

# Hazard Communication (HAZCOM) Training for Non-Laboratory Personnel

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**HAZARD  
COMMUNICATIONS**

# Hazard Communication



# Training Topics

- HAZCOM Program Requirements  
Labels, SDS's, Inventories
- Physical and Health Hazards of  
Chemicals
- HAZCOM Video



# Introduction

- The University HAZCOM program outlines the safe handling and use of chemicals to minimize potential exposure in shops and research facilities.
- The HAZCOM program ensures compliance with Occupational Safety and Health Administration (OSHA) regulations.



# HAZCOM Standard



- Hawaii Occupational Safety & Health (HIOSH)

Title 12, Subtitle 8, Chapter 203

- Occupational Safety and Health Agency (OSHA)

29 CFR 1910.1200



Regulations are online at:

<http://hawaii.gov/labor/hiosh>

[www.osha.gov](http://www.osha.gov)

# HAZCOM Enforcement

<b>Location</b>	<b>Citation</b>
<b>Leahi Hospital</b>	<b>MSDS's not available, training not conducted</b>
<b>UH Hilo</b>	<b>Chemical inventory not available in work area</b>
<b>Young Brothers</b>	<b>Training not conducted</b>
<b>Hawaii Manufacturing Inc.</b>	<b>No HAZCOM plan, MSDS's not available, training not conducted</b>

- Each citation carries a maximum fine of \$7000. “Willful” citations are \$70,000.
- For the educational and research occupations, HAZCOM is the second most cited violation.
- For the State of Hawaii, HAZCOM is the 3<sup>th</sup> most commonly cited violation.

# Top 10 list of most cited violations by OSHA region, fiscal year 2023



**OSHA REGION 10 (AK, ID, OR, WA)**

1. Hazard Communication (1910.1200)
2. Powered Industrial Trucks (1910.178)
3. Fall Protection – General Requirements (1926.501)
4. Electrical – General Requirements (1910.303)
5. Exit Routes and Emergency Planning – Maintenance, Safeguards and Operational Features for Exit Routes (1910.37)
6. Electrical – Wiring Methods (1910.305)
7. Fire Protection – Portable Fire Extinguishers (1910.157)
8. Respiratory Protection (1910.134)
9. Medical Services and First Aid (1910.151)
10. Lockout/Tagout (1910.147)

**OSHA REGION 9 (AS, AZ, CA, GU, HI, MP, NV)**

1. Electrical – General Requirements (1910.303)
2. Electrical – Wiring Methods (1910.305)
3. Hazard Communication (1910.1200)
4. Respiratory Protection (1910.134)
5. Fire Protection – Portable Fire Extinguishers (1910.157)
6. Machine Guarding (1910.212)
7. Powered Industrial Trucks (1910.178)
8. Medical Services and First Aid (1910.151)
9. Personal Protection Equipment – General Requirements (1910.132)
10. Exit Routes and Emergency Planning – Maintenance, Safeguards and Operational Features for Exit Routes (1910.37)

**OSHA REGION 8 (CO, MT, ND, SD, UT, WY)**

1. Fall Protection – General Requirements (1926.501)
2. Respiratory Protection (1910.134)
3. Hazard Communication (1910.1200)
4. Powered Industrial Trucks (1910.178)
5. Ladders (1926.1053)
6. Machine Guarding (1910.212)
7. Excavations – Specific Excavation Requirements (1926.651)
8. General Safety and Health Provisions (1926.20)
9. Fall Protection – Training Requirements (1926.503)
10. Electrical – General Requirements (1910.303)

**OSHA REGION 6 (AR, LA, NM, OK, TX)**

1. Fall Protection – General Requirements (1926.501)
2. Scaffolding (1926.451)
3. Ladders (1926.1053)
4. Personal Protective and Lifesaving Equipment – Eye and Face Protection (1926.102)
5. Fall Protection – Training Requirements (1926.503)
6. Respiratory Protection (1910.134)
7. Personal Protective and Lifesaving Equipment – Head Protection (1926.100)
8. Lockout/Tagout (1910.147)
9. Hazard Communication (1910.1200)
10. Electrical – Wiring Methods (1910.305)

