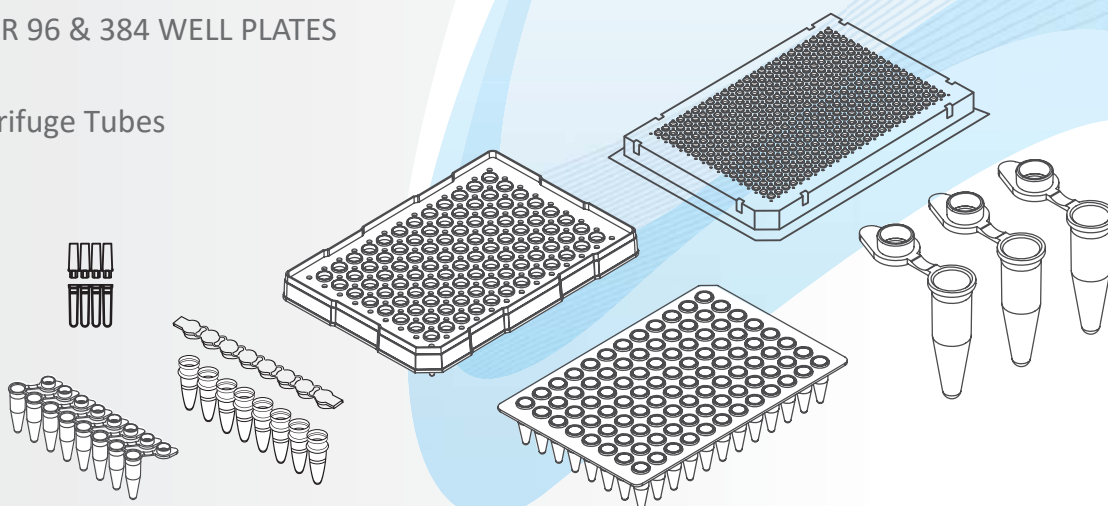




## Life science laboratory plastic products

- PCR SINGLE & 8-STRIP TUBES
- qPCR 8-STRIP TUBES
- PCR & qPCR 96 & 384 WELL PLATES
- SEALS
- Microcentrifuge Tubes



## PROMISE TO QUALITY

Our products are manufactured in class 100,000 clean room with ISO 9001:2015 and ISO 13485:2016 certified facility. Gunster's advanced manufacturing process continually monitors the quality of products and individual batch testing ensures Gunster products are certified RNase, DNase, Human DNA and Endotoxin-free.

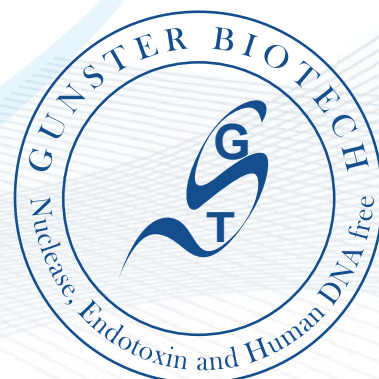
| ITEM                | DESCRIPTION                                                                                                                                                                                                                                                                                          |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Material            | The plastic resin in Gunster's products are certified in compliance with U.S. Pharmacopeia Plastic Class VI & FDA 21 CFR 177.1520 3.2a . Compliance with RoHS 2011 / 65 / EU, REACH (EC) No 1907/2006 & Non 233 SVHC & Non 2 SVHC directive does not contain heavy metals and prohibited substances. |
| Nuclease            | Gunster products are tested and certified to be free of detectable nucleases, with a test sensitivity level of less than $5 \times 10^{-10}$ Kunitz units of RNase and $4 \times 10^6$ Kunitz units of DNase.                                                                                        |
| PCR inhibitor       | Gunster products contain non-detectable levels of PCR inhibitors based on testing with qPCR test method.                                                                                                                                                                                             |
| Endotoxins/Pyrogens | Gunster products are tested and certified to be free of detectable endotoxins, with a test sensitivity level of less than 0.004 EU/ml of endotoxins.                                                                                                                                                 |
| Sterility           | Gunster pre-sterile products are gamma radiation and regularly tested to meet SAL $10^{-6}$ level.                                                                                                                                                                                                   |
| Human DNA           | Gunster products are tested and certified to be free of detectable human DNA, with a test sensitivity level of less than 0.5 pg/ul of human DNA.                                                                                                                                                     |
| ATP                 | Gunster products are tested and certified to be free of detectable ATP, with a test sensitivity level of less than $10^{-13}$ mg/ul of ATP.                                                                                                                                                          |
| Evaporation Test    | Gunster PCR&qPCR products are tested and certified the evaporation volume below 5% ( Add 20ul water in tubes and put in 95°C for 1 hour without hot lid).                                                                                                                                            |



ISO13485:2016



ISO9001:2015

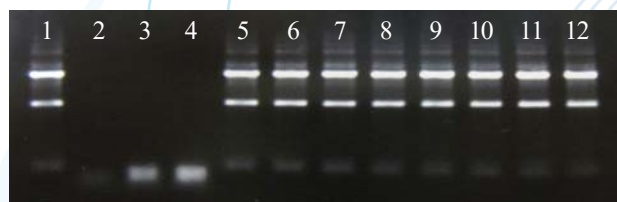


## CERTIFICATE OF COMPLIANCE

| Contaminants test | Testing detection levels                    |
|-------------------|---------------------------------------------|
| RNase             | $< 5 \times 10^{-10}$ Kunitz units/ $\mu$ l |
| DNase             | $< 4 \times 10^{-6}$ Kunitz units/ $\mu$ l  |
| DNA               | $< 0.5$ pg/ $\mu$ l                         |
| Pyrogens          | $< 0.004$ EU/ml                             |

### RNase tested by the following protocol :

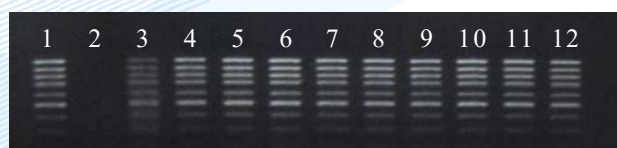
Products were rinsed in nuclease free water, then product extracts were exposed to a RNA standard in a fixed volume of buffer. The RNA standard was incubated at 37°C for 1 hour, then heated to 55 °C for 1 hour. RNA sample were then run on an RNA denaturing gel, photographed and evaluated for degradation.



Lane 1 : Negative Control 1.2 ug total RNA  
Lane 2 : Positive Control 1.2 ug total RNA +  $5 \times 10^{-8}$  RNase I  
Lane 3 : Positive Control 1.2 ug total RNA +  $5 \times 10^{-9}$  RNase I  
Lane 4 : Positive Control 1.2 ug total RNA +  $5 \times 10^{-10}$  RNase I  
Lane 5~12 : Gunster Tubes

### DNase tested by the following protocol :

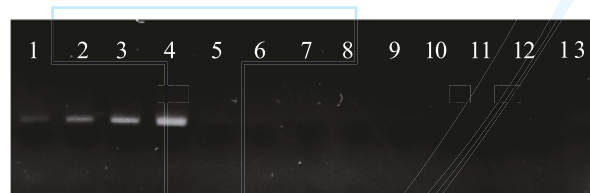
Products were rinsed in nuclease free water, then product extracts were exposed to a DNA standard in a fixed volume of buffer. The DNA standard was incubated at 37°C for 1 hour. DNA samples were then run on an agarose gel, photographed, and evaluated for degradation.



Lane 1 : Negative Control 200 ng DNA ladder  
Lane 2 : Positive Control 200 ng DNA ladder +  $4 \times 10^{-5}$  DNase I  
Lane 3 : Positive Control 200 ng DNA ladder +  $4 \times 10^{-6}$  DNase I  
Lane 4 : Positive Control 200 ng DNA ladder +  $4 \times 10^{-7}$  DNase I  
Lane 5~12: Gunster Tubes

### DNA tested by the following protocol :

Products were rinsed in nuclease free water, then product extracts were exposed to PCR reaction reagents containing Human L1 primers DNA. The reaction was allowed to proceed for 26 cycles. Products were evaluated for detectable human DNA via PCR amplification.



Lane 1 : Positive Control (0.5 pg/ $\mu$ l human genomic DNA)  
Lane 2 : Positive Control (1 pg/ $\mu$ l human genomic DNA)  
Lane 3 : Positive Control (2 pg/ $\mu$ l human genomic DNA)  
Lane 4 : Positive Control (4 pg/ $\mu$ l human genomic DNA)  
Lane 5 : Negative Control (no human genomic DNA)  
Lane 6~13 : Gunster Tubes

### Pyrogens tested by the following protocol :

Our LAL test according to USP33 <85>, <161>, and the guideline provided by FDA of the United States. The result showed that endotoxin concentration of Gunster's products were lower than 0.004 EU/ml.

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## PCR SINGLE & 8-STRIP TUBES

### FEATURES:

- Thin wall tube for best heat transfer
- Made of USP VI Polypropylene
- Free of DNase, RNase, Human DNA, PCR Inhibitor, ATP, Endotoxin. All products are ready to use in PCR
- Autoclavable
- Evaporation rate below 5%, minimum interfere PCR experiment
- Fit almost all thermal cycler
- Small package can avoid contamination by different researcher
- All items contain tubes and caps

Small Package (avoid contamination)



| Item Picture                                                                        | Product No | Description                                         | Features / Functions                                                                                                                                 |
|-------------------------------------------------------------------------------------|------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | MB-P02-A   | 0.2 ml PCR Tubes With Flat Cap                      | 1. Easy labeling on frosted flat cap                                                                                                                 |
|    | MB-P02-D   | 0.2 ml PCR Tubes With Domed Cap                     | 1. Dome cap can match hollow hot lid thermal cycler                                                                                                  |
|   | MB-P08-A   | 0.2 ml PCR 8-Strip Tubes (With Attached Flat Caps)  | 1. Easy labeling on frosted flat cap<br>2. Attached cap help avoid cross-contamination between different tubes<br>3. Good for storage                |
|  | MB-P08-AD  | 0.2 ml PCR 8-Strip Tubes (With Attached Domed Caps) | 1. Dome cap can match hollow hot lid thermal cycler<br>2. Attached cap help avoid cross-contamination between different tubes<br>3. Good for storage |
|  | MB-P08-B   | 0.2 ml PCR 8-Strip Tubes (With Frosted Caps)        | 1. Easy labeling on frosted flat cap<br>2. Traditional separate cap decrease operating time                                                          |
|  | MB-P08-D   | 0.2 ml PCR 8-Strip Tubes (With Domed Caps)          | 1. Dome cap can match hollow hot lid thermal cycler<br>2. Traditional separate cap decrease operation time                                           |

### Ordering details :

| Product Number | Description                                         | Bag Pack                         | Box Pack                                            |
|----------------|-----------------------------------------------------|----------------------------------|-----------------------------------------------------|
| MB-P02-A       | 0.2 ml PCR Tubes With Flat Cap                      | 500 Tubes                        | 6 Bags (3000 Tubes)                                 |
| MB-P02-D       | 0.2 ml PCR Tubes With Domed Cap                     | 500 Tubes                        | 6 Bags (3000 Tubes)                                 |
| MB-P08-A       | 0.2 ml PCR 8-Strip Tubes (With Attached Flat Caps)  | 12 Strip Tubes                   | 10 Bags (120 Strips)                                |
| MB-P08-AD      | 0.2 ml PCR 8-Strip Tubes (With Attached Domed Caps) | 12 Strip Tubes                   | 10 Bags (120 Strips)                                |
| MB-P08-B       | 0.2 ml PCR 8-Strip Tubes (With Frosted Caps)        | 12 Strip Tubes<br>120 Strip Caps | 10 Bags (120 Strip Tubes)<br>1 Bag (120 Strip Caps) |
| MB-P08-D       | 0.2 ml PCR 8-Strip Tubes (With Domed Caps)          | 12 Strip Tubes<br>120 Strip Caps | 10 Bags (120 Strip Tubes)<br>1 Bag (120 Strip Caps) |

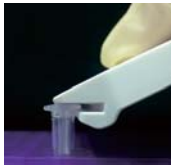
## 8 - Strip Capping Gadget

### FEATURES:

- Made of Polystyrene.
- Operating temperature range : -30°C to 70 °C
- Multiple functions design for decapping, capping, film scraping
- Multiple decapping functions could use in attached (MB-P08-A), separate (MB-P08-B) 8-Strip tubes, single tube (MB-P02-A), microcentrifuge tube (MB-E17-A)
- Transparent design helps observation and operation
- A smooth surface in film scraping side avoid causing damage on any adhesive film (MB-PSM, MB-QSM, MB-BQSM, MB-ASM)
- Non-autoclavable, using ethanol spray to sterilization



