

# Product Introduction

**RAININ**  
Pipetting 360°



## **New Tip Rack/Refill System**

Guaranteed Purity

Hinged-lid Rack

Space-saving Refills

LTS and Universal Fit

## **Rainin BioClean Ultra** Purity and Performance

**METTLER TOLEDO**







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## 7 Great Reasons

### Why Your Customers Should Choose Rainin!

Rainin tips now come packaged in a new rack and refill system.

1

#### Hinged/Lift-off Lid

Our innovative new hinged rack holds the lid open to a wide 120° or gently releases to function as a lift-off lid.

2

#### Multichannel Friendly

The wide-opening lid and unique tip deck design enables full or partial multichannel loading from any angle.



3

#### BioClean Ultra

With the new Ultra quality test, Rainin's tip purity standard continues to be industry leading.

4

#### Less Plastic, Lighter Weight

Precision engineering has resulted in a sturdy, stable rack that requires 20% less plastic.



5

**Stackable, Space-Saving**

These new racks stack five-high to save space and create a more organized bench.

6

**Fully Autoclavable**

Perfect for our Green-Pak™ and SpaceSaver™ refill systems, our new rack is designed to withstand many trips through the autoclave.

7

**Easy-open Latch**

Our new latch keeps tips safe and secure, and opens easily with one hand.

# 1. Enhanced Quality and Performance

## The New Rainin Rack and Refill System Delivers

Our new integrated pipetting consumables system includes new racks, improved refills and enhanced tip biocontaminant testing.

### Value Proposition

METTLER TOLEDO has redesigned its flagship line of Rainin pipette tip products to deliver greater utility and convenience.

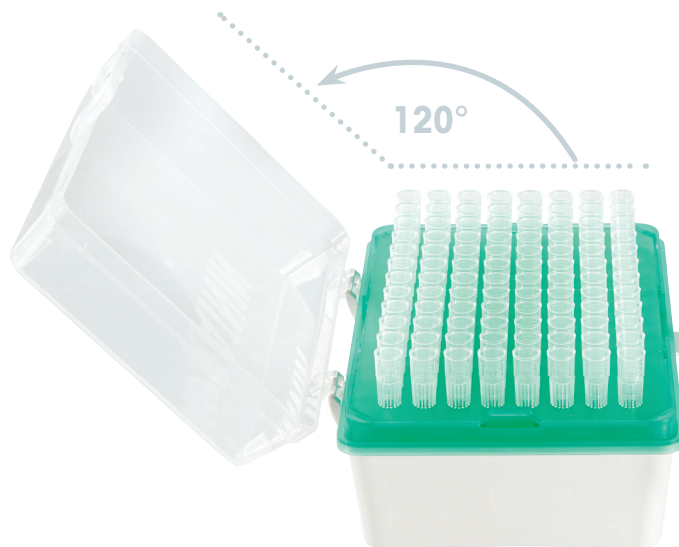
- The new, lighter tip rack features a special “bi-functional” hinged/lift-off lid and front latch for secure, one-hand operation.
- New Green-Pak and Green-Pak SpaceSaver rack refill systems have been optimized and redesigned to minimize plastic waste and improve recyclability.
- The new “BioClean Ultra” standard expands BioClean to include quality testing procedures for proteins and protease, assuring greater utility in a broader array of applications, including proteomics.

### 1.1 Why Update Our Tip Rack and Refill System?

The Rainin removable cover rack design was introduced at a time when molecular biologists routinely autoclaved all plasticware in an effort to destroy nucleases. Its thick walls, vented tip deck and two-position, lift-off lid met the need. But needs change, and today it is not uncommon to walk into a lab and see that tape has been applied to a Rainin rack, in an effort to convert it to a hinged design.

The challenge: design a tip rack that integrates seamlessly into the laboratory workflow and better accommodates the diverse pipetting needs of life science researchers. Racks are subjected to a variety of demands and must comply without hesitation or impediment. Multichannel pipettes in particular load tips from a variety of orientations and impose much greater force upon the rack during tip loading.

In addition to complementing the customer’s workflow, the rack and refill system has the added responsibility of protecting the purity and physical integrity of the tips until ready for use. Refill systems must work effortlessly and intuitively with empty racks, and racks must be able to endure multiple rounds of autoclaving.



BioClean Ultra rack's lid rests at 120°

## 1.2 Product Scope

Every facet of the new Rainin racked tip, Green-Pak and SpaceSaver portfolio has been carefully designed to meet the following objectives:

- A tightly integrated system of racks and accompanying refill systems that interface in a seamless, intuitive manner for effortless rack reloading.
- A hinged lid that rests open at 120° and is easily removed/reattached.
- A secure lid latch to prevent tips from spilling, yet opens easily with one hand.
- A lid and tip deck configuration that makes it possible to fully or partially load multichannels from any angle.
- A new labeling system that enables users to more quickly identify the tip size and attributes.
- A robust rack design that moves easily between and into different laboratory environments and the hands of individual researchers employing different applications.
- Full autoclavability.
- "LTS" embossed into the top of the tip to assure customers that they are using genuine Rainin LTS tips.
- Expanded tip batch testing that adds protein and protease to the already broad range of biological contaminants Rainin tests for. Each test is carried out at the practical limit of detection (LOD) using established testing methods specific for each contaminant type.
- Further minimize plastic waste in SpaceSaver by eliminating the empty rack, which many customers have told us they don't want or need.
- Enhanced product sterility by switching from shrink wrap to more durable, non-porous flow wrap.

### 1.3 Rack/Refill Enhancements at a Glance

	New Rack	New Rack Refills
<b>Overview</b>	The new rack forms the key component in this new consumables product line. Our new tip racks reflect design changes based on feedback from our customers and global sales team. As the new rack design evolved, each design phase was carefully tested and refined to achieve optimal performance.	The new GP and GPS refill systems are designed to effortlessly engage with the new rack for quick and easy refilling. The new GP and GPS refill systems retain all of the benefits of the previous system, but are more environmentally friendly and provide greater protection against dust intrusion.
<b>Features</b>	<ul style="list-style-type: none"> <li>• Hinged lid expands its utility</li> <li>• Color coding for easy volume identification</li> <li>• Front latch enhances security and further assures tip cleanliness</li> <li>• 20% less plastic to reduce environmental impact</li> <li>• The hinged lid opens to 120° or lifts off entirely</li> <li>• Stackable</li> <li>• Refillable</li> <li>• Autoclavable, multiple times</li> <li>• High-clarity lid makes it easier to see the tips when the lid is closed</li> <li>• Accommodates multichannel tip loading in all orientations.</li> <li>• Available in sterilized and non-sterile</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced plastic content</li> <li>• Resealable GPS protects unused refills from dust intrusion</li> <li>• GPS refill minimizes bench and storage surface required</li> <li>• Easy to use</li> <li>• Available sterilized or non-sterile</li> </ul>
<b>Compatibility</b>	The old GP and GPS refill systems marked "BioClean" cannot be used to refill the new racks.	<p>The new GP and GPS refill systems marked "BioClean Ultra" cannot be used to refill the rack system being phased out.</p> <p><b>Important:</b> Customers buying BioClean Ultra refills for the first time should also buy a box of racked BioClean Ultra tips to assure they have compatible BioClean Ultra racks on hand. They can choose to buy empty racks, however, the racked tips are a better value.</p>



## 2. BioClean is Now BioClean Ultra

The BioClean testing regimen and specifications, which were introduced in 2003, are still the industry's most comprehensive, but did not address potential protein and protease contamination, potentially limiting the appeal of our tips to proteomics labs. To remedy the situation, BioClean has been upgraded to BioClean Ultra by adding protein and protease contamination testing. All other tests and specifications are the same.



