

Hazardous Waste Disposal

If you are in any doubt about the disposal of hazardous material please contact your local sustainability co-ordinator for advice

ENVIRONMENTALLY HAZARDOUS, FLAMMABLE and WATER IMMISCIBLE SUBSTANCES MUST NOT BE DISCHARGED DOWN THE SINKS.

Chemicals.

All Staff and postgraduate workers are responsible for arranging the safe disposal of samples and chemicals that they have ordered but no longer require. This must be in consultation with Supervisors. At the termination of work, affirmation will be required that all outstanding disposals have been dealt with.

The following guidelines must be adhered to regarding disposal of chemicals:

- Purchase only enough chemical to complete your experiment.
- When designing and COSHH assessing experiments, remember to give due consideration to the safe disposal of waste.
- Toxic waste for disposal should be clearly and securely labelled with details and concentration of contents, date and laboratory and user's name, this should be taken to the waste chemical store and details sent to the College Safety Office. These chemicals are disposed of by the university approved contractor.
- Waste mercury is best collected, stored under water and saved for recycling. Traces of mercury remaining should be treated with zinc or sulphur dust, brushed up and put into a screw-capped jar before sending for disposal. Mercury disposal kits are available within each discipline, locations are available at www.exeter.ac.uk/lifesciences/healthsafety
- Material that requires specialized licensed disposal should be carefully labelled and details sent to the College Safety Office who will contact the appropriate disposal contractor and arrange removal from premises.
- Small quantities of materials and disposable contaminated with chemicals that require incineration; for example tips contaminated with ethidium bromide or acrylamide, should be placed in a YELLOW Biohazard bag and marked with the warning of CYTOTOXIN and placed in the yellow waste wheelie bin to be sent for incineration (see below). **Keep this waste to a minimum.**
- Large volumes of acid or strong alkali should be neutralised before washing to waste with copious quantities of water.
- **Silica Gel Waste and other chromatographic media must be placed in labelled plastic containers. When full, the waste containers must be taken to the stores (DO NOT PLACE IN THE LABORATORY WASTE BINS). Stores will continue to hold a stock of suitable plastic containers available on request.**
- Under no circumstances should **any** chemical waste or other hazardous material be placed in the normal laboratory waste bins, please consult with Lab Managers if in doubt.

Solvents.

- Waste solvents must be poured into properly labelled waste solvent containers. Remove original labels if reusing bottles (printed labels are available from www.exeter.ac.uk/lifesciences/healthsafety). **DO NOT** dispose of solvents down the

drains. When the containers are full to the shoulder ($\frac{3}{4}$ full) of the bottle, transfer them to the Waste Chemical Store for disposal, send details to the College Safety Office.

- Halogenated hydrocarbon waste should be segregated from non-halogenated hydrocarbon waste into separate bottles and properly labelled accordingly. (Printed labels are available from www.exeter.ac.uk/lifesciences/healthsafety).
- As there is a real possibility of explosion of waste acetone and chloroform in the presence of alkali, waste ACETONE should only be added to the blue labelled acetone waste bottles; if for some reason it is contaminated, then it should be sent for disposal in a separate container clearly labelled 'Do not mix with other waste solvent'.
- In general, waste solvent that contains a high concentration of acid or base should not be indiscriminately added to general waste solvent containers but disposed of separately.
- Decompose reactive materials before placing in waste solvent bottles.

Biological Material:

(Ref: also the College Microorganisms Safety Policy).

It is important that biological waste is disposed of safely. Appropriate sterilisation procedures must be used prior to disposal of any material contaminated with microorganisms.

Some guidelines:

- **Unlicensed Waste for autoclaving.** Material should be placed in clear plastic autoclave bags for standard autoclaving at the conditions detailed under the risk assessment for the specific material before disposal. These bags should be filled no more than $\frac{3}{4}$ full and securely sealed. The bag must be labelled with the Lab, building and date of filling. This bag should then be placed in the yellow wheelie bin in the located outside the building. This material is then sent for incineration.
- **Licensed Waste e.g. plant pathogens.** Material should be placed in CLEAR/RED plastic bags for autoclaving under the conditions specified on the licence.
- **Unlicensed waste for incineration.** Material that is **unsuitable** for autoclaving (including small quantities of some volatile chemical waste that requires incineration) should be placed in special YELLOW Biohazard labelled bags. These bags should be filled no more than $\frac{3}{4}$ full and securely sealed. The bag must be labelled with the Lab., building and date of filling. This bag should then be placed in the large yellow wheelie bin located outside the building. This material is then sent for incineration.

Glass: There is a dedicated broken glass disposal bin in each laboratory. All chemicals must be rinsed off and any glassware used for microbiological work must be autoclaved before disposal as this glass is ground and recycled for road surfacing. Never put broken glass in ordinary waste bin in case the staff collecting the waste are accidentally injured. Bottles and containers supplied by Fisher are recycled; these may be returned to the collection (wash out first please).

Sharps: Blades, hypodermic needles, capillary spotters and other 'sharps' should be placed in a yellow 'sharps' disposal container. Containers of biologically contaminated sharps should be autoclaved before disposal. Containers should then be placed in the yellow wheelie bin located outside the building for incineration.

General Waste: Low risk waste should be placed in the bins provided.

Paper: White paper is collected for recycling.

Waste bins: A universal colour code for waste bins is currently being implemented throughout the College.

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|--|---------------------------------|
| Hand towel waste | Green or Grey |
| General 'safe' waste | Green |
| Bacterial and other waste for autoclaving | Red (clear bag) |
| Licensed GM waste for autoclaving | Red (clear bag) |
| Biological and chemical waste for incineration (biohazardous material must be autoclaved prior to incineration) | Yellow (yellow bag) |
| Broken Glass | Blue/Grey bin or black dustbins |

Cytotoxic/Cytostatic Waste Streams.

All waste streams of hazard Group **H6-Toxic** (Substances and preparations (including very toxic substances and preparations) which, if they are inhaled or ingested or if they penetrate the skin, may involve serious, acute or chronic health risks and even death), **H7-Carcinogenic** (Substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence), **H10-Toxic to Reproductivity** (Substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may produce or increase the incidence of non-heritable adverse effects in the progeny and / or of male or female reproduction functions or capacity) and **H11-Mutagenic** (Substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence) need to be separated within laboratories so that the correct disposal method can be carried out.

The below H and R phrases are associated with the above hazard groupings:

H6 Toxic: Oral- **H300 (R28), H301 (R25)**

Dermal- **H310 (R27), H311 (R24)**

Inhalation- **H330 (R26), H331 (R23)**

Associated with other groupings **H350 (R39, 45, 49) H340 (R46)**

H7 Carcinogenic: **H350 (R45, 49), H351 (R40)**

H10 Toxic to Reproductivity: **H340 (R46), H341 (R68)**

H11 Mutagenic: **H360 (R60, 61), H361 (R62, 63)**

This waste must be disposed of via a yellow and purple bag or within a sharps bin with a purple lid. This waste must then have the below label attached to it and placed within the designated Cytotoxic/Cytostatic waste bin (Yellow with Red Lid) within the bin compound at the front of Geoffrey Pope.

On consignment (on collection) by Peake will be sign for and a record kept by the College Safety Office.

LAB NUMBER.....

University of Exeter

Cytotoxic/ Cytostatic Waste

18 01 08