



Absolute Tubes

Your best choice to care for your sample:
Eppendorf Tubes®



It's Your Sample

Disposable plasticware is used routinely in most life science laboratories. To achieve the highest level of reliability and consistency for your experiments, Eppendorf has optimized source materials and processes for the production of Eppendorf Tubes® to minimize the risk of interference. The effects from chemical substances such as slip agents, plasticizers or biocides leaching out of plastic consumables are still frequently underestimated in the majority of life science applications. However, increasing scientific evidence shows that this heterogeneous group of chemicals may significantly affect experiments and pose a likely source of error in various assay systems. They slow down evaporation, skew absorbance readings and lead to erroneous DNA quantification. Some of these slip agents have also been shown to negatively affect the outcome of biological tests like enzyme activity or receptor-binding assays.

Eppendorf Tubes®






- > Made of the highest quality, either virgin and bio-circular polypropylene (PP), free of biocides, plasticizers and latex
- > Produced with optimized, highly polished molds without the use of slip agents like oleamide, erucamide or stearamide
- > Designed and manufactured under ISO 13485 and ISO 9001 certified Management System
- > Full traceability is provided for each product back to material lot

Purity tailored to your applicational needs

Eppendorf has set standards in consumable purity levels. In addition to the high standard »Eppendorf Quality«, four additional purity grades are specifically tailored to the applications in which Eppendorf Tubes are used - Sterile (incl. pyrogen-free, RNase-free, DNase-free, human and bacterial DNA-free), PCR clean, Forensic DNA Grade and Biopur®. Tubes with these purity grades are tested by an independent, external laboratory for compliance. The lot-specific certificates issued by this laboratory may be downloaded at www.eppendorf.com/certificates



Eppendorf Purity Grades Selection Guide for Tubes

					
	Eppendorf Quality	Sterile	PCR clean	Forensic DNA Grade*5	Biopur®
Continuous quality control for the following relevant criteria					
Function, tightness, precision	■	■	■	■	■
Low wetting	■	■	■	■	■
High chemical resistance	■	■	■	■	■
High thermal resistance	■	■	■	■	■
High centrifugation stability*1	■	■	■	■	■
High transparency	■	■	■	■	■
Precisely shaped	■	■	■	■	■
Lot-specific certified for the following purity criteria					
DNA-free*6 (Human DNA)			■	■	■
DNA-free*6 (Bacteria DNA)				■	■
DNase-free*6			■	■	■
RNase-free*6			■	■	■
PCR inhibitor-free*6			■	■	■
ATP-free*6					■
Pyrogen-free*6 (endotoxin-free)		■			■
Sterile (Ph.Eur./USP)		■			■
Methods (Examples)					
Applications requiring high general quality, but no checked special purities	■				
Bacterial and yeast cultures		■			■
Cell and tissue culture		■			■
Isolation and storage of DNA			■	■	■
Isolation and storage of RNA			■	■	■
DNA analysis (PCR, restriction analysis, hybridization, sequencing, NGS)			■	■	■
Mitochondrial DNA analysis			■	■	■
Bacterial DNA analysis				■	■
RNA analysis				■	■
Eppendorf Tubes					
Safe-Lock Tubes	■		■	■	■*2
3810X / Flex-Tube®	■		■	■	
Eppendorf Tubes® 5.0 mL	■	■	■	■	■*2
Eppendorf Conical Tubes 15 mL and 50 mL		■*4		■*3	
Eppendorf Conical Tubes 25 mL	■	■*4	■		
DNA and Protein LoBind® Tubes			■		
PCR Tubes (PCR + real-time PCR)			■	■	
Cap Strips (PCR + real-time PCR)			■	■	

■ Recommended ■ Highly recommended
 *1 For accurate details regarding resistance to centrifugation, please refer to the respective product pages.
 *2 Lot-specific certificate can be downloaded from www.eppendorf.com/certificates.
 *3 Individually packaged.
 *4 Eppendorf sterile, RNase free, DNase free, DNA free. Testing showed conformity within the detection limits (human and bacteria DNA)
 *5 According to ISO 18385.
 *6 Testing showed conformity within the detection limits

Eppendorf Tubes® 3810X – The Original

Customer benefits

- > Functionality is guaranteed from -86 °C to 100 °C
- > Simple verification of the pipetted volume by clear graduation
- > All variants can be autoclaved for subsequent use in sterile environments (121 °C, 20 min.)
- > Manufactured without the use of slip agents, plasticizers and biocides
- > High resistance to chemicals, mechanical stress and temperature extremes - manufactured from virgin polypropylene
- > Tube lid is easy to open and close for ergonomic handling
- > Easy labeling on frosted lid and surface on the side
- > Available in Eppendorf Quality and PCR clean purity grade
- > Batch-specific purity certificates available for PCR clean at www.eppendorf.com/certificates

This is the successor to the renowned first microcentrifuge tube 3810 from Eppendorf. The idea of manufacturing a 1.5 mL plastic test tube was born out of the necessity to introduce an appropriate container into the automatic clinical analyzers developed by Eppendorf in 1962. The tried and tested design with invaluable features shows perfect sealing qualities, excellent chemical stability and optimal construction materials for resisting the demands of centrifugal forces. As they are easy to open and close securely, Eppendorf Tubes 3810X offer comfort and dependability for sample preparation, centrifugation and storage. One vessel for all applications in molecular biology, chemistry and biochemistry - safer than ever, Eppendorf Tubes 3810X can be centrifuged up to 30,000 x g without any problems!