### 2.1 Protein and Protease Test Specifications

The specifications for these two contaminants are at the levels of greatest sensitivity that can reasonably be achieved without the use of exotic methods and equipment. For example, the test for protein is an acrylamide gel-based method which has a visual limit of detection of 1-2 ng/band with silver staining. This is important because the level of detection of a spot on a two-dimensional protein gel is also 1-2 ng/spot. Given this, the BioClean Ultra test detects protein contamination down to a level that could conceivably result in a false positive on a 2-D gel. As such, our protein test method and sensitivity are relevant to proteomics work.

Contaminants Tested	Testing detection levels
<b>RNase</b>	$\leq 10^{-9}$ Kunitz units/ $\mu$ L
<b>DNase</b>	$\leq 10^{-7}$ Kunitz units/ $\mu$ L
<b>Human DNA</b>	< 0.32 pg
<b>Bacterial DNA</b>	< 1 pg
<b>Endotoxin</b>	$\leq 0.001$ EU/mL
<b>ATP</b>	< $2 \times 10^{-12}$ mg/ $\mu$ L
<b>Protein</b>	< 2 ng/lane (no visible band)
<b>Protease</b>	$\leq 500$ ng/mL
<b>PCR Inhibitors</b>	None detected

The test for protease is a sensitive, reliable, off-the-shelf method that relies upon the cleavage of a terminal fluorescent group from casein by any contaminating protease (there are several different kinds). This is referred to as the "FITC-casein" test. The test regimen is applicable to groups of tips collected from different production batches. With this method, several tips are rinsed with an aliquot of protease-free water and the rinsate is then tested.

## 2.2 Contaminant Testing Varies Among Manufacturers

While there is similarity among tip manufactures in how they test for various contaminants, there is significant disparity in the type and total number of contaminants they test for. Likewise, some competitors simply state that their tips are “free of” a particular contaminant without providing their test methods, data or specifications. Among competitors we’ve found who document their quality testing, both BioClean and, now BioClean Ultra, are the most stringent and comprehensive.

The chart below demonstrates how quality testing varies among tip manufacturers. What it does not show is the specification for each potential contaminant. For example:

- No other competitor tests its tips for this many contaminants and only Rainin tests for both protein and protease.

How BioClean Ultra compares with the competition

	Human DNA	Bacterial DNA	DNase	RNase	Endotoxin
<b>BioClean Ultra™</b>	< 0.32 pg	< 1 pg	$\leq 10^{-7}$ KU/ $\mu$ L	$\leq 10^{-9}$ KU/ $\mu$ L	$\leq 0.001$ EU/mL
<b>AXYGEN</b>	–	–	“DNase Free”	“RNase Free”	$\leq 0.05$ EU
<b>BRAND</b>	< 0.40 fg	–	–	< 8.6 fg	< 1 pg
<b>EPPENDORF</b>	< 2 pg	< 50 fg	$10^{-4}$ KU	$10^{-9}$ KU	< 0.001 EU/mL
<b>INTEGRA</b>	None detected	–	None detected	None detected	< 0.06 EU/mL
<b>LABCON</b>	< 1 pg	–	“Free of”	“Free of”	< 0.05 EU/mL
<b>SARSTEDT</b>	“Free of”	“Free of”	“Free of”	“Free of”	“Free of”
<b>SARTORIUS</b>	–	–	$< 6.25 \times 10^{-5}$ U/ $\mu$ L	$< 3.125 \times 10^{-9}$ U/ $\mu$ L	< 0.03 EU/mL
<b>SSI</b>	< 30 pg	–	$< 10 \times 10^{-7}$ KU/ $\mu$ L	$< 10^{-9}$ KU/ $\mu$ L	< 0.06 EU/mL
<b>THERMO ART</b>	< 30 pg	–	$< 10^{-7}$ KU/ $\mu$ L	$< 10^{-9}$ KU/ $\mu$ L	$\leq 0.06$ EU/mL
<b>USA</b>	“Free of”	“Free of”	“Free of”	“Free of”	“Free of”

- Eppendorf tests its tips for protein, but not protease and the converse is true for Labcon.
- Labcon provides no specifications for its protease testing.
- Rainin’s test specifications reflect the limits of detection for each test procedure, which guarantees both high sensitivity and stringent pass/fail criteria.
- Rainin has the most complete array of biocontaminant testing and publishes abbreviated versions of all of its test methods and specifications.
- Rainin subjects each production batch to the complete BioClean Ultra quality test regimen, while some competitors test on a monthly or quarterly basis.

To summarize, comparing quality certificates from a broad range of competing tip manufacturers with BioClean Ultra, Rainin offers the most stringent and comprehensive tip quality specification on the market.

Protein	Protease	ATP	PCR Inhibitors
< 2 ng/sample	≤ 500 ng/mL	< 2 x 10 <sup>-12</sup> mg/μL	None detected
–	–	–	–
–	–	< 1 fg	–
<1ng/μL	–	< 5.5 x 10 <sup>-12</sup> mg	< 10 targets amplifiable
–	–	–	None detected
–	“Free of”	ATP-free	–
–	“Free of”	“ATP-free”	“Free of”
–	–	–	–
–	–	–	–
–	–	< 10 <sup>-13</sup> mg/μL	None detected
–	–	–	–

**Legend**

- KU** Kunitz Units
- EU** Endotoxin Units
- ng** nanogram (Factor: 10<sup>-9</sup>)
- pg** picogram (Factor: 10<sup>-12</sup>)
- fg** femtogram (Factor: 10<sup>-15</sup>)

“ – ” no data available  
**“Free of”** and **“None detected”** – claims indicating no observed contamination, based upon test methods employed. No specifications or test methodology provided.


### 2.3 Tip Quality Certificates Now Online, Customizable

Cartons for new tips no longer have generic Quality Certificates included with them. Instead, the inner flap instructs customers to go to [www.mt.com/RaininCerts](http://www.mt.com/RaininCerts) for quality certificates.

At the site, BioClean Ultra customers have two options:

- Provide their name or organization, the product serial number and the nine-digit batch code to generate a customized certificate that they download as a PDF or print out.
- Print or download a generic BioClean Ultra certificate. This option is for customers who either don't want a customized certificate or for some reason are having trouble creating a custom certificate.

