

LOCAL ARRANGEMENTS FOR WASTE DISPOSAL (MAIN SITE)

The Chemical Safety Advisor, Mimi Nguyen, can be contacted by telephone (83337) or email chemicals@materials.ox.ac.uk for help or advice on the disposal of hazardous waste.

WASTE, EXCESS AND UNWANTED CHEMICALS

The current regulations do not permit the disposal of any chemicals via sinks. All chemicals have to be disposed of through the University Safety Office and its licensed Contractor. Policy Statement S5/11 states, "As producers of waste, individuals within departments have certain legal responsibilities relating to its disposal. They have a 'Duty of Care' to ensure that the waste is segregated at source (DO NOT MIX non-hazardous waste with hazardous waste), is properly packaged, containers are correctly labelled, and it is safe for transport".

The Department operates a scheme for the onward disposal of all unwanted and waste chemicals at its main site.

To use this service, members of the Department should:

- 1) Ensure that wastes are packaged safely by:
 - Using suitable containers that are compatible with the waste that you put in it. **Please see guidelines below for selecting suitable containers.**
 - Ensuring the containers are not damaged and not leaking liquids or vapours.
 - Not overfilling the containers above the maximum line, or $\frac{3}{4}$ of the container if no maximum line is shown. This allows for expansion.
 - Ensure the containers' exterior are clean and free of chemicals.
 - The containers must also be fully and correctly labelled (see S5/11). Pre-printed chemical-resistant labels are available (free of charge) from Stores.
 - No liquid wastes in containers over 10L, no solid wastes in containers over 10Kg

Any waste presented at the chemical waste store not conforming to the conditions stated above will be rejected.

Guideline for selecting suitable containers for chemical wastes:

- Chemicals may be sent for disposal in their original containers.
- UN marked containers may be reused**, provided they have been visually checked to ensure that there is no sign of damage, and that their materials are compatible with the chemicals you intend to put in it. Also thoroughly clean and dry the containers to ensure they do not contain residues of incompatible materials).
- If you need to purchase containers for specific type of waste, or if it is absolutely necessary to collect wastes in containers of $\geq 10L$ or 10Kg capacity, please contact the Chemical Safety Advisor chemicals@materials.ox.ac.uk for

advice to ensure they comply with UN standards. UN approved containers carry the UN mark.

- For hydrofluoric acid, use Teflon or high density polyethylene (HDPE). DO NOT use glass, because HF attacks glass.
- For perchloric acid, use glass.
- For solvents, use HDPE (high density polyethylene).
- For aqueous acids and alkalis, HDPE are also suitable.
- For solid wastes, use plastic containers designed for hazardous solid wastes.
- All containers for liquid wastes must be screw caps.
- All containers for solid wastes must have removable lids.

- 2) Complete the waste disposal form on the Department's web page <http://www.materials.ox.ac.uk/local/documents.html?panel=6#SafetyForms> . Please pay attention to the instructions on the form to ensure all required information is provided. Incorrectly completed disposal forms will be returned to the sender.
- 3) Send the completed waste form to the Chemical Safety Advisor by email (chemicals@materials.ox.ac.uk); she will schedule a time for you to bring the waste to the chemical waste building (on Banbury Road) on a Monday morning. On NO account leave chemical waste at the Store.

CLEANSING CHEMICALS/PRODUCTS

Unused cleaning products displaying a hazard warning pictogram are considered hazardous waste and must be disposed of using the waste form, i.e. via the Chemical Safety Advisor. Empty containers should be thoroughly rinsed and warning labels removed and then disposed of in the domestic waste stream.

PAINTS AND VARNISHES

Solvent based paints and varnishes must be disposed of as hazardous waste. Water based paints may be disposed of as non-hazardous waste.

MATERIALS WITH RESIDUAL CHEMICAL CONTAMINATION

Materials considered hazardous for disposal are determined by the proportion of hazardous material to non-hazardous material present, known as the hazardous waste threshold limit. This threshold level varies from 0.1% to 25% w/w depending on the hazardous property of the substance present. As this type of waste is likely to contain mixtures of substances, it is easier to use the worst case, lower threshold of 0.1% to assess whether it may be hazardous. So **if a material cannot be cleaned, but contains only minimal residual contamination, that is if there is less than 0.1% w/w of the contaminate on the material, this waste is not considered hazardous.**

Examples include:

- Gloves and paper towels. These items may be disposed via the non-hazardous waste route (the normal bins/general waste skip).

- Where glass or plastic tubes, pipettes, or pipette tips have been emptied, then the threshold level is very unlikely to be exceeded and this material may be disposed of as non-hazardous waste as described below for empty glass and empty *plastic containers*.

