specifications of, and are maintained and used in accordance with, American National Standard Specification for Audiometers, S3.6-1969, which is incorporated by reference as specified in Sec. 1910.6.

1910.95(h)(3)

Pulsed-tone and self-recording audiometers, if used, shall meet the requirements specified in Appendix C: "Audiometric Measuring Instruments."

1910.95(h)(4)

Audiometric examinations shall be administered in a room meeting the requirements listed in Appendix D: "Audiometric Test Rooms."

1910.95(h)(5)

"Audiometer calibration."

1910.95(h)(5)(i)

The functional operation of the audiometer shall be checked before each day's use by testing a person with known, stable hearing thresholds, and by listening to the audiometer's output to make sure that the output is free from distorted or unwanted sounds. Deviations of 10 decibels or greater require an acoustic calibration.

1910.95(h)(5)(ii)

Audiometer calibration shall be checked acoustically at least annually in accordance with Appendix E: "Acoustic Calibration of Audiometers." Test frequencies below 500 Hz and above 6000 Hz may be omitted from this check. Deviations of 15 decibels or greater require an exhaustive calibration.

1910.95(h)(5)(iii)

An exhaustive calibration shall be performed at least every two years in accordance with sections 4.1.2; 4.1.3.; 4.1.4.3; 4.2; 4.4.1; 4.4.2; 4.4.3; and 4.5 of the American National Standard Specification for Audiometers, S3.6-1969. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this calibration.

1910.95(i)

"Hearing protectors."

1910.95(i)(1)

Employers shall make hearing protectors available to all employees exposed to an 8-hour time-weighted average of 85 decibels or greater at no cost to the employees. Hearing protectors shall be replaced as necessary.

1910.95(i)(2)

Employers shall ensure that hearing protectors are worn:

1910.95(i)(2)(i)

By an employee who is required by paragraph (b)(1) of this section to wear personal protective equipment; and

1910.95(i)(2)(ii)

By any employee who is exposed to an 8-hour time-weighted average of 85 decibels or greater, and who:

1910.95(i)(2)(ii)(A)

Has not yet had a baseline audiogram established pursuant to paragraph (g)(5)(ii); or

1910.95(i)(2)(ii)(B)

Has experienced a standard threshold shift.

1910.95(i)(3)

Employees shall be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors provided by the employer.

1910.95(i)(4)

The employer shall provide training in the use and care of all hearing protectors provided to employees.

1910.95(i)(5)

The employer shall ensure proper initial fitting and supervise the correct use of all hearing protectors.

1910.95(j)

"Hearing protector attenuation."

1910.95(j)(1)

The employer shall evaluate hearing protector attenuation for the specific noise environments in which the protector will be used. The employer shall use one of the evaluation methods described in Appendix B: "Methods for Estimating the Adequacy of Hearing Protection Attenuation."

1910.95(j)(2)

Hearing protectors must attenuate employee exposure at least to an 8-hour time-weighted average of 90 decibels as required by paragraph (b) of this section.

1910.95(j)(3)

For employees who have experienced a standard threshold shift, hearing protectors must attenuate employee exposure to an 8-hour time-weighted average of 85 decibels or below.

1910.95(j)(4)

The adequacy of hearing protector attenuation shall be re-evaluated whenever employee noise exposures increase to the extent that the hearing protectors provided may no longer provide adequate attenuation. The employer shall provide more effective hearing protectors where necessary.

1910.95(k)

"Training program."

1910.95(k)(1)

The employer shall train each employee who is exposed to noise at or above an 8-hour time weighted average of 85 decibels in accordance with the requirements of this section. The employer shall institute a training program and ensure employee participation in the program.

1910.95(k)(2)

The training program shall be repeated annually for each employee included in the hearing conservation program. Information provided in the training program shall be updated to be consistent with changes in protective equipment and work processes.

1910.95(k)(3)

The employer shall ensure that each employee is informed of the following:

1910.95(k)(3)(i)

The effects of noise on hearing;

1910.95(k)(3)(ii)

The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care; and

1910.95(k)(3)(iii)

The purpose of audiometric testing, and an explanation of the test procedures.

1910.95(l)

"Access to information and training materials."

1910.95(l)(1)

The employer shall make available to affected employees or their representatives copies of this standard and shall also post a copy in the workplace.

1910.95(l)(2)

The employer shall provide to affected employees any informational materials pertaining to the standard that are supplied to the employer by the Assistant Secretary.

1910.95(l)(3)

The employer shall provide, upon request, all materials related to the employer's training and education program pertaining to this standard to the Assistant Secretary and the Director.

1910.95(m)

"Recordkeeping" -

1910.95(m)(1)

"Exposure measurements." The employer shall maintain an accurate record of all employee exposure measurements required by paragraph (d) of this section.

1910.95(m)(2)

"Audiometric tests."

1910.95(m)(2)(i)

The employer shall retain all employee audiometric test records obtained pursuant to paragraph (g) of this section:

1910.95(m)(2)(ii)

This record shall include:

1910.95(m)(2)(ii)(A)

Name and job classification of the employee;

1910.95(m)(2)(ii)(B)

Date of the audiogram;

1910.95(m)(2)(ii)(C)

The examiner's name;

1910.95(m)(2)(ii)(D)

Date of the last acoustic or exhaustive calibration of the audiometer; and

1910.95(m)(2)(ii)(E)

Employee's most recent noise exposure assessment.

1910.95(m)(2)(ii)(F)

The employer shall maintain accurate records of the measurements of the background sound pressure levels in audiometric test rooms.

1910.95(m)(3)

"Record retention." The employer shall retain records required in this paragraph (m) for at least the following periods.

1910.95(m)(3)(i)

Noise exposure measurement records shall be retained for two years.

1910.95(m)(3)(ii)

Audiometric test records shall be retained for the duration of the affected employee's employment.

1910.95(m)(4)

"Access to records." All records required by this section shall be provided upon request to employees, former employees, representatives designated by the individual employee, and the Assistant Secretary. The provisions of 29 CFR 1910.1020 (a)-(e) and (g)-

1910.95(m)(4)(i)

apply to access to records under this section.

1910.95(m)(5)

"Transfer of records." If the employer ceases to do business, the employer shall transfer to the successor employer all records required to be maintained by this section, and the successor employer shall retain them for the remainder of the period prescribed in paragraph (m)(3) of this section.

1910.95(n)

"Appendices."

1910.95(n)(1)

Appendices A, B, C, D, and E to this section are incorporated as part of this section and the contents of these appendices are mandatory.

1910.95(n)(2)

Appendices F and G to this section are informational and are not intended to create any additional obligations not otherwise imposed or to detract from any existing obligations.

1910.95(o)

"Exemptions." Paragraphs (c) through (n) of this section shall not apply to employers engaged in oil and gas well drilling and servicing operations.

[39 FR 23502, June 27, 1974, as amended at 46 FR 4161, Jan. 16, 1981; 46 FR 62845, Dec. 29, 1981; 48 FR 9776, Mar. 8, 1983; 48 FR 29687, June 28, 1983; 54 FR 24333, June 7, 1989; 61 FR 5507, Feb. 13, 1996; 61 FR 9227, March 7, 1996; 71 FR 16672, April, 3, 2006; 73 FR 75584, Dec. 12, 2008]

OSHA News Releases

When new information regarding a hazardous chemical is discovered, OSHA releases the information to the public. Below is a copy of a Hazard Alert release.

