Haz Com Overview

• Hazard Communication Act (OSHA, 29CFR 1910.1200) - Right to know
• Terms & Definitions
• Material Safety Data Sheets (MSDS)
• Hazardous Material Storage
• Hazardous Material Labeling
• First Aid For Hazardous Material Exposures
Why Haz Com?

Home

Work
Hazard Communication Standard

- The Occupational Safety & Health Administration (OSHA) mandates that companies using and producing hazardous materials must provide employees information and training on the proper handling and use of these hazardous materials.

Your Right to Know
Texas Hazard Communication Act

• The Texas Hazard Communication Act requires public employers to provide employees with specific information on the hazards of chemicals which the employee may be exposed to in the workplace.
  - Hazardous Materials
  - Workplace Chemical List
  - Employee Training
  - Material Safety Data Sheets (MSDS)
  - Labels
  - Employee Rights
Your Rights As an Employee

• Know everything about any hazardous materials you work with or any hazardous materials in your area
• Access all MSDS
• Information on your chemical exposures
• Receive training on chemical hazards
• File complaints, assist inspectors, or testify against your employer
• Employees may file complaints with Texas Department of Health at 800-452-2791
Why do I need to know about this hazardous material stuff?

- Working in an office
- No chemical bottles
- No gas cylinders
- Do I need to know any of these?
A Label Tells You

- The names of the ingredients in the product
- The name, address and phone number of the company manufacturing or importing the product
- Physical hazards of the product
- Health hazards of the product
- Storage and handling instructions
- Protective clothing and procedures to follow when using the product

Chemical Stuff

Made by ABC CHEM CO
123 Industry St.
Anytown, USA
Phone: 000-000-000

FLAMMABLE
Can cause skin irritation.
Store in cool well-ventilated area.
Avoid contact with skin.
Keep out of reach of children
READ DIRECTIONS COMPLETELY BEFORE USE

DIRECTIONS:

Shake can up to 1 minute. Screw nozzle adapter onto valve stem, being careful not to activate valve. With valve end of can down, slowly press trigger to dispense foam. Test on experimental surface. Fill cavity or can down, slowly press trigger to dispense foam. For cavities greater than 3 in. (75mm) diameter, fill cavity with foam to allow for expansion. Do not disturb uncured foam. Cured foam can be trimmed or sanded. Cured foam exposed to sunlight must be covered with protective cloth.

Use between 64°-100°F (18°C-38°C). Clean grease and oil off surfaces to be foamed. Cover surrounding surfaces.

Wear protective gloves, goggles and work clothes during use. Use with adequate ventilation.

Clean grease and oil off surfaces to be foamed. Cover surrounding surfaces.

MODE D'EMPLOI

Ne remplir que 30% du cylindre. Arrêter la pompe en prélevant la valve. Portez des gants de protection et des lunettes.

Utiliser avec attention et en respectant les instructions fournies avec le produit.

Service client :

1-800-123-4567
DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS, INCLUDING DIZZINESS, HEADACHE OR NAUSEA. CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. OVEREXPOSURE MAY CAUSE CARDIAC, BLOOD, LIVER, KIDNEY DAMAGE. USE ONLY WITH ADEQUATE VENTILATION. CONTENTS UNDER PRESSURE. KEEP OUT OF THE REACH OF CHILDREN. NOTICE: THIS PRODUCT CONTAINS SOLVENTS. REPORTS HAVE ASSOCIATED REPEATED AND CONTINUED EXPOSURE TO SOLVENTS WITH INCREASED RISK OF LUNG, SKIN, AND NERVOUS SYSTEM DAMAGE.
Where Can I Find Out Information about Hazardous Materials?

- A MSDS is required for every hazardous material produced.
• MSDS is a source of information that includes the following:
  – Physical & Chemical Properties of hazardous material
  – Health hazards
  – Signs & symptoms of hazardous material exposure
  – Emergency and First Aid procedures for exposure
  – Safe handling of hazardous material
  – Storage/Incompatibility/PPE
Material Safety Data Sheet

The Clorox Company
1221 Broadway
Oakland, CA 94612
Tel. (510) 271-7000

I Product:
CLOROX REGULAR-BLEACH

Description:
CLEAR, LIGHT YELLOW LIQUID WITH A CHARACTERISTIC CHLORINE ODOR

Other Designations
Clorox Bleach
EPA Reg. No. 5813-50

Distributor
Clorox Sales Company
1221 Broadway
Oakland, CA 94612

Emergency Telephone Nos.
For Medical Emergencies call:
(800) 460-1014
For Transportation Emergencies Chemtrec
(800) 424-9300

II Health Hazard Data

DANGER: CORROSIVE. May cause severe irritation or damage to eyes and skin. Vapor or mist may irritate. Harmful if swallowed. Keep out of reach of children.

