





Sustainability guidance for Laboratory Suppliers

The following guide provides information from contracted suppliers and the efforts they take towards waste management, recycling and sustainability.

More information about procurement at the University of Liverpool can be found <u>here</u>.

More information on the university schemes for waste and recycling can be found on the <u>sustainability</u> <u>webpages</u>.







Introducing the ACT[®] Label

The ACT (Accountability, Consistency, and Transparency) Environmental Impact Factor Label is a third party verified label that contains information about the environmental impacts of laboratory products By emphasizing Accountability, Consistency, and Transparency (ACT) around manufacturing, energy and water use, packaging, and end-of-life, making it easier for labs to make an informed choice over more sustainable products.

ACT-labeled products are independently audited by <u>SMS Collaborative, LLC</u> (<u>SMSC</u>) and published by My Green Lab

	US The Environmental Impact Factor Label Product Name Product Location SKU 0000	Regional labels capture the differenc- es in the Shipping and End of Life im- pacts for each region (US, EU, UK) in which the product is sold. The region- al labels also showcase how the energy usage may vary across the markets and reports the water usage	
This category is either yes or no Detailed scoring explanations for each category are outlined in the verifcation guide	Environmental Impact Scale Decreasing Environmental Impact 10	in units specific to the market (gallons per day or liters per day) for equip-	
	Manufacturing	ment.	
	Manufacturing Impact Reduction 3	These values are graded on a scale of 1-10, with 1 indicating the lowest en- vironmental impact and 10 indicating	
	Renewable Energy Use Yes		
	Responsible Chemical Management 5		
	Shipping Impact 9	the highest environmental impact	
	Product Content 1		
	Packaging Content 5		
	User Impact		
	Energy Consumption (kWh/day) 2.5	These values represent actual	
	Water Consumption (gallons/day) 13.1	daily consumption and apply only	
	Product Lifetime 4	to equipment	
	End of Life		
	Packaging 5		
	Product 1		
	Innovation		
The sum total of all values equals the Environmental Impact Factor ACT labels are valid for two years from the date of issue	Innovative Practices -1	A lower number indicates a lower overall environmental impact	
	Environmental Impact Factor: 47.6 Label Valid Through: January 2021		
	act.mygreenlab.org		

Reading The Label

For more information and to view the database see the My Green Lab website

ACT Home







Packaging

Abcam has changed its packaging from plastic to cardboard vial holders eliminating 8 tonnes of plastic annually and reducing the overall weight to 6,480 kilos of paper per year which can be recycled.

Abcam | From Plastic Waste to 100% Recyclable



Digital datasheets

Digital-only data sheets save over 1 million sheets of paper per year,

Overview	Datasheet	Images	Support & downloads





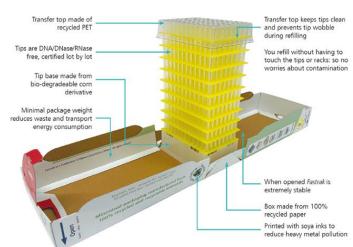


<u>Our Commitment to Corporate Social</u> <u>Responsibility | Alpha Labs</u>

Sustainable products

Alpha labs have identified their tip range Fastrak Tip Refill System as a sustainable product.

These tips have 95% renewable packaging material



Fastrak® Pipette Tip Refill System | Eco-friendly Pipette Tips (alphalabs.co.uk)

Packaging

Shipping boxes are made from 70% recycled cardboard, void fillers are made from either 75% recycled filler paper or bubble wrap made from 30% recycled materials..

Paper tape is used instead of plastic.

Plastic recycling (HDPE, LDPE, PP and PC)

Alpha labs offer a recycling service to recycle their **own brand** noncontaminated lab plastics.

Sign up for the scheme and Alpha labs will send you recycling bags.

Fill these with non-contaminated plastics that have been **purchased from Alpha labs**

These are finely ground and melted to produce plastic beads.

These beads are reused in the manufacture of new plastic products.

