Chemical Safety

Overview

Introduction

There are a variety of chemical hazards present in DLA industrial operations. It is the employer's responsibility to inform their employees about these hazards. Primarily this is accomplished by following the requirements of OSHA's HAZCOM standard. In some situations there are additional regulatory requirements related to chemical safety.

In this module

In this module we will review the HAZCOM standard, provide more detail on controlling chemical hazards, and study MSDSs and Warning Labels. In addition, we will look at specific information on the hazards of

- asbestos
- compressed gas cylinders, and
- AEDA.

We will also look at written Program requirements for

- lab safety
- respiratory protection
- HAZWOPER
- SPCC, and
- oil.

When unsure of what's inside, use MSDS as your guide.

Hazard Communication Standard

Introduction

The Hazard Communication Standard, also known as the Right To Know Act, was issued by the Occupational Safety and Health Administration (OSHA) in 1983 and revised in 1987. Executive Order 12196 of 1980 and 29 CFR Part 1960 provide the authority for implementing this Standard within the Federal sector. The Hazard Communication Standard helps protect your right to work in a safe and healthful environment. It requires that you be

- informed about hazardous chemicals in your workplace, and
- trained to work safely with these materials.

The HAZCOM standard's goals

This standard strives to achieve the following goals:

- Reduce the incidence of injury and illness caused by hazardous chemicals in the workplace.
- Identify and evaluate chemical hazards.
- Establish uniform requirements for communicating information about chemical hazards to employees.

Responsibilities of chemical manufacturers

In order to achieve these goals, chemical manufacturers and importers must follow these guidelines:

- Conduct hazard determinations to identify the hazards of, and appropriate control measures for the chemicals they produce or import.
- Label all containers of hazardous material leaving the workplace to communicate the identity of the material, all-appropriate hazard warnings, and the name and address of the responsible party.
- Obtain or prepare an accurate and up-to-date MSDS for each hazardous chemical material sold and provide a copy to every employer that purchases the chemical.
- Add new information to the MSDS on the hazards of a chemical, and/or appropriate control measures within 3 months after becoming aware of such information.

Hazard Communication Standard, Continued

Responsibilities of employers

The standard requires employers to do the following:

- Maintain an MSDS for every hazardous chemical used and make the MSDSs readily available to workers on every shift.
- Make sure that containers of hazardous material are labeled, tagged, or otherwise marked to identify the chemical and warn workers of the hazards it presents.
- Maintain an up-to-date list of all hazardous chemical materials known to be present in the workplace and make this list readily available to workers at all times.
- Inform and train workers.
- Maintain a written local Hazard Communication Program that describes how the organization complies with the above actions and make this written program available.

Chemical Forms and Exposure Hazards

Introduction

Many work processes require the use of hazardous chemicals. Having a safe and healthful work environment means that you must recognize potential chemical hazards and protect yourself from them. In this segment you will see what forms of chemicals can enter your body.

Categories of chemical hazards

The Hazard Communication Standard defines two main categories of chemical hazards:

- Physical hazards are chemicals that cause explosion, fires, violent chemical reactions, or other hazardous situations.
- Health hazards are chemicals that can cause illness or injury when inhaled or swallowed, or through skin or eye contact.

Chemical forms

All chemicals exist in one of three basic forms:

- Solids have a definite shape and can become airborne as dust or fume particles.
- Liquids take the shape of their container and can become airborne as mists or vapors.
- Gases are easily compressed, expand to fill a container, and become airborne when not contained.

Both dusts and fumes are made up of tiny solid particles. Mechanical operations like grinding and crushing produce dust. So does transfer of powered or fibrous solids and abrasive cleaning. Fumes form vapor condensation when solids are melted in operations like welding and metal casting.

Vapors are formed above any exposed liquid surface. Heating a liquid makes it vaporize more quickly. Mist is made up of tiny droplets that become airborne when liquids are sprayed, agitated, or applied to a hot surface. Mists also form when hot vapors cool in air and condense.

Chemical Forms and Exposure Hazards, Continued

Exposure routes

Exposure routes are ways that chemicals enter your body. There are five main routes of exposure:

- Breathing/inhalation takes a chemical from your nose or mouth, down your windpipe, and into your lungs. Some chemicals become trapped in your lungs. Others leave when you exhale. But many chemicals pass from your lungs into your bloodstream.

