

**PROVIDENCE COLLEGE
HAZARD COMMUNICATION PROGRAM**

**Providence College
Office of Environmental, Health and Safety**

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1. INTRODUCTION

The Providence College Hazard Communication Program has been developed in accordance with the requirements of the Federal Occupational Safety and Health Administration's (OSHA) Hazardous Communication Standard 29 CFR 1910.1200.

The OSHA Hazard Communication Standard (HAZCOM), also known as the Worker-Right-To-Know regulation, requires that employers inform their employees of the chemical hazards associated with their work environment. The law states that each employee has the right to know about the hazardous chemicals and substances that you work with or that are stored in your work area. This Program, along with the HAZCOM training, will help to ensure your safety and the safety of your co-workers as you carry out your daily work activities.

2. GENERAL RESPONSIBILITY

This Hazard Communication Program will be implemented through the Office of Environmental, Health and Safety. The program facilitator is Thomas Schenck, the Safety Coordinator. Mr. Schenck will be responsible for the implementation of the Program and may be reached at ext. 2625 for any questions or inquiries regarding the HAZCOM program.

3. TYPES OF EXPOSURE

Health hazards associated with exposure to chemicals may be either acute (immediate in their effects) or chronic (long term). Most chemical exposure occurs by one of three primary routes. They are inhaled through breathing, ingested by entry through the mouth and into the gastro-intestinal tract, or they are absorbed through the skin, sometimes causing direct injury to the skin.

A. Inhalation

Inhalation is the primary route of hazardous substances into the body. Those materials with potential for inhalation exposure are usually in the form of gases, vapors, and mists or as finely divided dusts or fumes. Fumes in this sense are very fine particles, usually of metals formed by welding or other heating operations.

Inhaled materials can cause direct injury to the lung or can interfere with the normal function of the lung in providing oxygen to the body. Some chemicals do this by simply displacing oxygen. This can occur with chemicals that are not particularly poisonous, such as carbon dioxide and nitrogen, but which may cause problems in high concentrations. Other chemical materials may directly interfere with the body's ability to use oxygen. Two examples of such

chemicals are carbon monoxide and cyanide gas.

Many inhaled chemicals produce their toxic effects by depressing the central nervous system. Most of the solvents and motor fuels produce this effect. There are other chemicals, which paralyze the respiratory center and decrease the rate of breathing.

Finally, some chemicals are inhaled and then absorbed into the bloodstream from the lungs to produce poisoning in other organ systems.

When metals are brazed or welded, particles of the oxides of these metals are released into the air and may be breathed in by workers in the vicinity. Fumes of copper, iron, zinc, cadmium and lead are commonly encountered in more industrial settings; however, some workers may encounter fumes from these metals in their work. Dusts of many types are produced by grinding, sanding, machining, mixing, sandblasting, and others.

B. Skin Absorption

A second route of entry is absorption through the skin. Toxic substances can pass through the unbroken skin. The skin is made to allow materials access into the body through it. Cuts and scrapes can increase absorption. Absorption through numerous membranes is even more effective than through the skin. Although local effects are most common (skin irritation or dermatitis), other effects of exposure through skin can occur without realizing an exposure has occurred.

C. Ingestion

Ingestion is a third route of entry into the body. Although it is generally the least difficult to control, ingestion can be controlled through the use of good hygiene practices. During ingestion entry usually occurs due to contaminated food, drink, or smoking materials. Poor hygiene practices are a major cause of toxic ingestion. Effects may be local or systematic.

4. TYPES AND HAZARDS OF CHEMICAL AGENTS

Chemicals are all around us and new chemicals are introduced every day. Many chemical substances have the potential to cause serious injury or illness.

A. Acids and Bases

Acids and bases are corrosive and caustic, resulting in burns to the skin on contact. Examples of acids and bases are hydrochloric acid found in solutions for cleaning concrete and tile surfaces, and sodium hydroxide for removing obstructions in drains.

B. Solvents and Fuels

Solvents and fuels are very common industrial materials. At Providence College potential exposure to solvents and fuels is limited. However, in some areas such as the Paint Shop, some petroleum-derived solvents are used in cleaning operations such as paint thinners and lacquer thinner. These materials are similar to kerosene and gasoline, varying primarily in their volatility.

C. Metals

Grinding, sanding, welding, and soldering operations involve the use of one or more metals. These metals may be converted into fine particles that may be ingested or inhaled into the body.

D. Fibrogenic Dusts

There are a number of minerals and organic dusts which have a potential to produce injury to lungs. These include silica from various sand-based materials and asbestos. Fortunately, all accessible friable asbestos at Providence College has been removed, minimizing exposure in the workplace. Non-friable asbestos may be present in vinyl tiles located in older buildings on campus. Only an approved asbestos abatement contractor should do removal of these tiles. If suspect asbestos materials are found, stop work and contact the health and safety coordinator.

5. PERSONAL PROTECTION

To prevent hazardous chemicals from entering the body and to reduce potential exposure the following approaches can be taken:

- A. In your work environment, there are "Material Safety Data Sheets" for the chemicals you work with and are exposed to. These Material Safety Data Sheets include information on the flammability, health effects, storage requirements, and protective equipment necessary to safely use these chemicals.
- B. All chemical containers in your work area should be labeled. Don't transfer the chemical into an unmarked container.
- C. Some chemicals need to have special precautions for storage to prevent fire or explosion. Never store flammable materials near a fire source.

