STOCKTON

THE RICHARD STOCKTON COLLEGE OF NEW JERSEY

Public Employees Occupational Safety and Health, (PEOSH) Hazard Communication Standard (HCS)

&

NJ Worker and Community Right-to-Know Act (RTK)

Regulations

- NJ Worker and Community Right-to-Know Act
  - State Standard
  - (1983 public and private sectors)
- OSHA Hazard Communication Standard
  - Federal Standard 29CFR1910.1200
  - (1983 private sector; public sector not covered!)
- PEOSH Hazard Communication Standard
  - State Standard N.J.A.C. 12:100-7 approved by OSHA
  - (2004 NJ public sector)

NOTE!

- Public employers are required to comply with **both** PEOSH HCS & the RTK Act.

PEOSH HCS & Right to Know Act
A Comparison

- HCS Compliance
  - Written Program
  - List of Chemicals
  - Container Labeling
  - Obtain/Maintain MSDS's
  - ***Train Employees***
- RTK Compliance
  - Complete RTK Survey
  - RTK Poster
  - Establish Central File
  - Container Labeling

PEOSH HCS
Who is Covered?

All public employers and employees* who use or store hazardous chemicals or products containing hazardous chemicals.

*Includes those employees with the potential for exposure.

What Is A Hazardous Chemical?

- **A "hazardous chemical" is defined as a chemical which is a physical or a health hazard.**

Physical Hazard

- A chemical for which there is scientifically valid evidence that it is:
  - Combustible liquid (flash pt 100-200°F)
  - Compressed gas
  - Explosive
  - Flammable
  - Organic peroxide
  - Oxidizer
  - Pyrophoric (ignite spontaneously)
  - Unstable or reactive (polymerize, decompose…)
  - Water reactive

Health Hazard

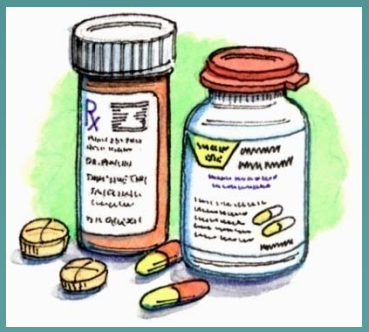
- A chemical for which there is statistically significant evidence that acute or chronic health effects may occur in exposed employees
  - Carcinogens
  - Toxic or highly toxic agents
  - Irritants
  - Corrosives
  - Sensitizers (allergic reactions)
  - Reproductive toxins
  - Heptatotoxins (liver)
  - Nephrotoxins (kidney)
  - Neurotoxins (nervous system)
  - Act on hemoatopoietic system (blood)
  - Damage lungs, skin, eyes or mucous membranes

Sources of Information

- PEOSH HCS-N.J.A.C. 12:100-7.4
  - For sources of information used to ID hazardous chemicals
- Material Safety Data Sheets (MSDS)
  - Provided by manufacturers & importers
- OSHA's 29 CFR 1910 subpart Z - Toxic and Hazardous Substances List

Products Not Covered by the Standard

- Consumer Products
  - These items become regulated when they are used in a manner beyond normal consumer use.
- Food or Tobacco Products
- Drugs, Cosmetics
- Biological Hazards



PEOSH HCS

N.J.A.C. 12:100-7

- Purpose of the HCS
  - Ensure the evaluation of all hazardous chemicals
  - Communicate chemical hazards to employers & employees
  - Ensure that employees are properly trained & equipped to handle hazardous chemicals

PEOSH HCS

N.J.A.C. 12:100-7

- Provisions of the HCS
  - Chemical Hazard Evaluation
  - ***Written*** Hazard Communication Program
  - Container labeling
  - Material Safety Data Sheets (MSDS)
  - Employee Training

PEOSH HCS

N.J.A.C. 12:100-7.4

- Chemical Hazard Provision
  - Responsibility of manufacturers & distributors
    - Each hazardous chemical produced or imported must be evaluated for its ability to cause adverse health effects.

This section does not apply to public employers unless you create or ship hazardous chemicals to others.

Laboratories

- For Labs covered under the Occupational Exposure to Hazardous Chemicals In Laboratories Standard (29 CFR 1910.1450)*, the requirements of the PEOSH HCS are superseded.

- Still required to comply with the provisions of the RTK Act.

*Labs where multiple chemicals or chemical procedures are used, the procedures are not part of a production process, and protective laboratory practices and equipment are available and in common use.

PEOSH HCS

N.J.A.C. 12:100-7.5

Written

Hazard

Communication

Program

PEOSH HCS

N.J.A.C. 12:100-7.5

Written Hazard Communication Program

- Describes how the requirements of the standard will be put into place in our facility. Made available to all employees.
  - Paper handout
  - Also available on-line on the Risk Management website.

PEOSH HCS

N.J.A.C. 12:100-7.5

Written Hazard Communication Program

- Employers must develop and maintain a written program at each workplace.
- Must be made available, upon request within 15 working days, to:
  - Employees
  - Commissioners of DOL & DHSS

PEOSH HCS

N.J.A.C. 12:100-7.5

Written Hazard Communication Program

- Describes how labeling, providing (M)SDS's and training employees will be met.
- Employers can use their RTK Survey as the list

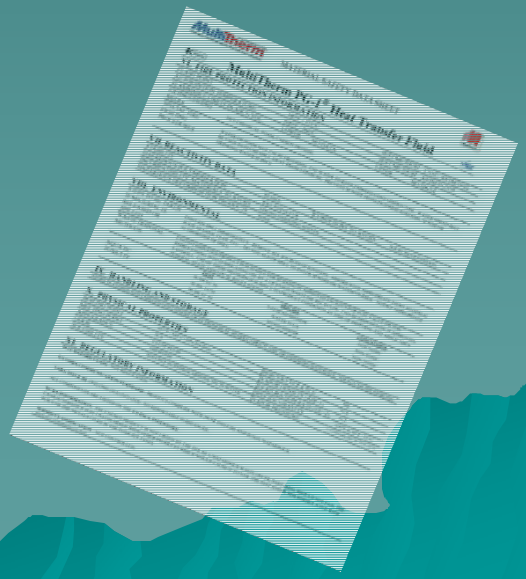
PEOSH HCS

N.J.A.C. 12:100-7.5

Written Hazard Communication Program

- Explains how employees will be informed of the hazards of non-routine tasks and working with chemicals in unlabeled pipes.

- Provides information regarding the availability & location of (M)SDS's & HSFS's.



PEOSH HCS

N.J.A.C. 12:100-7.5

Written Hazard Communication Program

- Describes employee training programs
  - Initial (provided upon assignment to work with a hazardous chemical)
  - When new hazards are introduced to the work environment
  - Refresher (every two years)

PEOSH HCS

N.J.A.C. 12:100-7.5

Written Hazard Communication Program

- The written program must reflect the policies and procedures implemented to comply with the standard and must be specific to the facility.