**OSHA REGION 5 (IL, IN, MI, MN, OH, WI)**

1. Fall Protection – General Requirements (1926.501)
2. Lockout/Tagout (1910.147)
3. Ladders (1926.1053)
4. Fall Protection – Training Requirements (1926.503)
5. Powered Industrial Trucks (1910.178)
6. Hazard Communication (1910.1200)
7. Scaffolding (1926.451)
8. Personal Protective and Lifesaving Equipment – Eye and Face Protection (1926.102)
9. Machine Guarding (1910.212)
10. Respiratory Protection (1910.134)

**OSHA REGION 7 (IA, KS, MO, NE)**

1. Fall Protection – General Requirements (1926.501)
2. Hazard Communication (1910.1200)
3. Powered Industrial Trucks (1910.178)
4. Ladders (1926.1053)
5. Personal Protective and Lifesaving Equipment – Eye and Face Protection (1926.102)
6. Respiratory Protection (1910.134)
7. Scaffolding (1926.451)
8. Machine Guarding (1910.212)
9. Lockout/Tagout (1910.147)
10. Electrical – General Requirements (1910.303)

**OSHA REGION 4 (AL, FL, GA, KY, MS, NC, SC, TN)**

1. Fall Protection – General Requirements (1926.501)
2. Personal Protective and Lifesaving Equipment – Eye and Face Protection (1926.102)
3. Ladders (1926.1053)
4. Powered Industrial Trucks (1910.178)
5. Hazard Communication (1910.1200)
6. Fall Protection – Training Requirements (1926.503)
7. Scaffolding (1926.451)
8. Lockout/Tagout (1910.147)
9. Respiratory Protection (1910.134)
10. Machine Guarding (1910.212)

**OSHA REGION 1 (CT, MA, ME, NH, RI, VT)**

1. Fall Protection – General Requirements (1926.501)
2. Hazard Communication (1910.1200)
3. Powered Industrial Trucks (1910.178)
4. Respiratory Protection (1910.134)
5. Ladders (1926.1053)
6. Fall Protection – Training Requirements (1926.503)
7. Lockout/Tagout (1910.147)
8. Scaffolding (1926.451)
9. Inspections, Citations and Proposed Penalties – Abatement Verification (1903.19)
10. Machine Guarding (1910.212)

**OSHA REGION 2 (NJ, NY, PR, VI)**

1. Fall Protection – General Requirements (1926.501)
2. Scaffolding (1926.451)
3. Hazard Communication (1910.1200)
4. Ladders (1926.1053)
5. Respiratory Protection (1910.134)
6. Powered Industrial Trucks (1910.178)
7. Lockout/Tagout (1910.147)
8. Personal Protective and Lifesaving Equipment – Eye and Face Protection (1926.102)
9. Personal Protective and Lifesaving Equipment – Head Protection (1926.100)
10. Exit Routes and Emergency Planning – Maintenance, Safeguards and Operational Features for Exit Routes (1910.37)

**OSHA REGION 3 (DC, DE, MD, PA, VA, WV)**

1. Hazard Communication (1910.1200)
2. Fall Protection – General Requirements (1926.501)
3. Respiratory Protection (1910.134)
4. Scaffolding (1926.451)
5. Lockout/Tagout (1910.147)
6. Ladders (1926.1053)
7. Fall Protection – Training Requirements (1926.503)
8. Powered Industrial Trucks (1910.178)
9. Electrical – General Requirements (1910.303)
10. Machine Guarding (1910.212)



## HAZARD COMMUNICATION

Standard: 1910.1200

Total violations: 3,213

Fiscal Year 2022 ranking: 2 (2,682 violations)

This standard addresses chemical hazards – both for chemicals produced in the workplace and those imported into the workplace. It also governs the communication of those hazards to workers.

