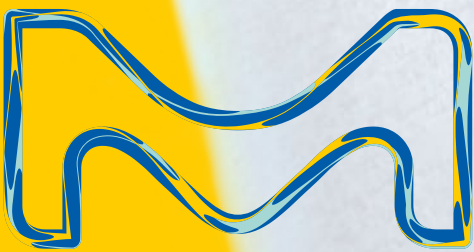




MERCK

# THE SAFETY SENTINELS

Environmental Monitoring Solutions  
for Pharmaceutical Industry



The life science business  
of Merck operates as  
MilliporeSigma in the  
U.S. and Canada.

**Millipore®**

Preparation, Separation,  
Filtration & Monitoring Products



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# ON GUARD

## GMP compliant solutions for process monitoring in pharmaceutical manufacturing

Safety matters. The manufacture of pharmaceutical products is performed under controlled conditions. Microbial monitoring is an important part of proving the manufacturing process is under control, especially in aseptic production. The risk-based implementation of sampling plans as well as subsequent trend analysis of monitoring results, this helps to detect deviations from qualified status, prepare root cause analysis and follow up with appropriate CAPAs.

We offer a broad portfolio for microbial monitoring of aseptic pharmaceutical manufacturing including convenient and ready to use 55 mm and 90 mm agar plates,

Swabs as well as viable air samplers for ambient air and compressed gas testing. Furthermore, we provide specific concepts for monitoring of isolators and RABS to ease your workflows.

In addition to solutions for classical environmental monitoring we have irradiated granulated as well as ready prepared culture media for aseptic process simulations.

All our portfolios are supported by a broad range of services, embodying our ambition to remain one step ahead of customer demands and expectations.

Learn more on  
[SigmaAldrich.com/  
environmentalmonitoring](https://www.sigmaaldrich.com/environmentalmonitoring)



# Accuracy

Consistent performance at every step

Our products are manufactured for high quality assured raw materials, each raw material is from a proven and audited supplier. The use of standardized manufacturing practices ensures high quality products. These conditions ensure a high quality and reliable product that makes your result trending data accurate, reliable and consistent.



# Risk Reduction

We minimize risk to make your work more secure

Our product range is designed to minimize the risk of cross-contamination as well as disruption of unidirectional air flow during active air monitoring up to the highest level of cleanroom grades and isolators.

# setting standards



Optimize your processes  
to save time and improve capacity

Our expertise and constant quality improvement programs coupled with a high level of validation and scientific data advances the environmental monitoring products to a world leading position.



# ONE

## STEP AHEAD!



Your first choice for  
Environmental Monitoring Solutions  
for Pharmaceutical Industry:  
[SigmaAldrich.com/  
environmentalmonitoring](https://SigmaAldrich.com/environmentalmonitoring)



Surface and  
Personnel Monitoring

# Eliminating blind spots

You can never be too cautious when it comes to keeping production plants clean.

To ensure that your hygiene and safety measures work, air sampling is often not enough. In order to stay on the safe side and avoid blind spots, monitoring surfaces and personnel is crucial. Thanks to our ready-to-use contact plates, slides and swabs, it's simple.

In the pharmaceutical production area a broad range of disinfectants are used and which may leave residues of their active ingredients on the surfaces. Therefore, culture media contain different neutralizers to inactivate disinfectant residues and facilitate the growth of microorganisms. Mainly four neutralizers are used for culture media, which are deployed for environmental monitoring: lecithin, Tween® 80, histidine and sodium thiosulfate.







## ICR swabs

for surface and personnel monitoring in isolators and cleanrooms

Our ICR swabs are designed for absence-presence testing on dry surfaces that are difficult to access, and for personnel monitoring.

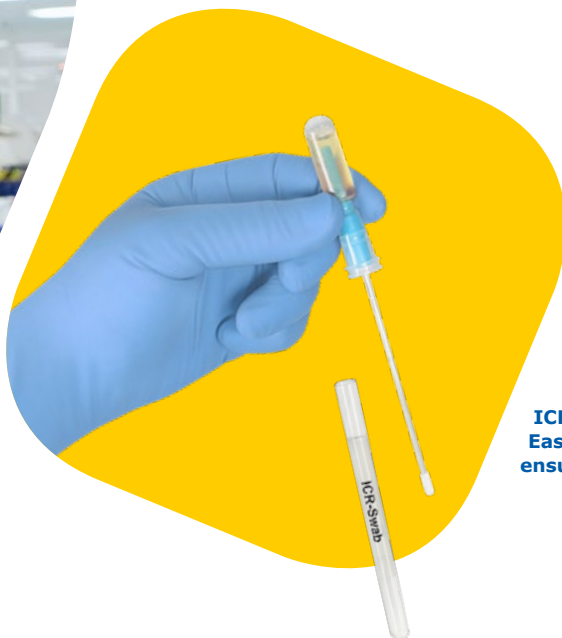
The patented snap valve design of the swab makes handling both convenient and safe. The swab tip material displays low abrasion, which minimizes the release of particles during use. The tip's moistening solution does not leave any growth promoting residues on the sampled surfaces.

The medium is TSB supplemented with neutralizers to ensure optimal growth conditions. It is supplemented with neutralizers according to pharmacopoeia recommendation. By default, it is supplemented to overcome growth inhibiting properties of VHP residues in isolators.

A **stainless steel rack** helps with the safe and easy transport of larger numbers of ICR Swabs. It holds 36 tubes at dimensions of 196 x 99 x 104 mm.

