



## MANAGEMENT OF MIXED CHEMICAL WASTE

Mixed waste can be generated either through an individual process or through the combining of waste from different processes into categories.

### Risk assessment and SOP

It is important that when beginning a new process that uses/generates hazardous substances that a risk assessment is conducted (preferably in RMSS).

Specific to the waste, the risk assessment requires that consideration of the compatibility of the chemicals is made, that waste is stored in appropriate containers and the chemicals are appropriately segregated.

The SOP must include instructions on what to do with the waste and include control measures detailed in the risk assessment.

### Chemical Incompatibility

Incompatible chemical waste must be segregated if possible to reduce the risk of a dangerous reaction. For further information about chemical compatibilities consult the product label and material safety data sheet (MSDS).

Where the waste from a process contains incompatible chemicals the waste must be neutralised or made inactive in some manner. For example, where nitric acid (corrosive) is mixed with ethanol (flammable solvent) the nitric acid can be neutralised by mixing with sodium bicarbonate to prevent further reaction and the generation of gas.

Waste from different tasks can potentially be collected in generic categories, eg:

- flammable solvent waste,
- halogenated solvent waste,
- toxic waste,
- corrosive waste.

### Labelling

The following are recommended as minimum information to be included on the label:

- (a) Signal words (ie flammable, corrosive, toxic etc) or the dangerous goods class and subsidiary risk labels where applicable.
- (b) Substance name or correct shipping name for single component waste.
- (c) United Nations (UN) number, or chemical abstract service (CAS) number where applicable.
- (d) Where possible for compatible mixed component waste, list the major ingredients and formulation.
- (e) Where necessary, provide warnings if special procedures are required to control emergency situations or to prevent life threatening human exposures.

Where mixed waste products are packaged together, the above information should be based on the major component or the component which constitutes the main risk.

In Schools where there is a high level of chemical understanding the waste labels can specify a generic category (flammable solvent waste, halogenated solvent waste, toxic waste, corrosive waste) to give some flexibility in what goes in the container.

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In Schools with a lower-level of chemical understanding specific labels should be used that have statements such as “only the following chemicals are to be placed in this container: (and a list)”. If a new chemical gets put into the lab users must be instructed in which container it must be put in, the label updated and an SOP gets created/updated.

The following are samples of labels for mixed waste containers:

Examples of labels for generic categories of waste. Can be used in areas with a high understanding of chemicals:


HAZARDOUS

# FLAMMABLE SOLVENT WASTE

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CONTENTS: NON-HALOGENATED AROMATIC AND ALIPHATIC ORGANIC SOLVENTS

ALSO CONTAINS MINOR QUANTITIES OF VARIOUS ORGANIC COMPOUNDS



UN 1993 PGII

HAZCHEM  
3[Y]E

- Highly flammable.
- Irritating to eyes and respiratory system.
- May produce skin discomfort
- May be harmful to the foetus/ embryo
- Cumulative effects may result following exposure
- Keep away from sources of ignition. No smoking.
- Do not breathe gas/ fumes/ vapour/ spray.
- Use only in well ventilated areas.
- Keep container tightly closed.
- Avoid exposure - obtain special instructions before use.

ENSURE BOTTLE IS CAPPED WHEN NOT IN USE

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# HAZARDOUS HALOGENATED SOLVENT WASTE

**CONTENTS: HALOGENATED AROMATIC AND ALIPHATIC ORGANIC SOLVENTS**



**UN 1993 PGII**

**HAZCHEM  
2[Z]**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>Harmful if swallowed</li> <li>Irritating to skin.</li> <li>Limited evidence of a carcinogenic effect.</li> <li>Inhalation and/or skin contact may produce health damage</li> <li>May produce discomfort of the eyes and respiratory tract</li> </ul> | <ul style="list-style-type: none"> <li>Do not breathe gas/ fumes/ vapour/ spray.</li> <li>Use only in well ventilated areas.</li> <li>Keep container in a well ventilated place.</li> <li>Keep away from combustible material</li> <li>Keep away from food drink and animal feeding stuffs.</li> </ul> |
|---|--|

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Example of a label with details of specific chemicals to go in the container. This kind of label is useful in areas that don't have detailed knowledge of chemicals:

## HAZARDOUS

# FLAMMABLE SOLVENT WASTE

<p><b><u>CONTENTS</u></b></p> <p><b>UNKNOWN PROPORTIONS OF:</b></p> <ul style="list-style-type: none"> <li>• <b>ETHANOL</b></li> <li>• <b>TOLUENE</b></li> <li>• <b>TETRAHYDROFURAN</b></li> <li>• <b>HEXANES</b></li> </ul>	<ul style="list-style-type: none"> <li>• Highly flammable.</li> <li>• Irritating to eyes and respiratory system.</li> <li>• May produce skin discomfort</li> <li>• May be harmful to the foetus/ embryo</li> <li>• Cumulative effects may result following exposure</li> <li>• Keep away from sources of ignition. No smoking.</li> <li>• Do not breathe gas/ fumes/ vapour/ spray.</li> <li>• Use only in well ventilated areas.</li> <li>• Keep container tightly closed.</li> <li>• Avoid exposure - obtain special instructions before use.</li> </ul>
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UN 1993 PGII

**HAZCHEM**  
3[Y]E

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