

# Regis

**Hazard  
Communication  
Program**

29 CFR § 1910.1200

221394.00

235 Wellesley Street  
Weston, Massachusetts

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**SUMMARY OF KEY HAZARD COMMUNICATION PROGRAM IMPLEMENTATION REQUIREMENTS**

The following table summarizes key compliance requirements, deadlines, and actions that must be performed by Regis College to implement this Hazard Communication Program. Please refer to the full text of this document for detailed requirements.

<b>Requirement</b>	<b>Due</b>	<b>Recordkeeping/Reporting Requirements</b>
Provide employee access to safety data sheets (SDSs) for hazardous chemicals to which they may be exposed on campus.	Ongoing	SDS are readily available to employees in each department on campus through the campus MSDS Online account. Hardcopies are also maintained in well-organized SDS binders in certain shops. Binders are kept up-to-date.
Maintain a chemical inventory of all hazardous chemicals used and/or stored on campus.	Ongoing	Master chemical inventory is maintained electronically by Environmental Health & Safety Compliance.
Provide training to all employees exposed to hazardous chemicals.	Program Rollout and New Employee Orientation. Additional trainings scheduled where necessary to address new chemical hazards	Training records are maintained in Appendix D.
Ensure all chemicals stored onsite are labeled, tagged, or marked with the required information.	Ongoing	All hazardous chemical containers are labeled appropriately.

## 1. PROGRAM OVERVIEW

### 1.1 COMPLIANCE STATEMENT

Regis College (Regis) is committed to providing a safe and healthful work environment on campus. This Hazard Communication Program was developed in support of the school's commitment to employee safety and in compliance with the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard.<sup>1</sup> This Program coordinates and administers the transmission of information concerning chemical hazards to all applicable employees on campus. Specifically, this document describes how Regis obtains and uses Safety Data Sheets (SDSs), labels products containing hazardous chemicals,<sup>2</sup> and trains employees about the hazardous chemicals they might be exposed to at work.

### 1.2 REGULATORY OVERVIEW

OSHA requires employers to adopt a Hazard Communication Program if employees are potentially exposed to hazardous chemicals under normal conditions of use or in a foreseeable emergency.<sup>3</sup> Employers are required to develop, implement, and maintain a written Hazard Communication Program which describes how the facility complies with OSHA requirements for identifying hazardous materials, managing SDSs, and providing employee information and training.

The program must include a list of the hazardous chemicals known to be present onsite, compiled either for the workplace as a whole or for individual work areas. As well as the methods the employer will use to inform employees of the hazards of non-routine tasks, and the hazards associated with chemicals contained in unlabeled pipes in employees' work areas.

The scope of this program is limited to hazardous chemicals in the workplace. Certain types of materials, such as hazardous wastes, ionizing and nonionizing radiation, and biological hazards, are not covered under this standard. This Hazard Communication Program does not apply to the following chemicals:

- Food or alcoholic beverages which are sold, used, or prepared in a retail establishment (such as a grocery store or restaurant), and foods intended for personal consumption by employees while in the workplace;
- Drugs when subject to regulations issued by the Food and Drug Administration for direct administration to the patient (e.g., tablets or pills); drugs which are packaged by the manufacturer for sale to consumers in a retail establishment (e.g., over-the-counter drugs); and drugs intended for personal consumption by employees while in the workplace (e.g., first aid supplies);
- Cosmetics which are packaged for sale to consumers in a retail establishment, and cosmetics intended for personal consumption by employees while in the workplace;
- Tobacco or tobacco products; and
- Articles defined as manufactured items which under normal conditions of use do not release more than trace amounts of a hazardous chemical and do not pose a physical hazard or health risk to employees.

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<sup>1</sup> 29 CFR § 1910.1200

<sup>2</sup> OSHA defines a "hazardous chemical" as any chemical which is classified as a physical hazard or a health hazard, simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified. See 29 CFR § 1910.1200(c).

<sup>3</sup> 29 CFR § 1910.1200(b)(2).

Household consumer products are also not generally covered under the Hazard Communication Standard. This is true when the products are used in the workplace in the same manner that a consumer would use them at home. Meaning, the duration and frequency of use (and therefore exposure) is not greater than what the typical consumer would experience. However, the exemption for consumer products is not based on the chemical's intended use, but on its actual use in the workplace: Employees who are required to work with hazardous chemicals in a manner that results in a duration and frequency of exposure greater than what a normal consumer would experience, have a right to know about the consumer product's chemical information consistent with this program.

In work operations, such as retail sales, where employees only handle chemicals in sealed containers which are not opened under normal conditions of use the Hazard Communication Standard only requires that the labels on incoming containers of hazardous chemicals are not removed or defaced and copies of the SDSs be readily accessible during each work shift to employees.

This program applies to all Regis employees, whether part-time, full-time, hourly or salaried. Sub-contractors hired for any reason who are using hazardous materials are also required to comply with program requirements. In addition, sub-contractors must inform Regis if they are utilizing any hazardous substance which could endanger any nearby employees in the vicinity of work underway.

A copy of this written program is available to Regis employees, their designated representatives, representatives of OSHA and the National Institute for Occupational Safety and Health (NIOSH) upon request. In addition, other information required as part of Regis' hazard communication efforts (e.g., SDSs and chemical lists) is also available to employees upon request. Requesting to see such information is an employee's right and no employee is penalized in any way for asking to review it.

## **2. DESIGNATED RESPONSIBILITIES**

### **2.1 HAZARD COMMUNICATION COORDINATOR**

The Environmental Health & Safety Manager identified is responsible for coordinating the overall Hazard Communication Program, including the following duties:

- Ensure the continued effectiveness of the Hazard Communication Program through periodic inspections of workplaces to oversee and facilitate proper labeling, training, and record keeping.
- Maintain and update the written Hazard Communication Program and training records, as necessary. A log to record updates and revisions is included in Appendix E.
- Provide expertise on chemical handling and hazard communication requirements.
- Administer the MSDS Online account, initiating an electronic master (campus-wide) chemical inventory.
- Maintain the electronic master chemical inventory, providing chemical handling and labeling expertise to the Department SDS Coordinators or any Regis employee upon request.
- Work with Department SDS Coordinators to clarify and facilitate the Hazard Communication Program.
- Contact the manufacturer when a hazardous chemical container label does not meet the requirements of the Hazard Communication Standard.

