

HAZARD COMMUNICATION PROGRAM AND CHEMICAL HAZARDS



OCCUPATIONAL SAFETY AND HEALTH MANUAL

Policy Owner:	Risk Management	Effective Date:	March 1, 2021
Category:	600	Reviewed Date:	n/a
Policy Number:	011	Revised Date:	n/a
Scope:	All Employees	Training Needed:	Yes
Associated Form:	No, but Chemical SDS must be kept	Training Frequency:	At hire and annually for related positions

HAZARD COMMUNICATION PROGRAM AND CHEMICAL HAZARDS

(This chapter does not cover the requirements of OAR 437: Division 2 and 29 CFR 1910.119 Process Safety Management of Highly Hazardous Chemicals. Water treatment facilities will need to comply with this standard if they are using 1500 pounds or more of chlorine.)

The Hazard Communication Program is an integral part of our employee safety and health awareness program. We have adopted chemical hazard control programs to ensure our compliance with various state and federal hazardous material regulations and the safety of our employees. For more information, please refer to Oregon OSHA's and Federal OSHA standards pertaining to Hazard communication and pipe labeling listed below.

[Oregon OSHA's Hazard Communication Rule Division 2/Z, 1910.1200](#)

[Oregon OSHA Rules for Pipe Labeling](#)

The purpose of this program is to provide information about chemical hazards and the control of hazards via our comprehensive Hazard Communication Program, which includes container labeling, Safety Data Sheets (SDS) and employee training. The goal of the program is to eliminate the possibility of illnesses and injuries caused by exposure to chemicals.

This written program is available at:

Facility Location	Contact Person
Public Works – supervisor's office	Field Supervisor
Water Treatment Plant – admin office	Superintendent
Wastewater Treatment Plant – admin office	Superintendent
Florence Events Center – admin office	Director/Manager
City Hall – outside HR office	Human Resources
Justice Center – breakroom	Admin Assistant

The program is available for review by any employee, outside contractors, or the Oregon OSHA compliance staff during an inspection.

DEFINITIONS

Hazardous Chemical: Any chemical which is a physical hazard or a health hazard (potential injury or disease agent). HCS defines a hazardous chemical as any chemical that is classified as a physical hazard, a health hazard, a simple ashyxiant, combustible dust, pyrophoric gas, or a hazard not otherwise classified.

Hazard warning (label): Any words, pictures, symbols, or combination appearing on a label or other appropriate form of warning to convey the hazards of the chemical in the container.

Health Hazards (chemicals): Chemicals are health hazards when they are classified as posing one of the following hazardous effects: acute toxicity (any route of exposure), aspiration toxicity, carcinogenicity, germ cell mutagenicity, reproductive toxicity, respiratory or skin sensitizations, serious eye damage or eye irritation, skin corrosion or irritation, or specific toxic organ toxicity (single or repeated exposure). Can range from acute to chronic.

Physical Hazards (chemicals): Chemicals are physical hazards when they are classified as posing one of these hazardous effects: corrosion to metals, explosive, flammable (includes aerosols, gases, liquids, and solids), pressurized gases, organic peroxides, oxidizers (includes gases, liquids, and solids), pyrophoric (includes liquids and solids), self-heating substances, self-reactive substances, and substances that emit flammable gases in contact with water.

Safety Data Sheet (SDS): Formerly known as a material safety data sheet (MSDS). Written or printed material concerning a hazardous chemical which is prepared in accordance with Oregon OSHA rule Division 2/z, 1910.1200. Identify hazardous properties of chemicals that may pose a health or physical hazard. Provide appropriate information on appropriate personal protective equipment and first aid treatment is exposed to the chemical.

GENERAL RESPONSIBILITIES

Management: It is the management's overall responsibility to see that hazardous materials are handled safely and that employees are trained in the physical and health hazards associated with the chemicals.

Supervisor and/or Department Manager: The supervisor and the Department managers will work together to ensure employee training, appropriate container labeling, availability of the SDS, maintenance of the chemical inventory, and information is provided to outside contractors. The supervisor will see that the initial Hazard Communication orientation for all new employees, volunteers, and temporary employees is given.

Supervisor: Each supervisor is responsible for maintaining SDSs for their work areas. The supervisor will ensure that all their employees are trained on specific chemical hazards and necessary precautions. They are also responsible to see that secondary containers are labeled.

Staff who order chemical products: Staff who orders chemical products are to ensure that original containers have legible labels and that SDS have been received when that product is delivered.

All Employees: All Employees are responsible to read the labels and SDS for products they use. They are also required to attend hazard communication training and properly handle chemicals per the labels, SDS and training. Employees generating secondary containers are responsible to label the containers or see that they are using properly labeled containers.