► **Ordering Information see page 26**

Learn more on  
[SigmaAldrich.com/  
icr-swab](https://SigmaAldrich.com/icr-swab)



**ICR swabs:  
Easy handling  
ensures safety**

# ICR Contact Plates

for isolators and critical cleanrooms

## Secure and reliable:

- Data matrix barcode on each plate: paperless and secure identification of individual plates
- Transparent, H<sub>2</sub>O<sub>2</sub>-impermeable triple-sleeve packaging: safe transportation in cleanrooms (ISO 5) and isolators
- Produced in cleanrooms, gamma-irradiated in final packaging: minimizes risk of contamination

## Convenient:

- Storage at room temperature: storable at site of use
- Long shelf life: fewer incoming goods controls
- SDA in pink plates: minimizes risk of confusion / easily distinguishes between TSA and SDA

## Flexible:

- Many different formulations for the monitoring of sanitized, dry surfaces
- Supplemented by neutralizers for a wide range of disinfectants



ICRplus  
Contact plates



CLOSED- or  
VENT-Closure

# ICRplus Contact Plates

for isolators and critical cleanrooms

## All the advantages of ICR Contact Plates ... and more:

- CLOSED- or VENT-Closure: safe transport and flexible incubation conditions (aerobe, anaerobe and microaerophilic).
- Supplemented by neutralizers for a wide range of disinfectants and  $\beta$ -lactam antibiotics
- New formulation of non-animal origin available: minimizing the risk of BSE contamination

## Accessories for settle and contact plates

To further add to the ease of use and safety of our environmental monitoring solutions, we offer a variety of accessories that help you get the job done. To minimize cross-contamination caused by non-sterile handling of plates, use our sterilized zipper bags when you transfer samples from your production area to the incubators.

**Stainless steel racks** help with the safe and easy transport of larger numbers of contact and settle plates. It has a capacity for 10 contact plates at a size of 70 x 250 mm (height), the rack for settle plates also has a capacity for 10 plates at a size of 100 x 240 mm (height).



Learn more on  
[SigmaAldrich.com/  
contact-plates](https://www.sigmaaldrich.com/contact-plates)

## Neutralizer A: Neutralization of antimicrobial activity

We offer a wide variety of formulations to counter the effects of the presence of a range of antimicrobial agents, such as disinfectant residues or  $\beta$ -lactam antibiotics on surfaces. With standard neutralizers such as lecithin, Tween® 80, histidine and sodium thiosulfate, a wide range of disinfectants can be neutralized reasonably effectively. However, residues of high concentrated quaternary ammonium compounds (QAC) as well as polyhexamethylene biguanides require higher neutralization capacity. For these purposes, we have developed the "Neutralizer A" mixture. It is capable of neutralizing all disinfectant residues tested so far.

## Cephase media

In  $\beta$ -lactam antibiotic manufacturing sites, the sampling results of air and surface monitoring are at risk of being affected by residues of the antibiotic. The efficacy of different  $\beta$ -lactamases against the broad spectrum of  $\beta$ -lactam antibiotics varies and depends on their origin of isolation. Our Cephase media shows an impressively broad spectrum of inactivated  $\beta$ -lactam antibiotics including the following components of the table.

Active agents	TSA + LT	TSA + LTHTh	TSA + Neutralizer A
Isopropyl alcohol	•	•	•
Hydrogen peroxide	•	•	•
Peracetic acid	•	•	•
Phenolics	•	•	•
Sodium hypochlorite	•	•	•
Aldehydes	•	•	•
QAC	• <sup>1</sup>	• <sup>1</sup>	•
Polyhexamethylene biguanides	x	x	•

1) Depending on concentration

Antibiotic group	Confirmed activity of Cephase containing plates
<b>Penicillins</b>	ampicillin, mezlocillin, oxacillin, penicillin
<b>Penicillins mixed with lactamase inhibitors</b>	ampicillin/sulbactam, amoxicillin/clavulanic acid, piperacillin/tazobactam
<b>Cephalosporins</b>	cefexim, cefazolin, cefotaxime, ceftriaxone, cefuroxime, cefquinom, cefepim, cefoperazon, ceftiofur, ceftiofur, ceftiofur
<b>Penems</b>	meropenem, imipenem
<b>Monobactams</b>	aztreonam

# HYCON® Contact Slides

for monitoring of curved surfaces and personnel

HYCON® Contact Slides are designed for monitoring flat and curved surfaces as well as personnel. Depending on whether you need them for critical or non-critical environments, they are available in standard single packaging or in a double-bagged, gamma-irradiated format.

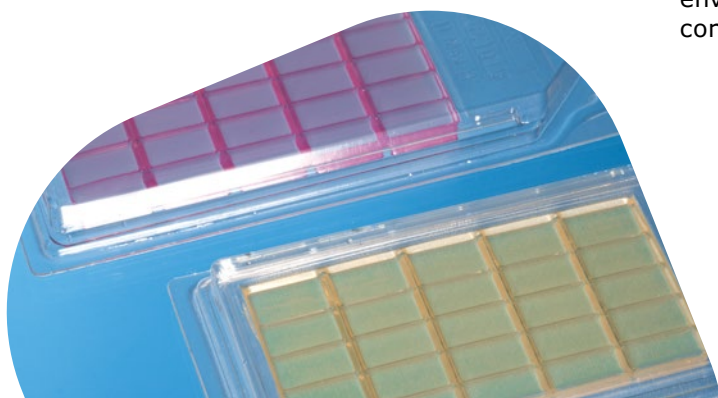
Both Standard HYCON® Contact Slides and Gamma-irradiated HYCON® Contact Slides are rectangular in shape, providing a constant surface of 25 cm<sup>2</sup>. Individual sealing of the primary packaging allows for the use of single Contact Slides to reduce waste. The slide body is slightly flexible to allow for efficient sampling of curved surfaces. The slides are equipped with a cover slide for closure after use, increasing safety during both transport and incubation.

## Gamma-irradiated HYCON® Contact Slides

For use in critical environments, final gamma-irradiation at 16–27 kGy minimizes contamination risks. The irradiated slides come in transparent double-packaging which makes safe transfer through material locks into critical cleanrooms simple. The fact that each slide is sealed individually allows for safe observation on contamination of the closed slide even before opening.

## Single-bagged contact plates for environmental monitoring in less critical areas

When it comes to monitoring less critical cleanroom areas, such as grade C and D, or non-specified environments, our single bagged room temperature contact plates are a tried and tested choice.



Learn more on  
[SigmaAldrich.com/  
hycon-slides](https://SigmaAldrich.com/hycon-slides)





**Microbial  
Air Monitoring**

# SOMETHING in the air?

## Comprehensive monitoring solutions

When monitoring cleanrooms and isolators, diligence is key. We offer a variety of easy-to-use solutions which help you ensure the highest hygiene standards in critical environments. We offer settle plates to complement our active air monitoring system. To make sure that results are not distorted by the presence of antimicrobial agents, reliable neutralizers are available. No matter which of our products you choose to help you keep contamination at bay, they all meet the international standards and regulations.