The 3810X tube guarantees tried and tested tight lid closure and easy, stress-free opening and closing.



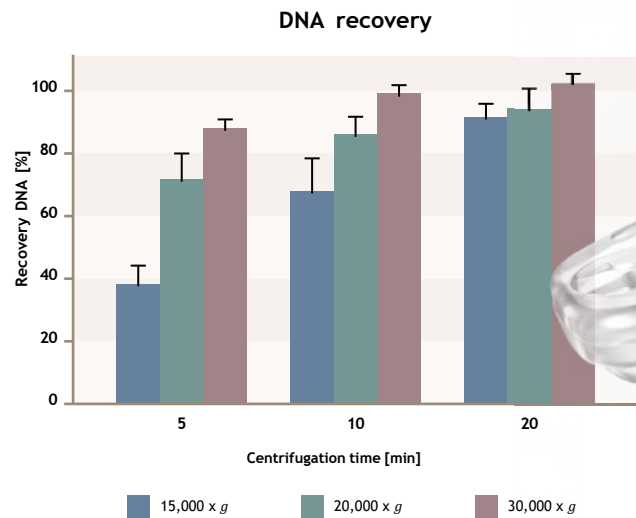
Safe-Lock Tubes – A Name Tells Its Story

The original Eppendorf Safe-Lock lid
How can you recognize Eppendorf Safe-Lock Tubes - the original »Eppi®«? One unmistakable feature of our tubes is the »ep« on the lid surrounded by our embossed brand name »Eppendorf«.



Outstanding application performance*

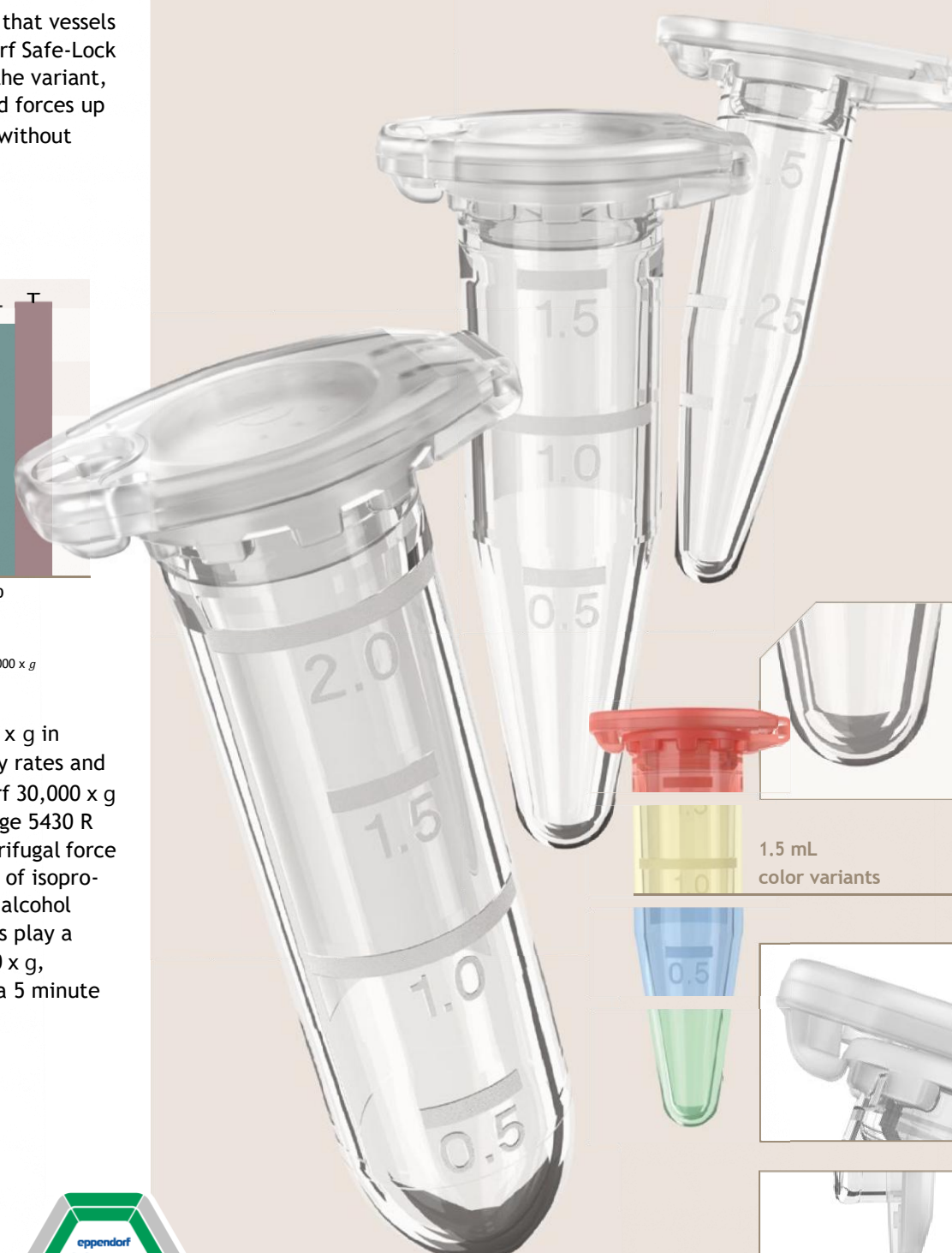
Safer than ever. Tests at 30,000 x g have shown that vessels can break during centrifugation but not Eppendorf Safe-Lock Tubes, the well-known »Eppi®«. Depending on the variant, the Safe-Lock Tubes are guaranteed to withstand forces up to 30,000 x g, allowing you to safely centrifuge without sample loss.