Should a customer with pre-Ultra tips end up on the site, they have the option to print or download a generic BioClean certificate for tips manufactured before February 2018.



**CERTIFICATE OF QUALITY**

Rainin BioClean™ Ultra pipette tips labeled "Certified RNase-, DNase-, Endotoxin-, Protein-, Protease- and ATP-free" have been process-tested and passed the following detection levels using the test protocols below.

Contaminants Tested	Testing Detection Levels	Contaminants Tested	Testing Detection Levels
RNase	≤ 10 <sup>-4</sup> Kunitz units/μL	ATP	≤ 2 x 10 <sup>-2</sup> μg/mL
DNase	≤ 10 <sup>-3</sup> Kunitz units/μL	Protein	≤ 2 μg/mole (no visible band)
Humans DNA	< 0.32 pg	Protease	≤ 5000 ng/mL
Bacterial DNA	< 1 pg	PCR inhibitors	None detected
Endotoxin	≤ 0.001 EU/mL		

**Testing Procedures**

**RNase testing protocol:** Pipette was rinsed in RNase-free 0.1 ppm Ethanol distilled water. Then product extracts were exposed to an RNA standard in a final volume of buffer. The DNA standard was incubated at 37°C for 1 hour. DNA fluorescence was measured using an RNA fluorescent dye and evaluated for degradation.

**DNase testing protocol:** Pipette was rinsed in DNase-free 0.1 ppm Ethanol distilled water. Then product extracts were exposed to a DNA standard in a final volume of buffer. The DNA standard was incubated at 37°C for 1 hour. DNA fluorescence was measured using an DNA fluorescent dye and evaluated for degradation.

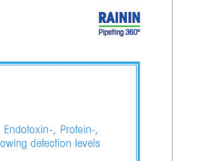
**Humans DNA testing protocol:** Quantitative PCR (qPCR) was used in the following fashion. A BioRad CFX96 system was used to detect amplification in 20 µL reaction mixtures containing negative controls, positive controls, varying concentrations of human DNA (human or bacterial) and 10 µL of the final primer concentration in 200-1000 µL Eppendorf tubes and bacterial primer sets for conserved sequences was used, and an as follows:

Human primers: Forward: 5'-TGAGGAGGAGAAAGGAGAG  
Reverse: 5'-GACGTCCAGGAGGATGTTTCTC  
Bacterial primers: Forward: 5'-CAGGTCAATGACTCTCTAC  
Reverse: 5'-GACGTCCAGGAGGATGTTTCTC

**Endotoxin testing protocol:** Pipette tips were rinsed in endotoxin-free LAL reagent water for 1 hour. Then product extracts were tested by kinetic assay. The test is performed by adding LAL to the negative control, control standard, positive control and product extracts. After 15-minute incubation, color change and optical density is measured. The sensitivity of this limit is only 0.001 EU/mL.

**ATP testing by the luminase process:** ATP is tested by measuring the difference between kinetic and product-free luminase reactions of an ATP standard solution containing 10<sup>-3</sup> moles of ATP. Fluorescence is light emission of a product-free ATP standard solution as evaluated to determine the presence or absence of ATP.

**Protein testing protocol:** Samples of tips from each production batch were rinsed with protein-free water and an aliquot of the rinsate was run on a 4-12% Novex 4-20 (Tris/Glycine gradient gel under reducing conditions with appropriate buffer). A 0.6 µm nitrocellulose membrane was probed with 1 µg of IgG anti-bovine IgG in individual lanes. Following development, the gel was fixed and silver-stained using standard procedures and the results measured on a light table.



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**DNase testing protocol:** Pipette was rinsed in DNase-free 0.1 ppm Ethanol distilled water. Then product extracts were exposed to a DNA standard in a final volume of buffer. The DNA standard was incubated at 37°C for 1 hour. DNA fluorescence was measured using an DNA fluorescent dye and evaluated for degradation.

**Humans DNA testing protocol:** Quantitative PCR (qPCR) was used in the following fashion. A BioRad CFX96 system was used to detect amplification in 20 µL reaction mixtures containing negative controls, positive controls, varying concentrations of human DNA (human or bacterial) and 10 µL of the final primer concentration in 200-1000 µL Eppendorf tubes and bacterial primer sets for conserved sequences was used, and an as follows:

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**Protease testing protocol:** Pipette tips were rinsed in protease inhibitor concentration using the Spectrolyse™ Protease Inhibitor Kit (Thermo Scientific) before the function was tested with the standard substrate. The water and the rinsate tested (in duplicate) according to the manufacturer's instructions. Tubes were used as a duplicate. Results were determined using a spectrophotometer at 405 nm and compared to a standard curve. The test protocol was used as an in-house reference.

**Standardized protocol:** Rainin products labeled as "raininfree" are validated to the same standards (100x-10<sup>4</sup>). Storage level has been predetermined by industry testing.

**Limitation of Liability:** Rainin's Ultra™ (100%) active liability with respect to this product is limited to the price of the product. In no event shall Mettler-Toledo, LLC, be liable to any employee for losses for direct, indirect, consequential or incidental damages arising out of the use of, or inability to use, this product or out of any claim for or damages for, or a claim for Mettler-Toledo Rainin has copies of the possibility of such damages. Subject to the limitation of Rainin's liability, Rainin, its registered trademark of Mettler-Toledo Rainin, LLC.

**Product Information:**  
**Purchaser:** National Institutes of Health  
**Batch:** 1720\_31025  
**Mfg. Date:** Jul. 18, 2017 10:25  
**Product ID:** 30389166  
**Description:** GreenPak™ SpaceSaver™ stacked refills, 10 µL max. volume, universal fit, shaftGuard shaft/No ejector protection, low-retention, sterilized, 960 tips in 10 layers

CERTIFIED BY:   
**David Greenwood, Ph.D.**  
 Head of Quality Systems

30412443 Rev A

**Generic**

30418154 Rev A

**Custom**

**METTLER TOLEDO**

## 3. Additional Product Enhancements

In addition to the new rack/refill system and BioClean Ultra, there are significant improvements across our new racked tip line.

### 3.1 Pre-sterilized is Now “Sterilized”

Gamma irradiation kills or inactivates any microorganisms present, rendering the product fully sterile. The dosage of gamma irradiation we use is carefully selected based upon preceding “bioburden” studies of Rainin products.

We previously wrapped our products in shrink-sealing plastic material. It has tiny pores that let the air out when shrink-wrapping, allowing it to suction tightly to the product. But these tiny holes in the wrapping prevented us from designating our tips as “sterile,” because the pores could conceivably allow a microorganism or spore to enter the package. So despite being gamma-sterilized, shrink-wrapped products were referred to as “presterilized” – an ambiguous term that often confused customers and employees alike. For clarity, we now use the term “sterilized” to indicate that the product “has been sterilized.”

### 3.2 New Flow Wrap Preserves Sterility

The new RT and GPS products feature flow wrapping. Unlike the porous shrink wrap it replaces, flow wrap is a non-porous material that hermetically seals the product inside, providing no opportunity for microorganisms to enter following sterilization. It is also durable enough to retain full structural integrity for at least five years.

