

# The Perfect Fit

## Consumables for PCR & qPCR



# It's the Details That Matter

Analytik Jena provides a comprehensive range of consumables and instruments for PCR and qPCR. We aim to offer time-saving processes, long-lasting equipment, and an easy-to-use user interface.

Our thermal cycler portfolio fulfills these promises with its intuitive products that come with advanced extras as standard and are built with the highest-quality materials.

PCR is one of the most established methods in molecular biology. Quantitative real-time PCR offers the additional advantages of monitoring the amplification in real-time and the final quantitative evaluation of data. Even so, using an unsuitable consumable can limit the specificity and performance of your assay.

This is why Analytik Jena also offers a range of consumables to always ensure the best possible results. All PCR plates, tubes, and sealing films are optimized to work with our thermal cyclers and real-time PCR thermal cyclers. In addition, our expert teams provide excellent application and service support. For mastermixes, polymerases, and other PCR reagents we would like to refer you to the portfolio of our partner, the IST Innuscreen GmbH ([www.ist-ag.com](http://www.ist-ag.com)).

### Take our word for it

- **Achieve reproducible results:**  
Perfectly optimized PCR and real-time PCR tubes, strips and plates
- **Ensure consistent sample conditions**  
Minimize any evaporation loss with our securely sealing foils

## The Perfect Fit

Consumables for PCR & qPCR



## The Importance of Lab Plasticware

Lab plasticware may seem like it's a dime a dozen, but not all PCR consumables are created equal. Analytik Jena offers the perfect consumable for each individual block format of PCR or real-time PCR thermal cyclers. Benefit from our expert knowledge and optimize your data results.

### The accurate fit is essential for performance

Consumables vary widely by dimension. This is a result of the production speed, the specifics of the tool used, and the quality of the basis material. If the plastic material does not exactly fit the geometry of the thermal block, air gaps between the plastic and the

block occur. This negatively affects heat transfer and the sample's final temperature.

All plasticware provided by Analytik Jena is adapted to the thermal cyclers' blocks. In addition to exemplifying optimal geometry, our consumables

also have particularly thin walls, which enhances the effect of quick temperature transfers and leads to 100 % reliable amplification results.

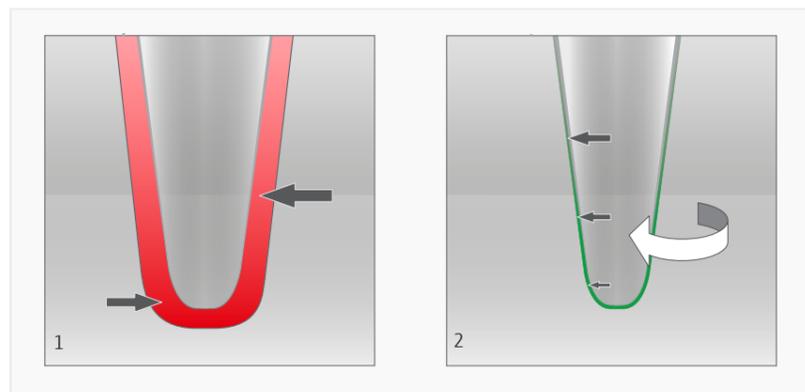


Figure 1: If the plastic is not an exact fit, air gaps occur between the well and the sample block. This inhibits a quick temperature transfer to the sample, which results in non-uniform temperatures and decreasing specificities.

Figure 2: When the wells fit the geometry of the thermal block exactly and have thin walls, quick temperature changes can occur, resulting in specific PCR products accelerated processes.

### Comparison of real-time signals using white or clear microplates

It might seem like the well color in qPCR plasticware is a trivial detail. This is not the case! Microplates are commonly available in standard clear, opaque black, and white. Although clear plates are easier to use because the well walls offer better visibility of liquids and although black plates ensure the lowest background readings, white microplates provide the most outstanding performance in qPCR.

Clear plates create problems with light scattering through the plastic, which then results in a loss of intensity. Thanks to the light reflection that occurs in the wells of white plates, signal intensity is reinforced, and Ct values for real-time assays are enhanced.

