Sartorius Pipetting and Dispensing Products

Simplifying Progress

SARTORIUS


ctronic pipette

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The Sartorius product portfolio, technical data and specifications are subject to change, due to continuous product development.

Please visit the website for an up-to-date overview of Sartorius products: www.sartorius.com

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Introduction

Three key factors – ergonomics, design and reliability – form the cornerstone of our product development. These and other factors have been combined to produce a perfectly balanced mechanical pipette, the Tacta®, the newest family member, following the Picus® Nxt, which is an excellent example of an electronic pipette that has all these aspects combined. Tacta® and Picus® are among the lightest pipettes on the market, reducing the risk of Work Related Upper Limb Disorder (WRULD). Their high reliability, and ease of use, make them valued instruments for professionals, who strive for high quality results.

Their functional and well-rounded design has been recognised with design awards. All Sartorius pipettes are designed and manufactured in Finland, where our R&D team is constantly seeking solutions to further improve liquid handling instruments to make lab work easier.

"Designing products that people work with on a daily basis is always challenging. Many users are interviewed and multiple aspects need to be taken into account, to combine excellent ergonomics and easy usability with today's technology and features. To solve this puzzle and come up with a great product is an exciting, but sometimes tough, journey. However, it is always rewarding in the end."

– Ville Hintikka, Chief Designer at Sartorius

Ergonomics
When designing a pipette, we always consider the shape and function of the human hand. As we understand the risks of repetitive pipetting, we emphasize ergonomic design in every product we make. Simply put, this means products that you can use in a comfortable posture with minimum muscle power. Our pipettes and dispensers are designed for both right- and left-handed users. Their operating buttons are located sufficiently close together, within ergonomic reach of the thumb.

Design
We provide products with a timeless and light, yet practical, design, suitable for laboratory settings and pleasing to the eye of the user. The Tacta® and the Picus®, won the Red Dot design award, in 2016 and 2012, respectively. The Picus® was distinguished with the Fennia Prize Honorary Mention in 2012. The Tacta® and the Picus®, won the German Design Award in 2017 and 2014, respectively.

GERMAN DESIGN AWARD WINNER 2017

German Design Award SPECIAL MENTION 2014

reddot award 2016 winner

fenniaprize 12 good design grows global HONORARY MENTION

Reliability
For us, reliability has many aspects, the most important being accuracy and precision of results and secured purity.

The core of a pipette lies in its **accuracy and precision.** For this reason, we have used the newest technologies together with in-house innovations, to achieve even more reliable pipetting results. Our electronic brake, piston control system and plate tracker for electronic pipettes are our latest innovations. They increase accuracy, precision and reliability of the device. Another important factor in achieving reliable results is the optimal tip fit, which we can guarantee by designing and producing the tips ourselves, so that they perfectly match our pipettes.

To reduce the risk of contaminating the internal components of our pipettes, we offer special Safe-Cone Filters to be used in our pipettes, as we understand that purity is a key concern in many laboratories. We strive to produce as many autoclavable products as possible, both pipettes and tips. Our pipette tips are manufactured in ISO Class 8 Cleanroom conditions. We test every certified tip lot for DNase, RNase and endotoxins at an external laboratory. We also offer an innovative Safetyspace™ Filter Tip range for safer and contamination-free pipetting.

Quality

Sartorius' products are developed and manufactured according to the requirements of the ISO 9001, ISO 13485 and ISO 14001 quality and environmental standards. Tip production also follows the ISO 14644-1 standard, in order to fulfil ISO class 8 cleanroom conditions.
We continuously develop our products and processes in order to meet, and often exceed, the demands of regulatory authorities, environmental bodies, and most importantly, our customers.

Sartorius' products are developed and manufactured according to the requirements of the ISO 9001, ISO 13485 and ISO 14001 quality and environmental standards. Tip production also abides by the ISO 14644-1 standard, in order to fulfil ISO Class 8 Cleanroom conditions. ISO 13485 is a specific standard for medical device quality systems, and supplementing the more generic ISO 9001 standard, which applies to many industries.