CONTAINER LABELING

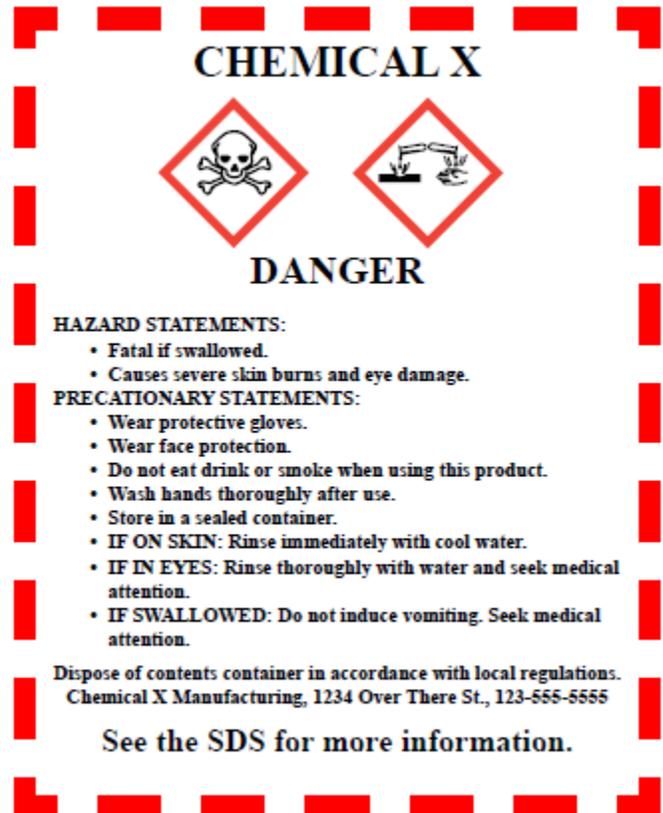
Primary Container Labeling: (Chemical container as received by manufacturer)

In 2012, Oregon OSHA revised the Hazard Communication Standard (HCS) to be consistent with the United Nation' Globally Harmonized System (GHS). This required a standardized approach to label elements and calling MSDS sheets by the term safety data sheets (SDS). As of June 1, 2015, all chemical manufacturers, importers, distributors, and employers were required to use the GHS labeling, which includes the following items:

- Pictograms
- Signal words
- Hazard and precautionary statements
- Product identifier
- Supplier identification information including name, address and telephone number

No container of hazardous chemicals will be released for use until the label information is verified by department staff who ordered the product and an SDS is onsite. SDS sheets will be readily available for employees during each work shift when they are in their work areas.

All employees are to be aware that the chemical label must be maintained on the chemical container and will notify their supervisor or environmental services/safety representatives if any unlabeled container(s) are discovered in their work area.



Secondary Container Labeling: (Containers that hold transferred hazardous materials from the original to a secondary use container are required to be labeled)

The employee in charge of the transfer of the chemical into the secondary container from its primary container must ensure that a hazard warning label is placed on the container. Portable containers which only one employee uses and is transferring chemical to be completely used during his or her shift (immediate use) are not required to be labeled. But if more than one employee uses the containers or material is stored over to the next shift, it must be labeled.

The hazard warnings must be legible, in English and prominently displayed. This includes labeling the product name and hazard warning. If a label becomes torn or not legible, the employee using the product must relabel it. Permanent marking pens should be used to label the secondary containers.

Each secondary container must be marked with either of the following items:

- All information specified for the labels on shipped containers.
- The product identifier/words, pictures, symbols, or a combination that provide at least the general information about the hazards of the chemicals.

DEPARTMENT OF TRANSPORTATION PLACARDS REQUIREMENTS

Vehicles that are transporting hazardous materials are required to have Oregon Department of Transportation placards. The exceptions for public sector entities include persons responsible for determining whether or not placarding is required on a vehicle should have a good understanding of the Department of Transportation placarding regulations.