PEOSH HCS

N.J.A.C. 12:100-7.6

Container Labeling

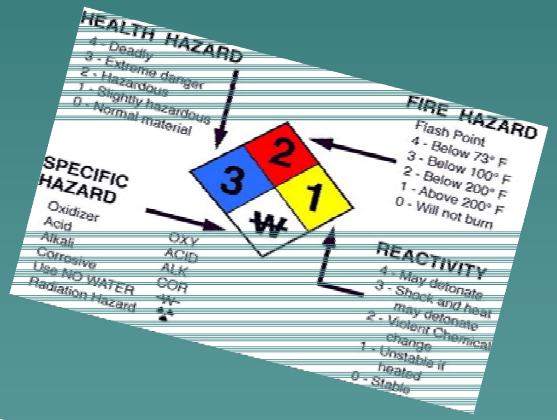
- Performed by manufacturer's, producer & distributors.
- Labels must contain:
  - Chemical identity
  - Hazard warnings
  - ID target organs affected
  - Manufacturers' name & address

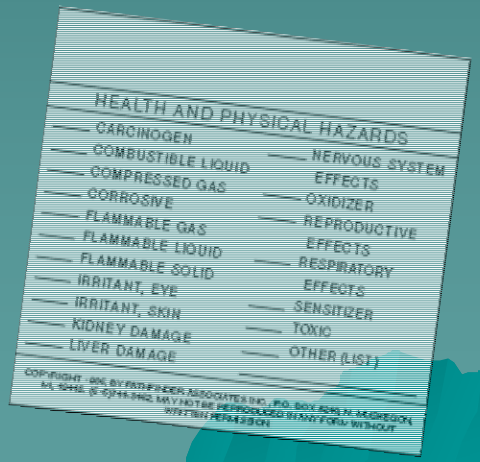
Container Labeling

PEOSH HCS

N.J.A.C. 12:100-7.6

- Warning may be in the form of:
  - Words
  - Pictures
  - Symbols





PEOSH HCS

N.J.A.C. 12:100-7.5

Container Labeling

- Public employers must ensure that incoming containers are labeled and, if necessary, transfer containers are labeled.

Public employers are required to comply with both the HCS and RTK labeling requirements. (Check RTK guidelines for all exceptions to RTK labeling. i.e.; consumer products, DOT, UN, FDA, etc.)

- **In 2013 OSHA revised its Hazard Communication Standard (HCS) to align with the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS).**

- **Three (3) significant changes contained in the revised standard require the use of new pictograms, new labeling elements, and a standardized format for Safety Data Sheets (SDSs), formerly known as, Material Safety Data Sheets (MSDSs).**

PEOSH HCS

N.J.A.C. 12:100-7.7

(Material) Safety Data Sheets (M)SDS's)

- Prepared by manufacturer or importer.
- Prepared for all hazardous chemicals or products.
- Required that they be provided to distributors & downstream employers.

PEOSH HCS

N.J.A.C. 12:100-7.7

(Material) Safety Data Sheets (M)SDS's)

- Public employer's must:
  - Obtain & maintain MSDS's for each hazardous chemical or product *(they are required to be in English, but can also be kept in other languages.)*
- Make them accessible to employees in their work areas during their work shift.
- Alternatives to paper copies are permitted (e.g., electronic access, microfiche.)

PEOSH HCS

N.J.A.C. 12:100-7.8

Employee Training

- Training must be provided to all employees who are exposed to hazardous chemicals under normal conditions of use or in a foreseeable emergency.

PEOSH HCS

N.J.A.C. 12:100-7.8

Employee Training

- Training is provided during working hours at no cost to the employee.
- Provided by a “technically qualified person.”

Note: Certification of trainers is not required under PEOSH HCS

PEOSH HCS

N.J.A.C. 12:100-7.8

Employee Training

- Training must be appropriate in content, vocabulary, educational level, literacy, and language.
- Documentation of training is required & is kept for the duration of an individual's employment.
- Responsible Staff are charged with securing attendance records.

PEOSH HCS

N.J.A.C. 12:100-7.8

Types of Employee Training

- General/Refresher
  - Provided to employees at the time of hire or new assignment
  - Covers the overall HCS & RTK programs.
  - Can be face-to-face or on-line.
  - Refresher training required every two years.
  - Provided by Risk Mgmt. and Environment/ Health/Safety

PEOSH HCS

N.J.A.C. 12:100-7.8

Types of Employee Training

- Initial/Specific
  - Provided by local supervision (Responsible Staff.)
  - Workplace specific training that covers:
    - Proper handling & storage of hazardous chemicals.
    - Provide relevant PPE & demonstrate use.
    - Location of (M)SDS's/HSFS's and how to interpret them.
    - How to interpret container labels.
    - When a new hazard is introduced to the work environment.

For Additional Information

- www.stockton.edu
  - Type RTK or Risk in keywords
  - Look for Written Hazard Communication Program

- N.J. Dept. of Health & Senior Services
  - PEOSH Program PO Box 360 Trenton, NJ 08625-0360
  - www.nj.gov/health/eoh/peoshweb
- N.J. Dept. of Labor
  - Div. of Public Safety & Occupational Safety & Health PO Box 386 Trenton, NJ 08625-0386
  - www.nj.gov/labor.lsse/lspeosh.html

N.J. Worker & Community Right to Know Act

- What We'll Cover
  - The RTK Central File
    - (M)SDS's, HSFS's, HSL, RTK Survey
  - The RTK Survey
  - The Chemical Inventory
  - The RTK Poster
  - The RTK Brochure
  - Container Labeling

N.J. Worker & Community Right to Know Act
RTK Survey

- List of products that contain hazardous substances according to the NJ Hazardous Substance List Book
- ID's the on-site hazardous chemicals for emergency responders and for each department's employees.
- NJ requires the Original Survey to be submitted annually to the State with copies to the County, police, fire & local emergency responders.
- The complete survey every five years with updates in the interim.
- Each department can use its portion of the survey for their "List of Hazardous Chemicals."

N.J. Worker & Community Right to Know Act
RTK Survey

- Overview of the Survey
- Completion Procedures:
  - Dept. of Risk Mgmt. & Environment/ Health/Safety Responsibilities
  - Individual department responsibilities

N.J. Worker & Community Right to Know Act RTK Hazardous Substance List

Under the New Jersey Worker and Community RTK Act, the RTK Program is required to develop the Right to Know Hazardous Substance List (RTKHSL). The revised RTKHSL contains 2,455 hazardous substances, including those which are on the Special Health Hazard Substance List (SHHSL).

The Special Health hazards are:

Carcinogens – cancer causing

Teratogens – substances that can cause birth defects by damaging a fetus

Mutagens – substances that can cause a change in genetic material

Corrosive – substances (solid, liquid, gas) that cause destruction of skin or containers

Flammable – substances (solid, liquid, vapor, gas) that ignites easily

Reactive – substances (solid, liquid, gas) that releases energy under certain conditions

N.J. Worker & Community Right to Know Act
(Material) Safety Data Sheets

Material Safety Data Sheet
Acetone Oxime, 98%

ACC# 60177

Section 1 - Chemical Product and Company Identification

MSDS Name: Acetone Oxime, 98%
Catalog Numbers: AC102390000, AC102390050, AC102391000, AC102395000
Synonyms: Acetoxime
Company Identification:
Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410
For Information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
127-06-0	Acetone Oxime	98 %	204-820-1

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white solid.
Warning! Toxic. Harmful if swallowed. Harmful if inhaled. May cause eye and skin irritation. May cause respiratory and digestive tract irritation.
Target Organs: No data found.

Potential Health Effects
Eye: May cause eye irritation.
Skin: May cause skin irritation.
Ingestion: Harmful if swallowed. Ingestion of large amounts may cause gastrointestinal irritation.
Inhalation: Harmful if inhaled. May cause respiratory tract irritation.
Chronic: No information found.

