

# *Hazardous Materials: Your Right to Know*



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## KIRKWOOD COMMUNITY COLLEGE

Kirkwood Community College strives to be a model for environmental, health and safety excellence in teaching, and the management of its facilities. Faculty, staff and students are responsible for establishing and promoting practices that ensure safety, protect health and minimize the institution's impact on the environment.

As an institution of higher learning, Kirkwood

- fosters an understanding of and a responsibility for the environment;
- encourages individuals to be knowledgeable about environmental, health and safety issues that affect their discipline;
- shares examples of superior environmental health and safety performance with peer institutions, the State of Iowa and the local community.

As a responsible steward of facilities and the environment, Kirkwood

- strives to provide and maintain safe working environments that minimize the risk of injury or illness for employees, students and the public;
- continuously improves operations, with the goal of meeting or exceeding authorized and applicable environmental, health and safety regulations, rules, policies, or voluntary standards;
- employs innovative strategies of waste minimization and pollution prevention to reduce the use of toxic substances, promote reuse, and encourage the purchase of renewable, recyclable and recycled materials.

It is the intent of this statement to promote environmental stewardship, protect health, and encourage safe work practices within the Kirkwood community.



# I. Introduction

## **Safety and Compliance Statement**

To comply with state and federal regulations and to ensure the safety of college employees and the community, Kirkwood Community College is dedicated to informing all employees who work with hazardous chemicals of both the hazardous properties of these chemicals and the protective measures that are available to minimize exposures to such chemicals. This information will be made available to employees by means of this written manual, labels on chemical containers, Material Safety Data Sheets (MSDS), and training. Employees will be informed of recognized hazards associated with chemicals they work with before their initial assignment and whenever the hazards change. The goal of Kirkwood's Worker Right to Know (WRTK) Program is to reduce employee exposure to hazardous chemicals, prevent chemically-related injuries and illnesses, and meet regulatory requirements.

## **Regulatory Basis**

The Worker Right to Know Manual has been designed to assist college departments in developing and implementing an action plan to comply with [Federal OSHA Hazard Communication](#) 29 CFR 1910.1200 and Iowa Occupational Safety and Health Administration (IOSHA) [Hazardous Chemical Risks Right To Know Standard](#), Iowa Administrative Code Section 875, Chapters 110, 130 and 140, effective March 31, 1999.

## II. Administrative Responsibilities

### Kirkwood Community College

Kirkwood Community College is responsible for ensuring the safety of its employees and for complying with applicable state and federal regulations. Kirkwood administration places a high value on safety and encourages employees at all levels to promote positive attitudes regarding safety, to incorporate safety into their work practices, and to cooperate fully in the implementation of safety-related programs.

### Environmental Health and Safety

The Facilities Department at Kirkwood Community College is responsible for developing and implementing health and safety-related programs within the college. To fulfill this responsibility, Facilities provides this manual and will assist individual departments in the development and implementation of WRTK programs for their areas. Specifically, Facilities has the responsibility for:

- Developing and providing basic WRTK training for college employees;
- Providing assistance to supervisors and employees in the implementation of the WRTK Program;
- Reviewing the labeling and hazard warning system that is used on secondary containers and ensuring that it is consistent throughout all departments;
- Compiling and maintaining an inventory database of hazardous materials (as supplied by departments);
- Compiling Material Safety Data Sheets for hazardous materials used (as supplied by departments) and maintaining them in a central location;
- Reviewing Material Safety Data Sheets on any currently used materials or any proposed new chemicals when there is doubt as to whether or not the material or chemical has any potentially hazardous ingredients or product safety issues; and
- Providing technical guidance and policy interpretation to college personnel.



## Departments

Each Kirkwood department is responsible for evaluating areas under its administrative control and determining whether hazardous chemicals are present. Departments that identify hazardous chemicals in their areas are responsible for the adopting and implementing the WRTK program. Departments participating in the program must:

- Designate someone to coordinate the program in their area;
- Submit inventories of hazardous chemicals used within the department to Facilities on an annual basis;
- Inform contractors working in the area of any hazards that they may encounter during the contract term; and
- Ensure that managers and supervisors implement the WRTK program effectively.

## Environmental Coordinators

Each department using hazardous chemicals will designate an individual (Environmental Coordinator) who will be responsible for facilitating information transfer (e.g., chemical inventories) between the department and Facilities. Environmental Coordinators may also provide WRTK training to department employees.