MB-OPENER  
operation video website

| Item Picture                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Product No | Description              | Features / Functions                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                   | MB-OPENER  | 8 - Strip Capping Gadget | <ol style="list-style-type: none"> <li>1. Decapping functions for MB-P08-A, MB-P08-B, MB-P08-D, MB-Q200(W), MB-Q100(W/C), MB-P02-A, MB-E17-A.</li> <li>2. Capping function for MB-P08B, MB-P08-D, MB-Q200(W), MB-Q100(W/C).</li> <li>3. Film Scraping for MB-PSM, MB-QSM, MB-BQSM, MB-ASM.</li> <li>4. The MB-OPENER operation video, please scan upper right 2D barcode.</li> </ol> |
| <p><b>For MB-P08A</b></p> <p>Decapping<br/>8 tubes</p>   <p>Decapping<br/>1 tubes</p>                                 |            |                          |                                                                                                                                                                                                                                                                                                                                                                                      |
| <p><b>For MB-E17</b></p> <p>Decapping</p>                                                                                                                                                                                                                                                                                                                                      |            |                          |                                                                                                                                                                                                                                                                                                                                                                                      |
| <p><b>For MB-Q200</b></p> <p><b>For MB-P08B</b></p> <p>8 tubes<br/>Decapping</p>   <p>Capping<br/>8 tubes</p>   |            |                          |                                                                                                                                                                                                                                                                                                                                                                                      |
| <p><b>For MB-QSM</b></p> <p><b>For MB-PSM</b></p> <p><b>For MB-ASM</b></p> <p><b>For MB-ESM</b></p> <p>Film scraping</p>                                                                                                                                                                                                                                                      |            |                          |                                                                                                                                                                                                                                                                                                                                                                                      |

### Ordering details :

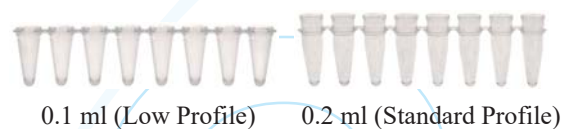
| Product Number | Description              | Bag Pack  | Box Pack    |
|----------------|--------------------------|-----------|-------------|
| MB-OPENER      | 8 - Strip Capping Gadget | 1 PCS/Bag | 15 Bags/box |

## qPCR 8-STRIP AND 4-STRIP TUBES

### FEATURES:

- Thin wall tube for best heat transfer
- Made of USP VI Polypropylene
- Free of DNase, RNase, Human DNA, PCR Inhibitor, ATP, Endotoxin. All products are ready to use in qPCR
- Evaporation rate below 5%, minimum interfere qPCR signal, during therme cycle.
- Two kinds of 8-Strip could fit almost all Real-Time PCR machine
- Small package can avoid contamination by different researchers
- Ultra clear cap show consistent light transmitting rate provide stable data than other brands
- All items contain tubes and caps

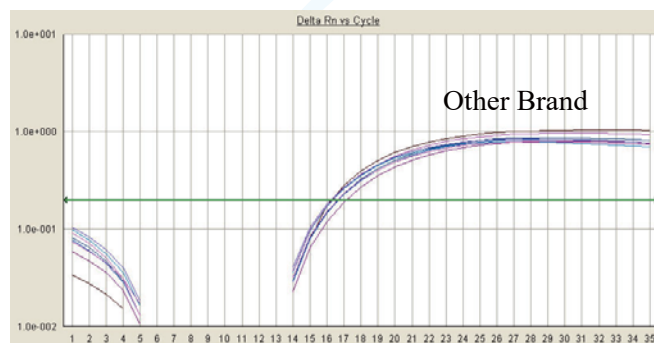
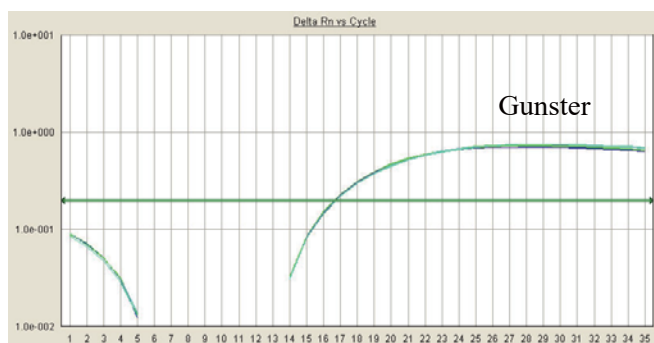
### Difference height of qPCR 8-Strip



| Item Picture | Product No | Description                                         | Features / Functions                                                                                                                                                                             |
|--------------|------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | MB-Q100    | 0.1 ml qPCR 8-Strip Tubes (With Optical Caps)       | <ol style="list-style-type: none"> <li>1. Low profile</li> <li>2. Tube height 16 mm</li> <li>3. Frosted tubes</li> </ol>                                                                         |
|              | MB-Q100W   | 0.1 ml qPCR 8-Strip White Tubes (With Optical Caps) | <ol style="list-style-type: none"> <li>1. Low profile</li> <li>2. Tube height 16 mm</li> <li>3. White tubes</li> </ol>                                                                           |
|              | MB-Q100C   | 0.1 ml qPCR 8-Strip Clear Tubes (With Optical Caps) | <ol style="list-style-type: none"> <li>1. Low profile</li> <li>2. Tube height 16 mm</li> <li>3. Ultra clear tubes designed for bottom detection machine such as Roche LC Nano machine</li> </ol> |
|              | MB-Q200    | 0.2 ml qPCR 8-Strip Tubes (With Optical Caps)       | <ol style="list-style-type: none"> <li>1. Standard profile</li> <li>2. Tube height 21 mm</li> <li>3. Clear tubes</li> </ol>                                                                      |
|              | MB-Q200W   | 0.2 ml qPCR 8-Strip White Tubes (With Optical Caps) | <ol style="list-style-type: none"> <li>1. Standard profile</li> <li>2. Tube height 21 mm</li> <li>3. White tubes</li> </ol>                                                                      |
|              | MB-QR4     | qPCR 4-Strip Tubes and Caps for Rotor-Gene® Q       | <ol style="list-style-type: none"> <li>1. ultra clear tubes for Rotor-GeneQ</li> </ol>                                                                                                           |

## qPCR 8-STRIP TUBES

### Gunster's qPCR strip's performance



8 same samples in 8-strip to do qPCR experiment, the result shows Gunster's 8-strip fluorescence signal has better consistent than other brands.

### Ordering details :

| Product Number | Description                                        | Bag Pack                        | Box Pack                     |
|----------------|----------------------------------------------------|---------------------------------|------------------------------|
| MB-Q100        | 0.1ml qPCR 8-Strip Tubes (With Optical Caps)       | 12 Strip Tubes<br>12 Strip Caps | 10 Bags Each<br>(120 Strips) |
| MB-Q100W       | 0.1ml qPCR 8-Strip White Tubes (With Optical Caps) | 12 Strip Tubes<br>12 Strip Caps | 10 Bags Each<br>(120 Strips) |
| MB-Q100C       | 0.1ml qPCR 8-Strip Clear Tubes (With Optical Caps) | 12 Strip Tubes<br>12 Strip Caps | 10 Bags Each<br>(120 Strips) |
| MB-Q200        | 0.2ml qPCR 8-Strip Tubes (With Optical Caps)       | 12 Strip Tubes<br>12 Strip Caps | 10 Bags Each<br>(120 Strips) |
| MB-Q200W       | 0.2ml qPCR 8-Strip White Tubes (With Optical Caps) | 12 Strip Tubes<br>12 Strip Caps | 10 Bags Each<br>(120 Strips) |
| MB-QR4         | qPCR 4-Strip Tubes and Caps for Rotor-Gene® Q      | 18 Strip Tubes<br>18 Strip Caps | 14 Bags Each<br>(252 Strips) |

Compatibility qPCR machine please refer to page 26 " [qPCR 8-STRIP & 4-STRIP COMPATIBILITY CHART](#) "

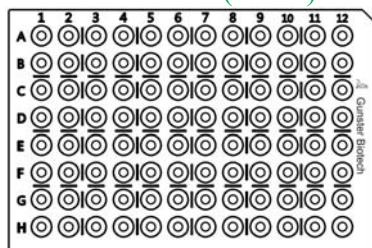
## PCR & qPCR 96 & 384 WELL PLATES

### FEATURES:

- Thin wall tube for best heat transfer
- Made of USP VI Polypropylene
- Free of DNase, RNase, Human DNA, PCR Inhibitor, ATP, Endotoxin. All products are ready to use in qPCR
- Low and standard profile with 3 skirted formats for almost all qPCR and sequencer machine
- Small package can avoid contamination by different researcher

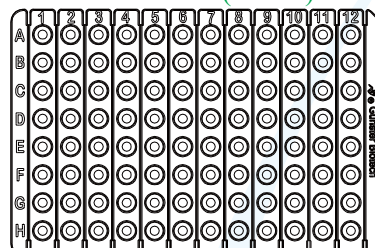
### Skirted Format

#### • Standard Profile (21mm)



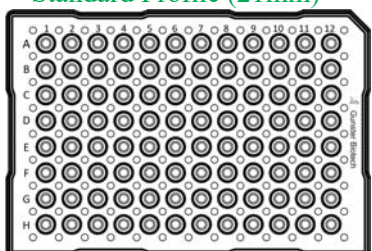
**MB-P96**  
Non-Skirted

#### • Standard Profile (21mm)



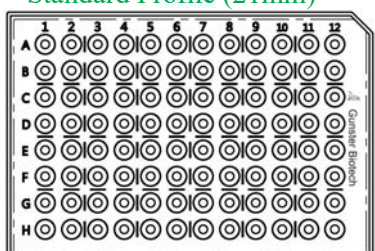
**MB-P96-T**  
Non-Skirted

#### • Standard Profile (21mm)



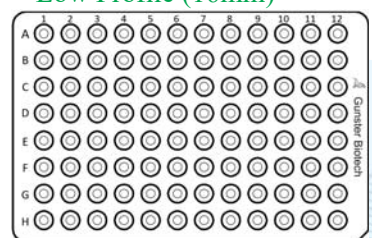
**MB-Q96**  
Sub-Semi Skirted

#### • Standard Profile (21mm)



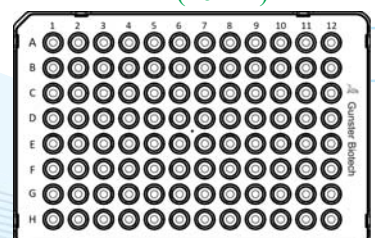
**MB-Q96-S**  
Semi-Skirted

#### • Low Profile (16mm)



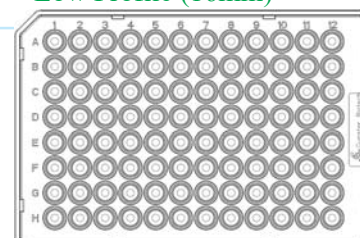
**MB-Q96-LN**  
Non-Skirted

#### • Low Profile (16mm)



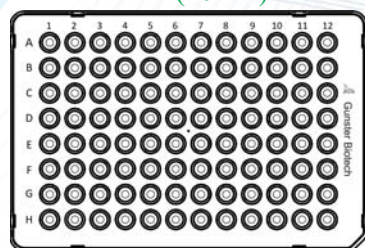
**MB-Q96-LP**  
Sub-Semi Skirted

#### • Low Profile (16mm)

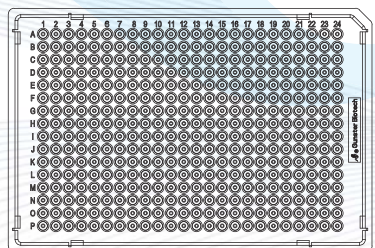


**MB-Q96-LBR**  
Semi-Skirted

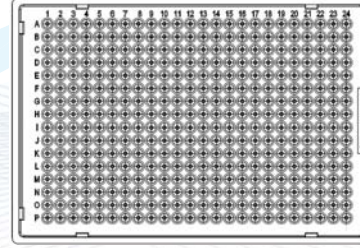
#### • Low Profile (16mm)



