

## High Quality Pipette Tips for Consistent and Reliable Results



# Excellence in Quality and Convenience

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.

## Pure Quality

- Tips are manufactured using a fully automated process in ISO class 8 cleanroom conditions to ensure purity
- Strict standards, followed from R&D to production and delivery: ISO 9001, ISO 140001, and ISO 13485
- Every batch of purity certified tips is tested and verified as DNase, RNase, and endotoxin free
- Using Sartorius tips with Sartorius pipettes guarantees perfect tip sealing, ensuring reliable results with high precision and accuracy
- Tip-purity certificates can be easily downloaded from our website, [www.sartorius.com](http://www.sartorius.com)
- Tips are manufactured using virgin polypropylene without any additives





## Convenient

- Smart color codes make it quick and easy to find the right tip for your pipette
- Versatile package options are available for various needs
- Sartorius pipettes feature Optiload® and Optiject® functions for smooth tip attachment and ejection
- Pre-sterilized tips are available for demanding applications
- Compatible with most pipette brands

## Fully Compliant

- Every tip package is clearly marked with the volume, colour code, purity grade, expiry date, product code, and lot number
- The lot number enables full traceability right from production
- CE/IVD compliant when used with Sartorius pipettes

# High Quality Tips for Various Pipetting Applications

## Optifit Tips – Standard Multipurpose Tips for Various Applications

Optifit Tips are high-quality standard tips and an excellent solution for various applications. Non-filter Optifit Tips are available in various purity levels and package options, and are suitable for use with other manufacturers' pipettes. Optifit Tips are also fully autoclavable at 121°C for 20 minutes with 1 bar/100 kPa pressure.

### Optifit Tip Range

- Extended and wide-bore tips for specific applications
- Pre-sterilized and non-sterile
- Purity certified Single Tray racks and Refill Packs
- Single Tray racks, Refill Packs, Refill Towers and Bulk packages
- Volume range from 10 µl to 10 ml

## SafetySpace Filter Tips – Filter Tips for Contamination Protection

SafetySpace Filter Tips help prevent cross-contamination of your sample and pipette, and reduce the need for pipette maintenance. Sartorius SafetySpace Filter Tips have more space between the sample and the filter than conventional filter tips, which prevents the risk of the sample coming into contact with the filter. The filter is made of polyethylene and does not include any self-sealing additives.

SafetySpace Filter Tips provide protection from contamination for pipettes and samples in the following applications:

- molecular biology
- microbiology
- cell culture
- radioactive work

### SafetySpace Filter Tip Range

- Pre-sterilized
- Purity certified
- Single Tray racks
- Volume range from 10 to 1200 µl





## Low Retention Tips - Hydrophobic Tips for Maximum Sample Recovery

Low Retention Tips maximize sample recovery and the accuracy of results when pipetting detergent containing solutions or other liquids with low surface tension. Using patented Sartorius technology, we can manufacture tips with fully hydrophobic and highly liquid-repellent surfaces. Low Retention Tips offer excellent chemical resistance without any leachables.

Low Retention Tips are beneficial in sensitive molecular biology applications, where reagents often contain viscous substances and detergents. These applications can include:

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

### Low Retention Tip Range

- Filter (SafetySpace) and non-filter (Optifit) tips
- Pre-sterilized and non-sterile
- Single Tray racks and Refill Towers
- Volume range from 10 to 1200  $\mu$ l



The four Low Retention Tips on the right retain the minimum amount of residual liquid.

## Unique SafetySpace Feature

SafetySpace Filter Tips have additional space between the sample and filter. Any liquid types and pipetting techniques can be applied without the risk of the liquid permeating the filter.

The extra space is particularly beneficial in the following applications:

- pipetting foaming liquids such as buffers and proteins
- when using electronic pipettes with multiple dispensing functions
- reverse pipetting



SafetySpace - the additional space between the sample and filter.

# A Convenient Range of Package Options

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

Smart color codes make it quick and easy to find exactly the right tip for your pipette. The trays, racks, and non-filtered tips are fully autoclavable at 121°C, 20 minutes, 1 bar/100 kPa. All tips, trays, and racks are made of 100% pure polypropylene and are recyclable as energy waste.

## Single Tray Racks

- 96 tips in convenient and reusable tray racks
- Each batch is certified free of DNase, RNase, and endotoxins
- Informative rack labelling enables easy tip identification and traceability
- Hermetically sealed plastic wrapping ensures purity
- Empty racks can be easily reloaded with tips from Refill Towers and Packs



## Refill Packs

The fast and easy way to refill empty Single Tray racks.

