HAZCOM
Hazard Communication Standard
“The Right-to-Know”

Hazard Communication Standard

The hazard communication standard requires:

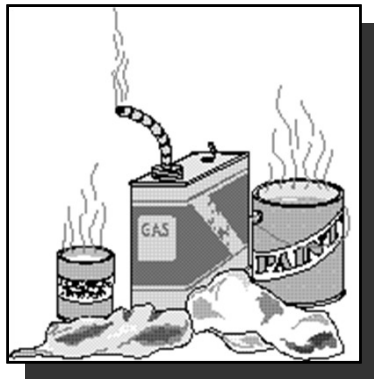
- The hazards of chemicals to be evaluated
- The hazard information is given to employers and employees
- Hazard communication programs
- Container labeling and other forms of warning
- Safety Data Sheets (SDS)
- Training for employees

HazCom: Responsibilities

It is the responsibility of chemical manufacturers and importers to determine the hazards of all chemicals imported into, produced, or used in U.S. workplaces.

In addition, hazard information and protective measures must be provided by:

- Chemical manufacturers
- Importers
- Distributors



HazCom: Responsibilities

At a minimum, employers must:

- Identify and list hazardous chemicals in the workplace
- Obtain SDSs and labels for each hazardous chemical
- Develop and implement a written HazCom program
- Communicate hazard information to employees

HazCom: Chemical Hazards

The best rule of chemical safety is: “Know what you are working with and how to protect yourself and others.”

There are 2 basic types of chemical hazards

- Physical Hazards
- Health Hazards

HazCom: Physical Hazards

Chemicals are classified as having physical hazards if they are:

- Explosive
- Compressed gas
- Combustible liquids
- Flammable
- Unstable
- Water reactive
- Oxidizers

HazCom: Health Hazards

Exposure to hazardous chemicals may cause or contribute to a wide range of health concerns including:

- Heart problems
- Kidney disease
- Lung disease
- Cancer
- Sterility
- Burns
- Rashes

HazCom: Health Hazards

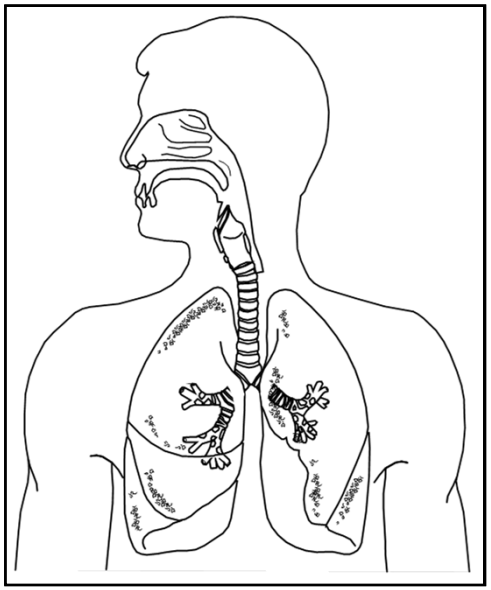
Chemicals are classified as being a health hazard if they:

- Can cause cancer
- Are poisonous (toxic)
- Cause harm to your skin, internal organs, or nervous system
- Are corrosive - such as acids
- Cause allergic reactions after repeated exposure

HazCom: Health hazards

Chemicals can enter your body in many different ways. The primary routes of entry are:

- Inhalation
- Ingestion
- Absorption
- Injection



HazCom: Health Hazards

Exposure to hazardous chemicals may be either:

- Acute – brief exposure
- Chronic – repeated or prolonged

HazCom: Written Program

The written HazCom program must, at a minimum, include:

- A list of all hazardous chemicals known to be in the workplace
- A Safety Data Sheet (SDS) and label for each hazardous chemical
- A training plan to communicate hazard information to employees

HazCom: Written Program

Also, the written HazCom program should:

- Indicate who is responsible for the program
- Provide chemical specific safety training methods
- Tell you where to find chemical safety information

HazCom: Warning Labels

Warning labels can grab your attention with words like:

- “Danger”
- “Warning”
- “Caution”

HazCom: Warning Labels

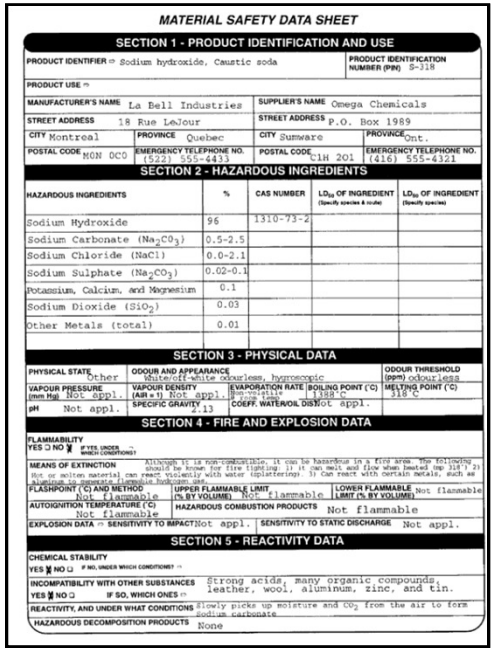
Containers of hazardous chemicals leaving the workplace must be labeled, tagged or marked with:

- The identity of the chemicals
- The appropriate hazard warnings
- The name and address of the manufacturer or other responsible party

HazCom: Safety Data Sheets (SDSs)