### **Environmental monitoring in isolators and cleanrooms: ICR and ICRplus**

ICR and ICRplus settle plates are designed to meet the demands of environmental monitoring in isolators and cleanrooms. To reduce the percentage of water loss during air monitoring, the settle plates come with a high filling volume of 30 mL in 90 mm plates.

Animal-free formulations are available for minimizing the risk of BSE/TSE contamination. We offer Sabouraud Dextrose Agar formulations in pink plates in order to allow for clear and easy differentiation of TSA and SDA. Additionally, ICRplus products come with a sophisticated locking system for safe transport and optimized incubation conditions under different atmospheres.

# ICR Settle Plates

for isolators and critical cleanrooms



## Secure and reliable:

- Data matrix barcode on each plate: paperless and secure identification of individual plates
- Transparent, H<sub>2</sub>O<sub>2</sub>-impermeable triple-sleeve packaging: safe transportation in cleanrooms (ISO 5) and isolators
- Produced in cleanrooms, gamma-irradiated in final packaging: minimizes risk of contamination

## Convenient:

- Storage at room temperature: storable at site of use
- Long shelf life: fewer incoming goods controls
- High filling volume settle plates: allow prolonged exposition and incubation
- SDA in pink plates: easily distinguishes between TSA and SDA

## Flexible:

- Usable for personnel monitoring or as disposables for active air monitoring with MAS air samplers
- Supplemented by neutralizers for a wide range of disinfectants and  $\beta$ -lactam antibiotics
- New formulation of non-animal origin available: minimizing the risk of BSE contamination

Learn more on  
[SigmaAldrich.com/  
settle-plates](https://SigmaAldrich.com/settle-plates)



# ICRplus Settle Plates

for isolators and critical cleanrooms

## All the advantages of ICR Settle Plates ... and more:

- CLOSED- or VENT-Closure: safe transport and flexible incubation conditions (aerobe, anaerobe and microaerophilic)
- Many different formulations available

## Single-bagged settle plates for environmental monitoring in less critical areas

When it comes to monitoring less critical cleanroom areas, such as grade C and D, or non-specified environments, our single bagged long incubation settle plates are a tried and tested choice. Their high-filling volume – 30 mL in 90 mm settle plates – reduces the percentage of water loss during the air monitoring procedures.



**CLOSED- or  
VENT-Closure**

## MAS-100 NT<sup>®</sup> & MAS-100 NT<sup>®</sup> with Filter

The industry standard for viable air sampling

## MAS-100 NT Ex<sup>®</sup> & MAS-100 NT Ex<sup>®</sup> with Filter

Explosion-proof air sampling

**The MAS-100 NT<sup>®</sup> and MAS-100 NT Ex<sup>®</sup>** portable microbial air samplers are the industry standard for use in critical environments. These compact yet sophisticated devices are the preferred choice for those demanding the highest quality in microbial air monitoring. The MAS-100 NT<sup>®</sup> system features a 300-hole perforated lid for increased collection efficiency and impaction speed. Both systems utilize standard 90–100 mm agar plates or can be adapted to fit 55–60 mm contact plates allowing for a low consumable cost and greater flexibility. Sampling at 100 L per minute, these systems have the highest airflow accuracy available at  $\pm 2.5\%$ , compared to others that can be as high as  $\pm 10\%$ .

The integrated flow sensor allows the user to freely interchange the perforated lids without affecting the accuracy or the calibration of the unit. Sampling volumes are also easily configurable between 1 and 2,000 L. The units have an impact velocity of 19.6 meters per second equivalent to Anderson 6 and isokinetic flow rate that will not produce turbulence in a laminar flow environment. The instrument is independently validated according to ISO 14698 providing high physical and biological efficiency. The MAS-100 NT<sup>®</sup> systems are controlled using a menu driven, larger illuminated display allowing for quicker navigation. A programmable start delay of up to 60 minutes allows for personnel to be out of the sampling area when the sampling starts and a new audible alarm indicates the interruption of a sampling cycle.

The MAS-100 NT<sup>®</sup> is powered by a Lithium ion rechargeable battery with an intelligent charging program that assures long battery life without routine discharging. The MAS-100 NT<sup>®</sup> microbial air sampler also features a USB data communication port. This allows for easy download of software upgrades and easy communication with database programs. The improved communications provides an interface to the new MAS-100<sup>®</sup> Regulus calibration standard for fully automated calibration.

The MAS-100 NT Ex<sup>®</sup> shares all of the same functions of the MAS-100 NT<sup>®</sup> system but is specially designed for use in explosion hazard areas. The MAS-100 NT Ex<sup>®</sup> has received ATEX Conformity and can be used in zone 2 and gas groups 11A, 11B and 11C in temperature classes T1 to T4.

Both versions the MAS-100 NT<sup>®</sup> as well as the explosion proof model are now available also with a HEPA exhaust filter or can be upgraded with a filter mounting kit to reduce any risk of cross-contamination between low to high grade cleanroom areas. The filtration efficiency of more than 99.95% has been proven via particle measurements at the air exhaust of the instrument. The filter meets the filtration efficiency requirements even after long term simulations of one year usage under worst case conditions. There is no significant influence of the filter on the airflow calibration and also no clogging could be observed after long term usage simulation.