HAZARD ALERT April 11th, 2011

Hair Smoothing Products That Could Release Formaldehyde

The Occupational Safety and Health Administration (OSHA) and several State OSHA programs are investigating questions and complaints from hair salon owners and workers about possible formaldehyde exposure from using Brazilian Blowout and other hair smoothing products. Some of these products have been labeled as "formaldehyde-free." Oregon's Occupational Safety and Health Administration, California's Occupational Safety and Health Administration, the Connecticut's Dept of Public Health and several other state agencies have already issued warnings about these products to salon owners, stylists, other salon workers, and clients. This Hazard Alert provides information about OSHA's investigations, the health hazards of formaldehyde, and how to protect workers using hair smoothing products that contain or release formaldehyde.

Recent reports from Oregon OSHA, California OSHA, and now Federal OSHA should alert salon owners and stylists to look closely at the hair smoothing products they are using to see if they contain methylene glycol, formalin, methylene oxide, paraform, formic aldehyde, methanal, oxomethane, oxymethylene, or CAS Number 50-00-0. All of these are names for or treated as formaldehyde under OSHA's Formaldehyde standard. Products containing them can expose workers to formaldehyde; employers who manufacture, import, distribute, or use the products must follow OSHA's formaldehyde standard.

What have OSHA's investigations found?

Federal OSHA and State OSHA programs are investigating complaints from stylists and hair salon owners about exposure to formaldehyde while using GIB LLC dba (doing business as) Brazilian Blowout products and other hair smoothing products. OSHA has found formaldehyde in the air when stylists use hair smoothing products. Some had "formaldehyde-free" on the label or did not list formaldehyde on the product label or in the Material Safety Data Sheet (MSDS).

During one investigation, Federal OSHA's air tests showed formaldehyde at levels greater than OSHA's limits in a salon using Brazilian Blowout Acai Professional Smoothing Solution, even though the product was labeled "formaldehyde-free." In most cases, OSHA found that hair salon owners did not know that a hair smoothing product contained or could expose workers to formaldehyde because manufacturers, importers, and distributors did not include the correct warnings on product information. California OSHA recently found violations at one importer and distributor, GIB LLC dba Brazilian Blowout, that failed to list formaldehyde as a hazardous ingredient on the MSDS provided to downstream users (e.g., salon owners, stylists) for two products: Brazilian Blowout Acai Professional Smoothing Solution and Brazilian Blowout Professional Brazilian Blowout Solution. The MSDS also did not list the health effects from formaldehyde exposure. The MSDS is required to provide users information about the chemicals in a product, the hazards to workers, and how to use a product safely.

The first reports about formaldehyde in hair smoothing products surfaced when Oregon OSHA investigated a complaint from a hair stylist who had nosebleeds, eye irritation, and trouble breathing while using a Brazilian Blowout product labeled "formaldehyde-free." After testing the product, Oregon OSHA found that the product contained formaldehyde, a chemical that can cause the health problems reported by the stylist. Oregon OSHA tested more than 100 samples of keratin-based hair smoothing products and found formaldehyde levels in some products well above what could legally be labeled as "formaldehyde-free." In addition to the Brazilian Blowout products, Oregon OSHA found that other manufacturers, importers, and distributors of hair smoothing products also had not listed formaldehyde or included hazard information on the label or in the MSDS. Based on these findings, Oregon OSHA published a Hazard Alert and a full report in October 2010. Oregon OSHA also alerted Federal OSHA and State OSHA programs where the products were manufactured, imported, or distributed because the hazard information for the product was not correct and did not meet the requirements of OSHA's Hazard Communication standard or State equivalent).

OSHA continues to work with other agencies (e.g., Food and Drug Administration, National Institute for Occupational Safety and Health) to look at formaldehyde exposures in other salons and to make sure that workers and the public have correct information about these products.

What is formaldehyde and how can it affect my health?

Formaldehyde is a colorless, strong-smelling gas that presents a health hazard if workers are exposed.

You can be exposed to formaldehyde if you breathe it into your lungs, if it gets into your eyes, or if it is contained in a product that gets onto your skin. You can also be exposed accidentally if you touch your face, eat food, or drink after using a product containing formaldehyde without first washing your hands. It can irritate the eyes and nose, and cause coughing and wheezing. Formaldehyde is a "sensitizer," which means that it can cause allergic reactions of the skin, eyes, and lungs such as asthma-like breathing problems and skin rashes and itching. When formaldehyde is in a product that gets sprayed into the eyes, it can damage the eyes and cause blindness. It is also a cancer hazard that is linked to nose and lung cancer. Formaldehyde is a health hazard, whether in a product or in the air. OSHA's Formaldehyde standard covers employers who use formaldehyde, and products that contain or release formaldehyde. (OSHA has also published a formaldehyde fact sheet

Why do some hair smoothing products expose me to formaldehyde?

Many keratin-based hair smoothing products contain formaldehyde dissolved (and chemically reacted) in water and other ingredients in the product. Because of the way the formaldehyde reacts in these products, some manufacturers, importers, or distributors might list other names for formaldehyde on product information or might claim that the product is "formaldehyde-free." Formaldehyde might be listed as methylene glycol, formalin, methylene oxide, paraform, formic aldehyde, methanal, oxomethane, oxymethylene, or CAS Number 50-00-0. All of these are names for formaldehyde under OSHA's Formaldehyde standard. The bottom line is that formaldehyde can be released from hair smoothing products that list any of these names on the label and workers can breathe it in or absorb it through their skin. Workers can be exposed to formaldehyde during the entire hair straightening process, especially when heat is applied (e.g. blow-drying, flat ironing).

How would I know if the product I'm using could expose me to formaldehyde?

Read the product label and MSDS to determine if they list methylene glycol or any of the other names for formaldehyde listed above. If they do, the product can expose you to formaldehyde. Under OSHA's Hazard Communication standard, salon owners and other employers must have an MSDS for each product used in the salon that contains a hazardous chemical. Employers need to review the MSDSs they receive and make sure they understand the hazards of the products they use in their salon(s). They must also make the MSDSs available to their workers (e.g., stylists) and train all workers using the product about the hazards and how to use it safely. If employers do not receive an MSDS automatically, they should request one. If the MSDS does not look complete (e.g., blank spaces that are not completed) then the employer should request a new one from the manufacturer. If the request does not produce the information needed, then the employer should contact the local OSHA Area Office for assistance in obtaining the MSDS.

Be aware that an MSDS may not contain all of the hazard information required, as initially found in the case of Brazilian Blowout products. In the Oregon case, it was only after a stylist reported health problems while using the products that the investigation began. Workers need to report any health problems they think are from the products they use in the workplace to their employer and employers need to follow up on reports of health problems from workers.

When are manufacturers, importers, and distributors of hair smoothing products required to list formaldehyde as an ingredient in their products?

OSHA requires manufactures of products that contain or release formaldehyde to include information about formaldehyde and its hazards on the label and in the MSDS.