**MB-Q96-LBR-W**  
Semi-Skirted



**MB-384**  
(Full-Skirted)

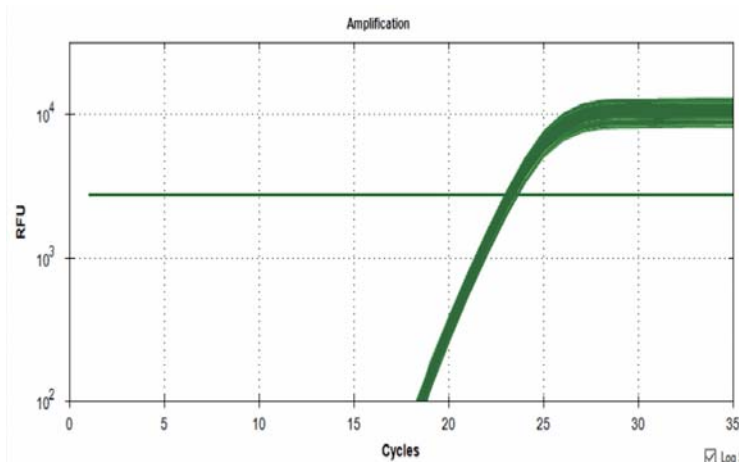


**MB-384-W**  
(Full-Skirted)

## PCR & qPCR 96 & 384 WELL PLATES

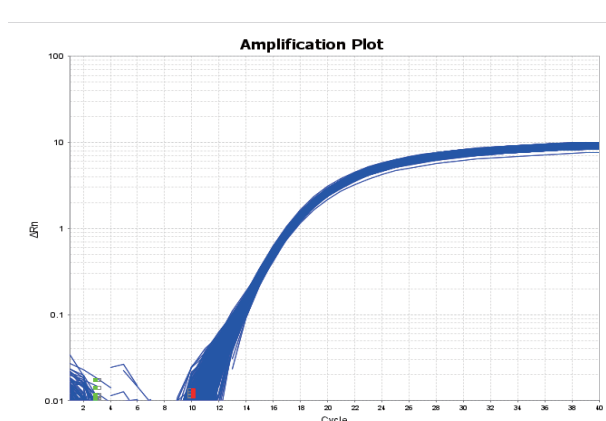
| Item Picture                                                                        | Product No   | Description                                                              | Features / Functions                                                                                                                                     |
|-------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | MB-P96       | 0.2 ml Standard Profile PCR 96 Well Plate (Non-Skirted)                  | <ol style="list-style-type: none"> <li>1. Non-Skirted</li> <li>2. Standard Profile : tube height 21 mm</li> <li>3. Clear Tubes</li> </ol>                |
|     | MB-P96-T     | 0.2 ml Standard Profile PCR 96 Well Tearable 8-Strip Plate (Non-Skirted) | <ol style="list-style-type: none"> <li>1. Non-Skirted</li> <li>2. Standard Profile : tube height 21 mm</li> <li>3. Clear Tubes</li> </ol>                |
|    | MB-Q96       | 0.2 ml Standard Profile qPCR 96 Well Plate (Sub-Semi Skirted)            | <ol style="list-style-type: none"> <li>1. Sub-Semi Skirted</li> <li>2. Standard Profile : tube height 21 mm</li> <li>3. Clear Tubes</li> </ol>           |
|    | MB-Q96-S     | 0.2 ml Standard Profile qPCR 96 Well Plate (Semi Skirted)                | <ol style="list-style-type: none"> <li>1. Semi Skirted</li> <li>2. Standard Profile : tube height 21 mm</li> <li>3. Clear Tubes</li> </ol>               |
|   | MB-Q96-LN    | 0.1 ml Low Profile qPCR 96 Well Plate (Non-Skirted)                      | <ol style="list-style-type: none"> <li>1. Non-Skirted</li> <li>2. Low Profile : tube height 16 mm</li> <li>3. Clear Tubes</li> </ol>                     |
|  | MB-Q96-LP    | 0.1 ml Low Profile qPCR 96 Well Plate (Sub-Semi Skirted)                 | <ol style="list-style-type: none"> <li>1. Sub-Semi Skirted</li> <li>2. Low Profile : tube height 16 mm</li> <li>3. Frosted Tubes</li> </ol>              |
|  | MB-Q96-LBR   | 0.1 ml Low Profile qPCR 96 well Plate (Semi-Skirted)                     | <ol style="list-style-type: none"> <li>1. Semi Skirted</li> <li>2. Low Profile : tube height 16 mm</li> <li>3. Clear Tubes</li> </ol>                    |
|  | MB-Q96-LBR-W | 0.1 ml Low Profile qPCR 96 well White Plate (Semi-Skirted)               | <ol style="list-style-type: none"> <li>1. Semi Skirted</li> <li>2. Low Profile : tube height 16 mm</li> <li>3. White Tubes</li> </ol>                    |
|  | MB-384       | 384 Well PCR Plate (Full-Skirted)                                        | <ol style="list-style-type: none"> <li>1. Semi Skirted (Full)</li> <li>2. Frosted Tubes</li> </ol>                                                       |
|  | MB-384-W     | 384 Well PCR White Plate (Full-Skirted)                                  | <ol style="list-style-type: none"> <li>1. Semi Skirted (Full)</li> <li>2. White Tubes</li> <li>3. White color for enhance fluorescence signal</li> </ol> |

## PCR & qPCR 96 & 384 WELL PLATES



### Gunster MB-96-LBR-W

96 same samples in 96 well plate to do qPCR experiment ( In BIO-RAD CFX-CONNECT ), the result shows Gunster's MB-Q96-LBR-W fluorescence signal has highly consistent.



### Gunster MB-384

384 same samples in 384 well plate to do qPCR experiment ( In ABI QuantStudio5 ), the result shows Gunster's MB-384 fluorescence signal has highly consistent.

### Ordering details :

| Product Number | Description                                                              | Bag Pack  | Box Pack           |
|----------------|--------------------------------------------------------------------------|-----------|--------------------|
| MB-P96         | 0.2 ml Standard Profile PCR 96 Well Plate (Non Skirted)                  | 10 Plates | 5 Bags (50 Plates) |
| MB-P96-T       | 0.2 ml Standard Profile PCR 96 Well Tearable 8-Strip Plate (Non-Skirted) | 10 Plates | 5 Bags (50 Plates) |
| MB-Q96         | 0.2 ml Standard Profile qPCR 96 Well Plate (Sub-Semi Skirted)            | 10 Plates | 5 Bags (50 Plates) |
| MB-Q96-S       | 0.2 ml Standard Profile qPCR 96 Well Plate (Semi Skirted)                | 10 Plates | 5 Bags (50 Plates) |
| MB-Q96-LN      | 0.1 ml Low Profile qPCR 96 Well Plate (Non Skirted)                      | 10 Plates | 5 Bags (50 Plates) |
| MB-Q96-LP      | 0.1ml Low Profile qPCR 96 Well Plate (Sub-Semi Skirted)                  | 10 Plates | 5 Bags (50 Plates) |
| MB-Q96-LBR     | 0.1ml Low Profile qPCR 96 well Plate (Semi-Skirted)                      | 10 Plates | 5 Bags (50 Plates) |
| MB-Q96-LBR-W   | 0.1ml Low Profile qPCR 96 well White Plate (Semi-Skirted)                | 10 Plates | 5 Bags (50 Plates) |
| MB-384         | 384 Well PCR Plate (Full-Skirted)                                        | 10 Plates | 5 Bags (50 Plates) |
| MB-384-W       | 384 Well PCR White Plate (Full-Skirted)                                  | 10 Plates | 5 Bags (50 Plates) |

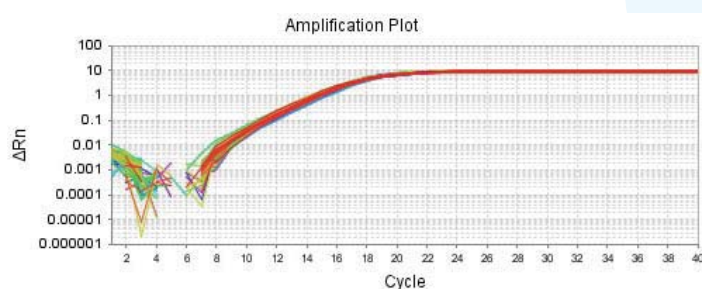
Compatibility qPCR machine please refer to Page 28 " [qPCR 96 & 384 Well Plate compatibility chart](#) "

## SEALS

### FEATURES:

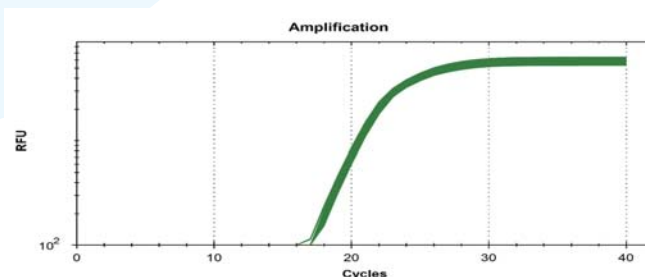
- Free of DNase, RNase, DNA, PCR Inhibitor, ATP, Endotoxin. All products are ready to use in qPCR
- Small package can avoid contamination by different researcher

| Item Picture                                                                        | Product No | Description                                                                    | Features / Functions                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------|------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | MB-PSM     | PCR 96 Well Plate Sealing Membrane                                             | <ol style="list-style-type: none"> <li>1. Operating Temperature -40 ~ 120°C</li> <li>2. PCR use</li> <li>3. Strong adhesive</li> </ol>                                                                                                                                                              |
|    | MB-QSM     | qPCR 96 Well Plate Optical Sealing Membrane (Pressure-Sensitive Adhesive Film) | <ol style="list-style-type: none"> <li>1. Operating Temperature -40 ~ 120 °C</li> <li>2. Real-Time PCR(qPCR) use</li> <li>3. Pressure sensitive adhesive design</li> <li>4. Ultra clear membrane shows consistent and high light transmitting rate provide stable data than other brands</li> </ol> |
|    | MB-BQSM    | qPCR 96 Well Plate Optical Sealing Membrane (Stick Adhesive Film)              | <ol style="list-style-type: none"> <li>1. Operating Temperature -40 ~ 120°C</li> <li>2. Real-Time PCR(qPCR) use</li> <li>3. Stick adhesive film design</li> <li>4. Ultra clear membrane shows consistent and high light transmitting rate provide stable data than brands</li> </ol>                |
|  | MB-ASM     | Aluminum Sealing Membrane                                                      | <ol style="list-style-type: none"> <li>1. Operating Temperature -80 ~ 120°C</li> <li>2. PCR or Storage use</li> <li>3. Strong adhesive film</li> <li>4. MB-ASM is pierceable</li> </ol>                                                                                                             |



Gunster MB-QSM

96 same samples in 96 well plate to do qPCR experiment (In ABI StepOne Plus), the result shows Gunster's qPCR sealing membrane (MB-QSM) fluorescence signal has highly consistent.



Gunster MB-BQSM

96 same samples in 96 well plate to do qPCR experiment (In Bio-Rad CFX96), the result shows Gunster's qPCR sealing membrane (MB-BQSM) fluorescence signal has highly consistent.

### Ordering details :

| Product Number | Description                                                                    | Bag Pack     | Box Pack                |
|----------------|--------------------------------------------------------------------------------|--------------|-------------------------|
| MB-PSM         | PCR 96 Well Plate Sealing Membrane                                             | 10 Membranes | 10 Bags (100 Membranes) |
| MB-QSM         | qPCR 96 Well Plate Optical Sealing Membrane (Pressure-Sensitive Adhesive Film) | 10 Membranes | 10 Bags (100 Membranes) |
| MB-BQSM        | qPCR 96 Well Plate Optical Sealing Membrane ( Stick Adhesive Film)             | 10 Membranes | 10 Bags (100 Membranes) |
| MB-ASM         | Aluminum Sealing Membrane                                                      | 10 Membranes | 10 Bags (100 Membranes) |

## CENTRIFUGE TUBES

### 1.7 (1.5) ml Microcentrifuge Tubes

The 1.7ml flat-cap tubes are frosted on the top and sides for convenient sample labeling. Scale mark from 0.1 ml to 1.5 ml make them ideal for many uses.