- Skin/Eye Contact can cause anything from reddening or itching to severe rashes, burns, loss of eyesight, or even death.

- Skin absorption hazards pass through the skin on contact and enter the bloodstream. Once in the bloodstream, chemicals can spread throughout your body and cause injury or disease far away from the original sight of contact. Chemicals can also be absorbed through the mucous membranes of the eye.

- Swallowing/ingestion takes a chemical from your mouth, down your esophagus, and into your stomach, and many chemicals enter the intestines, where they can be absorbed into the bloodstream and spread throughout the body. Damage can be done at any point along the way.

- Puncture takes a toxin through the skin and into the blood stream

Hazards

Degree of the hazard

The degree of hazard associated with exposure to health hazards depends on the following conditions:

- Toxicity
- Exposure route
- Dosage
- Individual differences

Toxicity effects of exposure

There are three levels of chemical toxicity effects:

- Low—Minor symptoms that go away when exposure stops
- Medium—Require medical attention, may be permanent
- High—Can cause death or severely disabling conditions

Exposure route

Some chemicals are more toxic by one exposure route than by another. For example, onion juice vapor irritates the eyes, but skin contact with onion juice produces little or no effect.

Dosage

Dosage depends on

- how much you are exposed to each time
- how long each exposure lasts, and
- how often you are exposed.

Individual differences

Individual differences have an effect on the exposure response. These differences include:

- Work practices
- Age and size
- General physical and emotional health
- Allergies and sensitivities
- Level of exertion
- Combinations of chemicals in the body, which depends on what medications you are taking and whether or not you smoke tobacco or drink alcoholic beverages

Types of Physical and Health Hazards

Introduction

We have seen that the Hazard Communication Standard covers both physical hazards and health hazards. This segment introduces you to the different types of hazards in each of these two categories. It helps you understand how each type of hazard can affect your health and safety.

Physical hazards

The following table identifies types of physical hazards.

Hazard	Description
Pressurization	Contain a lot of stored energy; sudden release produces a rocket effect
Explosive	Cause a sudden release of pressure and heat
Fire	Ignite and burn easily or cause/support fire in other materials
Unstable/Reactive	Produce or release hazards under commonly occurring temperatures, pressures, or light conditions

Chemicals that exhibit fire hazards

The following chemicals present fire hazards:

- Pyrophorics ignite spontaneously in air below 130 °F.
- Flammable liquids ignite easily at temperatures below 100 °F.
- Combustible liquids ignite easily at or above 100 °F, but below 200 °F.
- Oxidizers supply the oxygen required to start or support fire.

Unstable or reactive chemicals

The following hazards are representative of unstable or reactive chemicals:

- Decomposition—easily break up into simpler substances
- Polymerization—self-react to form long molecular chains, releasing heat and/or a hazardous chemical in the process
- Water Reactive—react violently with water resulting in physical and/or health hazards

Health hazards

The following table identifies types of health hazards:

Hazard	Definition
Irritants	Cause reddening, itching, or other irritation on contact
Corrosives	Burn or eat away body tissues on contact
Cryogenics	Freeze body tissue on contact
Reproductive	Target the reproductive system, causing sterility, miscarriages, fetal injury, or birth defects
Sanitizers	Cause an allergic-like response in many people who are repeatedly exposed
Carcinogens	Cause cancer
Target Organ	Damages a specific organ or system

Controlling Chemical Hazards

Three methods of control

There are three basic methods of controlling chemical hazards; but the specific MSDS should be reviewed for recommended method:

- Engineering controls
- Administrative controls
- Personal Protective Equipment (PPE)

Engineering controls

Engineering controls include the following:

- Substitution—replacing a chemical, process, or piece of equipment with a less hazardous or more efficient one. Example: using steam instead of solvent cleaning.
- Isolation—using an enclosure, barrier, or safe distance to separate workers from exposure hazards. Example: machine enclosures, enclosed control rooms, splash guards.
- General ventilation—mixing an airborne hazard with fresh air to reduce exposure levels; this is only suitable for hazards of low toxicity that mix readily with air. Example: fans, make-up air vents.
- Local exhaust ventilation—capturing an airborne hazard as it is released and taking it out of the workplace to eliminate exposure. Example: hoods, slots, and dust collectors

Administrative controls

Administrative controls include the following:

- Documentation, information and training—warning labels, MSDSs, Hazardous Material Authorized Use List, written Hazard Communication Program
- Work Practices—using all available controls correctly, reporting uncontrolled hazards promptly
- Housekeeping—containing and removing hazards—vacuuming toxic dusts, proper storage and handling, correct disposal of chemical wastes. Clean up of hazardous chemicals should be performed by qualified/trained personnel.