Laboratory Plastic Recycling | Alpha Labs









<u>Appleton Woods Limited - Shop Laboratory</u> <u>Consumables, Equipment and Reagents</u>

AppCYCLE 2.0

The appCYCLE 2.0 is a laboratory waste recycling box for the disposal of **non-hazardous** gloves, masks and dry plastic lab waste from any manufacturer.

The waste is collected, washed, shredded and turned into Stormboards.

Included in the cost is:

- One appCYCLE recycling box
- One box liner
- The processing and recycling of your waste
- One tree is planted for every box purchased.

More information can be found here:



AppCYCLE 2.0 Laboratory Waste Recycling Box - Appleton Woods Limited



Appleton pipette tips

The pipette tip range consists of both standard and filter pipette tips, made with sustainability in mind.

Refill racks for both filter and non-filter tips are available

Recyclable cardboard packaging used for all refills – reduces plastic consumption by 70%

Plastic racks can be recycled in the appCYCLE box.

Appleton Pipette Tips - Appleton Woods Limited







About Us (elkaylabs.com)



Pipettes and tips

ELKAY's culture pipettes and RefillPro Tip Refill system have less packaging waste

The RefillPro system reduces waste by 60% and uses recyclable tip racks that are made from 100% recycled plastic.



Tip box recycling

- Recycling bags are supplied by ELKAY
- Fill the bags with any tip boxes that have been supplied by ELKAY
- Once you have 4 full bags, contact ELKAY and they will arrange collection
- Call 01256 811118 or email <u>sales@elkaylabs.com</u> to discuss and arrange delivery of recycling bags.

Elkay Recycling Program (elkaylabs.com)

Packaging

The Eco-flo packaging peanuts used in deliveries are made from GM-free starch and are 100% biodegradable, fully compostable and reusable.







<u>Your Sample. Our Passion. Sustainability. –</u> <u>Eppendorf United Kingdom</u>

E D D

Sustainable products

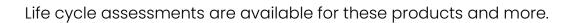
Eppendorf have highlighted a number of their products that are sustainable <u>Products – Eppendorf</u>

Centrifuges:

Eppendorfs 5427R refrigerated centrifuge uses Hydrocarbon cooling which uses a natural refrigerant. <u>Centrifuges - Eppendorf</u>

BioBased tubes:

Eppendorf offers 5ml, 15ml, 25ml and 50ml screw cap tubes made a second-generation biobased polymer made from 90 % renewable resources (e.g. waste and residues from vegetable oil refining or waste cooking oil). <u>Tubes & Plates - Eppendorf</u>



ACT label

Eppendorf participates in the ACT label program which provides information about the environmental impact of products. A list of Eppendorf products with ACT labels can be found here:

ACT Label - Eppendorf United Kingdom











Green Solutions (fishersci.co.uk)



Products

Greener choice products meet certain environmental benefits – find lab products that align with sustainability goals

ACT label

Fisher participates in the ACT label program which provides information about the environmental impact of products. ACT labels can be found on the product page in the photos

Trusted Sustainability Partner Program

Look for the icon for products offered by suppliers that have qualified for our Trusted Sustainability Partner Program. <u>Trusted Sustainability Partner Program | Fisher Scientific</u>

Greener Switch

Fisher have a specialist team that can cross-reference products You purchase and suggest Greener Choice products <u>Green Solutions</u>

Paper cooler

A fully recyclable 100% paper based container for shipping temperature-sensitive products replacing polystyrene (EPS) coolers.

Scheduled Shipments

Upon request consolidated and scheduled shipments can be offered as part of green solutions.