The shift to flow wrapping keeps us ahead of a few key competitors and means that our tip packaging now greatly exceeds the performance of many others.

The flow wrap employed by Rainin is particularly suited to the rigors of worldwide shipping, including adverse conditions and a range of temperatures and atmospheric pressures, often for prolonged periods. The wrap has been fully tested and proven to remain airtight to protect product cleanliness, sterility and integrity.

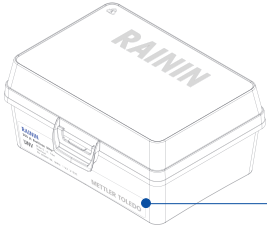
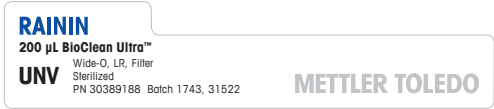
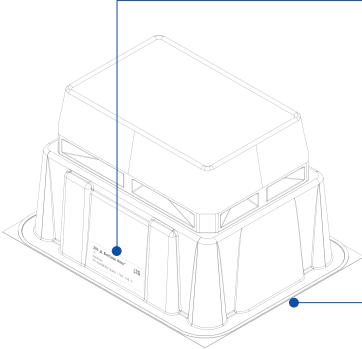

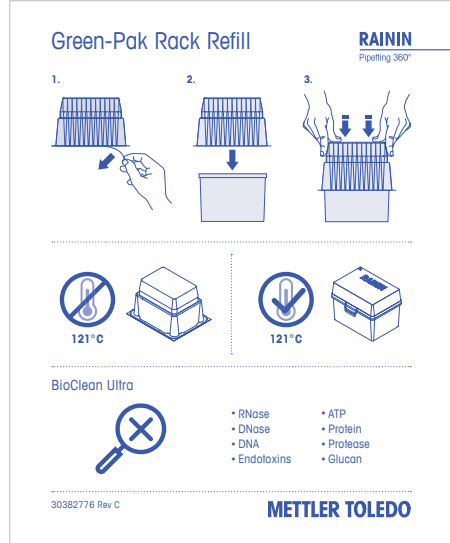
### 3.3 Translucent Colors for RT, GP and GPS

The color scheme for the new tip products is identical to that used for TerraRack. The solid red, green, and blue colors previously used for removable-cover racks have been replaced with the translucent color palette introduced with TerraRack, and yellow replaces gray for the 300 µL tip products. And like TerraRack, both LTS and UNV racks and refill systems have identical color schemes.

### 3.4 RT, GP and GPS Now Have Product Labels

The new RT, GP and GPS products have labels that provide more product information and a new, more specific batch code.

See Appendix B for a detailed discussion of the information contained on the label and how to read the extended batch code.

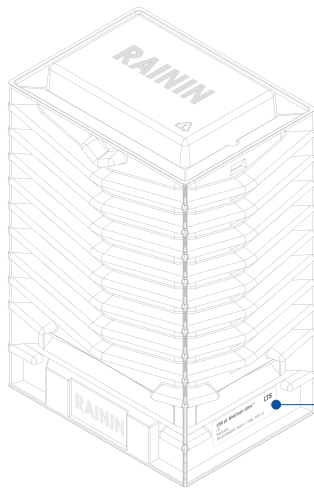
Product	Label(s)
<b>RT Racks</b> 	 <p>This clear 4" (10 cm) wide is used on all tip racks.</p>
<b>Green-Pak (GP)</b> 	 <p>This smaller, white version of the label is used on GP and GPS.</p>  <p><b>Green-Pak Rack Refill</b></p> <p>1. [Diagram: Lifting the rack] 2. [Diagram: Placing in container] 3. [Diagram: Refilling with tips]</p> <p><b>RAININ</b> Pipetting 360°</p> <p>121°C [Icon: No heat] [Icon: Rack] 121°C [Icon: Checkmark] [Icon: Rack]</p> <p>BioClean Ultra</p> <ul style="list-style-type: none"> <li>• RNase</li> <li>• DNase</li> <li>• DNA</li> <li>• Endotoxins</li> <li>• ATP</li> <li>• Protein</li> <li>• Protease</li> <li>• Glucan</li> </ul> <p>30382776 Rev C <b>METTLER TOLEDO</b></p>

The new GP peel-off Tyvek lid includes mostly illustrated, non-language centric instructions.

Product

Label(s)

**Green-Pak  
SpaceSaver  
(GPS)**



**250 µL BioClean Ultra™ LTS**  
LR  
Sterilized  
PN 30389302 Batch 1746, 70515

### 3.5 TerraRack, StableRak and StableStak

At the launch of the RT, GP and GPS, labeling, packaging and other elements for TerraRack, StableRak and StableStak will remain exactly as they are now. For example:

- Whereas RT, GP and GPS will initially be designated as “Sterilized,” to avoid the significant cost of changing packaging, literature, etc., TR, SR and SS will continue with the “Presterilized” designation.
- TR, SR and SS will continue to be shrink sealed. The other products will be flow wrapped in a non-porous material.
- TR, SR and SS will continue to have product-specific information ink-jet printed on the lid surface. The other products will have labels bearing printed information.

### 3.6 Side-by-Side Comparisons of New Rack vs. Old Rack



Feature	Previous Rack	New Rack
<b>Lid design</b>	Lift-off, translucent	Hinged, high clarity
<b>Front latch</b>	Opens if dropped or inverted	Stays closed if dropped or inverted
<b>Colors</b>	Solid red, green, blue and gray	More modern look with translucent color decks over white base. Yellow replaces grey for 300 µL.
<b>LTS/UNV designation</b>	Colored base for LTS	Same rack/deck for both. LTS or UNV printed on label.
<b>Product information</b>	Printed on rack lid	Printed on branded front label
<b>Refillable</b>	Yes	Yes
<b>Autoclavable</b>	Yes	Yes
<b>Stackable</b>	No	Yes
<b>Stability</b>	Excellent on most surfaces	Excellent on most surfaces
<b>Multichannel loading</b>	Most tip sizes and orientations	All tip sizes and orientations
<b>Weight</b>	Relatively heavy	Weighs 20% less
<b>Wrapping</b>	Porous shrink-sealing material	Non-porous flow wrapping
<b>Recycled content</b>	Varies	No
<b>Operation</b>	Two hand	One hand
<b>Sterility</b>	Presterilized	Sterilized



### 3.7 Side-by-Side Comparisons of New GP vs. Old



Feature	Previous GP	New GP
<b>Operation</b>	Two-hand	Two-hand
<b>Shipping</b>	Occasional impact damage	Improved to reduce damage
<b>Sterility</b>	Presterilized	Sterilized
<b>Peel-off Tyvek lid</b>	Yes	Yes
<b>Instructions for use</b>	Yes	Yes
<b>Product-specific information</b>	Only on product box	Each GP is labelled
<b>Recyclable blister</b>	Limited due to hybrid composition	100% virgin PET, fully recyclable

### 3.8 Side-by-Side Comparisons of New GPS vs. Old



Feature	Previous GPS	New GPS
<b>Operation</b>	Push from top	Push from top
<b>Rack included</b>	Yes	No. Has disposable bottom shipping support made from polypropylene
<b>Top and bottom caps</b>	No	Yes
<b>Recyclable components</b>	Yes	Yes
<b>Sterility</b>	Presterilized	Sterilized
<b>Product-specific information</b>	Label on band	Labels on band and tower
<b>Instructions</b>	Printed on band	Printed on band
<b>Sealing method</b>	Porous shrink-sealing material	Non-porous flow wrapping
<b>Refill wafer colors</b>	Solid, red, green, blue and gray	More modern look with translucent color decks. Yellow replaces grey for 300 µL.