- Monitoring—area monitoring, and personal exposure sampling for individual monitoring, medical exams and laboratory tests

Controlling Chemical Hazards, Continued

Personnel Protective Equipment (PPE)

PPE puts a barrier between the hazard and the individual who wears it. It can protect against both physical hazards and health hazards.

Type of PPE	Examples
Protective gloves and clothing	Hats, hoods, boots, impervious gloves, cloth gloves, aprons, lab coats, impervious boots
Eye and face protection	Safety glasses, splash goggles, face masks and shields
Air purifying respirators	Respirators with a cartridge or filter that removes contaminants from the air you breathe
Air supplied respirators	Self-contained units that supply air from a tank carried on the back; air-line units that provide air from a remote source

To protect you, PPE must be matched to the specific hazard. For example, cloth gloves are useless for protection against a corrosive liquid. **PPE is also useless unless you wear it.** Proper fit, correct use, and routine maintenance are also critical.

Material Safety Data Sheets (MSDSs)

General information

Every MSDS must contain the following general information:

- Name, address, and telephone number of the party responsible for preparing or distributing the MSDS, who can provide additional information on the hazardous chemical, and appropriate emergency procedures
- Name of the chemical material as it appears on the warning label
- Health hazards of the chemical, including signs and symptoms of exposure
- Precautions for safe handling and use
- Any applicable control measures

Use of the MSDS

Many chemical materials are mixtures. Mixtures contain more than one ingredient. The MSDS must identify all hazardous ingredients in a mixture. The MSDS is one of those rare items that is truly functional; it can save your life. The objective of the MSDS is to clearly tell you about the hazards of the materials you work with so that you can protect yourself and respond to emergency situations. An understanding of how to find and interpret the data on the MSDS is your best defense against misuse of the hazardous material.

Description of the MSDS Sections

Sections 1 through 8

The MSDS contains these sections:

- **Section 1: Material Identification.** This section identifies the material and the supplier. The MSDS material identity must match the name on the container. Thousands of materials with many similar names are found in workplaces. A mistake in having the wrong MSDS for the material being used needs to be corrected immediately.

- **Section 2: Ingredients and Hazards.** This section identifies more information about the material. The product's hazardous ingredients are listed and the relative percentage of concentration. If established, worker exposure limits are shown. Exposure to certain hazardous materials may be acceptable, but only for those periods of time not to exceed certain established limits. You learn these limits from the MSDS.

- **Section 3: Physical/Chemical Characteristics.** This section has information on the material's boiling point and melting point, solubility in water, viscosity, specific gravity, evaporation rate, vapor density, and normal appearance and odor. Knowing these characteristics can help you predict how the material will act (float on water, lighter or heavier than air, etc.) and can help you recognize anything different from normal which could possibly be dangerous.

- **Section 4: Fire and Explosion Data.** The flash point tells you the minimum temperature at which you must start worrying about flammable or explosive vapors. Flammability limits indicate the concentration of the material, in the form of a gas or vapor, that is needed for it to ignite. Ignition is less likely below the lower limit or above the upper limit. Compare it to an engine that won't start if the carburetor is too lean (below the lower limit) or too rich (above the upper limit). The MSDS also specifies the type of fire extinguisher to use in case of a fire, and if there are any special hazards or fire-fighting procedures to follow.

- **Section 5: Reactivity Data.** This section explains what could happen if this material is combined with other chemicals or with water or air. This information is especially useful if a spill occurs. It can also help you decide where and how to store materials that could have dangerous reactions if accidentally combined. It also tells you if a material is stable, exactly what it should be kept away from, and what situations to avoid.

- **Section 6: Health Hazard Information.** This section is one of the most important parts of the MSDS. It tells how the chemical could enter your body: inhaling, swallowing, or through the skin. It lists specific possible health hazards—things that could happen if you are overexposed to the chemical. Some effects like skin burns are acute—they show up right after exposure. Others are chronic—they are the result of exposure long ago or repeated small exposures over a long period of time. The MSDS also tells the signs and symptoms of exposure to watch out for; things like headache, nausea, dizziness or rashes. If the material is believed to be a carcinogen (causes cancer), that will be listed. Medical and first aid treatment for accidental exposure are also described.