It has been proven that centrifugation at 30,000 x g in plasmid DNA precipitation allows better recovery rates and shorter centrifugation times. Using the Eppendorf 30,000 x g system comprising Safe-Lock Tubes and Centrifuge 5430 R with high-speed rotor, the effect of relative centrifugal force (rcf), duration of centrifugation and the amount of isopropanol on the recovery rate of plasmid DNA from alcohol precipitation were investigated. All three factors play a role, with rcf having the greatest effect. At 30,000 x g, nearly 90% of the DNA could be recovered from a 5 minute centrifugation.

* Application Note 234 »Centrifugation at 30,000 x g in Plasmid DNA Precipitation Allows Better Recovery Rates and Shorter Centrifugation Times«
www.eppendorf.com/appnote234

Eppi® 0.5, 1.5 and 2.0 mL – Unrivaled for Decades



Eppendorf Safe-Lock Tubes in 0.5 mL, 1.5 mL and 2.0 mL volumes combine all our experience from decades of constant optimization and development. The original Safe-Lock Tubes protect your sample with excellent centrifugation stability, feature perfect sealing properties and reliably prevent sample evaporation. The hinged lid on Safe-Lock Tubes avoids any danger of leaks even under extreme conditions and the lid hook prevents the tube from opening. Thus high safety against spilling or contamination is ensured when working with expensive or toxic samples or with radioactive substances.

Customer benefits

- > Hinged Eppendorf Safe-Lock lid prevents unintentional lid opening during incubation and storage
- > High resistance to chemicals, mechanical stress and temperature extremes - manufactured from virgin polypropylene
- > Manufactured without the use of slip agents, plasticizers and biocides
- > g-Safe® for exceptional centrifugation stability up to 30,000 x g to prevent sample loss due to tube breakage and to provide extra safety when working with hazardous samples
- > Minimal evaporation rates during long-term storage through precise lid sealing
- > Easy labeling on frosted lid and surface on the side
- > Functionality is guaranteed from -86 °C to 100 °C
- > Autoclavability is given for all variants for use in sterile environment (121 °C, 20 min.)
- > All volumes available in Eppendorf Quality and PCR clean, Eppendorf Forensic DNA Grade, Biopur
- > Batch-specific purity certificates available for PCR clean, Eppendorf Forensic DNA Grade and Biopur on www.eppendorf.com/certificates
- > Maximum sample recovery with Safe-Lock Tubes in Eppendorf Protein LoBind® and DNA LoBind®
- > Protection of light-sensitive samples is provided by amber colored Safe-Lock Tubes