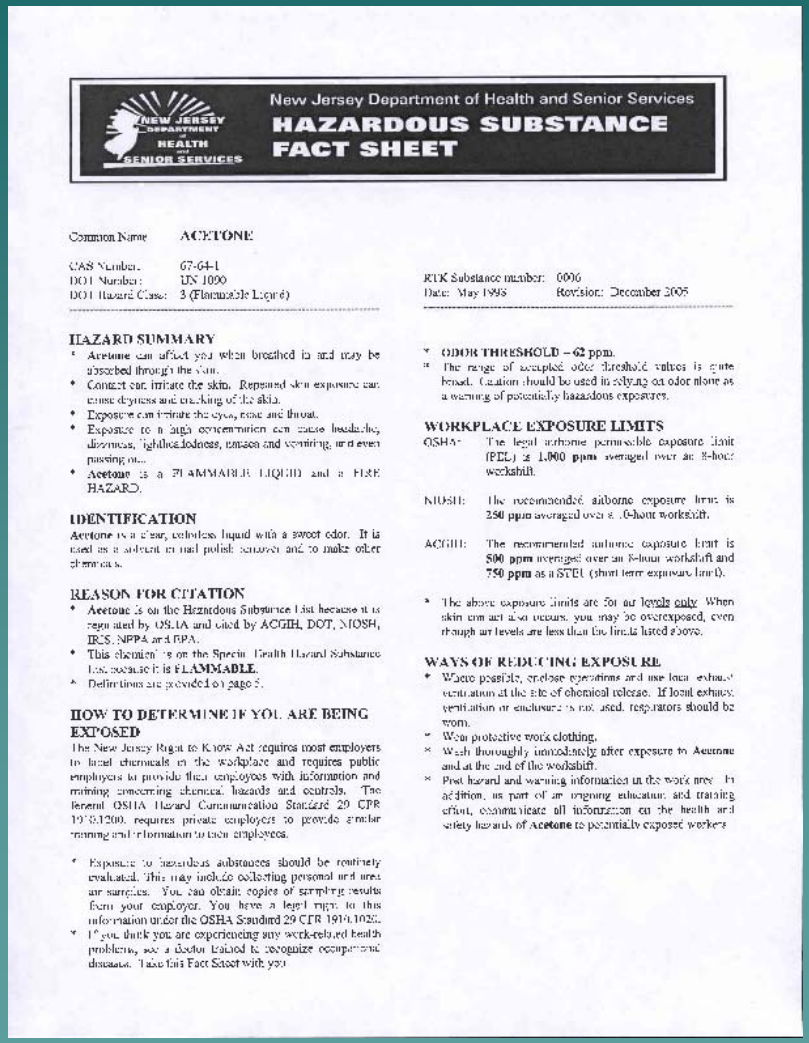
Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air

Other Sections Included:

- **Fire Fighting Measures**
- **Accidental Release Measures**
- **Handling & Storage**
- **Exposure Controls, Personal Protection**
- **Physical & Chemical Properties**
- **Stability & Reactivity**
- **Toxicology Info.**
- **Ecological Info.**
- **Disposal Considerations**
- **Transport Info.**
- **Regulatory Info.**

N.J. Worker & Community Right to Know Act
Hazardous Substance Fact Sheets



New Jersey Department of Health and Senior Services

HAZARDOUS SUBSTANCE FACT SHEET

Common Name: **ACETONE**

CAS Number: 67-64-1
DOT Number: UN 1090
DOT Hazard Class: 3 (Flammable Liquid)

RTK Substance number: 0006
Date: May 1995 Revision: December 2005

HAZARD SUMMARY

- Acetone can affect you when breathed in and may be absorbed through the skin.
- Contact can irritate the skin. Repeated skin exposure can cause dryness and cracking of the skin.
- Exposure can irritate the eyes, nose and throat.
- Exposure to high concentration can cause headache, dizziness, lightheadedness, nausea and vomiting, and even passing out.
- Acetone is a FLAMMABLE LIQUID and a FIRE HAZARD.

IDENTIFICATION

Acetone is a clear, colorless liquid with a sweet odor. It is used as a solvent in nail polish remover and to make other chemicals.

REASON FOR CITATION

- Acetone is on the Hazardous Substance List because it is regulated by OSHA and cited by ACGIH, DOT, NIOSH, IRS, NFPA and EPA.
- This chemical is on the Special Health Hazard Substance List because it is FLAMMABLE.
- Definitions are provided on page 5.

HOW TO DETERMINE IF YOU ARE BEING EXPOSED

The New Jersey Right to Know Act requires most employers to label chemicals in the workplace and requires public employers to provide their employees with information and training concerning chemical hazards and controls. The federal OSHA Hazard Communication Standard 29 CFR 1910.1200, requires private employers to provide similar training and information to their employees.

- Exposure to hazardous substances should be routinely evaluated. This may include collecting personal and area air samples. You can obtain copies of sampling results from your employer. You have a legal right to this information under the OSHA Standard 29 CFR 1910.1020.
- If you think you are experiencing any work-related health problems, see a doctor trained to recognize occupational diseases. Take this Fact Sheet with you.
- **ODOR THRESHOLD – 62 ppm.**
- The range of reported odor threshold values is quite broad. Caution should be used in relying on odor alone as a warning of potentially hazardous exposures.

WORKPLACE EXPOSURE LIMITS

OSHA: The legal airborne permissible exposure limit (PEL) is **1,000 ppm** averaged over an 8-hour workshift.

NIOSH: The recommended airborne exposure limit is **250 ppm** averaged over a 10-hour workshift.

ACGIH: The recommended airborne exposure limit is **500 ppm** averaged over an 8-hour workshift and **750 ppm** as a STEL (short term exposure limit).

- The above exposure limits are for air levels only. When skin contact also occurs, you may be overexposed, even though air levels are less than the limits listed above.

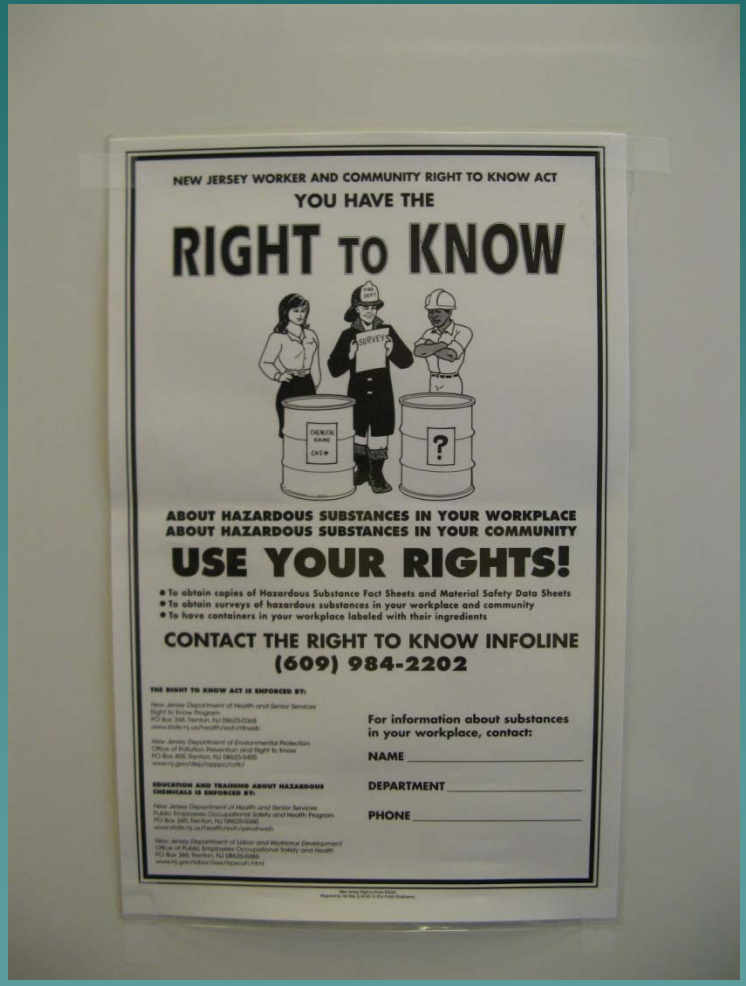
WAYS OF REDUCING EXPOSURE

- Where possible, enclose operations and use local exhaust ventilation at the site of chemical release. If local exhaust ventilation or enclosure is not used, respirators should be worn.
- Wear protective work clothing.
- Wash thoroughly immediately after exposure to Acetone and at the end of the workshift.
- Post hazard and warning information in the work area. In addition, as part of an ongoing education and training effort, communicate all information on the health and safety hazards of **Acetone** to potentially exposed workers.