Description of the MSDS Sections, Continued

Sections 1 through 8, Continued

- **Section 7: Spill, Leak, and Disposal Procedures.** After the MSDS explains all the reasons why you should handle and use a substance carefully, it tells you how to do it. Safe work practices to follow in the event of an accident are described. This is also the section that tells you how to handle and store the material safely, as well as any other precautions you might need to follow.

- **Section 8: Special Protection Information.** Methods for reducing your exposure to a particular hazardous material are described. The methods may include ventilation requirements, respiratory protection, and protective clothing such as gloves, aprons, and eye protection.

Hazard Warning Labels

Label information

The Hazard Communication Standard requires the use of hazard warning labels that include the following information:

- The name and identity of the chemical that matches the name and identity of the MSDS
- Hazardous Material Authorized Use List
- All appropriate hazard warnings

Labels on containers that leave the workplace must also contain the name and address of the responsible party. The warning label is often your first source of information about chemical hazards. The name and identity on the label can be used to find the right MSDS, where you will find additional information.

Placement of labels

Warning labels must be affixed to bags, barrels, bottles, boxes, cans, cylinders, drums, reaction vessels, storage tanks, and other chemical containers. Placards or bin labels can be used for stationary containers as long as the placard clearly identifies the containers to which it applies, and provides the same information required for any other type of hazard warning labels. Pipes carrying chemicals do not have to be labeled, but you must be informed about the hazards of any chemicals carried through your work area in unlabeled pipes. A transfer container does not have to be labeled provided that container is under the control of only one person and the container is filled and emptied in the same shift.

Asbestos

Introduction

In the past, asbestos was added to a variety of products to strengthen them and provide heat insulation and fire resistance. In most products, asbestos is combined with a binding material so that it is not readily released into the air. However, if asbestos should become airborne and is inhaled, it can remain in the lungs for a long period of time, producing the risk for severe health problems that do not appear until many years later.

Types of asbestos

Asbestos is a name given to a group of minerals that occur naturally as masses of long silky fibers. Asbestos is known for its unique properties of being resistant to abrasion, inert to acid and alkaline solutions, and stable at high temperatures. Asbestos fibers are woven together or incorporated within other materials to create many products. There are three main types of asbestos fibers:

- Chrysotile (White Asbestos): Fine, silky, flexible white fibers (the most commonly used asbestos in the United States)
- Amosite (Brown Asbestos): Straight, brittle fibers that are light gray to pale brown (the most commonly used in thermal system insulation)
- Crocidolite (Blue Asbestos): Straight blue fibers

There are three other types of asbestos fibers: Anthopylite, Tremolite, and Actinolite, which are found as contaminants in Asbestos Containing Materials (ACM).

Asbestos in DoD supply system

More than 3,000 products in use today contain asbestos. Most of these are materials used in heat and acoustic insulation, fireproofing, and roofing and flooring. These are some of the more common Federal Stock Classes (FSCs) that may contain asbestos:

- 2530: Vehicular brake, steering, axle, wheel, and track components
- 5330: Packing and gasket materials
- 5640: Wallboard, building paper, and thermal insulation materials
- 5650: Roofing and siding materials
- 5970: Electrical insulators and insulating materials

Asbestos, Continued

Exposure

Asbestos is rarely used alone, and it is generally safe when combined with other materials with strong bonding agents. As long as the material remains bonded so that fibers are not released, it poses no health risk. But occasionally asbestos fibers become loose and airborne, most often when contained in soft, easily crumbled materials.

While ACM is not normally an inhalation hazard, it can be crumbled, pulverized, or reduced to powder by hand pressure which is known as friable asbestos. When friable ACM is damaged or disturbed, it releases fibers into the air. Airborne asbestos fibers are small, odorless, and tasteless. Because asbestos fibers are small and light, they can be suspended in the air for long periods. People whose work brings them into contact with asbestos may inhale fibers.

Even in such well-bounded materials as floor tiles and painted surfaces, asbestos can become loose and airborne when these materials are cut, scraped, filed, sanded, or removed. Remodeling or demolition often causes the release of asbestos fibers.

