

■ Pipette Tips

Table of Contents

54	Pipette Tips
56	Optifit Tips
57	SafetySpace Filter Tips
58	Low Retention Tips
60	Packaging Options



■ Pipette Tips

The Perfect Match for Your Pipette



Optiload for a tight fit and equal sealing on every channel's tip cone.

Sartorius pipette tips meet the highest quality and purity standards. Sartorius tips are designed and manufactured to fit Sartorius pipettes perfectly, enabling maximum tip sealing and accuracy. This combination guarantees the highest performance and precision for your pipetting needs. Moreover, correctly fitting tips protect the pipette's tip cone from wear and tear.

Sartorius tip packages are designed to make the daily work of lab professionals easier. Our offering covers a variety of

functional tip package options with various purity ratings. The high purity and consistent quality of Sartorius tips provide your valuable samples with the ultimate protection from contamination. We adhere to strict quality standards and control procedures - from raw material to automated manufacturing and packaging.

Sartorius tips correspond with the colour-coding of Sartorius pipettes, to allow easy matching of corresponding volumes.



□ Premium Quality and Purity

Manufacturing the tips in our own production facility allows us to maintain the highest quality and purity standards, by selecting the best plastic materials and controlling the manufacturing process from beginning to end.

Our quality management system follows not only ISO 9001 and ISO 14001, but also ISO 13485. Tip production also abides by the ISO 14644-1 standard, in order to fulfil ISO Class 8 cleanroom conditions for secured tip purity.



Lot-specific purity certificate

□ Contamination Free Tips

To avoid contamination through human contact, we have automated the entire tip manufacturing process. Pure virgin polypropylene (PP) plastic is automatically fed from silos into moulding machines. Moulding machines and robots located in isolated clean cells, load the tips automatically into tip trays and packaging. HEPA filters and higher air pressure are applied for purity within the cell. All Sartorius Single Tray tip racks, Single Refill Packs and FlexiBulk® packs are individually and automatically packed in air-tight plastic, in order to rule out any danger of contamination.

Additionally, our highly experienced and trained personnel are equipped with specially designed coveralls, masks, hair nets and gloves, in order to further diminish risks of contamination.

An independent laboratory checks every tip lot of Single Tray and Refill Pack for RNase, DNase and endotoxins. Lot-specific purity certificates can be downloaded from www.sartorius.com (select from the navigation bars: ► Liquid Handling ► Tip Purity Certificates).





Definitions:

DNase	A deoxyribonuclease (DNase) is any enzyme that catalyzes the degradation of DNA. The absence of DNase is tested by using fluorometric assay. The detection level of the assay is 6.25×10^{-5} U/ μ l when DNase I is used as a standard.
RNase	Ribonuclease (RNase) is an enzyme that catalyzes the degradation of RNA into smaller components and can be generally found from organisms. The absence of RNase is tested by using fluorometric assay. The detection level of the assay is 3.125×10^{-9} U/ μ l, when RNase A is used as a standard.
Endotoxins	Endotoxins are lipopolysaccharides found in the Gram-negative bacteria and can cause several serious health effects in humans and animals. Limulus Amebocyte Lysate (LAL) Gel Clot method is used to detect the presence of endotoxins on the pipette tips. The detection level of the LAL assay is 0.005 IU/ml (EU/ml).
Sterilization	The destruction of all microbial life, including bacterial endospores. Can be accomplished e.g. using steam, heating, chemicals, or radiation. We use e-beam irradiation.

Features and Benefits

Best Fit – Highest Possible Accuracy

- Perfect fitting and sealing with Sartorius pipettes secure the highest possible accuracy and precision
- Compatible with Optiload feature in Sartorius Picus[®] NxT, Picus[®], Tacta[®], eLINE[®], mLINE[®] and Proline[®] Plus pipettes enabling ergonomic and light tip attachment and ejection
- Colour-coding of tip trays allows easy matching with a corresponding colour-coded Sartorius pipette
- Compatible with most other pipette makes

Premium Quality and Purity:

- Strict quality standards, ISO 9001 and ISO 13485, are followed from R&D to production and delivery
- Manufactured in ISO 8 classified clean room conditions
- Manufacturing process free of DNase, RNase and endotoxins: Single Trays, Refill Packs and FlexiBulk[®] packs certified pure by lot number
- Pre-sterilised tips are e-beam irradiated
- All tip packages, including individual racks, are lot numbered for full traceability
- The highest quality virgin polypropylene used as raw material

