

## **Access to Laboratories and Laboratory Waste Disposal Policy and Guidance**

<p><b>New document for approval</b></p> <p>Please note that this document is a draft document and not yet approved.</p> <p>When published in its final form, it will be issued as a Policy document, with a briefing issued to all relevant managers.</p>	<p><b>Synopsis</b></p> <p>This policy specifies the roles, responsibilities, actions and processes necessary to ensure that access to laboratories, and disposal of laboratory waste is controlled and managed to ensure the safety of laboratory workers, maintenance staff, cleaners and others handling or receiving laboratory waste for disposal.</p>
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<p><b>Approval</b></p> <p><b>Approved by: Operating Board</b></p>	

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**DISTRIBUTION:**

Heads of Schools  
Director of Estates and Facilities  
Director of People  
Director of Digital and Information Services  
Director of Health, Safety and Wellbeing  
University Health and Safety Adviser  
University Fire Safety Advisor  
Safety Coordinators  
University Health and Safety Committee

**Implementation**

From receipt after approval by the Operating Board with steps to be taken to provide new safety signs for doors by the end of the 2017/18 academic year.

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## 1. Standard Terms / Abbreviations

Throughout this document standard terms and abbreviations have been used. The terms and abbreviations with their definitions are set out below:

Term	Definition
<b>Hazard</b>	A <b>hazard</b> is anything with a potential to cause harm.
<b>Risk</b>	The likelihood of hazard causing harm to person or damage to property
<b>Risk Assessment</b>	An assessment of the likelihood of hazards present in a work place or activity causing harm or damage and likely consequence of such harm or damage occurring
<b>Because We Care</b>	This is the University of Aberdeen's approach to Health, Safety and Wellbeing of staff and students. It underpins the hearts and minds way of continuously improving

## **2. Introduction**

The University of Aberdeen has a range of laboratories for different purposes. The range and complexity of potential hazards in these laboratories require there to be procedures for safe working. The University has to ensure that the risks are identified, eliminated, reduced and controlled such that staff and students in the laboratories come to no harm. That includes controlling access to reduce the risk of anyone entering the laboratory and not familiar with the processes, substances and equipment in the laboratory is not exposed to any risk to their health or safety.

Laboratories generate different types of wastes that follow different disposal routes and are handled by different groups of people. Hazardous waste being placed in the black bags used only for non-hazardous solid waste, would put at risk the safety of laboratory staff, cleaning staff and those transporting the waste from the University and those working at the final disposal site making it paramount that the safe working procedures are followed.

## **3. Purpose**

Personnel other than laboratory workers and students or researchers will from time to time access laboratories for maintenance, cleaning or waste removal. The purpose of this Policy is to define roles and responsibilities for controlling their access to the laboratories and to ensuring the safe cleaning of the laboratories and for the safe removal and disposal of laboratory waste.

## **4. Scope**

This Policy applies to all University of Aberdeen laboratories at all of its campuses.

## **5. Objectives**

Our objectives are to ensure that the University of Aberdeen's laboratories are accessed or cleaned, as far as is reasonably practicable, safely and without risk to the health or safety of staff, students and other persons who might be affected. It is also to ensure that the waste from the laboratories is removed and disposed of safely and without risk to health or safety of the persons handling the waste, transporting the waste and disposing the waste

All departments/schools that have laboratories shall have arrangements in place that comply with this Policy.

## **6. Legislative Context**

The Health and Safety at Work Etc. Act, the Management of Health and Safety at Work Regulations, the Control of Substances Hazardous to Health Regulations require controls for work with substances hazardous to health, including waste containing substances hazardous to health. The Environmental Protection Act requires safe disposal of all wastes to protect people and the environment.

## **7. Responsibilities**

### **7.1 Heads of Schools / Sections**

Heads of Schools / Sections are responsible for:

- Ensuring that the area that they are responsible for is compliant with all relevant laws and statutory regulations
- Ensuring that procedures and processes are in place for the safe access, safe cleaning of the laboratories and for the safe disposal of all wastes from the laboratories
- Ensuring that staff and students in the area of their control carry out their responsibilities as listed below
- Reviewing the procedures and processes from time to time to ensure that they remain fit for purpose.

