

TDI-SOP-003

Handling, storage and disposal of laboratory waste

1.0 Introduction

The document outlines the procedures for the handling, storage and disposal of laboratory waste. It is the responsibility of the personnel within the TDI to know properly dispose of laboratory waste and this document outlines the procedure for different types of waste.

The disposal of chemical and biohazard waste from the laboratory environment is subject to specific rules and regulations imposed by the Health and Safety Executive and the Environment Agency.

2.0 Waste disposal

2.1 Bins

- Black Sacks
 - For domestic, non-contaminated waste only. Cardboard may be recycled and kept separately
- Autoclave bags
 - All contaminated waste, including all gloves (whether contaminated or not). Please do not over fill autoclave bags, when full tie with a cable tie and put into the relevant collection bin.
- Sharps bins
 - For disposal of needles and small glass items only. When full inform the laboratory manager and they will dispose accordingly
- Glass bins
 - For broken laboratory glass ware only

2.1.2 Broken Glass

- Clean broken glassware – clean is defined as had no contact with chemicals or biological substances. Clean broken glassware can be disposed of by collecting the broken item and disposal straight into the lab glassware bins
- Chemically contaminated broken glassware: Glassware which has come into contact with toxic substances must be collected in an incineration bin and collected by the HSO.
- Biologically contaminated broken glassware: Glass ware that has come into contact with biological substances must be collected and put into a dispo jar. This glassware must be autoclaved before it can be disposed of using the normal channels.

2.2 Chemical waste disposal

All collected waste needs to be recorded with the lab manager and then stored in the chemical waste storage area. This is located outside of the building, by goods inwards next to the gas bay. All relevant documentation **must** be completed **BEFORE** the waste is taken to the chemical waste storage. If the waste is not recorded the safety office will not take it away for disposal. Please see TDI-SOP-003a Arranging for hazardous waste collection with the HSO

2.2.1 Non-hazardous water miscible or soluble material

Dispose of to drains – the material must be diluted and washed away with copious amounts of cold water

2.2.2 Organic solvents

In small quantities, <100ml, allow to evaporate in a fume cupboard with a warning label. For larger quantities of chlorinated and non-chlorinated waste solvents these must be stored separately for disposal – see below. They are kept in labelled 10L jerricans under a fume cupboard until full. Full jerricans must be taken down to the chemical waste store, placed in boxes and labelled as follows:

- **Flammable waste** – label as flammable waste and the concentrations if known (for example, collection of waste from a mass spec will contain the same concentration as the mobile phase used). Where flammable waste is a mixture please label with the solvents that are contained, concentrations of each where possible.
- Flammable waste must be collected in the 10L jerricans for disposal and labelled as above. These are available from the lab manager.
- **Chlorinated waste** must be collected and be labelled as such.
- **Flammable chlorinated waste MUST** be collected in a separate vessel to chlorinated waste and **MUST** be labelled as such
- **Do not mix these wastes**, when full arrange collection through the University Safety Office. Please see TDI-SOP-003a
- **HPLC Waste** –this can be collected and disposed of in glass Winchesters. These must be labelled as 'hazardous waste' and labelled with what solvents (and concentration) and what aqueous (and concentration).

2.2.3 Phenols

All phenols must be disposed of via the Safety Office and **NOT** down the drains. Do not attempt to dispose of smaller quantities of phenol by 'pooling' into a larger container. Instead use an empty wide necked container (e.g. dispo jar) and drop the unopened tubes in. Seal the container, label accordingly and dispose of via the Safety Office.

2.2.4 Physiological salts

Dispose of to drains

2.2.5 Low toxicity organic and inorganic salts (e.g. copper salts)

Solutions can be disposed of to drains; however, solids must be disposed of via the Safety Office

2.2.6 Water-miscible solvents

Can be disposed of down the drain, however, no more than 100ml/day/lab

2.2.7 Toxic inorganic compounds

Arrange for disposal via the Safety Office

2.2.8 Toxic organic compounds

Arrange for disposal via the Safety Office

2.2.9 Reactive inorganics or organics and explosives

This includes alkali metals, azides and hydrides - Seek advice from the Safety Office

2.2.10 Carcinogens

Seek advice from the Safety Office

2.2.11 Waste Oil

Arrange for disposal via the Safety Office

2.2.12 Large spill of solvent, alkali or acid

- Sprinkle on spillage granules
- If used to soak up a solvent spillage allow to evaporate in a fume cupboard
- If used to soak and acid or alkali spill collect in a suitable container and arrange for disposal via the safety office

3.0 THE FOLLOWING SUBSTANCES ARE PROHIBITED FROM DISPOSAL VIA DRAINS BY THE TRADE EFFLUENTS (PRESCRIBED PROCESSES AND SUBSTANCES) REGULATIONS 1989:

- Mercury and its compounds
- Cadmium and its compounds
- gamma-Hexachlorocyclohexane
- DDT
- Pentachlorophenol
- Hexachlorobenzene
- Hexachlorobutadiene
- Aldrin
- Dieldrin

- Endrin
- Carbon Tetrachloride
- Polychlorinated Biphenyls
- Dichlorvos
- 1, 2-Dichloroethane
- Trichlorobenzene
- Atrazine
- Simazine
- Tributyltin compounds
- Triphenyltin compounds
- Trifluralin
- Fenitrothion
- Azinphos-methyl
- Malathion
- Endosulfan

These substances need special consideration and handling – if you are aware that you will use and generate waste that includes these compounds you must inform the laboratory manager so that they can be disposed of in the appropriate manner.

4.0 Waste Electrical and Electronic Equipment (WEEE)

Some WEEE is defined as hazardous waste and falls within the scope of this policy, so should be disposed of via the Safety Office. This includes equipment that contains any of the following: asbestos, batteries, cathode ray tubes, computer monitors, gas discharge lamps, fluorescent tubes, oil, other mercury-containing equipment (e.g. switches and some light bulbs, especially low energy ones), or refrigerant.

The Waste Electrical and Electronic Equipment (WEEE) Regulations are intended to minimise the impact of electrical and electronic goods on the environment, by increasing re-use and recycling and reducing the amount of WEEE going to landfill. They seek to achieve this by making those who produce electrical and electronic equipment (EEE), i.e. those who put such equipment onto the market, responsible for financing its collection, treatment, and recovery, and by obliging distributors to allow consumers to return their waste equipment free of charge. The University will not normally be regarded as a producer of EEE, but as an end-user.

4.1 Disposal of WEEE

WEEE will need to be segregated from other wastes during storage, collection, and disposal (these provisions apply once it has been designated as waste).

(b) The Safety Office will arrange and pay for the disposal of all hazardous WEEE, e.g. equipment containing asbestos, batteries, cathode ray tubes, computer monitors, fluorescent tubes, gas discharge lamps, other mercury containing equipment (e.g. some switches and some light bulbs, especially low energy ones), oil, and refrigerant.

Ordinary tungsten and halogen light bulbs need no special disposal arrangements – they are neither hazardous nor do they fall under the WEEE Regulations.

(c) Departments will be responsible for the disposal of all historic, non-hazardous WEEE (EEE that was purchased before 13 August 2005) that is not being replaced with new equivalent EEE. These items will not be covered by a PCS and their disposal will incur (as yet unknown) costs for the department.

Staff must fill in the WEEE waste decontamination and request form which can be found [here](#).

5.0 Review

The information in this document will be reviewed and amended if necessary every 3 years by the laboratory manager or alternative relevant personnel.

6.0 References

- The University Safety Office web pages – [University policy statement S5/11](#)
- SGC Induction documentation
- [Arrangements for specific types of hazardous waste](#)