### Customer benefits of white PCR plates

- Optimally amplifies products and improves Ct values
- Enhances intensities for ideal end point analysis
- Offers best reproducibility of detected fluorescence
- Doesn't influence running costs

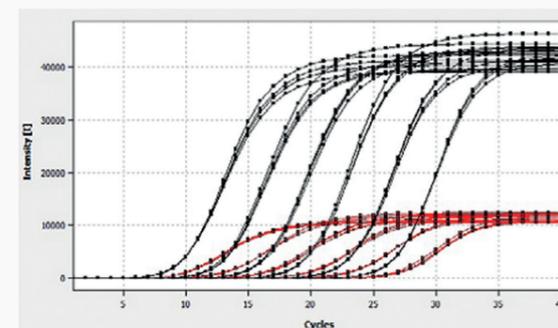
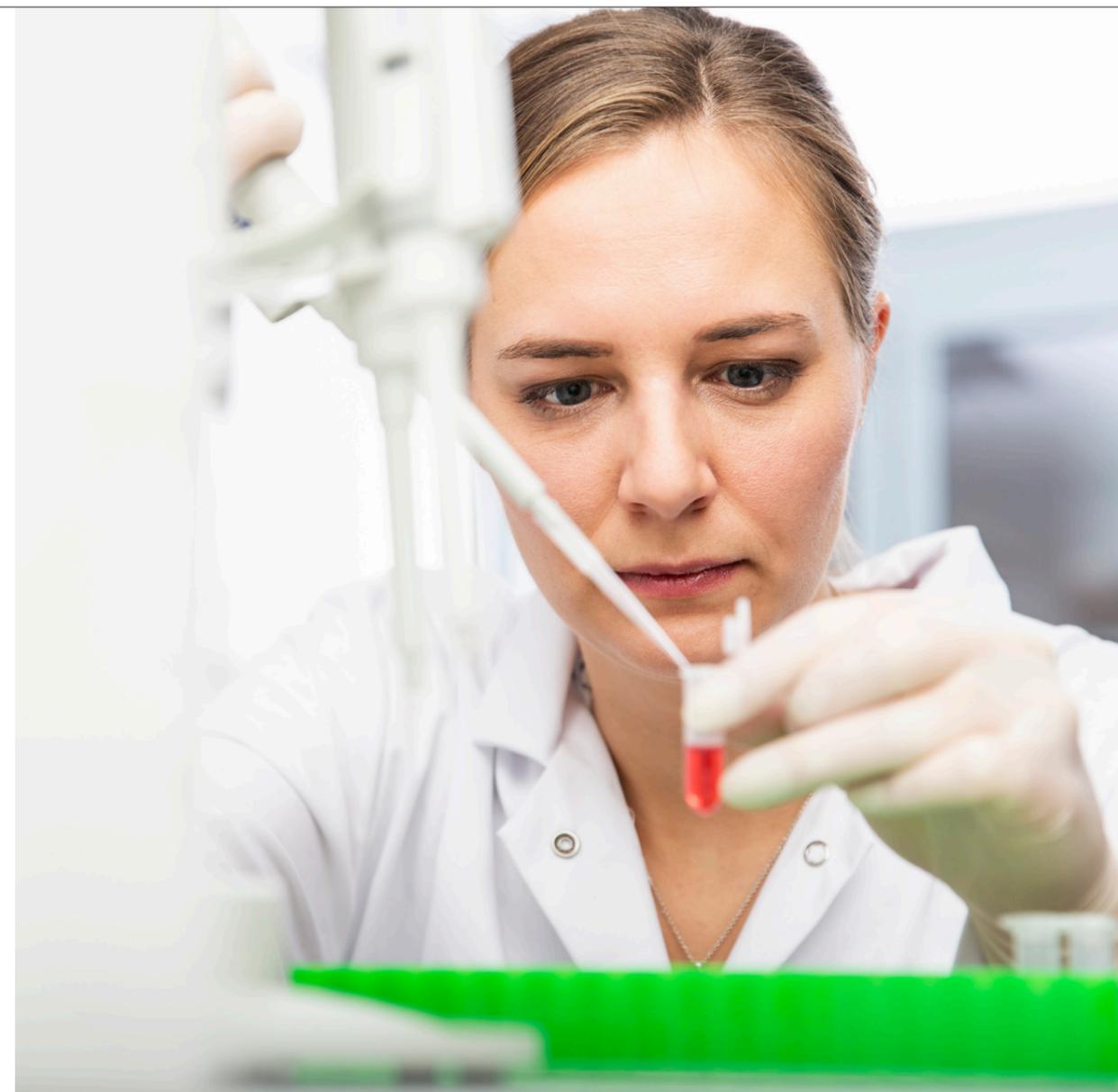


Figure 3: Comparison of white and clear microplates used in the amplification of the actin gene in a serial dilution (10x), from  $10^6$  to  $10^1$  of tobacco gDNA using innuMIX qPCR MasterMix SyGreen (IST Innuscreen GmbH). The use of white microplates in real-time PCR experiments leads to total fluorescence intensities, which are more than four times higher than when using transparent plasticware.

