DISPOSAL OF UNCONTAMINATED LABORATORY PLASTIC MATERIALS FOR RECYCLING

1 SCOPE

This SOP is to cover the disposal of uncontaminated / decontaminated laboratory plastics (see below) for recycling.

2 PURPOSE

To provide a consistent, well managed process for the safe disposal of laboratory plastic consumables for recycling

3 PLASTICS TO BE RECYCLED

Only plastics with the following symbols will be processed:

Polypropylene

Polystyrene

The Biology Department operates a mixed recycling scheme for other non-laboratory plastics and paper see the web pages

Laboratory plastics to be recycled are:

1. **Polystyrene (PS)**
    a. Tissue Culture Flasks - NO LIDS
    b. Well plates
    c. Universals – NO LIDS
    d. Stripettes (WITHOUT COTTON STOPPER)
        i. Stripettes to be bundled up and put into bag to reduce chance of penetration through bag

2. **Polypropylene (PP)**
    a. Falcon Tubes (15ml, 50ml) – NO LIDS
    b. Media pots – NO LIDS
    c. Syringes (WITHOUT RUBBER END)
        i. If rubber end of plunger is difficult to remove, recycle only barrel

4 SAFETY

Hazards & Risks

- Plastics may be contaminated with chemicals / biological agents. Disposal of contaminated items in recycling bin presents a health & safety risk to those exposed to contaminated plastic items, as well as a risk of reputational damage to Department / University.
- Plastic pipettes are ‘soft sharps’ and could penetrate the collection bags. Risk of minor skin penetration injury / scratches to workers who handle the bags.

5 RESPONSIBILITIES

- Before disposal, all laboratory workers are responsible for:
    - Decontaminating laboratory plastics (if necessary)
    - Removing unrecyclable items from plastics (see above)
    - Disposing of plastic in correct recycling bag
    - Bundling or containing 'soft sharps' (e.g. stripettes) to minimise penetration of recycling bag – DO NOT USE TAPE
    - Checking bag contents before sealing
    - Attaching label to recycling bag and completing label (Plastic Type / Dept. / Group / Date / Initials of person checking contents before sealing)

6 PROCEDURE

A. Lab Group Opt-In Form

- All lab. groups wanting to recycle plastic consumables must complete the 'Lab Group Opt-In Form' (Appendix 1), detailing:
    - types of plastic consumables to be recycled in lab. facility
    - group member responsible for monitoring compliance with procedures
    - signed declaration from Group Leader that all relevant workers will be trained to ensure they are competent to perform the lab plastic recycling procedure

B. Bins, Signage, Bags & Ties

Bins:

- Bin: Use green coloured bin (provided by Infrastructure) for collecting decontaminated lab plastic consumables for recycling
- Bin labels / signage:
    - all bins to be clearly labelled 'Decontaminated Lab Plastics for Recycling' (label provided by Stores)
    - all bins to have a sign attached (see Appendix 2 & 3 for example / sign provided by Stores) identifying type of plastic material to be recycled, typical lab plastic consumable items to be recycled / what is not allowed in the bags

Bags / Ties:

- Thick gauge green bags (provided by Tradebe Labwaste and available from Biology Stores) must be used to reduce risk of plastic materials splitting the bags
- Bag ties (available from Biology Stores) are used to secure full bags

Bag Labels:

- Bags must be labelled. Labels (provided by Biology Stores) document: *Plastic Type / Dept. / Group / Confirmation that Bag Contents Checked Before Sealing / Initials*.

C. Decontamination of plastic consumables by laboratory workers

The following restrictions apply for lab plastic consumables to be recycled. All contaminated items MUST BE decontaminated before disposal in the recycling bin (see procedure below).

Biological agents:
Plastic items for recycling is restricted to consumable items associated with work activities involving low hazard biological materials (non-pathogenic Hazard Group 1 agents / low hazard cell culture materials i.e. unlikely to be contaminated with hazardous agents).

Chemical agents:
Plastic items for recycling restricted to consumable items exposed to water soluble chemical solutions only.

Procedure for disposal of uncontaminated laboratory plastics for recycling

All contaminated lab plastic consumables to be processed by laboratory workers as follows:

Biohazards:

1. Remove any media from plasticware
2. Soak plasticware by fully submerging for 24h in 5% Chemgene solution (or acceptable alternative)
3. Rinse and drip-dry (i.e. residual liquid accepted) before disposal in appropriate lab plastics recycling bin
4. Remove non-plastic items from plastic consumables (see Section 3 above 'Plastics to be Recycled')
5. Stripettes: bundle up (to reduce chance of penetration through bag – DO NOT USE TAPE) and put into the bag.

Chemicals:

1. Empty any aqueous chemical solutions from plasticware
2. Rinse and drip-dry (i.e. residual liquid accepted) before disposal in appropriate lab plastics recycling bin
3. Remove non-plastic items from plastic consumables (see Section 3 above 'Plastics to be Recycled')
4. Stripettes: bundle up (to reduce chance of penetration through bag – DO NOT USE TAPE) and put into the bag.

D. Transfer of bags to Biology Stores

Lab workers:

- Secure full bags with cable ties
- Complete and attach label documenting: Plastic Type (i.e. PP or PS) / Dept. / Group / Confirmation that Bag Contents Checked Before Sealing / Initials
- Take sealed / labelled bags to Biology Stores for disposal.

Appendix 1

Recycling Laboratory Plastic Consumable Waste:
Lab Group Opt-In Form

Head of Laboratory Group:	
Location:	

Lab Plastics for Recycling: which of the following plastic consumables will be recycled (check plastic type with supplier (see Appendix 4)).