Formaldehyde must be listed if it is in the product at 0.1% or more (as a gas or in solution) or if the product releases formaldehyde above 0.1 parts of formaldehyde per million parts of air. Salons and other employers that directly import hair smoothing products from other countries have the same responsibilities as a manufacturer under the Hazard Communication standard - they must determine the hazards of the product and develop labels and MSDSs that communicate the hazards to users. These requirements are explained in OSHA's Hazard Communication standard (commonly referred to as the "Worker's Right-to-Know Rule") and OSHA's Formaldehyde standard.

What can I do to reduce exposure to formaldehyde when using formaldehyde releasing hair smoothing/straightening products?

Employers, stylists, and other salon workers should read the product information and MSDSs for the products they buy and use so that they know what chemicals are in them and how to use them safely in the workplace. The best way to control exposure to formaldehyde is to use products that do not list formaldehyde, formalin, methylene glycol, or any of the other names for formaldehyde listed above on the label or in the MSDS. Beauty care companies are now making and selling products that they claim do not contain formaldehyde in the solution. Choosing one of these products might eliminate the risk of formaldehyde exposure. Note that just because a product doesn't list formaldehyde, formalin, or methylene glycol does not mean that it does not contain any other hazardous ingredients.

If salon owners decide to use products that contain or release formaldehyde, then they must follow the requirements in OSHA's Formaldehyde standard. The standard requires that employers test the air to find out the level of formaldehyde present in the air when the product is being used. If the test shows that formaldehyde is present at levels above OSHA's limits (0.75 parts of formaldehyde per million parts (or ppm) of air during an 8-hour work shift or 2 ppm during any 15-minute period), then the employer must:

- Install air ventilation systems in the areas where these products are mixed and used to help keep formaldehyde levels below OSHA's limit and perform regular maintenance to make sure the systems work correctly;
- When possible, require workers to use lower heat settings on blow-dryers and flat irons used during the process;
- Give workers respirators, if needed; train them to use the respirator properly; and meet the other requirements in OSHA's Respiratory protection standard;
- Ensure workers understand the information on a product's label and MSDS;
- Post signs at entryways to any area where formaldehyde is above OSHA's limit to tell workers of the danger and stating that only authorized personnel may enter;
- Tell workers about the health effects of formaldehyde, how to use the product safely, and what personal protective equipment to wear while using the product; and
- Train workers how to safely clean up spills and properly throw products out.

In addition, where the tests show that formaldehyde is present in the air at a level of 0.5 ppm during an 8-hour work shift or 2 ppm during any 15-minute period, then the employer must:

- Get workers the right medical attention (e.g., doctor exams), and
- Test the air periodically to make sure that formaldehyde levels are below OSHA's limits.

Whether or not air tests show formaldehyde levels above OSHA's limits, employers must follow certain parts of the standard if a product contains formaldehyde:

- Give employees appropriate gloves and other personal protective equipment (e.g., face shield, chemical splash goggles, chemical-resistant aprons) and train them on how to use this equipment while mixing and applying the products;
- Explain to workers how to read and understand the information on a product's label and MSDS;
- Make sure the workplace has eye and skin washing equipment if products that contain formaldehyde could be splashed onto the workers' skin or into their eyes;
- Train workers how to safely clean up spills and properly throw products out, and;
- Get workers the right medical attention (e.g., doctor exams) if they develop signs and symptoms of an exposure to formaldehyde or are exposed to large amounts of formaldehyde during an emergency (e.g., a large spill).

Employers must also keep records of the air tests they perform, any medical attention needed by their employees, and respirator fit-testing.

For more information about how to control formaldehyde exposures in hair salons, read Oregon OSHA's hazard alert and Cal/OSHA's Advisory.

How can OSHA help you?

OSHA continues to monitor ongoing inspections that may have nationwide impact to ensure that health hazards and appropriate protections for products containing hazardous chemicals are communicated properly on the labels and MSDS. OSHA developed this webpage to give workers and employers useful, up-to-date information on formaldehyde hazards that might be present when using hair smoothing products that contain or release formaldehyde. Employers and workers should read OSHA's Formaldehyde Fact Sheet for more information about formaldehyde hazards and how to work with it safely. Contact your local OSHA office if you have any questions about a product that you are using or its MSDS. Hair salon owners can also contact OSHA's free and confidential consultation service to help determine if there are hazards at their workplace. On-site consultations do not result in penalties or citations.

What rights do workers have?

Workers have a right to a safe workplace. The Occupational Safety and Health Act of 1970 (OSH Act) was passed to prevent workers from being killed or seriously harmed at work. The law requires employers to provide their workers with a workplace that is free of potential hazards. The OSH Act created the Occupational Safety and Health Administration (OSHA), which sets and enforces protective workplace safety and health standards. OSHA also provides information, training and assistance to workers and employers. Workers may file a complaint to have OSHA inspect their workplace if they believe that their employer is not following OSHA standards or that there are serious hazards.

- Disclaimer -

This Hazard Alert is not a standard or regulation, and it creates no new legal obligations. It contains recommendations as well as descriptions of mandatory safety and health standards. The recommendations are advisory in nature, informational in content, and are intended to assist employers in providing a safe and healthful workplace. The Occupational Safety and Health Act requires employers to comply with safety and health standards and regulations promulgated by OSHA or by a state with an OSHA-approved state plan. In addition, the Act's General Duty Clause, Section 5(a)(1), requires employers to provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm.

Module 3

Composition and Structure of Nails (1 hour)

Learning objectives:

After completing this lesson you will be able to:

- Identify structural attributes of nails
- Describe functions of their parts
- Identify purposes
- Describe conditions and disorders
- Identify factors that effect health
- Explain infection prevention

Key Terms

cuticle

keratin

lunula

matrix

Composition and Structure of Nails

The Nail and it's Structure

The human body relies on the nail to protect the fingers and toes. It prevents injury to delicate nerve endings contained in the fingers and toes. Without the nail, we would be in great pain.

The nails can manifest the appearance of good and bad health.

The Nail Unit

Cuticle	the non-living skin that adheres to the nail plate
Distal Phalanges	the fingertip bones that gives shape to the nail unit and supports the dermis
Eponychium	the skin that covers the newly developing nail plate
Hyponychium	the epidermis under the free edge of the nail plate that forms the water tight seal
Keratin	the hard protein that the matrix produces
Lateral Nail Folds	the sidewall seals along each side of the nail plate
Lunula	the blueish white half-moon shape at the base of the nail, usually most pronounced on the thumb
Matrix	the area under the eponychium, the hidden part of the nail where growth takes place
Nail Bed	the skin beneath the nail plate
Nail Folds	the folds of skin that frame and support the nail on three sides
Nail Plate	the visible part of the nail on fingers and toes made of up of hard keratin

Onychodermal Band	the area between the bed epithelium and the solehorn that bunches together to form a band of delicate tissue - it borders the white free edge under the nail plate.
Proximal Nail fold	the fold nearest the point where the nail attaches.
Solehorn Cuticle	a thin layer of epithelium that attaches to the underside of the nail plate at the free edge and naturally sloughs away as the nail grows

Nails are produced by living skin cells in the fingers and toes.

Again, they are composed primarily of keratin, a hardened protein also found in skin and hair.

Growth

Nails grow from the matrix. As older cells grow out, they are replaced by newer ones. The cells are compacted and take on a flattened, hardened form.

Fingernails grow faster than toenails. Nails also grow more rapidly in the summer than in the winter.

Nails on a person's dominant hand grow faster, and a man's nails grow more quickly than a woman's, except possibly during pregnancy.