Other Sections Included:

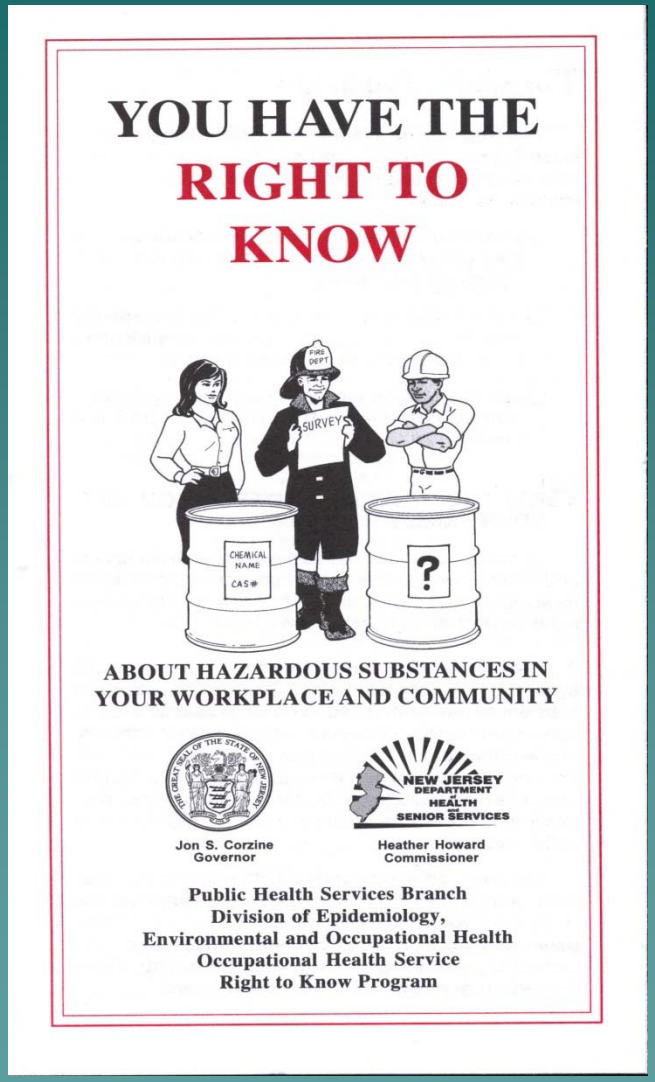
- **Health Hazard Info.**
- **Medical**
- **Workplace Controls & Practices**
- **Personal Protective Equip.**
- **Handling & Storage**
- **Q & A**
- **Definitions**
- **Emergency Info.**
  - **Fire hazards**
  - **Spills**

N.J. Worker & Community Right to Know Act
Right-to-Know Poster



The Poster describes the rights of a public employee under the Right to Know law and tells them who to contact for more information about the law and hazardous materials at their workplace.

N.J. Worker & Community Right to Know Act
Right-to-Know Brochure



The brochure provides public employees with general information regarding the NJ Worker & Community *Right to Know Act.*

Hazardous Materials / Waste Emergency Response Procedures

Purpose

- Protection of life & health
- Protection of environment & property

Hazardous Materials / Waste

Emergency Response Procedures

- Discovering a spill or leak
  - Report the spill immediately to Campus Police (x911) and then your supervisor
    - Initiate measures to protect yourself and others
    - Isolate the spill area, alert personnel in nearby areas
    - Evacuate the area if necessary

Hazardous Material / Waste

Emergency Response Procedures

- Small Spills
  - Respond only if you routinely handle the material, have RTK training specific to the material, and wear the proper PPE.
    - •Protect people, the environment & property from the effects of the release.
    - •Respond from a safe distance & keep the material from spreading into floor drains or catch basins.

Hazardous Materials / Waste

Emergency Response Procedures

- Large Spills
  - Only off-site resources have the specific team training and equipment to respond.

  Emergency contacts;

  - Campus Police ⇨ Fire Department ⇨ Sheriff's Department ⇨ Atlantic County Hazmat Team

  - Clean Harbors 24-hour emergency services: 1-800-645-8265 - for clean-up and disposal

New Supplement to Hazard Communication Training

the

Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

New Rules on Hazard Communication to improve worker understanding of the hazards associated with the chemicals in their workplace

OSHA revised its Hazard Communication Standard (HCS) to align with the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Three (3) significant changes contained in the revised standard require the use of new pictograms, new labeling elements, and a standardized format for Safety Data Sheets (SDSs), formerly known as, Material Safety Data Sheets (MSDSs).

Pictograms:

- OSHA's required pictograms must be in the shape of a square set at a point and include a black hazard symbol on a white background with a red frame sufficiently wide enough to be clearly visible. A square red frame set at a point without a hazard symbol is not a pictogram and is not permitted on the label. OSHA has designated eight pictograms under this standard for application to a hazard category.

New Rules on Hazard Communication to improve worker understanding of the hazards associated with the chemicals in their workplace

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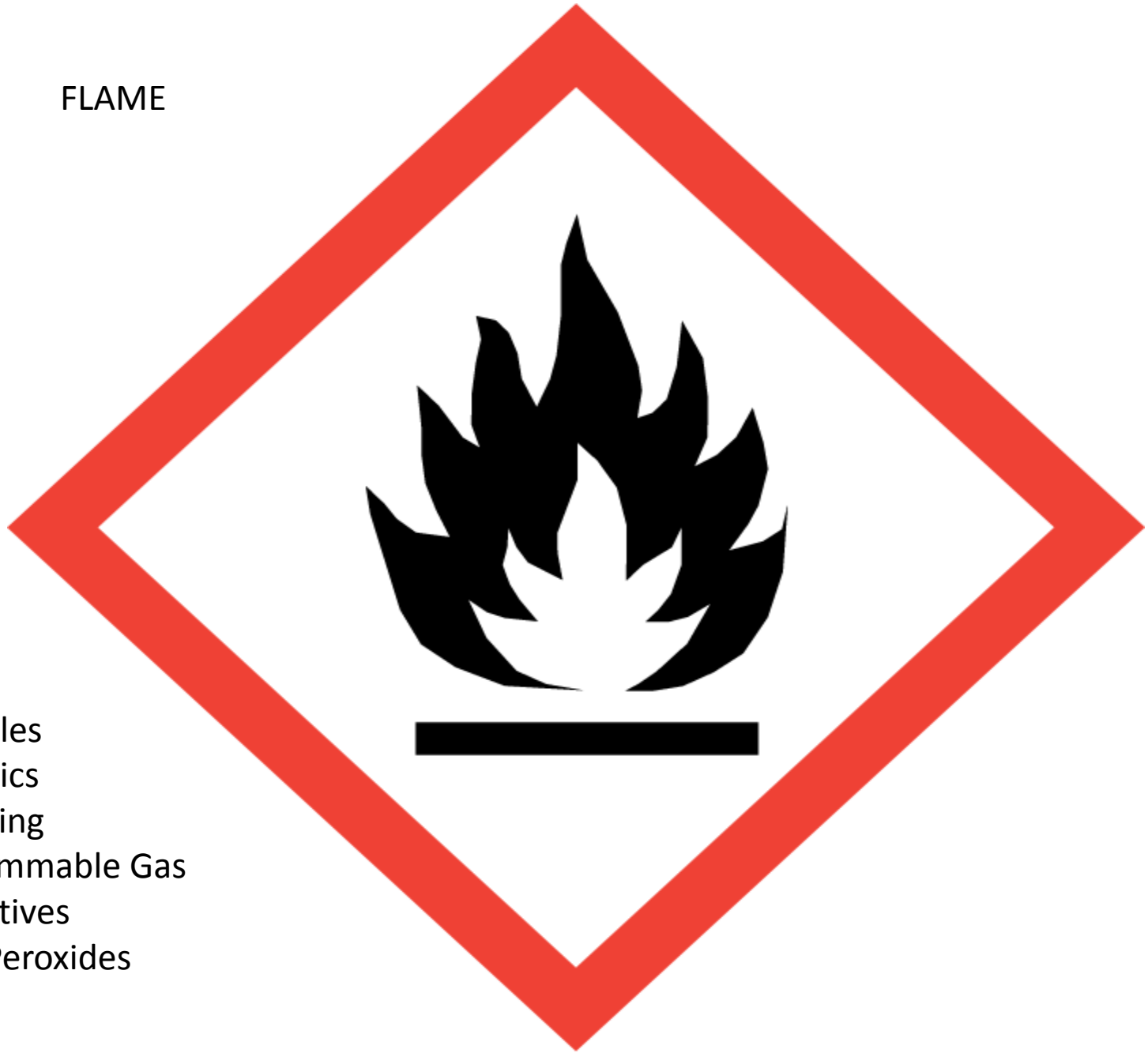
Figure 1: Pictograms and Hazards