### **2.2 DEPARTMENT SDS COORDINATORS**

Each Department on campus is responsible for identifying an SDS Coordinator who will be responsible for the following duties:

- Determine which chemicals used by the Department are hazardous and require SDSs.
- Obtain the SDSs for a newly purchased hazardous chemical or a hazardous chemical in stock that is otherwise missing an SDS. (Note: SDSs should be provided by the manufacturer. Most SDSs are available online. Check the Regis MSDS Online account.)
- Electronically enter department specific chemical inventories into the master (campus-wide) chemical inventory. Do this through the MSDS Online account. (Note: MSDS Online includes an eBinder with thousands of SDSs already available. You can search by product name, manufacturer, CAS# and, or product code.)
- Where applicable, maintain hardcopies of department-specific SDSs in a binder, readily accessible to any employee. This binder should be kept up-to-date, comprised only of the hazardous chemicals employees in that department handle or could be exposed to. (Note: Duplicates or dated versions of an SDS for the same chemical can be discarded. SDSs for chemicals no longer used/stored in the department should be given to the Hazard Communication Coordinator for recordkeeping purposes. Alphabetizing the binder is highly recommended.)

### **2.3 HUMAN RESOURCES**

The Office of Human Resources is responsible for the following duties:

- Coordinate training for all new employees who use or may be exposed to hazardous chemicals in the workplace, ensuring that all Regis employees who handle chemicals receive training.
- Maintain records of employee training and chemical exposures.
- Maintain SDSs for chemicals discontinued from use.

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## **3. HAZARDOUS CHEMICAL INVENTORY AND SAFETY DATA SHEETS**

### **3.1 HAZARDOUS CHEMICAL DETERMINATION**

Regis does not independently evaluate and classify products containing hazardous chemicals on campus. Instead, as is common practice, Regis relies on the evaluations and classifications performed by the chemical manufacturer or importer to understand a chemical's hazard classification.

Classification for health and physical hazards includes the determination of the degree of hazard by comparing the data regarding the hazards of a chemical with the criteria for health and physical hazards. Appendix A to § 1910.1200 describes the classification criteria for health hazards. Appendix B to § 1910.1200 describes the classification criteria for physical hazards. The GHS classification system is based on four numbered categories, where Category 1 is the most hazardous and Category 4 is the least hazardous. The results of the classification for health and physical hazards are included in Section 2 of the SDS.

### **3.2 HAZARDOUS CHEMICAL INVENTORY**

Department SDS Coordinators maintain a complete inventory of all hazardous chemicals currently used and/or stored in their assigned SDS Department. The department's chemical inventory is maintained electronically as part of a master (campus-wide) chemical inventory using the campus' MSDS Online account. The master electronic list is managed by the Hazard Communication Coordinator. When new chemicals are ordered or brought into a department, the ordering party obtains a SDS and informs the Department SDS Coordinator. The Department SDS Coordinator then uploads the SDS to the Regis MSDS Online account. The hazardous chemical list is reviewed and updated annually by the Hazard Communication Coordinator, or her designee.

### **3.3 SAFETY DATA SHEETS**

SDSs contain valuable safety information about the hazardous chemicals found in products in the workplace and are readily available for review upon request by any Regis employee. To keep employees well-informed and safe, Regis maintains an SDS for each hazardous product present on campus. In the event an employee is exposed to a hazardous chemical, a copy of the SDS for that product is provided to the medical facility for use by health care providers.

Where access to the MSDS Online account or language is potentially a barrier, the Department SDS Coordinators are responsible for maintaining hardcopies of SDSs for products containing hazardous chemicals present in their department. SDS hardcopies should be organized in an up-to-date binder. Missing SDSs for chemicals present in the department must be obtained from the manufacturer or by using MSDS Online. When a new chemical not currently included in the department's chemical inventory list is ordered, the department/person submitting the order is responsible for requesting a SDS from the supplier or manufacturer. Personnel receiving chemicals must request a SDS if one is not present with the shipment. Department Managers must update the department's SDS binder and the campus' electronic master chemical inventory accordingly.

Regis maintains SDSs in compliance with OSHA's revised Hazard Communication Standard. As a general rule, SDSs kept in the master chemical inventory are up-to-date. When a product's use is discontinued and no remaining product is onsite, the product is removed from the electronic master chemical inventory and the SDS hardcopy is removed from the department's SDS binder and put into an inactive SDS folder maintained by the Hazard Communication Coordinator. In accordance with OSHA's rules for access to employee exposure records, Regis maintains a record of hazardous chemicals discontinued from use for at least 30 years.<sup>1</sup>

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<sup>1</sup> 29 CFR § 1910.1020(d)(1)(ii).

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### 3.3.1 Content

Regis uses SDSs provided by the chemical manufacturer/supplier or included on their MSDS Online account. SDSs are in English and have a specific 16-section format, numbered as follows:

1. Identification.
2. Hazard(s) identification
3. Composition/information on ingredients
4. First aid measures
5. Firefighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure controls and personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transport information
15. Regulatory information
16. Other information including the date of preparation or last revision.

Sections 12-15 may be included in the SDS but are not mandatory and not regulated by OSHA. An SDS content reference table is included in Appendix C.

### 3.3.2 Trade Secret Information

In general, a business can keep confidential certain formula information that grants the business an advantage over competitors who do not know or use it.<sup>1</sup> In keeping with this practice, chemical manufacturers and importers are allowed to withhold specific chemical identities from SDSs provided:

- The information withheld qualifies as a trade secret;
- The properties and effects of hazardous chemicals are disclosed;
- The SDS indicates that the specific chemical identity or composition is being withheld as a trade secret; and
- The specific chemical identity or composition is made available in an emergency situation to medical personnel or in a non-emergency situation to designated individuals provided specific conditions are met.

