

## **11. WASTE DISPOSAL**

Several distinct categories of waste are generated by the School, and various combinations of the different types are possible, e.g. toxic and radioactive. It is SBMS policy to reduce the amount of waste generated within the School and to dispose of all wastes generated in accordance with the relevant legislation and local permits. In order to do this, all members of the school must cooperate in planning purchases to reduce potential waste and consider how to reduce potentially hazardous waste

### **General Points to note:**

- All waste must be properly contained and labelled so that others can handle it safely.
- The University procedures dealing with the different categories of waste should be understood by all lab managers to ensure that they are aware of the Health, Safety and Environmental issues of Waste Disposal.
- Bins containing clear bags are for GENERAL (non-hazardous) waste only and should under no circumstances be used to dispose of laboratory or liquid waste.
- An alphabetical guide on how to deal with the most common waste types within the University, including how to recycle or dispose of each and how to arrange an uplift is available from <http://www.ed.ac.uk/schools-departments/estates-buildings/waste-recycling/a-z>

Any member of SBMS with queries about waste disposal should contact the School Waste Coordinator (Mark Patrizio) or the relevant Floor manager.

### **11.1 Waste Classification**

The University Waste policy can be found on the waste and recycling website at <http://www.ed.ac.uk/schools-departments/estates-buildings/waste-recycling/our-waste-and-recycling-system>.

- A Glossary of terms used in describing waste types can be found at [http://www.docs.csg.ed.ac.uk/estatesbuildings/waste/Definitions\\_glossary.pdf](http://www.docs.csg.ed.ac.uk/estatesbuildings/waste/Definitions_glossary.pdf)
- Waste guidance notes have been produced for a range of waste types, and are available from the Waste & Recycling website at: <http://www.ed.ac.uk/schools-departments/estates-buildings/waste-recycling/policies-legislation/guidancenotes>

### **Categories of Waste:**

#### **11.1.1 Recyclable Waste-**

- This is divided into Paper and Cardboard, and Mixed Recyclables streams (All empty packaging can go into this stream from sandwich wrappers to plastic bottles and cans).

#### **11.1.2 General Waste-**

- Goes to landfill so the only waste entering this stream should be non-recyclables and "safe for disposal" lab waste.

A diagram illustrating these waste streams can be found at [http://www.docs.csg.ed.ac.uk/estatesbuildings/waste/Waste\\_Streams\\_Poster.pdf](http://www.docs.csg.ed.ac.uk/estatesbuildings/waste/Waste_Streams_Poster.pdf)

**11.1.3 Laboratory Waste**- Is divided into six categories For more information including a detailed flow chart on disposal routes and waste types, see <http://www.ed.ac.uk/schools-departments/estates-buildings/waste-recycling/laboratory-waste>

- **Special Waste**: is a legally defined term which includes the following waste types: chemical, cytotoxic and infectious. Under Scots law, 'special waste' is any waste that is defined as hazardous by the European hazardous waste directive."

Waste producers must identify the hazardous properties using the criteria and then follow the six-step process to ensure that the waste is appropriately identified and classified for disposal. For more information see:

<http://www.ed.ac.uk/schools-departments/estates-buildings/waste-recycling/laboratory-waste/special-waste/hazardous-properties>

- **Clinical & Healthcare Waste**- can include general, recognisable laboratory waste. All potentially infectious waste from laboratories, including gloves, soiled swabs, dressings or wipes, syringe bodies, lab plastics etc. must be treated in order to render it safe prior to disposal. If the waste is still identifiable as laboratory waste after treatment, it must be disposed of as clinical waste. Your lab or unit must be a registered clinical producer with the waste and recycling team before your waste can be uplifted.

For more information, including a detailed flow chart on disposal routes and waste types see <http://www.ed.ac.uk/schools-departments/estates-buildings/waste-recycling/laboratory-waste/clinical-and-healthcare/general-laboratory-waste>

- **Animal By-products**- This waste includes animal tissue, blood and body fluid, as well as carcasses, swabs, dressings and also all bedding. Details on how to dispose of this type of waste can be found in Waste guidance note 008- available from the Waste & recycling office see [http://www.docs.csg.ed.ac.uk/estatesbuildings/waste/WGN008\\_AnimalByProd.pdf](http://www.docs.csg.ed.ac.uk/estatesbuildings/waste/WGN008_AnimalByProd.pdf)
- **Radioactive Wastes**- Disposal of radioactive waste is strictly controlled, with defined limits to the amounts which can be disposed of during any monthly period. Records must be kept of all disposals. Workers should refer to local rules for limits and disposal routes.
  - University Radiation Code of Practice RP CoP009.1 details waste disposal procedures- Available from the Radiation Protection unit website at: <http://www.ed.ac.uk/schools-departments/health-safety/radiation-protection/policy-guidance/codes-of-practice>
  - University Radiation Code of Practice RP CoP004 details calculations of waste fractions to determine amounts of waste arising from experimental work with radionuclides. Available from the Radiation Protection unit website at: [http://www.docs.csg.ed.ac.uk/Safety/rpu/cop/RP\\_COP004.pdf](http://www.docs.csg.ed.ac.uk/Safety/rpu/cop/RP_COP004.pdf)
- **Liquid Wastes**- There are a number of substances which for a variety of reasons are considered to be too hazardous to be disposed of to drain. This is due to the risk of them getting into either sewers or watercourses and the potential impact of them on human or environmental health.