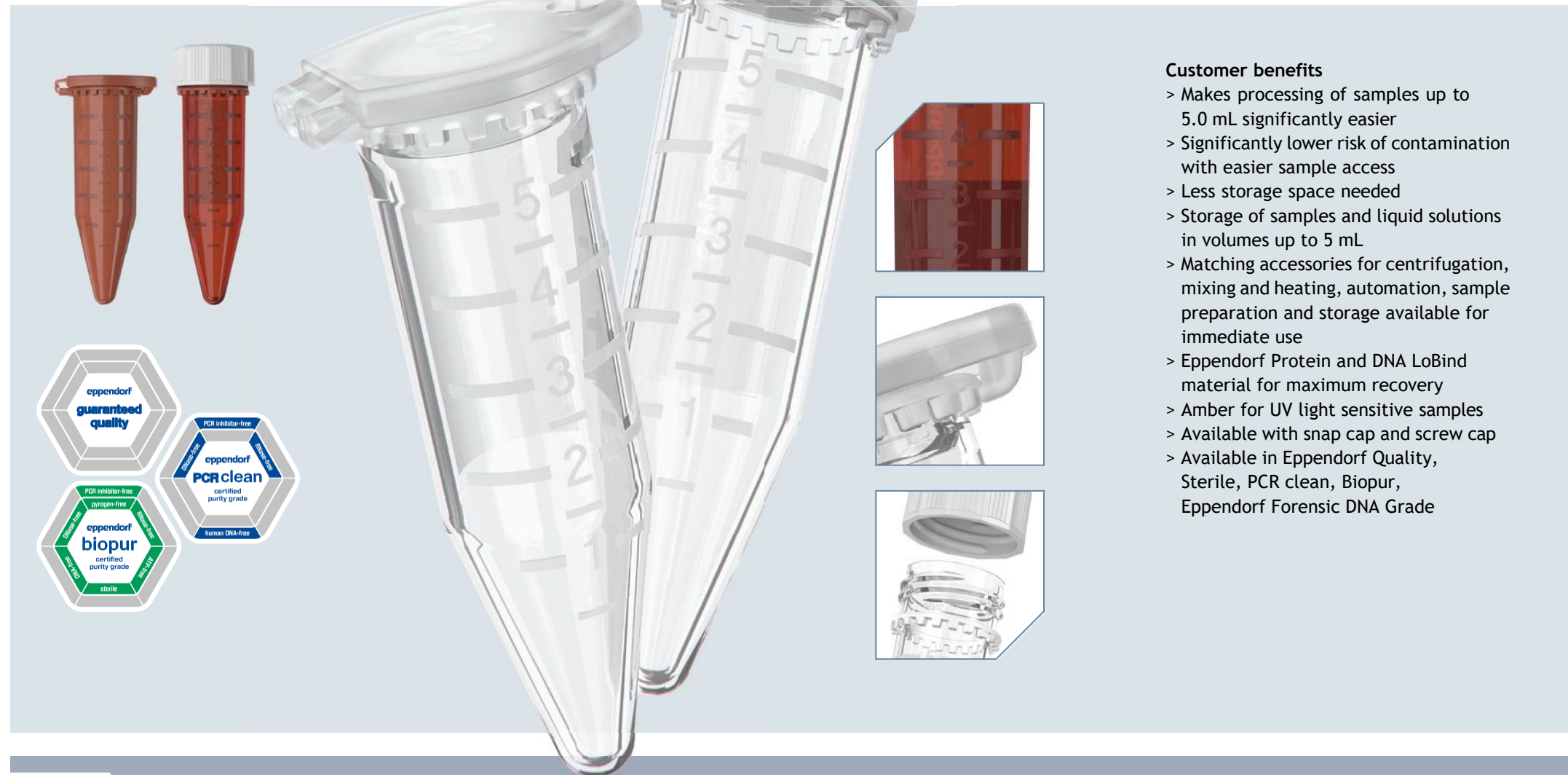


The Missing Link – Eppendorf Tubes® 5.0 mL

In 2013, Eppendorf once again set a standard in laboratories. The launch of the 5.0 mL Eppendorf Tubes offered the solution to a problem customers faced when working in volumes of more than 2.0 mL but up to a maximum of 5.0 mL. Conical tubes of e.g. 15 mL were available for large volumes but whenever the customer wanted to handle medium sample volumes, he faced an issue: a comparably small volume of sample needed to be processed with unnecessarily large

tube formats - impractical, inconvenient and often prone to contamination. The 5.0 mL tube is the missing link between existing tube versions and it allows easy and safe processing of sample volumes up to 5.0 mL. The availability of snap cap and screw cap formats enables the optimal choice for different requirements in sample preparation, incubation, storage, or other applications.

Intelligent and Simple – Systematically!




Comprehensive line of accessories

The 5.0 mL system concept represents a complete solution for laboratory workflows. It comprises a wide range of matching accessories. Efficient and simple pipetting, gentle mixing, incubating, safe centrifugation, automatic pipetting and storage: all work perfectly with Eppendorf Tubes 5.0 mL. The tube's conical shape is designed to be compatible with most accessories for common conical 15 mL tubes. This allows you to continue using many of your existing adapters and racks!

Customer benefits

- > Makes processing of samples up to 5.0 mL significantly easier
- > Significantly lower risk of contamination with easier sample access
- > Less storage space needed
- > Storage of samples and liquid solutions in volumes up to 5 mL
- > Matching accessories for centrifugation, mixing and heating, automation, sample preparation and storage available for immediate use
- > Eppendorf Protein and DNA LoBind material for maximum recovery
- > Amber for UV light sensitive samples
- > Available with snap cap and screw cap
- > Available in Eppendorf Quality, Sterile, PCR clean, Biopur, Eppendorf Forensic DNA Grade

A Full System of Components




Centrifugation

Centrifuge 5920 R e.g.:
Rotor S-4xUniversal-Large for 96 × 5.0 mL tubes, up to 4,402 × g

Centrifuge 5910 R:
Rotor S-4xUniversal with universal adapter for 68 × 5.0 mL tubes, up to 4,324 × g


Centrifuges with rotors for 15 mL conical tubes with screw cap:
universal adapter 8 pcs. for 8 × 5.0 mL tubes



Heating and Mixing

Eppendorf ThermoMixer® C and Eppendorf ThermoStat C:
Eppendorf SmartBlock for 8 × 5.0 mL tubes