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<sup>1</sup> 29 CFR § 1910.1200(c).

### **3.3.2.1 Emergency**

If a treating physician or nurse determines a medical emergency exists and the information otherwise withheld as a trade secret is necessary to provide medical treatment, the chemical manufacturer or importer must immediately disclose the specific chemical identity or composition to the treating physician or nurse.<sup>1</sup>

### **3.3.2.2 Non-emergency**

The Hazard Communication Coordinator can make a written request to the chemical manufacturer or importer that otherwise permissibly withheld trade secret information be disclosed to her or to a health professional providing medical or other occupational health services to Regis if the request satisfies the conditions listed in 29 CFR § 1910.1200(i)(3).

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<sup>1</sup> 29 CFR § 1910.1200(i)(2).

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## 4. HAZARD COMMUNICATION LABELING

OSHA adopted new hazardous chemical labeling requirements to align the federal Hazard Communication Standard with the United Nations' Globally Harmonized System of Classifying and Labeling Chemicals (GHS). The newly adopted requirements improve the quality and consistency of chemical labeling, and in turn, enhance employee awareness. Easily recognizable, standardized visual notifications alert employees of hazards, allowing for the safe handling/use of chemicals while also avoiding injuries/illnesses associated with exposure.

### 4.1 GHS LABELING REQUIREMENTS

As of December 2015, all chemical manufacturers, importers and distributors label their chemicals pursuant to OSHA's 2012 Hazard Communication Standard,<sup>1</sup> as aligned with the GHS. Regis employees verify this by confirming that the labels on incoming chemicals are intact and include all of the following information:<sup>2</sup>

- Product identifier – The name or number on the label or SDS of a hazardous product that allows its user to readily identify it. The product identifier must allow for cross-referencing between the chemical's label, SDS and listing in the chemical inventory;
- Signal word – A word used to alert readers to the severity of hazard. The signal words used in this section are “danger” and “warning.” Note: “Danger” alerts readers to a more severe hazard than “warning;”
- Hazard statement(s) – A statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard;
- Pictogram(s) – A composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, intended to convey specific information about the hazards of a chemical. Eight pictograms are designated under this standard for application to a hazard category (Appendix B);
- Precautionary statement(s) – A phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling; and
- The name, address, and telephone number of the chemical manufacturer, importer, or other responsible party.

Any chemical received whose label does not satisfy the above is immediately returned to the sender with notice of the labeling inadequacy.

Any chemical received whose label *does* satisfy the above, will not have its label removed or defaced unless the container is immediately and adequately marked.<sup>3</sup>

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<sup>1</sup> Labels, as defined in the Hazard Communication Standard, are an appropriate group of written, printed or graphic informational elements concerning a hazardous chemical that are affixed to, printed on, or attached to the immediate container of a hazardous chemical, or the outside packaging.

<sup>2</sup> 29 CFR § 1910.1200(f)(1).

<sup>3</sup> 29 CFR § 1910.1200(f)(9).

## 4.2 WORKPLACE LABELING

Regis ensures any container of hazardous chemical on campus is labeled, tagged or marked, with either:

- The above listed information, pursuant to OSHA’s newly adopted Hazard Communication Standard (and GHS) as it applies to chemical manufacturers, importers and distributors; or
- OSHA’s requirements for proper workplace labeling, which includes: Product identifier and words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program (e.g. SDSs), will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

There are two exceptions to OSHA’s workplace labeling requirements:

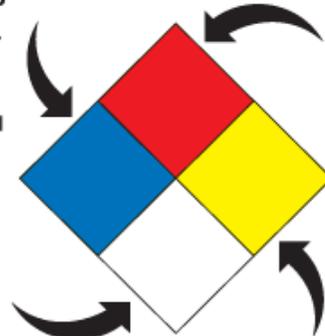
- Signs, placards, process sheets, batch tickets, operating procedures, or other such written materials can be used in lieu of affixing labels to individual stationary process containers, as long as all other workplace labeling requirements are met.
- Portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer do not have to be labeled.

## 4.3 OTHER LABELING SYSTEMS

This Hazardous Materials Identification System (HMIS) and the National Fire Protection Association (NFPA) labeling systems are both based on comprehensive systems for hazardous materials identification. These labeling systems are commonly used as a means of workplace labeling that conveys the chemical identity by product identifier, code numbers, or other descriptive terms that clearly identify the material for hazard information purposes. General information regarding the hazards of the chemicals are conveyed through the use of standardized color coding and a ranking system ranging from 0 for no hazard to 4 representing an acute hazard. Red is used to represent the flammability hazard. Blue is used to represent the health hazard. Yellow is used on the NFPA label to represent the reactivity hazard and white identifies specific hazards. The HMIS label has replaced yellow with orange to represent the physical hazard and used white to identify the recommended level of personal protective equipment.

Note that these two systems are the exact opposite of the GHS classification system, where Category 1 is the most hazardous and Category 4 is the least hazardous. Although not required to be included on the SDS, many manufacturers include the HMIS and NFPA labeling codes in Section 16 Other Information.

<b>Chemical Name</b>	
<b>HEALTH</b>	0
<b>FLAMMABILITY</b>	0
<b>PHYSICAL HAZARD</b>	0
<b>PERSONAL PROTECTION</b>	0

<b>HEALTH HAZARD</b> 4 Deadly 3 Extreme danger 2 Hazardous 1 Slightly hazardous 0 Normal material		<b>FIRE HAZARD</b> Flash Points 4 Below 73° F 3 Below 100° F 2 Above 100° F not exceeding 200° F 1 Above 200° F 0 Will not burn
<b>SPECIFIC HAZARD</b> ACID Acid ALK Alkali COR Corrosive DXY Oxidizer P Polymerization ⚡ Radioactive W Use No Water	<b>INSTABILITY</b> 4 May Detonate 3 Shock & heat may detonate 2 Violent chemical change 1 Unstable if heated 0 Stable	<b>CHEMICAL NAME</b> _____

## 5. TRAINING

### 5.1 TRAINING REQUIREMENTS

All Regis employees who work with or may be exposed to hazardous chemicals are trained on the safe use and handling of those chemicals, the federal Hazard Communication Standard, and this Program. SDS Managers are responsible for managing their department's chemical inventory and ensuring that SDS are readily available in the workplace for all employees.

