

Hazard Communication

Purpose

To ensure that the hazards of all chemicals produced or imported are evaluated and that information concerning the hazards is transmitted to employers and employees

Scope

Any chemical that is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency

OSHA penalties

Willful, repeat	\$ 70,000
Serious	\$ 7,000
Failure to abate	\$ 210,000
Failure to report fatality	\$ 5,000
Failure to post citation	\$ 3,000
Failure to post OSHA poster	\$ 1,000
OSHA recordkeeping 300 log	\$ 1,000
Failure to post 300A summary	\$ 1,000

Most-often-cited OSHA violations for fiscal year 2009 - general industry

Rank	Standard	Subject	# Violations	Penalties
1	1910.1200(e)(1)	written program	2944	\$930,571
2	1910.1200(h)	hazardous chemical info.	1601	\$485,756
10	1910.1200(g)(1)	MSDS on hand	803	\$ 58,050
11	1910.1200(f)(5)(i)	hazardous chemicals ID (labeled)	745	\$168,140

Material Safety Data Sheet

Identify (as used on label and list)

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's name	Emergency telephone number
Address (number, street, city, and zip code)	
Telephone number for information	
Date prepared	
Signature of preparer (optional)	

Section II - Hazardous Ingredients/Identity Information

Hazardous components (Specific chemical identity; common name(s))	OSHA PEL	ACGIH TLV	Other limits recommended	% Optional

Section III - Physical/Chemical Characteristics

Boiling point	Specific gravity (H ₂ O = 1)
Vapor pressure (mm Hg.)	Melting point
Vapor density (AIR 1)	Evaporation rate
Solubility in water	
Appearance and odor	

Section IV - Fire and Explosion Hazard Data

Flash point (method used)	Flammable limits	LEL	UEL
Extinguishing media			
Special fire fighting procedures			
Unusual fire and explosion hazards			

Section V - Reactivity Data

Stability	Unstable		Conditions to avoid
	Stable		

Incompatibility (materials to avoid)

Hazardous decomposition or by-products

Hazardous polymerization	May occur		Conditions to avoid
	Will not occur		

Section VI - Health Hazard Data

Route(s) of entry:	Inhalation?	Skin?	Ingestion?
Health hazards (acute and chronic)			
Carcinogenicity:	NTP? IARC Monographs? OSHA regulated?		
Signs and symptoms of exposure			
Medical conditions generally aggravated by exposure			
Emergency and first aid procedures			

Section VII

Steps to be taken in case material is released or spilled

Waste disposal method

Precautions to be taken in handling and storing

Other precautions

Section VIII

Respiratory protection (specify type)

Ventilation	Local exhaust	Special
	Mechanical (General)	Other
Protective gloves	Eye protection	
Other protective clothing or equipment		
Work/hygienic practices		

Labeling

- Purpose
- What information is required
- Accessible/legible/in English
- Types; Mfg.'s, HMIS, NFPA
- Someone responsible
- Alternate methods

Manufacturer's label

- Mfg.'s name/address
- Product name
- Physical warnings
- Health hazard warnings
Including targets organs

In-house label

- Product name
- Physical hazards
- Health hazard warnings including target organs

HMIS label

Health	<input type="text"/>
Flammability	<input type="text"/>
Reactivity	<input type="text"/>
PPE	<input type="text"/>

Chemical name: _____

Health hazard

- 4-Deadly
- 3-Extremely hazardous
- 2-Hazardous
- 1-Slightly hazardous
- 0-Normal material

Chemical name

Fire hazard

- Flash points
- 4-Below 73 °F
 - 3-Below 100 °F
 - 2-Below 200 °F
 - 1-Above 200 °F
 - 0-Will not burn

Specific hazard

- Oxidizer OXY
- Acid ACID
- Alkali ALK
- Corrosive COR
- Use NO WATER W
- Radiation hazard 

Reactivity

- 4-May detonate
- 3-Shock and heat may detonate
- 2-Violent chemical change
- 1-Unstable if heated
- 0-Stable

NFPA label

Hazard communication training

Employers shall provide employees with information and training on hazardous chemicals at:

- The time of initial assignment;
- Whenever a new hazard is introduced;
- When transferring;
- When returning from extended leave.