Tip Selection Guide per Application

Tip Type	Optifit Tips			SafetySpace Filter Tips	Low Retention Tips
Purity	Standard	Free of DNase, RNase & endotoxins	Pre-sterilized & free of DNase, RNase and endotoxins	Pre-sterilized & free of DNase, RNase and endotoxins	
Regular pipetting applications	✓				
Applications where prevention of cross-contamination is vital		✓	✓	✓	
Pipetting liquids with low surface tension (e.g. detergents, solvents)					✓

■ Optifit Tips

Standard Tips for Various Needs



Sartorius Optifit tips are an excellent choice for various laboratories and pipetting tasks with their wide range of packaging and purity options. The Optifit tips are packed in single tray racks, refill towers, single refill packs, and bulk packages. Optifit tips are available DNase, RNase and endotoxin free, as well as e-beam pre-sterilized.

The Single Tray tip racks are ideal for easy tip loading and for contamination-free pipetting. In order to reuse the empty tip racks and to create less waste, you may fill the empty racks with Refill tips, either using the refill tower or purity certified refill pack tips. The FlexiBulk® pack is the choice, if you need a cost-effective, yet purity-certified solution, in bulk tip format.



□ Available Packaging Options

- Single tray rack
- Refill tower
- Refill pack
- FlexiBulk® pack
- Bulk in a bag



□ Features and Benefits

- Standard non-filter tips made to Sartorius quality standards
- Low Retention Tip range also available for liquids with low surface tension
- Perfect fitting and sealing with Sartorius Picus® NxT, Picus®, Tacta®, eLINE®, mLINE®, Proline® Plus, and Proline® pipettes
- Wide tip volume range from 10 µl to 10 ml
- Wide selection of packaging and purity options
- Available as DNase, RNase and endotoxin-free
- e-beam pre-sterilized packaging options available
- Full traceability
- Colour-coded trays to match with corresponding Sartorius pipettes
- Fully autoclavable at 121°C, at 1 bar, for 20 minutes

Optifit tips provide excellent tip sealing

■ SafetySpace Filter Tips

Protect Valuable Samples



SafetySpace Filter Tips, made of virgin polypropylene, feature filter barriers that effectively capture solid and liquid aerosol particles. The filter is made of polyethylene without self-sealing additives to avoid any interference with the sample and results. The filter protects the sample against contamination. In addition, it protects the pipette and prolongs the maintenance interval of the pipette.

The SafetySpace Filter Tips are Ideal for:

- molecular biology
- microbiology
- cell culture applications
- radioactive work

The unique feature with SafetySpace Filter Tips is the additional space left between the sample and the filter that conventional filter tips do not have. This extra space prevents the liquid from touching, and permeating, the filter and thus guarantees the pipetting accuracy. Any liquid types and pipetting techniques can be applied without the risk of the liquid permeating the filter.

The Extra Space is Particularly Useful in the Following Applications:

- pipetting foaming liquids such as buffers and proteins
- pipetting solvents
- multiple dispensing functions of electronic pipettes
- reverse pipetting

□ Available Packaging Options

- Single Tray Rack



□ Features and Benefits

- Filter minimizes the risk of aerosol contamination
- Volume of air between the sample and filter reduces the risk of contaminating the internal components of our pipettes
- Covers tip volumes from 10 μ l to 1,200 μ l
- Certified free of DNase, RNase and endotoxins
- e-beam pre-sterilized
- Full traceability
- Colour-coded trays indicate the matching colour-coded Sartorius pipette

Low Retention Tips

Ensure Optimal Sample Recovery



The four tips on the right are low retention tips, providing maximum sample recovery.

Pipetting liquids that contain detergents can be problematic when using standard pipette tips. Some liquid residue often remains in the tip due to differences in surface energies between the plastic pipette tip and the sample. The residue causes imprecision in pipetting and loss of valuable samples or reagents.

We use an advanced technology to manufacture Low Retention Tips that have an extremely even and durable hydrophobic surface. Unlike some other hydrophobic tips on the market, our low retention tips do not contain any leachables that might risk your sample.

Low Retention Tips maximize the sample recovery, when handling detergent containing or other liquids with low surface tension. Better reproducibility in pipetting is especially beneficial in sensitive molecular biology applications, where reagents often contain detergents, for example in:

- PCR, real-time PCR
- Cloning, sequencing and other DNA & RNA techniques
- SDS-PAGE and other protein analysis methods
- Protein purification techniques



Packaging options for Low Retention tips

Available Packaging Options

- Single Tray Rack
- Refill Tower

Features and Benefits

- Extremely hydrophobic tips surface
- Maximum sample recovery for fluids with low surface tension
- Durable, high chemical resistance, no leachables
- Covers tip volumes from 10 µl to 1,200 µl
- Filter (SafetySpace) and non-filter (Optifit) tip options are available
- DNase, RNase and endotoxin-free packaging options available
- e-beam pre-sterilized packaging options available
- Full traceability
- Colour-coded trays indicate the matching colour-coded Sartorius pipette
- Non-filter tips are fully autoclavable at 121°C, at 1 bar, for 20 minutes