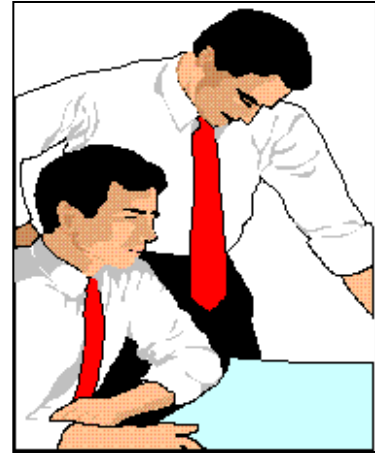
### TOP 5 SECTIONS CITED:

1. 1910.1200(e)(1): Employers shall develop, implement and maintain at each workplace a written hazard communication program that at least describes how the criteria specified in paragraphs (f), (g) and (h) of this section for labels and other forms of warning, Safety Data Sheets, and employee information and training will be met. – **1,136 violations**
2. 1910.1200(h)(1): 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. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and Safety Data Sheets. – **843**
3. 1910.1200(g)(8): The employer shall maintain in the workplace copies of the required Safety Data Sheets for each hazardous chemical, and shall ensure they are readily accessible during each work shift to employees when they are in their work area(s). – **363**
4. 1910.1200(f)(6): Workplace labeling. Except as provided in paragraphs (f)(7) and (f)(8) of this section, the employer shall ensure each container of hazardous chemicals in the workplace is labeled, tagged or marked. – **315**



# Program Administration

- Each supervisor is responsible for implementing the provisions of the HAZCOM program.
- The EHSO assists departments with implementation and updating.
- EHSO inspects for HAZCOM compliance during annual facility safety, health and environmental audits.



# Program Overview

The **HAZCOM Plan** consists of the following main elements:

- Training
- Inventory of Hazardous Chemicals
- Warning Labels
- Safety Data Sheets (SDS)

**The UH HAZCOM plan should be easily accessible in your work area.**

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HAZARD

COMMUNICATION

PROGRAM (HAZCOM)

