TOPIC	**Chemical Safety Awareness Training**
PRESENTER	**Maggie Hayes, Health & Safety Consultant, DGSA.**

AGENDA

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- Legislation
- Routes of Entry
- Health Effects
- Chemical Labelling
- Chemical Types
- Safety Data Sheet
- Control of Hazards
- Chemical Segregation
- Personnel Protection Equipment.
- Pregnancy.
- Chemical Spill
- Chemical Waste Disposal.

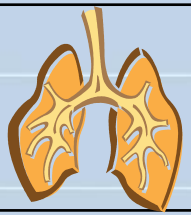
IRISH LAW AND CHEMICALS

- Safety, Health and Welfare at Work Act 2005
- Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001.
- Safety, Health and Welfare at Work (General Application) Regulations 2007.
- Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation)
- *This list is not complete of legislation which governs chemicals in Ireland*.

ROUTES OF WORKPLACE EXPOSURE

- 4 main routes of exposure.
- Direct effects at point of contact.
- Absorbed into the body.

POSSIBLE CONTAMINATION ROUTES

Transmission	
Respiratory 	Aerosols, gas, vapour, mist, dusts.
Cutaneous 	Direct effect, absorbed via the skin. Irritated or damaged skin.
Digestive 	Swallow
Conjunctive 	Projection, contact

HEALTH EFFECTS

If not used properly, hazardous substances can:

- Catch fire or explode
- Cause burns
- Damage your health including asthma, dermatitis, cancer, damage to the central nervous system, mutations
- Dermatitis (or skin rashes) is one of the most common health problems as a result of chemical exposure.

Caustic burn

Ammonia Burn

Hydrogen chloride

Chemical Burn from Silver Nitrate

Skin burn due to an acid

CLASSIFICATON OF HAZARDOUS CHEMICALS

All hazardous chemicals on site must be classified and labelled correctly

All labelling should have the following

- Chemical Name
- Warning Symbol
- Risk Phrases/Hazard Statement
- Safety Phrase/Precautionary Statement.

CHEMICAL LABELLING

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Explosive (E) 	Corrosive (C) 
Flammable (F, F+) 	Toxic (T, T+) 
Harmful (Xn) 	Oxidising (O) 
Irritant (Xi) 	Dangerous for the environment (N) 

CHANGES TO CHEMICAL LABELLING

- Due to change to GHS system.
- Substances- new system if manufactured after 1st Dec 2010
- Mixtures- new system if manufactured after 1st June 2015.

(+2 year grace period if chemicals are already on the market)

GHS LABELLING

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Physical Hazards




Health Hazards




Environmental Hazards

FLAMMABLE CHEMICAL

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Hazard: Catch fire, explosion, vapours catch fire.

Precautions:

- Keep away from heat.
- Keep away from sources of ignition. (Smoking, welding, soldering)
- Keep away from combustible material.
- Take precautionary measures against static discharges.
- Store chemicals in a locked flame proof cabinets.
- Do not use chemicals in a confined area without respiratory equipment.

OXIDISING CHEMICALS

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Hazard:spontaneously evolve oxygen at room temperature or with slight heating or promote combustion.

Precautions:

- Oxidisers should be stored in a cool and dry location.
- Keep oxidisers segregated from all other chemicals.
- Minimize the quantities of strong oxidisers stored.
- Never return excess chemicals to the original container. Small amounts of impurities may be introduced into the container which may cause a fire or explosion.

CORROSIVE CHEMICAL

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Hazard: Causes burns, directly attack tissue and surfaces.

Precautions:

- Do not breathe vapour.
- Avoid contact with skin and eyes.
- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- Take off immediately all contaminated clothing.
- After contact with skin, wash immediately with plenty of water

TOXIC CHEMICAL

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Hazard:can damage or interfere with the metabolism of living tissue.

Precautions:

- Minimise exposure to toxic chemicals.
- Ensure that all containers are sealed securely at all times.
- Ensure that contaminated skin is cleaned immediately.
- Promptly remove contaminated clothing.
- Report exposure immediately to your Supervisor.

DANGEROUS TO THE ENVIRONMENT CHEMICAL

Hazard:cause harm in the environment.

Precautions:

These chemicals must not be allowed enter the environment, i.e. do not allow chemicals to enter drainage system, do not discharge onto ground or soil.

SDS

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European law states that the SDS must be in the 16 point format.

1. Chemical name, supplier.
2. Hazard identification
3. Hazardous ingredients of preparation.
4. First Aid measures
5. Fire Fighting measures
6. Accident release measures
7. Operational measure
8. Occupational health & PPE
9. Physical and Chemical Information.
10. Stability
11. Toxicological
12. Ecological information
13. Waste disposal
14. Transport Regulations
15. Hazard Classification
16. Additional Information.