### **7.2 Laboratory Managers/Laboratory Supervisors (persons in control of the laboratory work)**

Laboratory Managers/ Laboratory Supervisors are responsible for:

- Ensuring that there are formal risk assessments of the laboratories under their control that amongst other things, address control of access, the safe cleaning of the laboratories and the safe disposal of wastes from the laboratories.
- Ensuring that staff / students, including visiting researchers, are adequately informed and where appropriate trained and competent to follow the procedures for the cleaning and the disposal of waste from the laboratories.
- Providing supervision to their staff / students proportionate to the risks involved to maintain a safe working environment.
- Ensuring that the laboratories are safe for access, cleaning and removal of wastes.
- Providing relevant information in writing to Estates maintenance and cleaning staff and their managers on hazards and risks in the laboratories that are to be accessed or cleaned.
- Ensuring that the appropriate signs and warnings are in place to inform anyone entering the laboratory of potential risks. The system of signs for access as identified in Appendix B of this Policy is applicable for all laboratories.
- Dealing with any reported infringements of the procedures and to have the infringements rectified.
- Reporting any incidents, including near miss incidents involving these procedures.

### **7.3 Staff & Students**

Staff and students working in laboratories are responsible for:

- Complying with all procedures and instructions including, the wearing of the correct personal protective equipment where advised and in accordance with the procedures separating and segregating waste for safe disposal.
- Immediately reporting any malfunction or failure in any controls.
- Immediately reporting to their supervisor or Laboratory Manager any incident involving any hazardous substance or hazardous waste.

#### **7.4 Cleaning Managers/Cleaning Supervisors**

Cleaning Managers and Cleaning Supervisors are responsible for:

- Ensuring that there is a risk assessment for the work carried out by cleaners of cleaning the laboratories and removal of waste
- Ensuring that cleaning staff are adequately informed and where appropriate trained and competent to follow the procedures for the cleaning and the disposal of waste from the laboratories
- Providing information to cleaners on potential hazards and risks in the laboratory as supplied by the laboratory managers or staff
- Dealing with any reported infringements of the procedures and to have the infringements rectified.
- Reporting any incidents, including near miss incidents.

#### **7.5 Cleaners**

Staff or contractors employed to clean laboratories or remove waste are responsible for:

- Complying with all procedures and instructions including, the wearing of the correct protective clothing where advised and in accordance with the procedures
- Reporting any incidents while cleaning the laboratories or removing any waste for disposal
- Only removing non-hazardous domestic waste in black bags
- Only cleaning areas of laboratories as instructed

#### **7.6 Maintenance Managers/Maintenance Supervisors**

Maintenance Managers and Maintenance Supervisors are responsible for:

- Ensuring that there is a risk assessment for the work carried out in a laboratory.
- Ensuring that maintenance staff or contractors are adequately informed and where appropriate trained and competent to follow the procedures for access to the laboratories.
- Providing information to maintenance or contractors on potential hazards and risks in the laboratory as supplied by the laboratory managers or staff.
- Dealing with any reported infringements of the procedures and to have the infringements rectified.
- Reporting any incidents, including near miss incidents

#### **7.7 Maintenance staff/contractors**

Maintenance staff or contractors are responsible for:

- Complying with all procedures and instructions including, the wearing of the correct protective clothing where advised and in accordance with the procedures
- Reporting any incidents while carrying out work in the laboratories

## **8. Management Review**

This Policy shall be reviewed at least annually by the Director of Health, Safety and Wellbeing or when any of the following occur:

- a) After significant internal reorganisation or restructuring.
- b) After any injury or incident or significant performance disruption that highlights the need for review.
- c) Any change in relevant legislation that has an impact on working with chemicals and bio agents / GMOs.

The purpose of the periodic review is also to:

- a) Assess whether the objectives set out in section 5 are achieved consistently.
- b) Ensure that recommendations emanating from previous reviews have been implemented and the required outcomes are being achieved.