Disorders

The medical community classifies nail disorders under the heading of skin conditions.

Nail disorders account for approximately 10 percent of all skin conditions.

Toenail injuries can happen simply because of poorly fitted shoes.

Indications of nail problems include shape change, color change, swelling of the skin around the nails, pain within or around the nail, white or black lines within the nail, and dents or ridges on the nail.

White spots indicate injury to the base of the nail and usually last a short duration then grow out.

White spots are very common and can reoccur.

Splinter hemorrhages are when blood vessels in the nail bed cause fine vertical lines to appear under the nail plate. They can be seen through the nail and are caused by trauma, certain drugs or diseases.

Ingrown nails develop at either corner of the free edge of the nail. The nail bends and curves downward into the skin causing pain. The largest toes are particularly vulnerable to this condition.

Improper nail trimming or tight shoes can cause this condition.

It can lead to infection.

Fungal infections often cause the end of the nail plate to separate from the nail bed.

The nail can appear white, green, yellow, or black and can develop infection.

The top of the nail or the skin at the base of the nail can also be affected.

Because of the warm and moist environment inside our shoes, toenails are more likely to acquire a fungal infection than fingernails.

However, those who have their hands in water often can acquire infections as well. These infections are usually in the candida or yeast family.

Bacterial infections can occur to a nail that has been injured. Discoloration can occur that is similar to a fungal infection.

Tumors and Warts can be found in any portion of the nail. The nail plate could change shape or be destroyed due to interference of a growing tumor or wart.

Warts are viral infections that affect the skin surrounding or underneath the nail. They can be painful and sometimes cause limited use of the affected finger or toe.

The most common health conditions and their effect on the nails are:

<u>Condition</u>	<u>Nail Appearance</u>
Liver Diseases	White Nails
Kidney Diseases	Half of nail is pink, half is white
Heart Conditions	Nail bed is red
Lung Diseases	Yellowing and thickening of the nail, slowed growth rate
Anemia	Pale nail beds
Diabetes	Yellowish nails, with a slight blush at the base

Another example of health related nail manifestations is for the condition of psoriasis. The nails can develop the appearance of pitting.

In addition, whenever the nails develop a concave shape, it indicates the presence of anemia.

Environmental Impact on the Nails

Elements of our environment such as the wind, Sun, weather, temperatures and humidity can effect our nails to substantial levels.

Although we need the Sun for nutrient production the hazards of large amounts of it's rays can be devastating to the health of our nails.

Our skin was created with a built-in protective ability to partially reflect the Sun's rays but much can also be absorbed. Therefore we must remember to take precautions such as using sunblock in order to prevent Sun damage to our hair, skin and nails.

Water naturally evaporates from the skin's surface. The more perspiration that is produced, the more water loss that occurs. The skin regulates water loss through the function of controlling it's perspiration amounts.

Module 4

Environmental Issues (1 hour)

Learning objectives:

After completing this lesson you will be able to:

- List ways to minimize inhalation
- List ways to minimize skin exposure
- Describe shop cleanliness
- Explain protective gear and its use

Protection of The Salon Professional

What Personal Service Workers Should Know

Approximately 155,000 people work in the United States as manicurists and pedicurists. These trained professionals provide nail treatments including filing, polishing, applying artificial nails, and giving manicures and pedicures.

Products that nail salon workers use are critical to performing high-quality services, and indeed, without them, these services would not be possible. However, many of the products contain ingredients that should be used and handled properly to minimize potential for overexposure.

Professional nail care products are typically formulated to minimize exposure and the potential for adverse health effects. Also, nail salon products are typically used in small amounts, which can further lower the risk of overexposure. Yet, if proper care is not taken, overexposure may occur and could result in adverse health effects, such as skin irritation, allergic reaction, or serious eye injury. It is recommended that nail salon workers and owners can use to minimize exposures and prevent overexposure.

The Environmental Protection Agency sets standards to protect salon workers.

Material Safety Data Sheets (MSDSs).

These documents contain information for people working in many occupations including factory workers, shippers, warehouse employees, emergency responders, and doctors, as well as nail professionals who use these products to perform salon services.

Not all of the information found on an MSDS is useful to nail professionals, but the information will help you better understand how to use these important documents properly and make your workplace safer.

Since state mandated and local requirements may differ from national recommendations, always contact your local cosmetology board and/or your state health department for more information.

To Minimize Inhalation

Install a local exhaust ventilation system near work tables. Since the general heating, ventilating, and air-conditioning systems (HVACs) slowly exchange the air inside the shop, a nail salon should use a system intended to effectively capture vapors and dust or expel them from the workplace, as well as a system that will exchange indoor air with fresh air from outside the building to maintain good air quality.

Nail Salons Should

- Have a work table with an exhaust vent embedded in it that is vented to the outdoors.
- Have a ceiling or wall-mounted exhaust system with exhaust intake suspended above the work table.
- Use professional quality room air cleaning devices. Avoid using ozone generating air cleaning devices. Healthy people, as well as those with respiratory difficulty, can experience breathing problems when exposed to even relatively low levels of ozone.
- Always turn on the general ventilation system (HVAC) during work hours.
- Replace charcoal and dust filters regularly and according to the manufacturer's directions. If filters are not replaced, they will become ineffective.
- Keep the top of the ventilated table clear of obstructions, e.g., towels.
- Tightly close nail care product containers when not in use.
- Do not use excessive amounts of product when performing services.
- Keep products in properly labeled, smaller-sized containers at the work table.
- Do not use bulk containers when performing services. Instead, transfer products from large containers to smaller, properly labeled containers. Perform this task in a well ventilated area, such as outside or near an open window or door. For additional protection, an organic vapor cartridge respirator may be worn during the transfer process, but it is usually unnecessary if ventilation is adequate.
- Place all waste in a metal trash can with a self-closing lid, and empty it often.
- Place all waste that has absorbed product, such as paper towels, gauze, cotton, or other absorbent material, in a sealed container (e.g., an empty plastic milk jug or resealable bag) before disposing of it in the trash.
- Change trash can liners at least once daily.
- Wear a dust mask if recommended in the Material Safety Data Sheet (MSDS) to prevent inhaling dust particles.

To Minimize Skin Exposure

- Wash hands before and after performing each service, before eating, and after handling products.
- Wear disposable nitrile gloves or the glove type recommended in the product MSDS when handling certain products.
- Replace gloves immediately if there are signs of cuts, tears, or holes.
- Choose appropriate clothing. Ensure that the clothing is not too loose in order to avoid accidental spills and that its coverage is adequate to help prevent skin overexposure to ingredients. For example, long-sleeved blouses or smocks protect arms; pants or skirts that are at least knee length when seated help protect the lap.
- Keep containers tightly closed when not in use to prevent accidental spills or leakage.
- Do not use excessive amounts of product when performing services.
- Keep products in small-sized containers at the work table to reduce the risk of spills and potential skin exposure.
- While transferring products to smaller containers, wear safety equipment, e.g., eye protection and /or gloves as recommended in the MSDS, and use a funnel or dropper to avoid spills.

To Prevent The Accidental Swallowing Of Products

Wash hands before eating and drinking.
Do not eat or drink at the work table.
Do not keep/store food and beverages around work area.
Store nail care products in a separate area away from food and the eating area.
Designate a dining area separate from storage and work areas.