#### 3.8.1 Empty Racks

The new GPS has been redesigned to further minimize plastic waste and the polypropylene rack has been eliminated. Because the current rack is incompatible with the new GPS, empty racks are available to help customers transition to the new GPS. Several new GPR part numbers exist and sales personnel should provide empty racks to customers, where necessary.

### 3.9 Flow Wrapping

The new, non-porous flow wrap on the racked tips and SpaceSaver seals the product inside, preventing microorganisms and spores from entering after sterilization. Each sealed end of the flow wrapping is serrated, which allows the wrap to be easily torn and removed. The flow wrapping is much easier to remove than the shrink wrap, which employed a tear strip on the top of the rack. This is also a significant improvement for GPS, which did not have a tear strip and had to be cut or torn away.



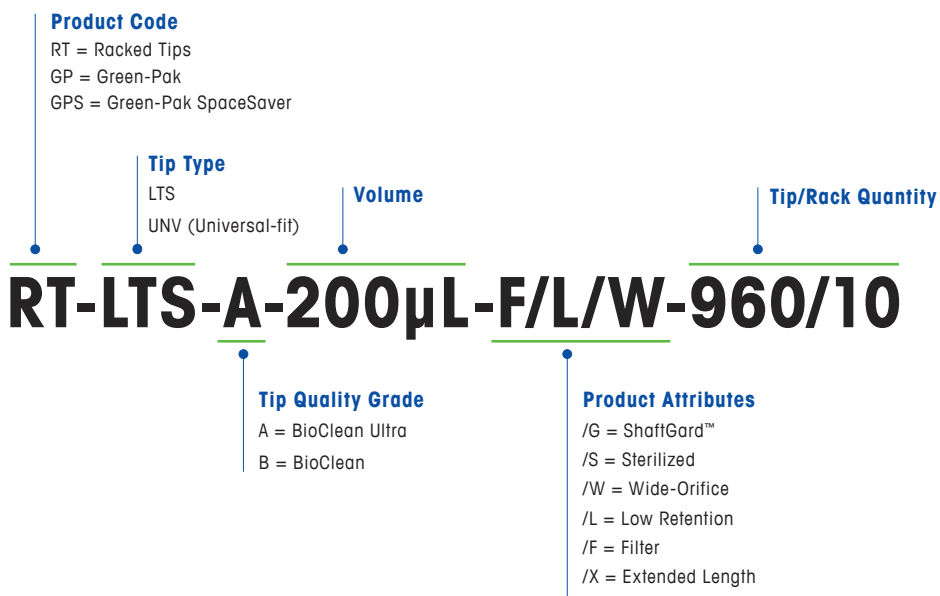
### 3.10 LTS Branded Tips

To assure customers that their tips are authentic Rainin LifeTouch™ System tips and not imitators, all Rainin LifeTouch System tips are now branded with “LTS” molded into the rim where the tip meets the shaft of the pipette. Plus, all new tips – LTS and UNV – are now manufactured with more stringent specifications for flash and concentricity.



### 3.11 More Detailed Tip Names

Our new tip naming system provides customers with more information about the tip.



## 4. Selling Guide

Customers should love this new product: for the same price they're paying now, Rainin tips now come in a greatly improved rack and refill system, and are manufactured under a tighter purity standard.

Our tips have not changed. Tip quality and composition are exactly the same. But our packaging and purity standard have advanced significantly, to the benefit of customers.

Key features:

- Our new rack and refill system delivers improved functionality
  - Hinged lid also functions as a lift-off lid
  - The new latch is secure, yet opens easily with one hand
  - Color decks and high-clarity lids make tip volumes easy to identify
- Green-Pak and SpaceSaver have been refined for improved operation
- With the new rack and refill system we have lightened its environmental footprint
  - SpaceSaver uses 20% less plastic
  - New tip racks weigh 20% less
- The BioClean purity standard has been upgraded to BioClean Ultra
  - We've added specifications for protein and protease
- New flow wrapping offers greater protection
- Lightweight rack design with integrated modules for added strength
- Refills that save space and reduce rack waste
- Refills reseal for tip cleanliness

### 4.1 Pricing

Essentially, no pricing change compared to current products.

## 5. Marketing Support

As a major launch, the Racked Tips, Green-Pak, Green-Pak SpaceSaver and BioClean Ultra launch is supported with all required collateral and sales tools.

Description	Purpose	Proposed use
<b>Data Sheet</b>	2-page overview of product benefits.	Distribution via sales, tradeshow and similar events
<b>Brochure</b>	8-page presentation of product benefits and ordering information.	Distribution via sales, tradeshow and similar events
<b>Conversion Guides</b>	4-page guides for both LTS and UNV that provide tables of old and new item numbers and descriptions.	Quick reference guides for customers
<b>Launch Campaign</b>	Create awareness for upgraded rack system and quality standard while assuring that tips have not changed.	Send email/mailer to database.
<b>News Release</b>	Create awareness for the new rack system and cleanliness standard via trade media.	Pitch to scientific publications globally via Fathom (SBU) and send to local press contacts for wider reach (MOs)
<b>Promo Video</b>	Create awareness for upgraded rack system and quality standard while assuring that tips have not changed.	Product pages on mt.com, YouTube, regional email campaigns
<b>Product Pages</b>	Provide comprehensive product information	mt.com/rainin
<b>BioClean Ultra Landing Page</b>	Provide comprehensive product information	mt.com/rainin
<b>LTS Landing Page</b>	LTS description page that links from all references to LTS on mt.com (and ShopRainin.com in the U.S.)	mt.com/rainin

Audience	Availability	Languages	Source
Sales force, customers, prospects, suspects	March 2018	EN, DE, FR, ES, IT, ZH, JP, KO, ZT, others on request	Print on demand portals; PDF on SharePoint
Sales force, customers, prospects, suspects	March 2018	EN, DE, FR, ES, IT, ZH, JP, KO, ZT, others on request	Print on demand portals; PDF on SharePoint
Sales force, customers	March 2018	EN, others on request	Marketing Toolbox on SharePoint
Customers, prospects, suspects	March 2018	All MT approved languages	Marketing toolbox on SharePoint
Customers, prospects, suspects	EN – March 2018 RoW – June 2018	EN, DE, FR, ES, IT, ZH, JP, KO, ZT, others on request	Marketing toolbox on SharePoint
Customers, prospects, suspects	March 2018	All MT approved languages	Marketing toolbox on SharePoint
Customers, prospects, suspects	March 2018	All MT approved languages	mt.com
Customers, prospects, suspects	March 2018	All MT approved languages	mt.com
Customers, prospects, suspects	March 2018	All MT approved languages	mt.com