The Office of Human Resources provides initial training of all employees during new hire orientation. Information provided during this training includes, but is not limited to, chemical safety, methods to detect the presence or release of a hazardous chemical, and training for responses to emergency situations. Each new Regis employee is required to complete the training.

Chemical hazard communication training is required:<sup>1</sup>

- Upon the initial assignment of an employee to a work area that involves the use of or potential exposure to a hazardous chemical.
- When a new hazardous chemical is introduced to a work area or new information about a hazardous chemical is revealed. Note: A new or revised SDS must be reviewed with employees who handle or could be exposed to that chemical.

### 5.2 TRAINING MATERIALS

Chemical hazard communication training materials include:

- The slide presentation included in Appendix D.
- SDSs for several hazardous chemicals present on campus.

### 5.3 SCOPE OF TRAINING

Chemical hazard communication training addresses:<sup>2</sup>

- The provisions of the OSHA Hazard Communication Standard.
- The provisions, location(s) and availability of this Hazard Communication Program.
- How to access SDS hardcopies on campus.
- The types of operations in work areas where hazardous chemicals are present.
- The physical and health hazards of hazardous chemicals on campus.
- Methods for detecting the presence or release of a hazardous chemical (e.g., the appearance and odor of chemicals, or the use of meters that monitor and alarm in the presence of chemicals).

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<sup>1</sup> 29 CFR § 1910.1200(h)(1).

<sup>2</sup> 29 CFR § 1910.1200(h).

- Measures employees can take to protect themselves from the hazards of chemicals, including best management practices, emergency procedures, and prudent personal protective equipment (PPE).
- PPE requirements generally and in emergencies.
- How to read, understand and effectively use chemical labels and SDSs.
- Applicable hazard identification systems (i.e., the labeling schemes of or used by the National Fire Protection Association, the Hazardous Material Identification System, and the Globally Harmonized System).
- Non-routine tasks. Note: This includes a review of non-routine tasks on campus and their associated chemical exposures. Before engaging in a non-routine task, an employee must have knowledge of any hazards, required PPE, and SDS information associated with the task.
- Contractors. Note: Contractors must have knowledge of the Regis Hazard Communication Program, in particular, the program's labeling requirements and SDS availability. (See Section 6 for details.)
- Employees in a supervisory role will establish methods for minimizing chemical exposures by, where appropriate, adopting for themselves and informing employees of:
  - The prudent and proper use of PPE.
  - The best management practices associated with localized exhaust used to minimize exposure to hazardous vapors and dust (e.g., fume hoods).
  - Work practice controls and the proper storage/handling of chemicals.
  - Proper procedures to follow in the event of a chemical spill.
  - Emergency first aid procedures in the event of hazardous chemical exposure.

## 5.4 RECORDS

Attendance sheets are completed by attendees at all Hazard Communication Training sessions in order to keep record of those employees who receive training. The Office of Human Resources maintains all Hazard Communication training records. If individual departments conduct additional task-specific training or training for non-routine tasks, records will be maintained by the individual department.

## 6. OUTSIDE CONTRACTORS

Prior to any outside contractor starting work at Regis, the Contracting Manager or Project Manager meets with the contractor and discusses the work to be done. The contractor is advised of the following:

- Hazardous chemicals to which they may be exposed;
- Measures the contractor's employees may take to lessen the possibility of exposure;
- The labeling system(s) used at Regis;
- How to request access to the electronic master (campus-wide) chemical inventory;
- Where to access SDS hardcopies per department; and
- Evacuation/emergency response procedures.

Contractors are informed that the Regis Hazard Communication Program is available for review.

Contractors are responsible for providing adequate safeguards so their employees can complete the work without endangering themselves or others. Contractors are expected to:

- Have their own written Hazard Communication Programs and must be in full compliance with all applicable State and Federal requirements.
- Use signs, barricades, and other appropriate means to keep unauthorized personnel out of the work area.
- Have SDSs for all hazardous chemicals brought onsite immediately available.
- Inform potentially affected Regis employees of any hazards associated with the contractor's work to which they may be exposed.

## **7. NON-ROUTINE TASKS**

Non-routine tasks involving potential exposures to hazardous chemicals not otherwise covered under the routine Hazard Communication Training are handled on a case-by-case basis. All non-routine work is reviewed by the Hazard Communication Coordinator, who, with the appropriate parties, establishes the best safety measures (including prudent PPE) for preventing or limiting the possibility of exposure during such work. Before engaging in a non-routine task of this nature, an employee must have knowledge of:

- The task's established safety measures (including prudent PPE);
- Any potential chemical hazards; and
- Ready access to SDSs for specific chemical information.

## **APPENDIX A: REGULATORY CROSS-REFERENCE TABLE**

**REGULATORY REQUIREMENT CROSS REFERENCE TABLE**

<b>Regulatory Requirement</b>	<b>Citation (29 CFR § ...) (2012 version)</b>	<b>Location in Hazard Communication Program</b>
Written Hazard Communication Program	1910.1200(e)	Throughout Document
Chemical inventory	1910.1200(e)(1)(i)	MSDS Online
Hazards of non-routine tasks	1910.1200(e)(1)(ii)	Section 7
Multi-employer workplaces	1910.1200(e)(2)	Section 6
Hazardous chemical containers are labeled, tagged, or marked	1910.1200(f)(6)	Section 4
Employer shall not remove or deface existing labels on incoming containers of hazardous chemicals, unless the container is immediately marked with the required information	1910.1200(f)(9)	Section 4
Ensure that labels are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift.	1910.1200(f)(10)	Section 4
Each safety data sheet shall be in English and contains required section numbers and headings, and associated information under each heading, in the order specified.	1910.1200(g)(2)	Section 3.3.1
If the safety data sheet is not provided with a shipment that has been labeled as a hazardous chemical, the employer shall obtain one from the chemical manufacturer or importer as soon as possible.	1910.1200(g)(6)(iii)	Section 2.2
Maintain in the workplace copies of the required safety data sheets for each hazardous chemical and ensure that they are readily accessible during each work shift to employees when they are in their work area(s).	1910.1200(g)(8)	Section 2.2
Provide employees with effective information and training on chemical hazards in their work area at the time of their initial assignment, and whenever a new chemical hazard the employees have not previously been trained about is introduced into their work area.	1910.1200(h)(1)	Section 5

