

# Pipetting

RAININ

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Products for the Life Sciences





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# Rainin Pipetting

## For the Life Sciences



**Strict regulations, stringent quality requirements and time-to-market or time-to-publish pressures demand reliable and consistent pipetting results. Pipetting is a central element of life science research work and for reproducible results scientists need accurate pipettes coupled with high-quality contamination-free tips.**

With more than 40 years of pipetting experience and knowledge, Rainin has the industry's leading integrated pipetting solution. We manufacture pipettes and tips as a tested system, so you can trust your results. Long a leader in the industry, Rainin continually strives for the next level, introducing the renowned LTS Lite Touch System, 96-well pipetting, RFID-enabled pipettes and E4 XLS, the next-generation electronic pipette which offers full functionality with operating simplicity.

### **Rainin brings true value**

- Broadest selection of pipettes and tips
- Enhanced pipetting performance
- Reduced total cost of ownership and fewest out-of-tolerance pipettes
- Standards compliance

**Ergonomic Pipettes**

Quality and performance

Ergonomic manual, electronic, single channel and multichannel pipettes for all routine and high-throughput applications.



**Ergonomic Pipettes**

**BioClean™ Tips**

Completely Inert

Rainin inert BioClean tips do not cause experiment inconsistencies or failures. BioClean tips are the cleanest and most tested tips on the market.



**BioClean Tips**

**96-well Pipetting**

Liquidator™ 96

Liquidator 96 is a fast, easy and convenient 96- and 384-well benchtop pipetting instrument that anyone can use. No electricity or programming. Great results.



**High Throughput**

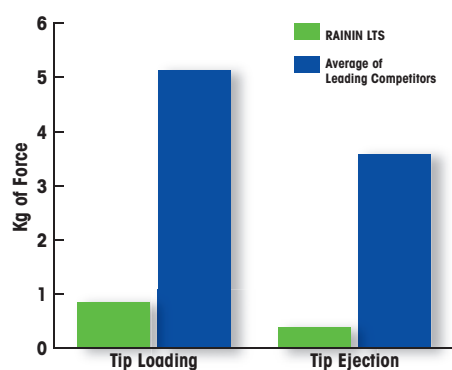
# Rainin's Unique LTS™ LiteTouch™ System

## Protect Your Hands

Rainin's LTS cylindrical shaft and tip design provides a reliable, consistent seal – without excessive force. LTS thin-wall tips have a small, well-defined seal area and a positive stop so the seal is made with low force – no need to jam or pound the shaft into the tip.

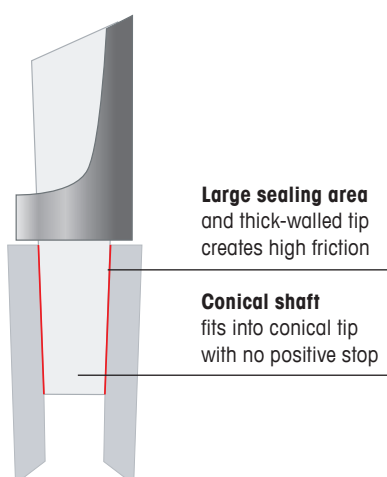
### LTS LiteTouch System reduces tip ejection forces dramatically

With traditional single channel tip/shaft designs, tip ejection forces can be as high as 10 kg, with an average of over 3.5 kg. With Rainin LTS, tip ejection force is only 0.6 kg.



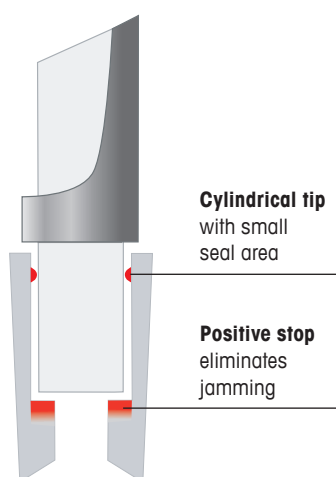
#### Traditional Pipetting

##### High Forces



#### LTS cylindrical tip and shaft

##### Low Forces





# Simplify Calibration Management

## Rainin's Unique RFID Solution for XLS Pipettes

### Scan your pipette

Pass the pipette over the RFID reader



LabX™ Direct Pipette Scan™ software uses the RFID reader to access the pipette's data. Once scanned, LabX displays the pipette's complete profile, including its serial number, manufacture and calibration due date, and any unique attributes assigned.

### Create custom profiles

Simple interface

Model Number: LS-3000LS  
Serial Number: ENGR00014

User Data

Data in pipette:	Data to write:
Next Calibration:	9/2/2010
Next Quick Check:	9/2/2010
User ID:	smith
Lab ID:	QC-2
Workflow:	Protein Therapeutic
Application 1:	SOP 7

Assign unique attributes (user, lab, inventory number, etc.) with LabX's 12 customizable data fields. Fast access to each pipette's calibration and service data reduces the possibility of performance and/or compliance-related rework.