Hazards

Once inhaled, the small, inert asbestos fibers can easily penetrate the body's defenses. They are deposited and retained in the airways and tissues of the lungs. Asbestos fibers can have serious effects on your health if inhaled. There is no known safe exposure to asbestos—the greater the exposure, the greater the risk of developing an asbestos-related disease. The amount of time between exposure to asbestos and the first signs of disease can be as much as 30 years. Asbestos can cause asbestosis, a scarring of the lungs that leads to breathing problems and heart failure. Workers who manufacture or use asbestos products and have high exposures to asbestos are often affected with asbestosis.

Safety guidelines

Take the following precautions when working in and around asbestos or ACM:

<u>Always</u>

- Wash your hands and face before eating, drinking, or smoking.
- Follow work-site SOP's.
- Check your PPE prior to entering an asbestos work or storage area.
- Follow posted warning signs and labels.
- Wear respiratory protection when working with friable asbestos (asbestos that can easily be crumbled).

<u>Never</u> eat, drink, smoke, or chew gum in an area that has asbestos danger signs posted or where any asbestos work is being performed.

Compressed Gas Cylinders

Introduction

Compressed gases present a unique hazard. Depending on the particular gas, there is a potential for simultaneous exposure to both mechanical and chemical hazards.

Mechanical hazards

Since the gases are contained in heavy, highly pressurized metal containers, the large amount of potential energy resulting from compression of the gas makes the cylinder a potential rocket or fragmentation bomb.

Chemical hazards

Gases within the cylinder may be

- flammable
- explosive
- corrosive
- poisonous
- inert, or
- may contain a combination of hazards.

Safety guidelines for identification

Use these guidelines to identify compressed gases:

- Always read the label. The contents of any compressed gas cylinder must be clearly identified. Identification will be stenciled or stamped on the cylinder or label.

- Never rely on cylinder color for identification. Color-coding is not reliable as it varies with suppliers. Filled compressed gas cylinders will be identified with two tags (DD Form 1574, Serviceable tag). One tag will identify the content of the cylinder, and the other will identify the cylinder. This is in addition to the Department of Transportation (DoT) label identification.

- DD Form 1577–2 (Unserviceable–Repairable tag) will be used to identify cylinders suspected of a defective valve or other unusual conditions.

Compressed Gas Cylinders, Continued

Safety guidelines for handling and use

Take the following precautions when handling or using cylinders:

- Inspect tank, cylinder, or other container before it is cut, welded, or other hot work is performed to ensure it is purged or inert.
- If a leaking cylinder is discovered, move it to a safe place and follow your site-specific spill plan.
- To minimize undesirable connections, only Compressed Gas Association (CGA) standard combinations of valves and fittings are used in compressed gas installations. The assembly of miscellaneous parts should be avoided.
- Examine threads on cylinder valves, regulators, and other fittings to ensure they correspond and are undamaged.
- Place cylinder so valve is accessible at all times. Main cylinder valves must be closed as soon as they are no longer necessary.
- Open cylinders slowly. Main cylinder valves are never opened all the way. When opening the valve on a cylinder containing an irritating or toxic gas, position the cylinder valve pointing away from operator and warn those working nearby.
- Secure cylinders at all times to prevent tipping.
- Cylinders containing flammable gases must not be stored in close proximity to open flames, areas where electrical sparks are generated, or where other sources of ignition may be present.
- Cylinders containing acetylene shall never be stored on their side.
- Regulators are specific and not necessarily interchangeable. Make sure regulator and valve fittings are compatible.
- Never use oil or grease on the regulator of a cylinder valve.
- Always use safety glasses when handling and using compressed gases.

Ammunition, Explosives, and Dangerous Articles (AEDA)

Applicability

Information in this section generally is applicable to employees at Defense Reutilization and Marketing Offices (DRMOs); however, the nature of DoD's business allows for applicability to other DLA organizations.

Definitions

AEDA is any substance that by its composition and chemical characteristics, alone or when combined with another substance, is or becomes an explosive or propellant, or is hazardous or dangerous to personnel, animal or plant-life, structures, equipment or the environment as a result of blast, fire, fragment, or radiological or toxic effects. It includes, but is not limited to, ammunition and explosives as defined in DoD 5154.4S. AEDA is not a criterion for demilitarization; only items of AEDA that are included on the Munitions List have been assigned a demilitarization code other than "A."