## Appendix A – Guidance for the Cleaning of Laboratories

The cleaning and maintenance of laboratories is an essential part of running of the laboratories. The Estates staff provide the basic cleaning service and maintenance service. Cleaning activities entail cleaning of hand wash basins, mopping of floors and removal of black bag waste. There is a range and complexity of hazards and potential risks which require careful consideration and an informed risk assessment by the laboratory managers. The University expects there to be a collaborative approach between Schools and Estates to ensure that no one comes to any harm when carrying out maintenance or cleaning or removal of wastes. That includes sharing of information on potential risks and ensuring that information is conveyed to the staff performing the cleaning and waste removal duties.

### Guidance for Laboratory Managers and Laboratory Supervisors

The cleaners will clean laboratory floors, hand wash basins and replenish soap and paper dispensers. Any other cleaning required, for example cleaning of the laboratory sinks must be agreed with the cleaning supervisor or their manager. The cleaners must be informed as to the basic precautions to follow while in the lab environment. Specific arrangements will be required for the cleaning of the biological containment laboratories and laboratories where radioactive materials are handled.

Laboratory managers should ensure that areas are safe for cleaners to gain access and safe for them to carry out their work. The cleaning staff work at a time when laboratory staff have left or are not there at the end of a normal working day. The communication should be such that the cleaning staff are not put in a position to make decisions for themselves as to whether an area or a laboratory is safe to clean or not, therefore adequate and agreed signs and notices should be used to inform the cleaners on whether an area is safe for them to enter and do their job.

The laboratory workers should also be instructed and trained to check, each day, before they finish work that no hazardous items have been left in areas where there is the potential for cleaners to come into contact with them and put their health or safety at risk. In particular:

- Where cleaners are expected to clean laboratory sinks, both the draining board area and the sink should be free of any glass ware and other items.
- Chemicals should never be stored on the floors but always stored in the suitable chemical store cupboards, of construction appropriate to the hazard(s). Hazardous liquids should be stored on drip trays. Flasks containing biological agents should be placed in some type of secondary containment to prevent them from being knocked or damaged during the cleaning and routine laboratory work.
- Small amounts of chemicals that may be within the open laboratory should be securely closed and labelled with the name of the chemical and a hazard warning label where appropriate on the container. Such chemical containers should be placed to the rear of the bench each evening.
- Where experiments are left running overnight, risk assessment should determine whether cleaners should be excluded from the laboratory by locking the access door and placing a warning sign outside the laboratory. An exception to this rule may be, subject to risk assessment, if the experiment is wholly confined within a fume cupboard with the sash fully closed.
- All experiments left running overnight must be clearly marked informing of action to be taken and the person to be contacted in the event of an accident involving the equipment.
- Cleaners should not clean laboratory benches. Where deep cleaning is carried out of benches by internal staff or by contractors, a specific risk assessment should be carried to devise appropriate control measures.

- All pressurised gas cylinders must be securely fastened, in an upright position, by the use of purpose made clamps, brackets and chains/belts.
- Hazard warning signs should be fixed to containers, cupboards and apparatus containing hazardous chemicals.
- Hazard warning signs and instructions for specific immediate hazard to anyone entering the laboratory or room should be fixed to the door in circumstances such as the presence of strong magnetic field that could be of risk to someone with a pace maker or where there are regulatory requirements such as in the case of biological or radiation hazards.
- Access to laboratories should be controlled by the use of a traffic light system as in Appendix B.