### Export your data

Records keeping and compliance

RFID	Model Number	Serial Number	Factory Date	Last Service	Next Service	User
1	7544CE51	U-100HL5	01/20/2007	7/21/2010	7/21/2011	
2	7544CE51	U-100HL5	01/20/2007	7/21/2010	7/21/2011	
3	4329PE32	U-1000HL5	01/20/2007	7/21/2010	7/21/2011	
4	4329PE32	U-1000HL5	01/20/2007	7/21/2010	7/21/2011	
5	4329PE32	U-1000HL5	01/20/2007	7/21/2010	7/21/2011	
6	4329PE32	U-1000HL5	01/20/2007	7/21/2010	7/21/2011	
7	7544CE51	U-100HL5	01/20/2007	7/21/2010	7/21/2011	
8	7544CE51	U-100HL5	01/20/2007	7/21/2010	7/21/2011	
9	4329PE32	U-1000HL5	01/20/2007	7/21/2010	7/21/2011	
10	4329PE32	U-1000HL5	01/20/2007	7/21/2010	7/21/2011	
11	4329PE32	U-1000HL5	01/20/2007	7/21/2010	7/21/2011	

LabX data easily exports to Microsoft® Word® and Excel®, or as a text file for easy integration with other asset management applications.

- When was this pipette calibrated?
- Who does it belong to?
- What application is it being used for?

Transform your workflow with Rainin's XLS family of RFID-equipped pipettes. In seconds, everything you want to know about a pipette can be displayed on a PC screen. With seemingly endless possibilities, Rainin's RFID reader and LabX™ Direct Pipette Scan™ software are all you need to communicate with any XLS pipette.



# Pipet-Lite™ XLS

## Low Force – Extreme Accuracy and Precision

### XLS Single-channel

Lighter and smoother operation, new design



Pipet-Lite XLS further reduces plunger force and tip ejection forces. Eleven models cover volume ranges from 0.1 µl to 20 ml. LTS and traditional models. The RFID tag in every XLS model promotes easy calibration management.

### XLS Multichannel

The best manual multi-channel pipette. Ideal for 96-well plate work



Pipet-Lite XLS multichannels give absolutely reproducible results, perfect sealing and consistent sample pick-up on all channels thanks to LTS. With volumes settable from 1 to 1200 µl, and 8 or 12 channels, these multichannel pipettes exceed laboratory requirements.

### XLS Adjustable Spacer

First manual pipette that changes formats between plates and tubes



Pipet-Lite XLS Adjustable Spacers pipettes change format between 24-well plates or 96-well plates, with just a twist. Set nozzle spacing between 9 and 19 mm, to increase your productivity. Volume settings from 5 through 1200 µl. Liquid end rotates 360° for alignment with the mother or daughter plate.



## Pipet-Lite XLS Pipettes – Best in Class

Cat.-No.	Pipet-Lite, Single-channel	Part. No.
L-2XLS	0.1–2 µl	17011784
L-10XLS	0.5–10 µl	17011780
L-20XLS	2–20 µl	17011785
L-100XLS	10–100 µl	17011781
L-200XLS	20–200 µl	17011786
L-300XLS	20–30 µl	17011789
L-1000XLS	100–1000 µl	17011782
L-2000XLS	200–2000 µl	17011787
L-5000XLS	500–5000 µl	17011790
L-10MLXLS	1–10 ml	17011783
L-20MLXLS	2–20 ml	17011788
L-STARTXLS	Starter Kit*	17011791

\* Starter Kit: L-20XLS, L-200XLS, L-1000XLS and accessories

Cat.-No.	Pipet-Lite, Multichannel	Part. No.
<b>8-Channel</b>		
L8-10XLS	1–10 µl	17011828
L8-20XLS	2–20 µl	17011830
L8-50XLS	5–50 µl	17011833
L8-200XLS	20–200 µl	17011831
L8-300XLS	20–300 µl	17011832
L8-1200XLS	100–1200 µl	17011829
<b>12-Channel</b>		
L12-10XLS	1–10 µl	17011834
L12-20XLS	2–20 µl	17011836
L12-50XLS	5–50 µl	17011839
L12-200XLS	20–200 µl	17011837
L12-300XLS	20–300 µl	17011838
L12-1200XLS	100–1200 µl	17011835

Cat.-No.	Pipet-Lite, Adjustable Spacer	Part. No.
<b>6-Channel</b>		
LA6-300XLS	20–300 µl	17011841
LA6-1200XLS	100–1200 µl	17011840
<b>8-Channel</b>		
LA8-50XLS	5–50 µl	17011844
LA8-300XLS	20–300 µl	17011843
LA8-1200XLS	100–1200 µl	17011842



Cat. No.	Accessories	Part. No.
HU-M3	Magnetic Hang-Ups with Magnet, set of 3	17003024
HU-S3	Shelf Hang-Ups without Magnet, 3 on a bracket	17004992
GR-3	Pipette Rack for 3 pipettes with fingerhook	17005446
CR-7	Carousel Stand for 7 pipettes with fingerhook	17001255
HU-A3	Adapter for Hang-Ups and Carousel Stand for use with electronic and multichannel pipettes	17006638

### RFID Accessories

Cat. No.	Description	Part. No.
RFID-KIT	RFID Kit incl. RFID Reader and LabX Direct Pipette-Scan software	17011966
RFID-RDR	Rainin RFID Reader	17011964
LabX-Pipet	LabX Direct Pipette-Scan Software	17011965



# The App Master

## E4 XLS Accelerates Your Workflow

### Single-channel

Simplicity without compromise. Fully featured yet easy to use



The brand-new E4 XLS is the new standard in electronic pipetting. With a large 16-bit color screen, and loaded with features and functionality, E4 XLS brings a revolutionary new approach to navigation with its joystick and carousel menu. It's intuitive and easy to use. RFID tags built in to every model enable advanced calibration tracking.