Recycling services

Terracycle Zero waste box: available to collect a variety of different waste streams: <u>16197_Terracycle_Recycling_Program_UK_only.pdf (fishersci.eu)</u>

RightCycle: Kimberley Clark PPE recycling <u>21074_New_RightCycle_Brochure.pdf</u> (<u>fishersci.eu</u>)

Chemical bottle return: 2.5L glass Winchester and 2.5L plastic Mauster bottles plus fisher cardboard packaging can be collected upon delivery of laboratory chemicals <u>13590 Customer Packaging Returns Info Update v3.pdf (fishersci.eu)</u>

















<u>Gilson | Sustainability</u>

₩ GILSON®

Products

PIPETMAN TOWER pack pipette tips:

Uses 70% less plastic than a regular rack box







<u>Sustainability that binds us together –</u> <u>Greiner Bio-One (gbo.com)</u>

Sapphire pipette tips

- ONE

ner

New product design uses 20% less material Refill units rack inserts are packaged in cardboard Inserts are made of approx. 70% recycled material



Packaging

RIO

Cardboard boxes contain on average 82% recycled material Around 60% comes from sustainable forestry and is FSC-certified.





INTEGR

<u>Sustainability Overview | INTEGRA (integrabiosciences.com)</u>

Sustainable product design

Sustainability and INTEGRA Products | INTEGRA (integra-biosciences.com)

384 tip format:

Small volume GRIPTIPS (12.5ul, 50ul and 125ul) are available in a 384 tip format. You can load 4 times more tips reducing plastic waste.

ECO Racks:

Lightweight ECO racks use 60% less material than standard racks. The ECO racks can inserted into the reusable PopTop base. <u>ECO Rack GRIPTIPS® | Eco-Friendly Pipette Tips | INTEGRA</u>

Reagent Reservoirs:

Integra offer a reagent reservoir which consists of a reusable base and disposable plastic inserts. These are available in a number of different sizes and types. The disposable inserts are stackable which means that more can fit into packaging boxes.

Reagent Reservoirs | INTEGRA (integra-biosciences.com)











Sustainable Solutions - Medline Scientific



Products

Medline scientific have identified a range of products that can:

- Improve energy efficiency
- Lower running costs (energy and water)
- Reduce environmental impact and/or carbon footprint

<u>Sustainable Autoclaves - Medline Scientific</u> <u>Biological Safety Cabinets - Medline Scientific</u> <u>Circulators/Chillers - Medline Scientific</u> <u>Sustainable Drying Cabinets - Medline Scientific</u> <u>PCR Cabinets - Medline Scientific</u> <u>Sustainable Powder Weighing Cabinets - Medline Scientific</u> <u>Sustainable Refrigeration - Medline Scientific</u> <u>Consumables/Supplies - Medline Scientific</u> <u>Sustainable Bench Top Equipment - Medline Scientific</u>



Servicing

Medline scientific offer refrigeration health checks and service contracts to help keep equipment running efficiently.

Service solutions include:

- Refrigeration health checks and service contracts
- 'green upgrade' compressor and refrigerant replacement
- Bespoke energy monitoring
- Refrigeration decommissioning
- ULT freezer hire/load service

Sustainable Service Solutions - Medline Scientific

These products and services are based on the following criteria:

- Energy efficient
- Less hazardous materials used or hazardous waste generates
 - Less waste generated or fewer resources used
- Sustainable packaging









Sustainability (sigmaaldrich.com)

Products

Merck have identified a range of products as 'Greener alternative products. These are products with significant improvements, these include products that follow the 12 principles of green chemistry.

Greener Alternative Products (sigmaaldrich.com)

4 Categories of Greener Alternatives

Merck

Green Chemistry Principles (sigmaaldrich.com)

DOZN Quantitative Green chemistry evaluator



The DOZN™ tool is a quantitative, industry-first tool that uses the 12 principles of green chemistry for comparing the relative greenness of similar chemicals, synthetic routes, and chemical processes.

DOZN™ Quantitative Green Chemistry Evaluator (sigmaaldrich.com)

Merck also follow 'Design for Sustainability' which keeps sustainability at the forefront of each stage of the product life cycle. Their 'DfS' scorecard quantifies sustainability improvements in products.

Design for Sustainability (sigmaaldrich.com)





Look for this symbol for greener alternative products and to see 'DfS' cards

SMASH packaging

Created to address the challenging issue of driving improvement of the sustainability of their packaging. <u>SMASH Packaging (sigmaaldrich.com)</u>



Greener Cooler

Merck have started using a recyclable insulated shipping container as an alternative to polystyrene. This cooer is made from paper and starch making it 100% recyclable. <u>Greener Cooler</u>







METTLER TOLEDO

Eco-Friendly Pipette Tip Racks

TerraRack is made from easy to recycle PETE (#'1) and uses 50% less plastic than conventional racks.