General training content

- Details of hazcom program/policy
- Training procedures
- Labeling
- MSDS's
- Terminology

Specific training content

- Characteristics of chemicals
- Physical properties
- Work practices to follow
- Emergencies
- PPE
- Seldom done---non-routine task
- Industrial hygiene monitoring

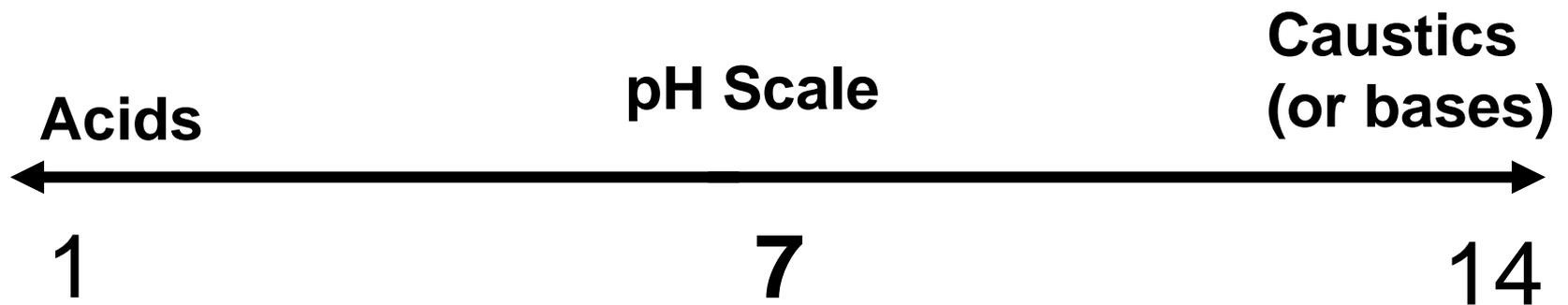
Hazard definitions

Chemical exposure

- “Acute” effects usually occur rapidly as a result of short-term exposures, and are of short duration
- “Chronic” effects generally occur as a result of long-term exposure, and are of long duration

Corrosive

- Visible destruction, or irreversible damage to body tissue
- Acids
- Caustics (or bases)



1910.1200 (g)(2) MSDS, required information

- Identity of the chemical
- Physical and chemical characteristics
- Physical hazards
- Chemical hazards
- Primary routes of entry
- PEL's or other exposure limits
- Control measures
- Emergency procedures
- Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Annual Report on Carcinogens
- Precautions for safe handling and use
- Date of preparation
- Name, address and telephone of the manufacturer