#### FEATURES:

- Labeled graduations at 100  $\mu$ l
- Spin: 20,000 RCF
- Frosted side & cap for sample labeling
- Made of USP VI virgin polypropylene
- Flat Cap
- Free of DNase, RNase, DNA, PCR Inhibitor, ATP, Endotoxin.
- Autoclavable (121°C, 15 psi, 15 minutes)

| Item Picture                                                                       | Product No | Description                        | Features / Functions            |
|------------------------------------------------------------------------------------|------------|------------------------------------|---------------------------------|
|  | MB-E17-A   | 1.7 (1.5) ml Microcentrifuge Tubes | 1. Bulk packing<br>2. Large cap |

#### Ordering details :

| Product Number | Description                        | Bag Pack  | Box Pack             |
|----------------|------------------------------------|-----------|----------------------|
| MB-E17-A       | 1.7 (1.5) ml Microcentrifuge Tubes | 500 Tubes | 10 Bags (5000 Tubes) |

## ORDER INFORMATION

### Gunster Biotech

E-mail : [gunster@gunster.com.tw](mailto:gunster@gunster.com.tw)

Phone : +886-2-2677-2332

Fax : +886-2-2677-2339

Address : 9F.-1, No. 192, Sec. 3, Datong Rd., Xizhi Dist., New Taipei City 221412, Taiwan

| Cat. No.                                       | Description                                                                    | Packing                       |
|------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------|
| <b>PCR SINGLE &amp; 8-STRIP TUBES</b>          |                                                                                |                               |
| MB-P02-A                                       | 0.2 ml PCR Tubes With Flat Cap                                                 | 500 pcs/bag, 6 bags/box       |
| MB-P02D                                        | 0.2 ml PCR Tubes With Domed Cap                                                | 500 pcs/bag, 6 bags/box       |
| MB-P08-A                                       | 0.2 ml PCR 8-Strip Tubes (With Attached Flat Caps)                             | 12 strips/bag, 10 bags/box    |
| MB-P08-AD                                      | 0.2 ml PCR 8-Strip Tubes (With Attached Domed Caps)                            | 12 strips/bag, 10 bags/box    |
| MB-P08-B                                       | 0.2 ml PCR 8-Strip Tubes (With Frosted Caps)                                   | 120 sets/box                  |
| MB-P08-D                                       | 0.2 ml PCR 8-Strip Tubes (With Domed Caps)                                     | 120 sets/box                  |
| MB-OPENER                                      | 8 - Strip Capping Gadget                                                       | 1pcs/bag, 15 bags/box         |
| <b>qPCR 8-STRIP &amp; 4-STRIP TUBES</b>        |                                                                                |                               |
| MB-Q100                                        | 0.1ml qPCR 8-Strip Tubes (With Optical Caps)                                   | 120 sets/box                  |
| MB-Q100W                                       | 0.1ml qPCR 8-Strip White Tubes (With Optical Caps)                             | 120 sets/box                  |
| MB-Q100C                                       | 0.1ml qPCR 8-Strip Clear Tubes (With Optical Caps)                             | 120 sets/box                  |
| MB-Q200                                        | 0.2ml qPCR 8-Strip Tubes (With Optical Caps)                                   | 120 sets/box                  |
| MB-Q200W                                       | 0.2ml qPCR 8-Strip White Tubes (With Optical Caps)                             | 120 sets/box                  |
| MB-QR4                                         | qPCR 4-Strip Tubes and Caps for Rotor-Gene® Q                                  | 252 sets/box                  |
| <b>PCR &amp; qPCR 96 &amp; 384 WELL PLATES</b> |                                                                                |                               |
| MB-P96                                         | 0.2ml Standard Profile PCR 96 Well Plate (Non-Skirted)                         | 10 plate / bag, 5 bags / box  |
| MB-P96-T                                       | 0.2ml Standard Profile PCR 96 Well Tearable 8-Strip Plate (Non-Skirted)        | 10 plate / bag, 5 bags / box  |
| MB-Q96                                         | 0.2ml Standard Profile qPCR 96 Well Plate (Sub-Semi Skirted)                   | 10 plate / bag, 5 bags / box  |
| MB-Q96-S                                       | 0.2ml Standard Profile qPCR 96 Well Plate (Semi-Skirted)                       | 10 plate / bag, 5 bags / box  |
| MB-Q96-LN                                      | 0.1ml Low Profile qPCR 96 Well Plate (Non-Skirted)                             | 10 plate / bag, 5 bags / box  |
| MB-Q96-LP                                      | 0.1ml Low Profile qPCR 96 Well Plate (Sub-Semi Skirted)                        | 10 plate / bag, 5 bags / box  |
| MB-Q96-LBR                                     | 0.1ml Low Profile qPCR 96 well Plate (Semi-Skirted)                            | 10 plate / bag, 5 bags / box  |
| MB-Q96-LBR-W                                   | 0.1ml Low Profile qPCR 96 well White Plate (Semi-Skirted)                      | 10 plate / bag, 5 bags / box  |
| MB-384                                         | 384 Well PCR Plate (Full-Skirted)                                              | 10 plate / bag, 5 bags / box  |
| MB-384-W                                       | 384 Well PCR White Plate (Full-Skirted)                                        | 10 plate / bag, 5 bags / box  |
| <b>SEALS</b>                                   |                                                                                |                               |
| MB-PSM                                         | PCR 96 Well Plate Sealing Membrane                                             | 10 membranes/bag, 10 bags/box |
| MB-QSM                                         | qPCR 96 Well Plate Optical Sealing Membrane (pressure-sensitive adhesive film) | 10 membranes/bag, 10 bags/box |
| MB-BQSM                                        | qPCR 96 Well Plate Optical Sealing Membrane (stick adhesive film)              | 10 membranes/bag, 10 bags/box |
| MB-ASM                                         | Aluminum Sealing Membrane                                                      | 10 membranes/bag, 10 bags/box |
| <b>CENTRIFUGE TUBES</b>                        |                                                                                |                               |
| MB-E17-A                                       | 1.7(1.5) ml Microcentrifuge Tubes                                              | 500 tubes/bag, 10 bags/box    |

## ABI qPCR INSTRUMENT PLASTICWARE SELECTION GUIDE

### How to check 8-Strip or 96-Well plate holder/tray

7300 / 7500



FOR USE WITH 96 WELL PLATES ONLY  
4367032 **Plate Use**



FOR USE WITH 8-STRIP & INDIVIDUAL TUBES ONLY  
4367033 **8-Strip Use**

ViiA 7



4381850 Blue tray for **8-Strip Use**

### How to check 8-Strip or 96-Well plate holder/tray

StepOne Plus



**Plate Use**



4379983 Black tray for **8-Strip Use**

### ABI qPCR machine 8-Strip & 96-Well Plate holder/tray number

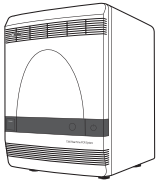
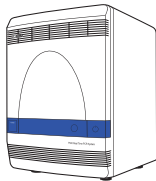
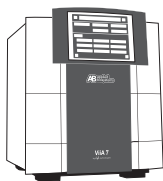
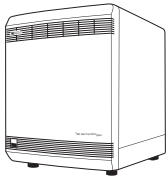
| Machine PN           | ABI holder/tray No. For 8-Strip | ABI holder/tray No. For 96-Well Plate |
|----------------------|---------------------------------|---------------------------------------|
| 7000                 | 4350105                         | 4350105                               |
| 7300&7500            | 4367033                         | 4367032                               |
| 7500 Fast            | 4403809 / A29252                | 4359652                               |
| 7900HT               | Use 96-Well Plate Only          | Direct Use 96-Well Plate              |
| 7900HT Fast          | Use 96-Well Plate Only          | Direct Use 96-Well Plate              |
| StepOne              | 4375282                         | Direct Use Plate without 8-Strip Tray |
| StepOne Plus         | 4379983                         | Direct Use Plate without 8-Strip Tray |
| ViiA 7               | 4381850                         | 4459845                               |
| ViiA7 Fast           | 4379983                         | 4459846                               |
| QuantStudio          | 4381850                         | 4459845                               |
| QuantStudio Fast     | 4379983                         | 4459846                               |
| QuantStudio 3/5      | 4381850                         | Direct Use Plate without 8-Strip Tray |
| QuantStudio 3/5 Fast | 4379983                         | Direct Use Plate without 8-Strip Tray |

### ABI Sequencer 8-Strip & 96-Well Plate holder/tray number

| Machine PN                                | ABI holder/tray No. For 8-Strip       | ABI holder/tray No. For 96-Well Plate |
|-------------------------------------------|---------------------------------------|---------------------------------------|
| 3130(xL)/3100<br>(0.1ml Fast 96 Well)     | Use 96-Well Plate Only                | 4367470 (Retainer)<br>4315933 (Septa) |
| 3130(xL)/3100<br>(0.2ml Standard 96 Well) | Use 96-Well Plate Only                | 4317241 (Retainer)<br>4315933 (Septa) |
| 3730(xL)<br>(0.1ml Fast 96 Well)          | Use 96-Well Plate Only                | 4367469 (Retainer)<br>4315933 (Septa) |
| 3730(xL)<br>(0.2ml Standard 96 Well)      | Use 96-Well Plate Only                | 4410228 (Retainer)<br>4315933 (Septa) |
| 3500(xL)<br>(0.1ml Fast 96 Well)          | 4410232 (Retainer)<br>4410701 (Septa) | 4409530 (Retainer)<br>4412614 (Septa) |
| 3500(xL)<br>(0.2ml Standard 96 Well)      | 4410230 (Retainer)<br>4410701 (Septa) | 4410228 (Retainer)<br>4412614 (Septa) |

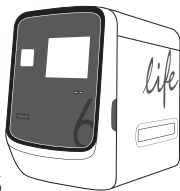
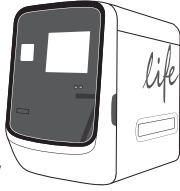
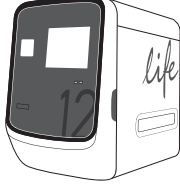
## ABI qPCR INSTRUMENT PLASTICWARE SELECTION GUIDE

ABI (Life Technology)

| 0.2 ml Standard Profile qPCR Machine                                                                 |                                      |                          |                                       |                             |
|------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------|---------------------------------------|-----------------------------|
| qPCR Machine                                                                                         | Compatibility Plasticware of Gunster |                          |                                       |                             |
|                                                                                                      | qPCR 8-Strip                         | ABI Holder & Tray Number | qPCR 96 Well Plate & Sealing Membrane | ABI Holder & Tray Number    |
| 7300<br>            | MB-Q200                              | 4367033                  | MB-Q96<br>MB-QSM (Film)               | 4367032                     |
| 7500<br>            | MB-Q200                              | 4367033                  | MB-Q96<br>MB-QSM (Film)               | 4367032                     |
| ViiA 7<br>        | MB-Q200                              | 4381850                  | MB-Q96<br>MB-Q96-S<br>MB-QSM (Film)   | 4459845                     |
| 7900<br>          | Use 96-Well Plate Only               |                          | MB-Q96<br>MB-Q96-S<br>MB-QSM (Film)   | Direct Use<br>96-Well Plate |
| QuantStudio 1<br> | MB-Q200                              | 4381850                  | MB-Q96<br>MB-Q96-S<br>MB-QSM (Film)   | Direct Use<br>96-Well Plate |
| QuantStudio 3<br> | MB-Q200                              | 4381850                  | MB-Q96<br>MB-Q96-S<br>MB-QSM (Film)   | Direct Use<br>96-Well Plate |

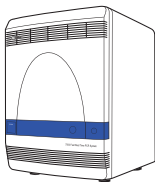
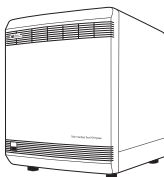
## ABI qPCR INSTRUMENT PLASTICWARE SELECTION GUIDE

ABI (Life Technology)

| 0.2 ml Standard Profile qPCR Machine                                                                         |                                      |                          |                                       |                             |
|--------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------|---------------------------------------|-----------------------------|
| qPCR Machine                                                                                                 | Compatibility Plasticware of Gunster |                          |                                       |                             |
|                                                                                                              | qPCR 8-Strip                         | ABI Holder & Tray Number | qPCR 96 Well Plate & Sealing Membrane | ABI Holder & Tray Number    |
|  <p>QuantStudio 5</p>       | MB-Q200                              | 4381850                  | MB-Q96<br>MB-Q96-S<br>MB-QSM (Film)   | Direct Use<br>96-Well Plate |
|  <p>QuantStudio 6</p>       | MB-Q200                              | 4381850                  | MB-Q96<br>MB-Q96-S<br>MB-QSM (Film)   | Direct Use<br>96-Well Plate |
|  <p>QuantStudio 6 pro</p> | MB-Q200                              | 4381850                  | MB-Q96<br>MB-Q96-S<br>MB-QSM (Film)   | Direct Use<br>96-Well Plate |
|  <p>QuantStudio 7</p>     | MB-Q200                              | 4381850                  | MB-Q96<br>MB-Q96-S<br>MB-QSM (Film)   | Direct Use<br>96-Well Plate |
|  <p>QuantStudio 7 pro</p> | MB-Q200                              | 4381850                  | MB-Q96<br>MB-Q96-S<br>MB-QSM (Film)   | Direct Use<br>96-Well Plate |
|  <p>QuantStudio 12k</p>   | MB-Q200                              | 4381850                  | MB-Q96<br>MB-Q96-S<br>MB-QSM (Film)   | Direct Use<br>96-Well Plate |

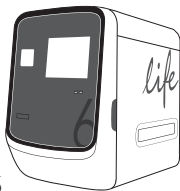
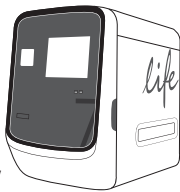
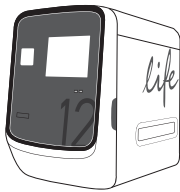
## ABI qPCR INSTRUMENT PLASTICWARE SELECTION GUIDE