ECP: Explosives Contaminated Property

UXO: Unidentified Explosive Object

EOD: Explosives Ordinance Disposal

Safety guidelines for live AEDA/ECP

When material that has been reported or physically turned-in to the DRMO is found to contain live AEDA or to be ECP, take the following actions:

- All personnel will immediately vacate the area when suspected live AEDA/ECP is discovered.
- The DRMO shall prepare and distribute to appropriate parties a special Situation Report (SITREP) addressing the incident.
- The DRMO shall request the assistance of the generating activity to provide qualified personnel to investigate the incident and take appropriate actions.
- The generating activity shall respond by having qualified personnel investigate the incident and set a course of corrective action. Actions may include reinspection, recertification, retrieval, accountability, or custody, as appropriate. Actions shall be based upon applicable regulations and agreements, and take into consideration public safety, environmental impact, and Government liability.
- In the event of mixed lots, the pertinent activities shall participate in a joint investigation and determine appropriate actions.
- Military Service activities shall establish a focal point to consult with the DRMO and the Sales Contracting Officer to determine the appropriate course of action based upon the MOU and pertinent regulations. When the generating activity and DRMO do not agree on incident remedial actions, the focal point shall coordinate with HQ DRMS to attempt to reach an agreement.

Ammunition, Explosives, and Dangerous Articles (AEDA), Continued

Safety guidelines for identifying UXO and EOD

Use these safety precautions for identifying UXO and EOD:

- If you suspect chemical warfare materiel, cease all field operations, withdraw in an upwind direction, and call the local EOD unit for your geographical area or for your installation.
- Consider all practice ammunition to contain live explosives.
- Never assume that the color code on an ammunition item is correct.Never move any piece of ordnance to discover any identifying characteristics:Note the color of the piece of ordnance.
  - Note any painted bands or lettering.
  - Note any other distinguishing marks or identifying features.
- Do not depend on color codes for a positive identification of ordnance.
- Color codes are only an indication when dealing with UXO.

Safety guidelines for approaching/touching UXO and EOD

Following these safety precautions when near UXO and EOD:

- Do not touch, directly or indirectly, a UXO at any time.
- Always approach a suspected UXO from a 45-degree angle from the rear of the item.
- Never spend more time near a suspected UXO than is absolutely necessary.
- Never attempt to remove anything from any suspected UXO.
- Never move any wire or other parts on an ammunition item.Do not drop, jar, strike, or otherwise mishandle a projectile at any time.
- Stay clear of the front and rear of ejection type projectiles.
- Do not pick up any projectile unless instructed to do so by a qualified EOD/UXO technician.
- Consider all practice projectiles to contain a live charge.
- Never handle, touch, or go near any known live projectile, regardless of its fusing.
- Never remove any foreign matter from a fuse or projectile.
- Avoid entanglement in guidance wires for wire-guided missiles, as this could jar the missile and cause a detonation.

Lab Safety

Introduction

Chemicals are important in the production of items that help make our lives better and more enjoyable. Some chemicals can and do pose a serious hazard to our health if used carelessly. To provide for safe use of hazardous chemicals, OSHA enacted a standard on Occupational Exposures to Hazardous Chemicals in Laboratories (29 CFR 1910.1450).

Chemical Hygiene Plan

Employers having laboratories using hazardous chemicals must develop a written Chemical Hygiene Plan. The plan is designed to help limit exposure to and protect employees from chemical health hazards in the laboratory. The plan must be available to all employees.

Chemical Hygiene Plan contents

The Chemical Hygiene Plan covers eight topics:

1. Identifies who is responsible for implementing the plan, including the Chemical Hygiene Officer.

2. States the required employee medical consultations and examinations.

3. Lists the procedures your employer uses to determine and implement needed hazard control measures.

4. Provides the procedures for ensuring fume hoods and other protective equipment are working.

5. Tells what the organization's standard operating procedures are.

6. Identifies the specific operations requiring advance approval.

7. Stipulates protective measures needed for particularly hazardous substances.

8. Provides required employee information and training.

Respiratory Protection Program

Written program

Field activities with operations requiring respiratory protection will develop and implement a written Respiratory Protection Program. The requirements for a written program are found in 29 CFR 1910.134. A trained program administrator must administer the program. Supervisors will provide employees with required or optional use respiratory protection, whether working at DLA or at contractor facilities. The program will be updated as necessary to reflect any changes in workplace conditions. The SOHO reviews and approves written respiratory protection programs.