Health Hazard • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	**Flame** • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	**Exclamation Mark** • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
Gas Cylinder • Gases Under Pressure	**Corrosion** • Skin Corrosion/ Burns • Eye Damage • Corrosive to Metals	**Exploding Bomb** • Explosives • Self-Reactives • Organic Peroxides
Flame Over Circle • Oxidizers	**Environment** **(Non-Mandatory)** • Aquatic Toxicity	**Skull and Crossbones** • Acute Toxicity (fatal or toxic)

HEALTH HAZARD

-Carcinogen
-Mutagenicity
-Reproductive Toxicity
-Respiratory Sensitizer
-Target Organ Toxicity
-Aspiration Toxicity

FLAME

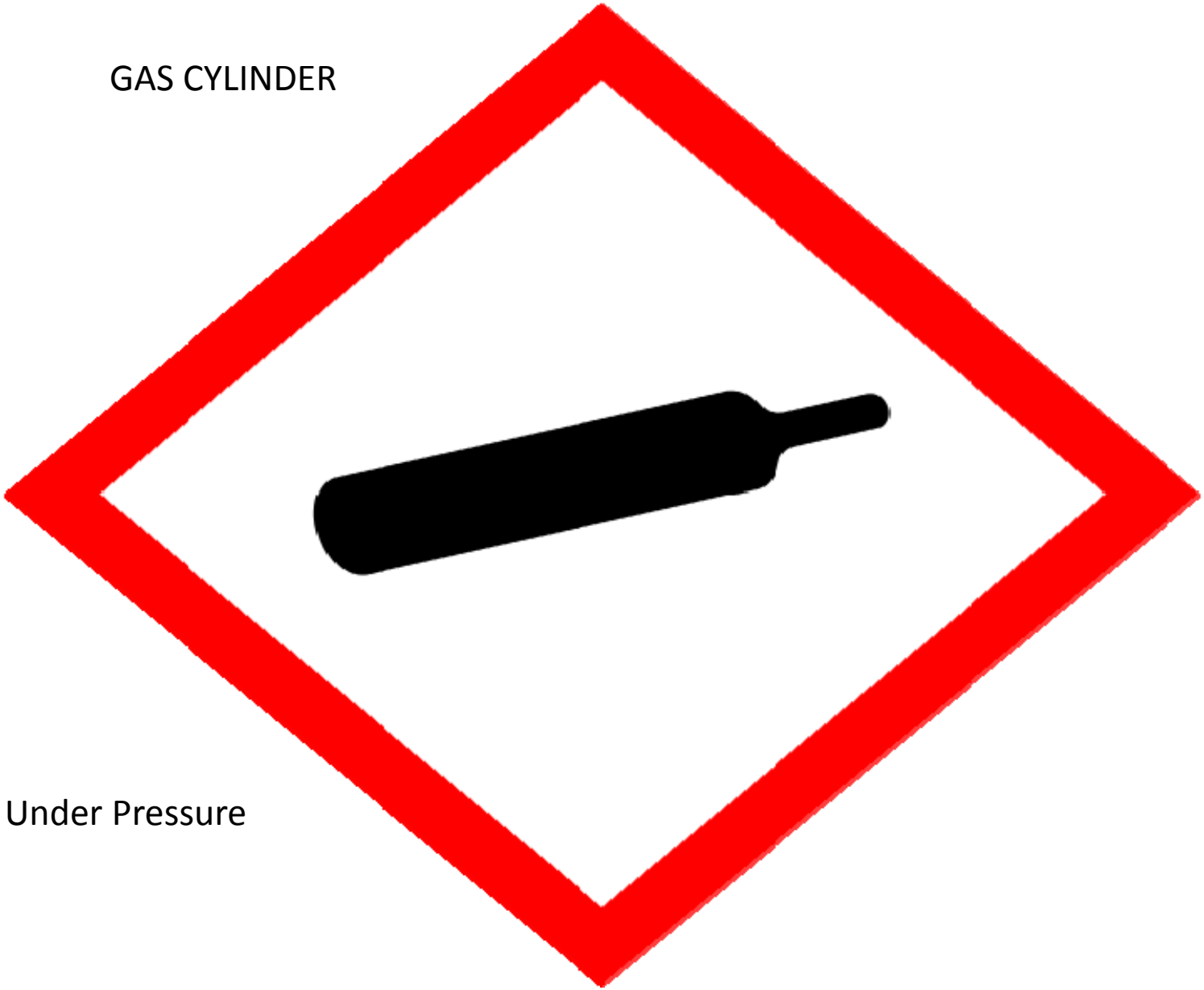


-Flammables
-Pyrophorics
-Self-Heating
-Emits Flammable Gas
-Self-Reactives
-Organic Peroxides

