More than 375,000 nail technicians work in salons across the United States and face possible health hazards every day. The hazards include exposure to chemicals from glue, polishes, removers, and other salon products. Workers also may have to deal with awkward positions or repetitive motions. This course gives important information about these hazards and the steps nail salon workers and employers can take to prevent injuries and illnesses.
OSHAcademy Course 609 Study Guide

Health Hazards in Nail Salons

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Contact OSHAcademy to arrange for use as a training document.

This study guide is designed to be reviewed off-line as a tool for preparation to successfully complete OSHAcademy Course 609.

Read each module, answer the quiz questions, and submit the quiz questions online through the course webpage. You can print the post-quiz response screen which will contain the correct answers to the questions.

The final exam will consist of questions developed from the course content and module quizzes.

We hope you enjoy the course and if you have any questions, feel free to email or call:

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Course Introduction

Nail salons are mostly small businesses who employ or contract with trained professionals to provide clients with nail services including, but not limited to, nail filing and polishing, artificial nail application, and other hand-and foot-care treatments.

More than 375,000 nail technicians’ work in salons across the United States and face possible health hazards every day.

The hazards include:

- exposure to chemicals from glues, polishes, removers, and other salon products
- muscle strains from awkward positions or repetitive motions
- risk of infection from contact with client skin, nails, or blood

This course gives important information about these hazards and the steps nail salon workers and employers can take to prevent injuries and illnesses.

Once you complete this course, you will have knowledge of the following components:

- chemical hazards
- product labeling requirements
- how to properly ventilate the nail salon
- biological hazards
- ways to prevent exposures to chemicals
- types of respirators
- reducing ergonomic hazards
- preventing aches and pains
Module 1: Chemical Hazards

Products used in nail salons may have chemicals in them that can harm your health.

Chemicals can get into your body if you:

- breathe in vapors, dusts, or mists from the products
- get the product on your skin or in your eyes
- swallow the product if it gets on your uncovered food, drink, or cigarettes

Chemicals affect different people in different ways. How a chemical affects you also depends on how much of it you are exposed to. You can get sick right away, or you can get sick over time. Exposures can “add up,” especially when many products are being used at the same time, when the products are used day after day, or when there is poor ventilation in the salon. If you use chemicals all day, every day, you are more likely to get sick than someone who uses the same chemicals once in a while.

Hazardous Chemicals Found in Nail Salon Products

Nail products, such as polishes, strengtheners, removers, and artificial nail liquids, can contain many chemicals. Some of these chemicals are more harmful than others. Over time, with repeated use or exposure to high concentrations, these chemicals could damage your body or cause an allergic reaction. Every person is different and not everyone who breathes in these chemicals or gets them on their skin will experience these effects now or in the future.

Some potentially hazardous chemicals, the types of products they can be found in, and how they can affect your body include:

- **Acetone** (nail polish remover): headaches; dizziness; and irritated eyes, skin, and throat.
- **Acetonitrile** (fingernail glue remover): irritated nose and throat; breathing problems; nausea; vomiting; weakness; and exhaustion.
- **Butyl acetate** (nail polish, nail polish remover): headaches and irritated eyes, skin, nose, mouth, and throat.
- **Dibutyl phthalate (DBP)** (nail polish): nausea and irritated eyes, skin, nose, mouth, and throat. Long-term exposures to high concentrations may cause other serious effects.
• **Ethyl acetate** (nail polish, nail polish remover, fingernail glue): irritated eyes, stomach, skin, nose, mouth, and throat; high concentrations can cause fainting.

• **Ethyl methacrylate (EMA)** (artificial nail liquid): asthma; irritated eyes, skin, nose, and mouth; difficulty concentrating. Exposures while pregnant may affect your child.

• **Formaldehyde** (nail polish, nail hardener): difficulty breathing, including coughing, asthma-like attacks, and wheezing; allergic reactions; irritated eyes, skin, and throat. Formaldehyde can cause cancer.

• **Isopropyl acetate** (nail polish, nail polish remover): sleepiness, and irritated eyes, nose, and throat.

• **Methacrylic acid** (nail primer): skin burns and irritated eyes, skin, nose, mouth, and throat. At higher concentrations, this chemical can cause difficulty breathing.

• **Methyl methacrylate (MMA)** (artificial nail products, though banned for use in many states): asthma; irritated eyes, skin, nose, and mouth; difficulty concentrating; loss of smell.

• **Quaternary ammonium compounds** (disinfectants): irritated skin and nose and may cause asthma.

• **Toluene** (nail polish, fingernail glue): dry or cracked skin; headaches, dizziness, and numbness; irritated eyes, nose, throat, and lungs; damage to liver and kidneys; and harm to unborn children during pregnancy.

