

## **Guidelines for Controlling and Minimizing Inhalation Exposure to Nail Products**

These guidelines outline steps that nail professionals can take to improve workplace safety by minimizing inhalation exposure to potentially irritating or harmful substances. It is important for salon professionals to utilize techniques that ensure the nail services given are performed in the safest manner possible. Fortunately, when the proper steps are taken, it is easy to safely perform professional nail services and avoid excessive inhalation of dusts or vapors. Minimizing inhalation exposure is an important way to ensure that nail salon products are properly and safely handled.

### **What is Product Overexposure?**

Nearly every substance on Earth has both a safe and potentially unsafe level of exposure. Injury may result if these safe levels are exceeded repeatedly or for prolonged periods. For example, inhaling excessive levels of certain vapors or dusts found in salons for prolonged periods may result in overexposure to these substances. In general, the vapors found in properly ventilated salon air have established OSHA safe limits and are well below these levels. However, not all salons have proper ventilation and those that don't may not understand its importance.

Ventilation is an important way of improving the salon environment for customers and can also create a more pleasant workplace for salon professionals. Proper ventilation can help sensitive individuals avoid symptoms such as irritated eyes, nose or throat, headaches, difficulty breathing, nervousness or drowsiness. The best way to prevent inhalation overexposure is by controlling the amount of vapors and dust in salon air. One of the very best ways to ensure safe working conditions is to use these guidelines to improve salon air quality.

### **Improving Salon Air Quality**

Some salon professionals mistakenly believe that ventilation systems are solely for controlling strong odors, when in fact, odors are not the reason for ventilating. Just because a substance smells strange or unpleasant does not mean it is risky to breathe. The odor of a substance does not indicate whether it is safe or harmful. Dirty socks provide a good example. They don't smell good, but they aren't harmful to breathe.

Don't ventilate to control odors; ventilate to control vapors and dusts. It is especially important to control the air quality of your breathing zone. Think of your breathing zone as an invisible sphere that extends two feet from your mouth. Your breathing air comes from this zone and working safely and using proper ventilation helps ensure the breathing zone is a source of high-quality air.

A great way to ensure good salon air quality is to use a combination of: 1) a properly maintained HVAC system, 2) a professional HEPA room air cleaner, and 3) source capture system.

- 1) HVAC system - The general room ventilation and air-conditioning systems in a salon are classified as "Heating, Ventilation and Air-Conditioning" (HVAC) systems. HVAC systems are "built-in" to the salon and are designed to exchange air inside the salon with fresh air from the outside. Typical salon HVAC filters remove some dusts, pollens, etc., but cannot remove vapors or the smallest dust particles. High quality systems that filter air back into the salon should use adsorbent beds with a substantial amount of activated carbon to ensure greater adsorption. Adsorbent beds eventually become saturated, making them ineffective, and, therefore, must be replaced on a regular basis, e.g. twice per year. Remember that to be effective, all ventilation systems must be properly maintained and cleaned on a regular basis. A local HVAC specialist that can advise salons on installing, repairing, cleaning and maintaining salon ventilation systems can be found on the Internet or in the phone directory under "Heating, Ventilating, and Air Conditioning". These skilled professionals can diagnose the salon's air quality and ventilation systems and provide useful solutions and advice. They can ensure the system is adequate for the salon and keep it working at its peak capacity. Whether the salon is being heated, air conditioned or neither, the HVAC fan should be in the "On" position if the building is occupied.

- 2) Professional HEPA room air cleaner - use of a stand-alone salon HEPA room air cleaner designed specifically to remove salon vapors and dusts is also recommended to help further clean the salon's air and to help keep it recirculating throughout the salon. It is best to use a professional quality air cleaner and avoid air cleaners designed for "home use". Home air cleaners are designed to remove pollen, cigarette smoke, etc., which is not the primary concern in a salon (there should never be smoking in a salon!). Dusts and vapors are the primary concern. Air cleaning devices that utilize HEPA filters are designed to remove most dusts from the air in the immediate vicinity of the air cleaning device, but will have much less effect on the breathing zone of nail technicians. Even so, they can be effective for removing fine dusts from the salon air. Newer types of filters referred to as electrically enhanced filters or polarized filters can be considered electronic versions of HEPA filters and are commonly called eHEPA filters. These claim to have the effectiveness of HEPA type filters, but allow substantially more air flow to pass through the air cleaning device. Both HEPA and eHEPA filters are designed to remove particles as small as 100th the diameter of a human hair and when used properly and according to manufacturer's directions can provide dust removal benefits to salons. Some activated charcoal air cleaner devices utilize a dust pre-filter that is machine washable or replaceable. These devices are also considered effective ways to lower airborne dust concentrations. Note: NEVER rely solely on stand-alone air filtration in the salon.

