



sartorius

## Low Retention Tips Optimum Flow for Optimum Recovery



Biohitfamily

turning science into solutions

# Maximize Your Sample Recovery

## Save Valuable Reagents



Tip with regular liquid retention

Pipetting liquids that contain detergents can be problematic when using standard pipette tips. Some residue of liquid often remains in the tip due to differences in surface energies between the plastic pipette tip and the sample. This sometimes difficult to visualize residue causes imprecision in pipetting, and loss of valuable samples or reagents.



Sartorius Low Retention Tip

To overcome this issue we have utilized an advanced technology to create an extremely even and durable hydrophobic surface on our Low Retention Tips. This feature helps you to maximize the sample recovery, when handling detergent containing or other liquids with low surface tension.

Better reproducibility in pipetting is especially beneficial in sensitive molecular biology applications, where reagents often contain detergents, for example in:

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

## SafetySpace™ Filter Tips with Low Retention Feature Doubled Security for Sample Recovery!



The extremely hydrophobic tip surface combined with the safety air gap between the sample and the filter improves the sample recovery in two ways: through better liquid flow, and by reducing the risk of the sample penetrating the filter.

Thus these tips are ideal for sensitive molecular biology applications, where

- reagents contain detergents.
- prevention of cross-contamination is vital.
- multi-dispensing with excess liquid volume is used.

# Sartorius Low Retention Tips

## Clearly Reduce Sample Loss

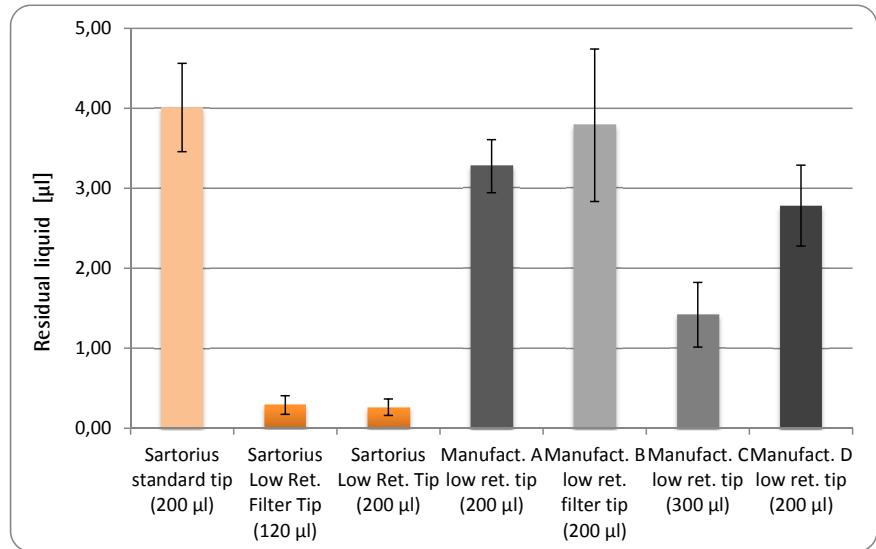
### Comparison of Residual Liquid Amounts

#### Test Setup

Low retention tips made by four manufacturers were compared with Sartorius standard and Low Retention Tips, when pipetting 120 µl of coloured PCR buffer (cont. detergents and a density agent) with Sartorius mLINE® mechanical pipette. The remaining liquid amount in the tip after dispensing was measured by a gravimetric method. The test was repeated with 10 tips of every manufacturer and tip type. The error bars show the standard deviations.

#### Results

Sartorius Low Retention Tips retained the least amount of residue, whereas some of the other manufacturers' low retention tips performed similarly to Sartorius standard tips. The use of



Sartorius Low Retention Tips resulted in best pipetting reproducibility, supporting the benefits of these tips e.g. in a PCR setup.