No.	Copies	Ct values		$\Delta Ct$
		Clear	White	
Std 1	$10^6$	10.74	8.77	1.97
Std 2	$10^5$	14.67	12.06	2.61
Std 3	$10^4$	17.59	15.30	2.29
Std 4	$10^3$	20.73	18.50	2.23
Std 5	$10^2$	24.13	21.95	2.18
Std 6	$10^1$	28.07	25.61	2.46

Amplification plots (black): White microplate,  $R^2 = 0.99943$ , efficiency = 0.99

Amplification plots (red): Transparent microplate,  $R^2 = 0.99931$ , efficiency = 0.98

## Analytik Jena Thermal Cyclers

Biometra Thermal Cyclers – The family of PCR thermal cyclers offers a great variety for many different applications.

### Biometra TOne

- The PCR standard with 96 well block for your laboratory
- Reliable partner thanks to robust design and ease of use
- Excellent heating and cooling rates for specific results
- Superior temperature uniformity for reproducible results across the entire sample block
- Gradient option for determination of optimal annealing temperature



### Biometra TAdvanced

- Premium quality with excellent ramping rates
- Exceeding temperature homogeneity across the block for reproducible results
- High application versatility thanks to the wide range of quickly exchangeable block modules
- Your excellent partner for Next Generation Sequencing (NGS)



### Biometra TRIO

- Three independent sample blocks for ultimate flexibility
- Ideal for high throughput: 144 samples in 0.2 mL tubes across all three blocks
- Temperature Optimization Step technology to determine the optimal annealing temperature
- Protocol Wizard and Advanced User Management included for convenient operation



### Biometra TRobot II

- Fully automated thermal cycler for smooth workflows
- Ensured work success thanks to reproducible, reliable results in high quality
- Win walk-away time thanks to the possibility of reliable unattended 24/7 operation
- Convenient operation by dedicated software or via complete integration into scheduler software
- Minimum downtime thanks to more than 30 years of experience in thermal cycler development and robust equipment design



qTOWER<sup>3</sup> Series – Discover the family of real-time PCR thermal cyclers. Get the fastest and most reliable real-time PCR results for your application.

### qTOWER<sup>3</sup>

- The real-time thermal cycler for high performance DNA amplification and precise quantification
- Innovative sample block technology for the best thermal well-to-well uniformity
- Maximum flexibility – open system for qPCR consumables and reagents as well as freely configurable color filter selection
- License-free qPCRsoft package for easy control and operation
- 10-years warranty on our patented fiber-optic system for ideal real-time PCR signals



### qTOWER<sup>3</sup> touch

- A modern stand-alone system that does not require any external control
- Touchscreen operation by an integrated 10" tablet
- Simple and intuitive menu navigation enables cycler programming, online monitoring, and the final determination of Ct values



### qTOWER<sup>3</sup> 84

- High-performance systems for high-throughput applications using real-time PCR in a 384-sample multiwell format
- Ultra-fast read-out time of just 6 seconds for a complete 384 well plate – regardless of the number of filters used
- High-quality aluminum block guarantees precise, accurate conductivity combined with unmatched temperature uniformity across the entire sample set



### qTOWER<sup>3</sup> auto

- High-end qPCR solution for automated research
- Sophisticated, automation-friendly design with reduced footprint
- Smooth integration into computer-controlled workflows
- Compatibility to common plates handlers and automation systems