To Ensure Adequate Shop Cleanliness

It is important to keep your shop clean. Bacteria, fungi, and viruses can be transferred between customers through dirty nail implements and other supplies and equipment, e.g., towels and pedicure tubs.

Use a new towel for each customer.
Wash your hands and your customer's hands and/or feet before each service.
Perform services only on healthy nails and intact skin. Refuse service to clients that show any signs of infection, unhealthy appearing conditions, or broken/irritated skin.
Clean any residue from all nail care implements after each use and before disinfection.
Disinfect all nail care implements with an appropriate disinfectant after each customer.
Follow your state cosmetology board's rules and instructions on proper cleaning and disinfection techniques. It is best to use an EPA-registered, hospital disinfectant labeled as viricidal, bacteriocidal, and fungicidal or a disinfectant as prescribed by your state cosmetology board. Follow usage instructions exactly. You may also choose to sterilize these disinfected items in an autoclave, if desired, or if required by your state's regulations.
Do not put clients' feet into water that contains an EPA-registered disinfectant and avoid skin contact with the disinfectant.
Use disposable implements on only one customer.
If gloves are worn, replace them after each customer.
Do not use razor-type shavers to remove calluses. These devices can cause injuries requiring medical attention. Licensing laws for nail salon workers and manicurists do not allow the use of cutting tools to remove living or callused skin.
Using nail implements owned by customers is not recommended. Problems can arise because clients may not properly clean and disinfect the implements. All implements must be properly cleaned and disinfected by the salon worker before use on a client.

Other Best Shop Practices

- *Do not allow anyone to smoke in your shop, because products stored and used in nail salons may be extremely flammable.*
- Provide training on hazard communication (OSHA 29 CFR 1910.1200) and the proper storage and handling of flammable liquids (OSHA 29 CFR 1910.106) to nail salon workers as required by OSHA.
- *Read and understand the state cosmetology board's rules and regulations.*
- Keep a copy of the most updated state cosmetology board's rules and regulations in the shop.
- *Keep the latest version of the MSDS for each product containing potentially hazardous ingredient(s) stored and used in the salon*
- Keep all MSDSs in a binder, and store this binder in the same place you store your products.
- *Read and understand the content of these MSDSs.*
- Update all MSDS sheets at least once a year to keep them current.
- *Label all containers so that nail salon workers can easily identify the contents.*
- Dispose of liquid waste according to manufacturers' instructions on the product label or MSDS and in accordance with local regulations.

Why Should Nail Salon Workers Wear Gloves?

To prevent damage to workers' nails and skin.

To prevent skin from absorbing potentially harmful ingredients which may cause skin allergies, irritation, or other related problems.

Why Do Solvents Cause More Concerns Than Other Nail Salon Products?

Skin can easily and quickly absorb certain solvents.

Solvents may damage skin by removing natural oils from the skin (defatting), which can lead to skin dryness and/or irritation, making it easier for other ingredients to enter the body.

What Kind Of Gloves Should Nail Salon Workers Wear?

Nitrile gloves provide the best protection – latex and vinyl gloves are permeable to many nail product ingredients and should not be used.

Always refer to the MSDS for recommendations on the kind of gloves to wear.

How Do Nail Salon Owners And Workers Find More Information About The Type Of Gloves To Wear?

Call the glove manufacturers and personal protective equipment distributors. Their phone numbers are listed in the phone book, on the box, and on glove manufacturers' websites. These companies often offer technical advice and free samples.

Ask your shop's nail care product distributor and personal protective equipment vendors.

Why Should Nail Salon Workers Wear Dust Masks?

To minimize breathing in dust particles.

If you have asthma, allergies, or other breathing related conditions, and a nail service is expected to generate a lot of dust, it may be necessary to wear a dust mask to minimize breathing in particles.

Dust masks are intended to prevent inhalation of dust; they will not protect against inhalation of vapors.

When Should Nail Salon Workers Wear Dust Masks?

When filing or shaping artificial nail enhancements.

What Kind Of Dust Masks Should Nail Salon Workers Wear?

Dust masks approved by the National Institute for Occupational Safety and Health

Follow manufacturers' instructions when using these masks.

Refer to the MSDS to determine if it is necessary to wear a dust mask and which type might be best.

Types Of Masks Nail Salon Workers Can Use To Protect Themselves

- Dust masks will protect you from dusts and particulates.
- Surgical masks may help prevent the spread of germs but will not protect you from dusts or vapors.

Why Don't Nail Salon Workers Normally Need To Wear Respirators With Organic Vapor Cartridges?

The most feasible way of protecting nail salon workers is to provide adequate ventilation in the salon. Providing adequate ventilation eliminates the need for respirator use.

What Requirements Exist For Using A Respirator In Necessary Circumstances?

Typically, an organic vapor respirator is not required. However, if a nail salon worker has a special need due to pre-existing health conditions, then the worker/shop owner should check the sources below to determine the proper type and proper fit guidelines, in accordance with the OSHA Respiratory Protection standard.

OSHA has a Respiratory Protection standard that includes specific requirements such as training, fit testing, care and maintenance, and medical surveillance that shop owners and workers may need to follow when workers wear respirators.

Post “No Smoking”, “No Eating”, and “No Drinking” signs in the shop’s work area.
Post a sign near the shop’s sink to remind workers to wash their hands before and after each customer, after handling chemicals, and before eating.
Require all customers to wash their hands and fingernails thoroughly before receiving service.
Perform services only on healthy nails and intact skin.
Post step-by-step procedures near the shop’s sink and in the shop’s work area on how to clean and disinfect nail instruments and other equipment that comes in contact with clients’ skin.
Properly ventilate each work station. Preferably, install an effective exhaust system with individual exhaust vents for each work table. If possible, the exhaust should be vented outdoors in a manner that meets local building code requirements.
Keep the general ventilation system (HVAC) on during work hours.
Place a metal trash can with a self-closing lid at every work station.
Label all product containers clearly and properly.
Purchase appropriate masks and gloves recommended in the MSDS for your employees.
Do not buy or use any nail product containing liquid methyl methacrylate (MMA) monomer.
Designate a chemical storage area far away from the dining area and equipped with local exhaust ventilation.
Provide an adequately ventilated dining area for nail salon workers, partitioned from the shop’s work area.
Designate a storage place for a binder of MSDSs for all nail salon products.
Ask for the most up-to-date MSDS for each product at least once a year.
Inform employees where MSDSs are kept.
Provide training required for reading and understanding MSDSs.
Provide worker training on hazard communication and proper storage and handling of flammable liquids as required by OSHA.
Maintain the latest copy of the state cosmetology board’s rules and regulations.
Keep the top of ventilated tables or other vents clear of any obstruction, e.g., towels.