■ Packaging Options



Single Tray Racks

□ Racked Tips

Single Tray Rack

- 96 tips in convenient and reusable tray racks (sales unit contains 10 tray racks, total 960 tips)
- Certified free of DNase, RNase and endotoxins
- e-beam pre-sterilized option available
- Lot-specific purity certificates can be downloaded from www.sartorius.com
- Informative rack labelling: volume, product number, lot number improves tip identification and traceability
- Air-tight plastic wrapping around the rack secures purity during transport and storage (wrapping is regular waste)

- Tip trays are colour-coded to indicate the matching, colour-coded Sartorius pipette
- Covers a large range of tip volumes from 10 µl to 10 ml
- Fully autoclavable at 121°C, at 1 bar, for 20 minutes
- Tray racks can be easily reloaded with Refill tips
- Racks, trays and tips are 100% recyclable polypropylene (PP)



Refill Towers

□ Refill Tips

Refill Tower

- Space-saving with 10 × 96 tips in one tower
- Tip trays are compatible with Single Tray racks for convenient use
- Trays are colour-coded to indicate the matching, colour-coded Sartorius pipette

- Covers the most widely used tip sizes: 10 µl, 200 µl and 350 µl
- Trays and tips are fully autoclavable at 121°C, at 1 bar, for 20 minutes
- 100% recyclable cardboard packaging, and plastic (PP) trays and tips



Single refill packs

Single Refill Packs

- Individually packed air-tight tip trays for maximum purity with less packaging material compared to racked tips
- 10, 15 or 20 trays of 96 tip trays, depending on tip volume
- Certified free of DNase, RNase and endotoxins
- e-beam pre-sterilized option available
- Lot-specific purity certificates can be downloaded from www.sartorius.com
- Tip trays are compatible with Single Tray racks for convenient use
- Informative rack labelling: volume, product number, lot number improves tip identification and traceability

- Tip trays are colour-coded to indicate the matching, colour-coded Sartorius pipette
- Covers a large range of tip volumes from 10 µl to 1,200 µl
- Trays and tips are fully autoclavable at 121°C, at 1 bar, for 20 minutes
- 100% recyclable trays and tips (PP). Container lid is regular waste.





FlexiBulk®

□ Bulk Tips

FlexiBulk®

- Tips made to the Sartorius quality standard in economical packaging
- Packed orderly in compact re-sealable plastic packages (480 or 960 pcs depending on tip volume)
- Covers a large range of tip volumes from 200 µl to 1,200 µl

- Lot-specific purity certificates can be downloaded from www.sartorius.com
- Tips are fully autoclavable at 121°C, at 1 bar, for 20 minutes
- 100% recyclable tips (PP) and package (PET)



Bulk in a bag

Bulk in a Bag

- Tips made to the Sartorius quality standard in economical packaging
- Packed in re-sealable bags in cardboard boxes (100, 250 or 1,000 pcs depending on tip volume)
- Covers tip volumes 10 µl, 5 ml and 10 ml
- Tips are fully autoclavable at 121°C, at 1 bar, for 20 minutes
- 100% recyclable tips and package

Ordering Information






Optifit Tips

Volume Range	Length	Packaging	Low Retention	Purity Level		Tips/Unit	Order Code	
				Free of RNase, DNase, endotoxins	Pre-sterilised			
● 0.1 – 10 µl	31.5 mm	Single Tray	●	•	•	10×96	790010	
		Single Tray		•		•	10×96	LH-L790010
		Single Tray		•		•	10×96	790011
		Refill Tower		•		•	10×96	790012
		Refill Tower		•		•	10×96	LH-L790012
		Refill Pack		•		•	20×96	790013
		Bulk in Bag		•		•	1,000	790014
● 0.1 – 10 µl	Extended 46 mm	Single Tray	•	•	•	10×96	783210	
		Single Tray		•		•	10×96	783211
● 0.5 – 200 µl	51 mm	Single Tray	•	•	•	10×96	790200	
		Single Tray		•		•	10×96	LH-L790200
		Single Tray		•		•	10×96	790201
		Refill Tower		•		•	10×96	790202
		Refill Tower		•		•	10×96	LH-L790202
		Refill Pack		•		•	15×96	790203
		FlexiBulk®		•		•	960	LH-B790204
● 5 – 350 µl	54 mm	Single Tray	•	•	•	10×96	790350	
		Single Tray		•		•	10×96	LH-L790350
		Single Tray		•		•	10×96	790351
		Refill Tower		•		•	10×96	790352
		Refill Tower		•		•	10×96	LH-L790352
		Refill Pack		•		•	15×96	790353
		FlexiBulk®		•		•	960	LH-B790354
● 10 – 1,000 µl	71.5 mm	Single Tray	•	•	•	10×96	791 000	
		Single Tray		•		•	10×96	LH-L791 000
		Single Tray		•		•	10×96	791001
		Refill Pack		•		•	10×96	791002
		Refill Pack		•		•	10×96	791003
		Refill Pack		•		•	10×96	791003
		FlexiBulk®		•		•	480	LH-B791004

