



# Pipette Tips

Simplifying Progress

Sustainability fact sheet

**SARTORIUS**

# Overview

Pipette tips are essential tools in any laboratory setting. Sartorius Optifit pipette tips are standard tips that are available with various purity and packaging options. The Safetyspace® filter tips, on the other hand, are always pre-sterilized and designed to safeguard against cross-contamination of reagents and samples alike.

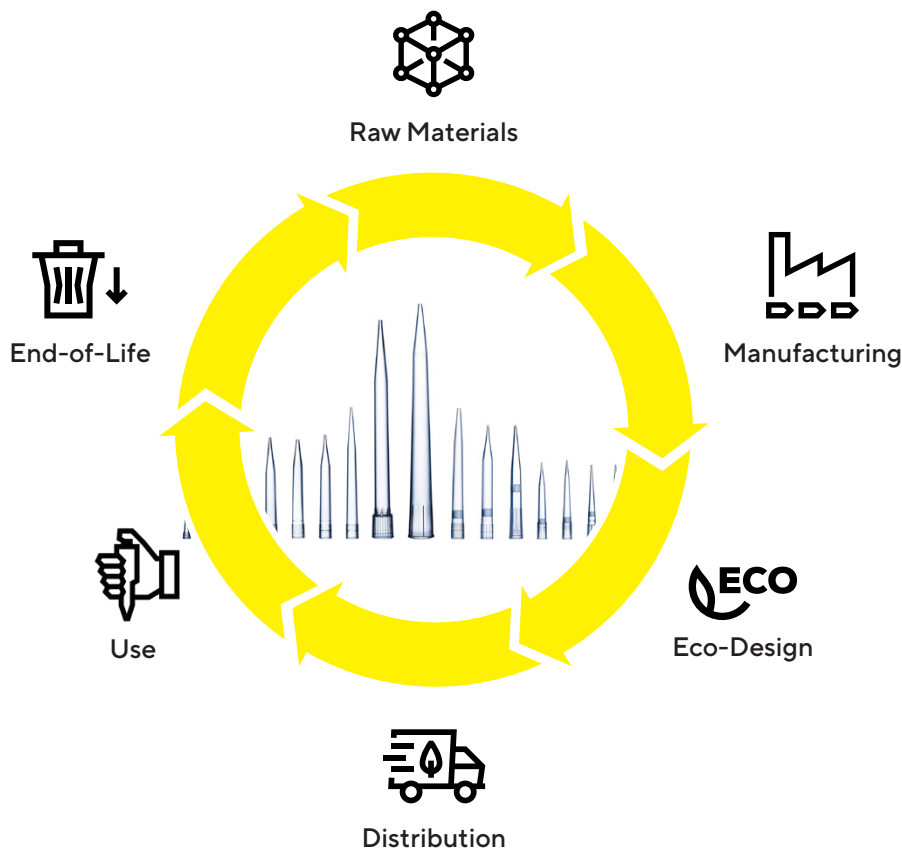
# Life Cycle Thinking

At Sartorius, we are committed to sustainability and are actively seeking innovative ways to reduce the ecological footprint of our products, including pipette tips.

Adopting life cycle thinking is key to enhancing sustainability and considering the environmental impacts from raw materials to end-of-life disposal. We are dedicated to refining our production methods, boosting efficiency, minimizing waste, and cutting energy use. We also consider the environmental toll of shipping practices and are committed to optimizing logistics to reduce carbon emissions.

Our ongoing research into materials and designs aims to lessen environmental impact and enhance the recyclability of our pipette tips. Guided by Life Cycle Assessment (LCA) screenings, we gain valuable insights that drive the development of more sustainable products and deepen our understanding of their ecological footprints.

Integrating life cycle thinking into our operations not only supports the sustainability of our pipette tips but also enables our customers to make environmentally conscious decisions with confidence.



# Raw Materials & Manufacturing

Sartorius pipette tips are produced with the utmost attention to purity and quality and are manufactured in accordance with ISO 9001 and ISO 13485 standards, within a Class 8 cleanroom environment. Additionally, our environmental management system is independently certified to meet the ISO 14001 standard.

