



**St. Mary's College of Maryland**

**HAZARD COMMUNICATION PROGRAM**

**Revision 3: May 2024  
St. Mary's College of Maryland  
Environmental Health & Safety  
18952 E. Fisher Road  
St. Mary's City, Maryland 20686**

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## **INTRODUCTION**

St. Mary's College of Maryland is committed to the prevention of exposures that may result in injury and/or illness; and to comply with all applicable federal and state health and safety rules. This written plan has been prepared by St. Mary's College of Maryland to describe our efforts regarding compliance with the requirements for Hazard Communication.

Information is provided on the following subjects:

1. Methods the College will use to compile and maintain a current inventory of hazardous substances
2. How the Safety Data Sheets will be obtained and organized
3. How labels will be maintained and/or provided
4. How employees will be trained and informed about hazardous substances
5. How contractors will be informed of the hazards associated with their job activities at St. Mary's College of Maryland

## **PROGRAM COORDINATION**

Overall coordination of the program for St. Mary's College of Maryland will be handled by the Environmental Health & Safety Manager.

## **SAFTEY DATA SHEETS**

A Safety Data Sheet (SDS) will be kept for every material that appears on our Hazardous Substance Inventory List. The Master SDS file will be kept and maintained by the Environmental Health & Safety office, with a duplicate master file copy located at Public Safety (24/7). Each department and/or work area where hazardous substances are used will maintain a file of SDS for their work area(s) and will be responsible for assuring that SDS are accessible to employees during all work hours. Employees have the right to review the SDS, and the employee must receive a copy within twenty-four (24) hours of written request.

## HAZARDOUS SUBSTANCE INVENTORY

The college will maintain both a Master Inventory List and Department Inventory Lists.

The Master List will be maintained and on file by the Environmental Health & Safety office, with a copy located in Public Safety (24/7). Hazardous substances used by other departments will be maintained by the appropriate departments.

The inventories consist of a collection of summarized SDS by building and are alphabetical by trade name, for each substance used. These summaries are available to all employees so that they can be used as a quick reference. If any employee has questions, or personal protective equipment is indicated, employees should refer to the SDS for specifics.

The inventory lists are set up as follows:

*TRADE NAME* – This is the name of the product as it appears on the label

*SUBSTANCE* – This is the type of product, possibilities might be detergent, stripper

*MANUFACTURER* – This will most often be the firm that actually made the product and in some cases it will be the supplier

*EMERGENCY PHONE* – This is the number to call for emergency handling or treatment information. Use only in case of a real emergency, not for technical or use information

*INGREDIENTS* – This is all ingredients listed on the SDS. Many of these are not hazardous, but many are.

*FACTOR* – This lists specific problems associated with the substance. Detailed explanations of each factor follow. Any time a factor is listed, you should refer to MSDS.

## FACTORY EXPLANATIONS

### *CORROSIVES:*

Corrosives are materials that will severely irritate or eat away body tissues. For the purposes of St. Mary's College of Maryland, no materials are included that indicated that they were mild irritants or that they might irritate. Corrosives are acidic or caustic, that is they have low or high Ph values. They are especially dangerous because they are also REACTIVE and may give off TOXIC fumes if they are engaged in reactions or exposed to fire.

Acids have many uses and are among our most valuable chemicals, but they need to be handled and stored properly. Proper protective equipment is a must for safe handling. Various products have different strengths, and some may require minimal equipment, that is splash-proof goggles and gloves. Other products may require full body protection and respiratory equipment. Acids are extremely reactive and need to be stored away from caustics. Chlorine and ammonia products should especially be avoided as very harmful gasses will result from interaction between acids and these chemicals. Some work areas should be ventilated to avoid concentrations of harmful mists.

Caustics are used in a variety of ways but most commonly as cleaners and disinfectants. They are also very reactive and need to be handled very carefully. Contact with acids and oxidizers should be avoided.

Water should never be added to acids or caustics. When necessary to mix water with these chemicals, the acid or caustic should be added to the larger volume of water to avoid a violent reaction.