Target organ effects

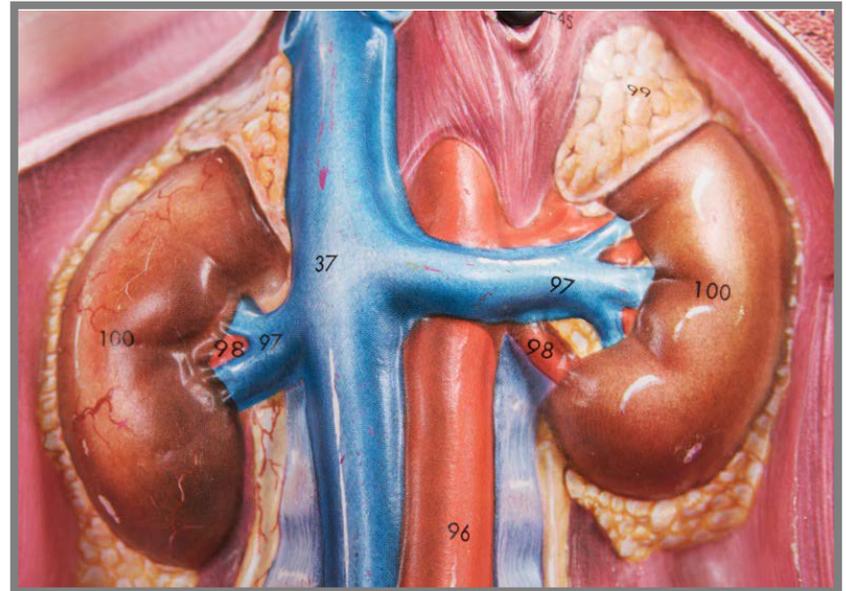
Hepatotoxins

- Chemicals which produce liver damage
- Signs and symptoms - jaundice, liver enlargement
- Chemicals - carbon tetrachloride, nitrosamines

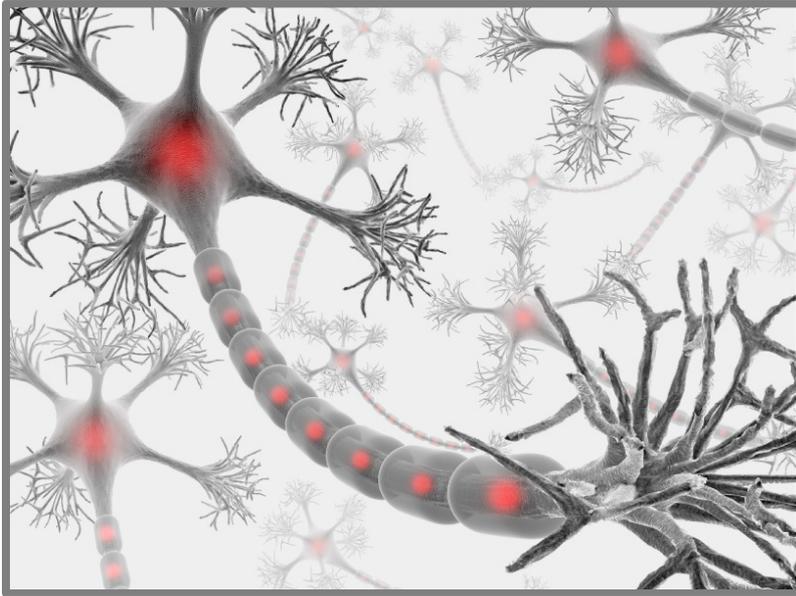


Nephrotoxins

- Chemicals which produce kidney damage
- Signs and symptoms - edema
- Chemicals - halogenated hydrocarbons, uranium



Neurotoxins



- Chemicals which produce their primary toxic effects on the nervous system
- Signs and symptoms - narcosis, behavioral changes, decreased motor function
- Chemicals – mercury, carbon disulfide, lead

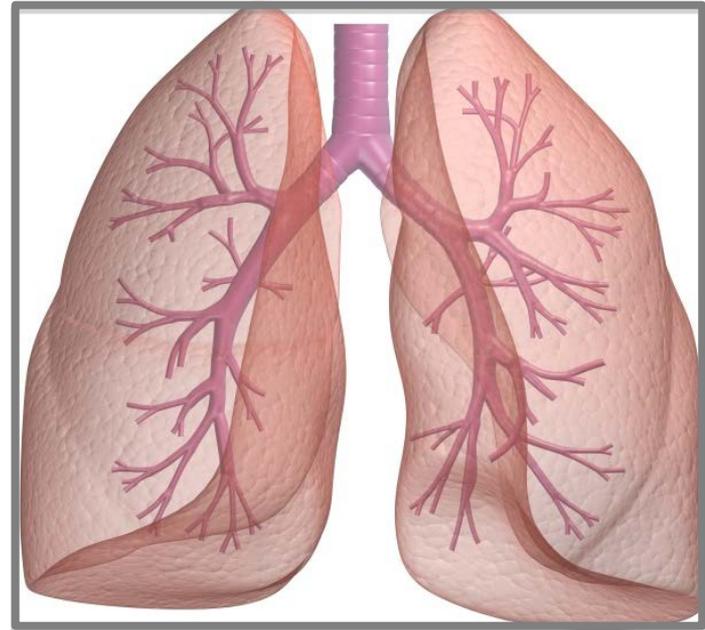
Agents which act on the blood

- Decrease hemoglobin function, deprive the body tissues of oxygen
- Signs and symptoms – cyanosis, loss of consciousness
- Chemicals - carbon monoxide cyanides