## **APPENDIX B: PICTOGRAM REFERENCE SHEET**

## HCS Pictograms and Hazards

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

For more information:



U.S. Department of Labor

[www.osha.gov](http://www.osha.gov) (800) 321-OSHA (6742)

## **APPENDIX C: SDS CONTENT REFERENCE SHEET**

## GUIDANCE FOR THE READING AND UNDERSTANDING SAFETY DATA SHEETS

The SDS is a primary information source on hazardous chemicals. All chemical manufacturers and importers are required to evaluate the hazards of the products they market and furnish that information to the user on the SDS. SDSs are in English and have a specified 16-section format. If no relevant information is found for any given subheading within a section, the SDS must clearly indicate that no applicable information is available.

Heading	Subheading
1 Identification	(a) Product identifier used on the label; (b) Other means of identification; (c) Recommended use of the chemical and restrictions on use; (d) Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party; (e) Emergency phone number.
2. Hazard(s) identification	(a) Classification of the chemical in accordance with paragraph (d) of § 1910.1200; (b) Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of § 1910.1200. (Hazard symbols may be provided as graphical reproductions in black and white or the name of the symbol, e.g., flame, skull and crossbones); (c) Describe any hazards not otherwise classified that have been identified during the classification process; (d) Where an ingredient with unknown acute toxicity is used in a mixture at a concentration $\geq 1\%$ and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity is required.
3. Composition/ information on ingredients	Except as provided for in paragraph (i) of § 1910.1200 on trade secrets:
	For Substances
	(a) Chemical name;
	(b) Common name and synonyms;
	(c) CAS number and other unique identifiers;
	(d) Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance.
	For Mixtures
	In addition to the information required for substances:
	(a) The chemical name and concentration (exact percentage) or concentration ranges of all ingredients which are classified as health hazards in accordance with paragraph (d) of § 1910.1200 and
	(1) Are present above their cut-off/concentration limits; or (2) Present a health risk below the cut-off/concentration limits.
3. Composition/ information on ingredients	(b) The concentration (exact percentage) shall be specified unless a trade secret claim is made in accordance with paragraph (i) of § 1910.1200, when there is batch-to-batch variability in the production of a mixture, or for a group of substantially similar mixtures with similar chemical composition. In these cases, concentration ranges may be used.

Heading	Subheading
	<p>For All Chemicals Where a Trade Secret is claimed</p> <p>Where a trade secret is claimed in accordance with paragraph (i) of § 1910.1200, a statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.</p>
4. First-aid measures	<p>(a) Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion;</p> <p>(b) Most important symptoms/effects, acute and delayed.</p> <p>(c) Indication of immediate medical attention and special treatment needed, if necessary.</p>
5. Fire-fighting measures	<p>(a) Suitable (and unsuitable) extinguishing media.</p> <p>(b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products).</p> <p>(c) Special protective equipment and precautions for fire-fighters.</p>
6. Accidental release measures	<p>(a) Personal precautions, protective equipment, and emergency procedures.</p> <p>(b) Methods and materials for containment and cleaning up.</p>
7. Handling and storage	<p>(a) Precautions for safe handling.</p> <p>(b) Conditions for safe storage, including any incompatibilities.</p>
8. Exposure controls/personal protection	<p>(a) OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the SDS, where available.</p> <p>(b) Appropriate engineering controls.</p> <p>(c) Individual protection measures, such as personal protective equipment.</p>
9. Physical and chemical properties	(a) Appearance (physical state, color, etc.);
	(b) Odor;
	(c) Odor threshold;
	(d) pH;
	(e) Melting point/freezing point;
	(f) Initial boiling point and boiling range;
	(g) Flash point;
	(h) Evaporation rate;
	(i) Flammability (solid, gas);
	(j) Upper/lower flammability or explosive limits;
	(k) Vapor pressure;
	(l) Vapor density;
	(m) Relative density;
	(n) Solubility(ies);
(o) Partition coefficient: n-octanol/water;	
(p) Auto-ignition temperature;	

Heading	Subheading
	(q) Decomposition temperature;
	(r) Viscosity.
10. Stability and reactivity	(a) Reactivity;
	(b) Chemical stability;
	(c) Possibility of hazardous reactions;
	(d) Conditions to avoid (e.g., static discharge, shock, or vibration);
	(e) Incompatible materials;
	(f) Hazardous decomposition products.
11. Toxicological information	Description of the various toxicological (health) effects and the available data used to identify those effects, including:
	(a) Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact);
	(b) Symptoms related to the physical, chemical and toxicological characteristics;
	(c) Delayed and immediate effects and also chronic effects from short- and long-term exposure;
	(d) Numerical measures of toxicity (such as acute toxicity estimates).
	(e) Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs, or by OSHA.
12 Ecological information (Non-mandatory)	(a) Ecotoxicity (aquatic and terrestrial, where available); (b) Persistence and degradability; (c) Bioaccumulative potential; (d) Mobility in soil; (e) Other adverse effects (such as hazardous to the ozone layer).
13. Disposal considerations (Non-mandatory)	Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.
14. Transport information (Non-mandatory)	(a) UN number;
	(b) UN proper shipping name;
	(c) Transport hazard class(es);
	(d) Packing group, if applicable;
14. Transport information (Non-mandatory)	(e) Environmental hazards (e.g., Marine pollutant (Yes/No));
	(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code);
	(g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.
15. Regulatory information (Non-mandatory)	Safety, health and environmental regulations specific for the product in question.
16. Other information	The date of preparation of the SDS or the last revision.