Our pipette tip production plant in Kajaani, Finland, operates on 100% renewable electricity. Waste heat from production is repurposed to heat the facility, reducing our reliance on district heating. We have also transitioned to LED lighting throughout, cutting energy use by up to 30% in specific areas, like our warehouse.

The plastic raw materials for our pipette tips are stored in silos and bought in bulk, minimizing packaging waste and transport emissions. Our manufacturing process is continuously improved to decrease plastic waste. Any production waste is collected by a local recycler and repurposed for making other plastic items, such as buckets and boxes. Altogether, our tip manufacturing site has achieved a total waste recovery rate of 98%.

Sartorius's Finnish manufacturing and office facilities have teamed up with a local Carbon Neutral Waste Management service. We measure the carbon footprint of our waste management and offset CO<sub>2</sub> emissions through Gold Standard-certified afforestation projects. In 2023, we invested in permanent carbon sinks to neutralize our waste emissions. This initiative, combined with thorough waste sorting and reduction, is crucial in our mission to diminish our operational carbon footprint.

*Sartorius manufacturing plant in Kajaani, Finland*



# Product Design

The quality of consumables is inherently tied to their initial design and the precision of their manufacturing. A pipette and its corresponding tip form an integrated system, engineered to function seamlessly as a unit. When paired with Sartorius Optifit or Safetyspace® Filter Tips, Sartorius pipettes deliver optimal performance.

Our tips are manufactured using diamond-polished molds, ensuring a consistently smooth surface that minimizes liquid retention and enables precise, accurate liquid dispensing.

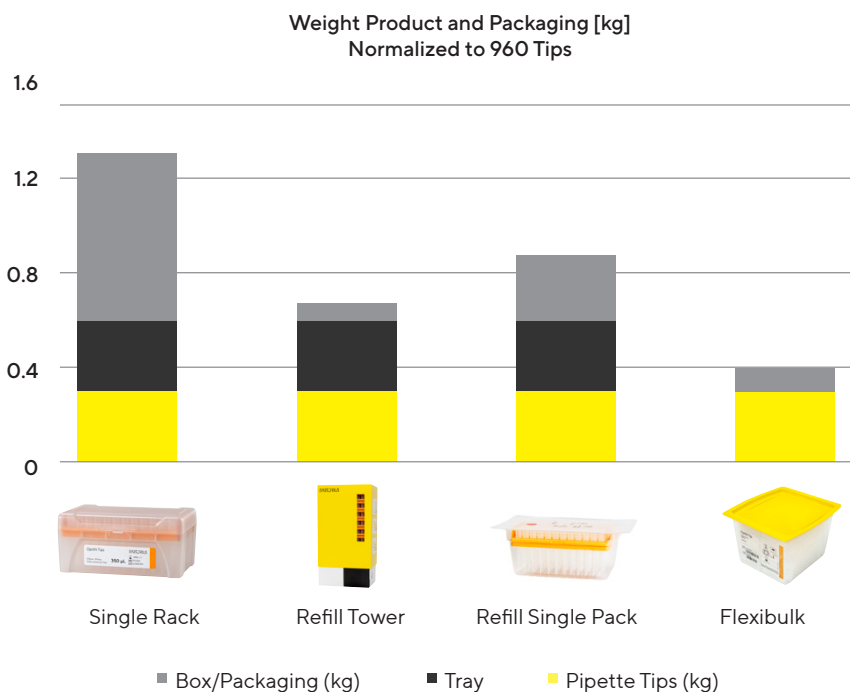
The compatibility between the pipette and tip, supported by our high-quality manufacturing standards, is key to obtaining reliable and repeatable results. Improved precision and accuracy in pipetting leads to reduced variability in results, thereby minimizing the necessity for repeated pipetting and experiments. Consequently, this efficiency translates into a decrease in overall tip consumption.

Optifit Refill trays and bulk tips are designed for full compatibility with Sartorius tip boxes across our product range, extending the lifespan of each tip box. The durable construction of our tip boxes and trays supports repeated autoclaving, maintaining purity and broadening the range of applications for both refill and bulk tips.

# Packaging Design

Packaging plays a pivotal role in preserving the integrity and quality of our products. It protects pipette tips from damage, contamination, and degradation, ensuring they arrive in perfect condition to the end user.