## Managers and Supervisors

Departmental managers and supervisors are knowledgeable about the processes and procedures conducted in their areas; they are primarily responsible for implementing the Worker Right to Know Program. The manager or supervisor of each work area is responsible for:

- Making Material Safety Data Sheets readily accessible to all employees during their work shifts;
- Properly labeling each container of hazardous material in the department with its contents and appropriate hazard warnings;
- Maintaining an inventory of hazardous chemicals present in the workplace;
- Coordinating employee medical consultation and/or surveillance with Campus Health and Human Resources in the event of an exposure to a hazardous chemical in the workplace;
- Maintaining records as required by IOSHA and EH&S; and
- Conducting training programs for department employees who work with or near hazardous materials. This training should include:
  - Potential hazards associated with workplace chemicals, including the availability of this manual;
  - Chemical-specific information (e.g., MSDS, chemical inventory);
  - Safe work practices;
  - Engineering controls;
  - Facility design features;
  - Personal protective equipment (PPE);
  - Emergency procedures

## Laboratory Supervisors

Laboratories that use potentially hazardous chemicals are governed by a number of policies. Although laboratories are exempt from most requirements of the Worker Right to Know Program, lab supervisors are required to:

- Ensure that labels on incoming chemical containers are not removed or defaced;
- Require that Material Safety Data Sheets are included with incoming shipments of hazardous chemicals, and that they are **readily accessible** to employees; and
- Minimize any potential exposure to employees by ensuring appropriate work practices and informing employees of the potential hazards of the chemicals used in their laboratory.

## Employees

The success of the WRTK Program ultimately lies in the hands of Kirkwood employees. Personnel who work with chemicals need to be conscientious in their efforts to follow the guidelines presented in this manual and to report the existence of health and safety hazards associated with chemical use to their supervisor and/or Facilities. Employees are responsible for ensuring their own safety:

- Actively participate in training programs and comply with training provisions;
- Know the hazards of materials you use at work; and
- Utilize measures that have been prescribed in order to ensure your protection from exposure to hazardous materials.

## Purchasing

Purchasing shall request an MSDS from vendors to accompany **all shipments** of hazardous materials and forward to the appropriate department/s.



## III. Program Requirements

### Location and Availability of the Written Worker Right to Know Program

A paper copy of the WRTK Manual, appropriate Material Safety Data Sheets and a list of hazardous chemicals must be available to all employees who work with or near hazardous chemicals. At this time, Kirkwood does not have electronic copies.

Employees will also be provided access to the Federal OSHA Standard 29 CFR 1910.1200 and Iowa Chemical Risks RTK Standard, Section 875, Chapters 110, 130, and 140. As a fulfillment to this requirement, links to these standards are provided in the introduction to this manual.

### Hazard Determination

Kirkwood Community College will rely on data from chemical manufacturers, distributors and importers from whom hazardous materials are purchased to evaluate the hazards of the chemicals in the workplace. The information on the MSDS is assumed to be accurate and complete.

### Hazardous Chemical Inventory

Departments must develop and maintain chemical inventories of hazardous chemicals in areas under their control. For the sake of simplicity, any material for which there is an MSDS should be considered hazardous. A chemical identity used on the chemical inventory can be a chemical name, common name or other designation, as long as it allows cross-reference to the container label and MSDS.

Chemical inventories should be submitted as follows:

- You may submit spreadsheet inventories by attaching your list to an email and sending it to Facilities.
- To simplify your chemical inventory, please format your list as follows:
  - Chemical inventories must be created for each location or room where chemicals are stored.
  - Label inventories with the following: building, room, department, date, person responsible for the information, and phone number.
  - Chemical name, quantity and units are the minimum required data. If possible, list the manufacturer, CAS number and location for each chemical.

**Example:**

Building: Linn Hall		Room:		Department:	
Date:		Name:		Phone:	
Chemical Name	Manufacturer	Quantity	Units	CAS#	Location
Acetone	Fisher	0.5		67641	Flammable Safety Cabinet
Cobalt	Fisher	0.5			Chemical Cabinet
Ethyl Alcohol	Fisher	1		64175	Flammable Safety Cabinet
Sulfuric Acid		2			Acids Cabinet
Titanium Dioxide	Sigma	1		13463677	North shelf

- To comply with federal reporting requirements, chemical quantities must be submitted in liters (L) or kilograms (kg).
- Preferred file format is Excel or equivalent. An [example](#) is attached.