ABI (Life Technology)

| 0.1 ml Fast qPCR Machine (Low Profile)                                                               |                                      |                          |                                       |                             |
|------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------|---------------------------------------|-----------------------------|
| qPCR Machine                                                                                         | Compatibility Plasticware of Gunster |                          |                                       |                             |
|                                                                                                      | qPCR 8-Strip                         | ABI Holder & Tray Number | qPCR 96 Well Plate & Sealing Membrane | ABI Holder & Tray Number    |
| StepOne<br>         | MB-Q100                              | 4379983                  | USE 8-Strip or 48-Well Plate Only     |                             |
| StepOne Plus<br>    | MB-Q100                              | 4379983                  | MB-Q96-LP<br>MB-QSM(Film)             | Direct Use<br>96-Well Plate |
| 7500 Fast<br>     | MB-Q100                              | 4379983<br>A29252        | MB-Q96-LP<br>MB-QSM(Film)             | Direct Use<br>96-Well Plate |
| ViiA 7 Fast<br>   | MB-Q100                              | 4379983                  | MB-Q96-LP<br>MB-QSM(Film)             | Direct Use<br>96-Well Plate |
| 7900 Fast<br>     | Use 96-Well Plate Only               |                          | MB-Q96-LP<br>MB-QSM(Film)             | Direct Use<br>96-Well Plate |
| QuantStudio 3<br> | MB-Q100                              | 4379983                  | MB-Q96-LP<br>MB-QSM(Film)             | Direct Use<br>96-Well Plate |

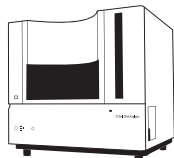
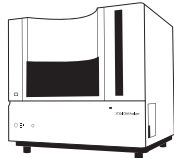
## ABI qPCR INSTRUMENT PLASTICWARE SELECTION GUIDE

ABI (Life Technology)

| 0.1 ml Fast qPCR Machine (Low Profile)                                                                       |                                      |                          |                                       |                             |
|--------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------|---------------------------------------|-----------------------------|
| qPCR Machine                                                                                                 | Compatibility Plasticware of Gunster |                          |                                       |                             |
|                                                                                                              | qPCR 8-Strip                         | ABI Holder & Tray Number | qPCR 96 Well Plate & Sealing Membrane | ABI Holder & Tray Number    |
|  <p>QuantStudio 5</p>       | MB-Q100                              | 4379983                  | MB-Q96-LP<br>MB-QSM(Film)             | Direct Use<br>96-Well Plate |
|  <p>QuantStudio 6</p>       | MB-Q100                              | 4379983                  | MB-Q96-LP<br>MB-QSM(Film)             | Direct Use<br>96-Well Plate |
|  <p>QuantStudio 6 pro</p> | MB-Q100                              | 4379983                  | MB-Q96-LP<br>MB-QSM(Film)             | Direct Use<br>96-Well Plate |
|  <p>QuantStudio 7</p>     | MB-Q100                              | 4379983                  | MB-Q96-LP<br>MB-QSM(Film)             | Direct Use<br>96-Well Plate |
|  <p>QuantStudio 7 pro</p> | MB-Q100                              | 4379983                  | MB-Q96-LP<br>MB-QSM(Film)             | Direct Use<br>96-Well Plate |
|  <p>QuantStudio 12k</p>   | MB-Q100                              | 4379983                  | MB-Q96-LP<br>MB-QSM(Film)             | Direct Use<br>96-Well Plate |

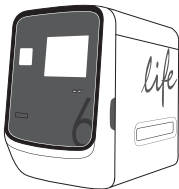
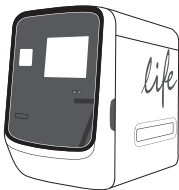
# ABI qPCR INSTRUMENT PLASTICWARE SELECTION GUIDE

ABI (Life Technology)

| sequencing machine                                                                                                             |                                      |                                                            |                    |                                                            |
|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------|--------------------|------------------------------------------------------------|
| Sequencing Machine                                                                                                             | Compatibility Plasticware of Gunster |                                                            |                    |                                                            |
|                                                                                                                                | qPCR 8-Strip                         | ABI Holder & Tray Number                                   | qPCR 96-Well       | ABI Holder & Tray Number                                   |
| 3130/3130xl<br>(0.2ml Standard 96 well)<br>   | Use Standard 96-Well Plate Only      |                                                            | MB-Q96<br>MB-Q96-S | USE ABI<br>4317241<br>(Retainer)<br>and (Septa)<br>4315933 |
| 3130/3130xl<br>(0.1ml Fast 96 well)<br>       | Use Fast 96-Well Plate Only          |                                                            | MB-Q96-LP          | USE ABI<br>4367470<br>(Retainer)<br>and (Septa)<br>4315933 |
| 3730/3730xl<br>(0.2ml Standard 96 well)<br>  | Use Standard 96-Well Plate Only      |                                                            | MB-Q96<br>MB-Q96-S | USE ABI<br>4317241<br>(Retainer)<br>and (Septa)<br>4315933 |
| 3730/3730xl<br>(0.1ml Fast 96 well)<br>     | Use Fast 96-Well Plate Only          |                                                            | MB-Q96-LP          | USE ABI<br>4367470<br>(Retainer)<br>and (Septa)<br>4315933 |
| 3500/3500xl<br>(0.2ml Standard 96 well)<br> | MB-Q200                              | 4410230<br>(Retainer)<br>4410701<br>(Septa)                | MB-Q96<br>MB-Q96-S | USE ABI<br>4410228<br>(Retainer)<br>and (Septa)<br>4412614 |
| 3500/3500xl<br>(0.1ml Fast 96 well)<br>     | MB-Q100                              | USE ABI<br>4410232<br>(Retainer)<br>and (Septa)<br>4410701 | MB-Q96-LP          | USE ABI<br>4409530<br>(Retainer)<br>and (Septa)<br>4412614 |
| SeqStudio<br>Genetic<br>Analyzer<br>        | MB-Q200                              | 403081<br>(Retainer)<br>A36543<br>(Septa)                  | MB-Q96<br>MB-Q96-S | A36541<br>(Septa)                                          |

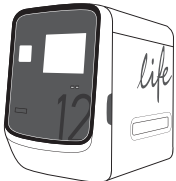
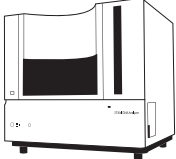
## ABI qPCR INSTRUMENT PLASTICWARE SELECTION GUIDE

### ABI (Life Technology)

| 384 qPCR & sequencing machine                                                                                       |                                      |                  |
|---------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------|
| qPCR Machine                                                                                                        | Compatibility Plasticware of Gunster |                  |
|                                                                                                                     | qPCR 384 Well Plate                  | Sealing membrane |
| <br>ViiA (384 well)                | MB-384                               | MB-QSM           |
| <br>7900 (384 well)                | MB-384                               | MB-QSM           |
| <br>QuantStudio 5 (384 well)     | MB-384                               | MB-QSM           |
| <br>QuantStudio 6 (384 well)     | MB-384                               | MB-QSM           |
| <br>QuantStudio 6 pro (384 well) | MB-384                               | MB-QSM           |
| <br>QuantStudio 7 (384 well)     | MB-384                               | MB-QSM           |

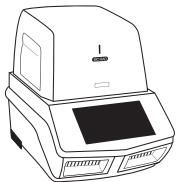
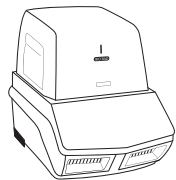
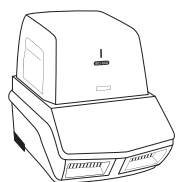
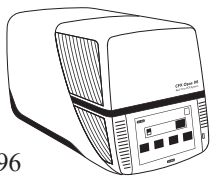
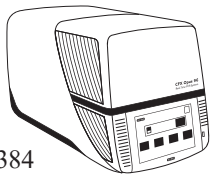
## ABI qPCR INSTRUMENT PLASTICWARE SELECTION GUIDE

ABI (Life Technology)

| 384 qPCR & sequencing machine                                                                                             |                                      |                                                 |
|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------|
| qPCR Machine                                                                                                              | Compatibility Plasticware of Gunster |                                                 |
|                                                                                                                           | qPCR 384 Well Plate                  | Sealing membrane                                |
|  <p>QuantStudio<br/>7 pro (384 well)</p> | MB-384                               | MB-QSM                                          |
|  <p>QuantStudio<br/>12k (384 well)</p>   | MB-384                               | MB-QSM                                          |
|  <p>3130/3130xl<br/>(384 well)</p>     | MB-384                               | USE ABI 4334865(Retainer)<br>and (Septa)4315934 |
|  <p>3500/3500xl<br/>(384 well)</p>     | MB-384                               | USE ABI 4334865(Retainer)<br>and (Septa)4315934 |
|  <p>3730/3730xl<br/>(384 well)</p>     | MB-384                               | USE ABI 4334865(Retainer)<br>and (Septa)4315934 |

# BIO-RAD, ROCHE, AGILENT, ANALYTIK JENA, QIAGEN qPCR INSTRUMENT PLASTICWARE SELECTION GUIDE

## Bio-Rad

| Bio-Rad qPCR machine                                                                                   |                                      |                                              |                                        |
|--------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------------|----------------------------------------|
| qPCR Machine                                                                                           | Compatibility Plasticware of Gunster |                                              |                                        |
|                                                                                                        | qPCR 8-Strip                         | qPCR 96 Well Plate & Sealing Membrane        | qPCR 384 Well Plate & Sealing Membrane |
| CFX 96<br>            | MB-Q100<br>MB-Q100W                  | MB-Q96-LBR<br>MB-Q96-LBR-W<br>MB-BQSM (Film) | NON                                    |
| CFX 96 Connect<br>   | MB-Q100<br>MB-Q100W                  | MB-Q96-LBR<br>MB-Q96-LBR-W<br>MB-BQSM (Film) | NON                                    |
| CFX 384 Connect<br> | NON                                  | NON                                          | MB-384<br>MB-384-W<br>MB-BQSM (Film)   |
| CFX Opus 96<br>     | MB-Q100<br>MB-Q100W                  | MB-Q96-LBR<br>MB-Q96-LBR-W<br>MB-BQSM (Film) | NON                                    |
| CFX Opus 384<br>    | NON                                  | NON                                          | MB-384<br>MB-384-W<br>MB-BQSM (Film)   |

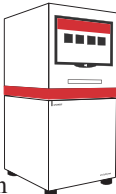
## BIO-RAD, ROCHE, AGILENT, ANALYTIK JENA, QIAGEN qPCR INSTRUMENT PLASTICWARE SELECTION GUIDE

### ROCHE

| Roche qPCR machine                                                                                                      |                                      |                                       |                                        |
|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------------|----------------------------------------|
| qPCR Machine                                                                                                            | Compatibility Plasticware of Gunster |                                       |                                        |
|                                                                                                                         | qPCR 8-Strip                         | qPCR 96 Well Plate & Sealing Membrane | qPCR 384 Well Plate & Sealing Membrane |
| LightCycler 96                         | MB-Q100W                             | MB-Q96-LBR-W<br>MB-QSM (Film)         | NON                                    |
| LightCycler 480I & 480II              | MB-Q100W                             | MB-Q96-LBR-W<br>MB-QSM (Film)         | NON                                    |
| LightCycler 480I & 480II (384 well)  | NON                                  | NON                                   | MB-384-W<br>MB-QSM (Film)              |

## BIO-RAD, ROCHE, AGILENT, ANALYTIK JENA, QIAGEN qPCR INSTRUMENT PLASTICWARE SELECTION GUIDE

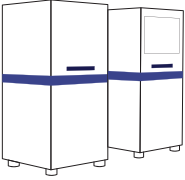
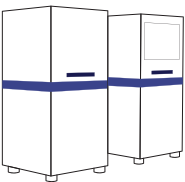
### Analytik Jena

| Analytik Jena qPCR machine                                                                            |                                      |                                       |                                        |
|-------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------------|----------------------------------------|
| qPCR Machine                                                                                          | Compatibility Plasticware of Gunster |                                       |                                        |
|                                                                                                       | qPCR 8-Strip                         | qPCR 96 Well Plate & Sealing Membrane | qPCR 384 Well Plate & Sealing Membrane |
| <br>qTOWER³ G        | MB-Q100W<br>MB-Q200W                 | MB-Q96-LBR-W<br>MB-QSM (Film)         | NON                                    |
| <br>qTOWER³ G touch | MB-Q100W<br>MB-Q200W                 | MB-Q96-LBR-W<br>MB-QSM (Film)         | NON                                    |
| <br>qTOWER³ 84     | NON                                  | NON                                   | MB-384-W<br>MB-QSM (Film)              |

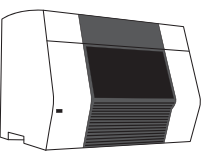
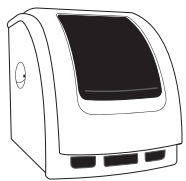