In the event of splashing or spilling, remove the worker to an emergency eyewash or shower immediately. Follow directions. If the SDS state to flush for fifteen (15) minutes, make sure that you do. Remove contaminated clothing and get qualified medical attention. Do not attempt to stop leaks or perform cleanup without proper training and equipment. Hydrofluoric acid requires specialized care so be sure to report that hydrofluoric acid is involved to emergency responders.

## *FLAMMABLES*

Flammables for these purposes are essentially anything that will burn. Most flammables fall into one of three categories: Solvents, Flammable gases, and Explosive dusts.

Solvents and solvent based mixtures are probably our biggest exposures. These take forms such as cleaners of many types, degreasers, thinners, and fuels. Solvents are generally quite volatile. This means that they change form readily and will evaporate at low temperatures, often creating hazardous conditions.

## *TOXICS*

Flammable gases are used in many ways, but most often as fuels for various processes. Natural gas, propane and acetylene are used around us every day. Propane, acetylene, and other compressed posed additional hazards because of the high pressure they are stored under. If a valve breaks on one of those bottles it can react very much like a rocket. Proper storage and handling are very important.

Explosive dusts are often generated from relatively benign materials. Dusts from metals, grains, food substances, plastics, soaps, and wood products can all be dangerous. They present special problems if large areas become contaminated. A small dust explosion can

form a chain reaction as the initial blast raised other dusts in the presence of these other substances may enhance the possibility of ignition taking place. Dusts may also be REACTIVE, CORROSIVE, or TOXIC depending on the source material.

It is most important to avoid conditions which may start a fire around any of these materials. Smoking or any type of open flame must not be allowed in an area in which solvents, flammable gases or explosive dusts are used or stored. Electrical equipment must be properly grounded and in excellent condition when used to pump or transfer materials or to ventilate storage and work areas. In some work and storage areas wiring should be explosion proof. Generally, we should try to eliminate any conditions which might start a fire.

One of the best ways we can help maintain safe conditions is to do what we can to keep airborne concentrations as low as possible. Solvents and liquid fuels must be kept in approved, airtight safety containers. Areas in which liquids are used must be kept properly ventilated. Systems that use flammable gases need to be kept in excellent condition and valves and connections monitored regularly to protect against leaks.

Spills of liquids need to be cleaned up properly and quickly. Many of these liquids generate heavier than air vapors which will seek the lowest level available to them. These areas often have electrical equipment or pilot lights which set off an explosion. Contaminated rags need to be stored and disposed of properly at the end of each shift so that spontaneous combustion or vapor problems do not occur. Dusts should not be allowed to build up in work or storage areas. Dust collection systems need to be in place and working properly when called for.

Flammable liquids and solvents should be stored properly in special cabinets or rooms designed for use. Flammables must be stored well away from oxidizers may make the materials more readily ignitable and will make a fire far more intense by supplying oxygen to the material than otherwise available.

If a spill or other emergency involving these types of substances occur, remove all ignition sources, and leave the area. Pilot lights and electrical equipment should be shut down. Flush eyes and exposed skin with large amounts of water. Remove contaminated clothing. Get to fresh air as soon as possible.

If you are going to attempt to stop a leak, perform a clean-up or fight a fire, make sure that you are familiar with the proper methods and have the equipment you need before you start the work. Many of these materials require special training.

## *REACTIVES*

Reactives are materials that are unstable and will react with air, water, or other chemicals to produce heat or dangerous gases. While some are stable, they have incompatibilities with other materials that may result in harmful situations. We have broadened this category somewhat to include materials whose SDS describes as stable but are incompatible with oxidizers. Oxidizers may contribute free oxygen in a reaction,

drastically lowering flash points. Many materials will burn at room temperature when exposed to oxygen. Other substances may burn when exposed to water, so it is important to note a material's incompatibilities.

Proper storage of reactives is the most important consideration for us in their handling. Reactives should never be stored in the presence of incompatible materials. In our daily work we should never mix chemicals. Probably the most common injury in physical plant work occurs through the mixing of acid and bleach or bleach and ammonia. The substances we use are designed to be handled according to their directions. Making solutions stronger than called for will often compromise their ability to do the job properly and could result in dangerous situations. Water should never be added to solutions of acids or caustics the corrosive should always be added to the larger volume of water.