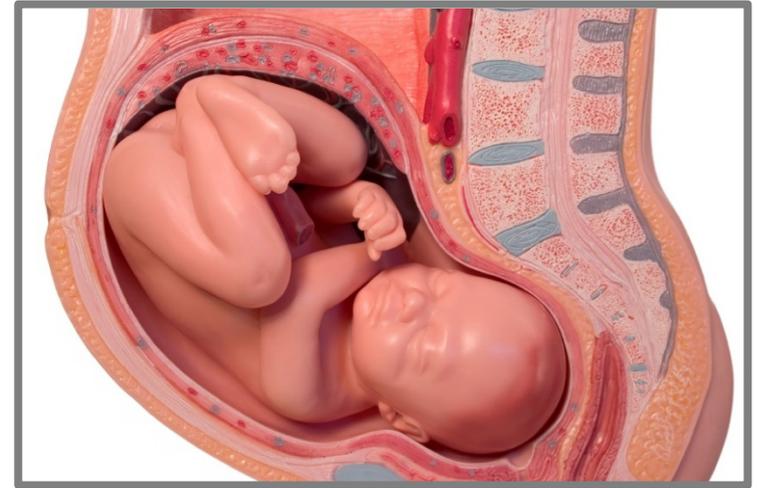
Agents which damage the lungs

- Chemicals which damage pulmonary tissue
- Signs and symptoms - cough, tightness in the chest, loss of breath
- Chemicals - asbestos, silica



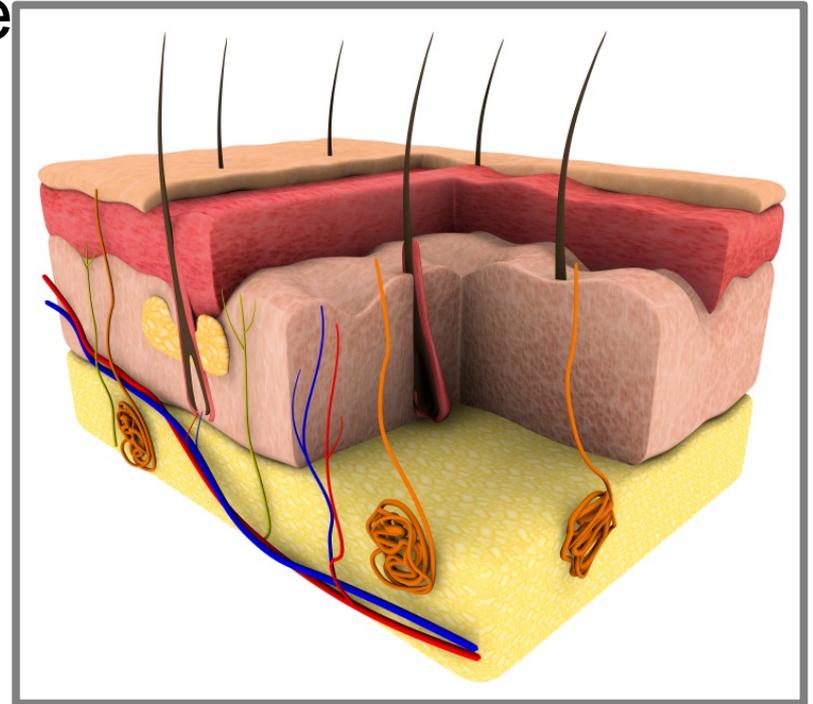
Reproductive toxins

- Chemicals which damage reproductive capabilities
- Includes chromosomal damage (mutations) and damage to fetuses (teratogenesis)
- Signs and symptoms - birth defects, sterility
- Chemicals - lead