MixMate®:
Tube Holder 5/15 mL, for 8 × 5/15 mL conical tubes



Sample Storage

Tube Rack 5/15 mL:
for 12 tubes

Tube Clip 5.0 mL:
to fix the tube lid in temperature applications from 80 °C up to 100 °C

Storage box made of polypropylene:
for 25 × 5.0 mL tubes

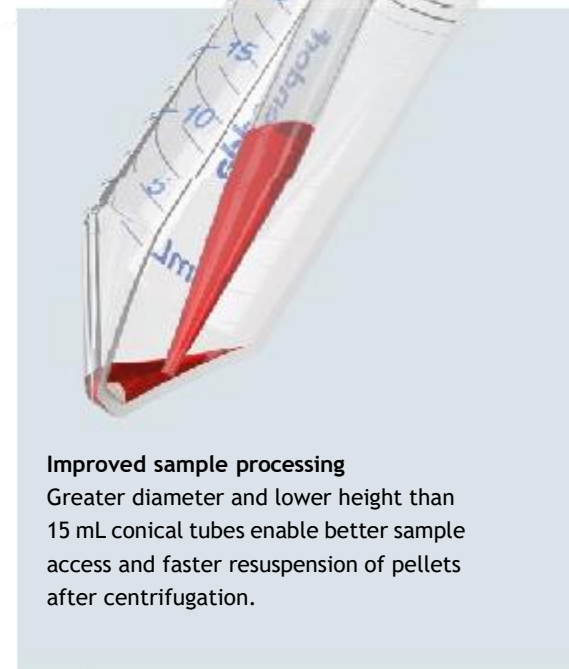


The Next Level – Eppendorf Conical Tubes 25 mL

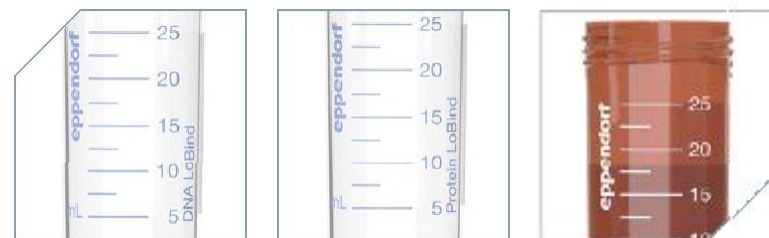
Very often sample volumes higher than 15 mL but much lower than 50 mL need to be prepared, centrifuged, mixed or stored.

As a result of this, we at Eppendorf have developed the the Eppendorf Conical Tubes 25 mL. This member of the big Eppendorf Tubes family fills the gap between the volumes of traditional conical tubes of 15 mL and 50 mL. The 25 mL conical tube has the same diameter as the 50 mL conical tube but is not as long. Thus, the insertion depth of pipettes into the tube is much lower compared to a 50 mL conical tube. The 25 mL tube is available with screw cap and also with the innovative SnapTec® cap. This patented lid solution represents a unique snap cap solution within the conical tubes segment.

New! Now also available in Amber for UV-light sensitive samples and in DNA LoBind and Protein LoBind.



Improved sample processing
Greater diameter and lower height than 15 mL conical tubes enable better sample access and faster resuspension of pellets after centrifugation.



Customer benefits

- > Easy sample access, low risk of cross contamination with low volume pipettes and tips
- > Centrifugation stability up to 17,000 × g*
- > SnapTec® caps allow single handed opening and closing for fast liquid extraction or addition
- > Less storage space needed
- > Ensures tightness of seal from -86 °C up to 100 °C*
- > Matching accessories available for centrifugation, mixing, heating, automation, sample preparation and storage
- > The SnapTec tube is autoclavable*
- > Eppendorf DNA and Protein LoBind material for maximum sample recovery **New!**
- > Amber for UV light sensitive samples **New!**

* Please note the instructions for use for details (www.eppendorf.com/manuals):
-Eppendorf Conical Tubes 25 mL, snap cap- and
-Eppendorf Conical Tubes 15, 25 and 50 mL-



Light protection as well as transparency
Visibility of liquid level inside the tube at all times while providing maximum protection of the sample from light transmission in the shortwave UV/VIS spectral range.

A Full System of Components



Centrifugation

Centrifugation up to 17,000 × g* with rotors for 50 mL conical tubes, e.g. 59xx series and 58xx series:
Two adapter variants for snap cap and screw cap 25 mL tubes enable usage in 50 mL rotors and buckets



Heating and Mixing

Eppendorf ThermoMixer® C and Eppendorf ThermoStat C:
Adapter for 25 mL tubes ensures compatibility with Eppendorf SmartBlock™ 50 mL



MixMate:
Tube Holder 25/50 mL, for 4 × 25/50 mL conical tubes



Sample Storage

Single Tube Stand:
Ideally suited for weighing samples on the balance and for handling individual samples. The viewing slit enables observation of the filling level at any time.