### Guidance for cleaners

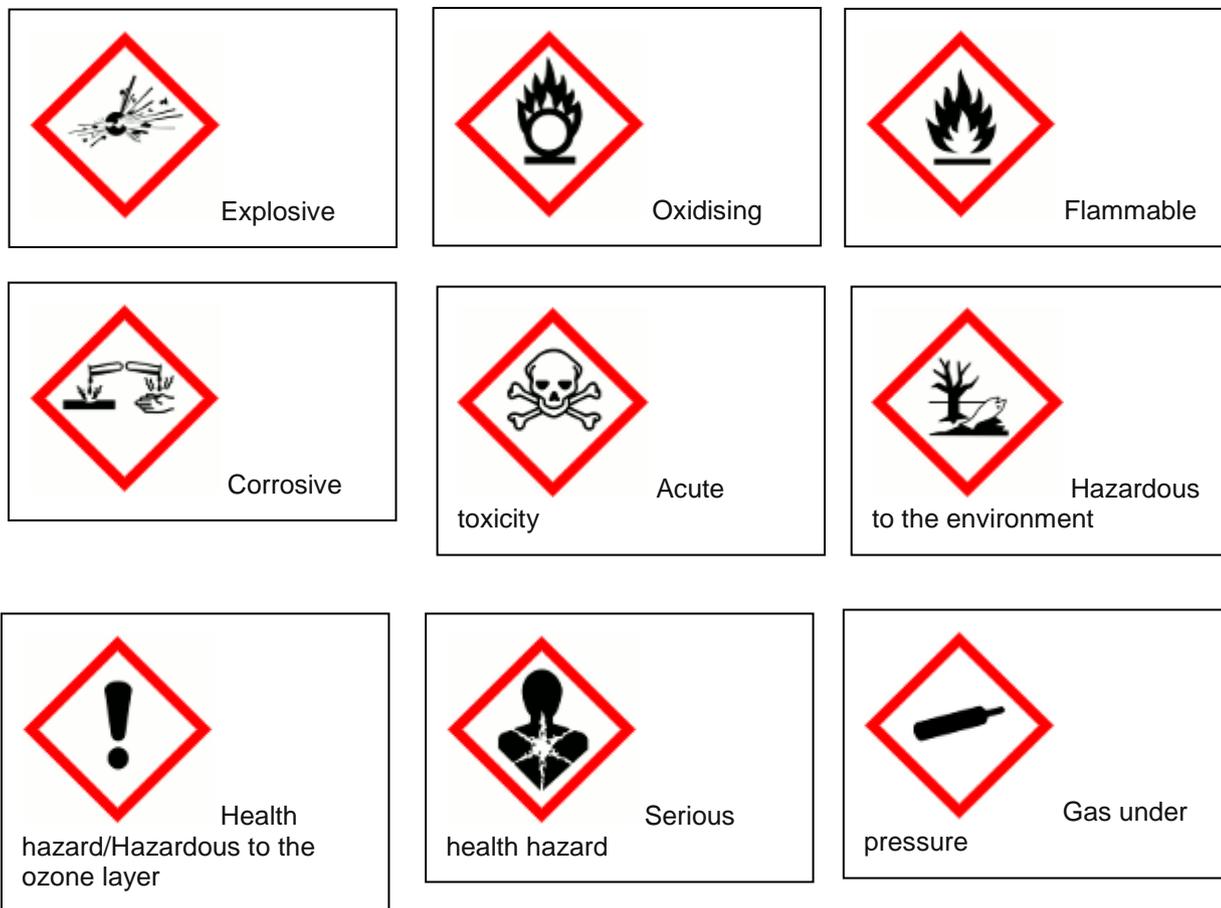
Cleaning staff play an important role in the safe operations of the University. The task cleaners undertake can vary from the removal of non-hazardous waste contained in black bags, cleaning of the hand wash basins, replenishing the paper towels and soap dispensers, and when specifically agreed, mopping of the floors,. Cleaning staff should be inducted, given all the relevant information and instructions on hazards, risks and safe working procedures in laboratories they are working in.

The following information is for guidance for those performing the role of a cleaner and for those supervising and instructing the cleaners.