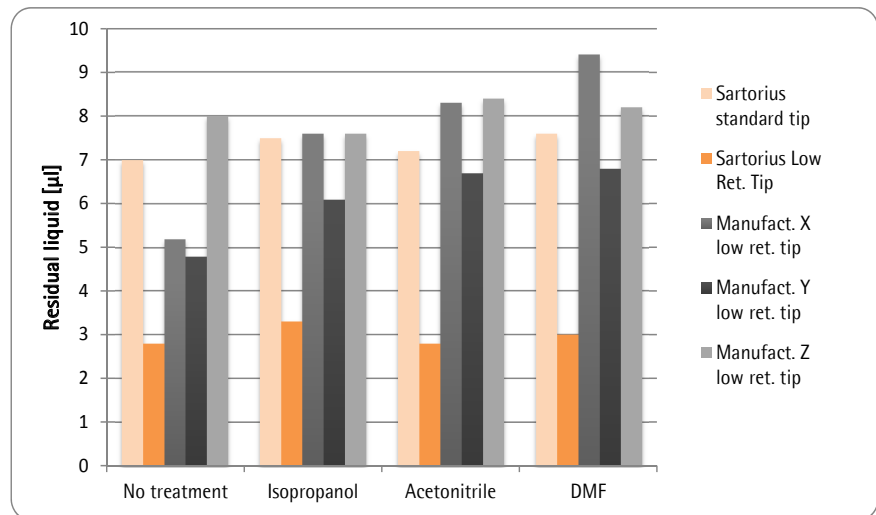
# Sartorius Low Retention Tips

## Have High Chemical Resistance

### Comparison of Chemical Resistances

#### Test Setup

Low retention tips from three manufacturers were compared with Sartorius standard and Low Retention Tips. The test was performed by pipetting 1000 µl of each solvent 20 times with every test tip with full volume using Sartorius Picus electronic pipette. After rinsing three times with distilled water, the effects of this treatment to the performance of the low retention tips were analyzed with an absorbance-based test method using coloured liquid as a test solution. The test was repeated with six tips of every manufacturer and tip type.



#### Results

When comparing liquid retention of the chemically treated tips with the untreated tips, it was seen that the performance

of Sartorius Low Retention Tips was not compromised, whereas the other tips tested lost some of their functionality after the chemical treatment.