The Finnish national accreditation body operates independently as part of the Measurement Technology Centre (MIKES). Accredited pipette calibration laboratories in Finland, Germany, France, UK, China and Japan calibrate pipettes according to precise technical requirements. Our calibration laboratories in Finland, Germany, France, UK, China and Japan have been granted this status by their national accreditation bodies.

During production and service, pipette performance testing is carried out according to ISO 8655 specifications. Sartorius accredited pipette calibration follows the ISO 17025 standard. Our pipettes are supplied with individual quality control certificates.

Sartorius offers a 2-year warranty for all mechanical and electronic pipettes. The low lifetime cost and environmental friendliness of our products, which have long warranty periods, give a high return on investment.

We follow these manufacturing quality standards:
- ISO 9001
- ISO 13485
- ISO 14001
- ISO 17025
- ISO 8655

The ergonomic design label indicates products, which Sartorius has designed specifically to reduce the risk of work-related hand, arm and shoulder disorders, such as Work Related Upper Limb Disorder (WRULD).

The Optiload tip loading mechanism developed by Sartorius in Tacta®, Mline®, Proline® Plus, Picus® and Picus® Nxt pipettes allows tips to be loaded with constant force. This secures optimal tip sealing and minimum tip ejection force.

The Optilock®, volume locking system in Tacta® gives the choice of locking and unlocking the volume the traditional way, using both hands, or specially developed convenient method, using one hand.

The Optiject®, is a unique mechanism in Tacta®, where the soft, levered tip ejection feature lets the tip detach in a smooth, controlled way with little force. Additionally the feature allows for hands-free ejection of the Safe-Cone filter for a truly safe disposal of contaminated filters.

Every lot of Sartorius Single Tray, Refill Pack and FlexiBulk® tips are certified to be free of DNase, RNase, human DNA and endotoxins, for the protection of samples from contamination. These lot specific and other certificates can be downloaded from www.sartorius.com.
Sartorius' tip production is ISO 8 cleanroom classified, which ensures a contamination-free manufacturing environment, and products.

Most Sartorius pipetting and dispensing products are autoclavable. Please see details in the following product specific chapters.

How to Choose a Pipette

Electronic or Mechanical Pipette

Are you looking for a pipette for sterile work, or one you could easily calibrate yourself? Or do you seek a really light and ergonomic solution? Perhaps you need a pipette with a certain pipetting mode to speed up your work? By consulting the tables below, you can choose the instrument that best suits your needs.

Electronic or Mechanical Pipette

Features	Electronic Pipettes	Mechanical Pipettes
Highest Ergonomics	▪	
Fastest pipetting	▪	
User-independent results	▪	
Multiple pipetting modes	▪	
Fully autoclavable		▪[1]
Adjustment by user	▪	▪

[1] Excluding Proline®

Mechanical Pipettes

Features	Tacta®	Mline®	Proline® Plus	Proline®
Most Ergonomic	▪			
Ergonomic Finger Hook	▪	▪	▪	▪
Weight[1]	75 g	77 g	82 g	84 g
Length[1]	225 mm	240 mm	239 mm	224 mm
Volume range, single-channels	0.1 µL – 10 mL	0.1 µL – 10 mL	0.1 µL – 10 mL	0.1 µL – 5 mL
Volume range, multi-channels	0.5 – 300 µL	0.5 – 300 µL	0.5 – 300 µL	0.5 – 300 µL
Fixed-volume models			▪	▪
Pipetting force[1]	12 N	13 N	15 N	20 N
Optiject soft tip ejection	▪			
Light tip ejection		▪	▪	
Optiload spring-loaded tip cones	all models	all models	multi-channels only	
User adjustment	▪	▪	▪	▪
Optilock on | off volume lock	▪			
Volume locking	▪	▪	click stops	click stops
Big, and easy to read display	▪	▪	▪	
Safe-cone Filters (models > 10 µL)	▪	▪	▪	▪
Filter ejector	▪	▪		
Color coding on pipette	▪	▪	▪	
ID tags	▪	▪		
Fully autoclavable	▪	▪	▪	
Multipacks	▪	▪	▪	
Pipette holder with pipette	▪	▪	▪	
Warranty for 2 years	▪	▪	▪	▪

[1] 1,000 µL 1-channel models

Tacta® Mechanical Pipettes

Perfectly Balanced

Tacta's® Optilock feature helps to prevent accidental volume changes during pipetting.