- Laboratories in the University use chemicals for teaching and research purposes. Not all chemicals are harmful but those that are have different hazards and risks and can be harmful to humans in different ways. Many of the chemicals are used in small quantities on work benches or in fume cupboards and normally stored in small containers. All containers should be labelled to say what the chemical is and what the hazard is from the chemical. These chemicals can be in either solid, liquid or gaseous form. The hazard from the chemical will typically be described in words and shown as a pictogram such as the following in use prior to 2015:



- Since 2015, the new Globally Harmonised symbols have been use:



- There are laboratories in the University where our researchers carry out research with micro-organisms. Many of these are generally harmless to people but some can cause health problems or illness if people come into contact with them. This type of research and work is carried out in special laboratories called containment laboratories. There are three different levels of containment laboratories:
  - Containment level 1 – For work with micro-organisms that are unlikely to cause any harm
  - Containment level 2 – For work with micro-organism that present some risk of harm and work is intermediate between levels 1 and 3

The laboratory door and storage containers for micro-organism materials or substances may have a sign like the one below to indicate the nature of the hazard:



- The University also has laboratories where they may be work with radioactive substances. There are warning signs posted on the doors of rooms or laboratories where there may be storage of radioactive substances or where work takes place with radioactive substances or sources.
- There are also three different categories of laboratories where radiation or radioactive material is used:

Non-designated – Where risk from radiation is very small  
 Supervised area - Risk is intermediate between ‘non-designated’ and ‘controlled’  
 Controlled area - Risk from radiation is high

- There is no sign for non-designated’ area. The signs for Supervised and Controlled areas look like:



**Appendix B – Access to laboratories**

Access to laboratories should be controlled based on risk assessment of the laboratory and the work carried out. The risk assessment should lead to the classification of the area into either low, medium or high risk category. The risk category will determine who has authorised access to the laboratory and who does not. The following is provided as a standard to follow:

Risk Category	Authorised	Not Authorised (except by arrangement)
Low – No significant hazards 	<ul style="list-style-type: none"> <li>• Staff, students</li> <li>• Maintenance and cleaning staff</li> <li>• Porters and security staff</li> <li>• Technical Resource staff</li> <li>• Local safety coordinator</li> </ul>	<ul style="list-style-type: none"> <li>• Contractors</li> <li>• Delivery personnel</li> <li>• Visitors</li> </ul>
Medium – Possible significant hazards 	<ul style="list-style-type: none"> <li>• Staff and Students explicitly authorised by a responsible person.</li> <li>• Cleaning Staff authorised for specific tasks.</li> <li>• Technical resource staff.</li> <li>• Local Safety Coordinator.</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance staff.</li> <li>• Porters and security staff.</li> <li>• Contractors.</li> <li>• Delivery personnel.</li> <li>• Visitors.</li> </ul>
High – Significant hazards exist 	<ul style="list-style-type: none"> <li>• Staff and Students explicitly authorised by a responsible person.</li> <li>• Technical resource staff.</li> <li>• Local safety coordinator</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance and cleaning Staff.</li> <li>• Porters and security staff.</li> <li>• Contractors.</li> <li>• Delivery personnel.</li> <li>• Visitors.</li> </ul>

Those authorised or given access to the laboratories should be briefed on hazards and risks and controls in place including the use of Personal Protective Equipment (PPE).

Along with other hazard warning signs, the following template signs for the categories should be affixed to the laboratory access doors to control access:

LABORATORY ACCESS		
Laboratory:		
	<ul style="list-style-type: none"> <li>- No significant hazards exist within.</li> <li>- Some access restrictions apply.</li> <li>- No deliveries.</li> </ul>	
AUTHORISED PERSONS		
<ul style="list-style-type: none"> <li>- Staff, Students and Visitors.</li> <li>- Maintenance &amp; Cleaning Staff.</li> <li>- Porters &amp; Security Staff.</li> <li>- TRO.</li> <li>- Local Safety Coordinator.</li> </ul>		
PROHIBITED PERSONS (Except by Arrangement)		
<ul style="list-style-type: none"> <li>- Contractors.</li> <li>- Delivery Personnel.</li> </ul>		
Contacts		
Name	Room number	Phone number
All deliveries must be made to:		
Lab Access Notice		