SAFETY DATA SHEETS (SDS)

As of June 1, 2015, the Hazard Communication Standard requires that all safety data sheets be in a uniform format and includes the following:

1. Identification including the product identifier; manufacturer or distributor name, address, phone number, and emergency phone number; recommended use; and restrictions on use.
2. Hazard identification which includes all of the chemical hazards and required label elements.
3. Composition / information on ingredients, including any information on chemical ingredients or trade secret claims.
4. Firefighting measures (including the most suitable fire extinguisher to use, equipment and chemical hazards from fire).
5. Accidental release measures (i.e. emergency procedures, proper protective equipment, and proper methods of cleanup/containment).
6. Handling and storage lists precautions for safe handling and storage, including chemical incompatibilities.
7. Exposure controls/personal protection lists OSHA's permissible exposure limits (PELs), American Council of Governmental Industrial Hygienists' threshold limit values (TLVs), appropriate engineering controls, and personal protective equipment (PPE).
8. Physical and chemical properties list the chemicals characteristics.
9. Stability and reactivity lists chemical stability and possibility of hazardous reactions.
10. Ecological information*
11. Disposal considerations*
12. Transport information*
13. Regulatory information*

*OSHA does not enforce sections marked with the asterisk because this information is regulated by other agencies

Chemical manufacturers and importers are required by these rules to develop a SDS for each hazardous chemical product. The SDS contains detailed information about the health and physical hazards associated with the product. It is the responsibility of the individual ordering or purchasing the chemical to ensure that they receive an SDS with the shipment of new chemicals or provide the SDS where there has been a change. To ensure that we receive the SDS, the following notification should be added to all chemical purchase orders:

Safety Data Sheets will be sent to the Public Works Director (or assignee) for each new chemical product purchased and an updated SDS will be sent when the manufacturers or importer changes the SDS. If SDS is not given to receiving then receiving will notify the individual who ordered the chemical and the product will not be released for use until the SDS is available. When SDSs are received by the various departments they are to be forwarded to the administrative assistant (or other designee) for copying, distribution and inclusion in the SDS binders and on the inventory list.

SDSs are available to all our employees for review during each work shift. If SDSs are not available or new chemicals in use do not have SDSs, immediately contact your supervisor.

A list of Hazardous Chemicals must be kept as part of the SDS index and include a table of contents. The lists (index) will be updated as new chemicals are purchased. The Supervisor is responsible to maintain the current inventory list of chemicals. Lists of chemicals and SDS can be stored electronically on the City's intranet.

There must be a way that staff can access these electronically stored chemical lists and SDS at any time, otherwise hard copies should be maintained and stored in a visible and easy to find location. If SDS are kept electronically or accessed on the Internet, a backup copy or system must be in place in case the primary system becomes inoperable (i.e. power loss, network outage, computer crash, etc.). That way the information can still be accessed by the employees.

EMPLOYEE TRAINING AND INFORMATION

A key component of this program is training employees about the hazardous chemicals which they may come in contact. Our training program is done in two parts.

The initial orientation is done by the Department Supervisor. The training will include the location and availability of our written hazard communication program, as well as how to read labels and review an SDS to obtain appropriate hazard information.

The employee's supervisor will review the specific chemicals, hazards and precautions needed in the employee's work area. The training program will cover the following elements:

1. The details of the hazard communication program, including:
 - a. The location of the hazard communication program and SDS sheets.
 - b. An explanation of the labels on shipped containers you receive.
 - c. Labeling system used on in-house containers and piping systems.
 - d. Information presented on SDS sheets, including the order of the information.
 - e. How to obtain and use the SDS information.
2. Review of the chemicals present in the workplace.
3. Any operation in their work area where chemical hazards are used.
4. Physical and health effects of the hazardous chemicals.
5. Methods and observation techniques used to determine the presence or release of hazardous chemicals in the work area.
6. How to lessen or prevent exposure to these hazardous chemicals through usage of engineering control/work practices and personal protective equipment.
7. Steps we have taken to lessen or prevent exposure to hazardous chemicals.
8. Emergency procedures to if our employees are exposed to these hazardous chemicals.
9. Extent necessary to protect them in the event of a spill or leak of a hazardous chemical.

It is critically important that all employees understand the training. If you have any additional questions please contact your supervisor. Each employee will fill-out a training verification form which asks the employee if the employee understood the training.

When new chemicals are introduced, supervisors will review the above items as they relate to the work area. Some employees may also require additional training depending upon their job tasks. Employees who are involved with process safety chemicals, e.g. 1500 pounds of chlorine, and employees who are involved with hazardous waste operations and emergency response will need to have 4 to 8 hours of hazardous material training. Please refer to the Federal OSHA 29 CFR 1910.119 Process Safety Management of Highly Hazardous Chemicals and 1910.120 Hazardous Waste Operations and Emergency Response for the additional training requirements.

HAZARDOUS NON-ROUTINE TASKS

Periodically, employees are required to perform hazardous non-routine tasks. Prior to starting work on such projects, each affected employee will review information about hazards to which they may be exposed during such an activity. This will be the responsibility of each supervisor.

