



Hazardous Substances



Occupational Health, Safety & Risk Unit

OBJECTIVES

- **Provide an overview of Regulations**
- **Know how to identify chemicals**
- **Know the potential health effects of high exposure to chemicals**
- **Understand information contained in MSDSs and labels**
- **Learn how to implement risk assessment & control measures**
- **Understand the role of workplace consultation**
- **Discuss appropriate record keeping protocols**

REGULATIONS - OBJECTIVES

- **Ensure all hazardous substances used in workplaces have material safety data sheets (MSDS) and labels.**
- **Ensure employees are provided with information and training on how to use chemicals safely at work.**
- **Ensure management implements adequate risk assessment and control measures in consultation with workers.**
- **Ensure emergency services have adequate access to information on the hazardous substances in use at work locations.**

How can chemicals injure the body?

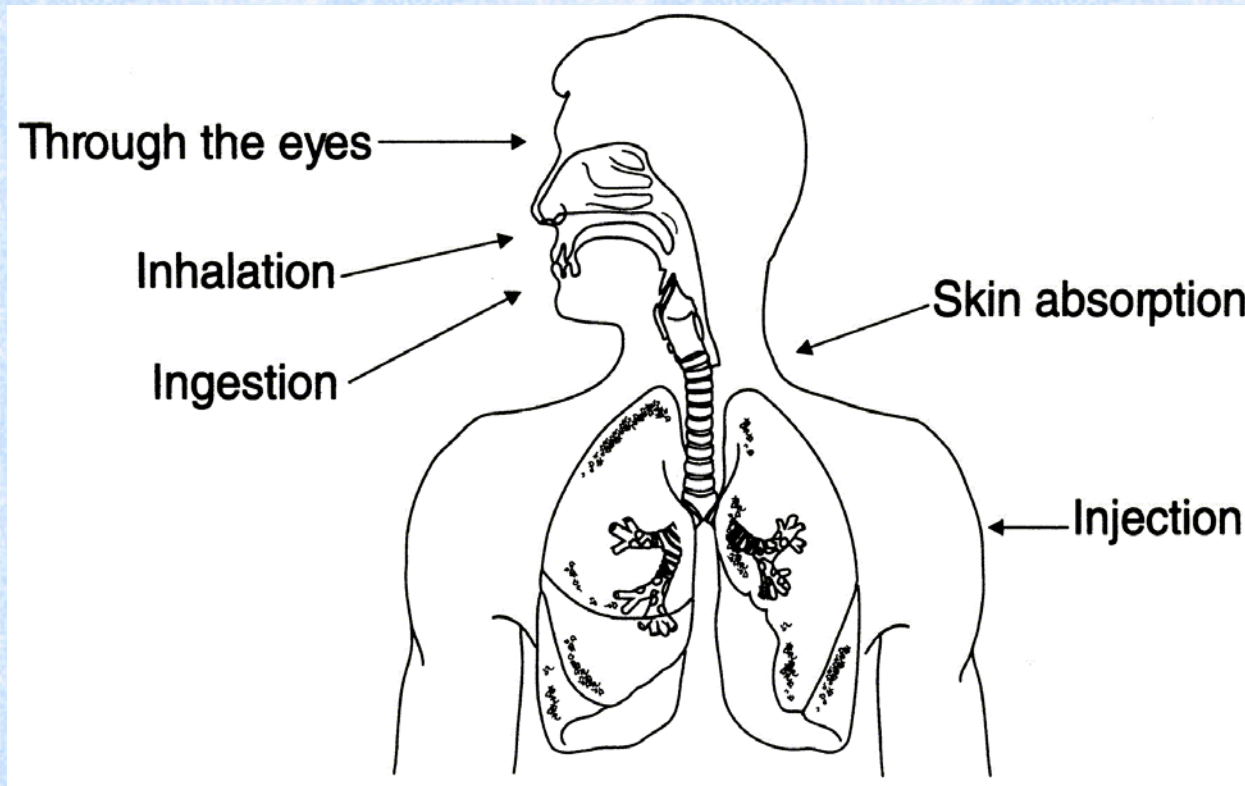
Short-term (acute)