LABORATORY ACCESS		
Laboratory:		
	<ul style="list-style-type: none"> <li>- Potentially significant hazards may exist.</li> <li>- Access restricted to authorised persons only.</li> <li>- All authorised persons must have a safety induction.</li> <li>- All visitors and contractors must be accompanied by an authorised person at all times.</li> <li>- No deliveries.</li> </ul>	
AUTHORISED PERSONS		
<ul style="list-style-type: none"> <li>- Staff and Students explicitly authorised by a responsible person.</li> <li>- Cleaning Staff.</li> <li>- TRO.</li> <li>- Local Safety Coordinator.</li> </ul>		
PROHIBITED PERSONS (Except by Arrangement)		
<ul style="list-style-type: none"> <li>- Maintenance Staff.</li> <li>- Porters &amp; Security Staff.</li> <li>- Contractors.</li> <li>- Delivery Personnel.</li> <li>- Visitors.</li> </ul>		
Contacts		
Name	Room number	Phone number
All deliveries must be made to:		
Lab Access Notice		

LABORATORY ACCESS		
Laboratory:		
	<ul style="list-style-type: none"> <li>- Significant hazards exist.</li> <li>- Access restricted to authorised persons only.</li> <li>- All authorised persons must have a safety induction.</li> <li>- All visitors and contractors must be accompanied by an authorised person at all times.</li> <li>- Strictly no deliveries.</li> </ul>	
AUTHORISED PERSONS		
<ul style="list-style-type: none"> <li>- Staff and Students explicitly authorised by a responsible person.</li> <li>- TRO.</li> <li>- Local Safety Coordinator.</li> </ul>		
PROHIBITED PERSONS (Except by Arrangement)		
<ul style="list-style-type: none"> <li>- Maintenance &amp; Cleaning Staff.</li> <li>- Porters &amp; Security Staff.</li> <li>- Contractors.</li> <li>- Delivery Personnel.</li> <li>- Visitors.</li> </ul>		
Contacts		
Name	Room	Phone number
All deliveries must be made to:		
Lab Access Notice		

## Appendix C – Laboratory waste management

### Introduction

Different activities in the University generate different types of waste. Some of the waste is hazardous in nature and requires special arrangement for storage, handling and transportation. All waste should be separated and packed in such a way that it does not harm anyone likely to handle it. This includes:

- Those who handle it between the point where it is generated in the laboratory and the point of storage for collection at the University (e.g. cleaners, porters, laboratory personnel);
- Those who may come into contact with the waste when they handle and transport (waste disposal contractors) the waste from the University; and
- Those at the site of ultimate disposal

Waste should be separated into “waste streams” at the point of generation in line with the guidance and standards of the University (see Appendix D). Each waste stream should be stored appropriately.

The safe disposal of any kind of waste is only possible when the nature of the waste is known. All materials must be kept in labelled containers at all times. Waste should not be allowed to accumulate over long periods of time.

It is essential that supervisors ensure that research students and other personnel arrange for the disposal of all chemicals in their charge before they leave the School.

The waste streams expected from the University laboratories and the segregation and the route of disposal of the waste is as follows:

### Solid waste

**Chemical contaminated waste** e.g. gloves, lab plastics, paper towels used to clean up small chemical spills

- The waste must not be disposed of in black bags.
- The waste goes into **yellow** bags in yellow bins or hoops.
- The **yellow** bags are transferred by lab staff into **yellow** storage bin in a secure compound. The key to the compound should be kept by a responsible person or in a secure place.
- The disposal of the bags is arranged through the Estates Department
- Bags are uplifted for disposal by a specialist company for incineration.

**Biohazardous waste** - Bacterial plates, tissue culture, plastic, plant material

- The waste must not be disposed of in black bags.
- Waste is inactivated by either chemical or physical means
- Inactivated waste goes into **orange** bags.
- The **Orange** bags are transferred by lab staff into **yellow** storage bin in a secure compound. The key to the compound should be kept by a responsible person or in a secure place.
- The disposal of the bags is arranged through the Estates Department.
- Bags are uplifted for disposal by a specialist company for incineration.