Eco-Friendly Pipette Tip Rack | Recyclable Pipette Tip Rack



Pipette trade in

Trade in old pipettes (any make, any model, any type) for a new Rainin pipette Pipette Trade-In | Trade in your old pipettes | METTLER TOLEDO







NEB UK is a Corporate Member of the Woodland Trust | NEB



Packaging

Miltenyi have removed the use of polystyrene boxes and replaced them with the use of straw insulation packaging.

The new packaging (<u>Landbox Straw bio</u>) is made from cardboard and an insulating and shock-absorbing padding of straw enveloped in starch-based bioplastic wrapping.

Landbox straw requires only 2% of the energy consumption compared to polystyrene and only 1.5% CO2 emissions compared to polystyrene.



The packaging is 100% recyclable. <u>Recycling to complete the Happy circle | Miltenyi Biotec | Great Britain</u>







Corporate Social Responsibility and Sustainability | NEB

Shipping Packaging, Shipping & Delivery | NEB

Ambient - 13% of products have been quality tested and are shipped ambient removing the need for polystyrene boxes. The envelope is 100% recyclable.

Cold – NEB use eco shipping boxes. The medium eco box are 100% recyclable with TemperPack insulated box liners. Large eco boxes have a cardboard outer containing LANDBOX hemp insulating insert which is biodegradable.

Frozen – for products that require dry ice polystyrene boxes are used but these include a free returns label and can be shipped back to NEB for recycling. Return the boxes free of charge via the mail room. NEB UK is a Corporate Member of the Woodland Trust | NEB

Ice packs - made from recyclable plastic and water or a water based gel. Ice packs can be reused or recycled. The gel degrades in sunlight and can be used for garden irrigation.

Monarch kits designed for sustainability and are 100% recyclable.

Monarch® DNA & RNA Purification Kits - Designed with sustainability in mind | NEB

Reduce lab waste:

- Less plastic
- Thinner walled columns
- Buffer bottles designed to minimise plastic usage

Purchasing:

• Buffers and columns can be purchased separately

Packaging:

- Sturdy reusable boxes are just the correct size
- Protocol cards replace printed manual's (which are available online)

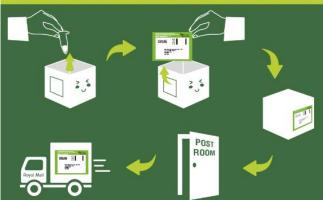
Recycling:

- All components are recyclable instructions can be found on the kit components
 - Recycling Your Monarch® Kit | NEB





FREEPOST returns label in every NEB box!























Environmental and social responsibilities | Oxford Nanopore Technologies

Recycling

Flow cells can be reused and recycled.

IANOPOR

ONT encourage users to reuse flow cells where possible by using the wash kit, cells can be reused up to 5 times.

If the flow cells cannot be reused, then they can be returned to ONT and some of the electrical components can be recycled.

Flow cells (nanoporetech.com)





Promega



<u>Corporate Responsibility | Corporate Social</u> <u>Responsibility | Biotech CSR (promega.co.uk)</u>

Products

Promega have identified environmentally preferable products that use less packaging, fewer hazardous components and generate less waste. These can be identified with the green logo.

Environmentally Preferable Products (promega.co.uk)

ACT label

Promega participates in the ACT label program which provides information about the environmental impact of products. ACT labels can be found on the product page in the photos

Packaging return

Promega print return labels on their polystyrene box deliveries. Close the box with the return label showing and ship back to Promega This is free of charge and can be sent back via the mail room.

Kit Packaging

Promega are using more sustainable packaging in their products. They have also redesigned their kit packaging to make them smaller, saving on paper, ink and adhesive.

Kit documentation

Certificate of Analysis are no longer printed and shipped with kits, instead these are available online.