CONTROLLING HAZARDS CHEMICAL USAGE

- ✓ Ensure that you are aware of the safe operating procedure for the job you are about to carry out.
- ✓ Ensure that you have read the SDS for all the chemicals that you are working with.
- ✓ Ensure you are dressed for the job, always wear your PPE. Remember do not use damaged PPE.

CONTROLLING HAZARDS CHEMICAL USAGE

- ✓ Ensure that you are aware of the location of first aid equipment (eye wash, safety shower) and that the access route remains clear.
- ✓ Use the equipment provided by your employer, e.g. ventilation, remember it is your responsibility to report any defects or damage you find.
- ✓ Keep your work area tidy, bad housekeeping could lead to a severe accident.

CONTROLLING HAZARDS CHEMICAL USAGE

- ✓ Never eat, drink or smoke with working with chemicals.
- ✓ Never mix chemicals unless you are sure that they will not react.
- ✓ Remember to wash you hands after working with chemicals.

CONTROLLING HAZARDS CHEMICAL USAGE

- ✓ Ensure that all equipment is working correctly prior to working with chemicals
- ✓ Chemical spills should be cleaned up immediately. – Beware of slippery floors.
- ✓ Never transfer chemicals into unmarked containers.
- ✓ Never leave chemicals unattended.

CONTROLLING HAZARDS
CHEMICAL STORAGE

- ✓ Ensure all chemical containers are sealed securely.
- ✓ Chemicals should never be stored beside sources of heat, ignition or direct sunlight.
- ✓ Ensure incompatible chemicals are not stored together.

CONTROLLING HAZARDS
CHEMICAL STORAGE

- ✓ All storage areas must be labelled with chemical hazards.
- ✓ Report all damaged chemical packaging immediately to your Supervisor.
- ✓ Report unlabelled chemical packaging immediately to your Supervisor.

CHEMICAL SEGREGATION

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- Chemicals should be stored in such a way that minimises the likelihood of dangerous interactions with other chemical agents.
- Chemicals must be segregated from incompatible materials.
- Chemical SDS (Section 7 & Section 10), Chemical Segregation Guidelines indicate what types of chemicals are compatible with each other.

CAN FLAMMABLE LIQUIDS BE STORED WITH CORROSIVE CHEMICALS?

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	Flammable Gases	Non Toxic , Non Flam Gases	Toxic Gases	Flammable Liquids
Flammable Gases Class 2.1	X			
Non Toxic , Non Flammable Gases Class 2.2		X		
Toxic Gases Class 2.3			X	
Flammable liquids Class 3				
Flammable solids Class 4.1		X		
Spontaneously combustible Class 4.2				
Dangerous when wet Class 4.3		X		
Oxidising agents Class 5.1		X	X	
Organic peroxides Class 5.2				
Toxic Class 6.1		X	X	
Corrosives Class 8				

Class 3

Class 8

PERSONNEL PROTECTIVE EQUIPMENT (PPE)

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- PPE IS PROVIDED TO PROTECT YOU WHILE AT WORK.
- YOU ARE REQUIRED TO

(i) Wear it

(ii) Store it correctly.

(iii)Report to your Supervisor if your PPE is damaged.

N.B- know the limitations of use of the PPE type in use.

Section 8 of SDS will detail PPE requirements for the chemical in use.

PREGNANCY

- If you discover that you are pregnant you must inform your employer.
- Your employer is required to carry out a risk assessment to ensure that your workplace/ work duties do not pose any risk to you and your unborn baby.
- Some chemicals can cause harm to expectant mothers.

List of Risk phrases in the Gen App Regulations 2007.

Always check SDS Section 11 for additional information.

CHEMICAL SPILL

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IF YOU CAUSE/ DISCOVER A CHEMICAL SPILL.

1. Warn everyone of the spill.
2. Provide adequate ventilation.
3. Ensure you are wearing appropriate PPE.
4. If it is safe to do so, limit the flow of the chemical with the contents of the spill kit.
5. Identify the chemical and consult the SDS for clean up instructions.
6. If the chemical is flammable, remove all sources of ignition and have a foam (cream label) extinguisher on-hand.
7. Collect and secure spent material in a yellow zulu bin with a purple lid.- Spill kit contaminated with .....
8. Ensure incident report is filled out and reported to your Supervisor/ Manager.

CHEMICAL WASTE DISPOSAL

- Treat chemical waste as you would other chemicals in the workplace.
  - Packaged securely.
  - Labelled correctly.
  - Stored in a safe and secure manner.
  - SDS available to waste disposal company

WHAT MUST I DO?

- Know the chemicals you are working with
  - Read labels
  - Read SDS
  - Review chemical agent risk assessments.
- Ensure you keep all chemicals in sealed containers.
- Report all damage immediately upon detection.
- Ensure incompatible chemicals are not stored together.
- Know the location of the nearest spill kit.
- Report it when you use any materials from the spill kit.
- Ensure an incident report is completed and reported to your Supervisor/Manager.
- Never put your own safety at risk!!!.

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Any Questions