### Multichannel

Precision across all channels



High-throughput 96-well plate work is fast and easy with E4 XLS multichannel pipettes. Advanced modes make quick work of setting highly complex protocols. LTS guarantees sample pickup to be exactly the same across all channels without rocking or hand tightening. Volumes from 5 to 1200  $\mu$ l.

### Adjustable Spacer

Quickly move samples between different formats



E4 XLS Spacers let you set nozzle spacing for 24 or 96-well plates with just a twist – 9 to 19 mm on 6-channel and 9 to 14 mm on 8-channel models. Volumes from 5  $\mu$ l to 1200  $\mu$ l. The liquid end rotates 360° for quick alignment with the plate. E4 XLS Spacer models are ideal for genomic, proteomic and cell culture applications.

**The E4 XLS carousel-like menu makes switching between features and functions fast and easy.**



Cat.-No.	E4 XLS Single-Channel	Part. No.
E4-10XLS	0.5–10 µl	<b>17012305</b>
E4-20XLS	2–20 µl	<b>17012306</b>
E4-100XLS	10–100 µl	<b>17012307</b>
E4-200XLS	20–200 µl	<b>17012308</b>
E4-300XLS	20–300 µl	<b>17012309</b>
E4-1000XLS	100–1000 µl	<b>17012310</b>
E4-2000XLS	200–2000 µl	<b>17012311</b>
E4-5000XLS	500–5000 µl	<b>17012312</b>
E4-10MLXLS	1–10 ml	<b>17012313</b>
E4-20MLXLS	2–20 ml	<b>17012314</b>

Cat.-No.	E4 XLS Multichannel	Part. No.
<b>8-Channel</b>		
E8-10XLS	1–10 µl	<b>17012321</b>
E8-20XLS	2–20 µl	<b>17012322</b>
E8-50XLS	5–50 µl	<b>17012323</b>
E8-200XLS	20–200 µl	<b>17012324</b>
E8-300XLS	20–300 µl	<b>17012325</b>
E8-1200XLS	100–1200 µl	<b>17012326</b>
<b>12-Channel</b>		
E12-10XLS	1–10 µl	<b>17012315</b>
E12-20XLS	2–20 µl	<b>17012316</b>
E12-50XLS	5–50 µl	<b>17012317</b>
E12-200XLS	20–200 µl	<b>17012318</b>
E12-300XLS	20–300 µl	<b>17012319</b>
E12-1200	100–1200 µl	<b>17012320</b>

Cat.-No.	E4 XLS Adjustable Spacer	Part. No.
<b>6-Channel</b>		
EA6-300XLS	20–300 µl	<b>17012327</b>
EA6-1200XLS	100–1200 µl	<b>17012328</b>
<b>8-Channel</b>		
EA8-50XLS	5–50 µl	<b>17012329</b>
EA8-300XLS	20-300 µl	<b>17012330</b>
EA8-1200XLS	100-1200 µl	<b>17012331</b>

Cat. No.	Accessories	Part. No.
E4-RCS	Rapid Charging Stand	17012332
E4-WPS	Wall Power Supply	17012334
E4-BATT	Battery	17012337
E4-USB	USB Cable	17012336

## RFID Accessories

Cat. No.	Description	Part. No.
RFID-KIT	RFID Kit incl. RFID Reader and LabX Direct Pipette-Scan software	<b>17011966</b>
RFID-RDR	Rainin RFID Reader	<b>17011964</b>
LabX-Pipet	LabX Direct Pipette-Scan Software	<b>17011965</b>

Watch our video: [www.mt.com/raininE4](http://www.mt.com/raininE4)

# Liquidator™ 96

## The Manual Multi-Task Master

Manually pipette into 96 wells simultaneously on a bench top or in a laminar flow cabinet. No electricity, computer programming or complicated robotics are required. Liquidator 96 is completely portable and easily moves between labs and benches.

Faster than other manual pipettes and an effective alternative to complicated robotic systems. Total speed control: fast for rapid filling of master mix into a PCR plate or slow for delicate or expensive samples.

Consistently reliable results when using inert and contamination-free BioClean LTS tips. Manufactured under clean room conditions BioClean tips are ideal for PCR use, tissue culture, genetic studies, forensic applications and much more.



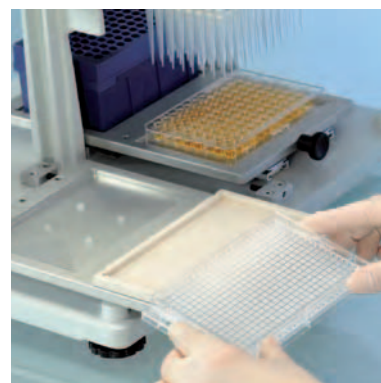
### Ergonomic

Liquidator 96 uses Liquidator LTS tips which dramatically reduce tip mounting and ejection forces. The whole hand operates the control levers for reduced strain, and two levers make it easy to eject all 96 tips at once. Counterbalanced design for light operation.



### Saves Time

Faster than all other manual pipetting methods, including expensive 4- and 8-channel robots. Easily fills 96 wells in less than 20 seconds. Perfect when preparing master mixes and for getting a PCR plate into the thermal cycler fast.



### 96 to 384 wells

Simple operation, no technician time or complicated program parameters to enter. A 96-well plate can be loaded in seconds and a 384-well plate in just four passes.