- ★ skin/eye irritation
- ★ headaches
- ★ dizziness
- ★ nausea
- ★ unconsciousness

Long-term (chronic)

- ★ cancer
- ★ lung disease
- ★ skin disease
- ★ liver or kidney dysfunction

Typical routes of entry

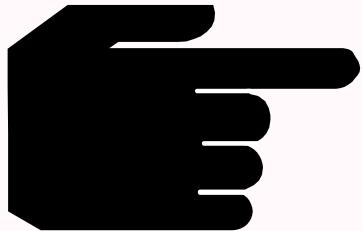


Substance Labelling

Look for:

- ★ Signal word - **POISON**
- ★ Product Name
- ★ Ingredient and formulation details
- ★ Size of container
- ★ UN Number
- ★ Dangerous Goods Information - “**PACKAGING GROUP III**”
- ★ RISK, eg “**Highly flammable**”
- ★ SAFETY, eg “**Use only in well-ventilated areas**”
- ★ FIRST AID, eg “**If swallowed...**”
- ★ Emergency Procedures
- ★ Details of manufacturer

Labels on chemical products



A label should:

- **provide information and instructions**
- **be firmly fixed to the container**
- **be legible**
- **provide contact details for more information**
- **be in English**

Risk and safety phrases

RISK phrases say what the hazard is:

May cause cancer

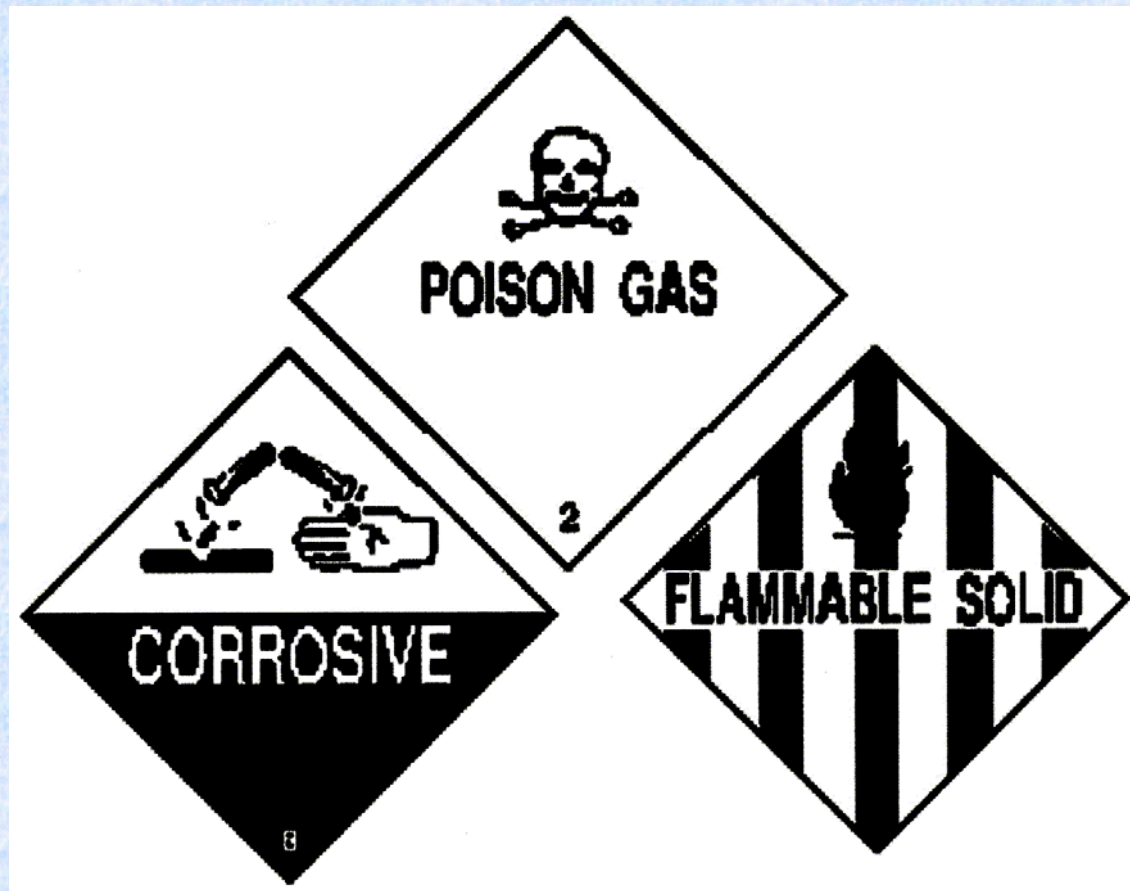
Irritating to skin

SAFETY phrases give information on safe use and personal protection:

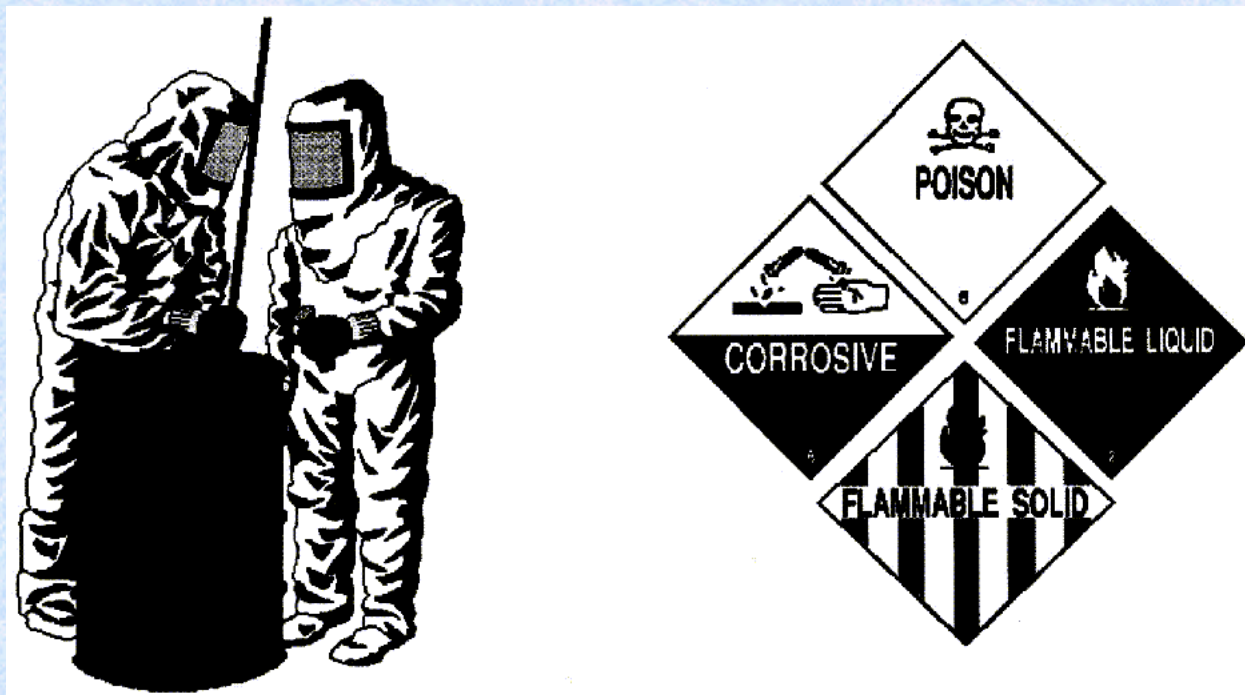
Do not breathe dust

Keep away from heat

Signal words and symbols



Classifications of chemicals



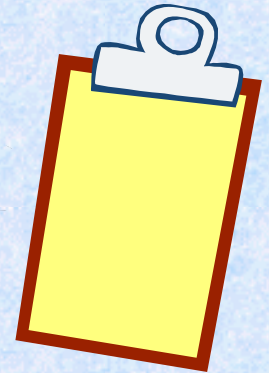
Critical points to consider when working with chemicals

- **Read the label.**
- **Look for risk and safety phrases.**
- **Look for signal words and symbols.**
- **Follow the safety instructions.**
- **Use only as directed.**
- **Consider other hazards in the immediate working environment eg ignition sources.**
- **Consider the potential risks for yourself, others & the environment.**
- **Ensure PPE is appropriate & serviceable.**

What are MSDS*?