## Technical specifications for MAS-100 NT®

Feature	Specification
Height	270 mm
Diameter	109 mm
Depth with handle	170 mm
Weight	2.37 kg
Material	Anodized aluminum
Diameter of sampling head	109 mm
Nominal airflow	100 L/min. + 2.5%
Standard sampling volumes	50, 100, 250, 500, 1,000 liters
Freely definable sampling volumes	1 to 2,000 liters
Battery pack	Li-Ion, rechargeable battery, 7.4 V/6.9 Ah
Charging time	Full recharge time approx. 3.5 hours
Running time	Total running time approx. 5.5 hours
Total aspiration volume	Approx. 42,000 liters
Motor	6 V
Display	Alphanumeric liquid crystal display, 32 characters
Lifetime RTC battery	RTC (Real Time Clock) battery; good for approx. 10 years
Driving motor	PWM frequency for driving motor
Processor	Type 80C552
Airflow regulation	Hot-wire anemometer, numerical control, temperature and pressure sensors
Relevant directives	2006/42/EC European Union Machinery directive 2014/35/EC European Union Low voltage directive 2014/30/EC European Union Electromagnetic compatibility 2011/65/EC European Union RoHS 2012/19/EC European Union WEEE EC 1907/2006 European Union REACH SJ/T11363-2006 P.R. of China RoHS CU/TR TPTC 004/2011 Custom Union EAC
Applied standards	IEC 61010-1:2006, 3rd edition, IEC 61326-1:2012, 2nd edition EN 61326-1:13, EN 55011:09 + A1:10 class A
GAMP	Developed and validated according to GAMP4 Usage as category 3 recommended (off-the-shelf product).
Power unit/battery charger	11–240 Volt, 50–60 KHz
Data exchange	USB Interface

Learn more on  
[SigmaAldrich.com/  
portable-airsamplers](http://SigmaAldrich.com/portable-airsamplers)



Request a demo on  
[SigmaAldrich.com/  
em-pharma-info](http://SigmaAldrich.com/em-pharma-info)



left to right:  
MAS-100 NT®, MAS-100 NT®  
with filter mounting kit  
and MAS-100 NT® with Filter

Manufactured by MBV AG, Switzerland,  
[www.mbv.ch](http://www.mbv.ch), MBV. Air. Nothing else.

# MAS-100 VF®

## The easy to use air sampler

The MAS-100 VF® active air sampler was specially developed for controlled environments. The MAS-100 VF® uses 90–100 mm standard Petri dishes, but also 55 mm contact plates, is easy to handle and compact, and is ideal for monitoring the quality of your environment. Its electronic speed control maintains an accurate flow rate. The simple user menu is easily

accessed and operated by a single touch slide control. Sampling volumes are programmable from 1–1,000 L, with 5 preset volumes to assure reproducible results. The perforated lid is the same as on the standard MAS-100® sampler. The instrument is independently validated according to ISO 14698 providing high physical and biological efficiency.



**MAS-100 VF®**

Manufactured by MBV AG,  
Switzerland, [www.mbv.ch](http://www.mbv.ch),  
MBV. Air. Nothing else.

### Technical specifications for MAS-100 VF®

Feature	Specification
Height	179 mm
Diameter	109 mm
Depth with handle	148 mm
Weight	1.75 kg (with sampling head)
Material	Anodized aluminum
Diameter of sampling head	109 mm
Nominal airflow	100 LPM ± 4%
Sampling volume	Preset values: 50, 100, 250, 500 and 1,000 liters Each volume can be preset to a value from 1 to 2,000 liters
Airflow regulation	Electronic
Petri dish support	For standard Petri dishes and contact plates
Tripod screw	1/4" and 3/8" for use with optional tripod
Rechargeable batteries	Rechargeable Li-ion battery pack
Motor	6 V
Display	Alphanumeric liquid crystal display, 2 x 8 characters
Lifetime RTC battery	RTC (Real Time Clock) battery; good for approx. 10 years
Operating conditions	Temperature 5 to 40 °C, humidity 0 to 80% RH (non-condensing)
Control unit	Microprocessor
Relevant directives	2014/35/EC European Union Low voltage directive 2014/30/EC European Union Electromagnetic compatibility 2011/65/EC European Union RoHS 2012/19/EC European Union WEEE EC 1907/2006 European Union REACH SJ/T11363-2006 P.R. of China RoHS CU/TR TPTC 004/2011 Custom Union EAC
Applied standards	IEC 61010-1:2006, 3rd edition IEC 61326-1:2012, 2nd edition EN 61326-1:13
GAMP	Developed and validated according to GAMP5. Usage as category 3 recommended (off-the-shelf product).
Power unit/battery charger	100 to 240 V AC/47–63 Hz
Output	5 V DC/2000 mA



Learn more on  
[MerckMillipore.com/  
MAS-100-VF](http://MerckMillipore.com/MAS-100-VF)



Request a demo on  
[SigmaAldrich.com/  
em-pharma-info](http://SigmaAldrich.com/em-pharma-info)



# MAS-100 CG Ex<sup>®</sup>

## Compressed gas microbial air sampler

The MAS-100 CG Ex<sup>®</sup> system samples at two constant flow rates, 100 L/min or 50 L/min for low flow applications. The system will sample gas at a pressure range between 1.5 bar to 10 bar. Compressed gas is directed through a perforated plate onto the 90–100 mm Petri dish. After sampling of the required volume of gas, a gradual decompression occurs automatically, preventing any sudden pressure change, avoiding possible damage to the microorganisms and improving recovery.

The MAS-100 CG Ex<sup>®</sup> system is the only compressed gas microbial air sampler approved for use in Zone 2 explosion hazard areas. The unit is pre-programmed for compressed air, nitrogen, carbon dioxide and argon gas, and a total of 10 gas protocols can be programmed and stored in the unit. The automated collection process saves time and eliminates the awkward and risky manipulations required with manual methods.

