

MAJOR PROGRAM POINTS

"THE OSHA LABORATORY STANDARD... A REFRESHER PROGRAM"

Training for THE OSHA LABORATORY STANDARD

Quality Safety and Health Products, for Today...and Tomorrow

OUTLINE OF MAJOR PROGRAM POINTS

The following outline summarizes the major points of information presented in the videotape program. The outline can be used to review the program before conducting a classroom session, as well as in preparing to lead a class discussion about the program.

- **Hundreds of chemicals are used in the Laboratory.**
 - Acids, Bases and Alkalis.
 - Reagents, Catalysts and Neutralizers.
 - Solvents, Cleansers and Disinfectants.

- **Generally these chemicals are used in small amounts.**
 - They can still be hazardous to our health or safety.
 - Most labs use a large variety of chemicals, which have a variety of hazards.

- **Two OSHA Standards affect Laboratories that use hazardous chemicals:**
 - Hazard Communication Standard.
 - Laboratory Standard.

- **These Standards require several things:**
 - That facilities create a Chemical Hygiene Plan.
 - That employees are provided with information about the potentially hazardous chemicals they work with.
 - That employees are trained to work safely with hazardous chemicals.

- **The Chemical Hygiene Plan also identifies procedures and equipment that are used to protect employees from hazardous chemicals.**
 - The definition of a "Hazardous Chemical" is a substance that has the potential to cause negative health affects.

- **There are five basic categories of hazardous chemicals:**
 - Sensitizers.
 - Irritants.
 - Corrosives.
 - Toxics.
 - Carcinogens.

- **Exposure to these different chemicals can cause different types of problems.**
 - Sensitizers can cause allergic skin reactions.
 - Irritants can cause inflammation of the skin, eyes or respiratory system.
 - Corrosives can cause severe burns, often irreversible.
 - Toxic chemicals can disrupt bodily functions (such as breathing).
 - Poisons can cause death (even if only a small dose).
 - Carcinogens can cause cancer.
- **All chemicals should be handled with care.**
 - Hazardous chemicals demand extra caution.
 - Protective measures depend on the hazards associated with the material.
- **There are sources of hazard information in the Laboratory:**
 - Container Labels.
 - Material Safety Data Sheets.
 - The Chemical Hygiene Plan.
 - Your lab's Chemical Hygiene Officer, Safety Director or Supervisor.
- **Read Container Labels before working with any chemicals to determine:**
 - What chemical you are working with.
 - The chemical's primary hazards.
 - Required safety precautions.
- **Any time you transfer a chemical to another container, that container must also be labeled.**
 - Everyone needs to know what's inside.
 - These are called "Secondary" containers.

- **Material Safety Data Sheets (MSDS's) provide detailed information about a chemical.**
 - Your lab maintains an MSDS for every chemical in the facility.
 - Read the MSDS before working with unfamiliar chemicals.
 - Also review MSDS's from time to time while you work.
- **Your facility's Chemical Hygiene Plan does a number of things:**
 - Outlines Standard Operating Procedures for working with hazardous chemicals.
 - Covers the selection, use and maintenance of PPE.
 - Describes the training that employees will receive.
- **Once the potential hazards that a chemical holds have been determined, steps must be taken to protect ourselves.**
- **The first step is to wear appropriate Personal Protective Equipment.**
 - Safety Glasses provide minimal eye protection.
 - Goggles should be used whenever splashes may occur.
 - Rubber gloves protect hands from most contact hazards.
 - Insulated gloves are needed when working with temperature extremes.
- **Respiratory protection can vary widely in a laboratory.**
 - Simple filter mask.
 - Air-purifying, cartridge respirators.
 - Self-Contained Breathing Apparatus (SCBA).
- **No matter what kind of respirator you use, you must be tested for a proper fit.**
 - Without a good fit, the respirator will not protect you.
 - Hazardous fumes can leak in through gaps between the mask and your face.