- D. Practice good hygiene. Never have food, drinking or smoking materials in an area of chemical use. Use good handwashing techniques after chemical use and before eating.
- E. Use chemicals in an area of good ventilation to prevent possible exposure.
- F. If you need to work in an area with high levels of chemicals and potentially high exposure to them, use protective equipment to decrease the amount of exposure. Eye protection, respirators, gloves and aprons are examples of protective equipment.
- G. If you are not able to decrease the level of your exposure, limit the amount of time you spend in the area.
- H. The exposure potential increases if the chemical is spilled. Use protective equipment, and follow the clean-up procedures on the material safety data sheet to decrease the level of your exposure. All spills shall be reported immediately to the health and safety coordinator. **ONLY TRAINED EMERGENCY SPILL RESPONDERS SHALL CONTAIN SPILLS.**
- I. If you smell a chemical, it may or may not be in a concentration that is harmful. Leave the area and contact the health and safety coordinator.
- J. If you don't understand these rules or have a suggestion to improve working conditions, see your supervisor or the safety coordinator.

6. LIST OF HAZARDOUS CHEMICALS

A complete list of all hazardous chemicals used on campus is located in the Office of Environmental, Health and Safety. The list is located on the inside of each MSDS booklet. Each trade has its own MSDS booklet specific to that trade. These MSDS booklets are considered an integral part of this HAZCOM program.

7. MATERIAL SAFETY DATA SHEETS

These sheets contain vital information regarding the chemicals used on campus. For each chemical they provide information on the chemical nature of the materials, their physical properties, their potential to produce illness or injury, appropriate protective measures, emergency procedures, and disposal information. Material Safety Data Sheets are the best source of safety information available to you. When you are about to work with a chemical new to you, obtain a copy of the sheet for that chemical, read it to become familiar with the chemical and retain a copy of the sheet for reference. The following explains the sections of a Material Safety Data Sheet.

- A. Material Identification - This section includes the manufacturer's name, address, and

phone number, chemical name, trade name, synonyms, chemical family and chemical formula.

- B. Hazardous Ingredients – This section includes ingredients that have been determined to be health hazards, and comprise 1% or greater of the composition. The exception is cancer causing agents, which are listed if they comprise 0.1% or greater of the composition.
- C. Physical Data - This section includes the physical properties of the material. The appearance and odor of the material are also included.
- D. Fire and Explosion Data - This section includes the fire and explosion data on the material. The flashpoint is listed which indicates the temperature at which the material can ignite. Fire fighting techniques and fire fighting equipment are also listed.
- E. Health Hazard Data - This section contains information on the health effects of the material. The PEL, the symptoms of over-exposure, and first aid procedures are typically included.
- F. Reactivity Data - This section contains information on the stability of the material and what materials are incompatible with this material.
- G. Spill or Leak Procedures - This section contains information on clean-up procedures. Waste disposal methods are included.
- H. Special Precaution Information - This section includes information on the protective equipment, ventilation, and medical surveillance precautions that are necessary.
- I. Storage and Handling - This section includes information on the proper storage of the materials and personal hygiene precautions.

In summary, while exposure to hazardous chemicals can cause injury, by following the above procedures and taking proper precautions, injuries and illnesses can easily be avoided. If there are any questions, please contact the Safety Coordinator.

8. LABELS, LABELING AND WARNINGS

Each department supervisor will be responsible for ensuring that all hazardous chemicals used in their department are properly labeled. This person will also verify that the identifying information and other data on the label correspond with the information on the MSDS for that hazardous chemical.

Damaged labels or labels lacking needed information should be reported to the safety coordinator immediately. He will approve all labels prepared for in-house use before they are used and will randomly check that all containers are labeled and are up to date.

Labels on incoming containers of hazardous chemicals may not be removed or defaced unless a new label or markings with the required warnings is immediately attached to the container. However, containers into which an employee transfers a hazardous chemical for his or her own **immediate** use do not require labeling. The following information will be placed on containers of hazardous materials, either by labels, tags, or markings:

- A. The identity of the hazardous chemical(s) as listed on the MSDS.
- B. Appropriate hazard warnings to help employees protect themselves from the hazards of the substance.

9. TRAINING

Every employee who works with or may be exposed to hazardous chemicals will be trained on the safe use of those substances. Employees will also receive training on the hazard communication standard as set forth by OSHA.

Formal training will be conducted under the direction of the Health and Safety Coordinator, who will monitor and maintain records of employee training.

Training Elements - Hazard communication training for workers includes:

- ◆ Information about the requirements of the hazard communication standard, the content and location of this written program, and where hazardous chemicals are located in their respective work area.
- ◆ How to detect the presence or release of hazardous chemicals, including appearance, odor, and use of monitoring devices.
- ◆ The physical and health hazards of chemicals in their respective work areas.
- ◆ Employees will be furnished with information on how to protect themselves from chemical hazards, including use of protective equipment, proper work practices, and emergency procedures.
- ◆ An explanation of the operation of the hazard communication program, including the meaning and use of labels and Material Safety Data Sheets.

- ◆ Information about their rights under the hazard communication program and on how to obtain and use appropriate and/or additional hazard information.

Materials used for training include the following:

- ◆ An employee handout.
- ◆ A formal training session.
- ◆ A video presentation.
- ◆ A question and answer session.
- ◆ A quiz.