### Technical specifications for MAS-100 CG Ex<sup>®</sup>

Feature	Specification
Height	325 mm
Length	370 mm
Width	110 mm
Weight (without sampling head)	10 kg
Material box	Coated aluminum
Nominal flow rates	100 L/min. +10% over the pressure range of 1.5 bar to 10 bar (absolute) 50 L/min. +10% over the pressure range of 1.5 bar to 10 bar (absolute)
Standard sampling volumes	50, 100, 250, 500, 1,000 liters
Freely definable sampling volumes	1 to 2,000 liters, volumes individually selectable between 0 and 2,000 liters. 0 volumes are not displayed
Pre-programmed gas types	Air, nitrogen, carbon dioxide, argon
Battery pack	20 cells NiMH, 3,800 mAh, voltage 24 V
Battery charger	110–240 Volt, 50–60 Hz
Charger output	36 V DC, 1.5 A
Display	Alphanumeric liquid crystal display, 32 characters
Lifetime RTC battery	RTC (Real Time Clock) battery; good for approx. 10 years
Flow valve	Proportional, 24 Volt
Processor	Type: 80C552
Gas regulation	Mass flowmeter and pressure sensor 0–10 bar and proportional valve
CE Approval	EN 61000-6-1; 2001, EN61000-6-3; 2001, EN61000-6-2; 2001, EN61000-6-4; 2001, EN61326-1 + A1, 1998
Ex-Proof	SNCH 02 ATEX 3418, EN1127; 1997, EN 50021; 1999

### Technical specifications for sampling head

Feature	Specification
Head without clamps, height	160 mm
Diameter	100 mm
Weight	1.5 kg
Material	Anodized aluminum, clamps of stainless steel
Autoclavable	20 minutes at 121 °C
Tubing	Length, 1.5 m ID = 10 mm, OD = 19 mm, sterilize for 20 min at 121 °C
Rapid connectors	Chromium-plated brass



Learn more on  
[MerckMillipore.com/  
MAS-100-CG-EX](http://MerckMillipore.com/MAS-100-CG-EX)



Request a demo on  
[SigmaAldrich.com/  
em-pharma-info](http://SigmaAldrich.com/em-pharma-info)



#### MAS-100 CG Ex<sup>®</sup>

Manufactured by MBV AG,  
Switzerland, [www.mbv.ch](http://www.mbv.ch),  
MBV. Air. Nothing else.



Isolators  
and RABS

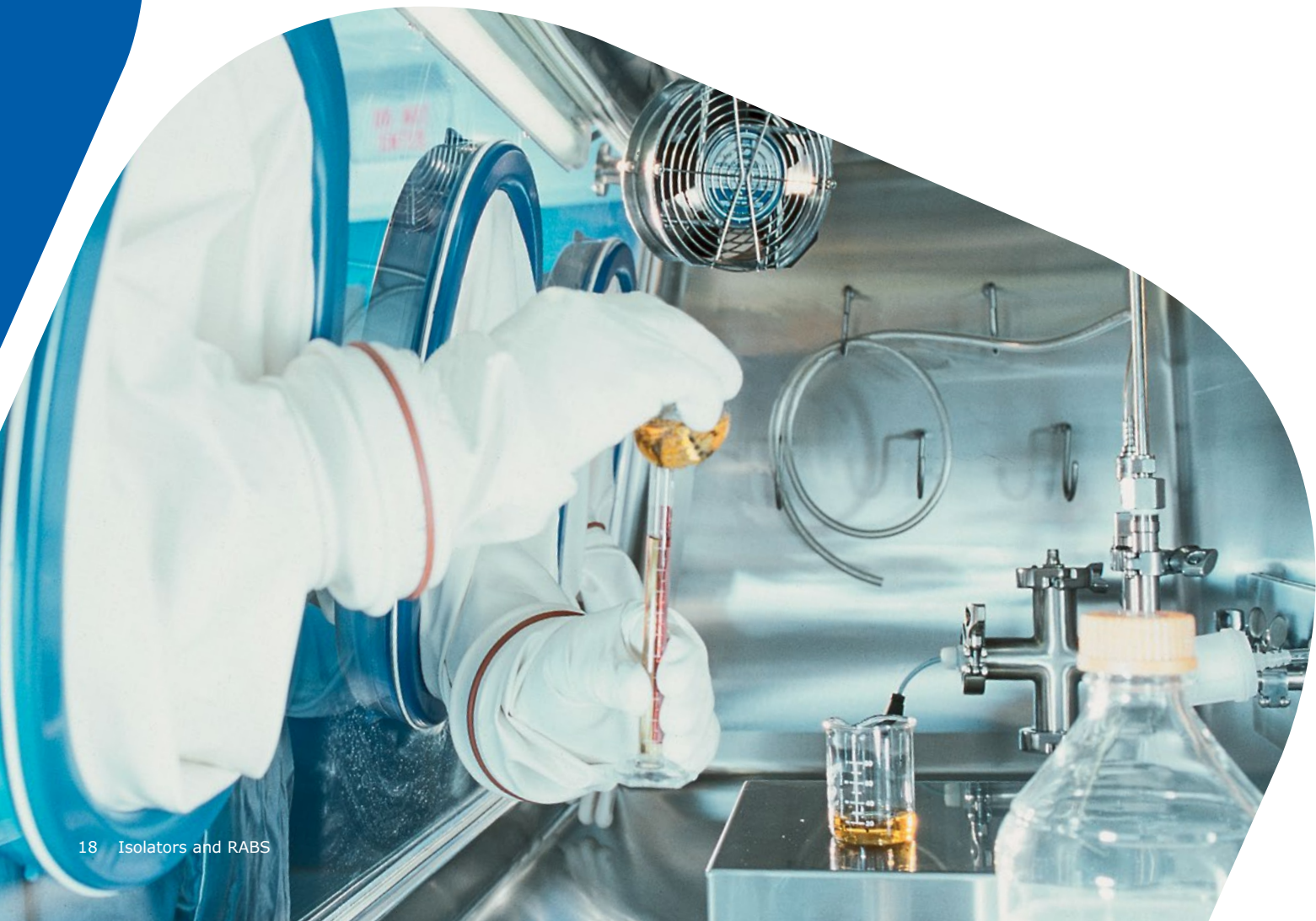
# All eyes on YOUR PROCESS

Clever solutions for isolators and RABS

Specific environments such as isolators and RABS are designed to prevent any human contact during your controlled manufacturing. These barrier technologies have highly sophisticated requirements for the instrumentation and culture media.

The main requirements for microbial air samplers and culture media are the prevention of cross-contamination, saving space and the reduction of time consuming transfer of products into the controlled manufacturing areas.

The MAS-100 Iso NT® & MAS-100 Iso MH® instruments allow a safe remote microbial air sampling in perfect combination with the IsoBag® for rapid culture media transfer into isolators.