## **APPENDIX D: HAZARD COMMUNICATION TRAINING PROGRAM AND TRAINING RECORDS**

# Hazard Communication Program Training

*Prepared in Accordance with:  
29 CFR §1910.1200(h)*



# Training Objectives

- Increase awareness of the types of chemical hazards, potential health effects, and protective measures
- Understand chemical labeling requirements
- Know where to locate SDSs and the written Hazard Communication Plan
- Know who to contact for additional information





# Regulatory Overview

- Chemical manufacturers, importers, and distributors classify the hazards of chemicals and communicate this information to employers
- Employers that “use” hazardous chemicals ensure this information is provided to exposed employees
- Employers use the information to implement a protective program to reduce worker exposures to hazardous chemicals



# What is a Hazardous Chemical?



- Any chemical which poses a physical or health hazard
- For simplicity, any chemical that has a SDS should be considered hazardous





# Physical Hazards

- Explosives
- Flammable Gases, Aerosols, Liquids, Solids
- Oxidizing Gases, Liquids, Solids
- Gases Under Pressure
- Self-Reactive Chemicals
- Chemicals which, in contact with Water, Emit Flammable Gases
- Pyrophoric Liquids, Solids
- Self-Heating Chemicals
- Organic Peroxides
- Corrosive to Metals



# Health Hazards

- Acute Toxicity
  - Adverse effect after oral dermal exposure (24 hr)  
inhalation exposure (4 hr)
- Skin Corrosion/Irritation
- Eye Damage/Irritation
- Carcinogenicity
- Respiratory/Skin Sensitization
- Germ Cell Mutagenicity
  - Permanent genetic material change
- Reproductive toxicity
  - Adverse effects on sexual function/fertility
- Specific Target Organ Toxicity
  - Single or repeated exposure
- Aspiration Hazard





# Types of Health Effects

## Acute

Effects occur from single or limited exposure over a short period of time (usually minutes to a day).

## Chronic

Effects occur from repeated exposures over a prolonged period of time (months to decades).

## Immediate

Symptoms occur instantaneously or shortly after exposure (usually within the hour).

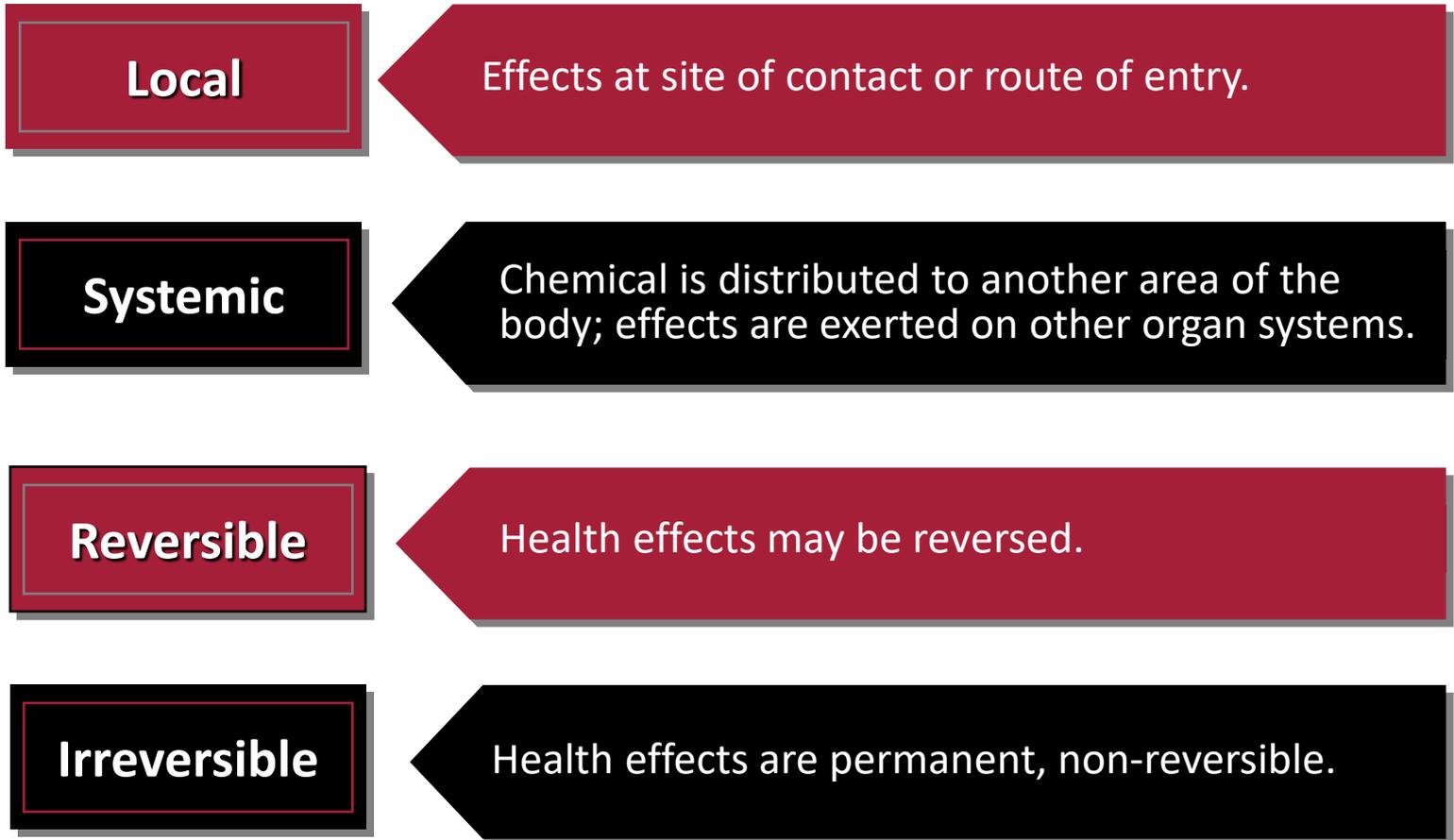
## Delayed

Symptoms are not apparent for a period after the exposure (usually hours/days to decades).