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UHCC FACILITIES AND ENVIRONMENTAL HEALTH

reviewed October 2013

# Training

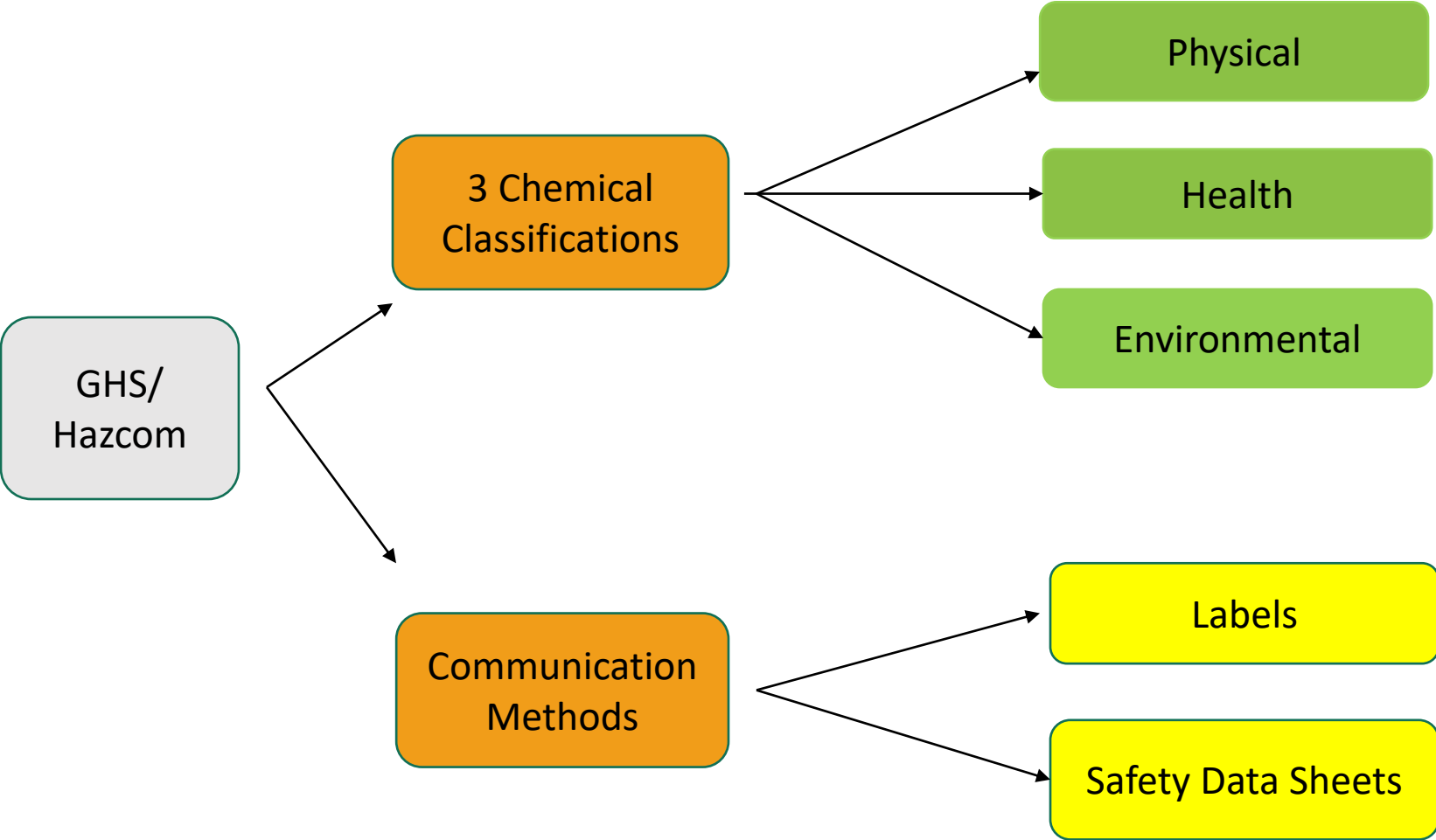


- HAZCOM training is required upon assignment to a work area where chemicals are present.
- Annual refresher training is not required unless chemicals with new types of hazards are introduced to the workplace.
- Each time a new chemical or process is introduced, employees must be trained on the new product or process.
- Each facility must keep training **records** on hand.

# Globally Harmonized System (GHS)

- The OSHA HazCom changes are being made to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). The GHS system provides a globally consistent communicating the hazards of chemicals via safety data sheets (SDS). It is a logical and comprehensive approach to:
  - Defining health, physical and environmental hazards of chemicals
  - Creating classification processes that use available data on chemicals for comparison with the defined hazard criteria; and
- Communicating hazard information, as well as protective measures, on labels and Safety Data Sheets (SDS)

# Main Changes Affecting Users of Hazardous Chemicals



# Chemical Hazard Classification

## 3 Chemical Hazard Classifications:

Chemicals must be classified as **Health Hazards, Physical Hazards, and Environmental Hazards**

### Physical Hazards:

1. Explosives
2. Flammable Gases
3. Flammable Aerosols
4. Oxidizing Gases
5. Gases Under Pressure
6. Flammable Liquids
7. Flammable Solids
8. Self-Reactive Substances
9. Pyrophoric Liquids
10. Pyrophoric Solids
11. Self-Heating Substances
12. Substances Which in Contact  
With Water Emit Flammable  
Gases
13. Oxidizing Liquids
14. Oxidizing Solids
15. Organic Peroxides
16. Substance Corrosive to Metal

### Health Hazards:

1. Acute Toxicity
2. Skin Corrosive
3. Skin Irritation
4. Eye Effects
5. Sensitization
6. Germ Cell Mutagenicity
7. Carcinogenicity
8. Reproductive Toxicity
9. Target Organ Systemic Toxicity
10. Aspiration Hazard

### Environmental Hazards:

1. Acute Aquatic Toxicity
2. Chronic Aquatic Toxicity

# Chemical Hazard Classifications



## Categories / Ranking

### Chemical Hazard Classifications

#### Categories

- NFPA 704 Diamond and HMIS hazard classification systems, use a 5 number system, ranging from 0 – 4, to indicate severity of hazards, with 0 being the least and 4 being the most hazardous.
- GHS classification system is a different classification system. With 1 being the most serious.
- The NFPA diamond is still being used, but will be fading out. It is still the marking for doors signage.