## Refill Tower

- Reuse and reload empty racks easily
- Save space: 10x96 tips in each tower
- Available in the most widely used tip sizes: 10 µl, 200 µl, and 350 µl
- 100% recyclable cardboard package



## Refill Packs

- Reuse and reload empty racks easily
- Each batch is certified free of DNase, RNase, and endotoxins
- Individually packed hermetically sealed tip trays for maximum purity
- Pre-sterilized option available



## Bulk Packs

Bulk packages of high-quality tips

### FlexiBulk®

- Fast and convenient reloading of racks due to orderly packed tips.
- Compact and airtight resealable plastic package



### Bulk Box









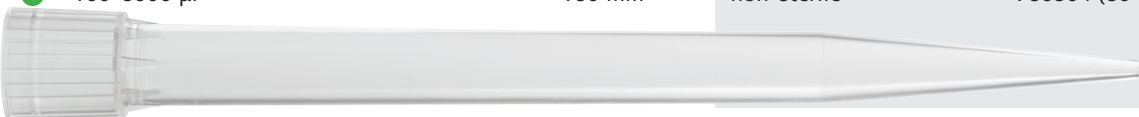

- Economical resealable bag of tips in cardboard packaging
- Available in 10 µl, 5 ml, and 10 ml



# Ordering Information



## Optifit Tips and Optifit Low Retention Tips

Package	Single Tray (10x96 tips)			
Low Retention				Low Retention
Purity			DNase, RNase, endotoxin free	DNase, RNase, endotoxin free
● 0,1-10 µl,	31,5 mm	non-sterile	790010	LH-L790010
		pre-sterilized	790011	
● 0,1-10 µl Extended	46 mm	non-sterile	783210	
		pre-sterilized	783211	
● 0,5-200 µl	51 mm	non-sterile	790200	LH-L790200
		pre-sterilized	790201	
● 5-350 µl	54 mm	non-sterile	790350	LH-L790350
		pre-sterilized	790351	
● 10-1000 µl	71,5 mm	non-sterile	791000	LH-L791000
		pre-sterilized	791001	
● 10-1000 µl Wide bore	68,5 mm	non-sterile	791020	
		pre-sterilized	791021	
● 50-1200 µl	71,5 mm	non-sterile	791200	LH-L791200
		pre-sterilized	791201	
● 50-1200 µl Extended	90 mm	non-sterile	791210	LH-L791210
		pre-sterilized	791211	
● 100-5000 µl	150 mm	non-sterile	780304 (50 tips)	
		pre-sterilized	780305 (50 tips)	
● 1-10 ml	155 mm	non-sterile		
				





Refill Pack



Refill Tower (10x96 tips)



FlexiBulk®



Standard Bulk

Low Retention

DNase, RNase,  
endotoxin free

	790012	LH-L790012		790014 (1000 tips)
790013 (20x96 tips)				
	790202	LH-L790202	LH-B790204 (960 tips)	
790203 (15x96 tips)				
790353 (15x96 tips)	790352	LH-L790352	LH-B790354 (960 tips)	
791002 (10x96 tips)			LH-B791004 (480 tips)	
791003 (10x96 tips)				
			LH-B791204 (480 tips)	
791202 (10x96 tips)			LH-B791204 (480 tips)	
791203 (10x96 tips)				
791212 (10x96 tips)			-	
791213 (10x96 tips)				


780300 (100 tips)  
780308 (1000 tips)

LH-780316 (250 tips)

# Ordering Information



## SafetySpace Filter Tips and SafetySpace Low Retention Tips

Package	Single Tray (10x96 tips)			
Low Retention	Low Retention			
Purity	DNase, RNase, endotoxin free			
 0,1-10 µl 	31,5 mm	pre-sterilized	790011F	LH-LF790011
 0,5-20 µl 	51 mm	pre-sterilized	790021F	LH-LF790021
 0,5-120 µl 	51 mm	pre-sterilized	790101F	LH-LF790101
 5-200 µl 	52,5 mm	pre-sterilized	790201F	LH-LF790201
 5-300 µl 	52,5 mm	pre-sterilized	790301F	LH-LF790301
 50-1000 µl 	78 mm	pre-sterilized	791001F	LH-LF791001
 50-1200 µl 	90 mm	pre-sterilized	791211F	LH-LF791211
 0,1-10 µl Extended, with standard air gap 	46 mm	pre-sterilized	783201	



# Protect Your Pipette and Sample with Safe-Cone Filters

Safe-Cone Filters act as a final barrier to prevent any fluids and liquid vapors from coming into contact with the internal components of the pipette. These unique and replaceable filters are made of polyethylene (PE). They:

- protect the pipette and sample from contamination
- prolong the pipette's lifetime
- reduce maintenance intervals

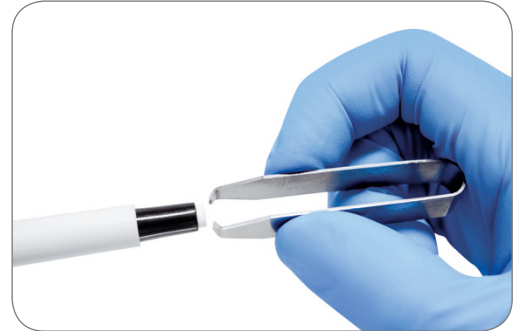
Safe-Cone Filters cannot be used together with filter tips.

