

Low Retention Tips



Rainin LR Tips

- Super repellent surface
- Uniform molecular field
- Enhanced pipetting accuracy
- Many size & packaging options

Improved Pipetting Accuracy
Advanced Repellent Surface

METTLER TOLEDO

Rainin LR Low Retention Tips

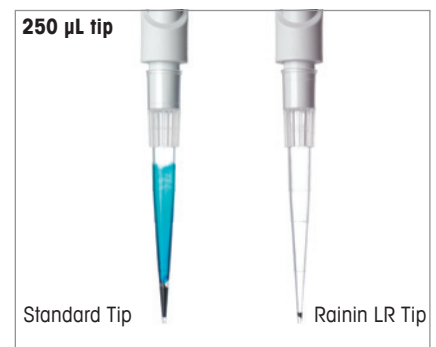
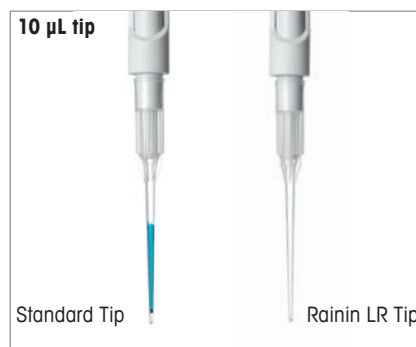
Improve Pipetting Accuracy

Rainin LR low retention tips improve pipetting accuracy by minimizing residual volume, particularly when transferring liquids such as viscous samples and those with low surface tension.

Rainin LR tips prevent samples from interacting with the polypropylene surface of the tip. METTLER TOLEDO employs a unique manufacturing process to produce tips with a uniform field of highly-repellent fluoropolymer molecules that form an impenetrable “superhydrophobic” electron field. The result: liquids and molecules are suspended above the tip surface, allowing problem liquids to glide effortlessly in and out of the tip.

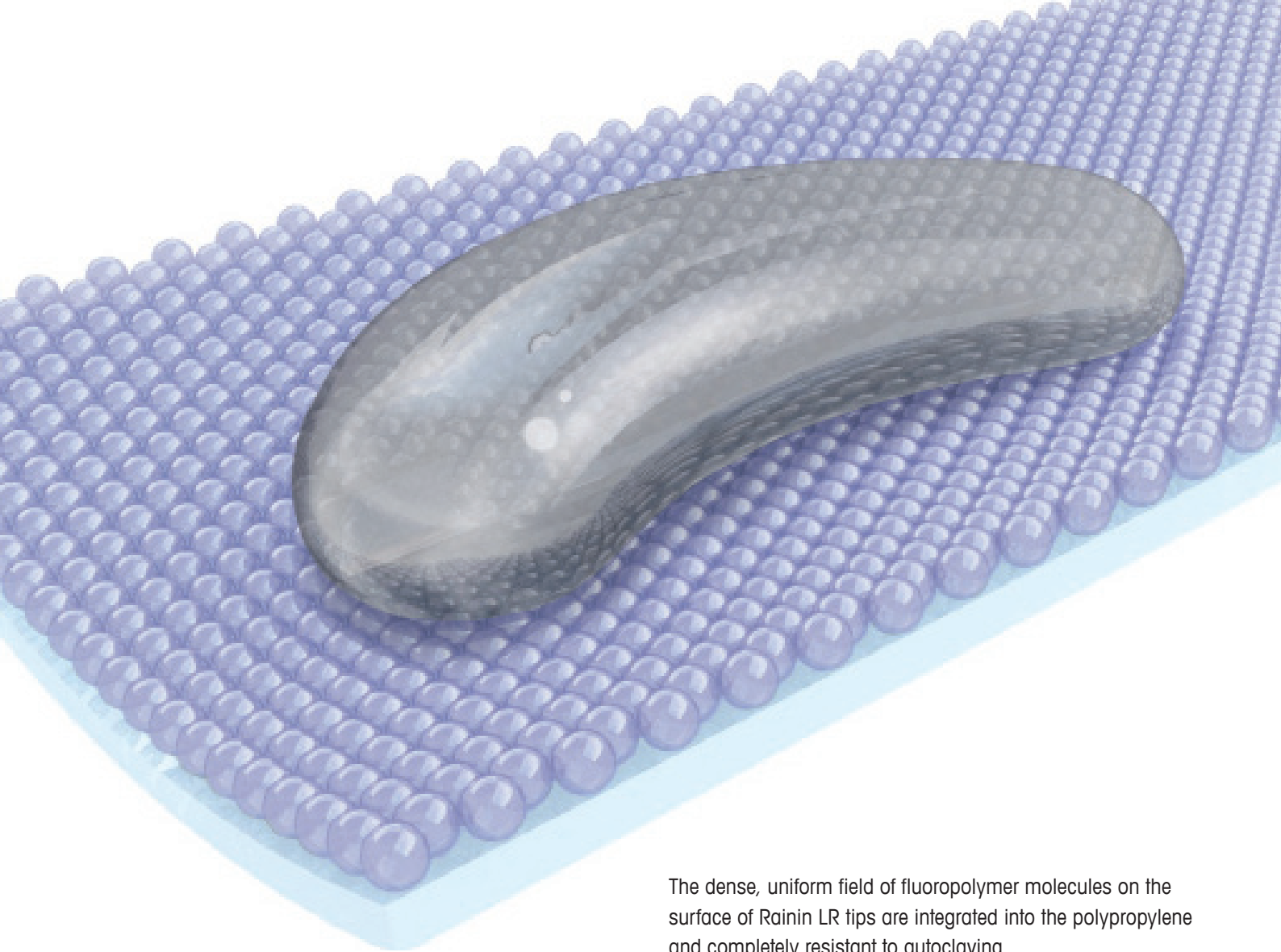
Not all low retention tips are created equally