ChromoTek is getting greener **Proteintech Group**

Cardboard

proteintech

Cardboard boxes are made of recycled paper and 30% low-protein grass which is unsuitable for animal feed. It comes from compensation land and is FSC certified.

No Styrofoam

Insulating materials are made from straw and hemp, these natural products have similar cooling and insulating qualities to styrofoam but they are carbon-neutral, compostable and sustainable.

Insulation materials

For shipments requiring blue ice or dry ice, they mainly use eco-friendly shipping boxes with hemp panels for insulation.

Reliable: Very good insulating properties similar to Styrofoam confirmed.

Sustainable: The cultivation of hemp improves the soil quality. The hemp used comes from Germany or Europe. It is 100% compostable. (DIN EN 13432 certified)

CO2-neutral: The manufacturing process of the panels is climate neutral. In addition, hemp absorbs significantly more carbon dioxide from the atmosphere than is released during cultivation, harvest and up to processing

Packaging

Proteintech are working towards using reusable and recyclable packaging materials. The paper envelope containing datasheets is reusable, they have also decreased paper waste by combining promotional materials and reducing paper size.

New and Improved packaging | Proteintech Group













Sustainability | QIAGEN



Packaging

Qiagen uses Landpack straw packaging as in insulator instead of polystyrene boxes in its cold shipments.

<u>Straw – a natural solution to cold chain shipping | QIAGEN</u>



Kits

Qiagen's new <u>QIAwave product line</u> is a new line of nucleic acid extraction kits that uses fewer components and produces less waste than the existing Qiagen kits.

The QIAwave kits use up to 62% less plastic and up to 58% less cardboard compared to standard kits and are made of 100% recycled plastic.

The QIAwave range are the first products From Qiagen to have an ACT label. <u>QIAGEN partners with My Green Lab</u>

The kits come with concentrated buffers, saving Up to 93% plastic per bottle.



Standard collection tubes have been replaced With new waste tubes made from 100% recycled plastic that you reuse throughout the procedure.

More Sustainable Products





<u>BRO_20_985_0100_201_NF_</u> Sustainability_0724.pdf

Pipette tips

Sarstedt's boxing and re-filling system for pipette tips and filter tips uses up to 64% less materials than standard tips. This is available in a range of sizes.





The SingleRefill





<u>Refill Revolution - The revolutionary boxing and re-filling concept for pipette</u> <u>tips / SARSTEDT AG</u>

Blood collection tubes

Sarstedt's S-Monovette® blood collection system uses:

- 40% less CO₂e per blood sample
- 32% less material used compared to vacuum systems
- 93% less rubber with the S-Monovette® cap
- 33% lower emissions by using PP instead of PET

Ecological sustainability in blood collection | SARSTEDT



Recycling

Empty sarstedt tip boxes can also be sent back to Sarstedt for recycling.

Refill & Recycling: Sustainability in the lab | SARSTEDT AG









<u>Scientific Laboratory Supplies (SLS) Ltd | Lab</u> <u>Supplies (scientificlabs.co.uk)</u>

Sustainability Attributes

SLS provide comprehensive information about products and their sustainability attributes are specific to individual products, evidence based using data from suppliers and contain information about the entire product lifecycle.

Attributes are defined by 5 stages of a product lifecycle



Products will display one or more of these symbols depending on the criteria it meets. By clicking on the symbol you can see details of the sustainable attribute it meets.

Scientific Laboratory Supplies (SLS) Ltd | Lab Supplies

Servicing

SLS has a service centre that can be used servicing of lab equipment. Servicing helps to prolong the life of lab equipment. <u>SLS Service Centre | Scientific Laboratory Supplies (SLS) Ltd (scientificlabs.co.uk)</u>

Pipette tip boxes

SLS offer a free service to recycle pipette tip boxes – plastic to purpose. The plastic is shredded into pellets/granules and is used as raw material for new products such as furniture, baskets and building materials.

<u>Give your waste plastic a purpose with SLS (scientificlabs.co.uk)</u>



Tips and Tricks

SLS also has a page of tips and tricks for labs to become more sustainable.