Tube Rack 25 mL:
Eppendorf Racks for 50 mL conical tubes can be used with the new 25 mL tubes



Storage box made of polypropylene:
Lower height allows space-saving storage for up to 9 × 25 mL tubes in 3.5 inches Eppendorf Storage Boxes



Eppendorf Conical Tubes 15 mL, 45 mL and 50 mL

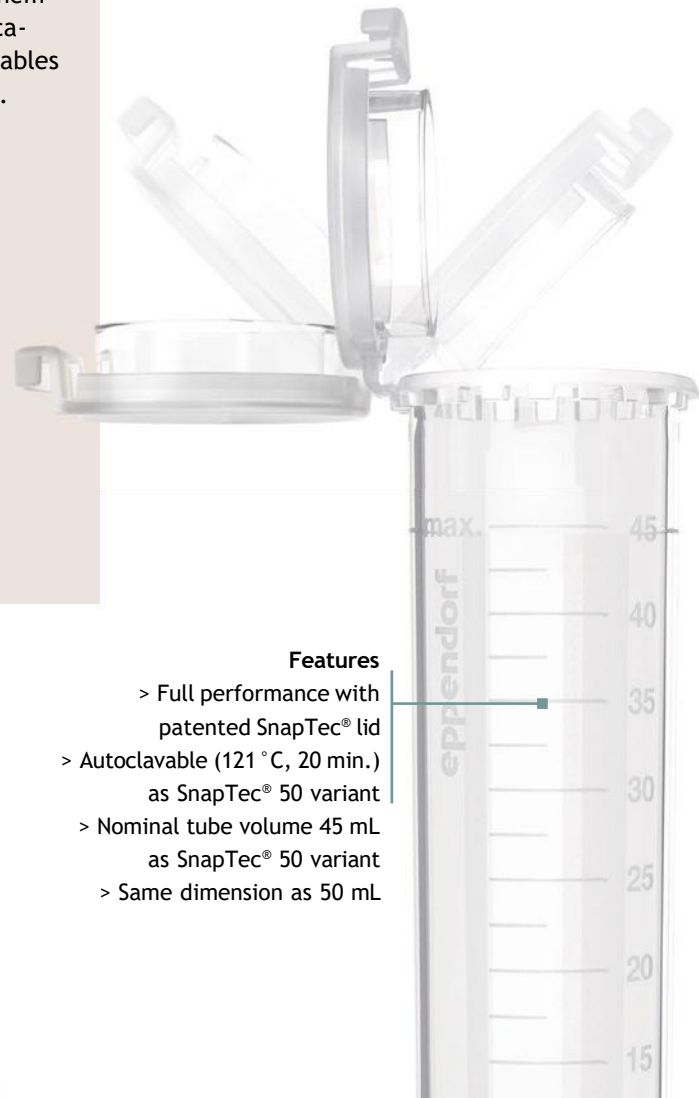
Conical tubes with screw caps belong to the most commonly used laboratory vessel formats and are universally used in a variety of laboratory procedures. Typical applications include setting up, handling, storage and transport of various samples and reagents, centrifugation and mixing, various incubations, cell culture and many others. Typically, they have to withstand a great variety of conditions and provide good integrity and sample/user safety.

The Eppendorf Conical Tubes 15 mL, 50 mL and SnapTec® 50 provide the highest combined performance on centrifugation stability and cap tightness. These tubes show minimal levels of leachables making them ideal vessels for a wide array of demanding applications. The availability of different purity grades enables you to further minimize the risk of contamination.

»What else makes

Eppendorf Conical Tubes special«

- > Precise dimensions enable maximum compatibility with centrifuge rotors, mixers and shakers
- > Eppendorf DNA and Protein LoBind material for maximum sample recovery
- > Amber for UV light sensitive samples



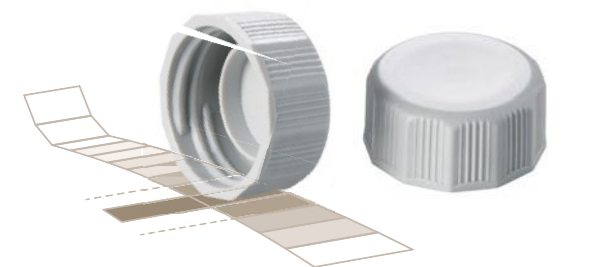
Features

- > Full performance with patented SnapTec® lid
- > Autoclavable (121 °C, 20 min.) as SnapTec® 50 variant
- > Nominal tube volume 45 mL as SnapTec® 50 variant
- > Same dimension as 50 mL



Your benefits

- > Reliable, safe labeling thanks to a large writing area on tubes
- > No use of slip agents, plasticizers, and biocides ensures highest sample integrity
- > High g-safe centrifugation stability
- > Optimal sample and pellet visibility



Cap with flattened and grooved sides

- > Supports user-friendly ergonomic handling
- > Enables stable and upright positioning
- > Minimizes contamination risk



DNA LoBind® – Recover Your Nucleic Acids

When dealing with low concentrations of nucleic acids, sample adsorption to inner surfaces of vessels cannot be ignored. For example, in workflows including preparation and setup of PCR applications, loss of DNA on vessel surfaces can affect the performance of individual processing steps and can lead to misinterpretation of results. DNA LoBind Tubes maximize sample recovery of nucleic acids by significantly reducing sample-to-surface binding. They represent the ideal solution for preparing and storing samples containing low amounts of DNA. To minimize the risk of sample interference, the DNA LoBind properties are achieved without surface coating.