# BIO-RAD, ROCHE, AGILENT, ANALYTIK JENA, QIAGEN qPCR INSTRUMENT PLASTICWARE SELECTION GUIDE

## QIAGEN

| Qiagen qPCR machine                                                                                        |                                      |                                       |                                        |
|------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------------|----------------------------------------|
| qPCR Machine                                                                                               | Compatibility Plasticware of Gunster |                                       |                                        |
|                                                                                                            | qPCR Strip                           | qPCR 96 Well Plate & Sealing Membrane | qPCR 384 Well Plate & Sealing Membrane |
| Rotor Gene Q Qiagen<br>   | MB-QR4                               | NON                                   | NON                                    |
| Qiagen_QIAquant<br>      | MB-Q100W<br>MB-Q200W                 | MB-Q96-LBR-W<br>MB-QSM (Film)         | NON                                    |
| Qiagen_QIAquant 384<br> | NON                                  | NON                                   | MB-384-W<br>MB-QSM (Film)              |

## AGILENT (STRATAGENE)

| Agilent (Stratagene) qPCR machine                                                                            |                                      |                             |
|--------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------------|
| qPCR Machine                                                                                                 | Compatibility Plasticware of Gunster |                             |
|                                                                                                              | qPCR 8-Strip                         | qPCR 96-Well                |
| AriaMx<br>                | MB-Q100                              | MB-Q96-LBR<br>MB-QSM (Film) |
| Mx3005PM 、<br>Mx3000P<br> | MB-Q200                              | MB-Q96-S<br>MB-QSM (Film)   |

## qPCR 8-STRIP COMPATIBILITY CHART

|                            | MB-100 | MB-100C | MB-100W | MB-Q200 | MB-Q200W | MB-QR4 | Holder No |
|----------------------------|--------|---------|---------|---------|----------|--------|-----------|
| ABI                        |        |         |         |         |          |        |           |
| 7000                       |        |         |         | ●       |          |        |           |
| 7300                       |        |         |         | ●       |          |        |           |
| 7500                       |        |         |         | ●       |          |        |           |
| 7500 fast                  | ●      |         |         |         |          |        |           |
| stepone                    | ●      |         |         |         |          |        |           |
| stepone plus               | ●      |         |         |         |          |        |           |
| Vii7 fast                  | ●      |         |         |         |          |        |           |
| Vii7                       |        |         |         | ●       |          |        |           |
| 7900                       |        |         |         | ●       |          |        |           |
| 7900 fast                  | ●      |         |         |         |          |        |           |
| Quantstudio 3 (0.1ml)      | ●      |         |         |         |          |        |           |
| Quantstudio 5 (0.1ml)      | ●      |         |         |         |          |        |           |
| Quantstudio 6 (0.1ml)      | ●      |         |         |         |          |        |           |
| Quantstudio 6 pro (0.1ml)  | ●      |         |         |         |          |        |           |
| Quantstudio 7 (0.1ml)      | ●      |         |         |         |          |        |           |
| Quantstudio 7 pro (0.1ml)  | ●      |         |         |         |          |        |           |
| Quantstudio 12K (0.1ml)    | ●      |         |         |         |          |        |           |
| Quantstudio 1 (0.2ml)      |        |         |         | ●       |          |        |           |
| Quantstudio 3 (0.2ml)      |        |         |         | ●       |          |        |           |
| Quantstudio 5 (0.2ml)      |        |         |         | ●       |          |        |           |
| Quantstudio 6 (0.2ml)      |        |         |         | ●       |          |        |           |
| Quantstudio 6 pro (0.2ml)  |        |         |         | ●       |          |        |           |
| Quantstudio 7 (0.2ml)      |        |         |         | ●       |          |        |           |
| Quantstudio 7 pro (0.2ml)  |        |         |         | ●       |          |        |           |
| Quantstudio 12K (0.2ml)    |        |         |         | ●       |          |        |           |
| 3130, 3130XL (0.1ml)       | ●      |         |         |         |          |        |           |
| 3500, 3500XL (0.1ml)       | ●      |         |         |         |          |        |           |
| 3730, 3730XL(0.1ml)        | ●      |         |         |         |          |        |           |
| 3130xl                     |        |         |         | ●       |          |        |           |
| 3500xl                     |        |         |         | ●       |          |        |           |
| 3730xl                     |        |         |         | ●       |          |        |           |
| Seqstudio Genetic Analyzer |        |         |         | ●       |          |        |           |

## qPCR 8-STRIP COMPATIBILITY CHART

|                             | MB-100 | MB-100C | MB-100W | MB-Q200 | MB-Q200W | MB-QR4 | Holder No |
|-----------------------------|--------|---------|---------|---------|----------|--------|-----------|
| Bio-Rad                     |        |         |         |         |          |        |           |
| CFX96                       |        | ●       | ●       |         |          |        |           |
| CFX96 connect               |        | ●       | ●       |         |          |        |           |
| CFX Opus 96                 |        | ●       | ●       |         |          |        |           |
| CFX Opus 384                |        |         |         |         |          |        |           |
| Roche                       |        |         |         |         |          |        |           |
| LightCycler 96              |        |         | ●       |         |          |        |           |
| LightCycler 480I & 480II    |        |         | ●       |         |          |        |           |
| Analytik Jena               |        |         |         |         |          |        |           |
| qTOWER <sup>3</sup> G       |        |         | ●       |         | ●        |        |           |
| qTOWER <sup>3</sup> G touch |        |         | ●       |         | ●        |        |           |
| qTOWER <sup>3</sup> 84      |        |         |         |         |          |        |           |
| Qiagen                      |        |         |         |         |          |        |           |
| Qiagen_Rotor-Gene Q         |        |         |         |         |          | ●      |           |
| Qiagen_QIAquant             |        |         | ●       |         | ●        |        |           |
| Stratagene                  |        |         |         |         |          |        |           |
| AriaMx                      | ●      |         |         |         |          |        |           |
| Mx3005PM、Mx3000P            | ●      |         |         |         |          |        |           |

# qPCR 96 & 384 WELL PLATE COMPATIBILITY CHART (INCLUDING SEALING MEMBRANE)

|                            | MB-Q96 | MB-Q96-S | MB-Q96-LP | MB-Q96-LBR | MB-Q96-LBR-W | MB-384 | MB-384-W | MB-QSM | MB-BQSM |
|----------------------------|--------|----------|-----------|------------|--------------|--------|----------|--------|---------|
| ABI                        |        |          |           |            |              |        |          |        |         |
| 7000                       | ●      |          |           |            |              |        |          | ●      |         |
| 7300                       | ●      |          |           |            |              |        |          | ●      |         |
| 7500                       | ●      |          |           |            |              |        |          | ●      |         |
| 7500 fast                  |        |          | ●         |            |              |        |          | ●      |         |
| Stepone Plus               |        |          | ●         |            |              |        |          | ●      |         |
| Vii7 fast                  |        |          | ●         |            |              |        |          | ●      |         |
| Vii7                       | ●      | ●        |           |            |              |        |          | ●      |         |
| Vii7 (384 well)            |        |          |           |            |              | ●      |          | ●      |         |
| 7900                       | ●      | ●        |           |            |              |        |          | ●      |         |
| 7900 fast                  |        |          | ●         |            |              |        |          | ●      |         |
| 7900 (384 well)            |        |          |           |            |              | ●      |          | ●      |         |
| Quantstudio 3 (0.1ml)      |        |          | ●         |            |              |        |          | ●      |         |
| Quantstudio 5 (0.1ml)      |        |          | ●         |            |              |        |          | ●      |         |
| Quantstudio 6 (0.1ml)      |        |          | ●         |            |              |        |          | ●      |         |
| Quantstudio 6 pro (0.1ml)  |        |          | ●         |            |              |        |          | ●      |         |
| Quantstudio 7 (0.1ml)      |        |          | ●         |            |              |        |          | ●      |         |
| Quantstudio 7 pro (0.1ml)  |        |          | ●         |            |              |        |          | ●      |         |
| Quantstudio 12K (0.1ml)    |        |          | ●         |            |              |        |          | ●      |         |
| Quantstudio 1 (0.2ml)      | ●      | ●        |           |            |              |        |          | ●      |         |
| Quantstudio 3 (0.2ml)      | ●      |          |           |            |              |        |          | ●      |         |
| Quantstudio 5 (0.2ml)      | ●      |          |           |            |              |        |          | ●      |         |
| Quantstudio 6 (0.2ml)      | ●      |          |           |            |              |        |          | ●      |         |
| Quantstudio 6 pro (0.2ml)  | ●      |          |           |            |              |        |          | ●      |         |
| Quantstudio 7 (0.2ml)      | ●      |          |           |            |              |        |          | ●      |         |
| Quantstudio 7 pro (0.2ml)  | ●      |          |           |            |              |        |          | ●      |         |
| Quantstudio 12K (0.2ml)    | ●      |          |           |            |              |        |          | ●      |         |
| Quantstudio 5 (384 well)   |        |          |           |            |              | ●      |          | ●      |         |
| Quantstudio 6 (384 well)   |        |          |           |            |              | ●      |          | ●      |         |
| Quantstudio 7 (384 well)   |        |          |           |            |              | ●      |          | ●      |         |
| Quantstudio 12K (384 well) |        |          |           |            |              | ●      |          | ●      |         |
| 3130, 3130XL (0.1ml)       |        |          | ●         |            |              |        |          |        |         |
| 3500, 3500XL (0.1ml)       |        |          | ●         |            |              |        |          |        |         |

# qPCR 96 & 384 WELL PLATE COMPATIBILITY CHART (INCLUDING SEALING MEMBRANE)

|                                     | MB-Q96 | MB-Q96-S | MB-Q96-LP | MB-Q96-LBR | MB-Q96-LBR-W | MB-384 | MB-384-W | MB-QSM | MB-BQSM |
|-------------------------------------|--------|----------|-----------|------------|--------------|--------|----------|--------|---------|
| <b>ABI</b>                          |        |          |           |            |              |        |          |        |         |
| 3730, 3730XL(0.1ml)                 |        |          | ●         |            |              |        |          |        |         |
| 3130xl (0.2ml)                      | ●      | ●        |           |            |              |        |          |        |         |
| 3500xl (0.2ml)                      | ●      | ●        |           |            |              |        |          |        |         |
| 3730xl (0.2ml)                      | ●      | ●        |           |            |              |        |          |        |         |
| 3130xl (384 well)                   |        |          |           |            |              | ●      |          |        |         |
| 3500xl (384 well)                   |        |          |           |            |              | ●      |          |        |         |
| 3730xl (384 well)                   |        |          |           |            |              | ●      |          |        |         |
| seqstudio genetic analyzer          | ●      | ●        |           |            |              |        |          |        |         |
| <b>Bio-Rad</b>                      |        |          |           |            |              |        |          |        |         |
| CFX96                               |        |          |           | ●          | ●            |        |          |        | ●       |
| CFX96 connect                       |        |          |           | ●          | ●            |        |          |        | ●       |
| CFX Opus 96                         |        |          |           | ●          | ●            |        |          |        | ●       |
| CFX Opus 384                        |        |          |           |            |              | ●      | ●        |        | ●       |
| <b>Roche</b>                        |        |          |           |            |              |        |          |        |         |
| LightCycler 96                      |        |          |           |            | ●            |        |          | ●      |         |
| LightCycler 480I & 480II            |        |          |           |            | ●            |        |          | ●      |         |
| LightCycler 480I & 480II (384 well) |        |          |           |            |              |        | ●        | ●      |         |
| <b>Analytik Jena</b>                |        |          |           |            |              |        |          |        |         |
| qTOWER <sup>3</sup> G               |        |          |           |            | ●            |        |          | ●      |         |
| qTOWER <sup>3</sup> G touch         |        |          |           |            | ●            |        |          | ●      |         |
| qTOWER <sup>3</sup> 84              |        |          |           |            |              |        | ●        | ●      |         |
| <b>Qiagen</b>                       |        |          |           |            |              |        |          |        |         |
| Qiagen_QIAquant                     |        |          |           |            | ●            |        |          | ●      |         |
| <b>Stratagene</b>                   |        |          |           |            |              |        |          |        |         |
| AriaMx                              |        |          |           | ●          |              |        |          | ●      |         |
| Mx3005PM、Mx3000P                    |        |          |           | ●          |              |        |          | ●      |         |

## WHITE, CLEAR TUBES DIFFERENCE IN qPCR

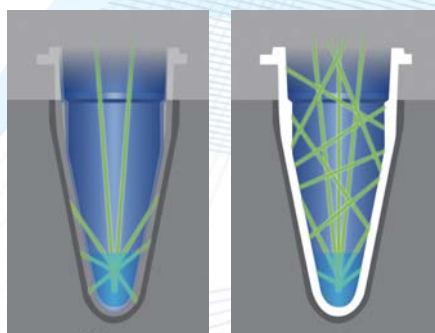
ROX passive dye : It didn't participate qPCR reaction, it used to normalize qPCR reporter dye (like SYBR).

|                                                       | Rox-dependent                          | No Rox                        |
|-------------------------------------------------------|----------------------------------------|-------------------------------|
| Machine Brands                                        | ABI<br>Stratagene<br>Biometa           | Bio-Rad<br>Roche<br>Eppendorf |
| Does mastermix including ROX                          | Yes                                    | No                            |
| Ct value determined by                                | $\Delta Rn$<br>(Reporter RFU/ Rox RFU) | Reporter RFU                  |
| Ct value difference among White, Forsted, Clear tubes | White = Clear                          | White < Clear                 |

Clear



White



Clear

White

White tube could reflect all light that will cause higher RFU intensity.