**Glass pipettes, Sharps and Biohazard contaminated sharps** – needles, syringes, scalpel blades

- The waste must not be disposed of in black bags.

- Waste goes into special cardboard boxes and sharps bins.
- When bin is full, it is sealed shut and taken to a secure store.
- The disposal is arranged through the Estates Department
- Sharps bins are uplifted for disposal by a specialist company for incineration

### Asbestos

It is not expected that Laboratories will generate asbestos waste or waste containing asbestos or contaminated with asbestos. All asbestos waste is handled through Estates Health and Safety Manager and can only be uplifted by specialist companies. Labs should contact their TRO in first instance.

### Radioactive waste (STRICTLY CONTROLLED)

- The waste must not be disposed of in black bags.
- The waste is kept in allocated radiation controlled area and disposal arranged through the Radiation Protection Supervisor (RPS). Radioactive waste requires special procedures; advice is provided to the University by NHS Grampian Radiation Protection Service. In first instance contact Local RPS and seek advice from the University Radiation Protection Adviser.

### Uncontaminated broken glass,

- Uncontaminated broken glass must not be disposed of in black bags, autoclave bags, yellow or orange bags.
- Uncontaminated glass is placed in puncture-proof container (e.g. cardboard box). Full containers sealed and labelled as broken glass and disposed of in main bins by the laboratory staff.
- Contaminated broken glass, where safe to do so, should be rinsed and then placed in cardboard boxes.

### Equipment and metal

- Electrical equipment for disposal (WEEE) is disposed of monthly. All equipment must be certified as decontaminated, all hazard labels removed and labels detached.
- Metal must not be disposed of in black bags, autoclave bags, yellow or orange bags, contact TRO for advice.
- Disposal of computers and peripherals, is arranged through IT services, servicedesk@abdn.ac.uk.

### General non-hazardous, inert contamination, domestic waste e.g. paper towels used for drying hands

- Waste goes into **black** bags.
- **Cleaners** remove the **black** bags from the laboratories.
- Black bags with domestic waste stream to landfill.

## Liquid waste

- Solvent waste should be kept in clearly labelled bottles. Each solvent in the waste must be listed. When full, these should be taken immediately to the Waste Solvent Store. **Waste solvent bottles must not be left tightly stoppered, a vented cap should be used.**
- **Important note:** Never mix chlorinated (e.g. chloroform, trichloroethylene) and non-chlorinated waste (e.g. acetone, diethyl ether) liquids for disposal. This is a condition of the university's contract with the contractor which collects and disposes of this waste.
- Persons drying solvents with sodium wire have the responsibility of (a) attaching warning labels to bottles containing such solvents and (b) disposing of the sodium wire as follows: *Sodium wire can be safely quenched by first adding to the bottle sufficient propan-2-ol to cover the wire. Leave in a fume cupboard until no more evolution of gas is visible. Slowly add small portions of methylated spirits until all the sodium has completely dissolved.*
- Some chemicals can be safely disposed of down drains using copious amounts of water, but note this is only acceptable if explicitly stated in the MSDS. If in doubt, contact the Transport and Waste Manager.
- Before purchasing chemicals consider how it will be disposed of.
- Significant quantities of unwanted chemicals should not be allowed to accumulate.
- If you have unwanted chemicals that cannot be discharged to the drains, contact TRO or the Transport & Waste Manager (Chris Osbeck). Where possible, dangerous wastes should be rendered innocuous by suitable chemical treatment.

## Recycling

### Confidential waste and waste paper

- The waste goes into the DataShred consoles
- DataShred empty the consoles weekly, if there is a large amount of paper waste, e.g. from an office clear out, then use white DataShred bags instead available from the Environment Office - [environment@abdn.ac.uk](mailto:environment@abdn.ac.uk), or TRO.

### Cans, Plastic and glass bottles

- The waste goes into **green bins** in various locations.

### Cardboard

- Remove all plastic (this is deemed general waste and should be disposed of in normal bins), flatten and taken to storage.

**Appendix D – Example - Laboratory Waste Streams**