The following materials are exempt and should **not** be listed as part of a department's hazardous chemical inventory:

- Hazardous waste regulated by the EPA
- Wood and wood products (in some circumstances wood dust is considered hazardous)
- Articles (furniture, tools, etc.) that do not release or otherwise result in exposure to a hazardous chemical under normal conditions of use)
- Foods, drugs or cosmetics intended for personal consumption by employees
- Consumer products used in the prescribed manner
- Most office products (e.g. white-out, glues, copier inks and toners, stamp pads, etc.)

### Material Safety Data Sheets

- Departments are required to obtain an MSDS from chemical manufacturers, distributors and/or importers for each hazardous chemical used in their work areas and have them available to employees during all work hours. An MSDS must be provided, upon request, to employees, their designated representatives, or the Assistant Secretary of Labor/OSHA.
- An MSDS should be requested on every purchase order requisition form. It must be provided to the department (by the manufacturer or distributor) at time of initial shipment, but do not need to physically accompany the shipment. Because manufacturers do not have to send multiple copies to a single employer, it will ultimately be the department's responsibility to have the MSDS available in their work areas.

- Departments that transfer or ship hazardous chemicals to other Kirkwood departments or college entities must ensure that the receiving party has the corresponding MSDS at or prior to the time of transfer. Additional requirements may apply to the shipment of hazardous/infectious materials. Contact Facilities at extension 5561 if you have additional questions.
  - You can also [search for an MSDS](#) online.
- Additional information regarding Material Safety Data Sheets is given in Appendix A.
- If you are having difficulty obtaining an MSDS from a manufacturer and need assistance, contact Facilities.

## Labels and Warnings

Containers of hazardous chemicals in areas controlled by a department must be labeled or tagged and marked in English (secondary languages, in addition to English, may also be used). Labels must have, at a minimum, the chemical identity and appropriate health and physical hazard warnings. "Identity" means chemical or common name or other designation as long as it allows cross-reference to the required MSDS and chemical inventory.

Whenever possible, manufacturers' labels should be used. When a secondary container must be used, the container must be labeled, at minimum, with the following:

- Identity of hazardous chemical
- Appropriate hazard warnings (Warning-Extremely Flammable, etc.)
- Name and address of manufacturer

MAGNESIUM OXIDE 014/250		CODE:
POWDERED MAGNESIUM OXIDE		BATCH:
<b>X</b> THE DANGEROUS CHEMICAL COMPANY	STORE IN DRY CONDITIONS	PRODUCED:
	HARMFUL BY INGESTION	NET WT. <b>KG.</b>
HARMFUL SPECIALIST ADVICE IN	AVOID EYE CONTACT	
0161 123 4567		

You can avoid having to address secondary labeling requirements by ordering smaller containers and refilling containers with manufacturers' labels already attached.

Departments may use signs, placards, or other such written materials rather than affixing labels to individual stationary containers, as long as the alternative method identifies the containers to which it is applicable and conveys the information required in the preceding paragraph.

**An unmarked or unlabeled container cannot be used to contain a hazardous chemical.**

Hazardous chemicals transferred from labeled containers may be re-labeled with just the chemical (or common) name of the product, as long as the chemical is used only by the individual who made the transfer, and the chemical is used during the shift in which the transfer was made. Any storage of excess chemical would require complete secondary labeling as described above. All labels must be legible. Facilities discourages the use of hand written labels.

## Employee Information and Training

Kirkwood employees will be informed of the requirements of the Hazard Communication Standard through training programs. Employees will be informed of operations in their department where hazardous chemicals are present and the dangers posed by those chemicals. Methods to avoid exposure will be explained during department-specific information and training sessions.

### Department Responsibilities

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Department supervisors will provide the department-specific WRTK training for their employees. This training will be provided **before** work with hazardous chemicals begins and whenever new hazardous chemicals are introduced to the work area.