# Order Information

## Plasticware for PCR

### Selection Chart

Order number	Description	Quantity (pieces)	Biometra TOne		Biometra TAdvanced			Biometra TRIO		Biometra TRobot II	
			96 / 96 G	Twin 30	Twin Combi 48 / 48 G	60 / 60 G	96 / 96 G / 96 SG	384 / 384 G	30	48	Combi 96 G
844-70016-0	 Thin-walled 0.2 mL tube, attached flat cap, transparent	1,000	✓	✓	✓	✓	✓	✓	✓	✓	✓
844-70017-0	 Thin-walled 0.5 mL tube, attached flat cap, transparent	1,000	✓	✓			✓	✓			
844-70084-0	 8 well strip with attached flat lids, volume 0.2 mL, transparent, high profile	120	✓	✓	✓	✓	✓	✓	✓	✓	✓
844-70085-0	 8 well strip with attached flat lids, volume 0.2 mL, transparent, low profile	120	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Plates</b>											
846-050-226	 48 well non-skirted PCR plate, volume 0.2 mL, max. volume 0.3 mL when using sealing options. Raised well rims, sealable with films, foils, and sealing caps, transparent	100	✓	✓	✓	✓		✓	✓	✓ <sup>1</sup>	✓ <sup>1</sup>
844-70033-0	 96 well non-skirted PCR plate, volume 0.2 mL, high profile, transparent	100	✓			✓				✓ <sup>1</sup>	✓ <sup>1</sup>
844-70034-0	 96 well half-skirted PCR plate, volume 0.2 mL, high profile, transparent	100	✓			✓				✓ <sup>2</sup>	✓ <sup>2</sup> ✓ <sup>2</sup>
844-70035-0	 96 well full-skirted PCR plate, volume 0.2 mL, low profile, transparent	100	✓			✓				✓	✓
844-70029-0	 96 well full-skirted PCR plate, volume 0.2 mL, low profile, white, with 15 mm high well rims, automation-friendly design (holes on sides for robot-handling), cut-out: A12; RNase-, DNase- and DNA-free, endotoxin-free	100	✓			✓				✓	✓
844-70039-0	 384 well full-skirted PCR plate, volume 35 µL, white, with 15 mm high well rims, automation-friendly design (holes on sides for robot-handling), cut-out: A24, P24; RNase-, DNase- and DNA-free, endotoxin-free	100				✓					✓
<b>Sealing foils</b>											
844-70043-0	 Sealing foil (77 x 140 mm), adhesive, transparent, peelable, suitable for standard 96 or 384 well PCR plates 77 x 140 mm, free of DNases and RNases	100	✓			✓	✓			✓ <sup>3</sup>	✓ <sup>3</sup> ✓ <sup>3</sup>
844-70044-0	 Sealing foil (77 x 140 mm), aluminum, adhesive, piercable and peelable, suitable for standard 96 or 384 well PCR plates 77 x 140 mm	100	✓			✓	✓			✓ <sup>3</sup>	✓ <sup>3</sup> ✓ <sup>3</sup>

<sup>1</sup> Without automatic plate lifting; <sup>2</sup> Adapter frame for automatic plate lifting required; <sup>3</sup> Automated sealing systems recommended.

## Plasticware and kits for real-time PCR

### Selection Chart

Order number	Description	Quantity (pieces)	qTOWER <sup>3</sup> Series		qTOWER <sup>3</sup> auto Series	
			96 / 96 G	384 / 384 G	96	384
<b>Strips and chains</b>						
844-70086-0	 8 well strip, volume 0.2 mL, high profile, white, without lid	120	✓			
844-70087-0	 Optical 8 well lid chain, transparent, flat	120	✓			
<b>Plates</b>						
844-70036-0	 96 well non-skirted PCR plate, volume 0.2 mL, high profile, white	100	✓			
844-70037-0	 96 well half-skirted PCR plate, volume 0.2 mL, high profile, white	100	✓			
844-70038-S	 96 well full-skirted PCR plate, volume 0.2 mL, low profile, white	100	✓		✓	
844-70029-0	 96 well full-skirted PCR plate, volume 0.2 mL, low profile, white, with 15 mm high well rims, automation-friendly design (holes on sides for robot-handling), cut-out: A12; RNase-, DNase- and DNA-free, endotoxin-free	100	✓		✓	
844-70039-0	 384 well full-skirted PCR plate, volume 35 µL, white, with 15 mm high well rims, automation-friendly design (holes on sides for robot-handling), cut-out: A24, P24; RNase-, DNase- and DNA-free, endotoxin-free	100		✓		✓
<b>Sealing foils</b>						
844-70045-0	 Optical sealing foil (77 x 140 mm), adhesive, transparent, peelable <sup>4</sup>	100	✓	✓	✓	✓
844-70046-0	 Optical sealing foil (77 x 140 mm), adhesive, transparent, peelable, free from ATP and endotoxines <sup>5</sup>	100	✓	✓	✓	✓
846-050-258	 Optical sealing foil (77 x 140 mm) for 96 well PCR plates, adhesive, transparent, peelable <sup>5</sup>	100	✓		✓	

### Real-time PCR Kits

Order number	Description	Quantity
845-QT-0090100	 qTOWER Probe Control & Verification Assay	100 reactions
847-0212000501	 qPCR Color Compensation Kit	12 reactions

<sup>4</sup> The adhesive is distributed over the entire film surface.

<sup>5</sup> The optical windows are free of adhesive. The adhesive is located at the contacts to the corrugated edges. This is more suitable for particularly sensitive applications.

## Overall Support

A global network of product, application and service specialists work hand-in-hand to help you fulfill your daily demands.

### We support you with:

- Choosing the best technique and instrumental configuration for your application
- Setting up instruments, accessories, and methods to meet your individual needs
- Offering ongoing support, training, and service worldwide

## Analytik Jena

Your Partner in Life Science



#### Headquarters

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Subject to changes in design and scope of delivery as well as further technical development.