## Marketing Support, continued

Description	Purpose	Proposed use
<b>Tip Finder</b>	Help customers identify Rainin tips for any major pipette brand. Enhanced features added for launch.	mt.com/rainin-TipFinder
<b>Product Number Lookup Tool (Excel)</b>	Help MT staff identify old/new product names and numbers; see current inventory	Internal reference tool
<b>Product Number Lookup Tool (Online)</b>	Help customers identify the new product numbers for their updated favorite products.	mt.com/rainin-Lookup
<b>Online Certificate Tool</b>	Download and print custom or generic quality certificates for BioClean Ultra and BioClean tips.	mt.com/rainin-Certs
<b>Sales Training PPT</b>	Sales training	Sales training
<b>Battle Card</b>	Provide reps with competitive intelligence to win against competing products and overcome objections.	Sales training

Audience	Availability	Languages	Source
Customers, prospects, suspects	March 2018	All MT approved languages	mt.com
Marketing, Sales and Tech Service	March 2018	EN	Marketing toolbox on SharePoint
Customers, prospects, suspects	March 2018	All MT approved languages	mt.com
Customers	March 2018	All MT approved languages	mt.com
Marketing, Sales and Tech Service	March 2018	EN	Marketing toolbox on SharePoint
Marketing, Sales and Tech Service	March 2018	EN	Marketing toolbox on SharePoint

### **5.1 Launch Campaign**

An email campaign has been developed to create awareness and interest in the new packaging and BioClean Ultra standard. The campaign is being supported by an online Part Number Look-up tool to help customers transition to the new part number and naming system.

### **5.2 Phase-In/Phase-Out**

The new Rainin rack and refill system is a replacement for the old rack and refills. As such, once product launch is complete, old product will no longer be available. The product will launch globally in three phases: 1) North America, 2) Europe and 3) Asia. At launch, the hub in the respective region will:

- Have 30 day supply of current and new product
- Accept orders for current or new products as long supply lasts (MOs will need to check inventory levels prior to placing orders)
- Rely on each MO to check orders carefully to assure that customers do not receive a mix of current and new product (the new racks and refills are not backward compatible)

As soon inventory levels are depleted, current products will be switched to inactive.





BioClean Ultra racks are stackable

## 6. Appendix A

### Table of New and Old Names/Part Numbers

#### Racked Tips

	Old Name	Old P/N	New Name	New P/N
Universal-Fit Tips	RT-10	17002896	RT-UNV-A-10µL-960/10	30389163
	RT-10S	17002905	RT-UNV-A-10µL-/S-960/10	30389181
	RT-10F	17002904	RT-UNV-A-10µL-/F-960/10	30389172
	RT-10LR	17014343	RT-UNV-A-10µL-/L-960/10	30389180
	RT-10SLR	17014344	RT-UNV-A-10µL-/L/S-960/10	30389182
	RT-10FLR	17014345	RT-UNV-A-10µL-/F/L-960/10	30389173
10 - ShaftGuard (G)	RT-10G	17002908	RT-UNV-A-10µL-/G-960/10	30389174
	RT-10GS	17002907	RT-UNV-A-10µL-/G/S-960/10	30389178
	RT-10GF	17002906	RT-UNV-A-10µL-/F/G-960/10	30389175
	RT-10GLR	17014347	RT-UNV-A-10µL-/G/L-960/10	30389177
	RT-10GSLR	17014348	RT-UNV-A-10µL-/G/L/S-960/10	30389179
	RT-10GFLR	17014349	RT-UNV-A-10µL-/F/G/L-960/10	30389176
30/100/200/250	RT-20F	17002917	RT-UNV-A-20µL-/F-960/10	30389189
	RT-20FLR	17014351	RT-UNV-A-20µL-/F/L-960/10	30389190
	RT-100F	17002903	RT-UNV-A-100µL-/F-960/10	30389170
	RT-100FLR	17014352	RT-UNV-A-100µL-/F/L-960/10	30389171
	RT-200F	17002912	RT-UNV-A-200µL-/F-960/10	30389186
	RT-200FLR	17014356	RT-UNV-A-200µL-/F/L-960/10	30389187
	RT-200WFLR	17014364	RT-UNV-A-200µL-/F/L/W-960/10	30389188
	RT-250	17002916	RT-UNV-A-250µL-960/10	30389191
	RT-250LR	17007958	RT-UNV-A-250µL-/L-960/10	30389192
	RT-250S	17002913	RT-UNV-A-250µL-/S-960/10	30389193
	RT-250SLR	17014354	RT-UNV-A-250µL-/L/S-960/10	30389194
	RT-250W	17007567	RT-UNV-A-250µL-/W-960/10	30389195
	RT-250WLR	17014362	RT-UNV-A-250µL-/L/W-960/10	30389196
	RT-250WSLR	17014363	RT-UNV-A-250µL-/L/S/W-960/10	30389197
300	RT-300	30264956	RT-UNV-A-300µL-768/8	30389058
	RT-300S	30264957	RT-UNV-A-300µL-/S-768/8	30389059
	RT-300F	30264958	RT-UNV-A-300µL-/F-768/8	30389136
	RT-300LR	30265232	RT-UNV-A-300µL-/L-768/8	30389137
	RT-300SLR	30265233	RT-UNV-A-300µL-/L/S-768/8	30389138
	RT-300FLR	30265234	RT-UNV-A-300µL-/F/L-768/8	30389139
1000	RT-1000	17002902	RT-UNV-A-1000µL-768/8	30389164
	RT-1000F	17002897	RT-UNV-A-1000µL-/F-768/8	30389165
	RT-1000FLR	17014361	RT-UNV-A-1000µL-/F/L-768/8	30389166
	RT-1000LR	17014359	RT-UNV-A-1000µL-/L-768/8	30389167
	RT-1000S	17002901	RT-UNV-A-1000µL-/S-768/8	30389168
	RT-1000SLR	17014360	RT-UNV-A-1000µL-/L/S-768/8	30389169
2 mL	RT-2000	17002911	RT-UNV-A-2000µL-480/8	30389183
	RT-2000F	17002909	RT-UNV-A-2000µL-/F-480/8	30389184
	RT-2000S	17002910	RT-UNV-A-2000µL-/S-480/8	30389185
5 mL	RT-5000	17002919	RT-UNV-A-5000µL-192/8	30389198
	RT-5000S	17002918	RT-UNV-A-5000µL-/S-192/8	30389199