Applications

- > Preparation or storage of DNA and RNA samples
- > Forensic trace analysis
- > Preparing dilution series in quantitative qPCR
- > Sample preparation in next-generation sequencing
- > Creation of genomic or oligonucleotide libraries



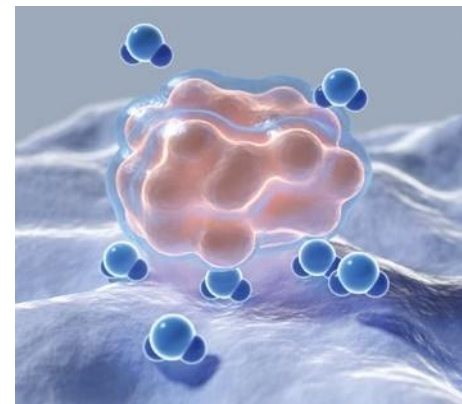
All LoBind Tubes by Eppendorf are free of surface coating (e.g. silicone) to minimize the risk of sample interference.

Protein LoBind® – Get the Most Out of Your Applications

Protein preparation and storage represent critical steps in a wide range of laboratory applications. Unspecific adsorption of up to 90% of protein molecules or peptides to the polymer surface of the inner walls of tubes can significantly contribute to sample loss within 24 hours and artificially affect experimental results. Eppendorf Protein LoBind Tubes are specifically designed for use in applications where protein concentrations tend to be small and sample recovery is vital for assay results. A special, two-component polymer mix creates a hydrophilic surface that guarantees optimal recovery rates of valuable samples.

Applications

- > Preparation or storage of protein, peptide or antibody samples
- > Enzymatic assays - the hydrophilic surface reduces denaturation when the enzyme comes into contact with the inner tube wall
- > Prevention of sample loss during storage of virus stock solutions
- > Storage of cell suspensions
- > Sample preparation in toxicology



Effective Light Protection in Amber Tubes

Numerous types of light-sensitive reagents and samples are often used in the laboratory routine. Once exposed to light, their life-time or activity may rapidly decrease and therefore adversely affect subsequent assays and experiments. To avoid those difficulties, light-sensitive reagents and samples must be handled and stored in a manner that protects them from direct light exposure. Amber-colored laboratory plastic tubes reduce or completely block light transmission, and thus allow safe storage and handling of light-sensitive samples.

Light protection meets transparency

While providing good sample protection against high-energy light in the short wavelength UV/VIS spectrum, these tubes often come with a major drawback: They are opaque and therefore do not allow optimal sample visibility. Specifically for our 5 mL screw cap tubes and our conical tubes 15 mL and 50 mL we developed our amber material with an optimized degree of transparency to offer full control over the insertion depths of pipette tips and thus provide a clear advantage regarding sample visibility, handling and prevention of contamination.



Well Organized with Eppendorf Tube Racks



Optimize your workflows through user-friendly handling of clearly arranged samples. Almost all laboratory protocols require efficient and reliable processing, transport, and short term storage of sample vessels in benchtop racks. The new Eppendorf Tube and Cuvette Racks combine optimized functionality and high robustness with an attractive design. Six different formats offer the optimal solution and perfect fit for all tubes and cuvettes commonly used in laboratories.

Compact dimensions require minimal space.

Customer benefits

- > All racks are stackable to save lab space when not in use
- > Silicone buttons ensure a safe stand
- > Made from high quality polypropylene (PP):
 - Ensuring dimensional stability across a broad temperature range (-86 °C to 121 °C)
 - Providing chemical resistance
- > The racks are laboratory washer-safe for fast and easy cleaning
- > The racks are autoclavable (121 °C/ 20 min) and thus suitable for workflows requiring a sterile environment, e.g. cell handling applications



Our System Solution for Sample Storage

The comprehensive modular concept of Eppendorf Storage Boxes for tubes from 0.5 mL to 50 mL allows selection of the optimal box combination for individual storage demands. The outer footprint dimensions of 133 mm (5.24 inches) are

compatible with common freezer rack systems. The different inner grid variants provide for a perfect fit to all typical tube formats: cryogenic tubes, microcentrifuge tubes, conical tubes, and other laboratory vessels.