Easy adjustment ensures accurate results with a variety of liquids. The handy adjustment key is included in the package.

Unique to Tacta®, is its Safe-Cone Filter ejector, which enables the removal of used filters without tweezers or human contact with contaminated filters.

Have you ever considered the overall user experience in pipetting?
We have.

Sartorius proudly presents Tacta®, the premium mechanical pipette with superb comfort and reliability. Tacta® makes pipetting effortless and safe, while producing accurate and reliable results time after time.

At Sartorius, we listened to our customers and combined their views with our extensive experience, and state-of-the-art R&D, to create the exceptionally balanced design of Tacta®. Tacta® is designed to feel great in your hand, and it is easy and comfortable to use. All materials used for Tacta® have been carefully selected, and each component is designed to meet the highest standards.

Superior Ergonomics

Tacta® rests lightly in your hand thanks to its ergonomically designed handle and finger hook. Tacta® is effortless to use and exceptionally comfortable to hold. Tacta® eases your workload and protects you from strain, even when you pipette for extended periods of your working day. The unique handle and finger hook design lets the pipette rest lightly in your hand, with no need to grip the handle tightly. Tacta® is effortless to use and exceptionally comfortable to hold. Tacta® eases your workload and protects you from strain, even when you pipette for extended periods of your working day.
The unique handle and finger hook design lets the pipette rest lightly in your hand, with no need to grip the handle tightly.

Low Pipetting, Tip Loading and Ejection Forces

The forces needed for a pipetting cycle, from tip attachment to pipetting and finally tip ejection, are exceptionally low with Tacta®, protecting you from Work Related Upper Limb Disorder (WRULD). The Optiload feature, with spring-loaded tip cones in both the single and multichannel models, secures tip loading with perfect sealing and minimal force. Consequently, Optiload also ensures light tip ejection to protect your hand. The light tip ejection is further enhanced by Sartorius Optiject, the soft, levered tip ejection feature that lets the tip detach in a smooth, controlled way with little force.

Large, Clear Display

The large, easy-to-read display helps you to see all four digits of the set volume from a distance without straining your eyes. The volume is easy to read even when the pipette is angled – eliminating the need to turn your head into an uncomfortable position.

Adjustment

Tacta® is very easy to adjust, for various types of liquids, using a simple adjustment key. The adjustment scale shows the degree of adjustment. By noting this value for a specific liquid, you can return to that setting any time. Easy calibration adjustment ensures accurate results with a variety of liquids.

Volume Adjustment

Use the Sartorius Optilock feature to prevent accidental volume changes during pipetting. Either hold down the volume lock button with one hand and adjust the volume with the other, then release to lock, or with just one hand, slide the volume lock up, adjust the volume and slide down to lock again. The choice is in your hands.

GERMAN DESIGN AWARD WINNER 2017

reddot award 2016
winner

Safe-Cone Filters
The exchangeable Safe-Cone Filters, used in pipette tip cones, act as barriers to reduce the risk of contaminating the internal components of the pipette. The unique Safe-Cone Filter ejector enables the removal of used filters without human contact with contaminated filters. Safe-Cone Filters are available for all Tacta® models greater than 10 µL and offer a cost-effective method to reduce contamination. Filters should be changed regularly, and always after over-aspiration.

Easy Cleaning
Tacta® is the quickest and easiest pipette, on the market, to clean, with only three parts to be disassembled for cleaning and no tools are needed for disassembly. Tacta® can also be steam-sterilized or autoclaved as-is, without disassembly. It has also high UV and chemical resistance.

