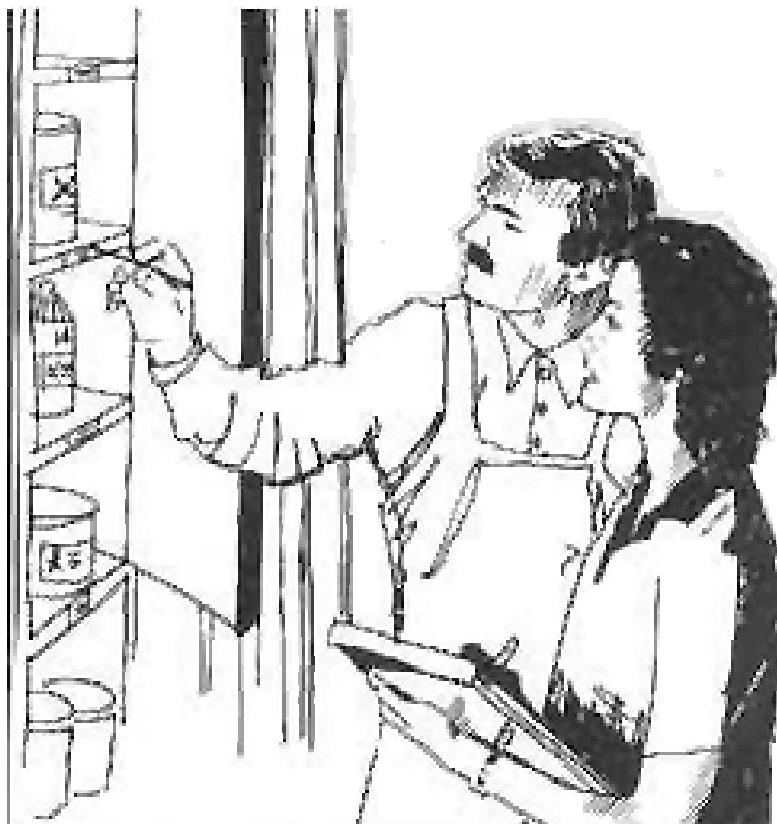


Hazard Communication

Aligned with GHS



A practical Workshop designed to guide you in developing and implementing an effective Hazard Communication Program aligned with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).



Presented by the Public Education Section
Oregon OSHA
Department of Consumer and Business Services



0114-02

Oregon OSHA Public Education Mission:

We provide knowledge and tools to advance
self-sufficiency in workplace safety and health

Consultative Services:

- Offers no-cost on-site assistance to help Oregon employers recognize and correct safety and health problems

Enforcement:

- Inspects places of employment for occupational safety and health rule violations and investigates complaints and accidents

Public Education and Conferences:

- Presents educational opportunities to employers and employees on a variety of safety and health topics throughout the state

Standards and Technical Resources:

- Develops, interprets, and provides technical advice on safety and health standards
- Publishes booklets, pamphlets, and other materials to assist in the implementation of safety and health rules

**Questions?
Call us**



Field Offices:

Portland	503-229-5910
Salem	503-378-3274
Eugene	541-686-7562
Medford	541-776-6030
Bend	541-388-6066
Pendleton	541-276-2353

Salem Central Office:

Toll Free number in English: 800-922-2689

Toll Free number in Spanish: 800-843-8086

Web site: www.orosha.org

Hazard Communication

In this Workshop, you will learn about:

The key elements of the Hazard Communication Rule:

- Labels
- Safety Data Sheets
- Written Program
- Training



You will also learn how the Hazard Communication Rule is aligned with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Certified Pesticide Applicators:

This Workshop provides three credit hours toward recertification of your Oregon certified pesticide applicator license. (Certified Pesticide Applicators License Information: Oregon Dept. of Agriculture: 503-986-4642).

Note: This material, or any other material used to inform employers of compliance requirements of Oregon OSHA standards through simplification of the regulations should not be considered a substitute for any provisions of the Oregon Safe Employment Act or for any standards issued by Oregon OSHA. Specific questions concerning chemicals or procedures at your workplace may require contacting an Oregon-OSHA consultant or technical representative.

Introduction

WHAT IS A CHEMICAL?

Any substance, or mixture of substances.

WHAT IS A HAZARDOUS CHEMICAL?

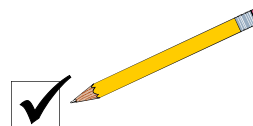
Any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.



Practice

Think of a hazardous chemical that you use. What is its name? _____

Put a checkmark in the box if:



You know the dangers to your health from the chemical.

☐

You know *exactly* the personal protective equipment (PPE) that you must use.

☐

You know *exactly* what to do in the event of an emergency.

☐

Introduction

Employers shall provide employees with effective information and training on hazardous chemicals 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.

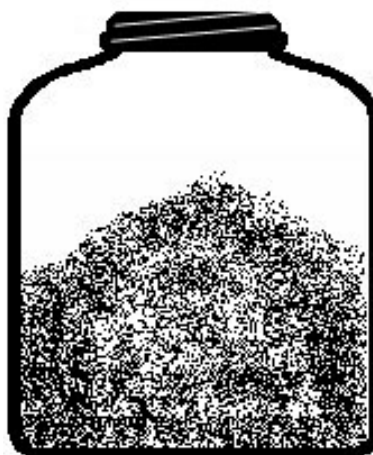


EMERGENCY EXPOSURES

HazCom also applies to any chemical which is known to be present in the workplace in such a manner that employees may be exposed under a foreseeable **EMERGENCY**.

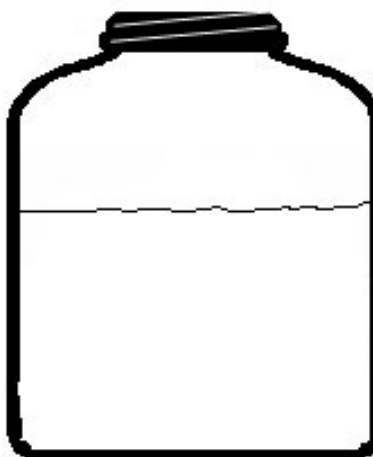
States of Matter

SOLID



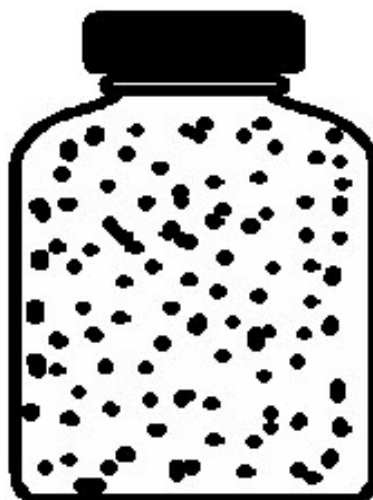
Silica
Asbestos
Lead
Fumes
Fiberglass

LIQUID



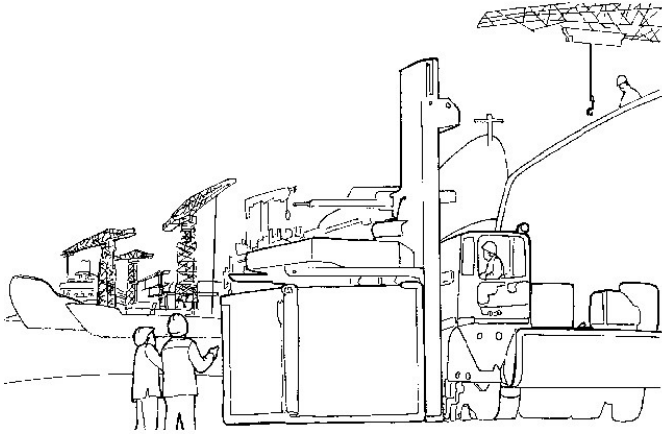
Turpentine
Benzene
Flammable liquids
Paints
Pesticides

GAS



Nitrogen
Methane
Carbon monoxide
Hydrogen sulfide
Ozone

Uses and hazards



Chemicals are necessary:

GLUES help build.

SOLVENTS help clean.

OILS help protect.

However, chemicals can also be dangerous:

GLUES can cause skin allergies (epoxy).

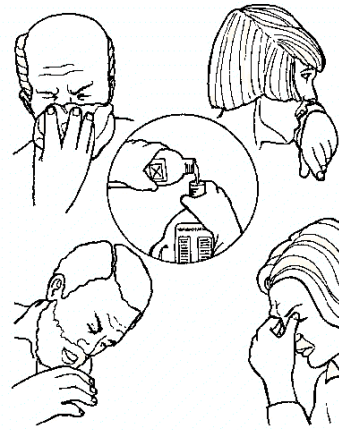
SOLVENTS can cause cancer (benzene).

OILS can cause skin ulcers and eye damage (creosote).



Dangers

Chemical hazards arise when they ENTER the body through the NOSE, MOUTH, EYES, and SKIN.



Where can you find more information about chemicals and target organs?

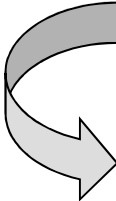
The FOUR parts of HazCom are designed to assist you in providing the information about hazardous chemicals in the workplace.



How HazCom works



Manufacturers and importers classify and categorize the chemicals and produce the Label and Safety Data Sheet (SDS)



Employer purchases chemical products which have a label and an SDS.

Employer prepares a **Written Hazard Communication Program** that:

- A.** Lists all the hazardous chemicals that employees may be exposed to, using product identifiers that are cross-referenced to the **Labels** and the **SDSs**.
- B.** Describes how the workplace will use and follow all the elements of the **Written Hazard Communication Program**, the **Labels**, **SDSs**, and the **Training** to keep employees safe.

The big picture

Are all hazardous chemicals in the workplace covered by the Hazard Communication Rule?

Please circle the correct answer:

YES

NO



HazCom does not apply to:

- ☐ Hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) when subject to regulations issued under that Act by the Environmental Protection Agency (EPA).
- ☐ Any hazardous substance as defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) that is the focus of remedial or removal action being conducted under CERCLA in accordance with EPA regulations.
- ☐ Tobacco or tobacco products.
- ☐ Wood or wood products, including lumber that will be used whole (not processed or cut, generating dust) where the manufacturer can establish that the only hazard is the potential for flammability or combustibility. Wood or wood products that have been treated with a hazardous chemical covered by this standard are not exempted.
- ☐ Articles – a manufactured item that does not pose a physical or health risk when used normally.
- ☐ Retail food or alcoholic beverages, such as those sold in grocery stores or restaurants, or consumed by employees in the workplace.

Continues

The big picture

HazCom does not apply to (continued):

- ☐ Any drug, as defined in the Federal Food, Drug, and Cosmetic Act when it is in solid, final form such as tablets or pills; retail, over-the-counter drugs, and other drugs, such as first-aid supplies, intended for employees in the workplace.
- ☐ Cosmetics packaged for retail sale to consumers and cosmetics used by employees in the workplace.
- ☐ A consumer product, as defined in the Consumer Product Safety Act, where the employer can show that it is used in the workplace for the purpose intended by the manufacturer and resulting in an exposure equivalent to the range of exposures (duration and frequency) that could reasonably be experienced by consumers.

