

When Sterile is Not Clean Enough

BioClean Inert Tips for Zero Interference



For successful experiments, pipette tips must be completely inert and not interfere with samples. As well as being contamination-free, pipette tips should also be free of any bioactive components. From raw material selection and clean production to automated packaging and frequent testing, Rainin BioClean tips are guaranteed to be free of RNase, DNase, DNA, pyrogens or ATP.

Many pipette tip brands are labeled as contamination-free or sterile, but publications¹ show that even these tips can compromise outcome and adversely affect scientific work.

Additives to virgin polypropylene, such as the detergent DiHEMDA and the releasing agent oleamide commonly used by some pipette tip manufacturers, can adversely affect experiment outcome. Rainin's BioClean tips are proven to be free of such components and therefore have zero interference on results.

BioClean – 100% clean, 100% pure

In internal quality controls and in external audits, BioClean tips from Rainin showed no traces of such additives or bioactive contaminants. The absence of bioactive components in the raw materials, as well as the proven lack of external contaminants (DNA, DNase, RNase, ATP, endotoxins or PCR inhibitors) in production and packaging, ensures that high-quality Rainin BioClean tips are completely inert and will not influence experimental outcome in any way.

METTLER TOLEDO



Maximum Performance

Zero Interference

Not all tips are equal. For optimal performance, tips must be of highest quality, contamination-free and totally inert to avoid affecting results. At Rainin, we use every conceivable measure to ensure the very highest tip quality.

The purest material

Rainin uses pure virgin polypropylene resin in the form of CFR 21 certified² pellets, free of any additives or dyes and extensively tested.

Clean manufacturing and packaging

Rainin's tip manufacturing facility is a Class 100,000 clean room. The fully automated material handling process feeds virgin polypropylene material from silos directly to molding machines, avoiding any human contact. Tips are molded at high temperature – 250°C. In addition to absolute material purity, Rainin's strict conformance to ISO 9001 manufacturing procedures eliminates all external sources of contamination.

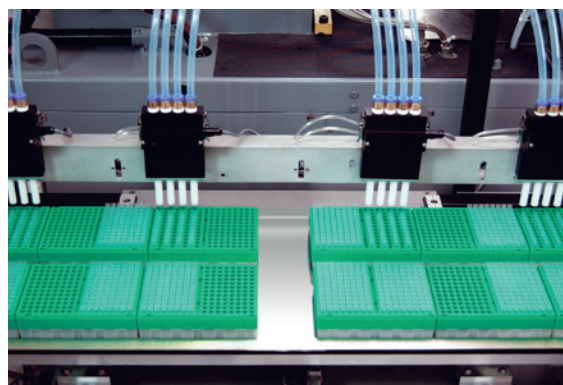
Tested for maximum safety

Rainin BioClean tips pass the most sophisticated testing protocols. For example, a test for DNA applies qPCR with sensitivity levels down to less than 1 copy number of human template DNA, so even the smallest trace amounts are detected. Because the most stringent test methods are applied to all potential contaminants (DNA, DNase, RNase, ATP, endotoxins, PCR inhibitors, trace metals, trace organics), you can rely on Rainin BioClean tips for safety and purity.

Contaminants Tested	Testing Detection Levels
RNase	$\leq 10^{-9}$ Kunitz units/ μ L
DNase	$\leq 10^{-7}$ Kunitz units/ μ L
DNA	< 1 copy human DNA
Endotoxins	0.001 EU/mL
ATP	$< 2 \times 10^{-12}$ mg/ μ L
Trace Materials	No trace materials
Trace Organics	No organic contaminants



Class 100,000 clean room manufacturing



Automated handling eliminates human contact.



Automated filter assembly, no human contact

1. McDonald, G., Hudson, A., Dunn, S., You, H., Baker, G., Whittall, R., Martin, J., Jha, A., Edmondson, D., and A. Holt. 2008. Bioactive Contaminants Leach from Disposable Laboratory Plasticware. *Science* 332(5903): 917.

2. CFR Title 21 (2003) 177.1520 (a), (b) and (c) 1.1 Olefin polymers, Montell Polyolefins Datasheet

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