If it is suspected that the threshold level will be exceeded, contact the Chemical Safety Advisor (chemicals@materials.ox.ac.uk).

DISPOSAL OF GLASS WASTE

1) Empty glass chemical bottles (non-pyrex)

University regulations governing the disposal of empty, glass chemical bottles are covered by Policy Statement S5/11. The regulations prohibit the disposal of empty glass bottles that have contained chemicals via the “domestic” waste, i.e. our normal waste bins.

To comply with regulations, **all bottles must be thoroughly washed out** and their tops removed **BEFORE disposal** (clean bottle tops may be placed in the normal waste bins) and their labels removed/defaced. The clean glass bottles can then be disposed in the recycling wheelie bin near the Holder Tower.

2) Empty non-recyclable glass (laboratory glassware made of Pyrex/borosilicate) Cardboard boxes for the disposal of glass waste, for example laboratory glassware etc are available from Stores. The boxes should be lined with a plastic bag (also available from stores). All glass must be clean or cleaned prior to being placed in the boxes. When the box is ready for disposal, they must be sealed (with gaffer tape) and clearly marked as containing glass. The taped up box can then be disposed in the general waste skip. There is no need to use ‘sharps bins’ for this waste as it is not considered ‘clinical or hazardous waste’.

3) Contaminated glass

Contaminated glass should be considered as hazardous waste. There should be very little of it, because end users must clean out all glassware or bottles in the manner described above. In exceptional circumstances, where contaminated glassware cannot be cleaned and disposed via the general waste stream, contact the Chemical Safety Advisor (chemicals@materials.ox.ac.uk) for advice. Please note that if the waste material is broken or otherwise has sharp or jagged edges, it is *your responsibility* to ensure that it is *packaged safely and labelled correctly* with full details of what is contained within the packaging and what the contaminant(s) is/are. Inappropriately packaged and/or labelled contaminated glass will not be accepted for disposal.

EMPTY PLASTIC CHEMICAL BOTTLES

Plastic containers that have open necks, e.g. solvent bottles, may be washed out, remove/deface the labels and disposed of via the non-hazardous waste route (the normal bins/general waste skip). Containers that cannot be washed out, e.g. hydrofluoric acid bottles **MUST** be treated as hazardous waste and disposed of as such via the Chemical Safety Advisor. Containers that remain stubbornly dirty or contaminated must also be disposed of as hazardous waste.

SHARPS BINS

YELLOW sharps bins are available from Stores and should only be used for:

- Small contaminated glass shards that cannot be cleaned
- Syringe needles (as well as the syringe body)
- Razor blades and scalpel blades

No other bins should be used for this type of waste.

All (yellow) sharps bins are to be regarded as hazardous waste. As such they must be disposed of via a specialist contractor. Under no circumstances must sharps bins be disposed of with general department waste. The individual wishing to dispose of the sharps bin is to:

1. Complete the information details on the front of the sharps bin
 2. Telephone the Safety Office (70811), 10 Parks Road, for a time to take the sharps bin along to them.
 3. Complete an entry in the logbook in the Safety Office for disposal records
- Obtain a replacement bin from the Materials Stores.

WASTE OILS

The waste cutting oil store is located beneath the concourse between the Hume-Rothery, Holder and Thom buildings. The key to the store is available from the senior workshop technician in Engineering (Mr Graham Haynes, telephone 73070) and should be returned to him after use. Empty containers should be cleaned out, and then disposed of as described above. Rags and paper that are heavily contaminated with oil are to be disposed of as hazardous waste (i.e. via the Chemical Safety Advisor). If there is any swarf in the rags or paper, you must tell the Chemical Safety Advisor.

AEROSOL CANISTERS

S5/11 identifies aerosol spray cans as special waste, regardless of their original contents. All aerosol containers must be disposed of through the University's hazardous waste procedures – a bin for disposal of these is available outside Stores.

BATTERIES

All batteries must be disposed of via the hazardous waste system. You may drop off your old alkaline and NiCad batteries outside Stores where there is a container for this purpose.

Contact the Chemical Safety Advisor (chemicals@materials.ox.ac.uk) directly if you are disposing of lead-acid batteries, lithium and lithium ion batteries. Do **not** take these to stores.

ELECTRICAL EQUIPMENT

The disposal of waste electrical and electronic equipment (WEEE) now comes under the WEEE regulations 2006 (see Policy Statement S5/11 for details). It is no longer permissible to put WEEE into domestic waste bins even if it does not contain hazardous materials. Generally, WEEE not containing hazardous materials must be

returned to the manufacturer or a reputable waste contractor for recycling. Electrical equipment containing hazardous material, for example, rechargeable batteries, will continue to be dealt with by the Safety Office. If you have any piece of electrical/electronic equipment to get rid of, please consult Ashley Brown (ashley.brown@materials.ox.ac.uk or 73756) or Paul Warren (paul.warren@materials.ox.ac.uk or 73727) for their advice prior to disposal. Additionally, when disposing of any item of equipment, including electrical equipment, you should contact Barry Fellows in the General Office and complete and return to him an asset disposal form, available to download from the Materials website.

