# 3.19 Chemical Safety Management

**Information Sheet : Understanding of Safety Data Sheets**

**Purpose**

The purpose of this information sheet is to guide workers and supervisors in general understanding of Safety Data Sheets (SDS formally known as MSDS). If you are pregnant or considering conception please also refer to Worker and reproductive toxicity (female and male fertility, pregnancy and breastfeeding) Information Sheet.

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**Q1 What hazard information in contained in a Safety Data Sheet (SDS)?**

**Hazard Classification** – you will be able to see this on the SDS as a hazard statement (e.g. flammable liquid; may cause cancer, etc).

**The route of entry** – this will indicate the ways in which the chemical may get into your body (so you can control against exposure). Routes can include ingestion, inhalation, skin contact, eye contact and injection.

**Advice for at risk workers** – specific information for sensitised people, pregnancy, and people with medical conditions.

**Instructions on storage** – this is the section which will indicate how you must store the chemical (e.g. incompatibility, special storage for explosives or peroxidables etc.).

**Physiochemical properties** – can have a significant effect on the hazard, below are the key properties and some explanations:

- Boiling Point is the temperature at which liquid boils. It is important in determining the vapour exposure hazard of the substance. Substances with a low boiling point are likely to give off more vapours at any given temperature; if the substance is a flammable liquid there may be a fire hazard due to vapours easily igniting.
- Vapour pressure is a measure of how much of a substance can accumulate as a vapour in the air above a liquid or solid. A high vapour pressure usually means more vapour will be given off and potentially reach high concentrations in the air. This is a potential fire hazard but may cause health problems from breathing the vapour. If the vapour density is greater than one then it is denser than air and will accumulate in low areas. There are many instances where distant ignition sources have ignited a vapour trail resulting in serious accidents/incidents when the fire has flashed back to the bulk container.
- Flash point is the lowest temperature at which a liquid will produce enough vapour to ignite if an ignition source is present. The lower the flash point the greater the potential fire hazard.
- Fire point and explosive limit is the range of concentrations of a flammable vapour in air, which will burn if ignited. If the vapour air mixture tends to explode then the explosive limits are recorded on the SDS. Concentrations below the limit are too weak to burn or explode and concentrations above the limit are too rich (not enough oxygen).
- Solubility in water is useful in determining effective fire extinguishing methods and spill clean-up procedures.
- pH is the measure of acidity and alkalinity. The lower the pH number the stronger the acid; and the higher the pH number the stronger the alkali.
- Viscosity is a measure of the fluids resistance e.g. thickness.
- Particle size will affect the route of exposure. Smaller particles may increase the hazard or change the route of exposure.
- Reactivity – is the measure of the chemicals behaviour in which it decomposes; forms new substances; etc.

**Information Sheet : Understanding of Safety Data Sheets (Continued)**

**Q1 What hazard information is contained in a Safety Data Sheet (SDS)? (Continued)**

**The activities (or use situations) that may generate hazardous chemicals** – this section will highlight if your activity will contribute to the hazard.

**Environmental hazards** – this section will outline the environmental hazards. This is useful for spills, disposal etc.
**Hazard ratings** - This gives a summary of the level of flammability, toxicity, body contact, reactivity and chronic. zero = min/nil, one = low, two = moderate, three = high and four = extreme

**Further Information**

If you require further information, please contact a member of the HSW Team.