For your guidance the tips are shown here in the actual size.

Empty Tip Boxes for Refill System (Tips and Trays are Not Included)

Item	Tip Type (Non-filter Tips)	Racks/Unit	Order Code
Empty Tip Box for Refill System	10, 200, 350 µl	10	790910
Empty Tip Box for Refill System	1,000, 1,200 µl	10	790920

Volume Range	Length	Packaging	Low Retention	Purity Level		Tips/Unit	Order Code	
				Free of RNase, DNase, endotoxins	Pre-sterilised			
● 10 – 1,000 µl	Wide bore tip	68.5 mm	Single Tray Single Tray FlexiBulk®		•		10 × 96	791020
					•	•	10 × 96	791021
								
● 50 – 1,200 µl		71.5 mm	Single Tray Single Tray Single Tray Refill Pack Refill Pack FlexiBulk®	•	•		10 × 96	791 200
					•		10 × 96	LH-L791 200
					•	•	10 × 96	791201
					•		10 × 96	791202
					•	•	10 × 96	791203
								
● 50 – 1,200 µl	Extended	90 mm	Single Tray Single Tray Single Tray Refill Pack Refill Pack	•	•		10 × 96	791210
					•		10 × 96	LH-L791210
					•	•	10 × 96	791211
					•		10 × 96	791212
					•	•	10 × 96	791213
								
● 100 – 5,000 µl		150 mm	Single Tray Single Tray Bulk in Bag Bulk in Bag		•		50	LH-780304
					•	•	50	LH-780305
							100	780300
							1,000	780308
								
● 100 – 10,000 µl		155 mm	Single Tray Bulk in Bag				35	LH-780314
							250	LH-780316
								














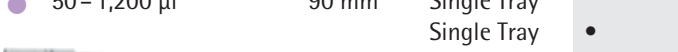
Note: The ordering information for 10,000 µl tip for Midi Plus can be found on page 69.

Note!

Tip compatibility with pipettes are shown in the Tip Selection Guides with the order information for Electronic Pipettes, and Mechanical Pipettes.

Ordering Information

SafetySpace Filter Tips

Volume Range	Length	Packaging	Low Retention	Purity Level		Tips/Unit	Order Code
				Free of RNase, DNase, endotoxins	Pre-sterilised		
 0.1 – 10 µl 	31.5 mm	Single Tray Single Tray	•	• •	• •	10×96 10×96	790011F LH-LF790011
 0.5 – 20 µl 	51 mm	Single Tray Single Tray	•	• •	• •	10×96 10×96	790021F LH-LF790021
 2 – 120 µl 	51 mm	Single Tray Single Tray	•	• •	• •	10×96 10×96	790101F LH-LF790101
 5 – 200 µl 	52.5 mm	Single Tray Single Tray	•	• •	• •	10×96 10×96	790201F LH-LF790201
 5 – 300 µl 	52.5 mm	Single Tray Single Tray	•	• •	• •	10×96 10×96	790301F LH-LF790301
 50 – 1,000 µl 	78 mm	Single Tray Single Tray	•	• •	• •	10×96 10×96	791001F LH-LF791001
 50 – 1,200 µl 	90 mm	Single Tray Single Tray	•	• •	• •	10×96 10×96	791211F LH-LF791211

For your guidance the tips are shown here in the actual size.

Filter tips are not recommended to be used simultaneously with Safe-Cone Filters

Filter Tips with Regular Air Gap

Volume Range	Length	Packaging	Low Retention	Purity Level		Tips/Unit	Order Code
				Free of RNase, DNase, endotoxins	Pre-sterilised		
● 0.1 – 10 µl Extended	46 mm	Single Tray		•	•	10×96	783201

**Note!**

Tip compatibility with pipettes are shown in the Tip Selection Guides with the order information for Electronic Pipettes, and Mechanical Pipettes.

