



Hazard Communications

Understanding the Chemicals You Work Around

Agenda

- This is a general awareness course in HAZCOM
- Review of OSHA 1910.1200 "Hazard Communication"
- Review GPR1700.8 "GSFC Hazard Communication Program"
- Review how it affects YOU!

And a Chemical is???

- The HCS definition of chemical is "any element, chemical compound, or mixture of elements and/or compounds." Thus, virtually any product is a "chemical." These various types of chemicals are as follows:
 - **Element** - the simplest form of matter. There are currently 109 known elements in the periodic table. Examples of elements are aluminum, carbon, chlorine, hydrogen, mercury and oxygen.
 - **Chemical compound** - a substance consisting of two or more elements combined or bonded together so that its constituent elements are always present in the same proportions.
 - **Mixture** - any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

So what is Hazardous?

- Under the HCS, any chemical that presents a physical hazard or a health hazard is considered a hazardous chemical. The HCS definitions for physical and health hazards are:
 - **Physical hazard** means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.
 - **Health hazard** means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes.

OSHA 1910.1200

- All Chemicals are reviewed for potential hazards
- All hazards have to be reported to the employers and employees
- Requires comprehensive Hazards Communications Program which includes:
 - Container labeling and other forms of warning
 - Material Safety Data Sheets
 - Employee Training

Scope and Application

- Per OSHA 1910.1200(b)(1)(2)-
 - Applies to any chemical which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.
- Per GPR 1700.8 "GSFC Hazard Communication Program"
 - This directive applies to all employees and contractors working at GSFC, including remote facilities and operations that engage in the use of hazardous chemicals. Employees and contractors engaged in the laboratory use of hazardous chemicals shall comply with GSFC's Chemical Hygiene Plan (GPR 1700.2).

Employer Responsibilities

- Have a written (and maintained) Hazard Communication program that:
 - Tells employees about the Hazard Communication Standard
 - Explains which chemicals are used in the workplace
 - Explains how chemicals are used in the workplace
 - Explains the labeling requirements for hazardous chemical containers
 - Explains how MSDSs are maintained at the facility and how to access them
 - Provides training about the dangers presented by those hazardous chemicals how employees can protect themselves from those dangers

Employee Responsibilities

- Read the MSDS before use
- Properly use required PPE
- Understand the Emergency response for that chemical
- Report any issues or spills immediately
- Properly label chemical containers
- Properly store chemicals
- Attend required training

Employee Training

- All employees who handle or use chemicals during the normal course of their work shall receive information and training:
 - before initial assignment and
 - when there are changes to the employees' assignment
 - or whenever a new hazard is introduced into the employees' work area.



Material Safety Data Sheet (MSDS)

MATERIAL SAFETY DATA SHEET Metal Cleaner

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Revision: 11/27/1996
Printed: 12/01/2003
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1. Product and Company Identification

Product Code: DX579
Product Name: Metal Cleaner
Manufacturer Name and Address
Company Name: PPG Industries, Inc.
4325 Rosanna Drive
P.O. Box 9
Allison Park, PA 15101
Emergency Contact 1
Information Contact Emergency Medical/Spill Info: (304)842-1300
Technical Information (614)363-9610
Chemical Family: ACID

2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA TWA	ACGIH TWA	Other Limits
1. Ethanol 2-Butoxy-	111-76-2	10.0 - 20.0 %	(S) 25 ppm	(S) 25 ppm	No data.
2. Diethylene glycol monobutyl ether	112-34-5	10.0 - 20.0 %	Not Estab.	Not Estab.	No data.
3. Phosphoric acid	7664-38-2	30.0 - 40.0 %	1 mg/m3	1 mg/m3	No data.

3. Hazards Identification

Emergency Overview

Harmful or fatal if swallowed. May be corrosive. This product contains a material which causes skin burns. This product contains a material which causes irreversible eye damage. May be harmful if absorbed through the skin. Vapor and/or spray mist harmful if inhaled. Vapor irritates eyes, nose, and throat. Vapor generated at elevated temperatures irritates eyes, nose, and throat.

Route(s) of Entry: Inhalation? No Skin? No Eyes? No Ingestion? No

Potential Health Effects (Acute and Chronic)

INGESTION: Harmful or fatal if swallowed.

EYE CONTACT: This product contains a material which causes irreversible eye damage.

SKIN CONTACT: May be corrosive. This product contains a material which causes skin burns. May be harmful if absorbed through the skin.

INHALATION: Vapor and/or spray mist harmful if inhaled. Vapor irritates eyes, nose, and throat. Vapor generated at elevated temperatures irritates the eyes, nose, and throat. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage.

CHRONIC OVEREXPOSURE: Avoid long-term and repeated contact. This product contains an ethylene series glycol ether and/or acetate which has been shown to cause adverse effects on the kidneys, liver, blood and/or blood-forming tissue. This product contains diethylene glycol monobutyl ether (DEGBE). DEGBE consumed in drinking water at low levels by rats for 30 days caused injury to either the liver, kidney, spleen, or testes.



MSDS's

- No requirement for MSDS's to have a similar format
- They are required to provide the following information:
 - The identity used on the label (except for trade secrets)
 - Includes chemical and common names
 - Physical characteristics
 - Physical hazards
 - Health hazards
 - Primary routes of entry
 - OSHA permissible exposure limit, ACGIH Threshold Limit Value, and any other exposure limit recommended by other sources.

