

MAJOR PROGRAM POINTS

"RIGHT-TO-KNOW FOR BUILDING AND CONSTRUCTION COMPANIES"

Part of the "CONSTRUCTION SAFETY KIT" Series

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 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.

- **You may have heard of hazard communication and "Right-To-Know" before, but you may not have thought about how it affects you.**
 - An ordinary cleanser can actually be toxic, flammable and explosive.
- **You have the "Right-To-Know" about potentially hazardous materials that may be encountered in your workplace.**
 - That is the reason for OSHA's Hazard Communication Standard and similar state laws.
 - The goal of these laws is to make sure that you have the information, training and equipment needed to work safely around hazardous materials.
- **Chemical hazard information is communicated to you in three different ways:**
 - Material Safety Data Sheets (MSDS).
 - Container labels.
 - Your company's written "Hazard Communication Program."
- **The MSDS is a guide for the safe use of a specific chemical.**
 - Chemical manufacturers and distributors provide an MSDS for each of the products they sell.
 - Your company keeps copies of each MSDS on file for reference.
- **The Material Safety Data Sheet is the primary source for information about a chemical product. The MSDS lists:**
 - All of the names which the chemical is known by.
 - The manufacturer.
 - Any hazardous ingredients.

- **The MSDS also describes:**
 - The types of hazards that the chemical may present.
 - First aid procedures for chemical exposures.
 - Techniques for cleaning up spills.

- **To help you work with the chemical safely, the MSDS also contains information about:**
 - How to handle and store the chemical properly.
 - What types of exposure controls and personal protective equipment (PPE) should be used for protection.

- **MSDS's can come in different formats, but they all contain the same information.**
 - Become familiar with the MSDS before working with a potentially hazardous material.
 - The few minutes this takes could prevent serious problems in an emergency.

- **Another place to look for "Right-To-Know" information is on a chemical's container label. The label will provide:**
 - The material's name and potential health, fire and reactivity hazards.
 - Specific precautions to take, or situations to avoid, when working with the chemical.
 - What PPE to wear when handling the chemical.

- **Like MSDS's, all labels do not present information in the same way. They can:**
 - Be written.
 - Use shapes, numbers or letters as warnings.
 - Use "symbols" or "pictures" to represent hazards or the required PPE.

- **Whichever labeling system that your company uses, read the label carefully before working with any chemical.**
 - If a chemical is transferred to another container, make sure that the "secondary" container is also labeled properly.

- **Another place where information about hazardous chemicals is located is your company's Hazard Communication Program.**
 - It lists the hazardous materials present in your workplace.
 - Other important information is also given.
- **There are some technical terms which are used in communicating hazard information that you need to understand.**
- **The "duration of exposure" is the time that you are exposed to a substance.**
 - For example, the time between spilling a chemical on your arm and when you wash it off.
 - This type of spill would be referred to as a "short-term exposure".
- **Short-term exposure to some hazards can cause sudden reactions or "acute effects" such as a rash or a burn.**
 - In most cases, short-term exposure will cause no long-term health problems.
- **Long-term exposure to some hazardous chemicals can cause long-term... or "chronic"... health effects.**
 - For example, the chronic effect of smoking for many years might be emphysema or lung cancer.
- **The "dose" (amount) of the substance that you are exposed to is also important when determining possible health effects.**
 - The larger the dose, the more serious your reaction may be.
- **"Routes of entry" are the ways that a substance can get into your body. These include:**
 - Skin contact.
 - Inhalation.
 - Ingestion.

- **Solids, liquids and gases can all be absorbed through the skin.**
 - Liquids pose the biggest threat because they are most easily absorbed.
- **"Inhalation" is when a hazardous substance is breathed in. Substances that can be easily inhaled include:**
 - Dusts.
 - Mists.
 - Fumes.
 - Vapors.
 - Gases.
- **The third route of entry is "ingestion" (swallowing). This happens when:**
 - You eat food that has been contaminated with a hazardous material.
 - A material is transferred to your mouth or face (with your hands).
- **Remember that the effects of exposure depend upon both the "dose" and the "duration of exposure".**
 - If these are low enough, a hazardous material may cause no negative health effects at all.
- **Government agencies have set limits regarding how much of any substance you can be exposed to safely. These limits are called the:**
 - "Threshold Limit Value"(TLV).
 - "Permissible Exposure Limit"(PEL).
- **TLVs and PELs are listed on a chemical's MSDS.**
- **Hazardous chemicals have been grouped into classes, which are based on:**
 - The hazards they present.
 - The safety precautions needed when working with them.