# Comparison NFPA 740 to GHS

	 <b>NFPA 704</b>	 <b>HazCom 2012</b>
<b>Purpose</b>	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.
<b>Number System: NFPA Rating and OSHA's Classification System</b>	0-4 0-least hazardous 4-most hazardous	1-4 1-most severe hazard 4-least severe hazard <ul style="list-style-type: none"> <li>• The Hazard category numbers are NOT required to be on labels but are required on SDSs in Section 2.</li> <li>• Numbers are used to CLASSIFY hazards to determine what label information is required.</li> </ul>
<b>Information Provided on Label</b>	<ul style="list-style-type: none"> <li>• Health-Blue</li> <li>• Flammability-Red</li> <li>• Instability-Yellow</li> <li>• Special Hazards*-White</li> </ul> <p>*OX Oxidizers W Water Reactives SA Simple Asphyxiants</p>	<ul style="list-style-type: none"> <li>• Product Identifier</li> <li>• Signal Word</li> <li>• Hazard Statement(s)</li> <li>• Pictogram(s)</li> <li>• Precautionary statement(s); and</li> <li>• Name address and phone number of responsible party.</li> </ul>




# Labels

Three key label components

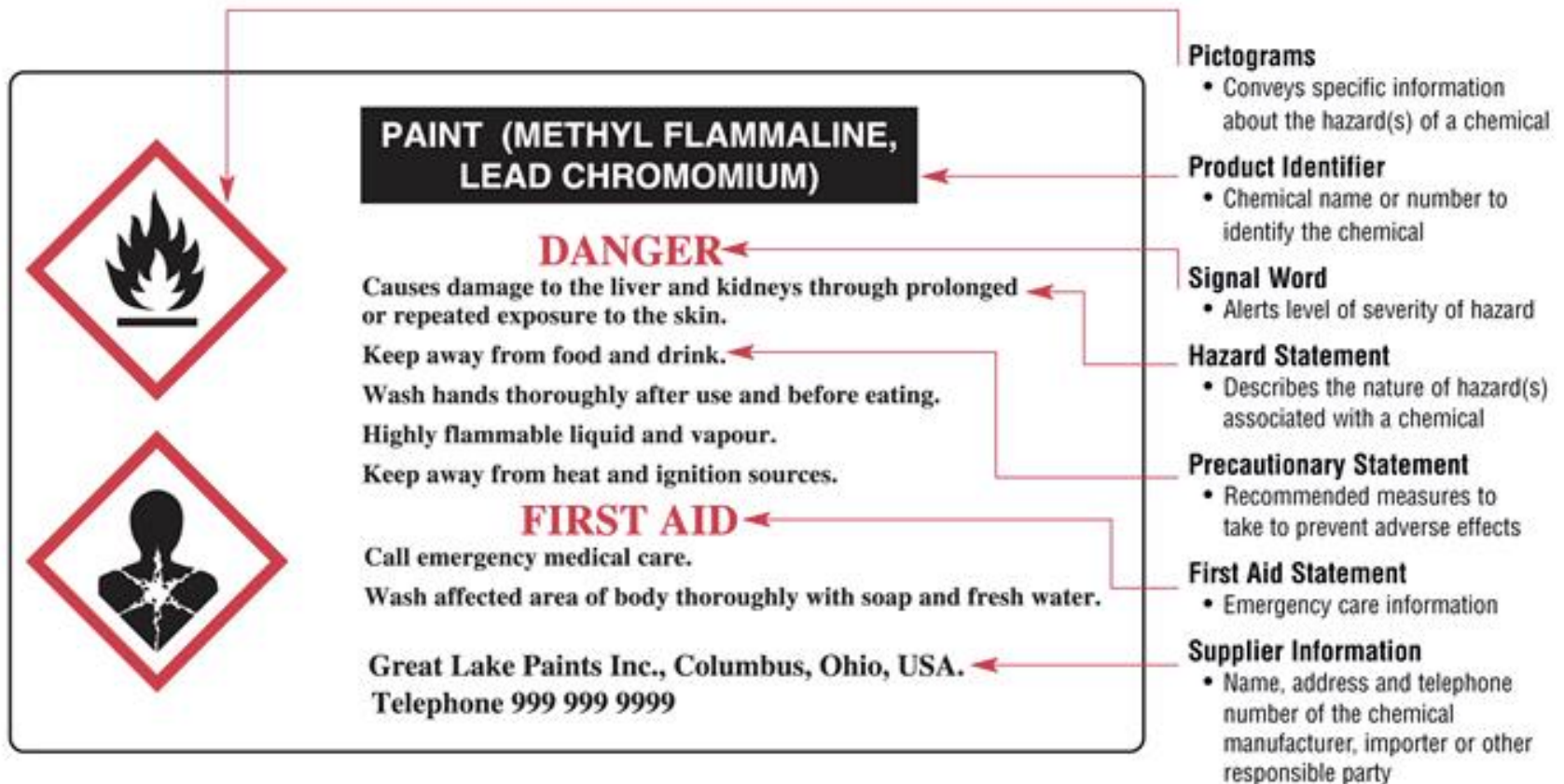
- Symbols or Pictograms
- Signal Words
- Hazard Statements