DISCUSSION:

Mechanics sometimes apply milk of magnesia to the threads of sparkplugs to prevent them from “seizing” to the motor.

Exempt because its covered by FDA? Used for the purpose intended by the manufacturer?

Would the employer need to add it to the list of chemicals, get an SDS, and conduct training on the hazards?



- ☐ Nuisance particulates (dust) that the chemical manufacturer can establish pose no covered physical or health hazard.
- ☐ Ionizing and nonionizing radiation.
- ☐ Biological hazards.

Nonionizing radiation includes ultra violet, infrared, and microwave. It burns tissue including the eyes.

Cell phones work on the microwave frequency. Phone companies say they are safe. More research is being done.

The big picture

Unopened, Sealed Containers

There is a **simpler procedure** if workers handle only unopened, sealed containers under normal conditions of use in places like warehouses or retail stores.

Answer: **TRUE** **FALSE**



Handling unopened sealed containers:

- ☐ Ensure that labels on incoming containers of hazardous chemicals are not removed or defaced.
- ☐ Maintain copies of any safety data sheets that are received with incoming shipments of the sealed containers of hazardous chemicals.
- ☐ Obtain a safety data sheet as soon as possible for sealed containers of hazardous chemicals received without a safety data sheet if an employee requests the safety data sheet.
- ☐ Ensure that the safety data sheets are readily accessible during each work shift to your employees when they are in their work areas.
- ☐ Ensure that employees are provided with information and training to the extent necessary to protect them in the event of a spill or leak of a hazardous chemical from a sealed container.

The big picture



There is an even **simpler procedure** if workers handle chemicals in laboratories.

The Correct Answer is:

TRUE FALSE

Handling chemicals in laboratories:

- ☐ Ensure that labels on incoming containers of hazardous chemicals are not removed or defaced.
- ☐ Maintain any safety data sheets that are received with incoming shipments of hazardous chemicals, and ensure that they are readily accessible to laboratory employees during their shift when they are in their work areas.
- ☐ Ensure that employees are provided all the required information and training, except for the location and availability of the written hazard communication program.
- ☐ Ensure that any containers of hazardous chemicals leaving the laboratory are properly labeled and that a safety data sheet is provided in accordance with the Hazard Communication Rule.

GHS – What is it?

Globally Harmonized System of Classification and Labeling of Chemicals



GHS was created by the 193 member countries of the United Nations.

Is **GHS** a Standard? **No.**

Is **GHS** a Rule? **No.**

GHS is a *mechanism* to meet the basic requirement of any hazard communication system, which is to decide if the chemical product produced and/or supplied is hazardous and *to prepare an internationally harmonized Label and a Safety Data Sheet.*

OSHA is the first agency in the United States to adopt the GHS.

Other United States agencies that require classification and labeling of chemicals include:

- Consumer Product Safety Commission (**CPSC**) (Includes the Federal Hazardous Substances Act).
- Department of Transportation (**DOT**) (Includes transportation of hazardous materials).
- Environmental Protection Agency (**EPA**) (includes safe water, air, and use of pesticides).



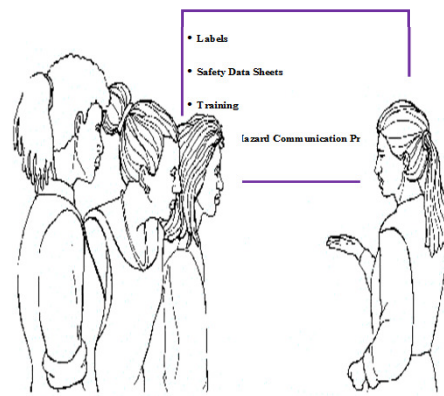
CPSC, DOT, EPA and other agencies have NOT yet adopted GHS.

Hazard Communication Aligned with GHS

ADVANTAGES

Will aligning OSHA's Hazard Communication Rule with GHS bring advantages?

Yes, it will benefit workers by reducing confusion about chemical hazards in the workplace, **facilitating safety training and improving understanding of hazards**, especially for low literacy workers.

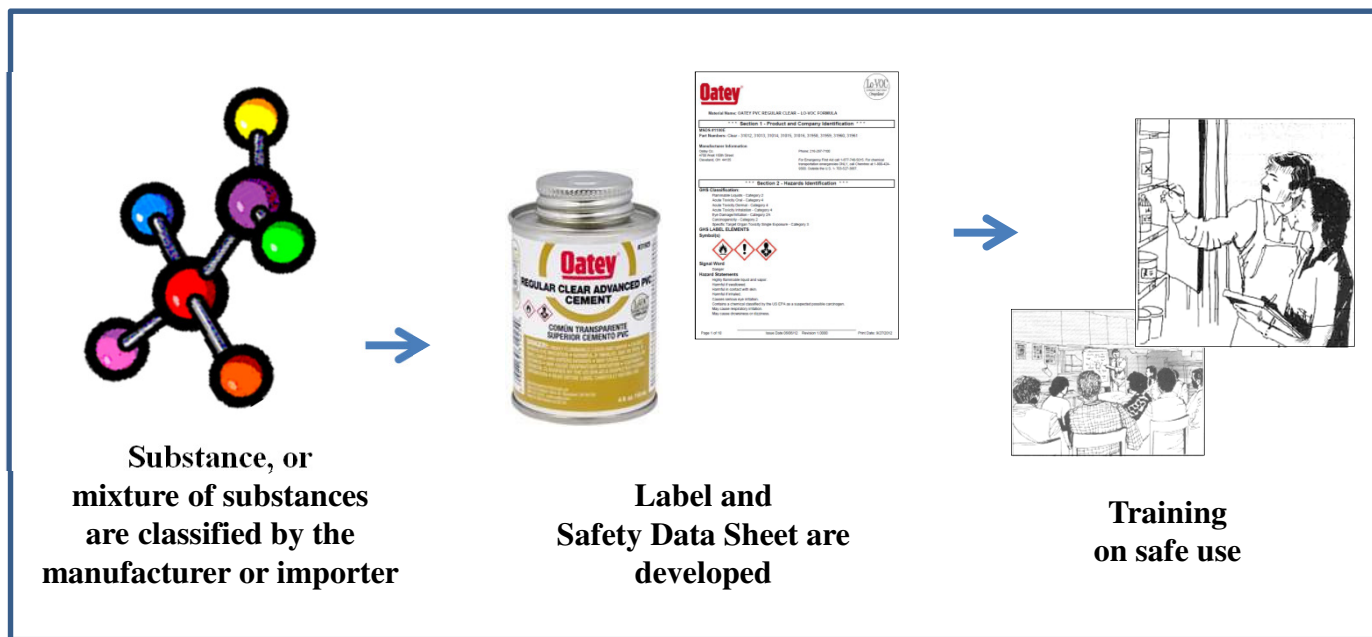


Yes, the U.S. Department of Labor estimates that across the country, the revised rule will **prevent 43 deaths and 585 injuries each year.**

Yes, it **will reduce trade barriers** and result in estimated annualized benefits in productivity improvements for American businesses that regularly handle, store and use hazardous chemicals, as well as **cost savings of \$32.2 million** for American businesses that periodically update safety data sheets and labels for chemicals covered under the standard.



Classify & Categorize chemicals



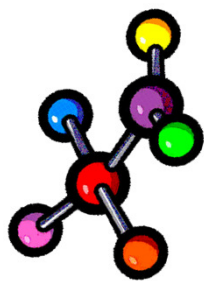
Who's responsible to classify and categorize chemicals?

- A: The **manufacturer** or the **importer**
- B: The **distributor**
- C: The **end-user**

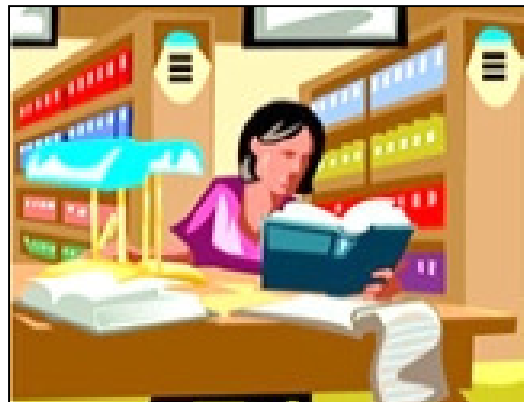


Answer: _____

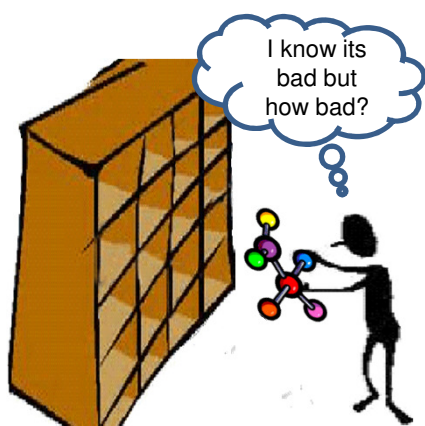
Classify & Categorize – how it works



The manufacturer or importer identifies and reviews relevant data regarding the hazards of the substance or mixture.



When classifying chemicals, the manufacturer or importer shall consider the full range of available scientific literature and other evidence concerning the potential hazards.



If the manufacturer or importer decides that the substance or mixture will be classified as a **hazardous substance**, the next step is to **categorize the hazard**.

In other words, the *degree* of health or physical harm that the chemical or mixture can cause.

Where is the criteria for each hazard class and hazard category?

The classification shall be in accordance with **Appendix A** – Health Hazards and **Appendix B** – Physical Hazards of 29 CFR 1910.1200.

more

Classify & Categorize – Appendix A & B

Appendix A has the following
HEALTH hazard categories:

Acute toxicity (any route of exposure)
Skin corrosion/irritation
Serious eye damage or eye irritation
Respiratory or skin sensitization
Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
Aspiration toxicity



**The Health
Hazard
Pictograms**

Which
pictogram is
both a Health
and Physical
hazard?

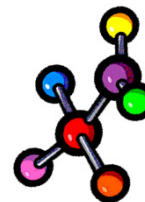
Appendix B has the following
PHYSICAL hazard categories:

Explosive
Flammable (includes aerosols, gases, liquids, and solids)
Oxidizers (includes gases, liquids, and solids)
Gases under pressure
Self-reactive substances
Pyrophoric (includes liquids and solids)
Self-heating substances
Substances that emit flammable gases in contact with water
Organic peroxides
Corrosive to metals



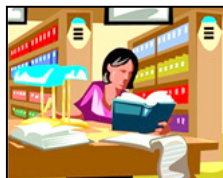
**The Physical
Hazard
Pictograms**

Classify & Categorize Oatey PVC Glue



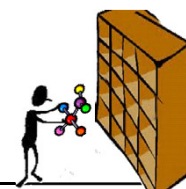
Oatey PVC Regular Clear Lo-VOC Formula – Contents:

Tetrahydrofuran, Methyl ethyl ketone, Cyclohexanone, Acetone, PVC (Chloroethylene, polymer)



Oatey Company identifies, reviews relevant data, and classifies the hazards of the substance or mixture:

Oatey Company categorizes the *degree* of health or physical harm that the chemical or mixture can cause.