**“We use Liquidator 96 for high-throughput applications. ...we replaced lower capacity pipettes with Liquidator 96 in PCR, purification and hybridization processes...”**

Kay Mearu,  
Lab Supervisor,  
Scientific Services,  
Affymetrix Research Services Laboratory

Cat. No.	Description	Part No.
LIQ-96-200	96-well Manual Benchtop Pipettor, 5-200 µl	<b>17010335</b>
<b>Accessories</b> (1 of each supplied with Liquidator)		
LIQ-AP	Height adjustment posts	<b>17010396</b>
LIQ-384PA	384-well adapter plate stage	<b>17010394</b>
LIQ-TRAY	Deep-well 8-section reservoir	<b>17010582</b>
LIQ-MAG1	24-post magnetic bead separator, for 96 wells	<b>17011288</b>
LIQ-MAG2	96-post magnetic bead separator for 384 wells	<b>17011289</b>
<b>Liquidator LTS Tips</b>		
LQR-20	Liquidator LTS tips 20 µl	<b>17011185</b>
LQR-20S	Liquidator LTS tips. pre-sterilized 20 µl	<b>17011186</b>
LQR-20F	Liquidator LTS tips, aerosol-resistant 20 µl	<b>17011117</b>
LQR-200	Liquidator LTS tips 200 µl	<b>17010645</b>
LQR-200S	Liquidator LTS tips. pre-sterilized 200 µl	<b>17010647</b>
LQR-200F	Liquidator LTS tips, aerosol-resistant 200 µl	<b>17010646</b>
LQS-20	Liquidator LTS tips 20 µl	<b>17011187</b>
LQS-20S	Liquidator LTS tips. pre-sterilized 20 µl	<b>17011287</b>
LQS-200	Liquidator LTS tips 200 µl	<b>17010648</b>
LQS-200S	Liquidator LTS tips. pre-sterilized 200 µl	<b>17010649</b>
<b>Liquidator Reservoirs, Blocks, Strips, Caps, Holder</b>		
LR-R1-PB-5	Low profile, pyramidal bottoms, 5-pack	<b>10712602</b>
LR-R1-PB-5-S	Sterile low profile, pyramidal bottoms, 5-ind. wrap	<b>17012603</b>
LR-R2-PB-5	Full profile, pyramidal bottoms, 5-pack	<b>10712604</b>
LR-R2-PB-5-S	Sterile Full profile, pyramidal bottoms, 5-ind. wrap	<b>17012605</b>
LR-R1-8V-5	Low profile, 8-channel V-bottoms, 5-pack	<b>17012608</b>
LR-R1-8V-5-S	Sterile low profile, 8-channel V-bottoms, 5-ind. wrap.	<b>17012609</b>
LR-R2-8V-5	Full profile, 8-channel V-bottoms, 5-pack	<b>17012606</b>
LR-R2-8V-5-S	Sterile full profile, 8-channel V-bottoms, 5-ind. wrap.	<b>17012607</b>
LR-R1-12V-5	Low profile, 12-channel V-bottoms, 5-pack	<b>17012612</b>
LR-R1-12V-5-S	Sterile low profile, 12-channel V-bottoms, 5-ind. wrap.	<b>17012613</b>
LR-R2-12V-5	Full profile, 12-channel V-bottoms, 5-pack	<b>17012610</b>
LR-R2-12V-5-S	Sterile full profile, 8-channel V-bottoms, 5-ind. wrap.	<b>17012611</b>
LR-P2-96P-5	2.2 ml 96-deepwell block, 5-pack	<b>10712623</b>
LR-P2-96P-5-S	Sterile 2.2 ml 96-deepwell block, 5-ind. wrap	<b>10712624</b>
LR-P2-96-M-5	Silicone seal fits 96-deepwell block, 5-pack	<b>10712625</b>
LR-P2-96-M-5-S	Sterile silicone seal fits 96-deepwell block, 5-ind. wrap	<b>10712626</b>
LR-T-96-5	1.2 ml racked microtube strips (8x12) 5-pack	<b>10712627</b>
LR-T-96-5-S	Sterile 1.2 ml racked microtube strips (8x12) 5-pack	<b>10712628</b>
LR-T-CS8	Microtube strip caps (8) Box of 300	<b>10712629</b>
LR-T-CS8-S	Sterile microtube strip caps (8) 25 bags/12 strips ea.	<b>10712630</b>
LIQ-96-ADP	Aluminum 96-well PCR plate holder	<b>10712767</b>



**See Liquidator in action**

Watch our video at [www.mt.com/liq96](http://www.mt.com/liq96)

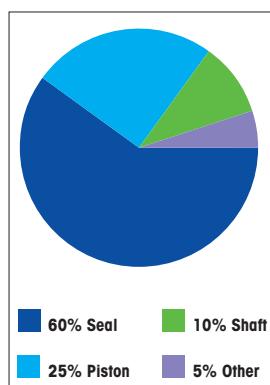
# Pipette Service by the Experts

## With the Best Equipment and Training

**Pipette service by METTLER TOLEDO – with the world's most advanced balances and state of the art test equipment – helps maximize pipette performance and enables compliance with regulatory agencies. METTLER TOLEDO's global reach offers a complete range of pipette service products for researchers in Biotech, Pharma, Academia, Government, and Forensic labs.**

### Uptime

Reduce pipette failures



Regular calibration and preventive maintenance keeps pipettes in peak condition and reduces downtime caused by out-of-calibration pipettes and predictable seal and piston wear. All service programs include reminders for next service.