Report any health problems you think are from the products you use in the workplace to your employer and doctor. Employers must follow up on reports of health problems from workers.

**Product Labels**

At minimum, professional-use nail salon products containing hazardous chemicals must provide the following information:

• the name and address of the product manufacturer or distributor

• something that explains the type and use of the product, such as a name, description, or illustration
• facts about the product, such as directions for safe use if a product could be unsafe if used incorrectly

• all necessary warning and caution statements

**Chemical Information**

You can get product information on packaging, or in printed materials delivered with the product such as its material safety data sheet (MSD).

**Safety Data Sheets (SDS)**

OSHA requires product manufacturers to provide salon owners with SDSs for the products they buy that contain hazardous chemicals. Employers must make these SDSs available to you. Your employer must also train you so you understand the chemicals’ potential hazards and how to use the products safely. In general, an SDS must provide the following information:

• hazardous ingredients in the product

• how you can be exposed to the ingredients

• health and safety risks you face when using the product

• steps for safely using and storing the product, including what to do in emergencies

All information is presented in a common 16-section format. This can help you compare the differences in hazards between products.

Be aware SDSs may not contain all the information needed to help protect you. For example, the manufacturer may state that you should wear “impervious gloves,” but not specify the type.

For more information on material safety data sheets on hazardous chemicals, please see OSHAcademy course **705 Hazard Communication Program**.

**Steps to Take to Protect Your Health**

**Choose Safer Products**

• Whenever possible, use products with the least hazardous chemicals in them.

  o **3-free**: Some products now **claim** to be made without the “toxic trio” (toluene, formaldehyde, and dibutyl phthalate). These products are called “3-free” products.
Acid free: Some primers claim to be made without chemicals like methacrylic acid. These are labeled “acid free.”

- Always read product labels and MSDSs and follow manufacturers’ instructions when using all nail salon products, including those labeled as “free” of hazardous chemicals.

**Ventilate the Room**

Ventilation is the best way to lower the level of chemicals in the salon. These steps can really help improve your health:

- Open doors and windows when possible to let in fresh air. If the salon has a ceiling vent, it should be turned on and working.
- Always keep the nail salon’s exhaust system on.
- If your salon does not have an exhaust system, always keep the heating, ventilation, and air conditioning (HVAC) system on during work hours. The HVAC thermostat fan switch should always be in the “on” position (not “auto”) so that it runs even when the heat or air conditioner is off. The salon owner should have a HVAC contractor clean the HVAC system and replace the filters at least once a year.
- Place fans near open doors or windows. Fans should pull air in one end of the salon and push it out of the other end.

If the salon has ventilated tables:

- Make sure they are turned on.
- Change the charcoal filters at least once a month.
- Clean out the catch basin at least once a week.

If the salon has portable ventilation machines, use them in your work area to pull harmful vapors away from you and your clients.

**Biological Hazards**

Biological hazards include bacteria, fungi, and viruses. You can be exposed to many infectious agents, such as hepatitis B, hepatitis C, and human immunodeficiency virus (HIV), if you come into contact with infected blood from a coworker or client. You can also be exposed to fungal
infections of the nails and feet by touching a client’s infected skin or by using equipment that has not been cleaned.
Protection against Biological Hazards

- Avoid touching any blood or bodily fluids.

- Wear gloves, and avoid clients with cuts, open wounds/sores, blisters, or visibly infected skin on their hands, feet, or nails.

- Throw away disposable gloves immediately after using them.

- Always wash your hands with soap and water before and after working with clients to avoid spreading germs.

- Bandage open cuts or broken skin to prevent contact with blood or other potentially infectious materials from a client or coworker.

- If an individual is bleeding, do not touch the blood. Ask the individual to use a cotton ball or tissue to stop the bleeding and to throw the used material directly into the trash once the bleeding has stopped.

- Consider getting immunized against hepatitis B. Your doctor can help you determine whether this is needed. Immunization practices can vary by state, so be sure to follow your state’s requirements. Your employer must offer you hepatitis B immunization without charge if you are likely to be exposed to blood or other infectious materials during your work.

- Clean and disinfect tools after each client according to the policies of your state’s cosmetology board. Some common steps for cleaning and disinfecting tools are:
  
  - Always wear the right gloves for the product you are using while cleaning and handling disinfectants or tools soaked in disinfectant.
  
  - Wash tools with soap and water. Use a scrub if needed.
  
  - Soak tools in an EPA-registered disinfectant for 10–30 minutes, according to manufacturer directions. Follow the manufacturer’s instructions when mixing the product ratios.
  
  - Rinse tools in clean water.
  