CLASS	CATEGORY
Acute Toxicity Oral	Category 4
Acute Toxicity Dermal	Category 4
Acute Toxicity Inhalation	Category 4
Eye Damage/Irritation	Category 2A
Carcinogenicity	Category 2
Specific Target Organ Toxicity Single Exposure	Category 3
Flammable Liquids	Category 2

Oatey uses this information to produce the Label, Safety Data Sheet, and to make Training effective:



Label



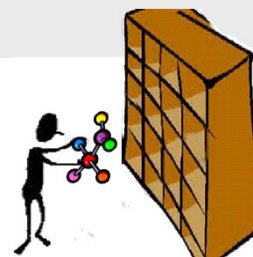
SDS



Training on Safe Use

GHS Categories – Health hazard example

Under GHS, Health and Physical Hazards are categorized by degree of harm that they cause.



Appendix A Health Hazard for Eye Damage/Irritation

Serious eye damage is tissue damage in the eye, or serious physical decay of vision, following application of a substance to the anterior surface of the eye which is not fully reversible within 21 days of application.

GHS categorizes **serious eye damage** as:

Category 1 (Signal word: **Danger**)

Example: Sodium hydroxide (lye) for unclogging drains and making soap.



CORROSION

Eye irritation is changes in the eye following application of a substance to the anterior surface of the eye which are fully reversible within 21 days of application.

GHS categorizes **eye irritation** as:

Category 2A if changes in the eye fully reverse within 21 days. (Signal word: **Warning**)

Category 2B if changes in the eye fully reverse within 7 days. (Signal word: **Warning**)

Example: some solvents for cleaning and degreasing.

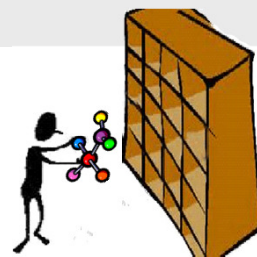


EXCAMATION MARK

NO PICTOGRAM
REQUIRED FOR
CATEGORY 2B

GHS Categories – Physical hazard example

Under GHS, Health and Physical Hazards are categorized by degree of harm that they cause.



Appendix B Physical Hazard for Flammable Liquids.

DEFINITION

Flammable liquid means a liquid having a ***flash point*** of not more than 93°C (199.4°F).

Flash point means the minimum temperature at which a liquid gives off vapor in sufficient concentration to form an ignitable mixture with air near the surface of the liquid.

Category	Criteria	Signal Word	Pictogram
1	Flash point < 23°C (73.4°F) and initial boiling point ≤ 35°C (95°F)	Danger	
2	Flash point < 23°C (73.4°F) and initial boiling point > 35°C (95°F)	Danger	
3	Flash point ≥ 23°C (73.4°F) and ≤ 60°C (140°F)	Warning	
4	Flash point > 60°C (140°F) and ≤ 93°C (199.4°F)	Warning	None

Appendix C

Which Category of Flammable Liquid is Oatey PVC Regular Clear Lo-VOC Formula?

(Hint, look back a page or two.)



Answer: _____

Pictograms

Parts of a pictogram:

- Border
- Background
- Symbol



The pictogram **BORDER** shall be this color? Circle the correct one:

BLACK
RED
GREEN

The pictogram **BACKGROUND** shall be this color? Circle the correct one:

YELLOW
BLUE
WHITE

The pictogram **SYMBOL** shall be this color? Circle the correct one:

ORANGE
BRIGHT GREEN
BLACK



Something to know:

The Environmental Pollutant Pictogram is part of GHS but is not regulated by OSHA.



GHS Label – Appendix C

The label elements shall be in accordance with **Appendix C** – of 29 CFR 1910.1200.

The labels shall include:







- Product Identifier (product name)
- Supplier Identification (if product is shipped)
- Signal Word
- Hazard Statement(s)
- Hazard Pictograms(s)
- Precautionary Statement(s)

SAMPLE LABEL

CODE _____ Product Name _____	Product Identifier	Hazard Pictograms  
Company Name _____ Street Address _____ City _____ State _____ Postal Code _____ Country _____ Emergency Phone Number _____	Supplier Identification	
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. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Ground and bond container and receiving equipment. Do not breathe vapors. Wear protective gloves. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Dispose of in accordance with local, regional, national, international regulations as specified. In Case of Fire: use dry chemical (BC) or Carbon Dioxide (CO ₂) fire extinguisher to extinguish. First Aid If exposed call Poison Center. If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.		Signal Word Danger
		Hazard Statements Highly flammable liquid and vapor. May cause liver and kidney damage.
Precautionary Statements		Supplemental Information Directions for Use _____ Fill weight: _____ Lot Number: _____ Gross weight: _____ Fill Date: _____ Expiration Date: _____



Something to know:

- ❖ If the signal word **“Danger”** is included, the signal word **“Warning”** shall not appear.
- ❖ If the skull and crossbones pictogram is included, the exclamation mark pictogram shall not appear *where it is used for acute toxicity*.

- ❖ If the corrosive pictogram is included, the exclamation mark pictogram shall not appear *where it used for skin or eye irritation*.

- ❖ If the health hazard pictogram is included for respiratory sensitization, the exclamation mark pictogram shall not appear *where it is used for skin sensitization or for skin or eye irritation*.


Labels

Please FIND the three elements that must be located *together* on the label:

- **Signal Word**
- **Precautionary Statements**
- **Pictogram(s)**










SAMPLE LABEL

CODE _____ Product Name _____	}	Product Identifier	Hazard Pictograms	
Company Name _____ Street Address _____ City _____ State _____ Postal Code _____ Country _____ Emergency Phone Number _____			}	Supplier Identification
		Signal Word Danger		
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. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Ground and bond container and receiving equipment. Do not breathe vapors. Wear protective gloves. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Dispose of in accordance with local, regional, national, international regulations as specified.		Highly flammable liquid and vapor. May cause liver and kidney damage.		
In Case of Fire: use dry chemical (BC) or Carbon Dioxide (CO ₂) fire extinguisher to extinguish.		}	Precautionary Statements	Supplemental Information
First Aid If exposed call Poison Center. If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.				
			Directions for Use _____ _____ _____	
			Fill weight: _____ Lot Number: _____ Gross weight: _____ Fill Date: _____ Expiration Date: _____	



Something to know:

The employer shall ensure that workplace labels or other forms of warning are legible, in **English**, and prominently displayed on the container, or readily available in the work area throughout each work shift. Employers having employees who speak **other languages** may add the information in their language to the material presented, as long as the information is presented in **English** as well.

Pictogram Name	Pictogram	Hazards
Flame		Flammables Self Reactives Pyrophorics Self-heating Emits Flammable Gas Organic Peroxides
Flame over circle		Oxidizers
Exclamation mark		Irritant Dermal Sensitizer Acute Toxicity (harmful) Narcotic Effects Respiratory Tract Irritants
Exploding bomb		Explosives Self Reactives Organic Peroxides
Corrosion		Corrosives
Gas cylinder		Gases Under Pressure
Health hazard		Carcinogens Respiratory Sensitizer Reproductive Toxicity Target Organ Toxicity Mutagenicity Aspiration Toxicity
Skull and crossbones		Acute Toxicity (severe)
Environment		Part of GHS, but not Hazard Communication, 29 CFR 1910.1200.

Pictograms

Group Game: Match pictograms with their meanings

Without looking at the previous page, write the appropriate letter for the pictogram that corresponds to each chemical category.

Flammables

Narcotic effects

Oxidizers

Self reactives

Self-heating

Irritant

Organic peroxides

Explosives

Gases under pressure

Carcinogen

Dermal sensitizer

Acute toxicity (harmful)

Respiratory tract irritation

Self Reactives

Corrosives

Respiratory sensitizer

Reproductive toxicity

Target organ toxicity

Mutagen



A



B



C



D



E



F



G



H

Labels

PRIMARY containers must have the complete GHS label.



SECONDARY containers must be labeled, tagged, or marked with either:

- All the information specified for the labels on shipped containers,
- or,
- The product identifier and words, pictures, symbols, or a combination that provide at least general information about the hazards of the chemicals.



Labels

STATIONARY PROCESS CONTAINERS

Instead of putting labels on individual stationary containers used for processing, the employer may use signs, placards, process sheets, batch tickets, operating procedures, or other written materials as long as this alternative method:

- Identifies the specific containers it applies to.
- Provides all the information required to be on a label.



Something to know:

The employer must ensure this alternative written material is readily accessible to the employees in their work area throughout each work shift.

Labels

PORTABLE, SECONDARY CONTAINERS FOR IMMEDIATE USE

You are **not required to put a label** on a portable, secondary container if it meets the **immediate use** definition

Immediate use means:

The hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and will only be used during the work shift in which it is transferred.



Do you think that these bottles have been under the control of the person who filled them?

Should these bottles have labels?

Labels

PIPES

If the workplace has pipes that **contain hazardous substances or that are insulated with asbestos-containing material**, you must either place warning labels on the pipes to identify the hazards or use other methods, such as process sheets or written operating procedures, to warn employees.



Asbestos wrapped pipes.
The pipe on the right shows damage which can cause asbestos fibers to go airborne.

Labeling pipes containing hazardous substances

The labeling method you use must clearly identify the location of the pipes and the substances in the pipes.

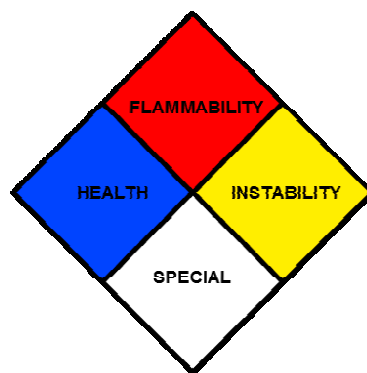
This information must be conveyed by the labels or made readily available to employees in their work areas.

- If you use warning labels, apply them at the beginning and at the end of continuous pipe runs.
- If a pipe is above or below the normal line of vision, apply the label above or below the horizontal centerline of the pipe so that employees can see it.



Pipes must also show the direction of flow.

HazCom and NFPA 704



HazCom is a workplace chemical information system established to provide information and safe work practices for those working with chemicals on a routine basis.

NFPA 704 was developed by the National Fire Protection Association and is designed to assist those who are responding to an emergency such as a fire or spill. It is sometimes referred to as the “fire diamond.”