Features and Benefits

Feel the Comfort
- Comfortable to hold due to the ergonomically designed handle
- Low pipetting and tip ejection forces that reduce the risk of Work Related Upper Limb Disorder (WRULD)
- Controlled and smooth tip ejection with the new Sartorius Optiject technology
- The unique Sartorius Optilock system provides flexibility for volume adjustment and locking

Achieve Reliable Results
- Reliable results, even over lengthy pipetting periods
- Calibration adjustment to provide accurate results for various liquid types
- 4-digit display for accurate and easy volume setting

Safe from Contamination
- Safe-Cone Filters provide cost-effective contamination prevention
- Easy to clean, with only three parts to disassemble
- Fully autoclavable

Ordering Information

Tacta® Order Code	Channels		Volume Range	Increment	Test Volume	Systematic Error[N] Limit ±		Random Error[N] Limit	
			(µL)	(µL)	(µL)	(%)	(µL)	(%)	(µL)
LH-729010	1		0.1 – 3	0.002	3 1.5 0.3	1.4 2.6 10.0	0.042 0.039 0.030	0.8 1.6 6.0	0.024 0.024 0.018
LH-729020	1		0.5 – 10	0.01	10 5 1	1.0 1.5 3.0	0.100 0.075 0.030	0.6 1.0 2.0	0.060 0.050 0.020
LH-729030	1		2 – 20	0.02	20 10 2	1.0 1.4 4.0	0.200 0.140 0.080	0.5 0.9 3.0	0.100 0.090 0.060
LH-729050	1		10 – 100	0.10	100 50 10	0.8 1.0 3.0	0.80 0.50 0.30	0.2 0.4 1.0	0.20 0.20 0.10
LH-729060	1		20 – 200	0.20	200 100 20	0.6 0.8 2.3	1.20 0.80 0.46	0.2 0.3 0.9	0.40 0.30 0.18
LH-729070	1		100 – 1,000	1.00	1,000 500 100	0.7 0.8 2.5	7.0 4.0 2.5	0.2 0.2 0.6	2.0 1.0 0.6
LH-729080	1		500 – 5,000	5.0	5,000 2,500 500	0.6 0.7 2.4	30 17.5 12	0.2 0.3 0.6	10 7.5 3
LH-729090	1		1,000 – 10,000	10.0	10,000 5,000 1,000	0.6 1.2 3.0	60 60 30	0.2 0.3 0.6	20 15 6
LH-729120 LH-729220	8 12		0.5 – 10	0.01	10 5 1	1.5 2.5 5.5	0.150 0.125 0.055	1.0 2.0 4.0	0.100 0.100 0.040
LH-729130 LH-729230	8 12		5 – 100	0.10	100 50 10	0.9 1.2 4.0	0.90 0.60 0.40	0.4 0.7 2.0	0.40 0.35 0.20
LH-729140 LH-729240	8 12		30 – 300	0.20	300 150 30	0.6 1.0 2.5	1.80 1.50 0.75	0.25 0.5 1.0	0.75 0.75 0.30

[N] Note: The listed systematic and random error values can be achieved only under strictly controlled conditions during type test per ISO 8655. The best compatibility is achieved when combining Sartorius pipettes and Sartorius tips. The systematic error and random error results, in tests, have been achieved using Sartorius Optifit tips at factory default speed settings. Due to the continuous product development by Sartorius, the systematic and random error values are subject to change without prior notice.

Tip Selection Guide

Pipette	Optifit Tip[LRT]		Safetyspace™ Tip[LRT]		Safe-Code Filters	
Color-Code	Color-Code	Volume	Color-Code	Volume	Standard	Plus
		0.1 – 10 µL		0.1 – 10 µL	–	–
		0.1 – 10 µL		0.1 – 10 µL	–	–
		0.5 – 200 µL		0.5 – 20 µL	721014	–
		0.5 – 200 µL		2 – 120 µL	721008	721018
		0.5 – 200 µL		5 – 200 µL	721007	721017
		10 – 1,000 µL		50 – 1,000 µL	721006	721016
		100 – 5,000 µL		100 – 5,000 µL	721005	721015
		500 – 10,000 µL	–	–	721005	721015
		0.1 – 10 µL		0.1 – 10 µL	–	–
		0.5 – 200 µL		2 – 120 µL	721008	721018
		5 – 350 µL		5 – 300 µL	721007	721017

[LRT] Note: Low Retention Tips are available in volumes up to 1,200 µL.