- **Unlike many other chemicals, "toxic substances" have the potential to disrupt physical processes such as:**
 - Breathing.
 - Coordination.
 - Other bodily functions.

- **Toxic materials can often be found around the home and the workplace. They include:**
 - Pesticides.
 - Cleaners.
 - Solvents.
 - Gases.
 - Polymers.

- **Toxic gases include the fumes produced when heating, burning or welding some metals.**

- **"Poisons" are considered toxic substances.**
 - A poison can cause serious illness or death, even with a very small dose.
 - There are very few true poisons.
 - Their use in the workplace is limited.

- **Remember that not all toxic substances are poisonous.**
 - Most are not harmful in small amounts.
 - The danger lies in larger doses and longer durations.

- **"Corrosives" and "irritants" are two types of chemicals commonly found in many facilities.**
 - Corrosives can cause serious, even permanent, damage to any part of the body coming into contact with the chemical.

- **Most "acids" are considered corrosive substances. Sulfuric Acid is one of the most widely used corrosives, and can be found in:**
 - Dyes.
 - Paints.
 - Petroleum processing.
 - Automobile batteries.

- **Many "bases" are also corrosives, such as Caustic Soda, which is commonly used in:**
 - Soaps.
 - Detergents.
 - Water treatment plants.
- **Skin contact with corrosive substances can cause redness, swelling, blisters and even severe burns.**
 - Contact with the eyes can result in permanent eye damage, even blindness.
- **Inhaling corrosive chemicals can seriously damage the delicate tissues of the:**
 - Nose.
 - Mouth.
 - Throat.
 - Lungs.
- **Swallowing corrosives ("ingestion") is rare in the workplace, but can result in:**
 - Extreme pain.
 - Severe internal injuries.
 - Death.
- **"Irritants" are often diluted forms of corrosive substances, and include:**
 - Ammonia.
 - Antifreeze.
 - Thinners.
 - Degreasers.
 - Acids.
- **Other Irritants are by-products generated during combustion.**
 - An example nitrogen dioxide found in automobile exhaust.
- **Irritants generally cause only minor, temporary inflammation or swelling at the point of contact.**

- **"Flammables" and "combustibles" are another common group of hazardous chemicals, which include:**
 - Gasoline.
 - Kerosene.
 - Acetylene.
 - Toluene.

- **The key in determining whether a chemical is flammable or combustible is its "flashpoint".**
 - This is the temperature at which the chemical releases vapors that can burn.
 - It is not the liquid that burns, but the vapor.

- **Liquids that have a flashpoint of less than 100 degrees Fahrenheit are considered flammable.**
 - Gasoline, for example, has a flashpoint of -45 degrees, almost always giving off vapors which can ignite.

- **A combustible liquid must have a flashpoint between 100 degrees and 200 degrees Fahrenheit.**
 - Combustibles are easier to control because they have to be heated before they will produce burnable vapors.

- **Liquid fuels are not the only flammables and combustibles we have to watch out for.**
 - Smoking near an open can of paint or a bottle of rubbing alcohol could cause a fire.
 - These and other materials can also ignite easily.

- **"Flammable gases" come with their own unique set of hazards, and include:**
 - Hydrogen.
 - Methane.
 - Propane.
 - Butane.
 - Acetylene.

- **Most gases are usually stored in compressed gas cylinders.**
 - The pressure inside these containers is enormous.
 - The rupture or heating of a cylinder or valve can result in a sudden, violent release of pressure.
 - The cylinder or valve could even become a flying projectile.

- **Another group of hazardous chemicals which we need to be aware of are "carcinogens" and "suspected carcinogens".**
 - These chemicals are often linked to cancer.
 - Normal cells in the human body follow a pattern to reproduce and grow.
 - Carcinogens disrupt this pattern, causing cells to grow abnormally, which is why cancer is often fatal.
- **Although carcinogens can affect nearly all areas of the body, they most frequently "target" specific organs, such as the:**
 - lungs.
 - Liver.
 - Kidneys.
 - Reproductive system.
- **Unfortunately there are not usually any immediate symptoms of exposure to these substances.**
 - This is why it is extremely important to know about any carcinogen you may encounter.
- **One carcinogen that has received a lot of attention is asbestos. at one time, asbestos was used in:**
 - Pipe insulation.
 - Floor tiles.
 - Fire-proofing.
 - Automotive brake and clutch linings.
- **When inhaled, microscopic asbestos fibers can damage the lungs... and eventually cause cancer.**
- **"Suspected carcinogens" are commonly believed to increase the chance of getting cancer.**
 - Unlike confirmed carcinogens, no direct link has been established.
- **Examples of "suspected carcinogens" include**
 - Formaldehyde.
 - PCB's.
 - Carbon tetrachloride.