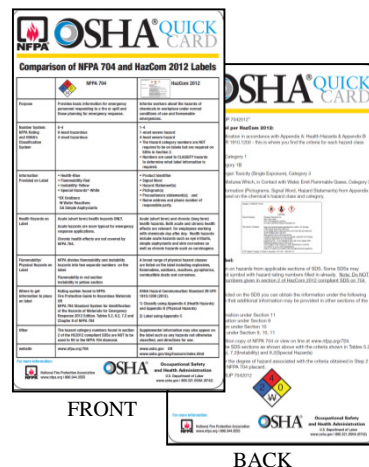
The Concern:

HazCom incorporates a numerical rating system that appears to be similar to NFPA 704 rating system, however the severity rating between them is inverted.

HazCom uses a numerical system of 1-4 with 4 indicating the least hazard. NFPA 704 uses a numerical system of 0-4 with 4 indicating the most severe hazard.

To Address This Concern:

NFPA and OSHA developed a “Quick Card” showing the differences between the two systems. It can be found on the NFPA website at www.nfpa.org/704 at the bottom of the page under “additional information”.



HazCom and HMIS®

SAMPLE LABEL

Product Name

Supplier Identification

Hazard Pictograms

Signal Word

Hazard Statements

Precautionary Statements

Supplemental Information

First Aid

Other

SUBSTANCE IDENTITY

HEALTH

FLAMMABILITY

REACTIVITY

PERSONAL PROTECTION

HEALTH HAZARDS

HazCom is a workplace chemical information system established to provide information and safe work practices for those working with chemicals on a routine basis.

The Hazardous Materials Identification System (HMIS®) was developed by the American Coatings Association (ACA) as a compliance aid for the OSHA Hazard Communication Standard.

The Concern:

HazCom incorporates a numerical rating system that appears to be similar to HMIS rating system, however the severity rating between them is inverted.

HazCom uses a numerical system of 1-4 with 4 indicating the least hazard.
HMIS uses a numerical system of 0-4 with 4 indicating the most severe hazard.

To Address This Concern:

ACA is preparing two tools for members and HMIS® users to aid in their compliance. The first tool is a “translator table” to allow facility managers of hazard communication programs to take new, GHS-oriented classification information and convert it to HMIS® hazard ratings. The second is a training program presentation to advise employees that HMIS® remains a qualified system for compliance but must be coupled with specific new training aspects to increase awareness and understanding of safety data sheets and “pictogram” label elements that will be forthcoming.

<http://www.paint.org/news/industry-news/item/1167-osha-hazard-communications---implementation-reminder.html>

GHS Safety Data Sheets – Appendix D

The Safety Data Sheet (SDS) elements shall be in
Accordance with **Appendix D** – of 29 CFR 1910.1200.

Material Name: OATEY PVC REGULAR CLEAR - LD-HSC FORMULA
*** Section 1 - Product and Company Identification ***
SDS #11000
Part Numbers: Clear - 31012, 31013, 31014, 31015, 31016, 31018, 31019, 31020, 31021
Manufacturer Information
Oatey Co.
4700 West 100th Street
Overland Park, MO 66204
Phone: (913) 237-7100
For Emergency: Please call 1-877-746-2015. For chemical information: emergency@oatey.com or 1-800-445-6339. Outside the U.S.: 1-781-522-2887
*** Section 2 - Hazards Identification ***
GHS Classification:
Flammable Liquids - Category 2
Acute Toxicity Oral - Category 4
Acute Toxicity Dermal - Category 4
Acute Toxicity Inhalation - Category 4
Skin Corrosion/Irritation - Category 4
Carcinogen - Category 2
Specific Target Organ Toxicity Single Exposure - Category 3
GHS LABEL ELEMENTS
Symbol(s):
Signal Word:
Danger
Hazard Statements:
Highly flammable liquid and vapor.
Irritant to eyes.
Irritant to skin.
Irritant to respiratory system.
Contains a chemical classified by the US EPA as a suspected possible carcinogen.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Page 1 of 10 Issue Date 05/01/12 Revision 1.0000 Print Date 02/12/12

When a manufacturer or importer classifies and categorizes a chemical, they prepare a:

SAFETY DATA SHEET (SDS)

An SDS includes detailed information about the product.

SDS information includes:

- **What to do in an emergency**
- **How the chemical enters the body**
- **The physical and health effects of the chemical**
- **Which Personal Protective Equipment to use**
- **Pictogram(s) and Signal Word**



Ready accessibility to SDSs (MSDSs) means that the employee has **immediate access** to read and refer to the information. This means that it is the employer's obligation is to ensure that SDSs (MSDSs) are readily accessible **during each work shift** to employees when they are in their work areas.

SDS – The 16 Elements

Section 1, Identification includes product identifier; manufacturer or distributor name, address, phone, number; recommended use; restriction on use.

Section 2, Hazard(s) identification includes all hazards regarding the chemical; required label elements.

Section 3, Composition/information on ingredients 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.

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.

Material Name: OATEY PVC REGULAR CLEAR - LD-VSC FORMULA
*** Section 1 - Product and Company Identification ***
Part Number: (See: 31012, 31013, 31014, 31015, 31016, 31018, 31019, 31020, 31021)
Manufacturer Information: Oatey Co., 4700 West 100th Street, Overland Park, MO 66204, Phone: (913) 687-7100, Fax: (913) 687-7100, For Emergency: Please call 1-877-746-2615. For chemical information: emergency@oatey.com or (913) 687-7100. Website: www.oatey.com
*** Section 2 - Hazards Identification ***
GHS Classification:
Flammable Liquid - Category 2
Acute Toxicity Oral - Category 4
Acute Toxicity Dermal - Category 4
Acute Toxicity Inhalation - Category 4
Skin Corrosion/Irritation - Category 2
Eye Corrosion/Irritation - Category 2
Specific Target Organ Toxicity Single Exposure - Category 3
GHS LABEL ELEMENTS
Symbol(s):
Signal Word: Danger
Hazard Statements:
Highly flammable liquid and vapor
Irritant to eyes
Irritant to skin
Irritant to respiratory system
Caution: avoid eye contact
Contains a chemical classified by the US EPA as a suspected possible carcinogen
May cause respiratory irritation
May cause drowsiness or dizziness
Page: 1 of 10 Issue Date: 05/01/12 Revision: 1.0000 Print Date: 02/27/2012

SDS – The 16 Elements

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.

*Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15 (29 CFR 1910.1200(g)(2)).



2 THINGS TO KNOW:

Retention of Safety Data Sheets:

Employers can get rid of SDSs for substances and/or products they no longer have on the premises if some record of the identity (chemical name if known), where it was used, and when it was used is retained for at least **thirty (30) years**.

Electronic records: If employers use electronic means to keep (archive) and update their list of chemicals, they must consider that over time, computer software and hardware will become obsolete. Employers must take technology changes into account to meet the 30-year requirement.

Pesticides regulated by the EPA will use Section 15, Regulatory information, to explain to the user that pesticide labels are not compliant with GHS and conflicts may exist.

For example, EPA pesticide labels use 3 signal words: **Danger, Warning, and Caution** and GHS uses 2 signal words: **Danger and Warning**

Basic Rule: When using a pesticide, follow the EPA label.

Written Program

Purpose: Communicates (in writing) who's in charge of:

- ☐ **CHEMICALS LIST**
- ☐ **LABELING** (primary, secondary, stationary containers)
- ☐ **SAFETY DATA SHEETS**
- ☐ **TRAINING** (initial and follow-ups)
- ☐ **HAZARDOUS NON-ROUTINE TASKS**
- ☐ **CHEMICALS IN PIPES**
- ☐ **CONTRACTORS** (coordinating information, SDSs)

Can the employer delegate these duties?

Yes! Delegating is okay and gets workers involved.

If a worker likes to train, an employer can delegate the Hazard Communication training to that person

If another worker likes to organize things and is good at procedures, delegate to them the Safety Data Sheets and Labeling.



Example of a written hazard communication program.
Your written plan should contain the elements in this example.

The management of **[this workplace]** is committed to preventing accidents and ensuring the safety and health of our employees. We will comply with all applicable federal and state health and safety rules and provide a safe, healthful environment for all our employees. This written hazard communication plan is available at the following location for review by all employees: **[Location name]**.

CHEMICALS LIST

A list is attached to this plan that identifies all hazardous chemicals with a potential for employee exposure at this workplace. **[Attach list]**. Detailed information about the physical, health, and other hazards of each chemical is included in a safety data sheet (SDS) and the product identifier for each chemical on the list matches and can be easily cross-referenced with the product identifier on its label and on its safety data sheet.

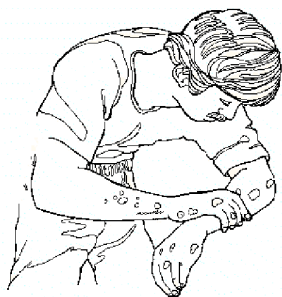
LABELING

All hazardous chemical containers used at this workplace will be marked with one of the following:

- The original manufacturer's label that includes a product identifier, an appropriate signal word, hazard statements, pictograms, precautionary statements, and the name, address, and telephone number of the chemical manufacturer, importer, or other responsible party.
- Another label with the appropriate label elements just described.
- Workplace labeling that includes the product identifier and words, pictures, symbols, or a combination that provides at least general information regarding the hazards of the chemicals.

[Name of person or job title] will ensure that all containers are appropriately labeled. No container will be released for use until this information is verified. Workplace labels must be legible and in English. Information in other languages is available at: **[Identify the location if they are stored in a paper file. Describe how to access this information.]**

The Written Program – Chemicals List

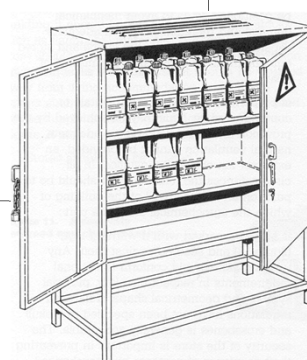


“If you don’t know what chemicals you have, your Hazard Communication Program can’t work.”

Required Column	Recommended Column	Recommended Column
PRODUCT IDENTIFIER	SIGNAL WORD	LOCATION OF USE
Chevron Regular Gasoline	Danger	Shop and Trucks
Oatey PVC Glue	Danger	Pipe Installation
Bestine Solvent & Thinner	Danger	Shop
Armstrong Floor Polish	Warning	Gymnasium

DISCUSSION: A worker is sent to the hardware store to buy a solvent to remove grease. The worker returns and goes to work using the solvent. The remainder of the chemical get stored on a shelf.

What can the employer do to reduce (or eliminate) the possibility of chemicals not getting added to the list?



Example of a written hazard communication program.
Your written plan should contain the elements in this example.

SAFETY DATA SHEETS

Safety data sheets are readily available to all employees during their work shifts.