## Plus Filter

For more demanding applications such as radioactive work, cell culture, bacterial and virological work, and molecular biology.

## Standard Filter

For general applications. These filters can be used for the same applications as the Plus filter, but need to be changed more frequently.



Removing the Safe-Cone Filter

## Safe-Cone Filters

Order Code	Item	Qty/Unit
721008	Standard Ø 2,51 mm PE	50
721007	Standard Ø 3,15 mm PE	50
721006	Standard Ø 5,33 mm PE	50
721005	Standard Ø 6,73 mm PE	50
721014	Standard Ø 1,83 mm PE	50
721018	Plus Ø 2,51 mm PE	50
721017	Plus Ø 3,15 mm PE	50
721016	Plus Ø 5,33 mm PE	50
721015	Plus Ø 6,73 mm PE	50

PE=polyethylene



# Sartorius Design and R&D – The Driving Force Behind Our High-Quality Products

Customer needs are always the starting point when developing and manufacturing Sartorius pipettes and pipette tips. As our customers have their own unique preferences and because pipetting needs vary between applications and users, we provide our customers with liquid handling equipment that matches their applications precisely and fulfills even the strictest quality standards. Ergonomics, performance, and reliability are the cornerstones of our design and product development processes. Strong technical innovation and the latest design and manufacturing technologies ensure the high quality and performance of our products.

Sartorius has a rich and extensive history in liquid handling. Our experience and knowledge of pipette and pipette tip design has resulted in several award-winning innovations and products. The Sartorius liquid handling competence center masters the entire value chain, from customer needs and product design to manufacturing. Our in-house R&D capabilities with experienced liquid handling experts enable continuous product and process development and the creation of new, innovative solutions. Designing Sartorius tips goes beyond mere tip geometry: our R&D team also designs the tip molds in order to ensure the highest possible quality and consistency.

Sartorius has modern production facilities for pipettes and tips. Our highly automated tip manufacturing 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 complies with the ISO 14644-1 standard, in order to fulfill ISO Class 8 cleanroom conditions for guaranteed tip purity.



reddot award 2016  
winner

# Ensure the Highest Pipetting Performance and Precision

Sartorius tips are designed and manufactured to perfectly fit with Sartorius pipettes enabling maximum tip sealing and accuracy.

## Pipette Tip Selection Guide

Electronic Pipettes		Picus® and Picus® NxT						eLINE®															
		1-ch						8 & 12-ch				1-ch						8 & 12-ch					
	Colour Code	µl	0,2-10	5-120	10-300	50-1000	100-5000	500-10000	0,2-10	5-120	10-300	50-1200	0,1-5	0,2-10	5-120	10-300	50-1000	100-5000	0,2-10	5-120	10-300	50-1200	
Optifit Tips	●	0,1-10	●						●				●	●					●				
	●	0,1-10 Ext.	●						●				●	●					●				
	●	0,5-200		●						●					●					●			
	●	5-350		●	●					●	●				●	●				●	●		
	●	10-1000				●											●						
	●	10-1000 WB				●											●						
	●	50-1200											●										●
	●	50-1200 Ext.											●										●
	●	100-5000					●											●					
	●	1-10 ml						●															
	SafetySpace Filter Tips	●	0,1-10	●						●				●	●					●			
●		0,1-10 Ext.*	●						●				●	●					●				
●		0,5-20																					
●		2-120		●						●					●					●			
●		5-200		●																			
●		5-300			●						●				●						●		
●		50-1000				●											●						
●		50-1200											●										●

Note: Low Retention Tips are available in volumes up to 1200 µl.

\* Filter tip with standard air gap. In tests, 10 µl extended tip's systematic error and random error results, deviated slightly from those of the 10 µl tip.

# Ensure the Highest Pipetting Performance and Precision

Sartorius tips are designed and manufactured to perfectly fit with Sartorius pipettes enabling maximum tip sealing and accuracy.