EXCLAMATION MARK

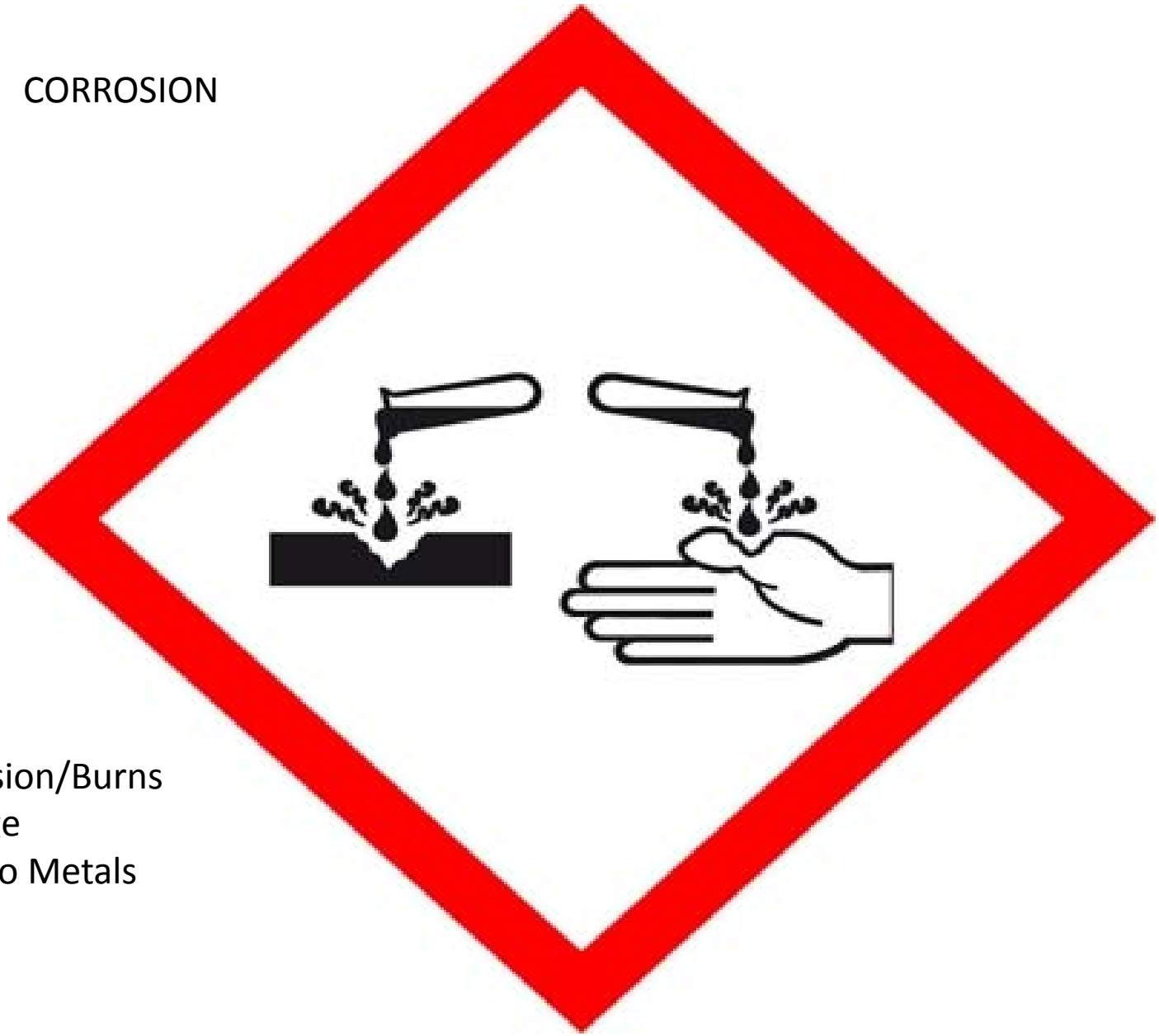
-Irritant (skin and eye)
-Skin Sensitizer
-Acute Toxicity (harmful)
-Narcotic Effects
-Respiratory Tract Irritant
-Hazardous to Ozone Layer