The training information will include but not limited to:

1. Specific chemical hazards.
2. Protective equipment and safety measures which must be utilized should accidental exposure occur.
3. Measures that have been taken to lessen the hazards including ventilation, respirators, presence of another employees and emergency procedures.
4. The SDS for employees to review.

HAZARDOUS SUBSTANCES IN PIPES

[Oregon OSHA Rules for Pipe Labeling](#)

All hazardous materials carried in piping systems are required to be labeled [under Division 2/Z, OAR 437- 002-0378 Oregon Rules for Pipe Labeling](#).

Pipes and piping systems that contain hazardous substances (any health or physical hazardous agent) or transport sub-stances in hazardous state will be labeled. The pipes must be colored coded or have lettered labels. The label will give the name of the contents in full or abbreviated form. The labels may be posted in the area of the pipe/piping systems. The labeling will be applied, at a minimum, at the beginning and end of continuous pipe runs. A complete hazard label is not required on pipes. If the pipe is above or below the normal line of vision, the label must be applied above or below the horizontal center line of the pipe so that employees can it.

Pipes Insulated with Asbestos-Containing Material

Pipes that are insulated or contain asbestos materials/products must be labeled with such language as “Danger, contains asbestos fibers. May cause cancer. Causes damage to lungs. Do no breathe dust. Avoid creating dust.”

Warning labels must be applied every 75 feet on continuous pipe runs. As mentioned above, if the pipe is above or below the line of sight, the label must be applied above or below the horizontal center line of the pipe so that the employees can see them.

INFORMING CONTRACTORS

Our organization occasionally uses outside contractors for some projects, as a result, we must inform the contractor of any chemical hazards his/her employees may be exposed to. The following methods will be used to inform outside contractors of the potential chemical hazards in their work areas:

To ensure that outside contractors work safely in our plant, it is the responsibility of the supervisor to ensure that we provide the required chemical information:

1. Hazardous chemicals to which they may be exposed to while on the job site.
2. Precautions the employees may take to lessen the possibility of exposure.
3. Location of SDS for chemicals they may potentially be exposed to.

If additional information is needed, the safety manager should be contacted for assistance.

CHEMICAL HAZARDS REQUIRING ADDITIONAL COMPLIANCE ISSUES

There are potential chemical exposures that have additional OR-OSHA requirements that our employees may be exposed to. (Examples: Hexavalent chromium, lead, asbestos, silica, vinyl chloride, cadmium, benzene etc.) If there are job tasks that have potential exposures to these chemicals, the following will be conducted.

1. Exposure monitoring that is representative of employee exposures.
2. Recordkeeping: maintain all exposure monitoring records.
3. If exposures exceed the OR-OSHA exposure limits, we will implement all required protective measures in compliance with the applicable OR-OSHA standard. This may include:
 - a. Written Compliance Plan
 - b. Personal Protective Equipment
 - c. Engineering Controls
 - d. Medical Monitoring
 - e. Employee Training

EXAMPLES OF PICTOGRAMS

 <p>Health Hazard</p> <ul style="list-style-type: none"> • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity 	 <p>Flame</p> <ul style="list-style-type: none"> • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides 	 <p>Exclamation Mark</p> <ul style="list-style-type: none"> • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
 <p>Gas Cylinder</p> <ul style="list-style-type: none"> • Gases Under Pressure 	 <p>Corrosion</p> <ul style="list-style-type: none"> • Skin Corrosion/Burns • Eye Damage • Corrosive to Metal 	 <p>Exploding Bomb</p> <ul style="list-style-type: none"> • Explosives • Self-Reactives • Organic Peroxides
 <p>Flame Over Circle</p> <ul style="list-style-type: none"> • Oxidizers 	 <p>Environment (Non-Mandatory)</p> <ul style="list-style-type: none"> • Aquatic Toxicity 	 <p>Skull and Crossbones</p> <ul style="list-style-type: none"> • Acute Toxicity • (Fatal or Toxic)

Explanation of Pictograms



Health Hazard

- **Cardiogens:** A chemical substance or mixture that can cause cancer.
- **Respiratory Sensitizer:** A chemical that if inhaled may lead to an allergic-type reaction of the lungs (respiratory system) if inhaled again.
- **Reproductive Toxicity:** Harmful effects to sexual function and fertility in adult males and females, or on development of the offspring.
- **Target Organ Toxicity (Single exposure):** The significant health effects that can impair the function of a specific target organ (for example, the eyes or the kidneys) caused by a single exposure to a chemical. Toxic effects may be reversible or irreversible, immediate or delayed.
- **Target Organ Toxicity (Repeated exposure):** The significant health effects that can impair function of a specific target organ (for example, the eyes or the kidneys) caused by repeated exposure to a substance or mixture. Toxic effects may be reversible or irreversible, immediate or delayed.
- **Mutagenicity:** Chemical exposure causing permanent changes in the amount or structure of the genetic material in a cell.
- **Aspiration Toxicity:** The harmful effect of a liquid or solid chemical when it enters the oral or nasal cavity directly by being breathed in or indirectly entering the respiratory system as a result of vomiting.