**SAMPLE LABEL**

<p style="text-align: center;"><b>PRODUCT IDENTIFIER</b></p> <p>CODE _____ Product Name _____</p> <p style="text-align: center;"><b>SUPPLIER IDENTIFICATION</b></p> <p>Company Name _____ Street Address _____ City _____ State _____ Postal Code _____ Country _____ Emergency Phone Number _____</p> <p style="text-align: center;"><b>PRECAUTIONARY STATEMENTS</b></p> <p>Keep container tightly closed. Store in 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 measure 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.</p> <p><b>In Case of Fire:</b> use dry chemical (BC) or Carbon dioxide (CO<sub>2</sub>) fire extinguisher to extinguish.</p> <p><b>First Aid</b> If exposed call Poison Center. If on skin (on hair): Take off immediately any contaminated clothing. Rinse skin with water.</p>	<p style="text-align: center;"><b>HAZARD PICTOGRAMS</b></p> <p style="text-align: center;"></p> <p style="text-align: center;"><b>SIGNAL WORD</b> <b>Danger</b></p> <p style="text-align: center;"><b>HAZARD STATEMENT</b></p> <p><b>Highly flammable liquid and vapor. May cause liver and kidney damage.</b></p> <p style="text-align: center;"><b>SUPPLEMENTAL INFORMATION</b></p> <p><b>Directions for use</b> _____ _____ _____ Fill weight: _____ Lot Number _____ Gross weight: _____ Fill Date: _____ Expiration Date: _____</p>
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# Shipped Container Labels

## HCS/GHS Labeling Components



# Secondary Container Labels

Chemicals are often transferred from original containers to smaller bottles or secondary containers.



The labels on **secondary containers** must include:

- Identity of the hazardous substance(s)
- Pictograms
- Signal Words
- Hazard Statement

Transfer hazard warning info from original container label

### Health Hazard



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

### Flame



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

### Exclamation Mark



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

### Gas Cylinder



- Gases under Pressure

### Corrosion



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

### Exploding Bomb



- Explosives
- Self-Reactives
- Organic Peroxides

### Flame over Circle



- Oxidizers

### Environment \*(Non Mandatory)



- Aquatic Toxicity

### Skull and Crossbones



- Acute Toxicity (fatal or toxic)

# Signal Words

## Labels: Signal Word

These are words used to indicate the severity of the hazard and alert employees to the potential hazard.

Only 2 signal words will appear:

- **“DANGER”** (more severe hazard)
- **“WARNING”** (less severe hazard)



Not all labels will have a signal word. **Some chemicals are not hazardous enough to require that a signal word appear on the label.**



# Safety Data Sheets

SDS's are prepared by the **manufacturer**. SDS is standardized into 16 sections. The SDS's provide detailed information about:

## **New Safety Data Sheet (SDS) Format**

- Section 1, Identification
- Section 2, Hazard(s) Identification
- Section 3, Composition/Information on Ingredients
- Section 4, First Aid Measures
- Section 5, Fire Fighting Measures
- Section 6, Accidental Release Measures
- Section 7, Handling and Storage
- Section 8, Exposure Controls/Personal Protection
- Section 9, Physical and Chemical Properties
- Section 10, Stability and Reactivity
- Section 11, Toxicological Information
- Section 12, Ecological Information
- Section 13, Disposal Considerations
- Section 14, Transport Information
- Section 15, Regulatory Information
- Section 16, Other Information