Some clinical reports suggest a low potential for sensitization upon exaggerated exposure to sodium hypochlorite if skin damage (e.g., irritation) occurs during exposure. Under normal consumer use conditions the likelihood of any adverse health effects are low.

Medical conditions that may be aggravated by exposure to high concentrations of vapor or mist: heart conditions or chronic respiratory problems such as asthma, emphysema, chronic bronchitis or obstructive lung disease.

FIRST AID:

Eye Contact: Hold eye open and rinse with water for 15-20 minutes. Remove contact lenses, after first 5 minutes. Continue rinsing eye. Call a physician.

Skin Contact: Wash skin with water for 15-20 minutes. If irritation develops, call a physician.

Ingestion: Do not induce vomiting. Drink a glassful of water. If irritation develops, call a physician. Do not give anything by mouth to an unconscious person.

Inhalation: Remove to fresh air. If breathing is affected, call a physician.

III Hazardous Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Concentration</th>
<th>Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hypochlorite</td>
<td>5 - 10%</td>
<td>Not established</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>&lt;1%</td>
<td>2 mg/m³¹</td>
</tr>
</tbody>
</table>

¹ACGIH Threshold Limit Value (TLV) - Ceiling
²OHSA Permissible Exposure Limit (PEL) – Time Weighted Average (TWA)

None of the ingredients in this product are on the IARC, NTP or OSHA carcinogen lists.
IV Special Protection and Precautions

No special protection or precautions have been identified for using this product under directed consumer use conditions. The following recommendations are given for production facilities and for other conditions and situations where there is increased potential for accidental, large-scale or prolonged exposure.

Hygienic Practices: Avoid contact with eyes, skin and clothing. Wash hands after direct contact. Do not wear product-contaminated clothing for prolonged periods.

Engineering Controls: Use general ventilation to minimize exposure to vapor or mist.

Personal Protective Equipment: Wear safety goggles. Use rubber or nitrile gloves if in contact liquid, especially for prolonged periods.

KEEP OUT OF REACH OF CHILDREN

VI Spill Procedures/Waste Disposal

Spill Procedures: Control spill. Containerize liquid and use absorbents on residual liquid; dispose appropriately. Wash area and let dry. For spills of multiple products, responders should evaluate the MSDS’s of the products for incompatibility with sodium hypochlorite. Breathing protection should be worn in enclosed, and/or poorly ventilated areas until hazard assessment is complete.

Waste Disposal: Dispose of in accordance with all applicable federal, state, and local regulations.

VII Reactivity Data

Stable under normal use and storage conditions. Strong oxidizing agent. Reacts with other household chemicals such as toilet bowl cleaners, rust removers, vinegar, acids or ammonia containing products to produce hazardous gases, such as chlorine and other chlorinated species. Prolonged contact with metal may cause pitting or discoloration.

VIII Fire and Explosion Data

Flash Point: None

Special Firefighting Procedures: None

Unusual Fire/Explosion Hazards: None. Not flammable or explosive. Product does not ignite when exposed to open flame.

IX Physical Data

Boiling point............................................. approx. 212°F/100°C
Specific Gravity (H₂O=1).......................................................... ~ 1.1 at 70°F
Solubility in Water................................................ complete
pH ........................................................................~11.9
Where are the MSDS?

- MSDS binders should be visible on a rack inside the lab
- In central or high traffic area
- Via the internet
Properties of Hazardous Materials

FLAMMABLE

TOXIC

BOOM
ROUTES OF ENTRY

• INHALATION
  – Breathing contaminants

• INGESTION
  – Swallowing contaminants

• ABSORPTION
  – Contaminants enter the body through the skin or eyes

• INJECTION
  – Contaminants penetrate the outer layer of the skin
DOSE AND RESPONSE

**DOSE:** The amount of chemical absorbed by the body tissue, organ, or system; and is dependent on a combination of **concentration** (exposure level) and **time** (exposure duration).

**Important to know in case an accidental ingestion occurs.**

**RESPONSE:** A given effect (symptom) caused by the received dose.
TYPES OF EXPOSURE

Exposure is the amount of hazardous substance in the environment that has the potential to enter the body.

ACUTE: Exposure to a high concentration of a substance over a short period of time (typically under 24 hours). Symptoms are felt immediately and may produce effects such as nausea, headache, eye irritation and difficulty breathing.

CHRONIC: Repeated or continuous exposure to low concentrations over a long period of time. Symptoms are typically latent (unnoticed) effects such as fatigue, emphysema, brain damage, and cancer.
TYPES OF HAZARDOUS SUBSTANCES

- **CRYOGENS** - extremely cold liquids that may explode or cause fire (liquid nitrogen)

- **IRRITANTS** - cause inflammation, redness or itching when they contact skin (solvents)

- **SENSITIZERS** - repeated exposure to these chemicals can cause an allergic reaction. A person may become sensitized at very low concentrations (toluene diisocyanate)

- **ASPHYXIANTS** - deprive the body of oxygen (carbon monoxide)
TYPES OF HAZARDOUS SUBSTANCES

• POISONS are substances harmful to a person in relatively small amounts. Examples are cyanide, pesticides and arsenic.