During an inspection, departments are expected to make WRTK training materials readily available for review by Iowa OSHA. This training will inform employees as to:

- The location and contents of 29CFR 1910.1200 and the Iowa Chemical Risks RTK standard, Section 875, Chapters 110, 130, and 140.
- The location of the hazardous chemical inventory of materials in their work area.
- The physical and health hazards associated with the hazardous materials.
- How to read and understand Material Safety Data Sheets and where they are maintained.
- How to read and understand product labels and other warnings used to identify hazardous materials in their work area (e.g. signs, placards, etc.).
- How and where Kirkwood's written WRTK program can be obtained.
- How to determine the presence or release of a hazardous material in their work area.
- How to protect themselves from physical and health hazards: proper work procedures, emergency procedures, and appropriate personal protective equipment (PPE).
- Emergency procedures for chemical accidents.



Each training session must include verbal presentations, written communication, and the opportunity to ask questions. Audiovisuals (e.g., videos, pictures, etc.) may be used to augment training sessions, but cannot be solely substituted for verbal communication and question and answer sessions.

Employees must receive training **prior to** performing any non-routine task involving hazardous chemicals and hazards associated with unlabeled pipes. The training will include information on the specific chemical hazards and measures the employee must take to ensure safety during performance of the new task.

## Facilities Responsibilities

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Facilities provides optional training that gives employees a general understanding of the WRTK program, including its training requirements. Each department's coordinator will ensure that WRTK training for hazards specific to each employee's work area has been completed.

WRTK training offered by Facilities includes:

- How employees can detect the presence or release of hazardous chemicals;
- Types of physical and health hazards of chemicals that may be encountered at work;
- How employees can protect themselves from hazards associated with chemicals and the procedures Kirkwood has implemented to provide employee protection such as workplace practices and PPE; and
- Details of Kirkwood's WRTK Program, including how to read and interpret information found on chemical labels and Material Safety Data Sheets.

## Record Keeping

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Departments are responsible for keeping proper records of WRTK training they give to their employees.

Records should include:

- An employee sign-in sheet (with the date, time and location of the training session);
- An outline of topics covered;
- Copies of any written materials given out during the training; and
- Quizzes or other means used to ensure employee understanding and retention of materials presented.

## Contractor Work

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Any contractor hired by Kirkwood Community College will be informed by the contracting department of any chemical hazards present, which its employees may encounter during the term of the contract. Copies of the appropriate MSDS will be made available upon request.

The contractor will be required to adhere to all established safe work practices and college procedures. The contractor will also inform the college, in advance, of all hazardous materials that will be used during a project. Material Safety Data Sheets will be available for all hazardous products used. Kirkwood reserves the right to refuse the use of any product which poses an excessive risk or will require additional training of college employees.



## IV. Regulatory Overview

The Iowa Hazardous Chemical Risks Right to Know standard (Iowa Administrative Code Section 875, Chapters 110, 130, 140) includes four main topics:

- 110 - General Provisions
- 130 - Community Right to Know
- 140 - Public Safety/Emergency Response Right to Know (Emergency RTK).
- 1910.1200 - Worker Right to Know

Listed below is a brief overview of the regulatory requirements of each chapter.

### **Chapter 110—General Provisions**

Chapter 110 contains the purpose, scope and application of the Hazard Communication Standard. This chapter requires that hazards of all chemicals produced or imported are evaluated and that the information is transmitted to affected employees and employers. Chapter 110 includes information on:

- Regulatory exemptions
- Definitions
- Hazard determination
- Labels and other forms of warning
- Material Safety Data Sheets
- Trade secrets

### **Chapter 130—Community Right to Know**

Upon request, Kirkwood Community College will inform the public of the presence of hazardous chemicals stored on campus and the potential health and environmental hazards that the chemicals pose. If the release of the information could create a possible security concern, the college will provide the reason for refusal within ten days. If the request is from a health professional, the information will be provided as soon as possible.

A department's hazardous chemical inventories and information on Material Safety Data Sheets developed for WRTK may be used to meet the requirements of Chapter 130—Community Right to Know.

### **Chapter 140—Public Safety/Emergency Response Right to Know**

Iowa Public Safety/Emergency Response Right to Know requires departments to identify and label hazardous chemical storage areas. Labels or signs conform to the National Fire Protection Association's (NFPA's) standard system for identifying fire hazards of chemicals. Signage rules (based on NFPA standard 704-1980) have been adopted under Iowa code.

For buildings less than 5,000 square feet, signs must be posted on the outside of the building. For buildings over 5,000 square feet, signs must be posted where hazardous chemicals are stored.

Signs shall identify health, flammability, reactivity, and any special hazards. Each category shall indicate severity numerically by five classifications, with “4” indicating severe hazard and “0” indicating no hazard.

