

## ■ Pipette Tips

### The Perfect Match for Your Pipette



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

In liquid handling, accurate pipetting results are not dependent on the pipette or the tip alone, but a combination of these and the comfort of the user. Our non-filter Optifit Tips and SafetySpace filter tips are designed and manufactured as a perfect fit for our pipettes, enabling maximal accuracy, precision and ergonomics. Moreover, well-matching tips protect the pipette tip cone from wear and tear.

The unique Optiload mechanism of our pipettes allows tip attachment and loading with reduced force, but with complete sealing, which is vital to get accurate results.

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



The factory in Kajaani, Finland.

### □ 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 each Single Tray and Refill Pack tip lot for RNase, DNase and endotoxins. Lot-specific purity certificates can be downloaded from [www.sartorius.com](http://www.sartorius.com) (select from the navigation bars: -> Liquid Handling -> Tip Purity Certificates).





**Definitions:**

<b>DNase</b>	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 $6,25 \cdot 10^{-5}$ U/ $\mu$ l when DNase I is used as a standard.
<b>RNase</b>	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 $3,125 \cdot 10^{-9}$ U/ $\mu$ l, when RNase A is used as a standard.
<b>Endotoxins</b>	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 0.03 IU/ml (EU/ml).
<b>Sterilization</b>	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<sup>®</sup> NxT, Picus<sup>®</sup>, eLINE<sup>®</sup>, mLINE<sup>®</sup> and Proline<sup>®</sup> 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
	Standard	Free of DNase, RNase & 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)					✓

## ■ Packaging Options

### □ Racked Tips



Single tray racks



#### 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](http://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  $\mu$ l to 5 ml
  - Fully autoclavable at 121°C for 20 minutes
  - Tray racks can be easily reloaded with Refill tips
  - Racks, trays and tips are 100% recyclable polypropylene (PP)

### □ Refill Tips



Refill towers

#### Refill Tower

- Space-saving with 10x96 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  $\mu$ l, 200  $\mu$ l and 350  $\mu$ l
  - Trays and tips are fully autoclavable at 121°C for 20 minutes
  - 100% recyclable cardboard packaging, and plastic (PP) trays and tips



Single refill packs



### Single Refill Packs

- 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](http://www.sartorius.com)
- Individually packed air-tight tip trays for maximum purity with less packaging material compared to racked tips
- 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  $\mu$ l to 1200  $\mu$ l
- Trays and tips are fully autoclavable at 121°C for 20 minutes
- 100% recyclable trays and tips (PP). Container lid is regular waste.

### Bulk Tips



FlexiBulk



### FlexiBulk

- Tips made to the Sartorius quality standard in economical packaging
- Packed orderly in compact re-sealable plastic packages (480 or 960pcs depending on tip volume)
- Covers a large range of tip volumes from 200  $\mu$ l to 1200  $\mu$ l
- Certified free of DNase, RNase and endotoxins
- Lot-specific purity certificates can be downloaded from [www.sartorius.com](http://www.sartorius.com)
- Tips are fully autoclavable at 121°C for 20 minutes
- 100% recyclable tips (PP) and package (PET)



Bulk in a box

### Bulk in a Box

- Tips made to the Sartorius quality standard in economical packaging
- Packed in re-sealable bags in cardboard boxes (100, 250 or 1000 pcs depending on tip volume)
- Covers tip volumes 10  $\mu$ l, 5 ml and 10 ml
- Tips are fully autoclavable at 121°C for 20 minutes
- 100% recyclable tips and package

## ■ Optifit Tips

### Standard Tips for Various Needs



Sartorius Optifit tips are an excellent choice for various laboratories and pipetting tasks with their wide 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 tips are 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 box

See details on packaging options on pages 56 and 57.

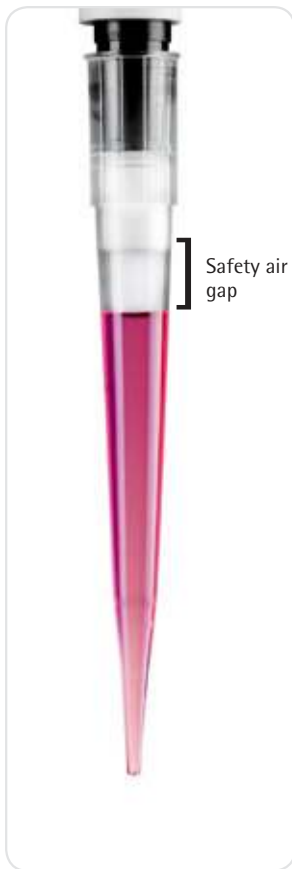
### □ Features and Benefits

- 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<sup>®</sup> NxT, Picus<sup>®</sup>, eLINE<sup>®</sup>, mLINE<sup>®</sup>, Proline<sup>®</sup> Plus, and Proline<sup>®</sup> 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 for 20 minutes



## ■ 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
- Large empty volume between the sample and filter prevents liquid from contacting the filter
- Covers tip volumes from 10 µl to 1200 µl
- 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  $\mu$ l to 1200  $\mu$ l
- 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 for 20 minutes





## 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 x 96	790010		
		Single Tray				●	●	10 x 96	LH-L790010
		Single Tray				●	●	10 x 96	790011
		Refill Tower				●	●	10 x 96	790012
		Refill Tower				●	●	10 x 96	LH-L790012
		Refill Pack				●	●	20 x 96	790013
		Bulk in Box				●	●	1000	790014
● 0,1-10 µl	Extended 46 mm	Single Tray	●	●	●	10 x 96	783210		
		Single Tray				●	●	10 x 96	783211
● 0,5-200 µl	51 mm	Single Tray	●	●	●	10 x 96	790200		
		Single Tray				●	●	10 x 96	LH-L790200
		Single Tray				●	●	10 x 96	790201
		Refill Tower				●	●	10 x 96	790202
		Refill Tower				●	●	10 x 96	LH-L790202
		Refill Pack				●	●	15 x 96	790203
		FlexiBulk				●	●	960	LH-B790204
● 5-350 µl	54 mm	Single Tray	●	●	●	10 x 96	790350		
		Single Tray				●	●	10 x 96	LH-L790350
		Single Tray				●	●	10 x 96	790351
		Refill Tower				●	●	10 x 96	790352
		Refill Tower				●	●	10 x 96	LH-L790352
		Refill Pack				●	●	15 x 96	790353
		FlexiBulk				●	●	960	LH-B790354
● 10-1000 µl	71,5 mm	Single Tray	●	●	●	10 x 96	791000		
		Single Tray				●	●	10 x 96	LH-L791000
		Single Tray				●	●	10 x 96	791001
		Refill Pack				●	●	10 x 96	791002
		Refill Pack				●	●	10 x 96	791003
		Refill Pack				●	●	10 x 96	791003
		FlexiBulk				●	●	480	LH-B791004

For your guidance the tips are illustrated 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	1000, 1200 µl	10	790920