Employees can review safety data sheets for all hazardous chemicals used at this workplace. **[Identify the file location if they are stored in a paper file. Describe how to access them if they are stored electronically].**

The safety data sheets are updated and managed by **[name of person or job title responsible for managing the safety data sheets]**. If a safety data sheet is not immediately available for a hazardous chemical, employees can obtain the required information by calling **[name of person or job title responsible for providing information in an emergency]**.

TRAINING

Before they start their jobs or are exposed to new hazardous chemicals, employees must attend a hazard communication training that covers the following topics:

- An overview of the requirements in Oregon OSHA's hazard communication rules.
- Hazardous chemicals present in their workplace.
- Any operations in their work area where hazardous chemicals are used.
- The location of the written hazard communication plan and where it may be reviewed.
- How to understand and use the information on labels and in safety data sheets.
- Physical and health hazards of the chemicals in their work areas.
- Methods used to detect the presence or release of hazardous chemicals in the work area.
- Steps we have taken to prevent or reduce exposure to these chemicals.
- How employees can protect themselves from exposure to these hazardous chemicals through use of engineering controls/work practices and personal protective equipment.
- An explanation of any special labeling present in the workplace.
- Emergency procedures to follow if an employee is exposed to these chemicals.

[Name of person or job title responsible for managing the training program] is responsible to ensure that employees receive this training. After attending the training, employees will sign a form verifying that they understand the above topics and how the topics are related to our hazard communication plan.

Example of a written hazard communication program.
Your written plan should contain the elements in this example.

HAZARDOUS NON-ROUTINE TASKS

Before employees perform special non-routine tasks that may expose them to hazardous chemicals, their supervisors will inform them about the chemical's hazards. Supervisors must inform employees how to control exposure and what to do in an emergency. The employer will evaluate the hazards of these tasks and provide appropriate controls including personal protective equipment and any additional training as required.

Examples of special tasks that may expose employees to hazardous chemicals include the following: **[include examples of special non-routine tasks]**.

CHEMICALS IN PIPES

Informing employees about hazardous chemicals in pipes This workplace follows the labeling requirements in OAR 497-002-0378 concerning the labeling of pipes. Before working in areas where hazardous chemicals are transferred through unlabeled pipes or where pipes are insulated with asbestos-containing material, employees will contact **[name of person or job title]** for the following information:

- Identity of chemicals in the pipes.
- Physical or health hazards presented by the chemicals.
- Safe work practices necessary to prevent exposure.

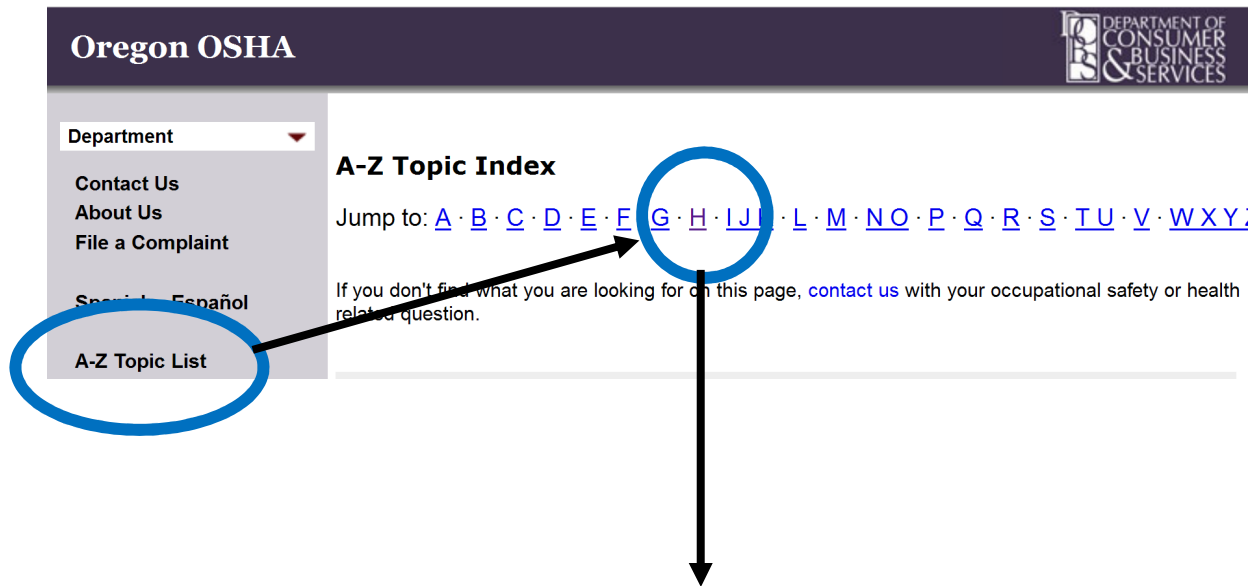
CONTRACTORS

Informing contractors and other employers about our hazardous chemicals If employees of other employer(s) may be exposed to hazardous chemicals at our workplace (for example, employees of a construction contractor working on-site) It is the responsibility of **[name of person or job title]** to provide contractors and their employees with the following information:

- The identity of the chemicals, how to review our safety data sheets, and an explanation of the container and pipe labeling system.
- Safe work practices to prevent exposure.

[Name of person or job title] will also obtain a safety data sheet for any hazardous chemical a contractor brings into the workplace.

Oregon OSHA Forms: www.orosha.org



WORD DOCUMENTS

Hazard Communication Plan in either [English](#) or [Spanish](#)

HazCom training form in either [English](#) or [Spanish](#)

Employee training record in either [English](#) or [Spanish](#)

Training



What are the advantages of these types of training?

GROUP TRAINING

INDIVIDUAL TRAINING

When should we train?

At time of initial assignment and whenever a new chemical hazard the employees have not previously been trained about is introduced into their work area.



Training - What needs to be explained?



- An overview of the requirements in Oregon OSHA's hazard communication rules.
- Hazardous chemicals present in their workplace.
- Any operations in their work area where hazardous chemicals are used.
- The location of the written hazard communication plan and where it may be reviewed.
- How to understand and use the information on labels and in safety data sheets.
- Physical and health hazards of the chemicals in their work areas.
- Methods used to detect the presence or release of hazardous chemicals in the work area.
- Steps we have taken to prevent or reduce exposure to these chemicals.
- How employees can protect themselves from exposure to these hazardous chemicals through use of engineering controls/work practices and personal protective equipment.
- An explanation of any special labeling present in the workplace.
- Emergency procedures to follow if an employee is exposed to these chemicals.

Practice

INSTRUCTIONS:

Using the SDS of a Hazardous Chemical provided by your instructor, identify the following mandatory training elements:

Oatey 

Material Name: OATEY PVC REGULAR CLEAR - LD-HSC FORMULA

*** Section 1 - Product and Company Identification ***

SDS #11000

Part Numbers: Clear - 31012, 31013, 31014, 31015, 31016, 31018, 31019, 31060, 31061

Manufacturer Information

Oatey Co.
4700 West 100th Street
Overland Park, MO 66204

Phone: (913) 237-7100
Fax: (913) 237-7100
For Emergency: Please call 1-877-746-6215. For chemical information: emergency@oatey.com or (913) 237-7100. Outside the U.S.: 1-781-522-2887

*** Section 2 - Hazards Identification ***

GHS Classification:

Flammable Gases - Category 2
Acute Toxicity Oral - Category 4
Acute Toxicity Dermal - Category 4
Acute Toxicity Inhalation - Category 4
Skin Corrosion/Irritation - Category 2
Serious Eye Damage/Irritation - Category 2
Hazardous to the Aquatic Environment - Category 3

GHS LABEL ELEMENTS

Symbols:

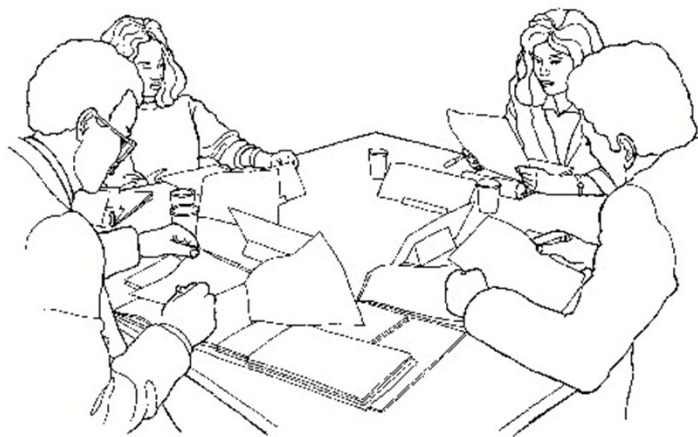
Signal Word:

Danger

Hazard Statements:

H225: Highly flammable liquid and vapor.
H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H314: Causes severe eye irritation.
H332: Causes respiratory irritation.
H334: May cause asthma or worsen symptoms.
H335: May cause respiratory irritation.
H410: May cause harm to the environment.

Page 1 of 10 Issue Date: 05/05/10 Revision: 1.0000 Print Date: 02/12/2012



- ☐ Health and Physical hazards of the hazardous chemical.
- ☐ How employees can protect themselves from exposure to these hazardous chemicals through use of engineering controls/work practices and personal protective equipment.
- ☐ Emergency procedures to follow if an employee is exposed to these chemicals.

DATES



The Hazard Communication Rule aligned with GHS will be phased-in over the next few years:

Phase-in Dates Hazard Communication Standard (HCS) 29 CFR 1910.1200		
Completion Date	Requirement(s)	Who
December 1, 2013	Train employees on the new label elements and safety data sheet (SDS) format.	Employers
June 1, 2015 December 1, 2015	Compliance with all modified provisions of this final rule, except: The Distributor shall not ship containers labeled by the chemical manufacturer or importer unless it is a GHS label.	Chemical manufacturers, importers, distributors and employers
June 1, 2016	Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards.	Employers
Transition period to the effective completion dates noted above	May comply with either the revised Hazard Communication Standard 29 CFR 1910.1200 (the final standard), or the current standard, or both.	Chemical manufacturers, importers, distributors, and employers

APPENDICES

- **FEDERAL OSHA DECEMBER 1, 2013 TRAINING REQUIREMENTS FACT SHEET**
www.osha.gov/Publications/OSHA3642.pdf
- **FEDERAL OSHA GHS QUICK CARDS**
www.osha.gov/dsg/hazcom/ghsquickcards.html
- **NFPA QUICK CARD**
www.nfpa.org/Assets/files/AboutTheCodes/704/NFPA704_HC2012_QCard.pdf
- **PICTOGRAMS GAME**
- **SAFETY DATA SHEET –**
OATEY PVC REGULAR CLEAR – LO-VOC FORMULA
http://www.oatey.com/msds/1100E_tmpl_us_e1_OUT.pdf

For more information about the **December 1, 2013** Training Requirements:

http://www.orosha.org/subjects/hazard_communication.html

A free online session from SAIF Corporation:

<http://www.orosha.org/educate/GHS-SAIF/player.html>

December 1st, 2013 Training Requirements for the Revised Hazard Communication Standard

OSHA revised its Hazard Communication Standard (HCS) to align with the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS) and published it in the Federal Register in March 2012 (77 FR 17574). Two significant changes contained in the revised standard require the use of new labeling elements and a standardized format for Safety Data Sheets (SDSs), formerly known as, Material Safety Data Sheets (MSDSs). The new label elements and SDS requirements will improve worker understanding of the hazards associated with the chemicals in their workplace. To help companies comply with the revised standard, OSHA is phasing in the specific requirements over several years (December 1, 2013 to June 1, 2016).