Where posting of signs could be misleading due to small quantities on hand, the posting requirement may be waived. Consult the [Hazard Communication Standard](#) or contact Facilities at 398-5561 for details on posting requirements.

Chemical inventories and locations of hazardous chemicals will be made available to the appropriate fire department upon their request.

### **1910.1200 Worker Right to Know**

The Kirkwood Community College WRTK Program is intended to ensure compliance to this standard. The statute requires the college to ensure that information concerning chemical hazards is transmitted to affected employees. This must be accomplished by a comprehensive hazard communication program which includes:

- A written program
- Employee information and training
- Container labeling requirements
- Material Safety Data Sheets
- Department-specific chemical inventories
- Contractor work at Iowa State University
- Non-routine tasks
- Trade secrets

# Appendix A

## Material Safety Data Sheets

Material Safety Data Sheets (MSDS) are information sheets required by OSHA for hazardous chemicals. The Hazard Communication Standard CFR29 1910.1200 and the Iowa Hazardous Chemical Risks Right to Know Standard (Iowa Administrative Code Section 875, Chapters 110, 130, 140) require that employers make an MSDS “readily accessible” for any hazardous chemical in the workplace and state that employers must ensure that employees are made aware of MSDS content and storage locations. Therefore, it is a regulatory requirement that employers (including laboratories) maintain an MSDS for each hazardous chemical in its inventory. Material Safety Data Sheets may be obtained electronically, but to meet the “readily accessible” criteria, each department must maintain paper copies of any MSDS for chemicals that are used frequently.

When departments receive Material Safety Data Sheets for new chemicals, the original MSDS must be placed in the department’s designated MSDS storage area.

NOTE: Manufacturers and distributors must provide Material Safety Data Sheets to the department/consignee (only) at time of initial shipment.



Departments that transfer (ship) hazardous chemicals to other departments or to non-college entities must ensure the receiving party has the appropriate MSDS at or prior to time of transfer.

## Sample Explanation and Glossary of a Material Safety Data Sheet

OSHA specifies what information must be included on a Material Safety Data Sheet, but does not prescribe the precise format for an MSDS. A non-mandatory MSDS form (OSHA Form 174) that meets the Hazard Communication Standard requirements can be used as is or expanded as needed. You can find this form on [OSHA's website](#). Some Material Safety Data Sheets may look substantially different because the order and format of information is not mandatory. Nonetheless, the same information should be included. The MSDS must be in English and must include at least the following information:

### Section I. Chemical Identity

The chemical and common name(s) must be provided for single chemical substances. An identity on the MSDS must be cross-referenced to the identity found on the label.

### Section II. Hazardous Ingredients

For a hazardous chemical mixture that has been tested as a whole to determine its hazards, the chemical and common names of ingredients that are associated with the hazards, and the common name of the mixture must be listed. If the chemical is a mixture that has not been tested as a whole, the chemical and common names of all ingredients determined to be health hazards and comprising 1% or greater of the composition must be listed. All components of a mixture that have been determined to present a physical hazard must be listed.

Chemical and common names of carcinogens must be listed if they are present in the mixture at levels of 0.1% or greater.

Chemical and common names of all ingredients determined to be health hazards and comprising less than 1% (0.1% for carcinogens) of the mixture must also be listed if they can still exceed an established Permissible Exposure Limit (PEL) or Threshold Limit Value (TLV) or present a health risk to exposed employees at these concentrations.

### Section III. Physical and Chemical Characteristics

The physical and chemical characteristics of the hazardous substance must be listed. These include items such as boiling and freezing points, density, vapor pressure, specific gravity, solubility, volatility, and the product's general appearance and odor. These characteristics provide important information for designing safe and healthful work practices.

### Section IV. Fire and Explosion Hazard Data

A chemical's potential for fire and explosion must be described. Also the fire hazards of the chemical and the conditions under which it could ignite or explode must be identified. Recommended extinguishing agents and fire-fighting methods must be described.

### Section V. Reactivity Data

This section presents information about other chemicals and substances with which the chemical is incompatible or with which it reacts. Information on any hazardous decomposition products, such as carbon monoxide, must be included.