# Improve Consistency

## Secure Reliable Results

### Optimum Liquid Flow

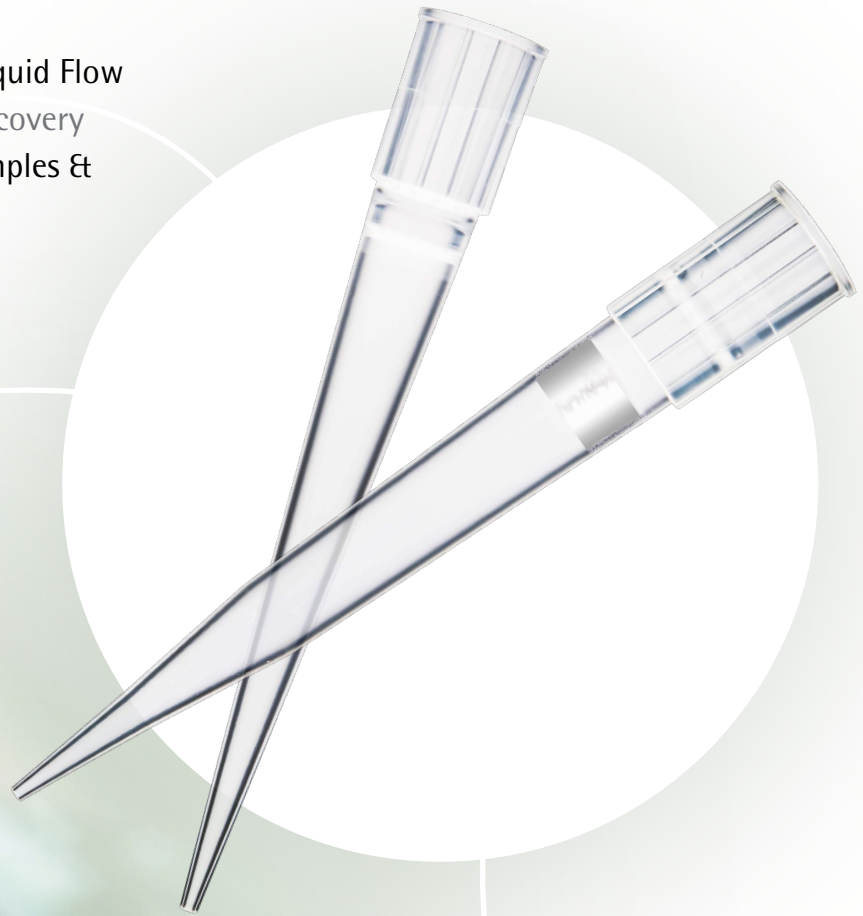
Optimum recovery

- ▶ Save samples & reagents

### High Reproducibility

Gain more precise and consistent pipetting results

- ▶ Achieve better reliability



### High Chemical Resistance

No leachables

- ▶ Secure sample and result integrity



# Ordering Information

## Low Retention Optifit Tips

Order Code	Description	Volume	Length	Packaging	RNase, DNase, endotoxin free	Pre-sterilised	Quantity
LH-L790010	● Optifit Tip Low Retention	0.1-10 µl	31.5 mm	Single Tray	●		10 × 96
LH-L790012	● Optifit Tip Low Retention	0.1-10 µl	31.5 mm	Refill Tower			10 × 96
LH-L790200	● Optifit Tip Low Retention	0.5-200 µl	51 mm	Single Tray	●		10 × 96
LH-L790202	● Optifit Tip Low Retention	0.5-200 µl	51 mm	Refill Tower			10 × 96
LH-L790350	● Optifit Tip Low Retention	5-350 µl	54 mm	Single Tray	●		10 × 96
LH-L790352	● Optifit Tip Low Retention	5-350 µl	54 mm	Refill Tower			10 × 96
LH-L791000	● Optifit Tip Low Retention	10-1000 µl	71.5 mm	Single Tray	●		10 × 96
LH-L791200	● Optifit Tip Low Retention	50-1200 µl	71.5 mm	Single Tray	●		10 × 96
LH-L791210	● Optifit Tip Low Retention, Ext.	50-1200 µl	90 mm	Single Tray	●		10 × 96

## Low Retention SafetySpace™ Filter Tips

Order Code	Description	Volume	Length	Packaging	RNase, DNase, endotoxin free	Pre-sterilised	Quantity
LH-LF790011	● SafetySpace™ Filter Tip Low Ret.	0.1-10 µl	32 mm	Single Tray	●	●	10 × 96
LH-LF790021	● SafetySpace™ Filter Tip Low Ret.	0.5-20 µl	51 mm	Single Tray	●	●	10 × 96
LH-LF790101	● SafetySpace™ Filter Tip Low Ret.	2-120 µl	51 mm	Single Tray	●	●	10 × 96
LH-LF790201	● SafetySpace™ Filter Tip Low Ret.	5-200 µl	52.5 mm	Single Tray	●	●	10 × 96
LH-LF790301	● SafetySpace™ Filter Tip Low Ret.	5-300 µl	52.5 mm	Single Tray	●	●	10 × 96
LH-LF791001	● SafetySpace™ Filter Tip Low Ret.	50-1000 µl	78 mm	Single Tray	●	●	10 × 96
LH-LF791211	● SafetySpace™ Filter Tip Low Ret.	50-1200 µl	90 mm	Single Tray	●	●	10 × 96



Sartorius Low Retention Tips, Single Tray



Sartorius Low Retention Tips, Refill Tower



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