• CARCINOGENS are substances capable of causing or producing cancer in humans or animals. Examples are arsenic, asbestos, benzene and tobacco smoke.

• REPRODUCTIVE TOXINS are substances that have the ability to affect the male or female reproductive system or a developing fetus. Examples are aspirin, glycol ethers, lead, toluene, dioxins in herbicide, and tobacco smoke.
INCOMPATIBLE SUBSTANCES

Any two substances that will react violently when combined with each other. Their reaction may produce fire, explosion, toxic gases, or tremendous heat.
INCOMPATIBLE SUBSTANCES

Bleach and Ammonia –

The reaction between household bleach and ammonia gives off toxic chlorine gas.

\[ 2\text{NaOCl} + 2\text{NH}_3 \rightarrow 2\text{NaONH}_3 + \text{Cl}_2. \]
INCOMPATIBLE SUBSTANCES

Acids and cyanides –
The reaction between acids and cyanide salts gives off poisonous hydrogen cyanide gas.
Acids and bases –
The reaction between strong acids and strong bases will give off large amounts of heat, often violently.
INCOMPATIBLE SUBSTANCES

Oxidizers and flammables - An oxidizer is an efficient source of oxygen which can keep a fire burning. It may be reactive enough to start a fire on its own.
DILUTING ACIDS OR BASES

Water plus acids or bases - Some acids or bases will react by giving off heat when mixed with water.

“Do as you aughta’, always add acid to water!”

When diluting strong solutions, **ALWAYS** **ADD THE ACID OR BASE SLOWLY TO THE WATER TO PREVENT ACID OR BASE SPLASH OUT**
What’s wrong with this picture?
What’s wrong with this picture?
Why Make a big deal about Chemical Incompatibility?

• Because we don’t want to be burned, injured, or dead from a violent chemical reaction

• Because we don’t want to be on the Caller Times’ front page with the big letter “L” attached to the head line
Chemical Storage

- Store compatible chemicals together in proper chemical cabinets
- **Never store incompatible chemicals together!!!**
  - Ex. Acids & Bases, Oxidizer and Flammables
- Refer to MSDS for chemical compatibility and store them accordingly
- When in doubt, Ask
Chemical Storage

Trick Question: Which one is a chemical Storage?
Chemical Labeling

According to the Hazard Communication regulation, you are required to label a hazardous material container in which you poured from an original container that has the manufacturer’s label.
What is in the bottle?
Any guess?
Chemical Labeling

If the content is **not a hazardous material**, do you need to label the container?

- Yes, to communicate what it is to everyone in the area.
Chemical Labeling

For immediate use of a chemical, you are not required to label a beaker or other chemical container.

When you walk away from the chemical or when you save it for the next day, you need to label the chemical clearly with chemical name (not formula).
PPE for Chemical Handling

• PPE
  – Gloves
  – Goggles

• PPE
  – Moon suit
PPE for Chemical Handling

• Trick Question: Which one is a pair of goggles?
Chemical Spill Response

- Evacuate the people
- Secure the area
- Call UPD at ext. 4444
- E,H&S will coordinate the clean up
- E,H&S will determine whether the building should be evacuated
- Do not return to the area until it is cleared by E,H&S, UPD
Hazardous Waste Handling

Contact E,H&S if you have any expired chemicals or any hazardous waste to be disposed of.
Compressed Gas Cylinders

- The Gas in a cylinder is stored under high pressure.
- Knocked over cylinder can be propelled like a bullet.
Compressed Gas Cylinders

• Store cylinders upright
• Secure each cylinder with a chain or strap provided
• Fuel gas cylinders are stored at least 20 feet away from Oxygen cylinder
Absorption - Eyes

- If chemical gets into the eyes, **flush eyes with water for 15 minutes**, occasionally lift the lower and upper lids.

- See a physician
GENERAL FIRST-AID

Absorption - Skin

• If chemical gets on skin, remove any contaminated clothing and wash with water for 15 minutes.

• See a physician if needed
GENERAL FIRST-AID

• Inhalation:
  – Remove victim to fresh air
  – See a physician if needed

• Ingestion: What to do?
  • 9-9111
Haz Com Recap

• Definitions
  – Routes of Entry
  – Types of Exposures
    • Acute Vs Chronic
  – Types of Hazardous Substances
    • Cryogen
    • Carcinogen
    • Irritant

• Material Safety Data Sheets (MSDS)

• Chemical Storage

• Chemical Labeling

• First Aid procedures
  – Chemical in eyes
  – Chemical on skin
  – Chemical in mouth
Need any clarifications?
QUIZ

- Click on the following link to take the online quiz.
- Call E,H&S @ Ext. 5555 for any Questions.
- You must pass with 100% correct.
- Good luck!