If a dangerous reaction is occurring in your workplace, it should be treated as a dangerous gas or fire problem. Do not try to neutralize the reaction unless you have been trained properly. Never re-enter a space until you have received a clearance. If flammables are involved shut down electrical equipment as you exit.

## **TOXIC CHEMICALS**

Toxic chemicals are those substances that affect the internal systems of the body. That is, they are poisonous or destructive to the tissues. Toxics can have acute or chronic effects. Acute toxic effects are apparent after a short exposure to a toxic substance. Many acute effects disappear after the victim is removed to fresh air, but some may cause permanent damage or death. Chronic effects appear after long term exposures to toxic chemicals. Toxics enter the body three ways: inhalation, skin absorption, and ingestion.

## **INHALATION**

When chemical vapors become airborne, people in the area will be subject to them through inhalation. As you breathe, whatever substances are in the air enter your lungs and are then distributed throughout your body. When using chemicals which are listed as toxic, always handle them so that airborne concentrations are held to a minimum.

Concentrations can be held down by use of safety cans and cabinets disposing of contaminated rags and other materials properly and use of adequate ventilation. If vapors accumulate to the point that Threshold Limit Value or Permissible Exposure Limit on the SDS are likely to be exceeded, be sure to use proper protective equipment, have adequate ventilation available or cease the process you are using and leave the area.

## **SKIN ABSORPTION**

The skin is good protection for our bodies, but it is permeable, that is, substances can pass through it and enter the body. Skin absorption can be managed by safe handling practices and proper use of safety equipment such as gloves, boots, face shields, and

protective clothing. A key factor in minimizing the possibility of skin absorption is good hygiene. Do not leave substances on your skin, wash thoroughly, following directions. Clean clothes properly before wearing them again.

## **INGESTION**

Toxic chemicals are most often ingested while eating, drinking, or smoking. Good hygiene practices are especially important. Wash thoroughly before taking breaks or meals if you have been using toxic substances which might be ingested in this way. It is also important to keep food and drink away from these materials so that they do not become contaminated. Solvents, petroleum products, metals, gases, pesticides, dusts and plastics and the materials associated with them are often TOXICS.

Solvents present handling problems because they are very volatile, that is, they change form readily. Most will evaporate at low temperatures and become airborne. They enter the body most readily through inhalation but may also be absorbed. Children may ingest them, but this is unlikely for a worker unless she or he fails to wash hands before eating.

Solvent exposures may cause fatigue, dizziness, nausea, unconsciousness, dermatitis, irritation of skin and eyes and chronic effects ranging from liver and kidney damage to cancer and birth defects.

Petroleum products such as lubricants and machine oils can cause problems because they are often handled in processes or encountered as mists. Exposures can be limited by proper handling, ventilation, protective equipment, and frequent changes of work clothing. Irritations of the lungs, skin and eyes are among the most common problems encountered with these materials and most can easily be avoided with proper use and handling.

Metals can be minimized by using proper ventilation especially in situations involving molten metals and spray painting. It is also important to control metal dusts as some, especially aluminum can be explosive. Appropriate personal protective equipment is essential to avoid heat and TOXIC injuries. Respiratory protection is a must for some situations. Exposures to lead and cadmium must be carefully monitored. Again, good hygiene practices can be very helpful.

Toxic effects can range from dermatitis, or skin irritations, to kidney and nervous system damage. Metal fume fever is a possibility when exposed to fumes of zinc, brass and copper. This produces flu like symptoms with a metallic taste in the mouth.

Gases may be toxic in different ways. Some are poisonous to the body. Carbon monoxide and hydrogen sulfide are examples of materials that are fatal through their toxic properties. Other gases may not harm you in low concentrations, but in large volumes will displace oxygen so that you cannot get enough to live, gases as seemingly safe as nitrogen and carbon dioxide fall in this category. They are often referred to in SDS as simple asphyxiates. Still other gases are corrosive and will burn if inhaled. Chlorine, ammonia and formaldehyde are the most common of this type.