**All substances which fall within either of the categories outlined below are therefore banned from disposal to drain in on or from University properties and **MUST** be disposed of as special waste.**

- Any waste designated as Special- Any liquid waste which falls under the category of special (or hazardous) waste is automatically banned from disposal to drain. It should be determined at the point of completion of a COSHH assessment whether any waste falls within this category.
- Substances or conditions requiring Trade effluent consent- There is a specific list of substances or conditions which have been identified as being inappropriate for disposal to sewerage without prior notification and approval by the local water company. The list is included in **appendix 2**.

If wishing to dispose of any substances on the list via the drains, the University would be obliged to obtain a Trade effluent consent. All substances which are on the list above are therefore banned from disposal to drain in on or from University properties and **MUST** be disposed of as special waste. Laboratory managers should collect and list items and notify the Waste office for disposal

- Any Solvents not listed on the banned list detailed in appendix 2, or requiring categorisation as special waste may be diluted and discharged to drains with copious amounts of water.
- Waste non-water miscible solvents should be stored in a Winchester labelled with the solvents it contains, the name of the individual and the date. Before putting more than one solvent into a Winchester, ensure that they do not form any hazard on mixing.
- Halogenated solvents should be kept in a separate labelled Winchesters.
- When full, the Winchesters should be delivered to the Store for disposal.
- **'Other' Laboratory waste**- Laboratory waste types not covered by the categories above may include Safety Cabinet filters, laboratory glassware, and uncontaminated laboratory plastics, packaging etc. Guidance on how to dispose of these types of waste can be found at <http://www.ed.ac.uk/schools-departments/estates-buildings/waste-recycling/laboratory-waste/other>

## **11.2. Biological Waste**

### **11.2.1 Waste contaminated with GMM's and/or pathogenic organisms**

All GM waste, and waste from pathogen work must be inactivated by validated means (e.g. autoclaving) before releasing to clinical waste, general waste, or drains. All waste material should be suitably contained for transport in order to prevent spillages or leaks of contaminated material.

**Solids** (e.g. plasticware such as pipettes, flasks, tubes etc and agar plates) - autoclave using a make safe cycle as specified in SBMS autoclave policy, discharge any excess liquids to drains. Dispose of solids via clinical waste stream for incineration or microwave treatment (if still considered clinical waste), or via the industrial (black bag) waste stream for landfill if considered general (non-offensive) waste.

**Liquids** (e.g. samples, culture supernatants, tissue culture media) – Disinfect using validated means or autoclave using a make safe cycle as specified in SBMS autoclave policy, discharge to drains.

**Sharps** (in sharps bin, e.g. needles, syringes, scalpels) – Sharps bins containing Containment level 1 organisms and level 1 GM waste can be disposed of via clinical waste stream.. Other waste (e.g. CL2 organisms,- autoclave using a make safe cycle as specified in SBMS autoclave policy, dispose via clinical waste stream for heat treatment.

**Animal bedding and carcasses** – autoclave using a make safe cycle as specified in SBMS autoclave policy, dispose of carcasses via clinical waste stream for incineration, and bedding via clinical waste stream or via the industrial (black bag) waste stream for landfill.

### 11.2.2 Waste not contaminated with GMM's/or Pathogens

**Solids** (e.g. plasticware such as pipettes, flasks, tubes etc and agar plates, not containing hazardous chemicals): Autoclave using make safe cycle (as for GM/pathogenic waste), then place in industrial (black bag) waste stream for landfill

**Liquids** (e.g. non-gm, non-hazardous samples, unused culture media): Dispose of to drains with plenty of water.

**Sharps** (e.g. Syringe, scalpel blades not contaminated with GMMs or pathogens): Disposal of needles and scalpel blades should **ONLY** be in one of the dedicated, all plastic 'Sharps Box'. Once full, the 'Sharps Box' should be labelled with source and sent for microwave treatment. Used glass slides should also be treated as sharps.

**Animal bedding and carcasses** (e.g. GM/wild type animals not infected with pathogens or GMMs): Place in appropriately labelled yellow clinical waste bag, (including material to absorb liquids) and place in a suitable container at collection point for clinical waste uplift at designated time.

## 11.3 Chemical Waste

- The COSHH regulations require that Hazardous substances must only be purchased if a less hazardous alternative cannot be used.
- The COSHH risk assessment must identify waste disposal routes for substances used in each activity. Research groups should check chemical stocks regularly and dispose of any chemicals longer required.
- Surplus chemical stocks must not be allowed to accumulate
- Waste Guidance note 0001 shows how to do dispose of chemical waste ([http://www.docs.csg.ed.ac.uk/estatesbuildings/waste/WGN001\\_Chemicals.pdf](http://www.docs.csg.ed.ac.uk/estatesbuildings/waste/WGN001_Chemicals.pdf))
- Certain chemicals such as toxins listed on Schedule 5 must be inactivated before disposal and this process must be documented and reported to the SBSO as all materials must be accounted for. Details on this procedure are available from the SBMS safety office.

Classification of Chemical waste is determined by **Hazard class derived from the risk phrases for each substance**. See guidance on [ESO website](#) for details.

**Concentration thresholds for each hazard class determine whether the waste can be sent via normal streams or should be consigned as special waste. The Risk phrases table on the ESO website details these thresholds.**

For further information and advice contact University Waste and Environment manager on [waste@ed.ac.uk](mailto:waste@ed.ac.uk) , or see the Waste & recycling website at

<http://www.ed.ac.uk/schools-departments/estates-buildings/waste-recycling/laboratory-waste/special-waste/chemical-waste>