Scientific Laboratory Supplies (SLS) Ltd | Lab Supplies





Carbon Reduction Plan



Products

SciQuip has a range of Eco Products that can be found here:

SciQuip Eco Products | Science Equipment & Laboratory Supplies | SciQuip









Sustainability UK - STARLAB (starlabgroup.com)

TipOne recycling

All TipOne packaging components are made from Polypropylene and can be collected for free by the Starlab recycling services.

Collect non-contaminated TipOne packaging in cardboard boxes. Log-on to the Starlab online recycling portal and arrange collection.

<u>TipOne Recycling Service UK - STARLAB (starlabgroup.com)</u>



Products

Starlab have created a list of their greenest products that come under their Reduce, Reuse, Refill, Recycle banner

These include:

All TipOne pipette systems:

- Sterile refills save up to 63% plastic compared to sterile racked equivalent
- TipOne tips save up to 40% plastic per tip
- Made from 100% recycled plypropylene.

ErgoOne manual pipettes:

- No seals or O-rings that need replacing annually.
- Stainless steel tip cones help prevent accidental breakage and reducing the waste associated with this.

Starguard nitrile gloves:

- 250 and 200 gloves packaged into the same size box as 100 gloves.
- Reducing transport emissions and packagine materials
- Resuable silicone mat:
- Prevent waste caused by paper or plastic bench liners
- Chemically resistant and chemically inert and heat proof
- Easy to clean using any standard disinfectant or pop in the autoclave or dishwasher.

For more products see: <u>Our greenest products UK - STARLAB</u> (starlabgroup.com)

Articles

Starlab also have a page of hints and tips for a more sustainable lab and articles on their newsroom.

<u>Tips for a more sustainable lab uk - STARLAB (starlabgroup.com)</u>

<u> Starlab News Room - STARLAB (starlabgroup.com)</u>





Thermo Fisher

Greener by design | Thermo Fisher Scientific - UK

Greener by design

We're on a journey to think differently about how we design, make and package our products—moving from linear processes to a more circular economy, where we eliminate waste and keep materials in use, either as a product, components or raw materials.

When you see a green leaf on the products it means that product meets one or more of our environmental sustainability criteria.

Greener by design products | Thermo Fisher Scientific

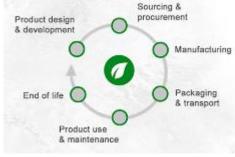
Criteria for reducing environmental impact, incorporating the principles of green chemistry and green engineering into product design.

- Less hazardous products and waste
- Less waste and use of fewer resources
- More energy efficient
- Responsibly packaged and shipped
- · Extending life of products and materials

ACT label

Thermo Fisher Scientific take part in the ACT label program which provides easy to use information regarding a products environmental impact. <u>The ACT Label | Thermo Fisher Scientific - UK</u>













<u>Sustainability Services for Laboratories |</u> <u>VWR</u>

Sustainable solutions | VWR

Sustainability services

VWR offer tailored services that include:

avantor

delivered by VWI

- Advice on the most sustainable practices and products
- Training on relevant legislation and related concerns
- Product development



Products

VWR have identified sustainable products on their website – look for the green leaf. These products fall into the categories of:

- Environmentally preferable safety and workwear
- Sustainable hygiene and disposal products
- Greener solutions for controlled environments

Recycling solutions

VWR offer a range of Zero waste boxes available to collect a variety of different waste streams. <u>Recycling solutions | VWR</u>

Rightcycle: Kimberley Clark PPE recycling <u>RightCycle™ - the first true recycling</u> programme for Kimtech™ nitrile gloves and garments | VWR











Wolflabs Think sustainable Wolflabs :: Laboratory Equipment Suppliers

Recycling

Wolflabs offer recycling services for old equipment and encourage the trading in of old equipment where possible. They are WEEE certified.

Products

The ecological benefits of equipment are shown in comparison tables listed on the product pages.

Most products are manufactured in the UK or Europe, this information can be found on the product page.