Keep nail product containers closed when not in use.
Keep nail products in smaller-sized, properly labeled containers at the work table.
Keep a metal trash can near the worktable with a self-closing lid completely covered at all times.
Place waste soaked with product in a sealed container before disposing of it in the trash container.
Wear mask and gloves and protective eyewear, if recommended in the MSDS, when handling larger quantities of chemicals.
Wash hands frequently: • before and after working on customers. before eating and drinking. after handling products.
If there are visible signs of sensitivity or allergic reaction to a product, discontinue use immediately.
Do not eat, drink, or store food at the work table.
Use a clean or disposable towel and a new pair of disposable gloves for each customer.
Use disposable nail implements on only one customer.
Clean and disinfect nail care implements properly after each use.
Do not put disinfectants in the water when clients' feet are in the footspa. Avoid skin contact when using disinfectants.
Do not use sharp instruments to shave calluses or remove living skin.
Do not allow smoking in the shop.
Read and understand the content of MSDSs for each product used.
Know where to find MSDSs in the shop.
Dispose of all waste properly

The following is a list of product ingredients that are found in the salon with their corresponding overexposure symptoms.

Product Ingredients

Symptoms of Overexposure

Acetone nail polish remover and fingernail glue remover	Headache, dizziness, irritation to skin, eyes, and throat,
Benzoyl peroxide powder additive for artificial nails	Irritation to eyes, mouth, throat, nose, and lungs, and skin rash
Butyl acetate nail polish	Irritation to skin, eyes, mouth, nose and throat; skin rash, headache, drowsiness and confusion
Butyl methacrylate artificial nails	Irritation to skin, eyes, skin, mouth, nose, and throat, skin rash, and shortness of breath
Camphor nail polish	Irritation to skin, eyes, mouth, nose and throat, nausea, vomiting, diarrhea, headache, dizziness, and in extreme cases of overexposure, uncontrollable muscle contractions
Dibutyl phthalate nail polish, nail hardener	Irritation to eyes, stomach, and upper respiratory system
Ethyl acetate nail polish, fingernail glue	Irritation to skin, eyes, mouth, nose and throat, skin rash and confusion
Ethyl cyanoacrylate fingernail glue	Irritation to skin, eyes, mucous membranes and skin sensitization
Ethyl methacrylate artificial nails	Irritation to skin, eyes, respiratory track and skin sensitization
Formalin nail hardener	Irritation to skin, eyes, nose, throat and respiratory system, and wheezing.

All salon professionals are at risk when insufficient ventilation causes overexposure.

Module 5

Employment as a Salon Professional (1 hour)

Module Outline

Keys to Successful Employment

- a. Self-evaluation
- b. The resume
- c. Establishment evaluation
- d. Job interview
- e. Prospering in the salon

Learning objectives:

After completing this lesson you will be able to:

- Define Key Terms
- Identify elements of self-evaluation
- Define elements of a well planned resume and portfolio
- Explain how to evaluate prospective establishments
- List elements of a successful job interview
- List elements of a team mentality

Key Terms

motivation

work ethic

enthusiasm

portfolio

prosper

Keys to Successful Employment

Whether a veteran as a Salon Professional or a beginner, it is a good idea to routinely evaluate yourself through personal inventory of your characteristics and behaviors as a Salon Employee.

We all have our own personal strengths as well as weaknesses.

We must perform a self-evaluation for ourselves by making a checklist to see how we measure up.

Through honest evaluation, we can determine those areas in which we can improve upon to become a better employee.

It is a good idea to give consideration to the things we expect of ourselves as well as the things that others expect of us. Not only should we consider our skills and abilities as it pertains to quality of service but also our abilities as it pertains to employment.

a. Self-evaluation

We must consider personal characteristics such as our willingness to be committed to excellence, our willingness to get along well with fellow employees or to be a dependable team player. All of these things and more lead to successful employment as a Salon Professional.

A few questions you might ask yourself are:

- Do I have a professional appearance?
- Do I have a willingness to serve?
- Do I have a willingness to help others?
- Do I have strong and appropriate interpersonal skills?
- Am I a good team player?
- Do I have excellent technical skills?

In order to acquire a stable permanent job in the service industry, you must either currently have these traits or be willing to practice for perfecting these traits.

The following is an example checklist you can use for self-evaluation. Use characteristics that a successful salon professional possesses and rate them as they apply to you personally.

Characteristic	Mastered	Above Average	Average	Needs Improvement
Well groomed				
Confident in technical skills				
Positive attitude				
Courteous				
Excellent communicator				
Motivated				
Responsible				
Honest				

When conducting a self-evaluation, there are a few questions we must ask ourselves in order to pursue a job that will be a good fit for what we are suited for.

Let's look at motivation.

There can be many motivating factors when seeking employment but the number one factor is the desire to make money.

On the average, most people need a job. We have to earn a living.

This can be a very strong motivation when seeking employment.

What is motivating you to seek employment?

According to Dictionary.com the word ***motivation*** is defined as: desire to do; interest or drive; incentive

This definition refers overall to the intrinsic or internal drive one has.

There can also be extrinsic or external motivations such as those that come from family, friends or varied life situations.

Intrinsic positive motivation is the most sustaining when it comes to a happy employment experience. Other types of motivation that involve extrinsic or negative will not usually sustain happy employment, not to be confused with successful employment.

External or negative motivation can sustain successful employment but under negative conditions does not normally make for a happy employment experience.

What level of technical skills do you possess?

This is where you must be painfully honest with yourself.

Do you, without question, have a complete understanding of all technical aspects of all services that as a license holder in your field requires?

Can you, with full confidence, perform all technical aspects of those services?

As a personal service worker you are expected to know all technical applications of services that fall within your category of licensing.

If you are unsure of procedures, you must continue to practice and study until you are confident that you can perform all services with confidence.

You must be an asset to an employer. Although most salons emphasize continued education and further training during employment, you must not rely on future training but possess it now.

Do you have a strong work ethic?

Dictionary.com defines the term ***work ethic*** as: a belief in the moral benefit and importance of work and its inherent ability to strengthen character.

Consistently giving it your best at every level is the best way to express a strong work ethic.

Be on time. Perform services to the best of your ability and treat people and things with respect.

Do you have enthusiasm?

Dictionary.com identifies the term ***enthusiasm*** to be synonymous to: eagerness, warmth, fervor, zeal, ardor, passion, devotion.

Do you have integrity?

Dictionary.com describes ***integrity*** as: adherence to moral principles; honesty.

Integrity can be applied to your work at many levels.

You can have integrity to your techniques. You can show integrity toward others through your attitude and actions.

Integrity never involves embellishing the truth. Integrity means never using short cuts or doing less than what is proper.

b. The resume

The beginning of job hunting is the resume.

A resume should represent a basic summation of your education and previous work experience.

Employers will view your resume for a quick overview of your achievements and work history.

Guidelines for preparing your resume:

Simplify resume information so it will fit onto one page
Use high quality paper to print it on
Include your Name, Address, Telephone Number and Email Address
List recent work experience
List education including school names and courses
Include a section for abilities and accomplishments
When adding information keep it relevant to the job you are pursuing

According to Milady's Standard book of Cosmetology, it only takes an employer about 20 seconds to view your resume before he decides whether he will grant you an interview.

Therefore the construction and content of a resume is vitally important.

It is much better to emphasize your accomplishments than detailing your previous duties.

Using percentages and numbers to describe your achievements is also a good idea.

It creates a solid basis of fact that an employer can visualize as he scans your resume.

For example: your written accomplishments can show

The number of regular clients that you serve.
The number of weekly clients that you serve.
Your client retention rate.
Your average revenue per client.
Your average percentage of total revenue that comes from retail sales.
Your average percentage of total revenue from chemical services.

Guidelines: Do

Do make it easy to read. Use accurate and clear communication when writing. Avoid run-on sentences and overpowering descriptive words.