GAS CYLINDER



Gases Under Pressure

CORROSION

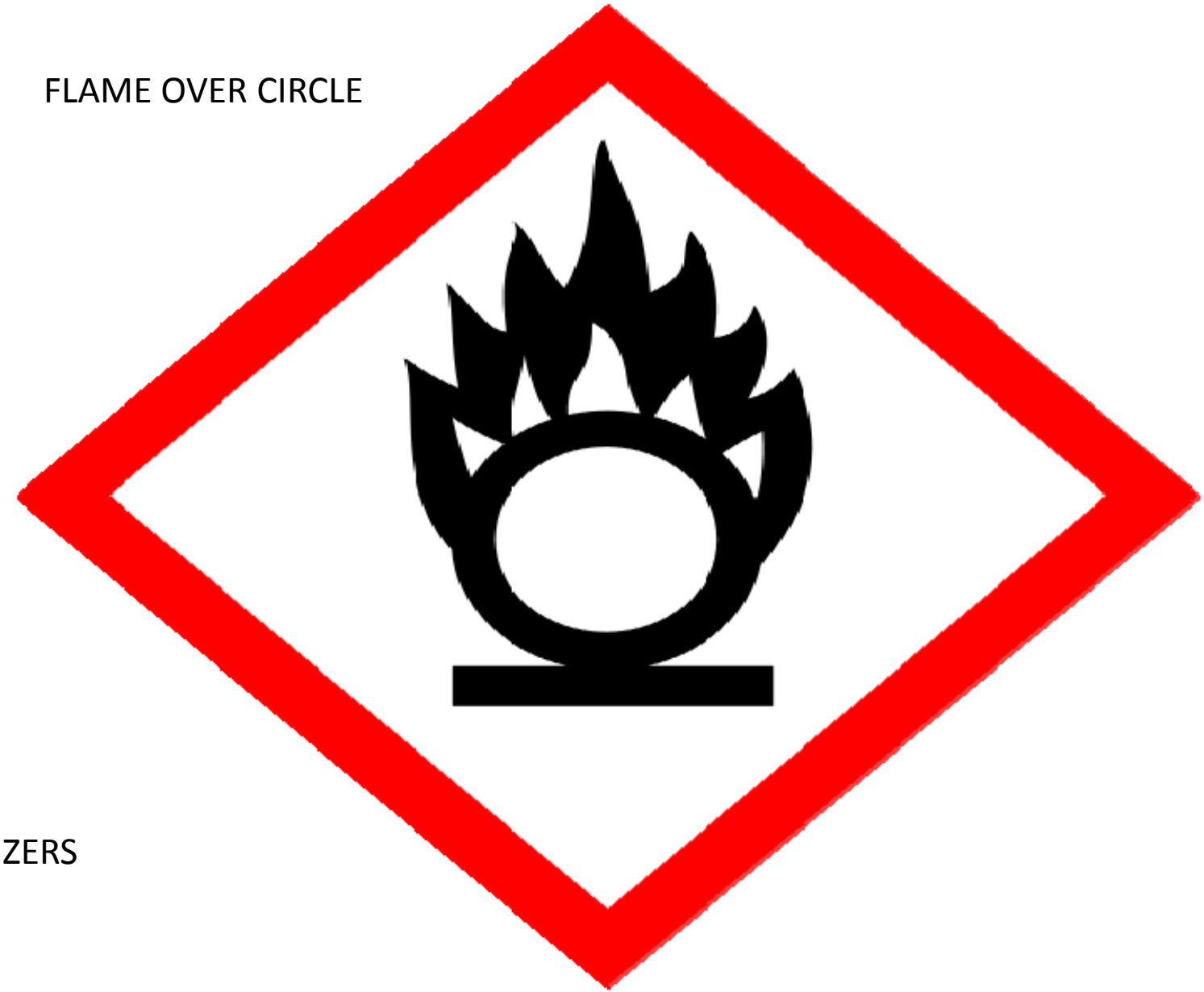


-Skin Corrosion/Burns
-Eye Damage
-Corrosive to Metals

EXPLODING BOMB

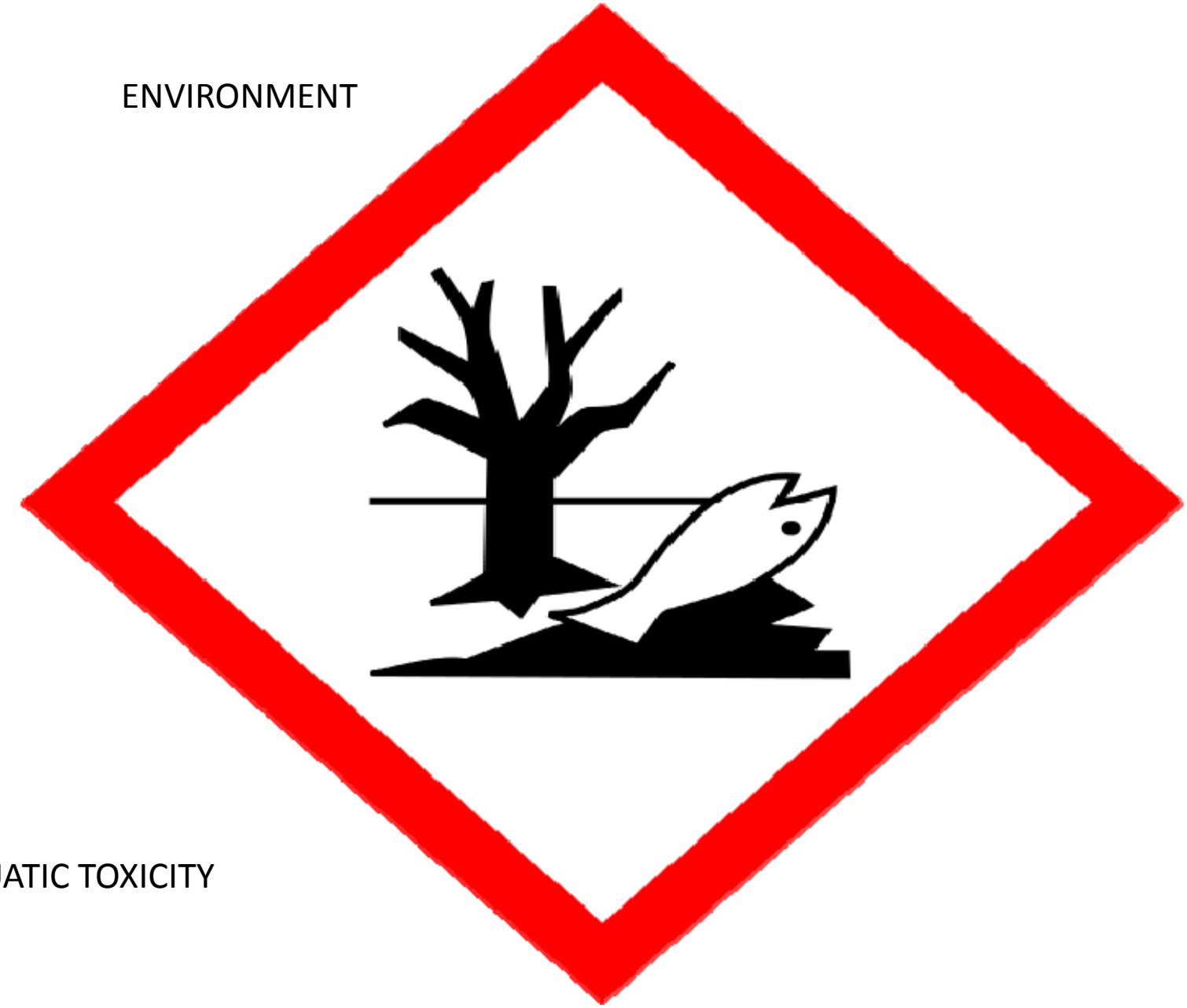
-Explosives
-Self-Reactives
-Organic Peroxides

FLAME OVER CIRCLE



OXIDIZERS

ENVIRONMENT



AQUATIC TOXICITY

SKULL and CROSSBONES

ACUTE TOXICITY
(fatal or toxic)

OSHA GHS Labels **do not** replace DOT Labels

It is important to note that the OSHA pictograms do not replace the diamond shaped labels that the U.S. Department of Transportation (DOT) requires for the transport of chemicals, including chemical drums, chemical totes, tanks or other containers.

The DOT labels must be on the external part of a shipped container and must meet the DOT requirements.

The DOT diamond label is required for all hazardous chemicals on the outside shipping containers, chemicals in smaller containers inside the larger shipped container do not require the DOT diamond but do require the OSHA pictograms.

Examples of DOT and OSHA GHS Labels
(Both represent the same hazards)

DOT

OSHA
GHS

Labels: 1

- Labels, as defined in the HCS, 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 to the outside packaging.

Examples of DOT labels not to be confused with OSHA GHS labels

Labels for a hazardous chemical must contain:

- • Name, Address and Telephone Number
- • Product Identifier
- • Signal Word
- • Hazard Statement(s)
- • Precautionary Statement(s)
- • Pictogram(s)

SAMPLE OF NEW GHS LABEL

CODE_____
Product Name_____

Product Identifier

Company Name_____

Street Address_____
City_____State_____
Postal Code_____ Country_____
E**merg**ency Phone Number_____

Supplier Identification

HAZARD PICTOGRAMS

Signal Word
DANGER

Hazard Statements

Highly flammable liquid and vapor.
May cause liver and kidney damage

Precautionary Statements

Keep container tightly closed. Store in a cool, well-ventilated place that is locked.
Keep away from heat/sparks/open flame. No Smoking.
Only use non-sparking tools.
Do not breathe vapors.
Wear protective gloves. Do not eat, drink or smoke when using this product.
Dispose of in accordance with local, regional, national, regulations as specified.

In Case of Fire: use dry chemical (BC) or Carbon Dioxide fire extinguisher to extinguish.

First Aid: if exposed call Poison Center.
If on skin, take off immediately any contaminated clothing.
Rinse skin with water

Supplemental Information

Directions for Use:

_____
_____

Fill weight_____Lot Number_____
Gross weight_____Fill Date;_____
Expiration Date:_____

Product Identifier

- **Product Identifier is how the hazardous** chemical is identified. This can be (but is not limited to) the chemical name, code number or batch number. The manufacturer, importer or distributor can decide the appropriate product identifier. The same product identifier must be both on the label and in section 1 of the SDS.

Supplier Identification

- **Name, Address and Telephone Number**
- of the chemical manufacturer, importer or
- other responsible party.

Hazard statement(s):

- describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard. For example: “Causes damage to kidneys through prolonged or repeated exposure when absorbed through the skin.” All of the applicable hazard statements must appear on the label. Hazard statements may be combined where appropriate to reduce redundancies and improve readability. The hazard statements are specific to the hazard

Precautionary statement(s):

- **means 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.**

Signal Words

Signal Words are used to indicate the relative level of severity of the hazard and alert the reader to a potential hazard on the label. There are only two words used as signal words**, "Danger" and "Warning**."

Within a specific hazard class, "***Danger" is used for the more severe hazards*** and ***"Warning" is used for the less severe hazards***. There will only be one signal word on the label no matter how many hazards a chemical may have. If one of the hazards warrants a "Danger" signal word and another warrants the signal word "Warning," then only "Danger" should appear on the label.

Supplementary Information.

The label producer may provide additional instructions or information that it deems helpful. It may also list any hazards not otherwise classified under this portion of the label. This section must also identify the percentage of ingredient(s) of Unknown acute toxicity when it is present in a concentration of ≥1% (and the classification is not based on testing the mixture as a whole).

Safety Data Sheets

The Hazard Communication Standard (HCS) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDSs) (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of hazardous chemical products. As of June 1, 2015, the HCS will require new SDSs to be in a uniform format, and include the section numbers, the headings, and associated information under the headings below:

SDS Headings

- Section 1, Identification includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.
- Section 2, Hazard(s) identification includes all hazards regarding the chemical; required label elements.
- Section 3, Composition/information on ingrédients includes information on chemical ingredients; trade secret claims.
- Section 4, First-aid measures includes important symptoms/ effects, acute, delayed; required treatment.
- Section 5, Fire-fighting measures lists suitable extinguishing techniques, equipment; chemical hazards from fire.
- Section 6, Accidental release measures lists emergency procedures; protective equipment; proper methods of containment and cleanup.