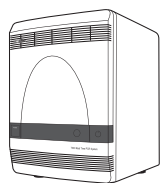
In **no ROX machine**, higher Reporter RFU will determine lower Ct value (the lower Ct the better).  
The comparison are White < Clear

In **ROX-dependent machines**, higher Reporter and Passive RFU will get almost the same Rn and determine the same Ct value.  
The comparison are White = Clear

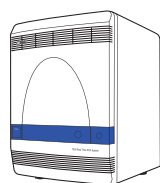
**Don't put different types of tubes in the same qPCR experiment**, that will cause different Ct values, even with the same sample.

## qPCR and SEQUENCER MACHINE PICTURES

### ABI



7300



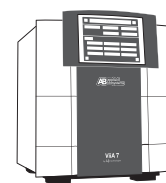
7500



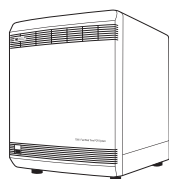
StepOne



StepOne Plus



ViiA 7 Fast



7900 Fast



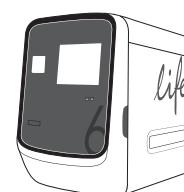
QuantStudio 1



QuantStudio 3



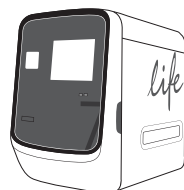
QuantStudio 5



QuantStudio 6



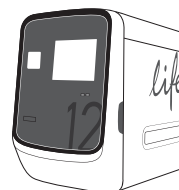
QuantStudio 6 pro



QuantStudio 7



QuantStudio 7 pro

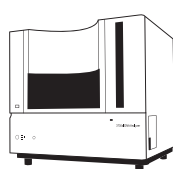


QuantStudio 12k

### SEQUENCER



3130/3130xl  
(0.2ml Standard 96 well)



3730/3730xl  
(0.2ml Standard 96 well)



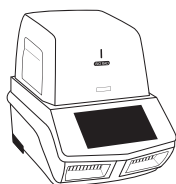
3500/3500xl  
(0.2ml Standard 96 well)



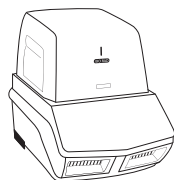
SeqStudio Genetic Analyzer

## qPCR and SEQUENCER MACHINE PICTURES

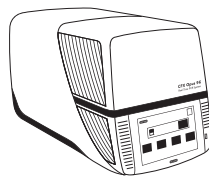
### BIO-RAD



CFX 96



CFX 96 Connect/384 Connect



CFX Opus 96/384

### ROCHE



CFX 96

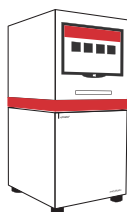


LightCycler 480I & 480II/  
480I & 480II(384 well)

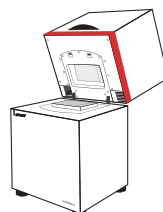
### ANALYTIK JENA



qTOWER³ G



qTOWER³ G Touch

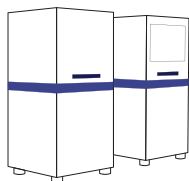


qTOWER³ 84

### QIAGEN

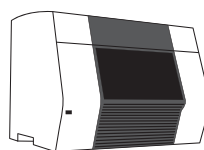


Rotor Gene Q Qiagen

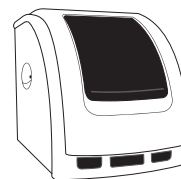


QIAGEN\_QIAquant/384 QIAquant

### AGILENT



AriaMx



Mx3005PM 、Mx3000P

## CHEMICAL RESISTANT CHART

Chemical Resistance Classifications are given at the bottom of the following charts.

First letter of each pair applies to conditions at 20° C; the second to those at 50° C. At 20°C → AB ← at 50° C

| Chemical                | LDPE | HDPE | PP | PET | Teflon® | PC | PSF | PS |
|-------------------------|------|------|----|-----|---------|----|-----|----|
| 1,2,4-Trichlorobenzene  | DD   | DD   | DD | DD  | AA      | DD | DD  | DD |
| 1,2 Dichloroethane      | DD   | DD   | DD | DD  | AA      | DD | DD  | DD |
| 1,4-Dioxane             | BC   | BB   | BC | —   | AA      | BC | BC  | DD |
| 2,2,4-Trimethylpentane  | CD   | CD   | CD | —   | AA      | DD | BC  | DD |
| 2,4 Dichlorophenol      | DD   | DD   | DD | —   | AA      | DD | DD  | DD |
| 2-Butanol               | AA   | AA   | AA | —   | AA      | AB | AB  | BB |
| 2-Methoxyethanol        | AB   | AA   | AA | —   | AA      | DD | DD  | DD |
| 2-Propanol              | AA   | AA   | AA | —   | AA      | AA | AA  | AB |
| Acetaldehyde            | BD   | BC   | BD | —   | AA      | CD | DD  | DD |
| Acetamide, Sat.         | AA   | AA   | AA | —   | AA      | DD | DD  | AA |
| Acetone                 | DD   | DD   | AB | DD  | AA      | DD | DD  | DD |
| Acetonitrile            | AA   | AA   | CD | —   | AA      | DD | DD  | DD |
| Acetophenone            | DD   | CC   | CC | —   | AA      | DD | DD  | DD |
| Acrylonitrile           | AA   | AA   | CD | —   | AA      | DD | DD  | DD |
| Adipic Acid             | AB   | AA   | AA | —   | AA      | AA | BB  | AA |
| Allyl Alcohol           | AA   | AA   | AA | —   | AA      | BC | BC  | BC |
| Aluminum Hydroxide      | AB   | AA   | AB | —   | AA      | CD | BB  | BB |
| Amino Acids             | AA   | AA   | AA | —   | AA      | AA | AA  | AA |
| Ammonia                 | AA   | AA   | AA | —   | AA      | DD | BC  | BC |
| Ammonia, 25%            | AA   | AA   | AA | —   | AA      | DD | AB  | AB |
| Ammonium Glycolate      | AB   | AA   | AB | —   | AA      | BC | BB  | AA |
| Ammonium Hydroxide, 5%  | AA   | AA   | AA | CD  | AA      | CD | BB  | AC |
| Ammonium Hydroxide, 30% | AB   | AA   | AB | DD  | AA      | DD | BB  | BC |
| Ammonium Oxalate        | AB   | AA   | AB | —   | AA      | AA | AA  | AA |
| Ammonium Salts          | AA   | AA   | AA | —   | AA      | AB | AA  | BB |
| Amyl Alcohol            | AA   | AA   | AA | —   | AA      | BC | AA  | BC |
| Amyl Chloride           | DD   | CD   | DD | —   | AA      | DD | DD  | DD |
| Aniline                 | AB   | AB   | BC | —   | AA      | CD | DD  | DD |
| Aqua Regia              | DD   | DD   | DD | —   | AA      | DD | DD  | DD |
| Arsenic Acid            | BC   | AB   | AA | —   | AA      | AA | —   | AA |
| Benzaldehyde            | AB   | BD   | AB | —   | AA      | CD | CC  | DD |
| Benzenamine             | AB   | AB   | BC | —   | AA      | CD | DD  | DD |
| Benzene                 | DD   | DD   | DD | DD  | AA      | DD | DD  | DD |
| Benzoic Acid, Sat.      | AA   | AA   | AB | —   | AA      | AB | CC  | BB |
| Benzyl Acetate          | AB   | AA   | AB | —   | AA      | CD | DD  | DD |
| Benzyl Alcohol          | DD   | CD   | DD | —   | AA      | DD | DD  | DD |
| Boric Acid              | AA   | AA   | AA | DD  | AA      | AA | —   | AB |
| Bromine                 | DD   | CD   | DD | —   | AA      | CD | DD  | DD |
| Bromobenzene            | DD   | DD   | DD | —   | AA      | DD | DD  | DD |
| Bromoform               | DD   | DD   | DD | —   | AA      | DD | DD  | DD |
| Butadiene               | DD   | CD   | DD | —   | AA      | DD | DD  | DD |
| Butyl Acetate           | DD   | CC   | CC | —   | AA      | DD | DD  | DD |
| Butyl Chloride          | DD   | DD   | DD | —   | AA      | DD | DD  | DD |
| Butyric Acid            | DD   | CD   | DD | —   | AA      | CD | BB  | DD |
| Calcium Hydroxide       | AA   | AA   | AA | —   | AA      | DD | BB  | BB |
| Calcium Hypochlorite    | AA   | AA   | AA | —   | AA      | CD | AA  | BC |
| Carbazole               | AA   | AA   | AA | —   | AA      | DD | DD  | AA |
| Carbon Disulphide       | DD   | DD   | DD | —   | AA      | DD | DD  | DD |

A-No damage after 30 days of constant exposure. B-Little or no damage after 30 days of constant exposure.

C-Some effect after 7 days of constant exposure. D-Immediate damage may occur. Not recommended for continuous use.

## CHEMICAL RESISTANT CHART

Chemical Resistance Classifications are given at the bottom of the following charts.

First letter of each pair applies to conditions at 20° C; the second to those at 50° C. At 20°C → AB ← at 50° C

| Chemical                           | LDPE | HDPE | PP | PET | Teflon® | PC | PSF | PS |
|------------------------------------|------|------|----|-----|---------|----|-----|----|
| Carbon Tetrachloride               | CD   | BC   | BC | DD  | AA      | DD | DD  | DD |
| Cellosolve Acetate                 | AB   | AA   | AB | —   | AA      | CD | DD  | DD |
| Chlorine Water                     | BD   | BC   | CD | —   | AA      | BC | DD  | DD |
| Chlorine, 10% (Moist)              | BD   | BC   | CD | —   | AA      | BC | DD  | DD |
| Chlorine, 10% in air               | BD   | AC   | BD | —   | AA      | AB | DD  | CD |
| Chlorine, wet gas                  | BD   | BC   | CD | —   | AA      | BC | DD  | DD |
| Chloroacetic Acid                  | AA   | AA   | AB | —   | AA      | CD | DD  | BD |
| Chlorobenzene                      | DD   | DD   | DD | —   | AA      | DD | DD  | DD |
| Chloroform                         | CD   | CD   | DD | —   | AA      | BC | DD  | DD |
| Chromic:Surfuric Acid Mixture, 96% | DD   | DD   | DD | A—  | AA      | DD | DD  | DD |
| Citric Acid, 10%                   | AA   | AA   | AA | —   | AA      | AB | AA  | AB |
| Cresol                             | DD   | CD   | BC | —   | AA      | DD | DD  | DD |
| Diacetone                          | DD   | DD   | BC | —   | AA      | DD | DD  | DD |
| Diacetone Alcohol                  | CD   | AA   | AC | —   | AA      | DD | DD  | BD |
| Dibutylphthalate                   | —    | —D   | DD | —   | AA      | BD | DD  | DD |
| Diethyl Benzene                    | DD   | CD   | DD | —   | AA      | CD | DD  | DD |
| Diethyl Ether                      | DD   | CD   | DD | —   | AA      | DD | DD  | DD |
| Diethyl Ketone                     | DD   | DD   | BB | —   | AA      | DD | DD  | DD |
| Diethyl Malonate                   | AA   | AA   | AA | —   | AA      | CD | CC  | DD |
| Diethylamine                       | DD   | CD   | BD | —   | AA      | DD | BC  | BB |
| Diethylene Dioxide                 | BC   | BB   | BC | —   | AA      | CD | DD  | DD |
| Diethylene Glycol                  | AA   | AA   | AA | —   | AA      | BC | BB  | BB |
| Diethylene Glycol Ethyl Ether      | AA   | AA   | AA | —   | AA      | CD | CC  | DD |
| Dimethyl Acetamide                 | CD   | AA   | AA | —   | AA      | DD | DD  | DD |
| Dimethyl Formamide                 | AA   | AA   | AA | —   | AA      | DD | DD  | DD |
| Dimethylsulphoxide (DMSO)          | AA   | AA   | AA | DD  | AA      | DD | DD  | AB |
| Dioxane                            | BC   | BB   | BC | —   | AA      | CD | DD  | DD |
| Dipropylene Glycol                 | AA   | AA   | AA | —   | AA      | BC | BB  | AA |
| Ethanol, 40%                       | AB   | AA   | AB | —   | AA      | AB | AB  | BC |
| Ether                              | DD   | CD   | DD | A—  | AA      | DD | DD  | DD |
| Ethyl acetate                      | AA   | AA   | AB | DD  | AA      | DD | DD  | DD |
| Ethyl Alcohol (Absolute)           | AB   | AA   | AB | —   | AA      | AB | AB  | CD |
| Ethyl Alcohol, 40%                 | AB   | AA   | AA | B—  | AA      | AB | AB  | BC |
| Ethyl Alcohol, 96%                 | AB   | AB   | AA | B—  | AA      | AB | AB  | BC |
| Ethyl Benzene                      | DD   | DD   | DD | A—  | AA      | DD | DD  | DD |
| Ethyl Benzoate                     | CC   | BB   | BC | —   | AA      | DD | DD  | DD |
| Ethyl Butyrate                     | BD   | BC   | BD | —   | AA      | DD | DD  | DD |
| Ethyl Chloride                     | CD   | CC   | CD | —   | AA      | DD | DD  | DD |
| Ethyl Chloride, Liquid             | CD   | CC   | CD | —   | AA      | DD | DD  | DD |
| Ethyl Cyanoacetate                 | AA   | AA   | AA | —   | AA      | CD | CC  | BD |
| Ethyl Lactate                      | AA   | AA   | AA | —   | AA      | CD | CC  | CD |
| Ethylene Chloride                  | BD   | BC   | CD | DD  | AA      | DD | DD  | DD |
| Ethylene Glycol                    | AA   | AA   | AA | A—  | AA      | BC | AA  | AA |
| Ethylene Glycol Monomethyl Ether   | AA   | AA   | AA | —   | AA      | CD | CC  | DD |
| Ethylene Oxide Gas                 | CC   | BC   | CC | BC  | AA      | CD | AA  | DD |
| Ethylene Oxide, 100%               | AB   | AA   | AB | BC  | AA      | BC | BB  | AC |
| Fatty Acids                        | CD   | BD   | CD | —   | AB      | BC | DD  | DD |
| Fluorine                           | AA   | AA   | AA | —   | AA      | AB | BC  | CD |