Exclamation Mark

- **Irritant (Skin or Eyes):** Reversible damage to the skin or eyes following exposure to a chemical substance.
- **Dermal Sensitizer:** An allergic-type reaction of skin tissue after repeated exposure to a chemical substance.
- **Acute Toxicity (Harmful):** Harmful, health effects that occur soon after a single oral or dermal exposure to a chemical substance; or multiple doses given within 24 hours; or an inhalation exposure of four hours.
- **Narcotic Effects:** Depression of the central nervous system, exhibited as sleepiness, reduced alertness, loss of reflexes, lack of coordination, and dizziness caused by chemical exposure. Can also be shown as severe headache or nausea and can lead to irritability, fatigue, and worsen memory, perception, and reaction time.
- **Respiratory Tract Irritants:** Chemical exposure effects, characterized by localized redness, swelling, and fluid build-up that weakens respiratory function with symptoms such as cough, pain, choking, and difficulty breathing.



Gas Cylinder

- **Gas Under Pressure:** Gases in a container at a pressure of 29 psi (gauge) or more, are liquefied, or are liquefied and refrigerated.



Flame

- **Flammable Gases:** A gas that forms a flammable mixture with air at ambient temperature and pressure.
- **Flammable Aerosols:** A chemical in a non-refillable container with a gas compressed, liquefied, or dissolved under pressure and fitted with a release device allowing the contents to be ejected as particles in suspension in a gas, or in another form; and meeting flammability test criteria.
- **Self Reactives:** Thermally unstable liquid or solid chemicals likely to undergo decomposition: even without interaction with air. These chemicals that are likely to undergo a stronger exothermic decomposition are classified under explosives.
- **Pyrophoric Liquids:** A liquid chemical that, even in small quantities, is likely to ignite within five minutes after coming into contact with air.
- **Pyrophoric Solids:** A solid chemical that even in small quantities is likely to ignite within five minutes after coming into contact with air.
- **Self-Heating:** A solid or liquid chemical (other than a pyrophoric liquid or solid) that, without energy supply, is likely to react with air and generate heat. Differs from a pyrophoric liquid or solid because it will ignite only when in large amounts and after long periods of time (hours or days).
- **Emits Flammable Gas:** Solid or liquid chemicals that, when in contact with water, emit flammable gases or that, by interaction with water, are likely to ignite spontaneously or to give off flammable gases in dangerous quantities.
- **Organic Peroxides:** A carbon-containing compound having two oxygen atoms joined together (-O-O-) called a "peroxy" group. Organic peroxides can be severe fire and explosion hazards.



Corrosion

- **Corrosive (destructive) to skin or eyes:** Irreversible damage to the skin or eyes, including visible, localized death (necrosis) of skin tissue, burns, or serious eye damage following exposure to a chemical substance.
- **Corrosives:** A chemical that will by chemical action materially damage or destroy metals.



Exploding Bomb

- **Self Reactives:** Thermally unstable liquid or solid chemicals likely to undergo a strongly exothermic decomposition even without participation of oxygen (air). This definition excludes chemicals classified under this section as explosives, organic peroxides, oxidizing liquids, or oxidizing solids.
- **Organic Peroxides:** Any organic (carbon-containing) compound having two oxygen atoms joined together (-O-O-) called a "peroxy" group, where one or both of the hydrogen atoms have been replaced by organic radicals (with an unpaired electron). Organic peroxides are thermally unstable chemicals, which may undergo exothermic self-accelerating decomposition. In addition, they are likely to have one or more of the following properties:
 - Likely to explode
 - Burn intensely
 - Be sensitive to impact or friction
 - React dangerously with other substances



Flame Over Circle
• Oxidizers



Skull and Crossbones

- **Explosives:** A solid or liquid chemical that is capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic chemicals are included even when they do not evolve gases.
- **Oxidizer:** A substance that readily yields oxygen to cause or intensify the combustion of organic material. Includes gases, liquids, and solids.
- **Acute Toxicity (Severe or Fatal):** Severe, harmful health effects (that may include death) occurring soon after a single oral, dermal, or inhalation exposure to a chemical substance, or multiple exposures within a 24-hour period.