



REDUCING LAB PLASTIC WASTE



Scientific laboratories use a lot of plastic due to its versatility and convenience. However, the use of plastic generates significant waste. To reduce plastic waste in laboratories, several steps can be taken by applying the Waste Management Hierarchy:



1 REFUSE Purchase responsibly

- Ask suppliers for life cycle analysis data
- Refuse unsustainable brands/products
- Buy only what you need and share resources
- Choose products with reduced plastic content and packaging
- Consolidate orders to reduce packaging and deliveries and improve delivery efficiency

3 REUSE / REPURPOSE Plastic lasts millennia

- Reuse single-use plastics where possible (e.g. tips in serial dilutions). If decontamination is needed, check which process is suitable for each item (chemical decontamination or autoclaving)
- Reuse plastic Falcon tubes, reservoirs, and cuvettes whenever possible
- Reuse or send packaging back to suppliers (e.g., NEB boxes, ice packs)
- Repurpose empty plastic containers to hold waste

2 REDUCE Minimise planned usage

- Optimise your experimental design to lower consumables usage
- Use the smallest size plastic vessels feasible
- Use the thinnest possible gloves for the task
- Replace single-use plastics with reusable alternatives that can be autoclaved, chemically decontaminated, and washed between uses
- Use refill systems for pipette tips (see how to 3D-print your own tip sorter) [QR code here](#)



4 RECYCLE If the previous steps are not possible, make sure to recycle

- Recycle packaging and lab plastics without biological or chemical residue
- Decontaminate non-reusable plastics so they can be recycled
- Use external recycling schemes for uncontaminated disposables (e.g., gloves, PPE)



FACT: Reusing your plastic tubes has a lower CO₂e_q footprint than production of new single-use tubes. This includes the footprint from production, washing, autoclaving, drying, and incineration!



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Any questions? Contact LEAF@exeter.ac.uk