## Section VI. Health Hazards

The health hazards of the chemical, together with signs and symptoms of exposure, must be listed. In addition, any medical conditions that are aggravated by exposure to the compound must be included. The specific types of chemical health hazards defined in the standard include carcinogens, corrosives, toxins, irritants, sensitizers, mutagens, teratogens and effects on target organs (i.e., liver, kidney, nervous system, blood, lungs, mucous membranes, reproductive system, skin, eyes, etc.)

The route of entry section describes the primary pathway by which the chemical enters the body. There are three principal routes of entry: inhalation, ingestion and skin absorption.

This section of the MSDS supplies the OSHA permissible exposure limit (PEL), the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV), and other exposure levels used or recommended by the chemical manufacturer.

If the compound is listed as a carcinogen (cancer-causing agent) by OSHA, the National Toxicology Program (NTP), or the International Agency for Research on Cancer (IARC), this information must be indicated on the Material Safety Data Sheet.

## Section VII. Precautions for Safe Handling and Use

The standard requires the preparer to describe the precautions for safe handling and use. These include recommended industrial hygiene practices, precautions to be taken during repair and maintenance of equipment and procedures for cleaning up spills and leaks. Some manufacturers also use this section to include useful information not specifically required by the standard, such as EPA waste disposal methods and state and local requirements.

## Section VIII. Control Measures

The standard requires the preparer of the MSDS to list any generally applicable control measures. These include engineering controls, safe handling procedures and personal protective equipment. Information is often included on the use of goggles, gloves, body suits, respirators, and face shields.

## Appendix B

### Table of Definitions for Hazardous Chemicals

Health Hazard	Definition	Example
Carcinogen	Causes abnormal cell growth and metastases. Identified by NTP, IARC, & OSHA.	<a href="#">Benzene</a>
Corrosive	Destroys living tissue (Irreversible Damage). Corrodes metal.	<a href="#">Sulfuric Acid</a>
Highly Toxic	Oral LD <sub>50</sub> < 50 mg/kg (Rat) Skin LD <sub>50</sub> < 200 mg/kg (Rabbit) Inhalation LC <sub>50</sub> < 200 PPM gas or vapor, LC <sub>50</sub> < 2 mg/L dust, fume or mist w/in 1 hr. (Rat).	<a href="#">Arsine</a> <a href="#">Parathion</a> <a href="#">TDI</a>
Irritant	Reversible, inflammatory damage to living tissue. Eye irritants included (16 CFR 1500.42).	<a href="#">Potassium Hydroxide</a>
Sensitizer	“Allergic” reaction developed after repeated exposure.	<a href="#">Formaldehyde</a>
Toxic	Oral LD <sub>50</sub> > 50 to 500 mg/kg (Rat). Skin LD <sub>50</sub> > 200 to 1000 mg/kg within 24 hr. (Rabbit). Inhalation LD <sub>50</sub> > 200 to 2000 PPM gas or vapor, LD <sub>50</sub> > 20 mg/L fume, mist, or dust w/in 1 hr. (Rat).	<a href="#">Aniline</a> <a href="#">Cyanogen (gas)</a>
Target Organ	Hazardous effect on specific organs (e.g., liver, kidney, CNS, skin, etc.) .	<a href="#">PVC (Polyvinyl chloride)</a>

## Appendix C

### Table of Definitions for Physical Hazards

Physical Hazard	Description	Example
Combustible Liquid	Flash Point from 100-199 degrees F.	<a href="#">Kerosene</a>
Compressed Gas	Gas or liquid which naturally develops high pressures in a container at room temperature.	<a href="#">Nitrogen</a>
Explosive	Sudden release of pressure, gas, & heat when subjected to shock, pressure, or high temperature.	<a href="#">Sodium Azide</a>
Flammable	A gas, liquid, or solid which readily burns in the presence of an ignition source. (29CFR 1910.1200(C)).	<a href="#">Acetylene</a>
Organic Peroxide	A very reactive organic compound. Structural derivative of H <sub>2</sub> O <sub>2</sub> .	<a href="#">Per benzoic Acid</a>
Oxidizer	Initiates or causes combustion of other materials.	<a href="#">Perchloric Acid</a>
Pyrophoric	Ignites spontaneously in air at 130 degrees F or less.	<a href="#">Titanium Dichloride</a>
Unstable	Vigorously undergoes polymerization, decomposition, or condensation via shock, pressure, or temperature.	<a href="#">Potassium Nitrate</a>
Water Reactive	Reacts with water to form flammable gas or produce a health hazard.	<a href="#">Sodium Metal</a>