# MAS-100 Iso MH®

## Pure innovation

The MAS-100 Iso MH® air sampler is used to monitor the microbiological contamination of the air in isolators. It was designed to allow the installation of up to four sampling heads per control unit for standard 90–100 mm Petri dishes at the critical control points. All electronic and moving parts are outside the critical zone. The MAS-100 Iso MH® has an additional internal pump with flow control for automatic decontamination of the sampling head and the aspiration tube.

An innovative double valve system enables the sampling heads to be integrated into the decontamination process of the isolator. Each unit has both an air and a sterilization pump that operate autonomously. The MAS-100 Iso MH® air sampler is built according to GAMP 5 and corresponds to the ISO 14698 standard. The instrument is independently validated according to ISO 14698 providing high physical and biological efficiency.

### Technical specifications for MAS-100 Iso MH®

Feature	Specification
Sampling head	Diameter 114 mm x H 37 mm
Instrument	(L/W/H) 423 x 380 x 160 mm (9.1–16.6 kg depending on the configuration)
Airflow	100 SLPM
Sampling volume	Selectable from 1–2,000 liters
Impaction speed	Approx. 20 m/sec
Sampling head	Stainless steel
Operation	Direct access or over PC
Calibration	Automatic calibration cycle
Connections	USB, RS232 ports, digital in/outputs, Ethernet or Profibus optional
Disinfection	Automatic in-line disinfection cycle
Relevant directives	2006/42/EC European Union Machinery directive, 2014/35/EC, European Union Low voltage directive, 2014/30/EC, European Union Electromagnetic compatibility, 2011/65/EC, European Union RoHS, 2012/19/EC European Union WEEE, EC 1907/2006, European Union REACH, SJ/T11363-2006 P.R. of China RoHS, CU/TR TPTC 004/2011 Custom Union EAC
Applied standards	IEC 61010-1:2006, 3 <sup>rd</sup> edition; IEC 61326-1:2012, 2 <sup>nd</sup> edition; EN 61326-1:13, IEC 60529:1989-1 + A1:1999; EN 60529:191-10 (incl. corrigendum: 1993-05) + A1:2000-02
GAMP	Developed and validated according to GAMP5. Usage as category 3 recommended (off-the-shelf product).

► Ordering Information see page 30

Learn more on  
[MerckMillipore.com/  
MAS-100-Iso-MH](http://MerckMillipore.com/MAS-100-Iso-MH)



Request a demo on  
[SigmaAldrich.com/  
em-pharma-info](http://SigmaAldrich.com/em-pharma-info)



Take the MAS-100 Iso MH® product video tour  
[MerckMillipore.com/MAS-100producttour](http://MerckMillipore.com/MAS-100producttour)

# MAS-100 Iso NT®

## for isolators

The MAS-100 Iso NT® air sampler is specifically designed for use in aseptic production and sterility testing isolators.

The MAS-100 Iso NT® is produced using GAMP 4 specifications and is independently validated according to ISO 14698 providing high physical and biological efficiency. The MAS-100 Iso NT® uses an innovative double valve system which enables the sampling head and unit to be integrated into the decontamination process of the isolator or cleanroom. The valve system allows the vaporized hydrogen peroxide (VHP) to run through the sampling head and internal flow path without damage to the instrument.

The system operates with an integrated mass flow sensor and uses 90–100 mm Petri dishes. The sampling head mounts inside the isolator with the instrument portion on the outside. The MAS-100 Iso NT® utilizes a flexible communications package including Ethernet, Profibus and 9 digital inputs/outputs. An IP54 accessory that covers the electrical connections is available for added protection.

The MAS-100 Iso NT® allows for remote activation via a computer or the PLC controlled on the isolator. The MAS-100 Iso NT® shares the same sampling accuracy and features as the rest of the MAS-100® family.

For further information about our **workshops and onsite services please have a look at page 24.**

### Technical specifications for MAS-100 Iso NT®

Feature	Specification
Nominal airflow	100 SLPM ± 2.5%
Dimensions	(L/W/H) 160 x 290 x 230 mm
Weight	7.5 kg without sampling head
Power	110–240 Volt, 1.5 A, 50–60 Hz
Power input	DC 24 V/3.25 A/65 W Max
Max current	2.5 A
Display	Backlit liquid crystal display
Preset sampling volumes	100, 250, 500, 750, 1,000 liters
User definable sampling volumes	1 to 2,000 liters
Material (side panels)	Anodized aluminum
Anemometer	Hot-wire anemometer, numeric control Alphanumeric liquid crystal display, 2 x 8 characters
Lifetime RTC battery	RTC (Real Time Clock) battery; good for approx. 10 years
Guidelines	73/23/EEC, 89/336/EEC, DIN EN 61326-1:2012, DIN EN 61010-1:2006, GAMP 4.0:2001
Relevant directives	2006/42/EC European Union Machinery directive, 2014/35/EC European Union Low voltage directive, 2014/30/EC European Union Electromagnetic compatibility, 2011/65/EC European Union RoHS, 2012/19/EC European Union WEEE, EC 1907/2006 European Union REACH, SJ/T11363-2006 P.R. of China RoHS, CU/TR TPTC 004/2011 Custom Union EAC
Applied standards	IEC 61010-1:2006, 3 <sup>rd</sup> edition; IEC 61326-1:2012, 2 <sup>nd</sup> edition; EN 61326-1:13; EN 60529:91 + A1:2 (only with optional IP54 accessory)
Valves rigid	PVC/Viton/SS

► **Ordering Information see page 30**

Request a demo on  
[SigmaAldrich.com/  
em-pharma-info](http://SigmaAldrich.com/em-pharma-info)





**MAS-100 Iso NT®**

Manufactured by MBV AG,  
Switzerland, [www.mbv.ch](http://www.mbv.ch),  
MBV. Air. Nothing else.

**Technical specifications for sampling head**

Feature	Specification
Weight	1.5 kg
Material	Stainless Steel (316 L)
Connector	3/4" Tri-Clamp
Diameter	109 mm
Height	90 mm

## IsoBag® rapid transfer bag

### A true timesaver

Production workflows are always at their most efficient when you have all your tools ready and available. Which is why we created a unique transportation and packaging bag as a reliable and easy way to have environmental monitoring plates right at hand in the isolator: the IsoBag® rapid transfer bag.