  - Dry tools with a clean cloth.
- Store all disinfected tools in a clean, covered area. Only use ultraviolet (UV) sanitizing boxes to store clean and disinfected reusable metal tools. The UV boxes do not disinfect tools.

- Disinfect foot basins and spas after each client and at the end of the day.
Module 1 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

1. When can hazardous chemicals get into your body?
   a. Yawning
   b. Breathe in vapors, dusts, or mists from the product
   c. Coughing
   d. Touching the chemicals with bare hands

2. Which of the following chemical can cause headaches, dizziness, and irritated eyes, skin, and throat?
   a. Isopropyl acetate
   b. Acetone
   c. Toluene
   d. Ethyl acetate

3. Disinfect foot basins and spas ONLY at the end of the day.
   a. True
   b. False

4. _____ is the best way to lower the level of chemicals in the salon.
   a. Open windows
   b. Ventilation
   c. Face mask
   d. Air conditioner
5. Catch basins in a ventilated table should be cleaned at least _____.

   a. daily
   b. once a week
   c. once a month
   d. twice a day
Module 2: Ways to Prevent Exposures to Chemicals

Safe Work Practices

You need to use safe work practices to avoid regular and accidental exposures to dangerous chemicals in nail products.

Here are a few options to protect yourself and your co-workers.

- Store chemicals in small bottles with small openings and label them with the information from the manufacturer’s label.

- Close bottles tightly when you are not using them so the product does not spill or get into the air.

- Use metal trashcans with tight, self-closing lids to keep the nail products soaked on cotton balls and other trash from evaporating and getting into the salon’s air.
  
  - Put cotton balls and other soaked materials into the trashcans immediately.
  
  - If you do not have metal trashcans with self-closing lids, put cotton balls and soaked materials in a sealed bag before putting them in the trashcan and keep the trash covered.
  
  - Empty trashcans often and remove from the work area to the outside garbage at the end of each day.

- Use only the amount of product you need to perform services.

- When possible, do not keep extra products at a workstation.

- Follow instructions for safely disposing of used chemicals. **DO NOT** pour them down your sink or toilet, throw them on the ground or down outside drains, or pour them onto cotton balls.

  - Some chemicals must be disposed of in a specific way. For example, used liquid acetone must be saved in a fire department approved metal container and disposed of as hazardous waste.

- Wash your hands before eating, drinking, putting on cosmetics, and smoking.
• When you have a break, go outside to get some fresh air. This will give you a chance to get away from chemicals in the salon’s air.

• Keep food and drinks covered at all times, and do not store or eat food in work areas.

**Keep Products Off of Skin and Out of Eyes**

There are several ways to keep hazardous products off your skin and out of your eyes. Here are a few ways:

• Wear long-sleeved shirts to protect your arms and pants or skirts that are at least knee-length to protect your lap from acrylic nail and other dusts.

• Wash your hands before and after working on clients; before eating, drinking, putting on cosmetics or smoking; and after handling or transferring products.

• Wear goggles and the appropriate type of disposable gloves when handling and transferring products. For example, nitrile gloves (usually blue or purple) protect against many chemicals used in nail salon products, but latex or vinyl gloves are appropriate when handling acetone.

• Replace gloves immediately if there are cuts, tears, or holes in them.

• Cover and protect cuts or cracks in your skin. Damaged skin can increase chemical absorption and exposure.

• Do not continue to use a product if you see signs of skin irritation.

**Respiratory Protection**

Employers need to determine if the levels of dust and/or chemical vapors in the salon pose a risk to employees. They must then decide if respirators are necessary to protect workers.

**Evaluating Possible Hazards**

Because chemicals can cause effects even at low levels, you may want to wear a respirator to protect yourself while transferring chemicals or when buffing and filing nails.

**Types of Respirators**

Let’s take a look at some types of respirators that may be used in nail salons.
Dust Masks

Many nail salon workers wear paper or cloth medical masks. These are not the same as dust masks (filtering face pieces) and even when stuffed with tissues, they will not protect you from breathing in harmful gases, vapors, or dusts (figure 1).

Filtering Face Piece Respirator

You should only use NIOSH-approved filtering face piece respirators (figure 2).

This type of respirator will help protect you from dust, viruses, and germs. However, it will not protect your from vapors or gases. Some N95s have filters which reduce chemical odors, but they may not protect you from harmful chemical exposure levels.

Filtering face piece respirators are helpful when you are buffering or filing nails and/or using acrylic powders.

You don’t need to wear the mask all the time, only when you are working on a client. When you put on this mask, make sure your hands are clean to avoid irritating your skin.

Half-Mask Respirators

Half-mask respirators (figure 3) with chemical cartridges offer protection from breathing in chemical vapors.