- **There is more to preventing cancer than simply avoiding exposure to carcinogens.**
 - Other "risk factors" affect the chances of getting cancer.
 - For instance, smoking increases the chances of getting cancer by tens or even hundreds of times.
 - Quitting is the biggest step in preventing cancer.
- **Another potential workplace hazard is "radiation".**
 - Radiation is not usually associated with chemicals.
 - But it can cause serious damage to the body's cells and tissues.
- **Radiation hazards include:**
 - Infrared radiation.
 - Ultraviolet (UV) radiation.
 - X-rays.
 - Gamma rays.
- **If you work around radiation hazards, you will need to take steps to protect yourself.**
 - Talk to your supervisor to find out more about any radiation hazards in your workplace.
- **Hazard communication goes beyond simply exercising your "Right-To-Know".**
 - You must act on what you have learned about potential hazards on the job.
- **Protection begins with selecting and using the appropriate personal protective equipment, such as:**
 - Goggles.
 - Face shields.
 - Gloves.
 - Acid suits.
- **"Respiratory protection" is especially important when working around many hazardous materials.**
 - There are many different types of respirators.
 - It is vital to use the right kind for the job.
 - Make sure your respirator fits properly.

- **When storing hazardous chemicals, a number of other things must be considered, such as:**
 - Ventilation (in case of fumes).
 - Lighting (for reading labels).
 - Identification of storage locations.
 - Strong, stable shelving.
 - Safe and easy access.

- **Small quantities of flammables or combustibles should be stored in U.L. approved cans with spring-loaded caps.**
 - These contain vapors and prevent spills.
 - Larger quantities of flammable materials need to be stored in a flammable materials cabinet.

- **Compressed gas cylinders have several special storage considerations as well.**
 - They must be stored upright, with a safety cap over the valve.
 - A safety chain or bracket is required to prevent the cylinder from falling over.

- **In "exposure situations", you need to act quickly to minimize the damage from hazardous materials.**
 - Always know the nearest location of running water (water is usually the first line of defense against chemical injuries).
 - For small chemical splashes, immerse the effected area in running water for at least 15 minutes.
 - For larger exposures, get to a safety shower quickly.
 - Remove contaminated clothing and stay in the shower stream for at least 15 minutes.

- **Getting chemicals in your eyes can cause severe damage. Get to an eye wash station immediately.**
 - Keep you eyes open and flush them for at least 15 minutes.

- **Inhaling hazardous materials can be dangerous, even deadly.**
 - If someone is overcome by fumes, get them out of the area and into fresh air.
 - Check the container label or MSDS to see if immediate medical attention is needed.

- **Swallowing a hazardous substance is extremely dangerous.**
 - Consult the MSDS immediately.
 - It may be necessary to dilute the chemical with water or milk, or induce vomiting.
 - In some cases, however, vomiting may cause more damage.
- **Seek medical attention after any exposure to a hazardous material, no matter how minor.**
 - Some chemicals have delayed or long-term effects.
 - Supply medical personnel with the chemical's MSDS.
- **In the event of a leak or a spill of a hazardous chemical, you must act quickly.**
 - The first concern is people's health and safety.
 - Tend to injuries immediately.
 - Evacuate the area if necessary.
 - Notify appropriate personnel.
- **If the spill is of a flammable or combustible substance, you should immediately remove sources of heat or ignition.**
 - But do not unplug machinery or equipment (this could cause sparks).
- **If you are going to be involved in cleaning up a hazardous spill, make sure to use the proper PPE and cleanup equipment.**
 - Check the MSDS or your company's Hazard Communication Plan Program.
- **First, work to contain the spill and minimize contamination.**
 - Create a barrier around the spill with an absorbent material.
 - Use a cleanup kit, if available.
 - In most cases you will need to absorb the spill with a neutral material.
- **Spills of some substances require special procedures.**
 - For example, use non-sparking tools when cleaning up a flammable.

- **Hazardous materials can not just be thrown into the trash.**
 - Many chemicals are classified as "regulated waste."
 - They must be removed by licensed disposal companies.
 - Check with your supervisor or your company's Safety Manager.
- **OSHA's Hazard Communication Standard and other "Right-To-Know" laws are there to get us the information we need to work safely.**
 - But only you can take the necessary steps to protect yourself from hazardous chemicals!