LTS® LiteTouch® Tips

	Old Name	Old P/N	New Name	New P/N
10	RT-L10	17002930	RT-LTS-A-10µL-960/10	30389200
	RT-L10S	17002929	RT-LTS-A-10µL-/S-960/10	30389228
	RT-L10F	17002928	RT-LTS-A-10µL-/F-960/10	30389225
	RT-L10LR	17007955	RT-LTS-A-10µL-/L-960/10	30389227
	RT-L10SLR	17007956	RT-LTS-A-10µL-/L/S-960/10	30389229
	RT-L10FLR	17007957	RT-LTS-A-10µL-/F/L-960/10	30389226
200/250	RT-L200F	17002927	RT-LTS-A-200µL-/F-960/10	30389239
	RT-L200FLR	17007961	RT-LTS-A-200µL-/F/L-960/10	30389240
	RT-L200WFLR	17014294	RT-LTS-A-200µL-/F/L/W-960/10	30389241
	RT-L200XF	17008887	RT-LTS-A-200µL-/F/X-768/8	30389242
	RT-L250	17002932	RT-LTS-A-250µL-960/10	30389243
	RT-L250LR	17007959	RT-LTS-A-250µL-/L-960/10	30389244
	RT-L250S	17002931	RT-LTS-A-250µL-/S-960/10	30389245
	RT-L250SLR	17007960	RT-LTS-A-250µL-/L/S-960/10	30389246
	RT-L250W	17007102	RT-LTS-A-250µL-/W-960/10	30389247
	RT-L250WLR	17014292	RT-LTS-A-250µL-/L/W-960/10	30389248
	RT-L250WS	17007101	RT-LTS-A-250µL-/S/W-960/10	30389249
	RT-L250WSLR	17014293	RT-LTS-A-250µL-/L/S/W-960/10	30389250
	RT-L250X	17008814	RT-LTS-A-250µL-/X-768/8	30389251
	RT-L250XS	17008815	RT-LTS-A-250µL-/S/X-768/8	30389252
300	RT-L300	17002935	RT-LTS-A-300µL-768/8	30389253
	RT-L300F	17002933	RT-LTS-A-300µL-/F-768/8	30389254
	RT-L300S	17002934	RT-LTS-A-300µL-/S-768/8	30389255
	RT-L300LR	30264959	RT-LTS-A-300µL-/L-768/8	30389160
	RT-L300SLR	30265230	RT-LTS-A-300µL-/L/S-768/8	30389161
	RT-L300FLR	30265231	RT-LTS-A-300µL-/F/L-768/8	30389162
1000	RT-L1000	17002922	RT-LTS-A-1000µL-768/8	30389211
	RT-L1000F	17002920	RT-LTS-A-1000µL-/F-768/8	30389212
	RT-L1000FLR	17007954	RT-LTS-A-1000µL-/F/L-768/8	30389213
	RT-L1000LR	17007952	RT-LTS-A-1000µL-/L-768/8	30389214
	RT-L1000S	17002921	RT-LTS-A-1000µL-/S-768/8	30389215
	RT-L1000SLR	17007953	RT-LTS-A-1000µL-/L/S-768/8	30389216
	RT-L1000W	17007100	RT-LTS-A-1000µL-/W-768/8	30389217
	RT-L1000WFLR	17014297	RT-LTS-A-1000µL-/F/L/W-768/8	30389218
	RT-L1000WLR	17014295	RT-LTS-A-1000µL-/L/W-768/8	30389219
	RT-L1000WS	17007099	RT-LTS-A-1000µL-/S/W-768/8	30389220
	RT-L1000WSLR	17014296	RT-LTS-A-1000µL-/L/S/W-768/8	30389221
	RT-L1000X	17008817	RT-LTS-A-1000µL-/X-768/8	30389222
	RT-L1000XF	17008819	RT-LTS-A-1000µL-/F/X-768/8	30389223
	RT-L1000XS	17008818	RT-LTS-A-1000µL-/S/X-768/8	30389224
1200	RT-L1200	17006421	RT-LTS-A-1200µL-768/8	30389230
	RT-L1200F	17006419	RT-LTS-A-1200µL-/F-768/8	30389231
	RT-L1200FLR	17008028	RT-LTS-A-1200µL-/F/L-768/8	30389232
	RT-L1200LR	17008026	RT-LTS-A-1200µL-/L-768/8	30389233
	RT-L1200S	17006420	RT-LTS-A-1200µL-/S-768/8	30389234
	RT-L1200SLR	17008027	RT-LTS-A-1200µL-/L/S-768/8	30389235
2 mL	RT-L2000	17002926	RT-LTS-A-2000µL-480/8	30389236
	RT-L2000F	17002923	RT-LTS-A-2000µL-/F-480/8	30389237
	RT-L2000S	17002924	RT-LTS-A-2000µL-/S-480/8	30389238
5 mL	RT-L5000	17002937	RT-LTS-A-5000µL-192/8	30389256
	RT-L5000S	17002936	RT-LTS-A-5000µL-/S-192/8	30389257

## Green-Pak Individual Refills

	Old Name	Old P/N	New Name	New P/N	
Universal-Fit Tips	10 (G)/ 10	GP-10	17002419	GP-UNV-A-10µL-960/10	30389258
		GP-10S	17002415	GP-UNV-A-10µL-/S-960/10	30389265
		GP-10F	17002414	GP-UNV-A-10µL-/F-960/10	30389263
		GP-10GF	17002416	GP-UNV-A-10µL-/F/G-960/10	30389264
	30/100/200/250	GP-20F	17002422	GP-UNV-A-20µL-/F-960/10	30389267
		GP-100F	17002413	GP-UNV-A-100µL-/F-960/10	30389262
		GP-200F	17002420	GP-UNV-A-200µL-/F-960/10	30389266
		GP-250	17002409	GP-UNV-A-250µL-960/10	30389268
		GP-250S	17002421	GP-UNV-A-250µL-/S-960/10	30389269
	1000	GP-1000	17002412	GP-UNV-A-1000µL-768/8	30389259
		GP-1000F	17002410	GP-UNV-A-1000µL-/F-768/8	30389260
		GP-1000S	17002411	GP-UNV-A-1000µL-/S-768/8	30389261

	Old Name	Old P/N	New Name	New P/N	
LTS LiteTouch Tips	10	GP-L10	17002424	GP-LTS-A-10µL-960/10	30389270
		GP-L10F	17002429	GP-LTS-A-10µL-/F-960/10	30389274
		GP-L10S	17002430	GP-LTS-A-10µL-/S-960/10	30389275
	200/250	GP-L200F	17002428	GP-LTS-A-200µL-/F-960/10	30389276
		GP-L250	17002425	GP-LTS-A-250µL-960/10	30389277
		GP-L250S	17002431	GP-LTS-A-250µL-/S-960/10	30389278
	1000	GP-L1000	17002423	GP-LTS-A-1000µL-768/8	30389271
		GP-L1000F	17002426	GP-LTS-A-1000µL-/F-768/8	30389272
		GP-L1000S	17002427	GP-LTS-A-1000µL-/S-768/8	30389273

## Empty Racks for Green-Pak and Green-Pak SpaceSaver\*

	Old Name	Old P/N	New Name	New P/N	
	10	GPR-10	17001860	GPR-UNV-A-10µL-0/10	30389350
		GPR-L10	17001865	GPR-LTS-A-10µL-0/10**	30389354
	250	GPR-250	17001861		
		GPR-L250	17001863	GPR-XXX-A-250µL-0/10	30389353
	300	GPR-300	N/A		
		GPR-L300	N/A	GPR-XXX-A-300µL-0/8	30397667
	1000	GPR-1000	17001859		
		GPR-L1000	17001864	GPR-XXX-A-1000µL-0/8	30389351

\* Please note that the new SpaceSaver product does not come with an extra rack any longer. If this is your first order of BioClean Ultra tips, you will need to purchase empty racks or racked tips in a matching size to start using this refill system.