SDS 2

- Section 7, Handling and storage lists precautions for safe handling and storage, including incompatibilities.
- Section 8, Exposure controls/personal protection lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).
- Section 9, Physical and chemical properties lists the chemical's characteristics.
- Section 10, Stability and reactivity lists chemical stability and possibility of hazardous reactions.
- Section 11, Toxicological information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.
- Section 12, Ecological information
- Section 13, Disposal considerations
- Section 14, Transport information
- Section 15, Regulatory information
- Section 16, Other information, includes the date of preparation or last revision.

What is Classification?

- Classification is the starting point for hazard communication. It involves the identification of the hazard(s) of a chemical or mixture by assigning a category of hazard/danger using defined criteria. The GHS is designed to be consistent and transparent. It draws a clear distinction between classes and categories in order to allow for **"self classification"**. For many hazards a decision tree approach (e.g., eye irritation) is provided in the GHS Document. For several hazards the GHS criteria are semi-quantitative or qualitative.

Classification Numbers – Flammable Liquids

Category	Criteria
1	Flash point < 23°C and initial boiling point ≤ 35°C (95°F)
2	Flash point < 23°C and initial boiling point > 35°C (95°F)
3	Flash point ≥ 23°C and ≤ 60°C (140°F)
4	Flash point ≥ 60°C (140°F) and ≤ 93°C (200°F)

Classification Numbers – Flammable Solids

Category	Criteria
1	Metal Powders: burning time ≤ 5 minutes Others: wetted zone does not stop fire & burning time < 45 seconds or burning rate > 2.2 mm/second
2	Metal Powders: burning time > 5 and ≤ 10 minutes Others: wetted zone stop fire for at least 4 minutes & burning time < 45 seconds or burning rate > 2.2mm/second

Classification Letters – Self Reactive Substances

Type	Criteria
A	Can detonate or deflagrate rapidly, as packaged.
B	Possess explosive properties and which, as packaged, neither detonates nor deflagrates, but is liable to undergo a thermal explosion in that package.
C	Possess explosive properties when the substance or mixture as package cannot detonate or deflagrate rapidly or undergo a thermal explosion.
D	•Detonates partially, does not deflagrate rapidly and shows no violent effect when heated under confinement; or •Does not detonate at all, deflagrates slowly and shows no violent effect when heated under confinement; or •Does not detonate or deflagrate at all and shows a medium effect when heated under confinement.
E	Neither detonates nor deflagrates at all and shows low or no effect when heated under confinement.
F	Neither detonates in the cavitated bubble state nor deflagrates at all and shows only a low or no effect when heated under confinement as well as low or no explosive power.
G	Neither detonates in the cavitated state nor deflagrates at all and shows non effect when heated under confinement nor any explosive power, provided that it is thermally stable (self-accelerating decomposition temperature is 60°C to 75°C for a 50 kg package), and, for liquid mixtures, a diluent having a boiling point not less than 150°C is used for desensitization.

Classification Numbers – Substances which on Contact with Water Emit Flammable Gases

Category	Criteria
1	≥10 L/kg/1 minute
2	≥20 L/kg/ 1 hour + < 10 L/kg/1 min
3	≥1 L/kg/1 hour + < 20 L/kg/1 hour
Not classified	< 1 L/kg/1 hour

Classification Letters – Organic Peroxides

Type	Criteria
A	Can detonate or deflagrate rapidly, as packaged.
B	Possess explosive properties and which, as packaged, neither detonates nor deflagrates rapidly, but is liable to undergo a thermal explosion in that package.
C	Possess explosive properties when the substance or mixture as packaged cannot detonate or deflagrate rapidly or undergo a thermal explosion.
D	•Detonates partially, does not deflagrate rapidly and shows no violent effect when heated under confinement; or •Does not detonate at all, deflagrates slowly and shows no violent effect when heated under confinement; or •Does not detonate or deflagrate at all and shows a medium effect when heated under confinement.
E	Neither detonates nor deflagrates at all and shows low or no effect when heated under confinement.
F	Neither detonates in the caviated bubble state nor deflagrates at all and shows only a low or no effect when heated under confinements as well as low or non explosive power.
G	Neither detonates in the caviated state nor deflagrates at all and shows no effect when heated under confinement nor any explosive power, provided that it is thermally stable (self-accelerating decomposition temperature is 60°C to 75°C for a 50 kg package), and, for liquid mixtures, a diluent having a boiling point not less than 150°C is used for desensitization.

3 Categories – Skin Corrosion/Irritation

Skin Corrosion Category 1			**Skin Irritation Category 2**	**Mild Skin Irritation Category 3**
Destruction of dermal tissue: visible necrosis in at least one animal			Reversible adverse effects in dermal tissue Draize score: ≥ 2.3 < 4.0 or persistent inflammation	Reversible adverse effects in dermal tissue Draize score: ≥ 1.5 < 2.3
Subcategory 1A Exposure < 3 min. Observation < 1hr,	Subcategory 1B Exposure < 1hr. Observation < 14 days	Subcategory 1C Exposure < 4 hrs. Observation < 14 days		

Classification and Categories

Please feel free to contact the Office of Risk Management and E/H/S if you have questions on any new labels that you see on incoming products.

Training Questions

1. What do the initial GHS stand for?

   a) Global Health Standard
   b) Global Harmonized System
   c) Global Harmony & Safety

2. How many significant changes does the GHS make to the revised Hazard Communication Standard ?

   a) 1
   b) 2
   c) 3

3. Which of the following changes are not part of the new GHS?

   a) pictograms
   b) labeling elements
   c) a standardized format for Safety Data Sheets (SDSs)
   d) a standardized for Material Safety Data Sheets (MSDSs)

5 Categories – Acute Toxicity

Acute toxicity	Cat. 1	Cat. 2	Cat. 3	Cat. 4	Category 5
Oral (mg/kg)	≤ 5	> 5 ≤ 50	> 50 ≤ 300	> 300 ≤ 2000	Criteria: •Anticipated oral LD50 between 2000 and 5000 mg/kg; •Indication of significant effect in humans;* •Any mortality at class 4;* •Significant clinical signs at class 4;* •Indications from other studies.* *If assignment to more hazardous class is not warranted.
Dermal (mg/kg)	≤ 50	> 50 ≤ 200	> 200 ≤ 1000	> 1000 ≤ 2000	
Gases (ppm)	≤ 100	> 100 ≤ 500	> 500 ≤ 2500	> 2500 ≤ 5000	
Vapors (mg/l)	≤ 0.5	> 0.5 ≤ 2.0	> 2.0 ≤ 10	> 10 ≤ 20	
Dust & mists (mg/l)	≤ 0.05	> 0.05 ≤ 0.5	> 0.5 ≤ 1.0	> 1.0 ≤ 5	

Questions

4. What can this pictogram represent?

a) Carcinogen

b) Irritant (skin and eye)

c) Acute toxicity

d) All of the above

5. Which is the correct GHS pictogram for Corrosive?

a)

<u>or</u>

b)

....Questions

6. Do OSHA GHS pictograms replace DOT diamond labels?

a) Yes
b) No

7. What is the total number of pictograms that OSHA uses for the GHS program?

a) 6
b) 8
c) 9

8. Why has OSHA adopted the GHS pictograms?

a) Improve worker safety and health
b) Conform with worldwide used of the pictograms
c) All of the above

More Questions…

9. Which SIGNAL WORD *is used for the more severe hazards?*

    a) Warning
    b) Caution
    c) Danger

10. How many “sections” or “headings” are on a SDS?

    a) 8
    b) 12
    c) 16

11. What “section” on a SDS contains first aid information?

    a) Section 1
    b) Section 4
    c) Section 8