SDSs are developed to provide:

1. Common name and chemical name of the material
2. Name, address and phone number of the manufacturer
3. Emergency phone numbers for immediate hazard information
4. Date the SDS was written
5. Hazardous ingredients
6. Physical and health hazards of the chemicals
7. Identification of chemical and physical properties
8. First Aid/Emergency Information
9. Safe handling and use information



MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT IDENTIFICATION AND USE

PRODUCT IDENTIFIER ⇨ Sodium hydroxide, Caustic soda	PRODUCT IDENTIFICATION NUMBER (PIN) S-318
PRODUCT USE ⇨	
MANUFACTURER'S NAME La Bell Industries	SUPPLIER'S NAME Omega Chemicals
STREET ADDRESS 18 Rue LeJour	STREET ADDRESS P.O. Box 1989
CITY Montreal / PROVINCE Quebec	CITY Sumware / PROVINCE Ont.
POSTAL CODE MON 0C0 / EMERGENCY TELEPHONE NO. (522) 555-6433	POSTAL CODE C1H 201 / EMERGENCY TELEPHONE NO. (416) 555-4321

SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS	%	CAS NUMBER	LD_{50} OF INGREDIENT (Specify species & route)	LD_{50} OF INGREDIENT (Specify species)
Sodium Hydroxide	96	1310-73-2		
Sodium Carbonate (Na_2CO_3)	0.5-2.5			
Sodium Chloride (NaCl)	0.0-2.1			
Sodium Sulphate (Na_2CO_3)	0.02-0.1			
Potassium, Calcium, and Magnesium	0.1			
Sodium Dioxide (SiO_2)	0.03			
Other Metals (total)	0.01			

SECTION 3 - PHYSICAL DATA

PHYSICAL STATE Other	ODOUR AND APPEARANCE Mute/off-white odourless, hygroscopic			ODOUR THRESHOLD (ppm) odourless
VAPOUR PRESSURE (mm Hg) Not appl.	VAPOUR DENSITY (AIR = 1) Not appl.	EVAPORATION RATE Non-volatile	BOILING POINT (°C) 1388°C	MELTING POINT (°C) 318°C
pH Not appl.	SPECIFIC GRAVITY 2.13	COEFF. WATER/OIL DIST. Not appl.		

SECTION 4 - FIRE AND EXPLOSION DATA

FLAMMABILITY YES ☐ NO ☒ IF YES, UNDER WHICH CONDITIONS? ⇨

MEANS OF EXTINCTION — Although it is non-combustible, it can be hazardous in a fire area. The following should be known for fire fighting: 1) it can melt and flow when heated (mp 318°) 2) Hot or molten material can react violently with water (splattering). 3) Can react with certain metals, such as aluminum to generate flammable hydrogen gas.

FLASHPOINT (°C) AND METHOD Not flammable	UPPER FLAMMABLE LIMIT (% BY VOLUME) Not flammable	LOWER FLAMMABLE LIMIT (% BY VOLUME) Not flammable
AUTOIGNITION TEMPERATURE (°C) Not flammable	HAZARDOUS COMBUSTION PRODUCTS Not flammable	
EXPLOSION DATA ⇨ SENSITIVITY TO IMPACT Not appl.	SENSITIVITY TO STATIC DISCHARGE Not appl.	

SECTION 5 - REACTIVITY DATA

CHEMICAL STABILITY YES ☒ NO ☐ IF NO, UNDER WHICH CONDITIONS? ⇨	
INCOMPATIBILITY WITH OTHER SUBSTANCES YES ☒ NO ☐ IF SO, WHICH ONES ⇨	Strong acids, many organic compounds, leather, wool, aluminum, zinc, and tin.
REACTIVITY, AND UNDER WHAT CONDITIONS	Slowly picks up moisture and CO_2 from the air to form sodium carbonate
HAZARDOUS DECOMPOSITION PRODUCTS	None

HazCom: Pictograms

The Health Hazard pictogram represents the following hazards:

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

HazCom: Pictograms

The Flame pictogram represents the following hazards:

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

HazCom: Pictograms

- The Exclamation Mark pictogram represents the following hazards:

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

HazCom: Pictograms

The Gas Cylinder pictogram represents a hazard from Gases Under Pressure.

HazCom: Pictograms

The Corrosion pictogram represents the following hazards:

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

HazCom: Pictograms

The Exploding Bomb pictogram

- Explosives
- Self-Reactives
- Organic Peroxides

HazCom: Pictograms

The Flame Over Circle hazard represents a hazard from oxidizers.

HazCom: Pictograms

The Environment Hazard represents aquatic toxicity. Displaying this pictogram is not mandatory.

HazCom: Pictograms

The Skull and Crossbones represents Acute Toxicity (fatal or toxic).

Skull and Crossbones

HazCom: Employee Training

Employers are required to provide training to all employees who might be exposed to hazardous chemicals. At a minimum, the training must include:

- Hazard communication standard
- Components of the hazard communication program
- Operations where hazardous chemicals are present
- Location of the written HazCom program
- Methods and observations that may be used to detect the presence of a hazardous chemical

Summary

Working with chemicals can be done safely. In order to be StartSafe and StaySafe when working with chemicals, you should:

- Know the chemicals you are using
- Know where the SDSs are located and how to read them
- Ask your supervisor if you have questions
- Be trained before using any chemicals
- Make sure you are using the appropriate PPE and that it is in good condition