Supervisor responsibilities

As a supervisor, you have the following responsibilities:

- Know work area hazards.
- Know the types of respirators that need to be used.
- Ensure the program and worksite specific procedures are followed.
- Enforce use of respirators where required.
- Ensure employees receive training and medical evaluations.
- Coordinate annual re-training.
- Notify the SOHO of any problems or changes in work processes.

Employee responsibilities

Employees will have the following responsibilities:

- Participate in all training.
- Wear respirator in accordance with worksite procedures.
- Maintain equipment.
- Report any malfunctions or concerns to supervisor.

Hazard assessments

Each workplace will be evaluated for respirator hazards. This evaluation shall include a reasonable estimate of employee exposures to a respiratory hazard and an identification of the contaminant's chemical state and physical form. Once a respiratory hazard has been identified, the work area must be monitored for any changes in the hazard or for new hazards. Changes in work processes, substitutions of materials, or changes in the ventilation of an area may necessitate re-testing. Supervisors are responsible for monitoring day-to-day operations and reporting changes to the SOHO.

When controlling airborne hazards, engineering and administrative controls will be considered first as a means to reduce the hazards.

Training

Required users of respirators will receive initial training in their use and maintenance. A qualified person who is knowledgeable of the OSHA standard and trained in respirator use and fit test procedures provides training. Re-training will occur at least annually or whenever there is a change in the workplace, type of respirator used, or inadequacies in employee knowledge or use of the respirator.

HAZWOPER

Introduction

In a world that increasingly relies on chemicals, the transportation, handling, and storing of those substances concerns everyone. OSHA issued a special regulation dealing specifically with spills of hazardous substances. This regulation, called the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, is found at 29 CFR 1910.120, specifically Paragraph (q).

Additional guidance

In addition to the OSHA standard, the Environmental Protection Agency (EPA) also issued some regulations dealing with HAZWOPER. These regulations are at 40 CFR Parts 264 and 265.

Applicability

29 CFR 1910.120(q), the emergency response to hazardous substance releases, applies to employers whose employees are engaged in emergency response, no matter where it occurs, except as stated in the next section.

Exclusions

There are some situations that are excluded from the application of 29 CFR 1910.120(q):

- Hazardous waste cleanup sites
- Hazardous waste operations at treatment, storage, and disposal (TSD) facilities regulated under 40 CFR Parts 264 and 265
- Emergency response organizations that have implemented a program equivalent to 29 CFR 1910.120(q)

HAZWOPER Plan

The employer shall develop and implement a HAZWOPER Plan to handle anticipated emergencies prior to the commencement of emergency response operations. This plan may set forth which personnel should be trained and when.

Plan elements

The HAZWOPER Plan should cover the following elements:

- An Emergency Response Plan (29 CFR 1910.38)
- Both a PPE and respiratory plan
- A Medical Surveillance Program
- Decontamination procedures
- What site control measures are to be used

HAZWOPER, Continued

Training

Training shall be based on the duties and functions to be performed by each responder in an emergency response organization. These are the levels of training:

- First responder awareness level
- First responder operations level
- Hazardous materials technician
- Hazardous materials specialist
- On-scene incident commander

Spill Prevention, Containment, and Countermeasure (SPCC)

Introduction

In 40 CFR Sections 112.1–.7, EPA requires the preparation and maintenance of an SPCC Plan. This plan describes the equipment, manpower, procedures, and countermeasures for preventing and controlling oil spills.

SPCC Plan elements

These are key plan elements:

- Responsibilities: Who is responsible for preparing and maintaining the plan.
- Description of the containment and diversionary structures at the worksite: This can be quite a project, depending on the number of different types of structures at the worksite.

Oil Spill Prevention and Response Plan

Introduction

40 CFR Section 130 requires all operations involving the transport of oil and the offering or acceptance of oil for transportation to specify the communication, packaging, and emergency response requirements for those operations.

Written plan elements

These are the key plan elements:

- Responsibilities: Who is responsible for the oil and transportation-related operations, and who reviews and updates the program.
- Basic Response Plan: Outlines the types of materials, packaging used, and quantities that could escape from this packaging. Provides procedures in case a release does occur.