### Performance

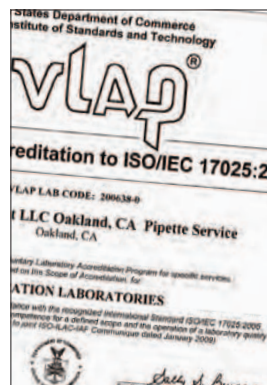
Accurate and precise



40 years of pipette service experience, with the data to back it up, shows that regular service in a preventive maintenance and calibration plan provides the highest level of performance with the fewest out-of-tolerance failures.

### Compliance

Certified calibration



ISO 17025 certification or its equivalent in key areas worldwide assures you that the highest calibration standards are being met. You can focus on your work, knowing that your service calibration lab is ISO compliant.

### Expertise

Trust the best



Based on rigorous documentation, extensive training, and long-term proficiency testing, our pipette service centers have achieved the highest level of calibration competency and data integrity using the gravimetric method.





Tailored Service packages from METTLER TOLEDO.

With over 40 years' experience of pipette manufacture and service, and the most advanced balances available, METTLER TOLEDO is your best choice for pipette service. Our comprehensive service programs result in the fewest out-of-tolerance pipettes returned for service.

A comprehensive program for service should include at least the elements shown in the adjacent table. Worldwide service programs from METTLER TOLEDO surpass these requirements, with Basic, Standard and Advanced service plans as well as OnSite service in your lab.

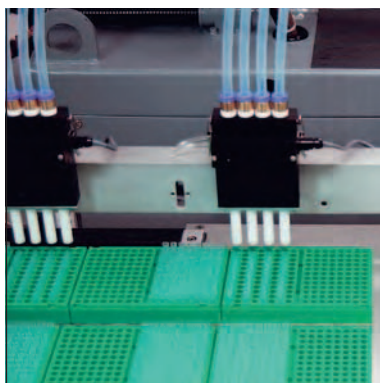
Basic	Standard	Advanced	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Service Center with MT balances
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Controlled environment
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reminder notice for scheduled service
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Adjustment to manufacturer or ISO 8655 specs
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	12 months warranty on labor & parts
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Calibration Certificate
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Gravimetric eval. to manufacturer or ISO 8655 specs
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ISO 17025 accredited certificate available
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	"As Found" Data ("AF")
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	"As Returned" Data ("AR")
		<input checked="" type="checkbox"/>	3 volumes, 4 weighings "AF"; 3 vols, 10 weighings "AR"
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Thorough inspection, internal & external function testing
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pipette label with due date
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Replace worn seals, shafts
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Replace pistons
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Thorough pipette cleaning
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Visual and pressurized leak test



# When Sterile Is Not Clean Enough

## BioClean™ Tips Don't Affect Results

Rainin high-grade BioClean tips ensure top pipetting performance through innovative design and high-quality production. Manufactured under clean-room conditions, these flawless tips are 100% inert, preventing experiment inconsistencies and failures.



### BioClean Tips – Premium Quality

To ensure high-quality lab results, tips must be free of DNase, RNase, DNA, Pyrogen and adenosine triphosphate (ATP). At Rainin, we ensure BioClean tip production by eliminating human contact. Our tips are beyond clean – they're BioClean.



### Innovative Packaging – Refills to Racks

Rainin BioClean tips are packaged in a variety of types for convenience to best suit your needs. Stacked refills make Green-Pak SpaceSaver easy to use and require less space in your lab



### Perfectly Made – Highest Precision

Virgin polypropylene material and state-of-the-art Rainin manufacturing result in flawless tips. No deformation or flash, with perfect form for consistent performance. Rainin tips deliver proven reproducible results.

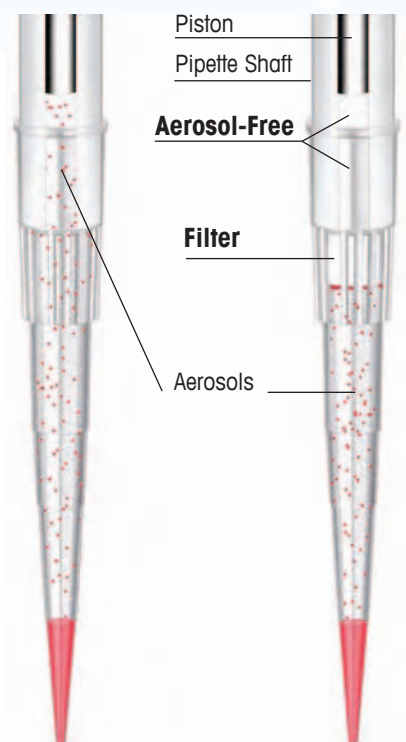
## Aerosol-resistant Filter Tips

### Eliminate Aerosol Contamination

Rainin's aerosol-resistant filter tips prevent aerosols and liquids in the tip from reaching and contaminating the pipette shaft. Ideal for PCR use, tissue culture, genetic studies and forensic applications.

The hydrophobic filter forms a barrier against aerosols and liquids, eliminating potential sample and pipette cross-contamination that could jeopardize results. Molded from pure virgin polyethylene with no contaminants. With an average pore size of on 20 microns, Rainin filters prevent aerosol contamination without impeding air flow.