The first compliance date of the revised HCS is December 1, 2013. By that time employers must have trained their workers on the new label elements and the SDS format. This training is needed early in the transition process since workers are already beginning to see the new labels and SDSs on the chemicals in their workplace. To ensure employees have the information they need to better protect themselves from chemical hazards in the workplace during the transition period, it is critical that employees understand the new label and SDS formats.

The list below contains the minimum required topics for the training that must be completed by December 1, 2013.

- Training on label elements must include information on:
 - Type of information the employee would expect to see on the new labels, including the
 - ✓ **Product identifier:** 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 (Identification).
 - ✓ **Signal word:** used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. There are only two 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.

- ✓ **Pictogram:** 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.
- ✓ **Hazard statement(s):** describe 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

classification categories, and chemical users should always see the same statement for the same hazards, no matter what the chemical is or who produces it.

- ✓ **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.

- ✓ **Name, address and phone number of the chemical manufacturer, distributor, or importer**

- How an employee might use the labels in the workplace. For example,
 - ✓ Explain how information on the label can be used to ensure proper storage of hazardous chemicals.
 - ✓ Explain how the information on the label might be used to quickly locate information on first aid when needed by employees or emergency personnel.
- General understanding of how the elements work together on a label. For example,
 - ✓ Explain that where a chemical has multiple hazards, different pictograms are used to identify the various hazards. The employee should expect to see the appropriate pictogram for the corresponding hazard class.
 - ✓ Explain that when there are similar precautionary statements, the one providing the most protective information will be included on the label.

➤ Training on the format of the SDS must include information on:

- Standardized 16-section format, including the type of information found in the various sections

- ✓ For example, the employee should be instructed that with the new format, Section 8 (Exposure Controls/Personal Protection) will always contain information about exposure limits, engineering controls and ways to protect yourself, including personal protective equipment.

- How the information on the label is related to the SDS
 - ✓ For example, explain that the precautionary statements would be the same on the label and on the SDS.

As referenced in [Dr. Michaels' OSHA Training Standards Policy Statement \(April 28, 2010\)](#) – with all training, OSHA requires employers to present information in a manner and language that their employees can understand. If employers customarily need to communicate work instructions or other workplace information to employees in a language other than English, they will also need to provide safety and health training to employees in the same manner. Similarly, if the employee's vocabulary is limited, the training must account for that limitation. By the same token, if employees are not literate, telling them to read training materials will not satisfy the employer's training obligation.

OSHA's Hazard Communication website (<http://www.osha.gov/dsg/hazcom/index.html>) has the following QuickCards and OSHA Briefs to assist employers with the required training.

- Label QuickCard ([English/Spanish](#))
- Pictogram QuickCard ([English/Spanish](#))
- Safety Data Sheet QuickCard ([English](#)) ([Spanish](#))
- [Safety Data Sheet OSHA Brief](#)
- Label/Pictogram OSHA Brief (to come)

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.



**U.S. Department of Labor
www.osha.gov (800) 321-OSHA (6742)**

DSG FS-3642 02/2013



Hazard Communication 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:

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 ingredients 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.

Section 7, Handling and storage lists precautions for safe handling and storage, including incompatibilities.

(Continued on other side)

For more information:



U.S. Department of Labor

www.osha.gov (800) 321-OSHA (6742)

OSHA 3493-02-2012



Hazard Communication Safety Data Sheets

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.

*Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15 (29 CFR 1910.1200(g)(2)).

Employers must ensure that SDSs are readily accessible to employees.

See Appendix D of 29 CFR 1910.1200 for a detailed description of SDS contents.

For more information:



U.S. Department of Labor

www.osha.gov (800) 321-OSHA (6742)

OSHA 3493-02-2012



Fichas de datos de seguridad para la comunicación de peligros

La norma de comunicación de peligros (HCS, por sus siglas en inglés) exige que los fabricantes, distribuidores o importadores de productos químicos proporcionen fichas de datos de seguridad (FDS) (conocidas anteriormente como hojas de información sobre la seguridad de los materiales o MSDS) para comunicar los peligros de los productos químicos peligrosos. A partir del 1.º de junio de 2015, la HCS exigirá que las nuevas FDS sigan un formato uniforme e incluyan los números de sección, los encabezados y la información pertinente bajo los encabezados siguientes:

Sección 1, Identificación del producto, incluye el identificador del producto; nombre, dirección y número de teléfono del fabricante o distribuidor; número de teléfono de emergencia; uso recomendado; y restricciones del uso.

Sección 2, Identificación del peligro o peligros, describe todos los peligros relacionados con el producto químico y los elementos obligatorios de la etiqueta.

Sección 3, Composición/información sobre los componentes, incluye los datos acerca de ingredientes químicos y las declaraciones de secretos de fabricación.

Sección 4, Primeros auxilios, describe los síntomas o efectos agudos inmediatos y retardados importantes; y el tratamiento necesario.

Sección 5, Medidas de lucha contra incendios, enumera los medios y los equipos protectores adecuados para la extinción de incendios, y los peligros específicos de los productos químicos debidos al fuego.

Sección 6, Medidas que deben tomarse en caso de vertido accidental, menciona los procedimientos de emergencia, equipos protectores y métodos correctos para aislamiento y limpieza.

(Continúa al reverso)

Para más información:



Departamento de Trabajo de los EE. UU.
www.osha.gov (800) 321-OSHA (6742)



Fichas de datos de seguridad para la comunicación de peligros

Sección 7, Manipulación y almacenamiento, describe las precauciones para manipular y almacenar con seguridad los materiales, entre otras, las incompatibilidades.

Sección 8, Controles de exposición/protección personal, enumera los límites de exposición permisibles (PEL) de la OSHA, valores límite umbrales (TLV), controles de ingeniería apropiados, y equipos de protección personal (EPP).

Sección 9, Propiedades físicas y químicas, menciona las características del producto químico.

Sección 10, Estabilidad y reactividad, describe la estabilidad química y la posibilidad de reacciones peligrosas.

Sección 11, Información toxicológica, enumera las vías de exposición, los síntomas y efectos agudos y crónicos relacionados, y las medidas numéricas de la toxicidad.

Sección 12, Información ecotoxicológica*

Sección 13, Información relativa a la eliminación de los productos*

Sección 14, Información relativa al transporte*

Sección 15, Información sobre la reglamentación*

Sección 16, Otras informaciones, incluye la fecha de preparación o de la última modificación.

*Nota: debido a que otros organismos regulan esta información, la OSHA no exigirá el cumplimiento de las secciones 12 a 15 (norma 29 CFR 1910.1200(g)(2)).

Los empleadores deben comprobar que los empleados tengan acceso fácil a las FDS.

Consultar la descripción detallada del contenido de las FDS en el Apéndice D de la norma 29 CFR 1910.1200.

Para más información:



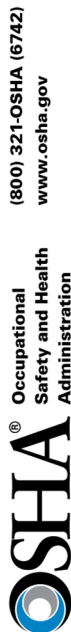
Departamento de Trabajo de los EE. UU.
www.osha.gov (800) 321-OSHA (6742)



Hazard Communication Standard Labels

OSHA has updated the requirements for labeling of hazardous chemicals under its Hazard Communication Standard (HCS). As of June 1, 2015, all labels will be required to have pictograms, a signal word, hazard and precautionary statements, the product identifier, and supplier identification. A sample revised HCS label, identifying the required label elements, is shown on the right. Supplemental information can also be provided on the label as needed.

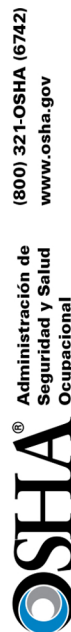
For more information:



Etiquetas para la norma sobre la comunicación de peligros

De acuerdo con su norma de comunicación de peligros (HCS, por sus siglas en inglés), la OSHA ha actualizado los requisitos para las etiquetas de los productos químicos peligrosos. A partir del 1.º de junio de 2015, se exigirá que todas las etiquetas incluyan pictogramas, una palabra de advertencia, indicaciones de peligro, consejos de prudencia, identificación del producto y la identificación del proveedor. A la derecha se presenta la muestra de una etiqueta modificada de acuerdo con la HCS, que indica los elementos obligatorios. La etiqueta puede contener también información suplementaria según sea necesario.

Para más información:



SAMPLE LABEL

Product Identifier
CODE _____
Product Name _____

Supplier Identification
Company Name _____
Street Address _____ State _____
City _____ Country _____
Postal Code _____
Emergency Phone Number _____

Signal Word
Danger

Hazard Pictograms

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 headsparks/open flame. No smoking.
Only use non-sparking tools.
Use explosion-proof electrical equipment.
Take precautionary measures against static discharge.
Ground and bond container and receiving equipment.
Do not breathe vapors.
Wear protective gloves.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Dispose of in accordance with local, regional, national, international regulations as specified.

Supplemental Information
Directions for Use _____

First Aid
If exposed call Poison Center.
If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.
Lot Number: _____
Gross weight: _____
Expiration Date: _____
Fill Date: _____

ETIQUETA DE MUESTRA

Identificación del producto
CÓDIGO _____
Nombre del producto _____

Identificación del proveedor
Nombre de la empresa _____
Dirección _____ Estado _____
Ciudad _____ País _____
Código postal _____
Número de teléfono de emergencia _____

Pictogramas de peligro

Palabra de advertencia
Peligro

Indicaciones de peligro
Líquido y vapores muy inflamables.
Puede provocar daños al hígado y a los riñones.

Consejos de prudencia
Mantener el contenedor herméticamente cerrado.
Guardar en un lugar fresco, bien ventilado y cerrado bajo llave.
Mantener alejado de fuentes de calor, chispas o llama abierta. No fumar.
Usar sólo con herramientas que no generen chispas.
Usar equipo eléctrico a prueba de explosiones.
Tomar medidas de precaución contra descargas estáticas.
Fijar y conectar a tierra el equipo contenedor y receptor.
No respirar los vapores.
Usar guantes protectores.
Abstenerse de comer, beber o fumar cuando se usa este producto.
Lavarse muy bien las manos después de manejar este producto.
Desechar el producto según las especificaciones y los reglamentos locales, regionales, nacionales e internacionales.

Información suplementaria
Instrucciones de uso _____

En caso de incendio: usar un extintor de polvo químico (tipo BC) o de dióxido de carbono (CO₂).