More common manufacturing methods – dipping or tumbling tips in a fluoropolymer bath – can produce tips with incomplete and uneven layers of fluoropolymer that are more likely to clog or leach. What’s more, tips made with “diamond polished” molds – often promoted as low retention – do nothing to prevent samples from reacting with the polypropylene and binding to the surface.



Significantly less residual volume

Propylene glycol in food coloring can interact with the polypropylene surface and cause liquids to sheet or coat the tip interior. Shown here, the highly repellent fluoropolymer field in Rainin LR tips forces the dye to glide smoothly about the polypropylene surface and prevent sheeting.



The dense, uniform field of fluoropolymer molecules on the surface of Rainin LR tips are integrated into the polypropylene and completely resistant to autoclaving.



BioClean™ quality

Strict quality testing assures the absolute cleanliness and purity of Rainin LR tips. Each tip lot is rigorously tested and certified to be free of these biological contaminants:

- DNA
- DNase
- RNase
- Pyrogen
- ATP
- PCR inhibitors



Wide-orifice

Rainin LR wide-orifice tips combine a wide aperture with a super-repellent surface for viscous/syrupy liquids, cultured cells and high-molecular polymers (such as genomic DNA). These tips reduce shear force and provide a super-slippery surface to protect delicate samples.



Many sizes, styles

Tip styles and sizes for every application. Universal tips fit all brands of pipettes.

- LTS™
- Universal fit
- Liquidator™ 96
- Sterile
- Filtered
- Wide-orifice



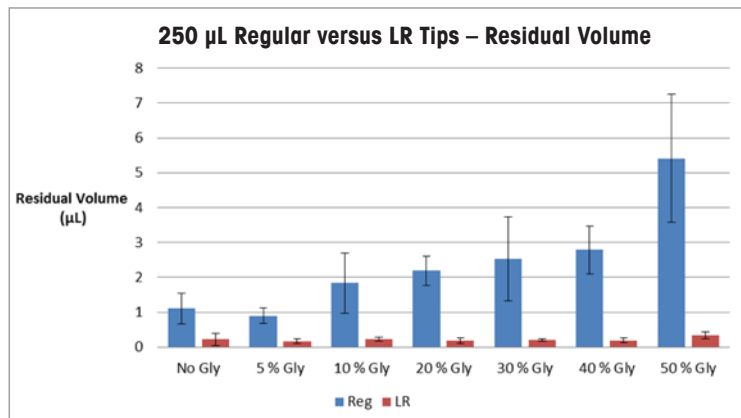
Many packaging options

Rainin LR tips are available in a complete range of packaging options to satisfy individual preferences.

- Racks
- Green-Pak™ SpaceSaver™
- Bulk

Rainin LR tips minimize residual liquid volumes with problem liquids

The data below compare the effect of increasing sample viscosity upon liquid retention within Rainin LR tips and standard pipette tips.



The data above indicate the likelihood for significant liquid retention by non-LR tips when pipetting liquids with increased viscosity, reduced cohesion and reduced surface tension. For example, many/most thermostable DNA polymerases and many other enzymes are routinely suspended in buffers which contain 50% glycerol. The retention of enzyme-containing solutions by non-LR tips can easily skew data in an inconsistent and unpredictable manner, as well resulting in significant monetary loss over time by wasting costly reagents.

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