- **When selecting Personal Protective Equipment, consider all the hazards that a material presents.**
 - Cryogenic liquids require eye and face protection as well as insulated gloves for your hands.
 - If you are uncertain as to what PPE you should use, consult your supervisor.
- **Laboratory Hoods can also protect against chemical hazards, but only if used properly.**
 - The hood is a ventilated enclosure that helps contain fumes and vapors.
 - To be effective, air must flow freely in the hood.
 - Hoods can also act as a "physical barrier" against spills, splashes and explosions when the sash is lowered.
- **A Laboratory Hood is a tool for your protection, not a storage cabinet.**
 - Storing chemicals in a hood can be dangerous.
 - Always return supplies and glassware to their assigned storage places.
- **Handling Laboratory Glassware is also important when using potentially hazardous chemicals.**
 - Mishandling of glassware is the leading cause of accidents in the lab.
 - When a glassware accident involves chemicals, the problem can escalate quickly.
- **Inspect glassware before using it.**
 - Look for cracks, chips and other flaws.
 - Even "hair-line" cracks can cause problems, especially if temperature changes occur.
- **When handling heated Glassware, use insulated gloves.**
- **We need to be prepared to deal with laboratory emergencies, if accidents occur.**
 - Know where the MSDS's are for the chemicals you are working with.
 - Locate a copy of your facility's Chemical Hygiene Plan.

- **If there is a spill or leak of a hazardous chemical:**
 - Quickly evaluate the situation.
 - If people are in danger, evacuate the area.
 - Notify appropriate personnel.

- **If the spill is small, and you can handle it yourself:**
 - Work to contain it.
 - Use an absorbent pillow or neutral material.
 - Create a barrier around the chemical.

- **Clean-up should occur next.**
 - Not all chemicals should be handled the same way.
 - Some chemicals need to be absorbed with a non-reactive material.
 - Inorganic acids and bases need a neutralizing substance.
 - Check the MSDS for proper procedures.

- **Sometimes a chemical spill leads to an exposure situation. There are four "Routes of Entry" chemicals use to get into the body:**
 - Skin or eye contact.
 - Inhalation.
 - Ingestion.
 - Injection.

- **If you experience chemical contact with the skin or eyes, several things can occur.**
 - A "localized" reaction.
 - Absorption into the bloodstream.

- **For skin and eye contact, water is the "first line of defense".**
 - Know the location of the nearest Safety Shower and Eye Wash.
 - You should be able to find them "with your eyes closed".

- **For eye splashes, get to an Eye Wash and use the following procedures:**
 - Hold your eyes open into the stream of water.
 - Rinse for a minimum of 15 minutes.

- **If a chemical splashes onto your body:**
 - Call out for help.
 - Head for the nearest Safety Shower.
 - Remove your PPE and clothing.
 - Stay under the shower for at least 15 minutes.

- **If someone inhales hazardous gases, fumes or vapors:**
 - Get the person out of the area.
 - Find a source of fresh air.

- **If a co-worker "Ingests" a chemical:**
 - Consult the MSDS for instructions.
 - Determine if there is an antidote, or whether the victim should drink water or milk (to dilute the chemical).

- **Chemicals can also enter the body through "Injection", which can occur through:**
 - Syringes.
 - Broken glassware.
 - Other sharp materials and tools.

- **Any exposure to a hazardous chemical should be reported to your supervisor.**
 - Also seek professional medical attention.
 - Act as quickly as possible, since many exposures can cause serious problems rapidly.

- **Some chemicals can prevent Physical Hazards as well as Health Hazards.**
 - Flammable or Combustible chemicals can cause fires or explosions.
 - Compressed Gas Cylinders can rupture and cause significant damage.
 - Bloodborne Pathogens are an example of "Biological Hazards".
 - Laboratories also often have lasers, ultraviolet lights or x-ray radiation.

*** * * SUMMARY * * ***

- **Be aware of the hazards around you in the laboratory.**
- **Read Container Labels.**
- **Review Material Safety Data Sheets.**
- **Consult your facility's Chemical Hygiene Plan.**
- **Wear appropriate Personal Protective Equipment.**
- **Use Safe Work Practices.**
- **Be prepared for emergencies before they happen.**