- **Critical information sheets with legal content requirements,**
- **Provided on or before first supply of product,**
- **Kept in a hazardous substances register as near to point of use as possible,**
- **Must be accessible to all employees.**

* *Materials Safety Data Sheets*



Key sections of MSDS



Health hazard information

- Health effects
- First aid
- Advice to doctor



Precautions for use

- Exposure standards
- Engineering controls
- Personal protection
- Flammability

Key sections of MSDS (Cont'd)



Safe handling information

- Storage and transport
- Spills and disposal
- Hazard/explosion hazard
- Environmental data



Product identification

- Product names
- Dangerous goods/details/UN number
- Recommended use(s)
- Recommended application method(s)

What to do with MSDS

- Find the MSDS for the product & ensure it is less than 5 years old
- Read:
 - identification information
 - precautions for use
 - safe handling information
 - health hazard information
- Do not use chemical or substance if unable to comply with meet safety directions on MSDS consult supervisor

Hazard and risk

- **Hazard** — the basic capability of a substance to cause harm and death.
- **Risk** — the likelihood that the substance will cause harm to health in the conditions of its actual use.

Personal Protective Equipment

Must be:

- suitable for protecting the worker from the hazard
- looked after and maintained
- suitable for the users
- used by trained workers
- replaced as necessary



Working Safely

- Follow the rules and systems of work.
- Use the control measures.
- Wear personal protective equipment.
- Cooperate with management when risks are being assessed.
- Be involved with monitoring and health surveillance.
- Report problems.
- Work in a safe and responsible manner.

Undertaking risk control

- ❖ Eliminate the hazard
- ❖ Substitute a safer substance
- ❖ Isolate the risk (worker or process)
- ❖ Engineer safe systems
- ❖ Control the risk administratively
- ❖ Use personal protective equipment (last resort)

PLUS

- ❖ maintain, examine and test control systems
- ❖ consultation
- ❖ monitor exposure levels
- ❖ conduct health surveillance
- ❖ training

Managers and supervisors

- Perform and review risk assessments.
- Ensure workplace changes and new information is used to review assessments.
- Ensure control measures are maintained, continue to be adequate and are used.
- Deal with concerns from workers.
- Be prepared to make changes.
- Provide information, instruction, training and supervision.

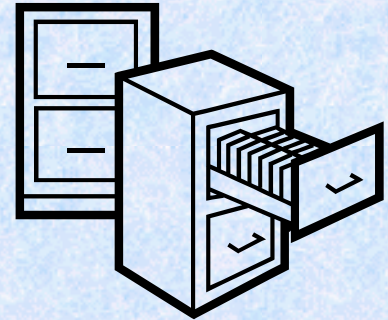
Always be aware of:

- ✓ **Emergency procedures**
- ✓ **Shutdowns and maintenance**
- ✓ **Use of contractors on site**
- ✓ **Staff shortages**
- ✓ **Waste disposal**
- ✓ **Housekeeping**
- ✓ **Training & education requirements**
- ✓ **MSDS information**



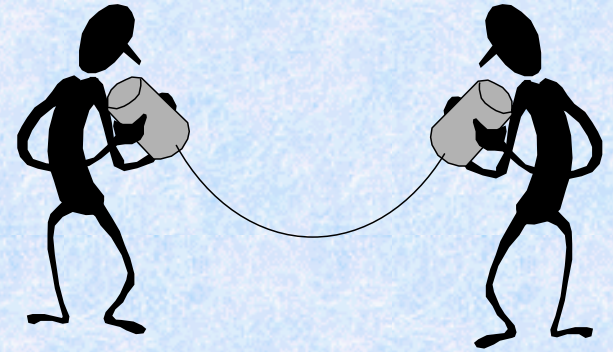
Record Keeping

- ☑ **Employer keeps records for:**
 - **Training (5 years)**
 - **Risk Assessment (5-30 years)**
 - **Health Surveillance (30 years)**
 - **Monitoring (30 years)**



- ☑ **Health surveillance results must be kept confidential**

Summary



- ✓ **Communication is essential**
- ✓ **Management and employees must work together**
- ✓ **If there is a health or safety issue, notify relevant people immediately**
- ✓ **Risk management is the key tool for controlling workplace risks**