Do be familiar with the type of reader. Knowing your reader can help you cater the resume to the style of your potential employer.

Do keep it brief. One page is best.

Do emphasize accomplishments. Indicate the accomplishment and the skill that it took to achieve it.

Do define career goals when possible. Indicate that the position you are seeking is your goal.

Do mention skills that are transferable. List skills that you now have that will be of benefit to the new position.

Do use verbs that show positive action such as; maintained, coordinated, developed, increased, etc.

Guidelines: Do Not

Do not state your salary history (that will be asked on the job application)

Do not lie about anything

Do not put personal references on a resume (that will be asked on the job application)

The following is an example of a successfully written resume.

SORA KATO
123 Wisteria Drive
City, State 12345
(123) 123-1234

A Cosmetologist who was trained in advanced techniques in Japan and France and has been featured in "Hair Asia" magazine.

Accomplishments and Abilities

Sales

Named "Retail Leader of the Year" for highest monthly revenue.
Increased and sustained retail sales an average of 32%.
Increased chemical services by 43%.

Client Retention

Developed and maintained a client base of 220 customers for more than 3 years.

Special Projects

Developed a gifting program that helps cancer survivors acquire high-quality wigs.
Supervised the collection of hair for wigs.
Guest speaker for various Cosmetology Schools

Additional Training

Advanced techniques in hair-cutting / Japan.
Advanced techniques in hair-coloring / France
HIV/AIDS continuing education
updated sanitation and health courses

Awards

"Retail Leader of the Year" award
"Expert Colorist" award
"Superior Stylist" award
Competition Grand Prize Winner

Experience

The Place Salon & Spa

2004-2007
Cosmetologist / performed all services

Mattie's Beauty Boutique

2007-2011
Cosmetologist / performed all services

Education

Graduate, Tangleze National Academy of Cosmetology, New York, 2004
Licenses as Cosmetologist, 2004

Whether you are fresh out of Cosmetology school or have been working for years, it is a good idea to have a **portfolio** to show off your talents.

A portfolio should include a good quality ring binder that can hold photos and documents within clear individual sleeves.

It's a great opportunity to give true visuals of what you have accomplished throughout your career. This is the time to put your best foot forward into a collection of awards, certificates, recognitions and even business reports.

Keep in mind a portfolio has no limits in how you can represent yourself as a professional.

As long as your portfolio contains nothing that can be construed as offensive to the viewer, all is well.

Here are a few ideas.

Portfolio Content

Cosmetology school diploma
Certificates of Awards
Resume
Letters of reference from former employers
Continuing Education Certificates
Industry / Organization / Affiliation / Membership documentation
Photos of “before and after” models
Professional Statement /brief paragraph of “why you choose to be in your field”
Other relevant documentation such as newspaper articles, business reports, etc

Before assembling your portfolio consider whether your gathered material is a good representation of you and your skills.

Remove anything in question and get advice from someone who is familiar with you and your work.

Keep in mind that all documentation including your resume and professional statement should be typed and never hand written.

You can use tabs to mark each section if you wish.

Professional Statement

Your professional statement should include:

<u>A description of what you love about your profession</u>
Your philosophy of teamwork and how you can contribute
Your acknowledgment of the importance of service and retail revenue and a method or two of how you increase it

c. Establishment evaluation

Which salon / employer is a good fit?

To ensure the best chance of success of employment, it is best to find a salon that is a good fit for what you are looking for. There are many things to consider.

Throughout your research, you should visit several salons in order to get a good idea of your opportunities. This checklist is a good way to keep up with how you grade your would-be employer.

Good Fit Checklist

The Salon's Image: Does the salon have an image that fits into your comfort zone? Does it reflect an image that goes against your ethics in some way or seem uncomfortable to you? How about the way your work area is arranged? Is the volume of the music excessive and unprofessional? Does the salon use handmade signs? If you see anything alarming, go ahead and check that salon off your list. Use your own values for what is acceptable in order to decide if the salon is a possible place for you to be employed.

above average **average** **poor**

comments: Clean back-bar. High-end appliances / lighting is excellent at the service stations.

Employee Image: Observe the manager and her employees. Are they leaning on counter-tops? Are they giving proper attention for those clients who just walked up to the counter for an appointment? Are they properly monitoring chemical services for any discomfort a client might be having? This is the time to monitor the behavior and appearance of both the manager and her employees. If it doesn't seem acceptable today, it is unlikely things would improve after you are employed there.

above average **average** **poor**

comments: Employees are all ages - all had incredible hair /wardrobe /makeup

Management: Is the telephone begin answered quickly and walk-in clients attended to promptly? Are the floors clean and the retail area orderly? What about team work? Is there an air of negativity? All of these things can indicate poor management.

above average **average** **poor**

comments: They have a full-time receptionist.

Clients: Are the clients being properly attended to from beginning to end? Are they properly welcomed and monitored throughout their visit? Does the salon have customary smocks, changing rooms and beverages for their patrons?

above average **average** **poor**

comments: They have individually wrapped chocolates in the dressing rooms for the patrons.

Services and Pricing: Compare one salon's pricing to another. Compare the add-on services within the pricing to see which salon has the better value for the customer. Consider if you yourself would come there as a client under those circumstances.

above average **average** **poor**

comments: They include a free hand message with every service

Retail: Again, Does the salon use professional marketing for their retail? Are the prices over-inflated? Are the bottles covered in dust? Are the employees selling?

above average average poor

comments: Very clean. The usual brands. No specials or sale bundles that I noticed.

Professional Marketing: Does the salon use professional posters to promote their product lines? Does the salon use wall hangings and framed photos that reflect updated styles?

above average average poor

comments:

Once you have determined which salon is the perfect fit, it is time to prepare for the job interview. Remember, there doesn't have to be a job opening to get an interview. And, there doesn't have to be a formal "job opening" per say to be hired. Many a salon professional has been hired when the manager hasn't even herself advertised a job opening. There may be a position available that is part-time or temporary that can lead to a full-time position. Often times a manager will create a position if she really wants you on her team.

d. Job interview

Preparing for the Interview

Resume Review:

Preparing for the face to face interview includes reviewing your resume.

- Does your resume represent your abilities and accomplishments in your job and training?
- Does it make your reader inquisitive and want to learn more?
- Is the format neat and easy to read with content that emphasizes your skills?
- Is all information relevant to the job you are seeking?
- Is it a relatively complete and well-rounded overview?

Portfolio Review:

Preparing for the face to face interview includes reviewing your portfolio.

Did you include:

- diploma
- awards and Certificates of Achievement
- resume
- letters of reference from former employer(s)
- continuing education certificates
- memberships of Cosmetology organizations
- before and after photos
- other relevant documentation

Now would be the time to remove anything from your resume or portfolio that doesn't fit in with your overall purpose.

Now let's focus on wardrobe.

Since you have previewed the potential establishment, you now have an idea of what they consider the image appropriate for their salon.

You should try to mirror this as closely as possible.

You want to look like you could begin work the day you are interviewed with no changes needed.

You might be asked to return for a second interview so have ready a second outfit for that purpose.