Flexibility

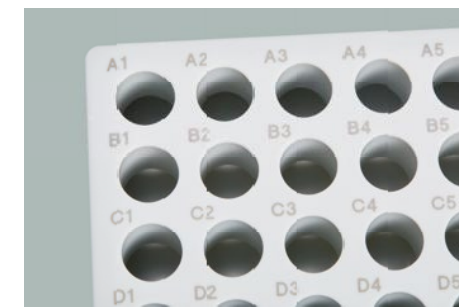
- > Space saving dimensions take full advantage of freezer space. Flexible combination options for different box formats optimize storage and archiving of samples
- > Boxes retain their shape during freezing to -86 °C or autoclaving for 20 minutes at 121 °C for sterilization

Ease of use

- > Sample can easily be identified thanks to individual alpha-numeric laser labeled code assigned to each sample location
- > Easy readability through high contrast of dark codes on light-grey surface
- > Long lifetime of permanent labeling
- > 5 additional inscription labels enable user-specific labeling
- > Easy and fast sample inspection through transparent lids
- > Smooth opening and closing for low ergonomic stress

Safety

- > Eppendorf conical tube boxes for 15 mL and 50 mL ensure an evenly distributed freezing process through ventilation slots on box sides. Thus tube damage and breakage is prevented.



Eppendorf PCR Tubes

Original Eppendorf PCR tubes are manufactured according to the highest Eppendorf Quality standards. These thin-walled polypropylene tubes ensure efficient and homogeneous heat transfer. They are easy to open, but provide tight sealing to

prevent evaporation during PCR. Efficient heat transfer to the sample is ensured, thanks to their thin, even wall thickness and smooth wall surface.



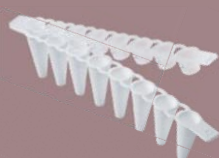
Eppendorf PCR Tubes, 0.2 mL

- > Contamination shield on hinged lid
- > Defined lid position due to special hinge
- > High transparency even at the base of the tube
- > Etched lid for labeling
- > For use with thermal cyclers with 0.2 mL block format
- > Also available in 8-tube strip format
- > Lot specific certified free from human DNA, DNase, RNase and PCR inhibitors*



Eppendorf PCR Tubes, 0.5 mL

- > Etched lid for labeling
- > Tight seal but easy to open
- > For use with all thermal cyclers with 0.5 mL block format
- > Lot specific certified free from human DNA, DNase, RNase and PCR inhibitors*



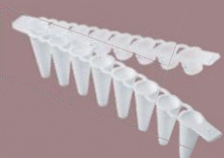
Eppendorf PCR Tube Strips

- > 8 reaction tubes in strip-format - ideal for small sample volumes
- > Easily adaptable for automation
- > Sealable using flat or domed strip-lids
- > Lot specific certified free from human DNA, DNase, RNase and PCR inhibitors*



Cap Strips

- > Strips with eight microcaps for PCR tube strips
- > Easy and rapid sealing of Eppendorf PCR tube strips
- > Flat Cap Strips are suitable for real-time PCR
- > Autoclavable (121 °C, 20 min)



Masterclear® Cap Strips and real-time PCR Tube Strips

- > White wells for better reflection
- > High mechanical stability
- > Extremely thin walls for optimal heat transfer
- > Cap strips with inverted dome to reduce volume of the tubes
- > Cap strips optimized for maximum light transmission

Eppendorf SafeCode System

»Stored vessels must be labeled« - naturally, every lab member agrees. In reality you always find some (or even more) vessels in your freezer without any labeling or with labeling resembling hieroglyphs. In many labs, there is a second rule: label-free vessels are disposed of as soon as they are found.

Proper labeling is recommended to make reading easy and as reliable as possible for everyone. Printed labels on vessels can contain either plain writing, barcode, or both. Smart labeling of your high-value samples is crucial for safe identification and ultimately for safe results. Manage your (barcoded) samples with sample management software like eLabNext.



Relax – Your Samples Are Safe

As a scientist, you own hundreds of samples; samples that are the results of years of hard work; samples of high value. When storing these, it is vital to keep them safe and know their ID.

The SafeCode system is based on a multi-level-coding to enable safe sample identification: QR code and human readable code.

- > Pre-labeled off-the-shelf consumables for immediate use
- > Reliable long-term labels for safe sample ID
- > Combine all experimental data with relevant information about the vessel for convenient documentation
- > Available as cryostorage vials from 0.5 mL - 4.0 mL for cold storage
- > Available as 5 mL, 15 mL, and 50 mL tubes, combining the well-known Eppendorf tube benefits with digital approaches



The Eppendorf SafeCode family:

For modern digital sample management with high sample safety, management, and tracking needs.

Get to Know the New Eppendorf Tubes® BioBased

Since oil-based plastic vessels replaced glass vessels, they have become irreplaceable in laboratories around the world, providing the high quality standards needed in increasingly demanding research. However, this poses a growing challenge in respect to sustainability.

This is why Eppendorf not only focuses on the development of new products but also on new, more environmentally friendly manufacturing materials.

We have even succeeded in finding a manufacturer of certified polypropylene based on renewable raw materials which we are now using for the first time in the production of a new generation of tubes.

New Eppendorf Tubes BioBased will be available in screw cap format from 5 mL to 50 mL.

- > Purity grade: Sterile
- > Product-specific and lot-specific purity certificates
- > General quality certificates / compliance with standards
- > Certified ISCC plus (International Sustainability & Carbon Certification) manufacturer
- > Environmental Impact Factor - ACT (Accountability, Consistency, Transparency) labeled