Tacta® Multipacks Smart and Complete Set of Pipettes and Accessories

Choose from a range of eight Multipacks that include a selection of Tacta® Mechanical Pipettes, a Linear Stand, matching Optifit Tips, and Pipette Holders.

Ordering Information

Multipack Order Code	Tacta® Pipettes	Optifit Tips	Accessories
Tacta® Pipette 3 – pack 10 **LH – 729670**	1-channel ▪ 0.5 – 10 µL ▪ 10 – 100 µL ▪ 100 – 1,000 µL	Tip Racks (96 tips) ▪ 0.2 – 10 µL ▪ 0.5 – 200 µL ▪ 10 – 1,000 µL	Linear Stand
Tacta® Pipette 3 – pack 20 **LH – 729671**	1-channel ▪ 2 – 20 µL ▪ 20 – 200 µL ▪ 100 – 1,000 µL	Tip Racks (96 tips) ▪ 0.5 – 200 µL ▪ 10 – 1,000 µL	Linear Stand
Tacta® Pipette 4 – pack 20 **LH – 729672**	1-channel ▪ 0.5 – 10 µL ▪ 2 – 20 µL ▪ 20 – 200 µL ▪ 100 – 1,000 µL	Tip Racks (96 tips) ▪ 0.1 – 10 µL ▪ 0.5 – 200 µL ▪ 10 – 1,000 µL	Linear Stand
Tacta® Pipette 4 – pack 100 **LH – 729673**	1-channel ▪ 0.5 – 10 µL ▪ 10 – 100 µL ▪ 20 – 200 µL ▪ 100 – 1,000 µL	Tip Racks (96 tips) ▪ 0.1 – 10 µL ▪ 0.5 – 200 µL ▪ 10 – 1,000 µL	Linear Stand
Tacta® Pipette 5 – pack 10 **LH – 729674**	1-channel ▪ 0.5 – 10 µL ▪ 10 – 100 µL ▪ 20 – 200 µL ▪ 100 – 1,000 µL ▪ 500 – 5,000 µL	Tip Racks (96 tips) ▪ 0.1 – 10 µL ▪ 0.5 – 200 µL ▪ 10 – 1,000 µL Tip Rack (50 tips) ▪ 100 – 5,000 µL	Linear Stand
Tacta® Pipette 5 – pack 20 **LH – 729675**	1-channel ▪ 2 – 20 µL ▪ 10 – 100 µL ▪ 20 – 200 µL ▪ 100 – 1,000 µL ▪ 500 – 5,000 µL	Tip Racks (96 tips) ▪ 0.5 – 200 µL ▪ 10 – 1,000 µL Tip Rack (50 tips) ▪ 100 – 5,000 µL	Linear Stand
Tacta® Pipette 3+1 – pack **LH – 729676**	1-channel ▪ 0.5 – 10 µL ▪ 20 – 200 µL ▪ 100 – 1,000 µL 8-channel ▪ 30 – 300 µL	Tip Racks (96 tips) ▪ 0.1 – 10 µL ▪ 0.5 – 200 µL ▪ 5 – 350 µL ▪ 10 – 1,000 µL	Linear Stand
Tacta® Pipette 3 – pack max **LH – 729677**	1-channel ▪ 100 – 1,000 µL ▪ 500 – 5,000 µL ▪ 1,000 – 10,000 µL	Tip Racks ▪ 10 – 1,000 µL (96 tips) ▪ 100 – 5,000 µL (50 tips) ▪ 500 – 10,000 µL (35 tips)	Linear Stand