**Without Filter**      **With Filter**



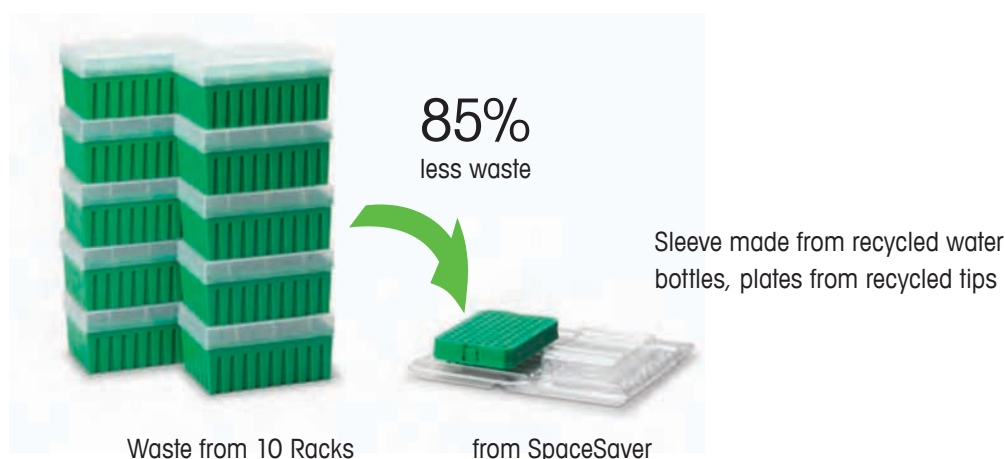
Automated filter assembly,  
no human contact

Contaminants Tested	Testing Detection Levels
RNase	$\leq 10^{-9}$ Kunitz units/ $\mu$ l
DNase	$\leq 10^{-7}$ Kunitz units/ $\mu$ l
DNA	< 1 copy human DNA
Pyrogens (LAL test)	0.001 EU/ml
ATP	< $10^{-12}$ mg/ $\mu$ l

# BioClean™ Tips in Green Packaging

## Reducing Waste at the Source

Many labs today are concerned with reducing environmental impact. Rainin has long been a pioneer in addressing these concerns through innovative package designs for tip-rack refilling to reduce plastic waste at the source.



### Green-Pak™ SpaceSaver™

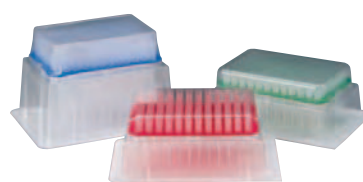
Stacked Refills – 85% less waste



SpaceSaver refills are protected from contamination by the sleeve, a rack and a lid. SpaceSaver uses only 35% of the space used by 10 racks. The outer shell is made of recycled water bottles and the plates from waste tip material. Available standard or presterilized.

### Green-Pak

Individual Refills – 75% less waste

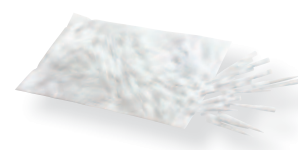
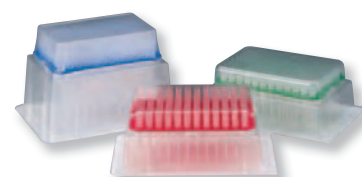


Green-Pak refills are completely sealed, eliminating contamination. Filter and presterilized tips are irradiated and certified free of DNase, RNase, DNA, pyrogens and ATP. Fast, trouble-free loading. Green-Pak shell is made of recycled water bottles. Available standard, presterilized or presterilized with aerosol-resistant filter tips.