Environmental monitoring in aseptic production isolators is made quicker by the IsoBag® as it provides ready-to-use gamma-irradiated contact or settle plates for immediate use; the bag is simply mounted to the 190 mm alpha port of the isolator and the required amount of plates can be transferred into the isolator for immediate environmental monitoring. Saving time for decontamination will increase your operational productivity. In addition, no extra space is required in your isolator to store the required amount of plates between decontamination cycles.



**IsoBag®  
connected to  
Alpha port**



Learn more no  
[SigmaAldrich.com/isobags](http://SigmaAldrich.com/isobags)



## Media Fill / Aseptic Process Simulation

# YOUR GOAL IS ZERO POSITIVES. SO IS OURS.

## Granulated and ready-to-use culture media for secure media fill tests

Every aseptic process should be validated with at least 3 successful aseptic process simulations, or media fill tests. The aseptic process simulation should then be repeated on a regular basis. The choice of the media for aseptic process simulation is crucial. You want to make sure:

- that you have the right media to mimic the product, depending if you have solid to liquid or liquid to liquid filling line.
- that the media won't bring any contamination to your aseptic process line.
- that the technical performances of the media allows you to handle it like your product: it must be cold filterable.
- that the microbiological performance of the media enables to detect any contamination in your production line. Our media fill range overcomes all these critical challenges.

# Granulated and ready-to-use culture media

for secure media fill tests

When performing media fill trials, you shouldn't have to worry about culture media compromising your validated process.

With our irradiated, triple-wrapped culture media, you won't. Every batch is carefully tested.

## Choice of format for your simulation:

- Sterile ready-to-use broths in gas-impermeable 10 L bags
- Low-dust granules with excellent cold-filterability performance

## Choice of media type:

- Tryptic soy broth or thioglycolate broth
- Vegetable peptone alternatives for TSB and FTM

## Ultimate security:

- BSE-certified or non-animal origin
- Validated sterilization and irradiation processes

► **Ordering Information see page 31**

TSB 5 kg irradiated  
and 10L bag Ready-To-Use



Learn more on  
[SigmaAldrich.com/  
mediafills](https://SigmaAldrich.com/mediafills)



## Services

# OUR SERVICES FOR YOU

Benefit from our all-around services offer from validation and training to maintenance and calibration.

### **Validation package: validation protocols and on-site IQ/OQ service**

We aim to provide complete validation documentation to help you through the validation process. Our validation protocols are based on our internal product qualification test methods. These extensive protocols will enable the QA/QC Lab to quickly initiate your validation master plan and perform IQ, OQ and PQ (suitability of the test methodology) with ease. International guidelines such as EP/USP and GMP are followed rigorously.

Our experienced and trained validation engineers are skilled to assist in validation protocol implementation within the QC microbiology laboratory, so the QA/QC departments do not have to allocate resources. A basic technical training on your air sampler is also provided during the validation engineer's visit. Having our validation protocol and on-site IQ/OQ service eliminates high costs, both apparent and hidden, and helps ensure the validation is completed quickly and economically, and guarantees optimal performance over the equipment lifetime. We also provide Advanced Operator Training at your site. Contact your local sales representative for the availability of validation support and training at your site.

### **Service plans: preventative & curative maintenance**

The services provided include:

- Complete yearly visual, functional and performance "as found" and "as left" checks including calibration for all MAS-100® systems.
- Calibration certificate with traceability to referenced standard and complete performance report is provided with every service. In addition to the above services, additional verification, calibration or preventive maintenance (included verification & calibration) options are available. We offer several service plans levels to give you the possibility to enhance the coverage of the equipment e.g. spare part and repair visits can be included in your contract. Our certified service engineers can service your air sampler in our closest repair depot or directly in your lab. Contact your local sales representative for more information.





### Traceability & calibration accuracy

The sample collection volume for each MAS-100® System is measured and adjusted with the dedicated animometer system that is using a specific calibration station, which is directly traceable to standards. Traceability relies on a documented unbroken chain of calibrations linking measurements made to referenced standard. The uncertainty (accuracy) of a measurement is determined by the combined uncertainties of all measurements made by devices between the referenced standard and the device being calibrated, this is called the “chain of comparisons”. With each link in the chain, additive uncertainty occurs. To minimize uncertainty and maintain accuracy the number of links in the chain of comparison must be minimized and the uncertainty for each link must be documented. You can have the confidence when monitoring critical environments that every sample volume collected is accurate.



For more information or a quotation on our services portfolio please contact your local sales representative or visit our website at:

[SigmaAldrich.com/EM-services](https://SigmaAldrich.com/EM-services)