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## CHEMICAL RESISTANT CHART

Chemical Resistance Classifications are given at the bottom of the following charts.

First letter of each pair applies to conditions at 20° C; the second to those at 50° C. At 20°C → AB ← at 50° C

| Chemical                      | LDPE | HDPE | PP | PET | Teflon® | PC | PSF | PS |
|-------------------------------|------|------|----|-----|---------|----|-----|----|
| Formaldehyde, 10%             | AB   | AA   | AB | —   | AA      | AB | BC  | DD |
| Formaldehyde, 40%             | AA   | AA   | AA | —   | AA      | AB | BC  | CD |
| Formalin, 10%                 | AB   | AA   | AB | —   | AA      | AB | BC  | DD |
| Formalin, 40%                 | AB   | AA   | AB | —   | AA      | AC | CC  | CC |
| Formic Acid                   | AB   | AA   | AB | —   | AA      | AB | BB  | AB |
| Formic Acid, 3%               | AB   | AA   | AB | —   | AA      | BC | BB  | CC |
| Formic Acid, 50%              | AA   | AA   | AB | —   | AA      | CD | AB  | CC |
| Formic Acid, 85%              | AB   | AA   | AB | —   | AA      | CD | AB  | CD |
| Formic Acid, 100%             | AB   | AB   | AB | —   | AA      | BC | DD  | DD |
| Freon TF                      | AB   | AA   | AA | B—  | AA      | AC | BB  | AC |
| Glutaraldehyde                | AA   | AA   | AA | —   | AA      | AA | AA  | AA |
| Glycerine (Glycerol)          | DD   | BC   | BC | A—  | AA      | CD | AB  | DD |
| Hexane                        | DD   | DD   | DD | —   | AA      | DD | DD  | DD |
| Hydrazine                     | —    | —D   | AB | —   | AA      | BC | AB  | CC |
| Hydrobromic Acid, 69%         | AA   | AA   | AA | —   | AA      | AA | AA  | AA |
| Hydrogen Peroxide, 3%         | AB   | AA   | AB | A—  | AA      | AA | AA  | AB |
| Hydrogen Peroxide, 30%        | AB   | AA   | AB | A—  | AA      | AA | AA  | AB |
| Hydrogen Peroxide, 90%        | DD   | DD   | CD | —   | AA      | DD | DD  | DD |
| Iodine Crystals               | AA   | AA   | AA | —   | AA      | AB | AB  | BB |
| Isobutanol                    | AA   | AA   | AA | —   | AA      | AA | AA  | AB |
| Isopropanol, 100%             | BC   | AB   | BC | —   | AA      | DD | DD  | DD |
| Isopropyl Acetate             | CD   | BC   | CD | —   | AA      | DD | DD  | DD |
| Isopropyl Ether               | DD   | DD   | DD | —   | AA      | DD | DD  | DD |
| Lactic Acid, 3%               | AB   | AA   | AB | CD  | AA      | AB | AA  | BB |
| Lactic Acid, 85%              | AB   | AA   | AB | DD  | AA      | AB | AA  | BB |
| Mercury                       | AA   | AA   | AA | —   | AA      | DD | AA  | AA |
| Methanol, 100%                | AA   | AA   | AA | B—  | AA      | BC | BC  | CD |
| Methoxyethyl Oleate           | AB   | AA   | AB | B—  | AA      | BD | DD  | DD |
| Methyl Acetate                | CD   | CC   | BC | —   | AA      | DD | DD  | DD |
| Methyl Ethyl Ketone           | DD   | DD   | AB | B—  | AA      | DD | DD  | DD |
| Methyl Isobutyl Ketone (MIBK) | DD   | DD   | BC | DD  | AA      | DD | DD  | DD |
| Methyl Propyl Ketone          | BC   | AB   | BC | DD  | AA      | DD | DD  | DD |
| Methyl-t-Butyl Ether          | DD   | CD   | CD | DD  | AA      | DD | DD  | DD |
| Methylene Chloride            | CD   | CC   | CD | DD  | AA      | DD | DD  | DD |
| Nitric Acid, 10%              | AA   | AA   | AA | B—  | AA      | AB | AC  | BD |
| Nitric Acid, 20%              | AB   | BC   | CC | B—  | AA      | BC | BC  | DD |
| Nitrobenzene                  | DD   | CD   | DD | DD  | AA      | DD | DD  | DD |
| Nitromethane                  | DD   | CD   | CD | DD  | AA      | DD | DD  | DD |
| n-Amyl Acetate                | BC   | AB   | BC | —   | AA      | DD | DD  | DD |
| n-Butanol                     | AA   | AA   | AA | —   | AA      | BC | BC  | AB |
| n-Butyl Acetate               | BC   | AB   | BC | —   | AA      | DD | DD  | DD |
| n-Decane                      | CD   | CD   | BD | —   | AA      | CD | BC  | CD |
| n-Heptane                     | CD   | BC   | CC | —   | AA      | AB | AB  | DD |
| n-Octane                      | AA   | AA   | AA | —   | AA      | BC | BC  | DD |
| Oil, Mineral                  | BD   | AA   | AA | —   | AA      | AB | AA  | AA |
| Oxalic Acid, 10%              | AA   | AA   | AA | —   | AA      | AA | AA  | AA |
| Ozone                         | AB   | AA   | AB | —   | AA      | AB | AA  | CC |
| o-Dichlorobenzene             | CD   | CC   | CD | DD  | AA      | DD | DD  | DD |

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| Chemical                   | LDPE | HDPE | PP | PET | Teflon® | PC | PSF | PS |
|----------------------------|------|------|----|-----|---------|----|-----|----|
| Perchloric Acid            | BD   | BD   | BD | —   | BC      | DD | DD  | BC |
| Perchloric Acid, 70%       | BD   | BD   | BD | —   | BC      | DD | DD  | BC |
| Perchloroethylene          | DD   | DD   | DD | —   | AA      | DD | DD  | DD |
| Phenol, 100%               | DD   | DD   | DD | DD  | AA      | DD | DD  | DD |
| Phenol, 50%                | DD   | DD   | DD | DD  | AA      | DD | DD  | CD |
| Phenol, Crystals           | BD   | BC   | BD | DD  | AA      | DD | CC  | DD |
| Phenol, Liquid             | DD   | DD   | DD | DD  | AA      | DD | DD  | CD |
| Propane                    | DD   | CD   | DD | —   | AA      | CD | CC  | DD |
| Propionic Acid             | CD   | AC   | AB | —   | AA      | DD | BB  | BD |
| Propylene Glycol           | AA   | AA   | AA | —   | AA      | BC | BB  | AA |
| Propylene Oxide            | AB   | AA   | AB | —   | AA      | BC | BB  | DD |
| Pyridine                   | DD   | DD   | DD | —   | AA      | DD | DD  | DD |
| p-Chloroacetophenone       | AA   | AA   | AA | —   | AA      | DD | DD  | DD |
| p-Dichlorobenzene          | CD   | BC   | BC | —   | AA      | DD | DD  | DD |
| Resorcinol, 5%             | AA   | AA   | AA | —   | AA      | BC | DD  | BC |
| Resorcinol, Sat.           | AA   | AA   | AA | —   | AA      | BC | DD  | BC |
| Salicylaldehyde            | AB   | AA   | AB | —   | AA      | BC | CC  | DD |
| Salicylic Acid, Sat.       | AA   | AA   | AA | —   | AA      | AB | AA  | AB |
| Salt Solutions, Metallic   | AA   | AA   | AA | —   | AA      | AA | AA  | BB |
| Silicone Oil               | AB   | AA   | AA | DD  | AA      | AA | AA  | AB |
| Silver Nitrate             | AB   | AA   | AB | —   | AA      | AA | AA  | BC |
| Sodium Dichromate          | AA   | AA   | AA | —   | AA      | AA | AA  | AA |
| Sodium Hydroxide, 1%       | AA   | BC   | AA | A—  | AA      | CD | AA  | AA |
| Sodium Hydroxide, 10%      | AA   | BC   | AA | A—  | AA      | DD | AB  | AA |
| Sodium Hydroxide, 50%      | BB   | BC   | AA | DD  | AA      | DD | AB  | AB |
| Sodium Hypochlorite, 15%   | AA   | AA   | BC | B—  | AA      | BC | AA  | AA |
| Stearic Acid               | AA   | AA   | AA | —   | AA      | AB | BB  | AB |
| Sulfur dioxide             | DD   | CD   | DD | —   | AA      | BD | BB  | DD |
| Sulfur Dioxide, wet or dry | AA   | AA   | AA | —   | AA      | AB | BB  | CD |
| Sulfur Salts               | CD   | BC   | CD | —   | AA      | CD | BB  | DD |
| Sulfuric Acid, 6%          | AA   | AA   | AA | A—  | AA      | AA | AA  | AB |
| Sulfuric Acid, 20%         | AA   | AA   | AB | A—  | AA      | AB | AA  | AB |
| Sulfuric Acid, 30%         | AA   | AA   | BB | B—  | AA      | BC | AA  | BD |
| Sulfuric Acid, 60%         | AB   | AA   | AB | —   | AA      | BC | AA  | BD |
| Tartaric Acid              | AA   | AA   | AA | —   | AA      | AB | AA  | BB |
| Tetrahydrofuran            | CD   | BC   | BC | —   | AA      | DD | DD  | DD |
| Thionyl Chloride           | DD   | DD   | DD | —   | AA      | DD | DD  | DD |
| Tincture of Iodine         | AB   | AB   | BB | —   | AA      | DD | —   | BC |
| Toluene                    | CD   | CD   | CD | CD  | AA      | CD | DD  | DD |
| Tributyl Citrate           | BC   | AB   | BC | —   | AA      | DD | CC  | DD |
| Trichloroacetic Acid (TCA) | BD   | CC   | CD | —   | AA      | CD | BB  | CD |
| Trichloroethane            | DD   | CD   | DD | —   | AB      | DD | DD  | DD |
| Trichloroethylene          | DD   | CD   | DD | —   | AA      | DD | DD  | DD |
| Triethylene Glycol         | AA   | AA   | AA | —   | AA      | AB | AA  | AB |
| Tripropylene Glycol        | AA   | AA   | AA | —   | AA      | AB | AA  | AA |
| Tris Buffer, Solution      | AB   | AB   | AB | BB  | AA      | BC | BC  | BD |
| Urea                       | AA   | AA   | AA | —   | AA      | DD | CC  | AB |
| Xylene                     | BD   | BC   | CD | —   | AA      | DD | DD  | DD |

A-No damage after 30 days of constant exposure. B-Little or no damage after 30 days of constant exposure.

C-Some effect after 7 days of constant exposure. D-Immediate damage may occur. Not recommended for continuous use.

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# GUNSTER BIOTECH

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