## LTS Tips for Rainin LTS Pipettes

Cat. No.	Description	Max Capacity	Item
<b>Green-Pak SpaceSaver: Stacked Tip Rack Refills</b>			
GPS-L10	960 LTS tips in 10 refills	20 µl	17005091
GPS-L10S	960 LTS tips in 10 refills, presterilized	20 µl	17005090
GPS-L250	960 LTS tips in 10 refills	200 µl	17005093
GPS-L250S	960 LTS tips in 10 refills, presterilized	200 µl	17005092
GPS-L300	768 LTS tips in 8 refills	300 µl	17005095
GPS-L300S	768 LTS tips in 8 refills, presterilized	300 µl	17005094
GPS-L1000	768 LTS tips in 8 refills	1000 µl	17005089
GPS-L1000S	768 LTS tips in 8 refills	1000 µl	17005088
<b>Green-Pak Individual Tip Rack Refills</b>			
GP-L10	960 LTS tips in 10 refills	20 µl	17002424
GP-L10S	960 LTS tips in 10 refills, presterilized	20 µl	17002430
GP-L10F	960 LTS tips in 10 refills, presterilized, filter	20 µl	17002429
GP-L250	960 LTS tips in 10 refills	200 µl	17002425
GP-L250S	960 LTS tips in 10 refills, presterilized	200 µl	17002431
GP-L200F	960 LTS tips in 10 refills, presterilized, filter	200 µl	17002428
GP-L1000	768 LTS tips in 8 refills	1000 µl	17002423
GP-L1000S	768 LTS tips in 8 refills, presterilized	1000 µl	17002427
GP-L1000F	768 LTS tips in 8 refills, presterilized, filter	1000 µl	17002426
GPR-L10	Empty racks for 20 µl tips, red, pkg of 10		17001865
GPR-L250	Empty racks for 200/250-µl tips green, pkg of 10		17001863
GPR-L1000	Empty racks for 1 ml-tips, blue, pkg of 8		17001864
<b>Removable Cover-Rack Tips</b>			
RT-L10	960 LTS tips in 10 racks	20 µl	17002930
RT-L10S	960 LTS tips in 10 racks, presterilized	20 µl	17002929
RT-L10F	960 LTS tips in 10 racks, presterilized, filter	20 µl	17002928
RT-L200F	960 LTS tips in 10 racks, presterilized, filter	200 µl	17002927
RT-L250	960 LTS tips in 10 racks	200 µl	17002932
RT-L250S	960 LTS tips in 10 racks, presterilized	200 µl	17002931
RT-L250W	960 LTS Wide-orifice tips in 10 racks	200 µl	17007102
RT-L250WS	960 LTS Wide-orifice tips in 10 racks, presterilized	200 µl	17007101
RT-L300	768 LTS tips in 8 racks	300 µl	17002935
RT-L300S	768 LTS tips in 8 racks, presterilized	300 µl	17002934
RT-L300F	768 LTS tips in 8 racks, presterilized, filter	300 µl	17002933
RT-L1000	768 LTS tips in 8 racks	1000 µl	17002922
RT-L1000S	768 LTS tips in 8 racks, presterilized	1000 µl	17002921
RT-L1000F	768 LTS tips in 8 racks, presterilized, filter	1000 µl	17002920
RT-L1000W	768 LTS Wide-orifice tips in 8 racks	1000 µl	17007100
RT-L1000WS	768 LTS Wide-orifice tips in 8 racks, presterilized	1000 µl	17007099
RT-L1200	768 LTS tips in 8 racks	1200 µl	17006421
RT-L1200S	768 LTS tips in 8 racks, presterilized	1200 µl	17006420
RT-L1200F	768 LTS tips in 8 racks, presterilized, filter	1200 µl	17006419
RT-L2000	480 LTS tips in 8 racks	2000 µl	17002926
RT-L2000S	480 LTS tips in 8 racks, presterilized	2000 µl	17002924
RT-L2000F	480 LTS tips in 8 racks, presterilized, filter	2000 µl	17002923
RT-L5000	192 LTS tips in 8 racks	5000 µl	17002937
<b>StableStak Double-96-Format Stacked Racks</b>			
SS-L10	960 LTS tips in 5 layers	20 µl	17005873
SS-L10S	960 LTS tips in 5 layers	20 µl	17005872
SS-L250	960 LTS tips in 5 layers	200 µl	17005875
SS-L250S	960 LTS tips in 5 layers	200 µl	17005874
SS-L300	768 LTS tips in 4 layers	300 µl	17005877
SS-L300S	768 LTS tips in 4 layers	300 µl	17005876
SS-L1000	768 LTS tips in 4 layers	1000 µl	17007090
SS-L1000S	768 LTS tips in 4 layers	1000 µl	17007089
<b>Bulk Tips</b>			
RC-L10	1000 LTS tips in bags	20 µl	17001128
RC-L250	1000 LTS tips in bags	200 µl	17001118
RC-L300	1000 LTS tips in bags	300 µl	17001132
RC-L1000	1000 LTS tips in bags	1000 µl	17001129
RC-L1200	1000 LTS tips in bags	1200 µl	17006324
RC-L2000	1000 LTS tips in bags	2000 µl	17001130
RC-L5000	1000 LTS tips in bags	5000 µl	17001133
RC-L10ML	200 LTS tips in bags	10 ml	17001119
RC-L10MLS	75 LTS tips in bags, prstrl., indiv. wrapped	10 ml	17005940
RC-L20ML	100 LTS tips in bags	20 ml	17001131
RC-L20MLS	50 LTS tips in bags, prstrl., indiv. wrapped	20 ml	17005941





# FrameStar™ Plates

## Fast, Accurate qPCR and PCR Results

Binary plate construction provides the advantages of thin-walled polypropylene wells integrated into a rigid polycarbonate frame.

Our FrameStar plates offer superior technology for fast, efficient and accurate quantitative PCR (qPCR) and standard PCR. FrameStar technology combines thin-walled polypropylene wells with rigid, thermally-stable polycarbonate plate frames for superior performance.



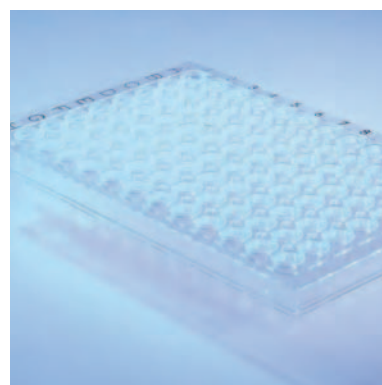
### Polycarbonate Frame – Improved Sealing

During PCR, excessive thermal expansion/contraction of polypropylene plates can compromise the integrity of adhesive seals. In contrast, the higher thermal stability of the FrameStar polycarbonate frames results in a reliable seal in all areas of the plate during PCR and in cold storage.



### Thin-wall Polypropylene Wells

FrameStar's polypropylene wells provide optimal heat transfer and an inert surface with low binding of nucleic acids, proteins and other molecules. An advanced injection molding technology enables the thickness of the well walls to be reduced for rapid temperature equilibration and efficient cycling.



### Quality and Reliability, Performance Testing

PCR plate samples undergo thermal cycling for leak testing and sealing performance under extreme temperature conditions. qPCR functional testing, with other methods ensures that all products are free from DNase and RNase and human gDNA. LAL assays are used to test the raw materials and finished products for pyrogens.