MSDS's

- Other information required on MSDS's
 - Whether the chemical is listed in the National Toxicology Program Annual Report on Carcinogens or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC).
 - Any generally applicable precautions for safe handling and use
 - Any generally applicable control measures
 - Emergency and first aid procedures
 - Date of preparation or last change to the MSDS

NASA Exceptions for Labeling

- Exemptions to container labeling will be those containers which due to physical limitation cannot have all of the aforementioned hazard warnings, such as small chemical samples. Exempted containers must, however, be identified by some appropriate means; i.e., by chemical name or tag attached with identifying information.

Identification

- Identity of the hazardous material;
- Appropriate hazard warnings including target organ effects; and
- Name and address of the chemical manufacturer, importer, or other responsible party.

Labeling Secondary Containers

- Portable containers (all secondary containers), into which chemicals are transferred from labeled (primary) containers and which are intended only for the immediate use of the employee who performs the transfer shall be clearly labeled with the identity of the hazardous material.



Different Types of Labels

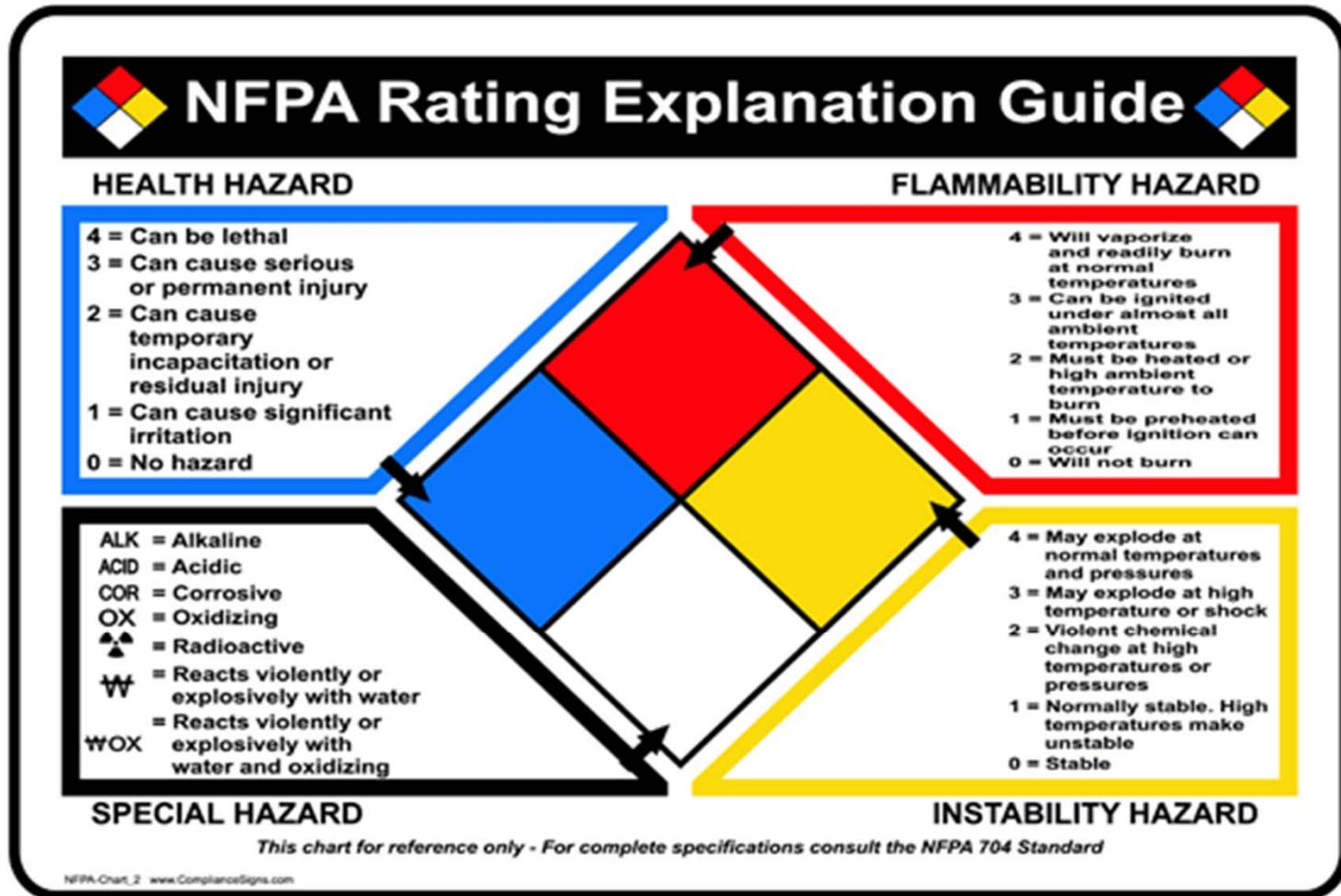
- NFPA Label



- HMIS Label

Chemical Name	
CAS #	
HEALTH	<input type="checkbox"/>
FLAMMABILITY	<input type="checkbox"/>
INSTABILITY	<input type="checkbox"/>
SPECIFIC	<input type="checkbox"/>
OKLAHOMA STATE HAZARD COMMUNICATIONS	

Explanation of Categories



Charlie Brown Yet?



Summary

- Almost everyone should receive some initial training in Hazard Communications.
- Know where the MSDS's are located in your work areas.
- Read the MSDS's for the chemicals you handle or use!
- Handle chemicals properly and use appropriate PPE.
- Notify you supervisor if you fee I you need further training or a new chemical introduces a new hazard to the work place.

Summary

- Label all containers with proper label and chemical name, hazards, manufacturer information (if it fits).
- Use appropriate containers for transporting or dispensing chemicals (secondary containers).

Any Questions?