Consider these points:

- Is your outfit appropriate for that position?
- Is it an up-to-date fashion and does it fit well?
- Are your accessories appropriately sized and not noisy?
- Are your fingernails clean and manicured?
- Is your hair style up to date and flattering?
- Ladies, is your make-up up-to-date and appropriate?
- Men, are you clean shaven and/or your facial hair appropriately trimmed?
- Is your cologne or perfume lightly applied?
- Are you carrying a handbag or briefcase but not both?

In addition to your resume and portfolio, you will need to have a list of names and dates of former employment, education and references.

Be ready for the questions!

You may not be a professional “interviewee” but there is a good chance that your future employer is a professional “interviewer”.

She will be ready to ask the hard questions whether or not you are ready to answer them, so be ready.

There are certain questions that often asked by employers.

You can be ready and even rehearse your answers.

Get a friend or family member to role-play.

It's a great way to put yourself at ease with having to think on your feet.

Typical questions that are often asked during an interview.

What did you like best about your training?
Are you regularly on-time for meetings and work-days? Would your Program Director or Instructor confirm this?
What do you feel are your strongest skills? What areas do you feel are not as strong?
Are you a team player? Give me an example of when you were a team player.
Are you flexible? Give me an example of when you had to be flexible.
What is your ultimate career goal?
What days and hours are you available for work?
Do you have your own transportation?
Are there any problems that would prevent you from being employed full-time?
What assets would you bring to this position and to our salon?
Who is the most interesting person you have met? Why?
How do you handle difficult people?
How do you feel about retail?
Would you be willing to attend our company training program?
Describe ways that you perform excellent customer service.
What questions do you ask a client during a consultation?
What do you do to build your business? How do you ensure that they return for future services with you?

If you prepare ahead of time, you will be more relaxed and will give better answers.

If you were told to be prepared to perform a service as part of the interview, you will need to prepare your model to ensure that she will meet interview standards.

Discuss with her what to expect, what to wear, what not to wear and the need to arrive early.

Gather all necessary gear to perform the service.

Be careful to observe all modes of sanitation, storage and customary behaviors you normally would.

The Interview

Tips for the “face-to-face”:

- Be early.
- Smile.
- Use good posture at all times.
- Be courteous and polite at all times.
- Remain standing until asked to be seated or whenever you are aware that it is expected.
- Never chew gum or smoke even if offered to do so.
- Do not bring food or drink.
- Do not lean. Do not touch the interviewer except for a hand shake. Do not touch his desk or other items.
- Make a good first impression, be relaxed and confident.
- Speak clearly.
- Answer questions truthfully and do not speak longer than a couple of minutes about any given subject.
- Never criticize former employers.
- Thank the interviewer at the end of the interview.

You will be asked by the interviewer if you have any questions. Never say no! It shows interest and enthusiasm to be inquisitive about your new job.

Here are a few questions that you can ask.

May I review the job description?
Is there a salon manual?
How does your salon advertise?
How long do your employees usually work here?
Does your company offer continuing education?
<u>Does your company offer benefits, medical insurance or paid vacations?</u>
What is your compensation plan?
When will the position be filled?
Should I follow up with you about your decision or will you be contacting me?

It probably wouldn't be necessary to ask all of the questions listed above, however, do ask the questions that are most important to you.

Pay attention to the interviewer's reactions to your questions. You will most likely be able to discern when it is a good time to end the conversation.

Employment Application

Here is where you will use your prepared notes: dates of employment, addresses of former employers. The application is always a mandatory addition to your resume. Employment applications will vary from company to company however there is a standard in which certain information is customary.

Sample Application:

Personal Information		
Date	Telephone	Social Security Number
Last Name	First Name	Middle Name
Physical Address		
Do you have relatives that are employed with X Company?		Name:
Were you referred to this salon?		Name:
Desired Position		
Date you can start	Salary desired	
Current Employer		
May we contact them?		
Have you ever applied for a position with our company before?		
Where?		
When?		
Education		
Name/ location of school	Years completed:	Subjects studied:

Subject of special study:		
What languages do you speak fluently?		
Read fluently		
Write fluently		
US Military Service	Rank	present membership

National Guard Reserve?

Employment History

List below the last four employers, beginning with the most recent one first.

Date: month/year	Name and Address of Employer	Salary	Position	Reason for leaving
From: _____ To: _____				
From: _____ To: _____				
From: _____ To: _____				
From: _____ To: _____				

References:

Give names of 3 people not related to you whom you have known at least one year

Name	Address	Business	Years known

Physical Record

List any defects in hearing, vision or speech that might affect your job performance.

In case of emergency, notify:

Name _____ Address _____ Telephone _____

I authorize investigation of all statements contained in this application. I understand that misrepresentation or omission of facts called for is cause for dismissal if hired.

Signature _____

Date _____

Prospering in the Salon

There are many ways to *prosper*.

You prosper in your relationship with other professionals.

You prosper in your relationship with clients and management.

You prosper financially.

One of the basic tools to measure prosperity as a salon professional is your finances and income.

Financial prosperity comes with successful business practices.

It's our reward for excellence.

The personal service industry can be very challenging, especially if you are ever mistreated or disrespected by the people that you serve.

Prosperity in the knowledge that you have lasting integrity and honesty with those that you serve and those that you work with is immeasurable.

a. Thriving or Surviving?

There are solid approaches to increase prosperity in the salon.

Putting these approaches into action will help the salon professional to thrive.

Put others first. This sometimes means putting your own feelings aside while putting the client or the salon first.

Fulfill your word. Do what you say you will do. Be truthful and do not exaggerate.
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Be on time. Your time is carefully scheduled and if you are late it will impact the client and your team. Arrive to work early enough to prepare your station and to prepare for your first client before she gets there.

Be grateful for your job. It is a privilege to have a job. Behave with a positive attitude and appreciation for it.

Be a problem solver. All places of employment has it's share of difficulties. You can assist in solving any problem that may arise. Think constructively and be the problem solver.

Respect all. No matter what is said or done, respect all at all times.
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Learning for a lifetime. All of your professional life, there will be new things to learn. A mature professional always finds new things to learn.
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The Team

It's a give and take world no matter what the job.

You can't always be a taker, you must contribute.

Whether you contribute much or little, no kind deed goes unnoticed.

A salon is the kind of team environment that provides the opportunity to exercise great artistic freedom.

Many people are not so fortunate as to have a professional license and would love to take your place.

No matter what the challenge, it is indeed a privilege to be on the team.

The Team Mentality

To be a good team player you should:

<p>Help others. Do things not only to help yourself be successful but be concerned with helping others succeed. Go beyond the call of duty from time to time when you see someone needs assistance.</p>
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<p>Pitch in. Join in to do tasks. Be self motivated. Do things because they need to be done. Don't wait to be instructed.</p>
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<p>Share your knowledge. We are all in this together and if you can mention something that can enhance the knowledge of others it is always a good thing.</p>
--

<p>Be positive. Don't join in with those that have negative attitudes. Speak positive and think positive.</p>
--

<p>Build relationships. Get along with others. Have conversations and build a relationship between you and other team members.</p>

<p>Resolve conflicts willingly. Find solutions and be quick to forgive. Quickly resolve unpleasant issues so they do not grow into bigger problems.</p>
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<p>Be willing to be subordinate to your manager. All employees must be able to be instructed by their manager. You must make an effort to show you are willing to be instructed.</p>

<p>Loyalty. Be loyal to your manager and to your salon.</p>
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