## Pipette Tip Selection Guide

Mechanical Pipettes		Tacta® and mLINE®							Proline® Plus																	
		1-ch							8 & 12-ch			1-ch				8 & 12-ch										
Colour Code	µl	0,1-3	0,5-10	2-20	10-100	20-200	100-1000	500-5000	1-10 ml	0,5-10	5-100	30-300	0,1-3	0,5-10	2-20	5-50	10-100	20-200	100-1000	500-5000	1-10 ml	0,5-10	10-100	30-300		
Optifit Tips	● 0,1-10	●	●							●			●	●									●			
	● 0,1-10 Ext.	●	●							●			●	●									●			
	● 0,5-200			●	●	●					●				●	●	●	●						●		
	● 5-350				●	●					●	●					●	●						●	●	
	● 10-1000						●									●			●							
	● 10-1000 WB						●									●			●							
	● 50-1200																									
	● 50-1200 Ext.																									
	● 100-5000								●												●					
	● 1-10 ml									●												●				
	SafetySpace Filter Tips	● 0,1-10	●	●							●			●	●									●		
● 0,1-10 Ext.*		●	●							●			●	●									●			
● 0,5-20				●											●											
● 2-120					●						●					●	●							●		
● 5-200						●												●								
● 5-300						●						●						●							●	
● 50-1000							●												●							
● 50-1200																										

Note: Low Retention Tips are available in volumes up to 1200 µl.

\* Filter tip with standard air gap. In tests, 10 µl extended tip's systematic error and random error results, deviated slightly from those of the 10 µl tip.

Mechanical Pipettes		Proline®										
		1-ch								8 & 12-ch		
Colour Code	µl	0,1-2,5	0,5-10	2-20	5-50	10-100	20-200	100-1000	1000-5000	0,5-10	5-50	50-300
Optifit Tips	● 0,1-10	●	●							●		
	● 0,1-10 Ext.	●	●							●		
	● 0,5-200		●	●	●	●	●				●	
	● 5-350				●	●	●				●	●
	● 10-1000							●				
	● 10-1000 WB							●				
	● 50-1200											
	● 50-1200 Ext.											
	● 100-5000								●			
	● 1-10 ml											
SafetySpace Filter Tips	● 0,1-10	●	●							●		
	● 0,1-10 Ext.*	●	●							●		
	● 0,5-20		●	●								
	● 2-120				●	●	●				●	
	● 5-200					●	●				●	
	● 5-300					●	●					●
	● 50-1000							●				
	● 50-1200											



## Ergonomic and Reliable Sartorius Pipettes

Sartorius pipettes provide the perfect solution for your liquid handling needs. Sartorius pipettes and tips fit seamlessly together and provide you with maximum pipetting performance and exact accuracy and precision. Sartorius offers the leading range of superior electronic and mechanical pipettes. For more information, visit [www.sartorius.com](http://www.sartorius.com).

Sartorius also provides pipette maintenance, repair, and calibration services globally. Contact your nearest Sartorius service center or office for more information.

# Sartorius ABC of Tip Purity

<b>Additive-free</b>	Manufacturing tips from pure virgin polypropylene minimizes the risk of substances from the tip material leaching into samples. This is why Sartorius tips are free of colours, clarifying agents, and plasticizers.
<b>DNase-free</b>	DNases are powerful enzymes (nucleases) that degrade DNA by hydrolyzing it into short fragments. Even trace amounts of DNases can lead to low or no yields in DNA techniques such as PCR. DNase contamination sources are human contact and bacteria. DNase-free tips are tested for DNase activity with fluorometric assay by detecting degradation of labeled DNase substrate. DNase-free pipette tips show no evidence of DNase activity in the assay with a detection level of $<6,25 \cdot 10^{-5}$ U/ $\mu$ l when DNase I was used as a standard.
<b>Endotoxin-free</b>	Endotoxins are lipopolysaccharides that are part of the outer membrane of Gram-negative bacteria. They cause fever in humans and impair the growth of cell cultures. Endotoxins are very durable and are present wherever bacteria are able to grow, i.e. air, water, soil, skin, raw materials, and in any non-sterile environment. When certified endotoxin free, the tips are tested according to FDA guidelines for medical devices. The Ph. Eur. 2.6.14, Method D. Validated test result for endotoxin-free tips is $< 0,005$ IU/ml (EU/ml).
<b>RNase-free</b>	RNases are enzymes that catalyze the degradation of RNA into short fragments. These very stable enzymes are difficult to remove and originate from human skin, hair, and saliva, as well as from bacteria. Tips are tested for RNase activity using fluorometric assay. RNase-free tips show no evidence of RNase activity with a detection level of $<3,125 \cdot 10^{-9}$ U/ $\mu$ l when RNase A was used as a standard.
<b>Sterilization</b>	The destruction of all microbial life, including bacterial endospores. Sterility can be accomplished using, for example, steam, heating, chemicals, or radiation. Sartorius pre-sterilized tips are sterilized with an electron beam (beta irradiation) in accordance with EN 552 and ISO 11137, and the process is validated by using 25 kGy as the minimum dose, with an SAL (sterility assurance level) of $10^{-6}$ .

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