Air cleaners that produce tiny amounts of ozone (parts-per-billion) may neutralize some odors, but they do not remove vapors or dusts. Ozone is a hazardous air contaminant, even at very low concentrations. The Environmental Protection Agency (EPA) has warned all consumers against using air cleaners that release ozone due to the health risks they create. These devices sometimes cause watery eyes, runny nose, coughing, chest tightness, metallic tastes in the mouth, shortness of breath, and blurred vision. These are not effective for controlling dusts or vapors in salons. Healthy people, as well as those with respiratory difficulty, can experience breathing problems when exposed to even relatively low levels of ozone, e.g. 40 parts-per-billion.

- 3) Source Capture Systems - are designed to capture nail vapors and dust particles at their source of release and then extract them from the breathing zone, protecting the health of those working in the salon. At a minimum, these systems should draw 50 cfm of airflow when measured within 6" of the area where the dusts and vapors are released. A three-stage filtration system is recommended and should include an activated carbon filter with a minimum of 2 lbs. of activated carbon. Avoid systems with little or no activated carbon. Additionally, some systems are equipped with eHEPA filters which have enhanced dust collecting and vapor adsorption capability. When properly designed and correctly used, Source Capture Systems protect the breathing zone of both the nail technician and client. These systems are the most effective way to control and prevent inhalation of salon dusts, vapors and other airborne contaminants.

Source capture systems that return filtered air into the salon are not as effective as those designed to vent to the outdoors and are more costly to maintain, so when possible, source capture systems should be ventilated to the outside. However, when this is impractical, systems that clean the air and return it to the salon can be very useful if properly maintained.

### **Selecting and Properly Using Dust Masks**

Certain services, such as filing or shaping artificial nail enhancements, can generate large amounts of dusts in the breathing zone of the salon worker. While performing nail services, disposable dust masks can be used to control and minimize inhalation of dusts. Clients are not likely to be exposed to excessive amounts of dusts, so masks are not recommended for them. Dust masks prevent the breathing of dust particles, but cannot prevent the inhalation of vapors. Dust masks should never be used in place of proper three part ventilation as described in the previous section. Even so, when properly used, the correct mask can be an important way to prevent inhalation of excessive amounts of dust particles and is especially useful if you have pre-existing asthma, allergies, or other breathing related conditions.

The best disposable masks are those approved by the National Institute for Occupational Safety and Health (NIOSH). Masks with “N95” ratings are the most effective for salon workers. To be effective, dust masks must fit well, be used properly and also disposed of regularly. Be sure to follow manufacturer’s instructions when using these important tools. Masks without this rating, such as surgical masks, will not provide enough protection and should not be used in the salon setting. Surgical masks may help prevent the spread of germs, but will not protect you from dusts.

### **Important Tips to Remember**

- Always read, understand and follow all manufacturers’ directions and heed all product warning labels.
- An effective exhaust system provides individual ventilation to each separate work table or station.
- Salons should have their own ventilation systems and avoid sharing with adjacent businesses.
- The minimum recommended amount of fresh air per occupant for salons is 25 ft.<sup>3</sup> per minute.
- Source Capture system should be designed to withdraw at least 50 ft.<sup>3</sup> per minute of air from the breathing zone at every station
- Source Capture System filters should contain an activated carbon filter with a minimum of 2 lbs. of activated carbon.
- Use professional HEPA room air cleaners; avoid devices designed for home use and only use air cleaners in conjunction with a source capture system.
- Never use fans or open windows in place of proper three part ventilation.
- Odor does not indicate whether a vapor is safe or potentially hazardous.
- Don’t ventilate to control odors; ventilate to control vapors and dusts.
- Turn on all general ventilation systems (HVAC) during work hours and use HEPA room air cleaners along with source capture systems while performing services.
- Replace all filters regularly and according to the manufacturer’s directions.
- Avoid using ozone generating air cleaning devices.
- Dispose of all product-contaminated materials, e.g. paper towels, gauze, cotton, or other absorbent material, in a sealed container or bag.
- Use trash cans with a self-closing lid and place one at every work table.
- Empty trash cans several times per day and change liners daily.
- Dispose of waste products according to manufacturer’s instructions or Safety Data Sheets, SDS (aka MSDS).
- Properly ventilate storage area where professional products are kept.
- Keep top exhaust vents on work tables clear of any obstruction, e.g., cloth towels.
- Keep all product containers tightly closed when not in use.
- Avoid working from bulk size containers of products when performing services. Instead, transfer products from large containers to smaller, properly labeled containers. Perform this task in a well-ventilated area.
- Use dappen dish with small opening and cover it when not in use.
- Wear properly fitted N95 rated dust mask to prevent inhaling dust particles.
- Do not smoke in the salon and post “No Smoking” signs in the shop’s work area.
- Read and understand the product’s Safety Data Sheets (SDS, aka MSDS) before use and know where the SDS can be quickly located.
- Maintain the latest copy of the state cosmetology board’s rules and regulations.