Recognizing the diverse needs of laboratory applications, we offer a variety of packaging options. Our selection includes Single Rack, Refill Tower, Refill Single Pack, and Bulk options. Laboratories that choose Refill or Bulk packaging can significantly reduce waste output. These choices are especially advantageous for eco-conscious labs aiming to cut down on plastic consumption.

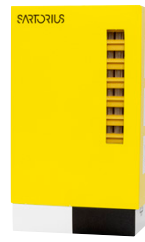


*The type of packaging influences the plastic content per product. Refill and bulk products offer environmental benefits as they contain less plastic and packaging material. The picture shows the total weight of a sales unit that contains altogether 960 pipette tips. The comparison was made with the 350 µl tip variant.*

Single Rack



Refill Tower



-50%  
Reduced Plastic Weight

Refill Single Pack



-30%  
Reduced Plastic Weight

FlexiBulk



-70%  
Reduced Plastic Weight

Reduced plastic weight per tip (normalized with 960 tips) when compared to a single-rack product. Comparison done using 200 µl Optifit Tips.

All of our cardboard packaging is 100% recyclable, and some packages even incorporate recycled content. All of our cardboard is from sustainable sources.



# Time to ACT

The Refill Tower has earned the ACT Ecolabel an eco-certification from an independent third party that assesses various sustainability factors. 'ACT' stands for Accountability, Consistency, and Transparency, the core principles of this label. Much like nutrition labels provide details on food contents, the ACT Ecolabel offers a clear view of a laboratory product's environmental impact. It rates products on multiple sustainability criteria, making it easier for users to compare their ecological effects.



## Distribution








We have optimized our packaging and palletizing designs to enhance shipping and sterilization efficiencies. This optimization maximizes space utilization during transit, reducing the number of shipments required per product and, as a result, lowering transportation-related carbon emissions. Additionally, we prioritize overland and maritime freight as our main transportation methods.

We are in the process of transitioning to wooden pallets that are 27% lighter (10.6 kg compared to 14.5 kg). To mitigate contamination risks, our pallets are made from virgin material and are not reused.

## Disposal

The cardboard packaging for our product sales units is fully recyclable. Both the tip box and tray are manufactured from 100% polypropylene. The recycling of pipette tips, tip boxes, and trays is subject to local regulations and laboratory practices. While recycling is preferred, it may not always be practical due to contamination risks or the use of hazardous substances. Products that have not been in contact with hazardous materials can be considered plastic waste and recycled as such. The materials used in the FlexiBulk and Refill Single Pack packages are mixed plastics; please adhere to local recycling guidelines.

# Materials

	Tip	<b>Polypropylene (PP)</b>
	Tip Filter	<b>Polyethylene (PE)</b>
	Tip Tray and Rack	<b>Polypropylene (PP)</b>
	Tip box wrapping	<b>Polyamide (PA)   Polyethylene (PE)</b>
	Single Refill Package	Cover: <b>Polyamide (PA)   Polyethylene (PE)</b> Container: <b>Polyethylene terephthalate (APET)   Polyethylene (PE)</b>
	FlexiBulk® package	<b>Polyethylene terephthalate (APET)   Polyethylene (PE)</b>
	Bulk bag	<b>Low-density polyethylene (LDPE)</b>
	Cardboard package	<b>Cardboard</b>

Moving forward, Sartorius remains dedicated to sustainability in every facet of our products' life cycle. We continually seek innovative methods to improve our environmental performance, ensuring that our high-quality pipette tips are not only dependable for laboratory use but also produced with responsibility.

# Sustainability at Sartorius

Sartorius is dedicated to shaping a future where improved medicine is more accessible to many. Concurrently, we acknowledge and address the impacts of our operations globally. Taking into account the concerns of its stakeholders,

Sartorius has defined six strategic sustainability topics:



Climate Action



Resources and  
Circularity



Water and Effluents



Supply Chains



Social Responsibility



Corporate  
Governance

For more information, please visit:  
[www.sartorius.com/en/company/sustainability](http://www.sartorius.com/en/company/sustainability)



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**For further information, visit,**  
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