We can protect ourselves by using gases appropriately and in well-ventilated areas. Respirators or self-contained breathing equipment may be necessary in some situations. Goggles and gloves may be important when using gases that are considered corrosive.

Never attempt to stop or repair leaks involving toxic gases, or rescue persons overcome by gases unless you have self-contained equipment and proper training. Each year people die while trying to rescue friends or co-workers who have been overcome by toxic gases. Your friend and you will be best served if you can give responding personnel details of the substances and circumstances involved in an accident of this type. Dusts of all types present problems but mineral dusts are most often toxic. Asbestos is probably the most recognized, but silica, talc, graphite, coal, clay, limestone, fiber glass and rock wool can all cause problems.

Although inhalation is the primary vehicle for entering the body in a harmful way, skin irritation may result from prolonged contact with dust. Lung diseases such as asbestosis, silicosis and black lung can result from chronic exposures to dusts. Cancers are also associated with exposure to asbestos.

Dusts can be managed through proper handling and cleanup procedures. Use adequate ventilation and protective equipment when working with dusts in confined spaces. Wet processes generally work better for cleanup. If you work with toxic dusts during the day with protective equipment, do not disregard your dusty work clothes at the end of the day. It is important to thoroughly clean yourself and your clothes to minimize exposure to family members and others.

## **LABELS AND WARNINGS**

No incoming containers of hazardous substances may be accepted unless properly labeled with the following information:

1. Identify the hazardous chemical(s)
2. Appropriate hazard warnings
3. Name and address of the manufacturer, importer, or other responsible party.

No label or incoming container is to be defaced or removed and no product may be accepted from shipment if labels have been damaged, obscured or removed. Each department head will be responsible for this requirement and should be contacted if damaged or incomplete labels are found. Each department head or supervisor will also be responsible for ensure that labels are found. Each department head or supervisor will also be responsible for ensuring that label information is kept current, and that it corresponds with the information on the matching SDS.

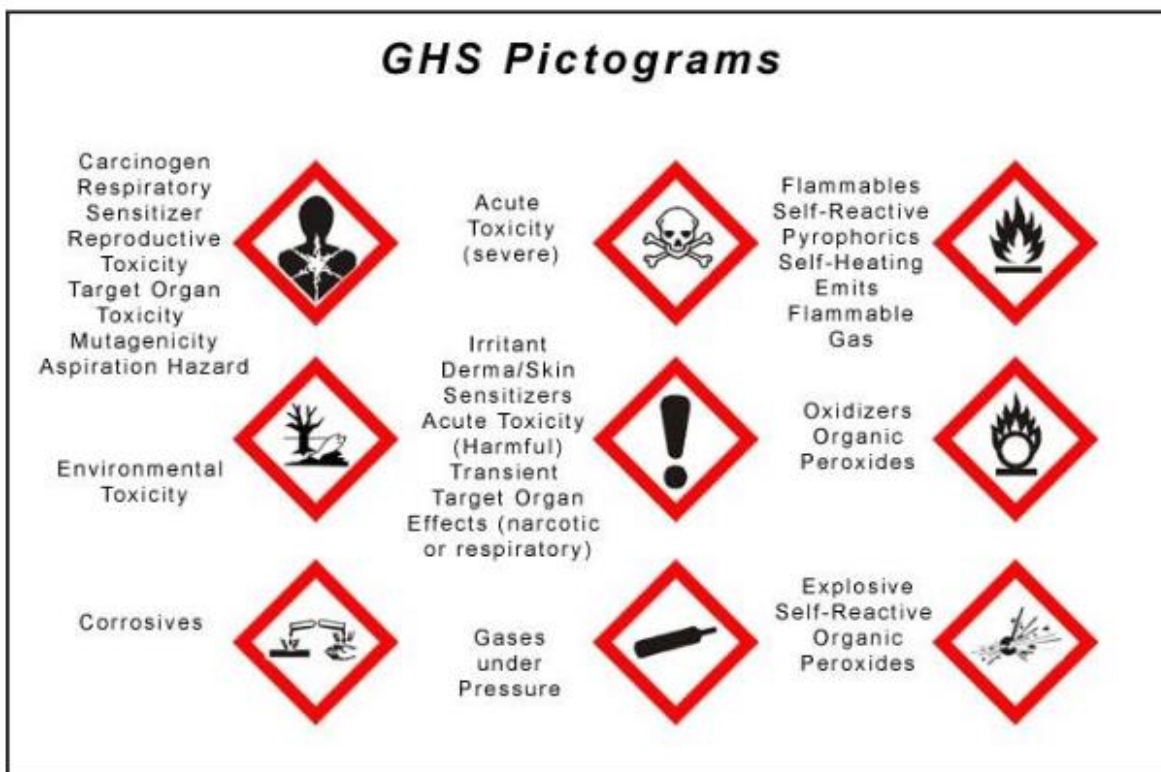
Materials should not be transferred from bulk to unlabeled transfer containers unless the entire amount is used in the current shift by the person performing the transfer. If the