# Types of Health Effects



# Routes of Entry for Chemical Exposure



**INHALATION**  
(breathing)



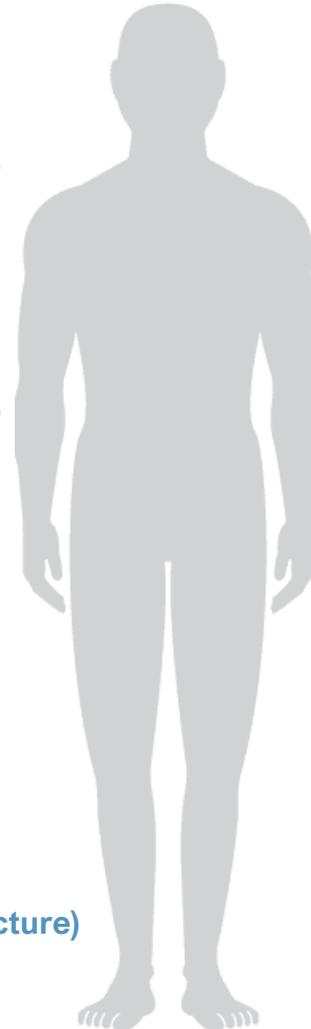
**INGESTION**  
(eating/swallowing)



**DERMAL**  
(absorbed through the skin)



**INJECTION**  
(bypassing the skin through a cut or puncture)

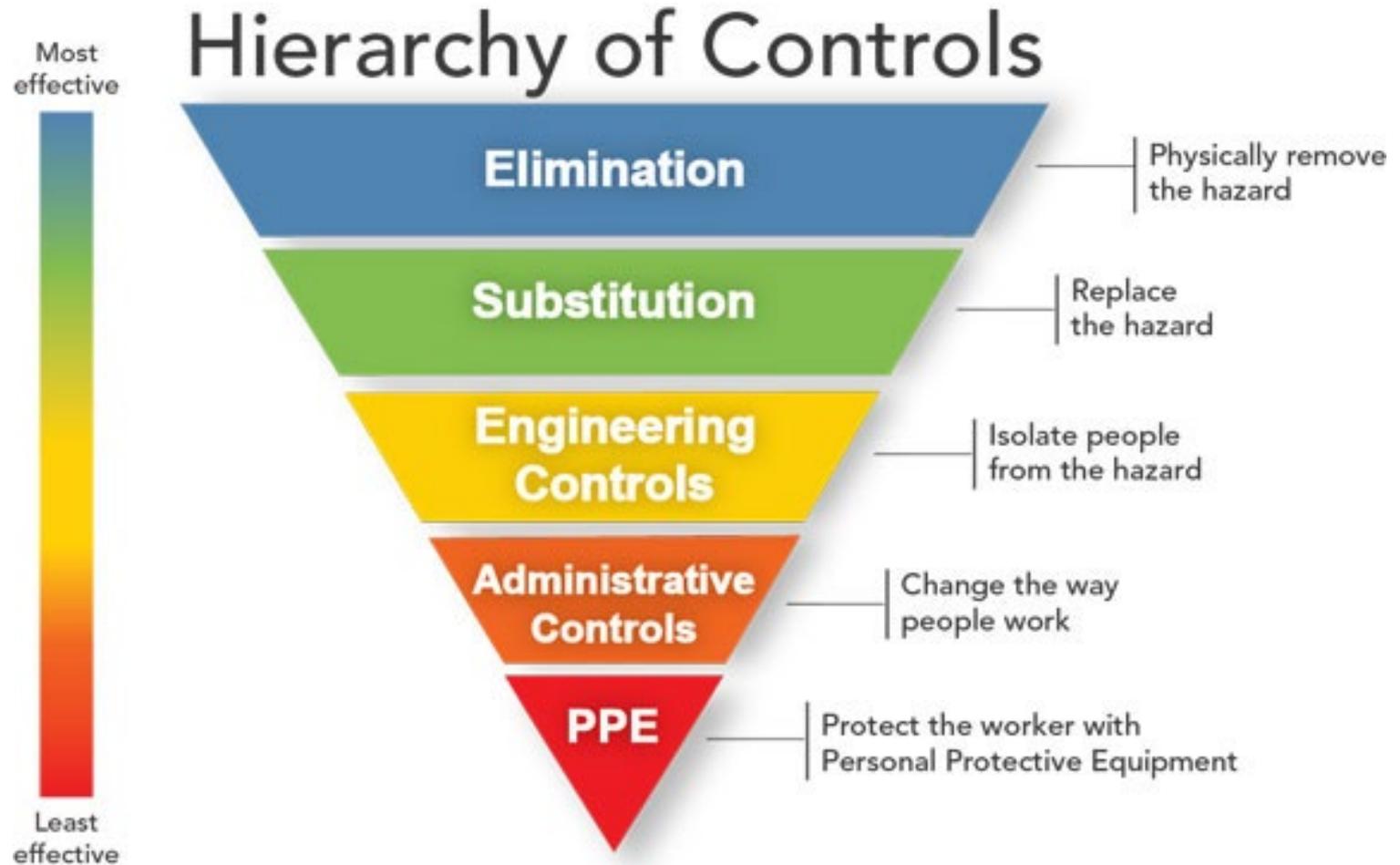


# Hazard Potential

- Hazard potential depends on a number of factors:
  - Toxicity
  - Dose
  - Route of entry
  - How the chemical is used and handled
  - Individual susceptibilities



# Protecting Yourself and Others



# Hazardous Chemical Information



- All hazardous chemicals received must be accompanied by an SDS
- All hazardous chemicals should be managed in accordance with the precautionary measures and handling procedures identified on the SDS
- SDS must be available in the workplace



# Format of the 16-Section SDS

- Section 1. Identification
- Section 2. Hazard(s) identification
- Section 3. Composition and information on ingredients
- Section 4. First-Aid measures
- Section 5. Fire-fighting measures
- Section 6. Accidental release measures
- Section 7. Handling and storage
- Section 8. Exposure controls and personal protection
- Section 9. Physical and chemical properties
- Section 10. Stability and reactivity
- Section 11. Toxicological information
- Section 12. Ecological information
- Section 13. Disposal considerations
- Section 14. Transport information
- Section 15. Regulatory information
- Section 16. Other information, including date of preparation or last revision



