

Reactivity of Chemical Waste

Section 10: Stability and Reactivity

Many chemicals require specialist waste streams. Information regarding the reactivity of chemicals and their incompatibilities is found within the chemical SDS (Safety Data Sheet)

Suggested Specialist Waste

Reactive Chemicals:

Nitric Acid – nitric acid is incompatible with strong bases, reducing agents, metals, powdered metals, organic materials, aldehydes, alcohols, cyanides and ammonia. Avoid excess heat or exposure to air/moisture over time.

Explosive Chemicals: (Temperature/Pressure)

Picric Acid – incompatible with strong oxidising agents. Chemical poses an explosive hazard when dry. Unstable if heated.

Azides – highly toxic and explosive. Reacts vigorously with CS₂ bromine, nitric acid, dimethyl sulphate and heavy metals. Reaction with water, highly toxic/explosive hydrogen azide may be released. Avoid heat.

Hydrogen Peroxide (91% by weight) – aggressive oxidiser. May corrode materials. In presence of reducing agent, high concentrations of H₂O₂ will react violently.

Oxidisers - Cause ignition of combustible materials without ignition source. Commonly reactive with other oxidisers. Can evolve oxygen therefore fuelling fires.

Thallium Nitrate – avoid heat or shock. Intensifies fires. Incompatible with strong acids, strong reducing agents and combustible materials.

Highly Dangerous Chemicals

Hydrofluoric Acid – highly corrosive. Poisoning through skin symptoms may not be acute. Specialist training required.

Cyanides – highly toxic. Should be segregated and isolated from other users.

Carcinogenic Chemicals:

Bromines & derivatives – react with metals vigorously. Explosive with potassium.

Scheduled Carcinogens – must be disposed of as per license agreements.

Dichloromethane – high volatility makes this an acute inhalation hazard. Potentially carcinogenic. Commonly used in paint stripper.

Waste Classifications

Flammable Liquids



Include solvents such as acetone, ethanol and acetonitrile, mixtures and by-products from synthetic reactions. Sometimes, halogenated solvents are disposed in the flammable liquid stream. Refer to the SDS for verification.

Flammable Solids



These are solid material that undergo rapid combustion or are self-reactive. Aluminium powder and other metallic powders are flammable solids.

Spontaneously Combustible



These are materials that will start to combust when they come in contact with air. White phosphorous is spontaneously combustible, as are some forms of activated carbon.

Dangerous When Wet



These are materials that combust or give off toxic vapours when they come into contact with water. Sodium is an example of a material that is dangerous when wet.

Oxidising Agent



Includes nitrates such as ammonium nitrate and chlorates such as calcium hypochlorite.

Toxic



Includes acrylamide, ethidium bromide, phenol, chloroform, cadmium and mercury batteries, mercaptoethanol waste, solid paraformaldehyde and other toxic wastes.

Halogenated Solvent



Generally, these have chloro-, bromo- or fluoro- atoms attached. Any contaminants must be identified on the label.

Corrosive Acid



Includes all acids where the corrosive properties represent the greatest hazard. Some examples are hydrochloric acid, sulfuric and acetic acid. Some acids are incompatible with other acids and should not be mixed.

Corrosive Base



Includes all bases where the corrosive properties represent the greatest hazard. Some examples are sodium hydroxide and ammonia.

Miscellaneous Non-hazard



This is chemical waste that while not classified as hazardous must still be disposed of via a waste contractor.

Combustible Liquid



These are liquids that will burn, but are not volatile to be classified as flammable. Some examples are diesel and some motor oils.

Cytotoxic



Cytotoxic waste is material or drugs which are harmful to living cells or carcinogenic, mutagenic and/or teratogenic. Cytotoxic waste includes cytotoxic waste chemicals and materials associated with their.

Waste Labelling Guidelines

- 1 SIGNAL WORD**
DANGER, WARNING OR CAUTION
- 2 PICTOGRAM**
Picture of hazard type
- 3 CONTACT DETAILS**
To ensure the chemical can be traced to its source in case of emergencies
- 4 WASTE DETAILS**
List of chemicals disposed into waste container.
- 5 SPECIALIST INFORMATION**
Contact details of specialist waste product removalist. Helpful to determine if wastes can be mixed if this is not clear in the SDS.
- 6 EPA TRANSPORT CODES**
Required to transport Dangerous Goods in Victoria.

Victoria University **1 DANGER** **2** **3** **Contact Person**

Flammable Liquid Waste

4 Waste Details:
Substances | Concentration | Volume

5 In Emergency Dial
000
Poisons Information
13 11 26
For specialist advice:
Toxfree
83 Dohertys rd.
Laverton North, Vic
Phone: 9369 4222

6 EPA G100
UN No. 1993

Tel. No.
Lab
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