transfer container is used longer than the current shift, it must be marked with the following information:

1. Identity of the hazardous chemicals(s)
2. Appropriate hazard warnings

Pictograms are graphic symbols used to communicate specific information about the hazards of a chemical. On hazardous chemicals being shipped or transported from a manufacturer, importer, or distributor, the required pictograms consist of a red square frame with a black hazard symbol on a white background, sufficiently wide to be clearly visible. A square red frame set at a point without a hazard symbol is not permitted on the label.

The pictograms OSHA uses improve worker safety and health and are used worldwide. Below are the pictograms OSHA requires on all chemical labels:



## EMPLOYEE INFORMATION AND TRAINING

Each employee will receive training and information before they are assigned to a work area where they may be working with or be exposed to hazardous substances. Annual formal training will be conducted by, or under the direction of the Environmental Health & Safety Manager. Department supervisors will also maintain training records and advise the departments regarding additional training needs.

Training sessions will include the following information:

1. The contents and location of the Written Program Plan
2. Information about the types of hazardous substances that employees are working with and/or exposed to; the methods and observations used by employees to detect the presence or release of a hazardous chemical/substance in the work area, either by visual appearance or by odor of the chemical when released.
3. Training on how to read SDS's, pictograms, and the use of labels
4. Training on the use of protective equipment, proper work practices, and emergency procedures
5. Information about the rights of the employee and the employer
6. Information on how to obtain and use additional information on hazardous substances in the employee's work place

## **CONTRACTOR POLICY**

In order to inform outside contractors of the hazardous substances they may encounter while working at St. Mary's College of Maryland, the Associate Vice President of Facilities or their designee will serve as the contractor contact for the College.

The Environmental Health & Safety Manager or designee will be responsible to provide the contractor with the following information upon request

- A copy of the College's Hazard Communication Program along with a copy of the Workplace Chemical List;
- The location of the MSDS files; and,
- Information and location for any hazardous substances to which they may be exposed while working on the job site.

Outside contractors are required to review this information with their employees prior to the start of work at the college. It will be the responsibility of the contractor to notify the Director or College Management overseeing the job site of any hazardous chemicals or substances that may be brought onto the job site and provide the SDS. This information will need to be provided to any college employee working at the job site.

## **INFREQUENT TASKS AND UNLABELED PIPES**

Non-routine activities will be coordinated through the Physical Plant Office to make sure that employees are informed of the hazardous substance exposures and provided with the necessary training and personal protective equipment needed to safely complete the job. Before activities in questionable areas begin, the Director, or applicable department supervisors should meet with employees to discuss the potential hazards they may encounter.

Under the supervision of the Director, Department Supervisors will inform employees of the dangers associated with any hazardous substances located in unlabeled pipes within their work areas.

Any questions pertaining to this program can be made to the campus Human Relations Department at 240-895-3059 or by contacting the campus Environmental Health & Safety Manager at 240-895-3347.