

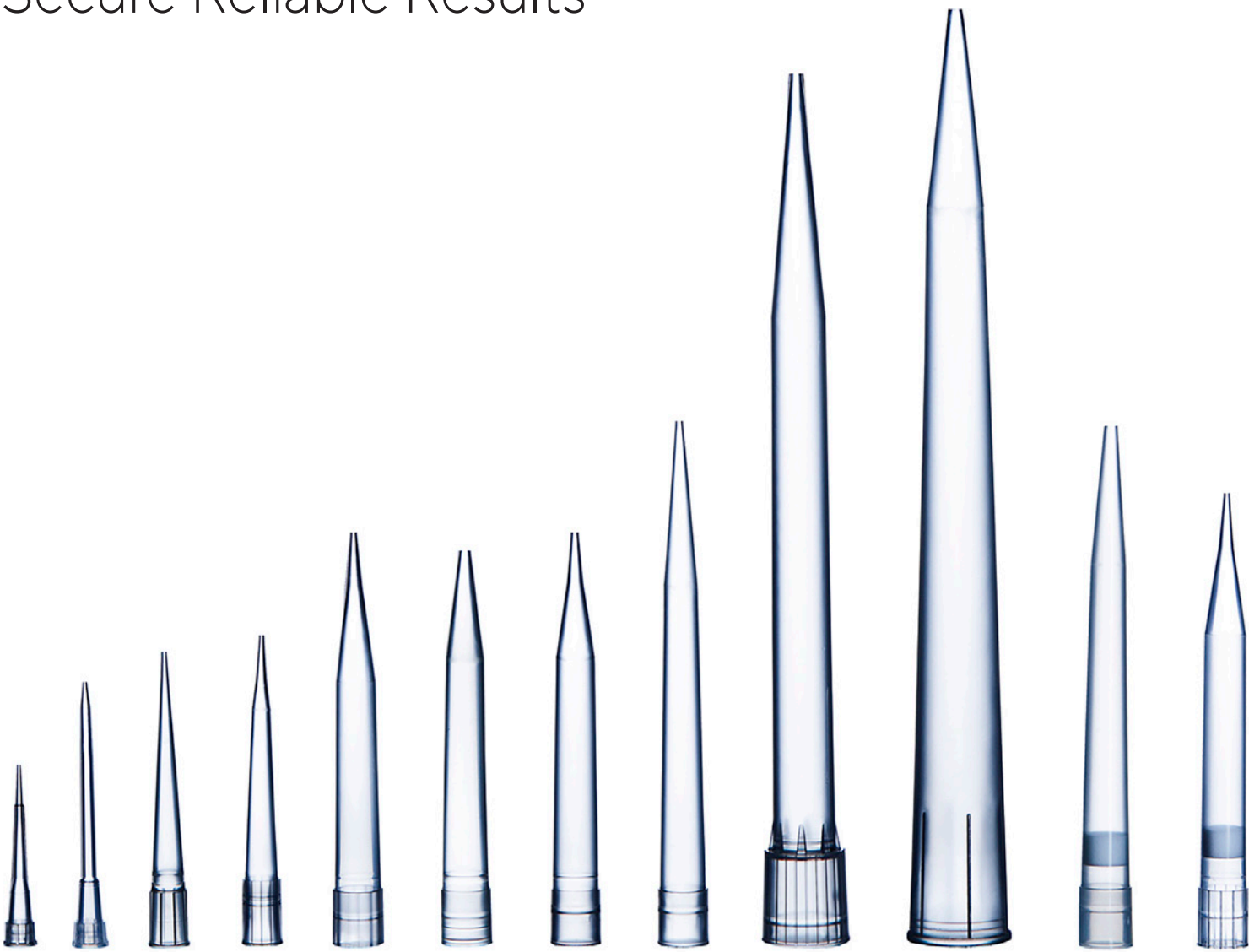


Low Retention Tips
Optimum Flow for
Optimum Recovery

Simplifying Progress

SARTORIUS

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

Maximize Your Sample Recovery

Save Valuable Reagents

Pipetting detergent containing liquids can be problematic when using standard pipette tips. There is often residual liquid remaining 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.

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 technique



Tip with regular liquid retention

Sartorius Low Retention Tip

Safetyspace™ Filter Tips with Low Retention Feature

Double 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 And Have High Chemical Resistance

Comparison of Residual Liquid After Dispensing

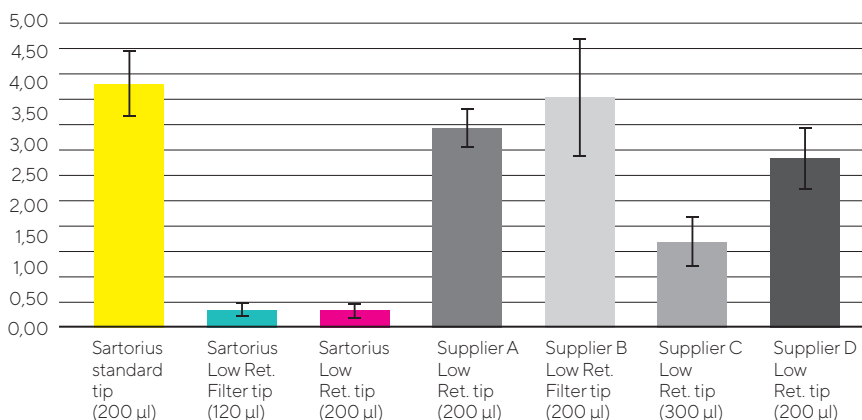
Test Setup

Low retention tips from four suppliers were compared against Sartorius standard and Low Retention Tips when pipetting 120 µl of colored PCR buffer (cont. detergents and density agent) with Sartorius mLINE® mechanical pipette. The remaining liquid amount in the tip after dispensing was measured with a gravimetric method. All tips were tested in 10 replicates. The error bars show the standard deviations.