Heat sealer

A wide range of plate configurations, for compatibility with all popular thermal-cyclers and applications.

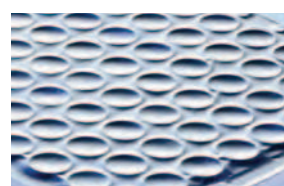
Cat. No.	Description	Part No.
<b>FrameStar 96 skirted</b>		
FS-96FS-C/C	Clear wells, clear frame, 50 plates per case	<b>17011923</b>
FS-96FS-C/B	Clear wells, blue frame, 50 plates per case	<b>17011924</b>
FS-96FS-W/X	White wells, black frame, 50 plates per case	<b>17011925</b>
<b>FrameStar 96 semi-skirted (cut corner A12) for ABI GeneAmp series</b>		
FS-96A12-C/C	Clear wells, clear frame, 50 plates per case	<b>17011933</b>
FS-96A12-W/X	White wells, black frame, 50 plates per case	<b>17011934</b>
<b>FrameStar 96 semi-skirted (cut corner H1) for Bio-Rad and MJR</b>		
FS-96H1-C/C	Clear wells, clear frame, 50 plates per case	<b>17011935</b>
FS-96H1-W/C	White wells, clear frame, 50 plates per case	<b>17011936</b>
<b>FrameStar 96 non-skirted, standard profile</b>		
FS-96NS-C/C	Clear wells, clear frame, 50 plates per case	<b>17011937</b>
FS-96NS-C/B	Clear wells, blue frame, 50 plates per case	<b>17011938</b>
FS-96NS-W/X	White wells, black frame, 50 plates per case	<b>17011939</b>
<b>FrameStar 480/96, semi-skirted for Roche Light Cycler 480</b>		
FS-96LC-C/C	Clear wells, clear frame, 50 plates per case	<b>17011926</b>
FS-96LC-W/C	White wells, clear frame, 50 plates per case	<b>17011927</b>
<b>FrameStar FastPlate 96 semi-skirted for ABI Fast Block Cyclers</b>		
FS-96FB-C/C	Clear wells, clear frame, 50 plates per case	<b>17011961</b>
FS-96FB-W/C	White wells, clear frame, 50 plates per case	<b>17011929</b>
<b>FrameStar 96 with upstand for ABI cyclers and sequencers</b>		
FS-96U-C/C	Clear wells, clear frame, 50 plates per case	<b>17011930</b>
FS-96U-C/B	Clear wells, blue frame, 50 plates per case	<b>17011931</b>
FS-96U-W/X	White wells, black frame, 50 plates per case	<b>17011932</b>
<b>FrameStar 96 non-skirted, low profile</b>		
FS-96LP-C/C	Clear wells, clear frame, 50 plates per case	<b>10711940</b>
FS-96LP-C/B	Clear wells, blue frame, 50 plates per case	<b>17011941</b>
FS-96LP-W/X	White wells, black frame, 50 plates per case	<b>17011942</b>
<b>FrameStar 384, ideal for robotic systems</b>		
FS-384-C/C	Clear wells, clear frame, 50 plates per case	<b>17011918</b>
FS-384-C/B	Clear wells, blue frame, 50 plates per case	<b>17011919</b>
FS-384-W/X	White wells, black frame, 50 plates per case	<b>17011920</b>
<b>FrameStar 480/384 for Roche LightCycler 480</b>		
FS-384LC-C/C	Clear wells, clear frame, 50 plates per case	<b>17011921</b>
FS-384LC-W/C	White wells, clear frame, 50 plates per case	<b>17011922</b>

Heat sealer, heat and adhesive seals and cap strips are listed below. All FrameStar products available online.

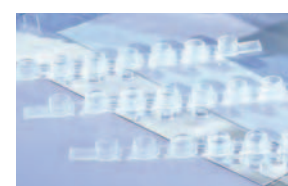
Cat. No.	Description	Part No.
<b>Heat Sealer</b>		
FS-HS	Thermal sealer incl. universal power, supply, power cord manual, standard plate adapter and seal platen	<b>17011954</b>
FS-HS-25/12	Adapter for 96-well PCR plates, plus #612 sealing frame	<b>17012021</b>
<b>Heat Seals</b>		
FS-HS-Q	Optically Clear Seal, 100 sheets, 125 mm x 78 mm	<b>17011953</b>
FS-HS-L-P	Pierce Seal, 100 sheets, 125 mm x 78 mm	<b>17012019</b>
FS-HS-F-NP	Foil Seal, Piercable, Non-peelable, 100 sheets, 125 mm x 78 mm	<b>17011951</b>
FS-HS-F-P	Foil Seal, Piercable, Peelable, 100 sheets, 125 mm x 78 mm	<b>17011952</b>
<b>Adhesive Seals</b>		
FS-AS-C	Adhesive PCR Seal, 100 sheets, 135 mm x 80 mm	<b>17011947</b>
FS-AS-Q	qPCR Adhesive Seal, 100 sheets, 135 mm x 80 mm	<b>17011949</b>
FS-AS-F	Adhesive PCR Foil Seal, 100 sheets, 135 mm x 80 mm	<b>17011948</b>
<b>Cap Strips</b>		
FS-8S-F	Strips of 8 flat optical caps, 300 strips	<b>17011945</b>
FS-8S-D	Strips of 8 flat domed caps, 300 strips	<b>17011946</b>



Optically clear seal



Adhesive seal



Cap strips