Polystyrene (PS)		**Polypropylene (PP)**	
Tissue Culture Flasks	☐	Falcon Tubes	☐
Well Plates / Microtitre Plates	☐	Media Pots	☐
Universals / Bijouxs	☐	Syringes	☐
Stripettes	☐	Other:	
Other:			

Contaminating Materials:

Biological agents:
Note: recycling consumable lab plastics is confined to materials associated with work activities involving low hazard biological materials (non-pathogenic Hazard Group 1 agents / low hazard cell culture materials (i.e. unlikely to be contaminated with hazardous biological agents)

What biological materials will plastic consumables be exposed to before decontamination?

Chemical agents:
Note: Recycling lab plastic consumables is restricted to consumables exposed to aqueous chemical solutions which must be decontaminated (water rinse) before disposal in the recycling bag

Name of Group Member Responsible for Periodically Checking Compliance with Procedure:	

Declaration by Head of Lab:

I will provide / arrange provision of training of all relevant workers in my group to ensure they are competent to perform the lab plastic recycling procedure

Name:	**Signature:**	**Date:**

‘UNCONTAMINATED LABORATORY POLYPROPYLENE PLASTIC WASTE’

YES

Falcon tubes *(without lid)*
Media pots *(without lid)*
Syringe bodies *(no rubber end)*

NO

Other types of plastic materials
Other waste materials *(paper, glass, metal)*
Liquids
Biological agents

‘UNCONTAMINATED LABORATORY POLYSTYRENE PLASTIC WASTE’

YES	Tissue culture flasks *(without lid)* Well plates Universals *(without lid)* Stripettes *(no cottons stopper & must be bundled)*
NO	Other types of plastic materials Other waste materials *(paper, glass, metal)* Liquids Biological agents

Appendix 4: Types of Plastic & Suppliers

= Biology Stores Stock Item

Appendix 4a: Tissue Culture Flasks

Supplier Name	Catalogue Number	Material
Fisher Scientific Ltd	10296861	Polystyrene,
Fisher Scientific Ltd	15350591	Polystyrene,
Sarstedt Ltd	83.3911.302	Polystyrene
Fisher Scientific Ltd	10045411	Polypropylene, polycarbonate(?)
Fisher Scientific Ltd	10288990	Polystyrene
SLS (Scientific Laboratory Supplies)	430372	Cannot be found
VWR International	734-1885	Cannot be found
VWR International	734-1886	Cannot be found
Sarstedt Ltd	83.3912.002	Polystyrene

Appendix 4b: Well Plates / Microtitre Plates / Petri dishes

Supplier Name	Catalogue Number	Material
Fisher Scientific Ltd	10687551	Polystyrene
Fisher Scientific Ltd	10578911	Polystyrene
Fisher Scientific Ltd	10380932	Polystyrene
Sarstedt Ltd	83.392	Polystyrene
Sarstedt Ltd	83.3920.300	Polystyrene
Sarstedt Ltd	82.9923.422	Polystyrene
Starlab UK Ltd	CC7682-7506	Polystyrene
Fisher Scientific Ltd	10344311	Polystyrene
Starlab UK Ltd	CC7682-7524	Polystyrene

Appendix 4c: Pipettes & Tips

Supplier Name	Catalogue Number	Detail Plastics
Sarstedt Ltd	86.1685.001	Polystyrene
Sarstedt Ltd	86.1254.001	Polystyrene
Sarstedt Ltd	86.1253.001	Polystyrene
Fisher Scientific Ltd	11839660	Polystyrene
Fisher Scientific Ltd	11566963	Possibly glass?
Fisher Scientific Ltd	11829660	Polystyrene
Fisher Scientific Ltd	11546963	Soda lime glass
SLS (Scientific Laboratory Supplies)	PIP4204	Unknown
Fisher Scientific Ltd	11517752	Polystyrene
Starlab	I1050-0000	Polypropylene
Starlab	I1054-0000	Polypropylene

Appendix 4d: Centrifuge Tubes

Supplier Name	Catalogue Number	Plastic Material
Greiner Bio-One Ltd	227261	Polypropylene
Sarstedt Ltd	62.554.502	Polypropylene
Sarstedt Ltd	62.547.254	Polypropylene
Greiner Bio-One Ltd	188271	Polypropylene
Sarstedt Ltd	55.476.005	Polystyrene
Sarstedt Ltd	55.476	Polystyrene
Sarstedt Ltd	60.9922.243	Polypropylene

Appendix 4e: Specimen Containers

Supplier Name	Catalogue Number	Plastic Material
Greiner Bio-One Ltd	201170	Polystyrene
Greiner Bio-One Ltd	189170	Polystyrene
Greiner Bio-One Ltd	189171	Polystyrene
Thermo Scientific	142AS	Polystyrene

Appendix 4f: Syringes

Supplier Name	Catalogue Number	Material
SLS (Scientific Laboratory Supplies)	SYR6000	Cannot be found
SLS (Scientific Laboratory Supplies)	SYR1040	Cannot be found
SLS (Scientific Laboratory Supplies)	SYR1036	Cannot be found
Fisher Scientific Ltd	12044717	Cannot be found
SLS (Scientific Laboratory Supplies)	SYR6012	Cannot be found
SLS (Scientific Laboratory Supplies)	SYR1038	Cannot be found
Fisher Scientific Ltd	15295083	Cannot be found
BD plastipak	303172	Polypropylene

Appendix 4f: Miscellaneous

Supplier Name	Catalogue Number	Material
Medline Scientific (loops)	302774M	Polystyrene
Medline Scientific (spreaders)	MLSP25	Polypropylene
Starlab (weigh boats)	3300-0070, 0030 & 0011	Polystyrene
Kartell (cuvettes)	01938-00	Polystyrene