Cutaneous hazards

- Chemicals which effect the dermal layer of the body
- Signs and symptoms - defatting of the skin, rashes, irritation
- Chemicals - ketones, chlorinated compounds



Eye hazards

- Chemicals which affect the eye or visual capacity
- Signs and symptoms - conjunctivitis, corneal damage, blurred vision, burning or irritation
- Chemicals - solvents, corrosives

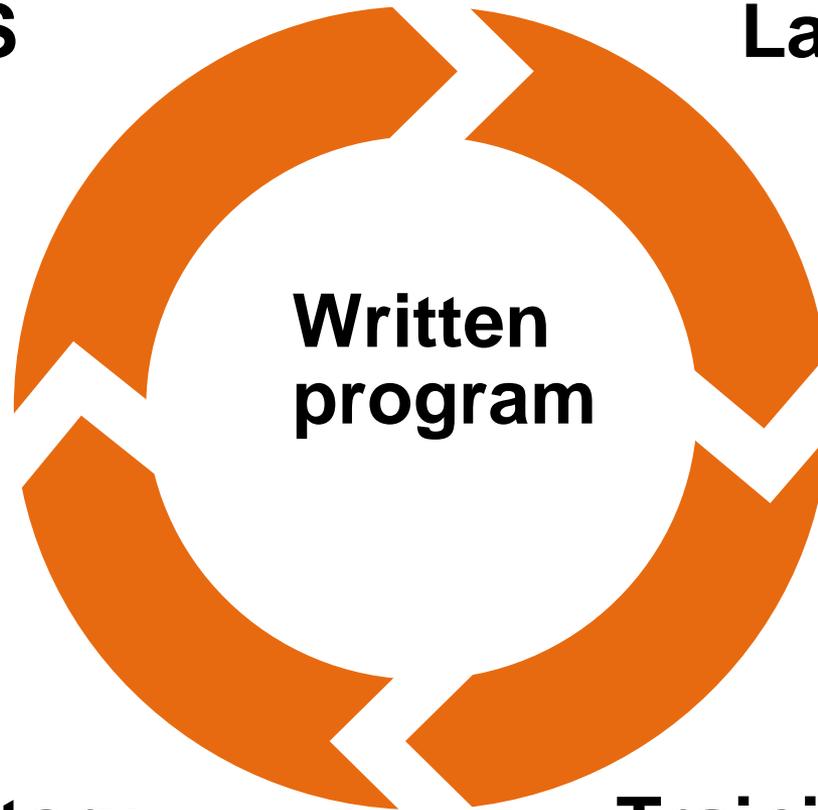




Requirements of the standard

MSDS

Labeling



**Written
program**

Inventory

Training



Material safety data sheets (MSDS)

- Purpose
- What information they provide
- Readily accessible/complete/retain
- Someone responsible



Employee training

- General training
- Specific training



General training

- Hazard communication standard
- Employer's written program
- Location/availability of written program and MSDS
- How to read labels and MSDS's



Specific training

- Characteristics
- Health and safety hazards
- Work practices or SOPs
- Emergency action plans
- (PPE)
- Non-routine tasks
- Industrial hygiene monitoring results



Written Program

- Must be developed, implemented and maintained
- A blueprint for how the requirements will be met
- Readily accessible



Miscellaneous

- Non-routine tasks
- Piping systems
- Contractors/multi-employer worksites

Hazard communication written program

- Policy statement
- Labeling
- MSDS
- Employee training
- List of hazardous materials
- Non-routine tasks
- Piping systems
- Informing contractors



Summary

- What is Hazcom?
- Why was the Hazcom Standard implemented?
- What are the four major elements of our written Hazcom program?
- Why is a workplace inventory important?
- What is the purpose of an MSDS?

Summary (continued)

- Where do we keep MSDSs & Written Program?
- Who is responsible for maintaining MSDS in your area?
- What labeling system do we use?
- Why do we need MSDS and labeling?
- Why do we train on Hazcom?
- What's the difference between General and Specific training?