# Safety Data Sheets

## SAFETY DATA SHEET Solvent Wipe #120

Page: 1  
Printed: 05/05/2011  
Revision: 05/12/2008

### 1. Product and Company Identification

**Product Code:** SOLVENT #120  
**Product Name:** Solvent Wipe #120  
**Reference #:** AVS 1241014  
**Company Name:** Standardized Sanitation Systems, Inc.  
141 Middlesex Turnpike  
Burlington, MA 01803

**Emergency Contact Information:** Emergency (804)422-2071  
(617)273-2000

**Product Category:** Solvents

### 2. Hazards Identification

Flammable Liquids, Category 2  
Serious Eye Damage/Eye Irritation, Category 2A  
Target Organ Systemic Toxicity (single exposure),  
Category 3



Danger



Warning

**GHS Hazard Phrases:** H225: Highly flammable liquid and vapor  
H319: Causes serious eye irritation  
H335: May cause respiratory irritation.

**GHS Precaution Phrases:** P233: Keep container tightly closed.  
P210: Keep away from [heat/sparks/open flames/hot surfaces]. - No smoking.  
P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.  
P240: Ground/bond container and receiving equipment - if the explosive is electrostatically sensitive.  
P241: Use explosion-proof electrical/ventilating/lighting/... equipment ... other specified by the manufacturer/supplier or the competent authority. - if dust clouds can occur.  
P243: Take precautionary measures against static discharge.  
P242: Use only non-sparking tools.  
P264: Wash hands thoroughly after handling.  
P271: Use only outdoors or in a well-ventilated area.  
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

**GHS Response Phrases:** P370+378: In case of fire, use ... for extinction ... appropriate media specified by the manufacturer/supplier or the competent authority - if water increases risk.  
P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+313: If eye irritation persists, get medical advice/attention.  
P309+311: Call a POISON CENTER or doctor/physician if exposed or you feel unwell.  
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**GHS Storage and Disposal Phrases:** P403+235: Store in cool/well-ventilated place.  
P501: Dispose of contents/container to ... (in accordance with local/regional/national/international regulation).  
P405: Store locked up.  
P403+233: Store container tightly closed in well-ventilated place - if product is as volatile as to generate hazardous atmosphere.

# Accessibility of Material Safety Data Sheets

- Each supervisor is responsible for maintaining copies of SDS's
- Copies of SDS must be available at a **centralized location** and readily available to employees during all hours of operation.
- **Electronic copies** are acceptable only if there is a back-up system in place in case of power outage or internet failure.
- Most UH facilities rely on **paper copies.**
- Employees are encouraged to refer to the SDS's !!



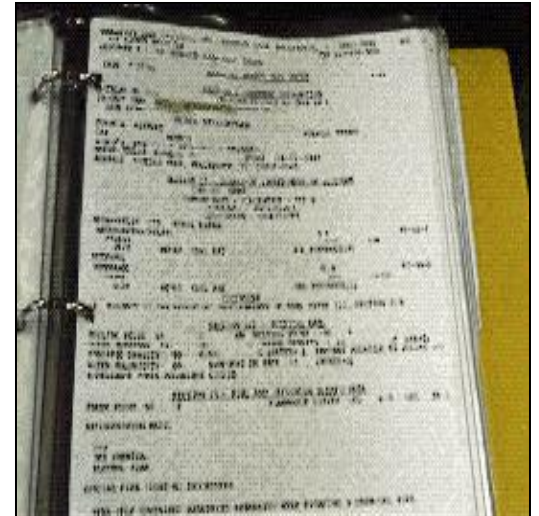


# Obtaining Safety Data Sheets

- All incoming SDS's must be complete and included in the SDS file.

SDS's can now commonly be found on the internet:

→ Manufacturer's website



# For More Information:

**Miles Nirei**

UHCC Facility and Environmental Health Office

Phone: 956-9464

Email: nirei@hawaii.edu

*Web: UH EHSO*

[www.hawaii.edu/ehso](http://www.hawaii.edu/ehso)

OSHA Hazard Communication and GHS

[www.osha.gov/dsg/hazcom/ghs.html](http://www.osha.gov/dsg/hazcom/ghs.html)

# Any Questions ??