This type of respirator will help protect you from breathing in chemical gases and vapors, such as formaldehyde. Your employer may require you to wear this type of respirator when you transfer chemicals from larger bottles to smaller ones or when you need to clean up large spills.

If you must use this type of respirator, your employer is required to develop a respiratory protection program and must evaluate the appropriate cartridge for the job task and provide it to you. You must also be fitted and trained to wear a respirator properly. As an employee, you must know how and when to change cartridges. Your employer must provide you with a cartridge change out schedule.
Module 2 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

1. When disposing of used chemicals, it is okay to pour them down your sink or toilet.
   a. True
   b. False

2. Who must decide if respirators are necessary in a salon?
   a. Employers
   b. Employees
   c. Customers
   d. Patrons

3. What type of gloves protect you against many of the chemicals used in nail salon products?
   a. Latex
   b. Vinyl
   c. Nitrile
   d. Work

4. _____ gloves are appropriate when handling acetone.
   a. Nitrile
   b. Latex or vinyl
   c. Work
   d. Non-latex
5. **Which type of respirators requires your employer to develop a respiratory protection program?**

   a. Dust mask  
   b. Paper mask  
   c. Half-mask  
   d. Filtering face piece
Module 3: Preventing Aches and Pains

Introduction

Nail salon workers can get aches and pains from several different things. Here are a few:

- leaning over a worktable for a long time
- doing repetitive movements like filing and buffing nails
- resting hands, wrists, and forearms and/or elbows against hard surfaces or sharp edges of worktables

These are often called ergonomic or musculoskeletal hazards because they affect your muscles and bones. Ergonomics is the science of “fitting the task to the worker” so you are more comfortable and efficient when doing your job. Good ergonomic practices will reduce stress to your body and help you avoid aches and pains.

Reducing Ergonomic Hazards

There are several things you can do to reduce musculoskeletal hazards. Here are a few tips:

- Use an adjustable chair. Sit so your feet are flat on the floor and your back is supported. You should also use a footrest if your feet do not touch the floor when sitting.
- Make sure there is enough space between the back of your knees and the front edge of your seat to improve blood flow to your legs.
- Adjust the lightning. Good lighting can help you see without having to bend over.
- Use a cushion to raise the client’s hand or foot so you don’t have to bend over as far.
- Put a towel or foam pad on the edge of the table to soften it for hands, arms, wrists, and elbows.
- Take frequent breaks and change your positions, if possible.
- Do gentle stretching exercises in between sessions with clients, such as the ones below.
### Stretching Exercises

**Neck:** Keeping your arms and shoulders loose, tilt your head to one side for two seconds. Then, tilt your head to the other side for two seconds.

**Fingers:** Stretch your fingers out and hold for 8 seconds. Relax. Make a claw with your hands and hold for 8 seconds.

**Shoulders and Upper Back:** Put one hand on your shoulder and look the opposite way. Pull your elbow in and up with the other hand.

**Lower Back and Hips:** Lean forward keeping your neck relaxed and your head down. Hold for 8 seconds while breathing slowly. Use your hands to push you back up.
<table>
<thead>
<tr>
<th><strong>Neck:</strong> Keeping your arms and shoulders loose and your head facing straight forward, tuck your chin for two seconds.</th>
<th><strong>Back of Legs:</strong> Place your hands shoulder width apart on a wall or table. Bend your knees, keep hips directly above your feet, and lower your head between your arms.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Neck Image" /></td>
<td><img src="image2" alt="Back of Legs Image" /></td>
</tr>
<tr>
<td><strong>Neck:</strong> Keeping your arms and shoulders loose, turn your head to one side and then the other side. Hold the stretch for two seconds.</td>
<td><strong>Inner Thighs:</strong> With your feet wide apart, place both hands on your left knee until you can feel the stretch. Hold for 8 seconds.</td>
</tr>
<tr>
<td><img src="image3" alt="Neck Image" /></td>
<td><img src="image4" alt="Inner Thighs Image" /></td>
</tr>
</tbody>
</table>
**Shoulders:** Lace your fingers and stretch your arms with your palms facing out. Hold the stretch for two seconds.

**Ankles:** While holding onto a table or wall for balance, put one foot out and point your toe up and down. Draw circles with your foot.
Module 3 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

1. **Ergonomics is defined as _____**.
   - a. fitting the task to the worker
   - b. stretching techniques
   - c. working less time
   - d. standing too long

2. **How will good ergonomic practices affect you?**
   - a. Help you avoid aches and pains
   - b. Reduce stress
   - c. Allow you to work longer hours
   - d. Both B and C are correct

3. **Which of the following are things you can do to reduce musculoskeletal hazards?**
   - a. Work less hours
   - b. Use an adjustable chair
   - c. Leave work early
   - d. Take a longer lunch break
Endnotes