\*\* This product can be also used with UNV 10 µL ShaftGard tips.

## Green-Pak SpaceSaver Stacked Refills

### Universal-Fit Tips

	Old Name	Old P/N	New Name	New P/N
10 (6)	GPS-10G	17005085	GPS-UNV-A-10µL-/G-960/10	30389283
	GPS-10GLR	17014381	GPS-UNV-A-10µL-/G/L-960/10	30389284
	GPS-10GS	17005084	GPS-UNV-A-10µL-/G/S-960/10	30389285
	GPS-10GSLR	17014383	GPS-UNV-A-10µL-/G/L/S-960/10	30389286
250	GPS-250	17005087	GPS-UNV-A-250µL-960/10	30389287
	GPS-250LR	17014385	GPS-UNV-A-250µL-/L-960/10	30389288
	GPS-250S	17005086	GPS-UNV-A-250µL-/S-960/10	30389289
	GPS-250SLR	17014386	GPS-UNV-A-250µL-/L/S-960/10	30389290
300	GPS-300	New	GPS-UNV-A-300µL-768/8	30397665
	GPS-300S	New	GPS-UNV-A-300µL-/S-768/8	30397666
1000	GPS-1000	17005083	GPS-UNV-A-1000µL-768/8	30389279
	GPS-1000LR	17014387	GPS-UNV-A-1000µL-/L-768/8	30389280
	GPS-1000S	17005082	GPS-UNV-A-1000µL-/S-768/8	30389281
	GPS-1000SLR	17014394	GPS-UNV-A-1000µL-/L/S-768/8	30389282

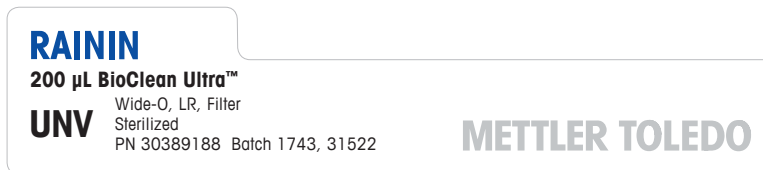
### LTS LiteTouch Tips

	Old Name	Old P/N	New Name	New P/N
10	GPS-L10	17005091	GPS-LTS-A-10µL-960/10	30389291
	GPS-L10LR	17014307	GPS-LTS-A-10µL-/L-960/10	30389296
	GPS-L10S	17005090	GPS-LTS-A-10µL-/S-960/10	30389297
	GPS-L10SLR	17014335	GPS-LTS-A-10µL-/L/S-960/10	30389298
250	GPS-L250	17005093	GPS-LTS-A-250µL-960/10	30389299
	GPS-L250LR	17014336	GPS-LTS-A-250µL-/L-960/10	30389300
	GPS-L250S	17005092	GPS-LTS-A-250µL-/S-960/10	30389301
	GPS-L250SLR	17014337	GPS-LTS-A-250µL-/L/S-960/10	30389302
300	GPS-L300	17005095	GPS-LTS-A-300µL-768/8	30389303
	GPS-L300S	17005094	GPS-LTS-A-300µL-/S-768/8	30389304
1000	GPS-L1000	17005089	GPS-LTS-A-1000µL-768/8	30389292
	GPS-L1000LR	17014338	GPS-LTS-A-1000µL-/L-768/8	30389293
	GPS-L1000S	17005088	GPS-LTS-A-1000µL-/S-768/8	30389294
	GPS-L1000SLR	17014339	GPS-LTS-A-1000µL-/L/S-768/8	30389295

## Appendix B

### Labeling Information and Guide

The Rainin tip labeling scheme follows uniform structure that is consistent across all labeled tip products. With the release of BioClean Ultra and the RT tip box and refills, labels are used on RT, GP, GPS and bulk-bagged tips. Later in 2018, labeling will begin on TerraRack, StableRak and StableStak.



Sample RT label

Line	Specification	Example	Font and Size
1	Volume, LTS or UNV, Cleanliness Spec	200 µL UNV BioClean Ultra	ITC Avant Garde Gothic Com: Bold 8 pt
2	Tip Features (see chart below)	Wide-O, LR, Filter, XL	ITC Avant Garde Gothic Com: Book 6.5 pt
3	Sterility information	Sterilized	ITC Avant Garde Gothic Com: Book 6.5 pt
4	SAP No. and Batch Detail	PN17014296 Batch 1708, 12345	ITC Avant Garde Gothic Com: Book 6.5 pt

#### Line 1 Volume, LTS or UNV, Cleanliness Spec

**Format:** Numeric volume [space] Symbol [space] Tip Type [space] Cleanliness

**Example:**

Lab Grade	<b>200 µL UNV</b>
BioClean	<b>10 µL LTS BioClean</b>
BioClean Ultra	<b>1000 µL UNV BioClean Ultra</b>

**Line 2**

**Tip Features**

**Format:** Feature [comma] [space] Feature [comma] [space] Feature [comma] [space]...

**Example:** When present, "Wide-O" always precedes "LR" in a sequence of features. Likewise, "LR" always precedes "Filter" in a sequence.

Priority in a Sequence	Feature Code	Description
1	Gel-Well	Gel-Well
2	ShaftGard	ShaftGard
3	Wide-O	Wide Orifice
4	LR	Low Retention
5	Filter	Filter
6	XL	Extended Length

	1 Gel-Well	2 ShaftGard	3 Wide-O	4 LR	5 Filter	6 XL
Wide-O LR Filter			•	•	•	
ShaftGard LR Filter		•		•	•	
LR Filter				•	•	
Filter XL					•	•
Gel-Well	•					
[no attributes]						

**Line 3**

**Sterility Information**

Racks designated Sterilized are noted on Line 3.

S	t	e	r	i	l	i	z	e	d
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**Line 4**

**SAP Number and Batch Code**

The product SAP number and batch code anchor the label.

**Batch Code**

February 21, 2017, at 3:22 p.m.

B	a	t	c	h	Year	Week	Day	Hour	Minute	Machine					
B	a	t	c	h	1	7	0	8	3	1	5	2	2	1	0

**Day numbers**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7

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