Material Safety Data Sheet

A material safety data sheet is a document that Provide an information about Chemical. (The Container label is a good source of Information for Chemical Safety) and before using an any Chemical read the appropriate MSDS it provide the following info.

1. Identity of a Chemical.
2. Manufacture name & Address.
3. Hazardous ~~Materio~~ Ingredients
4. Exposure limits.
5. physical Characteristics. (B.P, V.P)
6. Chemical Hazards. (Reactivity, Flameability, Explosive)
7. Health hazards
   - Toxicity (acute or long term)
   - Carcinogenous
   - Reproductive Toxic.
   - Teratagens
   - Detergents
   - Neurotoxins
   - Mutagens

4. Exposure limits

1. Permissible - Exposure limits (PEL)

Recomended Exposure limits (REL).

This is a amount of a Chemical that a Person Can be exposed to average over an eight hour. ~~material~~

Period. Before it causes him/her harm.

② Short Exposure limits

This is a amount of a chemical that a Person can be exposed to over average over 15 minuts Period. before it Cause him harm.

③ immediately Dangerous to life & Health (IDLH).

This is a amount of a Chemical that immediatly Puts a person a risk of Serious injury or even death.

Industerical Chemistry.

Types of Chemical Hazards.

There are 3 types of Chemical hazard.

(1) Corrosive
(2) Flamable Liquid.
(3) Irritant.

=> Corrosive.

Corrosive Chemicals destroy or damage living tissue by direct Contact.

Some acids, bases, dehydrating agent, oxidizing agent & organics are Crossive.

e.g Acidic Corrosives are Inorganic acid. (HCl, HNO_3, H_3PO_4, H_2SO_4), Organic acids (CH_3COOH, $HCOOH$, CH_3CH_2COOH)

Basic Corrosive

$NaOH$, KOH,

Dehydrating agents.

Phosphorus Pentaoxide

Calcium oxide

Oxidizing agents

Halogen gasses, H_2O_2

Perchloric Acid, and etc

Extreme cautions Should be Taken when handling Corrosive.

→ Conc. Acids can cause painful and some time sever burn.

→ Inorganic Hydroxide can cause Seriaus damage to skin tissue b/c a protective Protein layer does not form.

Even a dilute Solution Such as NaOH or KOH can attack skin by reacting with the fat tissue & forming a soapy film/layer.

* Safe Handling of Corrosive

To ensure safe handling following Procedure should be use.

(1) Always store Corrosive Properly (Seggregate Acids from bases) (Inorganics, from Organic)

(2) Always wear a laboratory coat, gloves, & goggles. ~~when~~ when working with Corrosives

(3) To dilute acid, carefully add acid to water

(4) Inorganic bases may be very Slippery, handle them with care & clean any Spills, leaks, the Splashes or ~~diffe~~ dribbles Immediately.

(5) Work in a Chemical Fumehood when handling fumic acids or volatile irritants.

(6) If Corrosive Contact to body or eyes wash them immediately with plenty water (There Should be plenty of water at ~~both~~ work place).

* Flamable liquids

A flamable chemical is any Solid, liquid, vapour or gas that Ignite easily & burn rapidly in air, Consult the appropriate

MSDs. before beginning with work

Flamables.

Flamable Chemicals are classified according to flash point, Boiling Point. Fire point & auto ignition temprature.

* Flash Point

FP is lowest Temp. at which a flamable liquids vapours burns when ignited.

* Boiling Point

B.P is Temp. at which the vapour pressure of liquid is equal to the atmospheric pressure under which the liquid vapourises.

Flamable liquid with low B.P. generally cause fire hazards.

* Fire Point

Fire point is Temp. at which the flamable liquid burn.

* Auto ignition Temp.

It is a lowest Temp. at which a substance will ignite without an Ignition Source.

* Condition for fire

1. Flamable Source
2. O_2
3. Ignition Source.