Results

Sartorius Low Retention Tips retained the least amount of residue, whereas some of the other suppliers' 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 PCR setup.





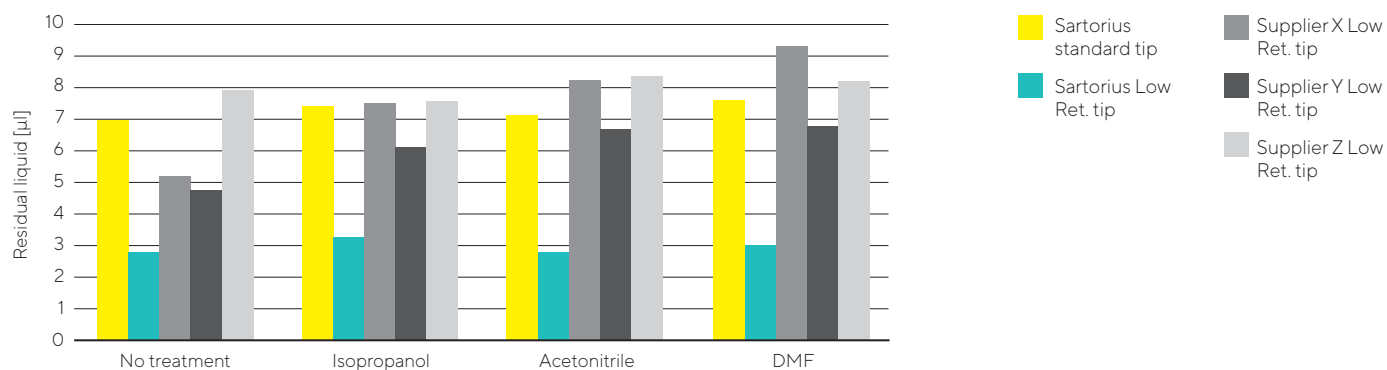
Comparison of Chemical Resistances

Test Setup

Low retention tips from three suppliers were compared against Sartorius standard and Low Retention Tips. The test for chemical resistance was performed by pipetting 1000 μl of each solvent 20 times with each test tip with full volume using Sartorius Picus electronic pipette.

Results

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 colored liquid as a test solution. All tips were tested in 6 replicates. When comparing liquid retention after chemical treatment against non-treated 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.





Sartorius Low Retention Tips,
Single Tray



Sartorius Low Retention Tips,
Refill Tower



Ordering Information

Low Retention Optifit Tips

Article No.	Description	Volume	Length	Packaging	RNase, DNase, DNA, endotoxin free	Pre-sterilized	Quantity
LH-L790010	■ Optifit Tip Low Retention	0.1-10 µl	31.5 mm	Single Tray	■		10 x 96
LH-L790012	■ Optifit Tip Low Retention	0.1-10 µl	31.5 mm	Refill Tower			10 x 96
LH-L790200	■ Optifit Tip Low Retention	0.5-200 µl	51 mm	Single Tray	■		10 x 96
LH-L790202	■ Optifit Tip Low Retention	0.5-200 µl	51 mm	Refill Tower			10 x 96
LH-L790350	■ Optifit Tip Low Retention	5-350 µl	54 mm	Single Tray	■		10 x 96
LH-L790352	■ Optifit Tip Low Retention	5-350 µl	54 mm	Refill Tower			10 x 96
LH-L791000	■ Optifit Tip Low Retention	10-1000 µl	71.5 mm	Single Tray	■		10 x 96
LH-L791200	■ Optifit Tip Low Retention	50-1200 µl	71.5 mm	Single Tray	■		10 x 96
LH-L791210	■ Optifit Tip Low Retention, Ext.	50-1200 µl	90 mm	Single Tray	■		10 x 96

Low Retention Safetyspace™ Filter Tips

Article No.	Description	Volume	Length	Packaging	RNase, DNase, DNA, endotoxin free	Pre-sterilized	Quantity
LH-LF790011	■ Safetyspace™ Filter Tip Low Ret.	0.1-10 µl	32 mm	Single Tray	■	■	10 x 96
LH-LF790021	■ Safetyspace™ Filter Tip Low Ret.	0.5-20 µl	51 mm	Single Tray	■	■	10 x 96
LH-LF790101	■ Safetyspace™ Filter Tip Low Ret.	2-120 µl	51 mm	Single Tray	■	■	10 x 96
LH-LF790201	■ Safetyspace™ Filter Tip Low Ret.	5-200 µl	52.5 mm	Single Tray	■	■	10 x 96
LH-LF790301	■ Safetyspace™ Filter Tip Low Ret.	5-300 µl	52.5 mm	Single Tray	■	■	10 x 96
LH-LF791001	■ Safetyspace™ Filter Tip Low Ret.	50-1000 µl	78 mm	Single Tray	■	■	10 x 96
LH-LF791211	■ Safetyspace™ Filter Tip Low Ret.	50-1200 µl	90 mm	Single Tray	■	■	10 x 96

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