Primeros auxilios
Si hay exposición a este producto, llamar al Centro de Control de Intoxicaciones.
En caso de contacto con la piel o el cabello: quitarse de inmediato toda la ropa contaminada. Lavarse la piel con agua.

Peso lleno: _____ Número de lote: _____
Peso bruto: _____ Fecha de llenado: _____
Fecha de caducidad: _____

Hazard Communication Standard Pictogram

As of June 1, 2015, the Hazard Communication Standard (HCS) will require pictograms on labels to alert users of the chemical hazards to which they may be exposed. Each pictogram consists of a symbol on a white background framed within a red border and represents a distinct hazard(s). The pictogram on the label is determined by the chemical hazard classification.

HCS Pictograms and Hazards

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

For more information:

OSHA[®] Occupational Safety and Health Administration
 U.S. Department of Labor
www.osha.gov (800) 321-OSHA (6742)

OSHA 3491-02 2012

Pictograma para la norma sobre la comunicación de peligros

A partir del 1.º de junio de 2015, la norma de comunicación de peligros (HCS, por sus siglas en inglés) exigirá pictogramas en las etiquetas para advertir a los usuarios de los peligros químicos a los que puedan estar expuestos. Cada pictograma representa un peligro definido y consiste en un símbolo sobre un fondo blanco enmarcado con un borde rojo. La clasificación del peligro químico determina el pictograma que muestra la etiqueta.

Pictogramas y peligros según la HCS



Peligro para la salud  <ul style="list-style-type: none"> • Carcinógeno • Mutagenicidad • Toxicidad para la reproducción • Sensibilización respiratoria • Toxicidad específica de órganos diana • Peligro por aspiración 	Llama  <ul style="list-style-type: none"> • Inflamables • Pirofóricos • Calentamiento espontáneo • Desprenden gases inflamables • Reaccionan espontáneamente (autorreactivos) • Peróxidos orgánicos 	Signo de exclamación  <ul style="list-style-type: none"> • Irritante (piel y ojos) • Sensibilizador cutáneo • Toxicidad aguda (daño) • Efecto narcótico • Irritante de vías respiratorias • Peligros para la capa de ozono (no obligatorio)
Botella de gas  <ul style="list-style-type: none"> • Gases a presión 	Corrosión  <ul style="list-style-type: none"> • Corrosión o quemaduras cutáneas • Lesión ocular • Corrosivo para los metales 	Bomba explotando  <ul style="list-style-type: none"> • Explosivos • Reaccionan espontáneamente (autorreactivos) • Peróxidos orgánicos
Llama sobre círculo  <ul style="list-style-type: none"> • Comburentes 	Medio ambiente (No obligatorio)  <ul style="list-style-type: none"> • Toxicidad acuática 	Calavera y tibias cruzadas  <ul style="list-style-type: none"> • Toxicidad aguda (mortal o tóxica)

Para más información:

OSHA[®] Administración de Seguridad y Salud Ocupacional
 Departamento de Trabajo de los EE. UU.
www.osha.gov (800) 321-OSHA (6742)



Comparison of NFPA 704 and HazCom 2012 Labels

	 NFPA 704	 HazCom 2012
Purpose	Provides basic information for emergency personnel responding to a fire or spill and those planning for emergency response.	Informs workers about the hazards of chemicals in workplace under normal conditions of use and foreseeable emergencies.
Number System: NFPA Rating and OSHA's Classification System	0-4 0-least hazardous 4-most hazardous	1-4 1-most severe hazard 4-least severe hazard <ul style="list-style-type: none"> The Hazard category numbers are NOT required to be on labels but are required on SDSs in Section 2. Numbers are used to CLASSIFY hazards to determine what label information is required.
Information Provided on Label	<ul style="list-style-type: none"> Health-Blue Flammability-Red Instability-Yellow Special Hazards*-White <p>*OX Oxidizers W Water Reactives SA Simple Asphyxiants</p>	<ul style="list-style-type: none"> Product Identifier Signal Word Hazard Statement(s) Pictogram(s) Precautionary statement(s); and Name address and phone number of responsible party.
Health Hazards on Label	Acute (short term) health hazards ONLY. Acute hazards are more typical for emergency response applications. Chronic health effects are not covered by NFPA 704.	Acute (short term) and chronic (long term) health hazards. Both acute and chronic health effects are relevant for employees working with chemicals day after day. Health hazards include acute hazards such as eye irritants, simple asphyxiants and skin corrosives as well as chronic hazards such as carcinogens.
Flammability/ Physical Hazards on Label	NFPA divides flammability and instability hazards into two separate numbers on the label. Flammability in red section Instability in yellow section	A broad range of physical hazard classes are listed on the label including explosives, flammables, oxidizers, reactives, pyrophorics, combustible dusts and corrosives.
Where to get information to place on label	Rating system found in NFPA Fire Protection Guide to Hazardous Materials OR NFPA 704 Standard System for Identification of the Hazards of Materials for Emergency Response 2012 Edition. Tables 5.2, 6.2, 7.2 and Chapter 8 of NFPA 704	OSHA Hazard Communication Standard 29 CFR 1910.1200 (2012). 1) Classify using Appendix A (Health Hazards) and Appendix B (Physical Hazards) 2) Label using Appendix C
Other	The hazard category numbers found in section 2 of the HC2012 compliant SDSs are NOT to be used to fill in the NFPA 704 diamond.	Supplemental information may also appear on the label such as any hazards not otherwise classified, and directions for use.
website	www.nfpa.org/704	www.osha.gov OR www.osha.gov/dsg/hazcom/index.html

For more information:



National Fire Protection Association
www.nfpa.org | 800.344.3555



Occupational Safety and Health Administration
U.S. Department of Labor
www.osha.gov | 800.321.OSHA (6742)



The substance: "NOMIXUP 7042012"

To create an OSHA label per HazCom 2012:

Step 1: Perform the classification in accordance with Appendix A: Health Hazards & Appendix B Physical Hazards of 29 CFR 1910.1200 - this is where you find the criteria for each hazard class and hazard category.

Class: Flammable Gas, Category 1




Class: Carcinogen, Category 1B

Class: Specific Target Organ Toxicity (Single Exposure), Category 3

Class: Substances and Mixtures Which, in Contact with Water, Emit Flammable Gases, Category 3

Step 2: Gather labeling information (Pictograms, Signal Word, Hazard Statements) from Appendix C of 29 CFR 1910.1200 based on the chemical's hazard class and category.

Step 3: Create the Label

Identifier: NOMIXUP 7042012	
  	
DANGER!	
Hazard Statements:	Extremely Flammable Gas May Cause Cancer May Cause Respiratory Irritation In Contact with Water Releases Flammable Gas
Precautionary Statements:	Keep away from heat/sparks/open flames/hot surfaces. No Smoking Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing vapors and mists. Wear protective gloves and eye protection. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call poison center/doctor if you feel unwell. Leaking Gas Fire: Do not extinguish unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Store in tightly closed container in a well-ventilated place, locked up. Use outdoors or use in a well-ventilated place. Dispose of contents in accordance with local/regional/national regulations.
XYZ Chemical Company 123 Main St. Anywhere, NY, USA 1-800-000-1111	

To Create NFPA 704 label:

Step 1: Collect information on hazards from applicable sections of SDS. Some SDSs may provide the NFPA diamond symbol with hazard rating numbers filled in already. Note: Do NOT use the hazard category numbers given in section 2 of HazCom 2012 compliant SDS on 704 label!

If the diamond is not provided on the SDS you can obtain the information under the following sections of the SDS. Note that additional information may be provided in other sections of the SDS.

- Health hazard information under Section 11
- Flammability information under Section 9
- Instability information under Section 10
- Special information under Section 9, 10, 11

Step 2: Obtain current edition copy of NFPA 704 or view on line at www.nfpa.org/704.

Compare the criteria on the SDS sections as shown above with the criteria shown in Tables 5.2 (Health), 6.2 (Flammability), 7.2 (Instability) and 8.2 (Special Hazards)

Step 3: Place numbers for the degree of hazard associated with the criteria obtained in Step 2 in the correct quadrant of NFPA 704 placard.

NFPA Label for NOMIXUP 7042012












For more information:



National Fire Protection Association
www.nfpa.org | 800.344.3555











Occupational Safety
and Health Administration
U.S. Department of Labor
www.osha.gov | 800.321.OSHA (6742)

Pictogram Name	Pictogram	Chemicals covered
Flame		Flammables Self Reactives Pyrophorics Self-heating Emits Flammable Gas Organic Peroxides
Flame over Circle		Oxidizers
Exclamation Mark		Irritant Dermal Sensitizer Acute Toxicity (harmful) Narcotic Effects Respiratory Tract Irritation
Exploding Bomb		Explosives Self Reactives Organic Peroxides
Corrosion		Corrosives
Gas Cylinder		Gases Under Pressure
Health Hazard		Carcinogen Respiratory Sensitizer Reproductive Toxicity Target Organ Toxicity Mutagenicity Aspiration Toxicity
Skull and Crossbones		Acute Toxicity (severe)
Environment		Part of GHS, but not Hazard Communication, 29 CFR 1910.1200.









Pictograms Game

Please write the appropriate letter for the pictogram that corresponds to each chemical category.

_____	Flammables		A
_____	Narcotic effects		
_____	Oxidizers		B
_____	Self reactives		
_____	Self-heating		
_____	Irritant		C
_____	Organic peroxides		
_____	Explosives		D
_____	Gases under pressure		
_____	Carcinogen		E
_____	Dermal sensitizer		
_____	Acute toxicity (harmful)		F
_____	Respiratory tract irritation		
_____	Self Reactives		
_____	Corrosives		G
_____	Respiratory sensitizer		
_____	Reproductive toxicity		
_____	Target organ toxicity		H
_____	Mutagen		

Pictograms Game Answer KEY

*There are two broad categories of self-reactives: those that will explode and those that will burn. If heating may cause an explosion, the signal word must be danger. If the signal word is warning, the chemical can still catch on fire with enough heating, but it won't explode.

<u>D</u>	Flammables		A
<u>F</u>	Narcotic effects		
<u>C</u>	Oxidizers		B
<u>D or E*</u>	Self reactives		
<u>D</u>	Self-heating		
<u>F</u>	Irritant		C
<u>D or E</u>	Organic peroxides		
<u>E</u>	Explosives		D
<u>G</u>	Gases under pressure		
<u>B</u>	Carcinogen		E
<u>F</u>	Dermal sensitizer		
<u>F</u>	Acute toxicity (harmful)		
<u>F</u>	Respiratory tract irritation		F
<u>D or E*</u>	Self reactives		
<u>H</u>	Corrosives		G
<u>B</u>	Respiratory sensitizer		
<u>B</u>	Reproductive toxicity		
<u>B</u>	Target organ toxicity		H
<u>B</u>	Mutagen		



Material Name: OATEY PVC REGULAR CLEAR – LO-VOC FORMULA

***** Section 1 - Product and Company Identification *****

MSDS #1100E

Part Numbers: Clear - 31012, 31013, 31014, 31015, 31016, 31958, 31959, 31960, 31961

Manufacturer Information

Oatey Co.
4700 West 160th Street
Cleveland, OH 44135

Phone: 216-267-7100

For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1- 703-527-3887.