# Chemical Hazards Summary

- Review the SDS
- Know the primary routes of exposure
- Be aware of the different effects toxins can have
- Identify any relevant factors that may influence your reaction to toxins (e.g., medications, previous exposure, pre-existing disease)
- Immediately report any adverse signs or symptoms that could be attributed to hazardous chemical exposure



# Labeling Requirements

- Each hazardous chemical container must be labeled or marked with:
  - Product identifier
  - Signal word\*
  - Hazard statement(s)\*
  - Pictogram(s)\*
  - Precautionary statement(s)
  - Name & address of the manufacturer/responsible party



\* Standardized information



# Product Identifier

- Chemical name, code number, batch number

# Signal Words

- ***Danger***
  - Used for more severe hazards
- ***Warning***
  - Less severe hazards
- Only one signal word on label no matter how many hazards a chemical may have



# Hazard Statement(s)

- Describe the nature of the chemical hazard(s)
- All applicable hazard statements must appear on the label
- Specific to the hazard classification categories
- Are standardized for the same chemical hazards
- *Examples:*
  - *“Causes severe skin burns and eye damage”*
  - *“May be harmful if swallowed and enters airways”*
  - *“Causes damage to kidneys through prolonged or repeated exposure when absorbed through the skin”*



# Hazard Pictograms

## GHS – Hazard Pictograms and correlated exemplary Hazard Classes

### Physical Hazards



Explosives



Flammable Liquids



Oxidizing Liquids



Compressed Gases



Corrosive to Metals

### Health Hazards



Acute Toxicity



Skin Corrosion



Skin Irritation



CMR<sup>1)</sup>, STOT<sup>2)</sup>,  
Aspiration Hazard

### Env. Hazards



Hazardous to the  
Aquatic Environment

1) carcinogenic, germ cell mutagenic, toxic to reproduction / 2) specific target organ toxicity



# Precautionary Statements

- Describes recommended measures that should be taken to minimize or prevent adverse effects resulting from chemical exposure or improper chemical handling/storage
- The precautionary statement providing the most protective information will be on the label



# Labeling Example

Product Identifier	<b>n-Propyl Alcohol</b>	Pictograms
	UN 5548 Cas# 55-45-8	
Signal Word	<b>DANGER</b>	
Hazard Statement	Highly flammable liquid and vapor. Causes serious eye damage. May cause drowsiness and dizziness.	
Precautionary Statement	Keep away from heat/sparks/open flames/hot surfaces. No smoking. Avoid breathing fumes/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection. IF IN Eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present. Continue rinsing.	
	Fill Weight: 14.65 lbs. Lot Number: B56222434 Gross Weight: 15lbs Fill Date: 8/10/2014 Expiration Date: 6/10/2021	See SDS for further information.
Supplier Identification	EPI Chemical Company • 342 Jones Road • Dover, PA 17315 • <a href="http://www.epichem.com">www.epichem.com</a> • 987-555-4444	



# Workplace Container Labeling

- If transferring a chemical from its original container, label the new container with:
  - The same information as the original container (pictograms, hazard warning, etc.) or
  - Product identifier and words, pictures, or symbols that provide information about the hazards of the chemical



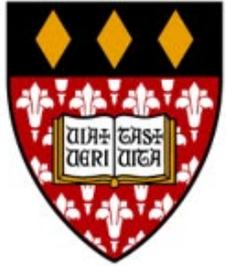
DIESEL FUEL	
HEALTH	1
FLAMMABILITY	2
REACTIVITY	0
PERSONAL PROTECTION	<input type="checkbox"/>



# Four Elements of the Regis College Hazard Communication Program

1. Written hazard communication plan
2. List all hazardous chemicals present at the facility
3. SDS and labels for each hazardous chemical
4. Communicate hazard information to employees through labels, SDSs, and formal training programs





# REGIS

A CATHOLIC UNIVERSITY IN GREATER BOSTON

**Hazard  
Communication  
Program**



Regis College

# Program Responsibilities

## ■ Program Coordinator:

- Implementation of the Hazard Communication program
- Manage the SDS inventory
- Maintain the list of hazardous chemicals
- System for labeling/placarding containers, tanks and vessels
- Overseeing and supporting employee training
- Reviewing and updating the written Hazard Communication program at least annually





# Program Responsibilities

## ■ **Employees:**

- Know how to access the chemical list and SDSs
- Read SDSs and labels and understand how to use the applicable information for safe job performance
- Use the appropriate work practice and safety equipment
- Label every container with the identity of its contents and appropriate hazard warnings
- Store incompatible chemicals in separate areas
- Substitute fewer toxic materials whenever possible
- Immediately report spill or suspected spills of chemicals



# Contractors

- Must be made aware of:
  - Location of SDSs
  - How the facility will inform contractors of precautionary measures to be taken during normal and emergency conditions
  - Chemical labeling used onsite
- Must follow safe work practices and have SDSs available for chemicals brought onsite
- Remove all unused chemicals when finished



# Response to Spills and Accidents

- All chemical spills should be reported, properly contained and cleaned up
- Employees should notify their supervisor to evaluate the spill quantity and location to determine if cleanup requires assistance from an outside contractor



# Medical Consultation



- If a spill or other occurrence results in a hazardous chemical exposure
- Employee develops signs or symptoms associated with a hazardous chemical
- Monitoring reveals exposure greater than the action level for a chemical



# Hazard Communication Summary

- Know your rights and responsibilities under the Hazard Communication Program
- Properly label all chemical containers
- Be familiar with the SDS and know the hazards associated with chemicals present in your work area
- Be mindful of your hazard potential and implement engineering and administrative controls
- Know how to select and use appropriate PPE to protect yourself when handling hazardous chemicals





# Questions?



## **APPENDIX E: RECORD OF CHANGES**





[woodardcurran.com](http://woodardcurran.com)  
COMMITMENT & INTEGRITY DRIVE RESULTS