FLUORESCENT TUBES

The only fluorescent light tubes you are likely to dispose of are those from the illuminated magnifying lenses found in some laboratories. The small circular tubes from these lamps/lenses should be given to Maintenance Workshop (73744) for disposal.

COMPUTERS AND MONITORS

All computers and monitors should be disposed of via the IT section. Contact Paul Warren (73727) or Khalid Schofield (73728).

CATHODE RAY TUBES

All types of cathode ray tubes have to be disposed/recycled through a contractor. Contact Paul Warren (73727).

FURTHER INFORMATION AND HELP

If you have any questions about the disposal of your hazardous waste, please contact the Chemical Safety Advisor who will do her best to help (chemicals@materials.ox.ac.uk or tel. 83337).

**HAZARDOUS WASTE DISPOSAL SUMMARY
DEPARTMENT OF MATERIALS – Main Site**

Waste type	Disposal route	Disposal information required
Chemicals	Contact Mimi Nguyen (chemicals@materials.ox.ac.uk or 83337)	Waste Form TW 2/10
Aerosols (whether full or empty)	Contact Mimi Nguyen (chemicals@materials.ox.ac.uk or 83337)	n/a
Photographic waste	Contact Mimi Nguyen (chemicals@materials.ox.ac.uk or 83337)	TW 2/10
Cleaning products or chemicals with hazard warning pictogram	Contact Mimi Nguyen (chemicals@materials.ox.ac.uk or 83337)	TW 2/10
Solvent based paints, varnishes and 'empty' tins	Contact Mimi Nguyen (chemicals@materials.ox.ac.uk or 83337)	TW 2/10
Water based paints & empty paint tins	Via non-hazardous waste stream	N/A
Waste cutting oil	Contact Graham Haynes in Engineering Science (73070)	N/A
(Other) Waste oil	Contact Mimi Nguyen (chemicals@materials.ox.ac.uk or 83337)	TW 2/10
Solvent or oil impregnated materials, rags etc	Contact Mimi Nguyen (chemicals@materials.ox.ac.uk or 83337)	TW 2/10
Empty plastic chemical containers	MUST BE CLEAN, remove/deface the labels then dispose in non-hazardous waste stream (normal waste bin/general waste skip). EXCEPT containers that cannot be washed out e.g. some hydrofluoric acid bottles have a non-removable dripper top. These MUST be treated as hazardous waste and be disposed of via the Chemical Safety Advisor Contact Mimi Nguyen (chemicals@materials.ox.ac.uk or 83337)	N/A TW 2/10
Empty glass reagent bottles (recyclable)	MUST BE CLEAN, remove/deface the labels, then dispose in recycling wheelie bin near the Holder tower.	N/A

Clean non-recyclable laboratory glassware (in cardboard boxes)	MUST BE CLEAN, and the cardboard box safely packaged, can dispose in the general waste skip	
Contaminated glass waste	Contaminated glass must be treated as chemical waste. Contact Mimi Nguyen (chemicals@materials.ox.ac.uk or 83337)	TW 2/10
Fluorescent tubes	Contact Maintenance Workshop (73744)	N/A
Batteries (alkaline and NiCad only) and aerosols	There are containers outside Stores. If you have lead-acid, lithium or lithium ion batteries or are in any doubt, contact Mimi Nguyen (chemicals@materials.ox.ac.uk or 83337) or the Stores Technician.	N/A
Sharps	Through Safety Office (70811)	N/A
Asbestos	Contact Mimi Nguyen (chemicals@materials.ox.ac.uk or 83337)	N/A
Computer monitors, cathode ray tubes, televisions and other computer equipment.	Dispose/recycle through contractor – contact Paul Warren (73727)	N/A
Electrical or electronic equipment (including fridges and freezers etc)	Make sure equipment is taken off the Portable Appliance Testing and Equipment Register databases before disposal. For fridges and freezers, contact the Chemical Safety Advisor, for other electrical items contact Paul Warren or Ashley Brown.	N/A
Components containing mercury (eg some light bulbs & electrical switches)	Contact Mimi Nguyen (chemicals@materials.ox.ac.uk or 83337)	TW 2/10
Toner cartridges (except Epson type and photocopier cartridges) & mobile phones	Take to Reception – they are recycled by the RNIB	N/A