***** Section 2 - Hazards Identification *****

GHS Classification:

Flammable Liquids - Category 2
Acute Toxicity Oral - Category 4
Acute Toxicity Dermal - Category 4
Acute Toxicity Inhalation - Category 4
Eye Damage/Irritation - Category 2A
Carcinogenicity - Category 2
Specific Target Organ Toxicity Single Exposure - Category 3

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor.
Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes serious eye irritation.
Contains a chemical classified by the US EPA as a suspected possible carcinogen.
May cause respiratory irritation.
May cause drowsiness or dizziness.

Material Name: OATEY PVC REGULAR CLEAR – LO-VOC FORMULA

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames and hot surfaces. - No smoking.
Keep container tightly closed.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/eye protection/face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/gas/mist/vapors.
Use only outdoors or in a well-ventilated area.

Response

If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. Do not induce vomiting.
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
If exposed or concerned Get medical advice/attention.
In case of fire: Use dry chemical, CO₂, or foam to extinguish fire.

Storage

Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** Section 3 - Composition / Information on Ingredients ***

CAS #	Component	Percent
109-99-9	Tetrahydrofuran	20-40
78-93-3	Methyl ethyl ketone	15-35
108-94-1	Cyclohexanone	10-20
67-64-1	Acetone	10-20
9002-86-2	PVC (Chloroethylene, polymer)	10-18

*** Section 4 - First Aid Measures ***

First Aid: Eyes

If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

Material Name: OATEY PVC REGULAR CLEAR – LO-VOC FORMULA

First Aid: Skin

Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with hand cleaner or baby oil.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

First Aid: Inhalation

If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

*** * * Section 5 - Fire Fighting Measures * * ***

General Fire Hazards

See Section 9 for Flammability Properties.

Highly flammable liquid and vapor. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

Hazardous Combustion Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

Extinguishing Media

Use dry chemical, CO₂, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.

Unsuitable Extinguishing Media

None.

Fire Fighting Equipment/Instructions

Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

*** * * Section 6 - Accidental Release Measures * * ***

Recovery and Neutralization

Stop leak if it can be done without risk.

Materials and Methods for Clean-Up

Remove all sources of ignition and ventilate area. Soak up spill with an inert absorbent such as sand, earth or other noncombusting material. Put absorbent material in covered, labeled metal containers.

Emergency Measures

Isolate area. Keep unnecessary personnel away.

Personal Precautions and Protective Equipment

Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high.

Environmental Precautions

Prevent liquid from entering watercourses, sewers and natural waterways.

Prevention of Secondary Hazards

None

Material Name: OATEY PVC REGULAR CLEAR – LO-VOC FORMULA

*** Section 7 - Handling and Storage ***

Handling Procedures

Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use. Other: "Empty" containers retain product residue and can be hazardous. Follow all SDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

Storage Procedures

Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.

Incompatibilities

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

*** Section 8 - Exposure Controls / Personal Protection ***

Component Exposure Limits

Tetrahydrofuran (109-99-9)

ACGIH: 50 ppm TWA
100 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
250 ppm STEL; 735 mg/m3 STEL

Methyl ethyl ketone (78-93-3)

ACGIH: 200 ppm TWA
300 ppm STEL
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
300 ppm STEL; 885 mg/m3 STEL

Acetone (67-64-1)

ACGIH: 500 ppm TWA
750 ppm STEL
OSHA: 1000 ppm TWA; 2400 mg/m3 TWA
NIOSH: 250 ppm TWA; 590 mg/m3 TWA

Cyclohexanone (108-94-1)

ACGIH: 20 ppm TWA
50 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 50 ppm TWA; 200 mg/m3 TWA
NIOSH: 25 ppm TWA; 100 mg/m3 TWA
Potential for dermal absorption

PVC (Chloroethylene, polymer) (9002-86-2)

ACGIH: 1 mg/m3 TWA (respirable fraction)

Material Name: OATEY PVC REGULAR CLEAR – LO-VOC FORMULA

Engineering Measures

Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

Personal Protective Equipment: Respiratory

For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Personal Protective Equipment: Hands

Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

Personal Protective Equipment: Eyes

Safety glasses with side shields or safety goggles.

Personal Protective Equipment: Skin and Body

No additional protective equipment needed.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance:	Clear	Odor:	Ether-like
Physical State:	Liquid	pH:	NA
Vapor Pressure:	145 mmHg @ 20°C	Vapor Density:	2.5
Boiling Point:	151°F (66°C)	Melting Point:	NA
Solubility (H2O):	Negligible	Specific Gravity:	0.90 +/- 0.02 @ 20°C
Evaporation Rate:	(BUAC = 1) = 5.5 - 8.0	VOC:	84-88%
Octanol/H2O Coeff.:	ND	Flash Point:	14-23°F (-10 to -5°C)
Flash Point Method:	CCCFP	Upper Flammability Limit (UFL):	11.8
Lower Flammability Limit (LFL):	1.8	Burning Rate:	ND
Auto Ignition:	ND		

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid heat, sparks, flames and other sources of ignition.

Incompatible Products

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

Hazardous Decomposition Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

* * * **Section 11 - Toxicological Information** * * *

Acute Toxicity

Component Analysis - LD50/LC50

Tetrahydrofuran (109-99-9)

Inhalation LC50 Rat 53.9 mg/L 4 h; Inhalation LC50 Rat 180 mg/L 1 h; Oral LD50 Rat 1650 mg/kg

Methyl ethyl ketone (78-93-3)

Inhalation LC50 Mouse 32 g/m³ 4 h; Oral LD50 Rat 2737 mg/kg; Dermal LD50 Rabbit 6480 mg/kg

Acetone (67-64-1)

Oral LD50 Rat 5800 mg/kg

Cyclohexanone (108-94-1)

Inhalation LC50 Rat 10.7 mg/L 4 h; Inhalation LC50 Rat 8000 ppm 4 h; Oral LD50 Rat 800 mg/kg; Dermal LD50 Rabbit 948 mg/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

Potential Health Effects: Ingestion

Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

Potential Health Effects: Inhalation

Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

Carcinogenicity

A: General Product Information

In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure.

Material Name: OATEY PVC REGULAR CLEAR – LO-VOC FORMULA

B: Component Carcinogenicity

Tetrahydrofuran (109-99-9)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Acetone (67-64-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Cyclohexanone (108-94-1)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

PVC (Chloroethylene, polymer) (9002-86-2)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Supplement 7 [1987]; Monograph 19 [1979] (Group 3 (not classifiable))

Reproductive Toxicity

Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Specified Target Organ General Toxicity: Single Exposure

May cause respiratory irritation. Inhalation of high concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

This product is not expected to be toxic to aquatic organisms.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Tetrahydrofuran (109-99-9)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	1970-2360 mg/L [flow-through]
96 Hr LC50 Pimephales promelas	2700-3600 mg/L [static]
24 Hr EC50 Daphnia magna	5930 mg/L

Methyl ethyl ketone (78-93-3)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	3130-3320 mg/L [flow-through]
48 Hr EC50 Daphnia magna	>520 mg/L
48 Hr EC50 Daphnia magna	5091 mg/L
48 Hr EC50 Daphnia magna	4025 - 6440 mg/L [Static]

Material Name: OATEY PVC REGULAR CLEAR – LO-VOC FORMULA

Acetone (67-64-1)

Test & Species

Conditions

96 Hr LC50 Oncorhynchus mykiss	4.74 - 6.33 mL/L
96 Hr LC50 Pimephales promelas	6210 - 8120 mg/L [static]
96 Hr LC50 Lepomis macrochirus	8300 mg/L
48 Hr EC50 Daphnia magna	10294 - 17704 mg/L [Static]
48 Hr EC50 Daphnia magna	12600 - 12700 mg/L

Cyclohexanone (108-94-1)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	481-578 mg/L [flow-through]
96 Hr LC50 Pimephales promelas	8.9 mg/L
96 Hr EC50 Chlorella vulgaris	20 mg/L
24 Hr EC50 Daphnia magna	800 mg/L

Persistence/Degradability

No information available for the product.

Bioaccumulation

No information available for the product.

Mobility in Soil

No information available for the product.

*** Section 13 - Disposal Considerations ***

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** Section 14 - Transportation Information ***

DOT Information

For Greater than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): Flammable Liquid

For Less than 1 liter (0.3 gal):

Shipping Name: Consumer Commodity, ORM-D

IMDG Information

For Greater than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): Flammable Liquid

Material Name: OATEY PVC REGULAR CLEAR – LO-VOC FORMULA**For Less than 1 liter (0.3 gal):****Shipping Name:** Adhesives**UN #: 1133 Hazard Class: 3 Packing Group: II****Required Label(s):** None (Limited Quantities are expected from labeling)*** * * Section 15 - Regulatory Information * * *****Regulatory Information****US Federal Regulations****Component Analysis**

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Tetrahydrofuran (109-99-9)

CERCLA: 1000 lb final RQ; 454 kg final RQ

Methyl ethyl ketone (78-93-3)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Acetone (67-64-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Cyclohexanone (108-94-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

State Regulations**Component Analysis - State**

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Tetrahydrofuran	109-99-9	Yes	Yes	Yes	Yes	Yes	No
Methyl ethyl ketone	78-93-3	Yes	Yes	Yes	Yes	Yes	No
Acetone	67-64-1	Yes	Yes	Yes	Yes	Yes	No
Cyclohexanone	108-94-1	Yes	Yes	Yes	Yes	Yes	No
PVC (Chloroethylene, polymer)	9002-86-2	No	No	No	Yes	No	No

Material Name: OATEY PVC REGULAR CLEAR – LO-VOC FORMULA

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Tetrahydrofuran	109-99-9	1 %
Methyl ethyl ketone	78-93-3	1 %
Acetone	67-64-1	1 %
Cyclohexanone	108-94-1	0.1 %

Additional Regulatory Information

A: General Product Information

This product contains trace amounts of chemicals known to the State of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. The use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 will minimize exposure to these chemicals.

B: Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Tetrahydrofuran	109-99-9	Yes	DSL	EINECS
Methyl ethyl ketone	78-93-3	Yes	DSL	EINECS
Acetone	67-64-1	Yes	DSL	EINECS
Cyclohexanone	108-94-1	Yes	DSL	EINECS
PVC (Chloroethylene, polymer)	9002-86-2	Yes	DSL	ELINCS

* * * Section 16 - Other Information * * *

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

Literature References

None

Other Information

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.

End of Sheet



In Compliance with the Americans with Disabilities Act (ADA),
this publication is available in alternative formats by calling the
Oregon OSHA Public Relations Manager at 503-378-3272 (V/TTY)