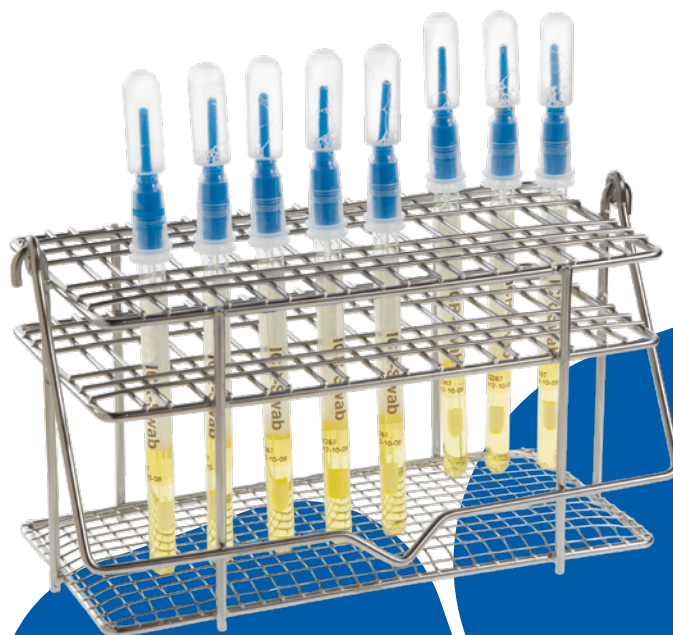


# Surface & Personnel Monitoring

## Ordering information

Description	Qty.	Ord. No.
<b>Swabs</b>		
ICR swab	100	1.46529.0100
<b>Accessories</b>		
Swab Rack (stainless steel)	1	1.46530.0001
<b>55 mm Contact Plates (triple bagged, gamma-irradiated, non-lockable)</b>		
SDA Contact +LTHTh – ICR (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate, filled in pink plates)	20 200	1.46201.0020 1.46201.0200
TSA Contact +LT – ICR (with neutralizers lecithin, Tween® 80)	20 200	1.46195.0020 1.46195.0200
TSA LTHThio cont. ICR (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate)	20 200	1.46797.0020 1.46797.0200
TSA Contact +LTHTh – ICR (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate)	20 200	1.46231.0020 1.46231.0200
<b>55 mm Contact Plates (triple bagged, gamma-irradiated, lockable)</b>		
Chocolate Contact Agar +LTH – ICR+ (with neutralizers lecithin, Tween® 80, histidine, supports growth of fastidious aerobic and anaerobic microorganisms)	20	1.46555.0020
SDA Contact +LTHTh – ICR+ (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate; filled in pink plates)	20 200	1.46501.0020 1.46501.0200
SDA Contact +LTHTh selective – ICR+ (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate, irradiation-resistant antibiotics to inhibit bacterial growth, filled in pink plates)	20 200	1.46538.0020 1.46538.0200
TSA Contact +LT – ICR+ (with neutralizers lecithin, Tween® 80)	20 200	1.46552.0020 1.46552.0200
TSA with LTHThio cont. – ICR+ (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate)	20 200	1.46783.0020 1.46783.0200
TSA Contact +LT+ Cephas – ICR+ (with neutralizers lecithin, Tween® 80, β-lactamases for inactivation of penicillins, all generations of cephalosporins and carbapenems)	200	1.46539.0200
TSA with Penase LTHThio cont. ICR+ (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate, penase for inactivation of penicillins)	20 200	1.46798.0020 1.46798.0200
Vegetable pepton agar LTHThio cont. ICR+ (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate)	20 200	1.46803.0020 1.46803.0200
Neutralizer A – Contact – ICR+ (neutralizers for increased spectrum of sanitizers)	20 200	1.46697.0020 1.46697.0200
<b>55 mm Contact Plates (single bagged, lockable and non-lockable)</b>		
Malt Extract Agar Contact – RT	20	1.46191.0020
Plate Count Agar Contact – RT	20	1.46154.0020
SDA Contact+ Chloramphenicol – RT+ (lockable plate)	20	1.46549.0020
TSA Contact – RT	20	1.46240.0020
TSA Contact +LTH – RT (with neutralizers lecithin, Tween® 80, histidine)	20	1.46200.0020
TSA Contact +LTH – RT+ (with neutralizers lecithin, Tween® 80, histidine, lockable plate)	20	1.46554.0020
<b>Accessories</b>		
Plate Rack for contact plates (stainless steel rack for 10 x 55 mm plates)	1	1.46502.0001

Description	Qty.	Ord. No.
<b>HYCON® Contact Slides (gamma-irradiated)</b>		
Contact Slides TC-y	20	1.44022.0020
Gamma-irradiated Tryptic Soy Agar, double wrapped; for determination of total count in aseptic environment; with neutralizers (lecithine, sorbitol monooleate complex, Tween® 80) and growth supplements.	100	1.44022.0100
Contact Slides DE-y	20	1.44021.0020
Gamma-irradiated, modified Dey Engley Agar (D/E Agar), double-wrapped; for determination of total count in aseptic environments; with neutralizers (lecithin, sorbitol monooleate complex, sodium thioglycolate, sodiumbisulfite) and growth supplements.		
Contact Slides PEN-y	100	1.44014.0100
Gamma-irradiated Tryptic Soy Agar with Penase, double-wrapped; for determination of total count in penicillin-containing air; with neutralizers (lecithin, L-histidine, sorbitol monooleate complex, Tween® 80) and growth supplements.		
Contact Slides LAC-y	100	1.44015.0100
Gamma-irradiated Tryptic Soy Agar with penase and a broad-spectrum cephalosporinase, double-wrapped; for determination of total count in environments with antibiotics contaminating air; with neutralizers (lecithin, L-histidine, sorbitol monooleate complex, Tween® 80) and growth supplements.		
Contact Slides SDX-y	20	1.44016.0020
Gamma-irradiated Sabouraud Dextrose Agar with modified pharmacopoeia formulation, double-wrapped; for determination of yeasts and molds in aseptic environments; with neutralizers (Tween® 80, L-a-phosphatidylcholine) and growth supplements.		
<b>HYCON® Contact Slides (single bagged)</b>		
Contact Slides TC	20	1.44023.0020
Tryptic Soy Agar; for determination of the total count; with neutralizers (lecithin, L-histidine, sorbitol monooleate complex, Tween® 80) and growth supplements.	100	1.44023.0100
Contact Slides YM	20	1.44018.0020
Rose Bengal Agar with streptomycin and chloramphenicol; for determination of yeasts and molds; with growth supplements.		
Contact Slides SDX	20	1.44017.0020
Sabouraud Dextrose Agar with modified pharmacopoeia formulation; for determination of yeasts and molds; with neutralizers (Tween® 80, L-a-phosphatidylcholine) and growth supplements.		
Contact Slides C	20	1.44019.0020
Mac Conkey Agar; for determination of coliform bacteria; with growth supplements.		



**Swab Rack**  
stainless steel  
(Ord. No. 1.46530.0001)



# Microbial Air Monitoring

## Ordering information

Description	Qty.	Ord. No.
<b>90 mm Settle Plates (triple bagged, gamma-irradiated, non-lockable)</b>		
SDA +LT – ICR 30 mL (with neutralizers lecithin, Tween® 80, filled in pink plates)	120	1.46081.0120
SDA +LTHTh – ICR 30 mL (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate, filled in pink plates)	20 120	1.46005.0020 1.46005.0120
SDA selective +LTHTh – 30 mL ICR (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate, antibiotics against bacteria, filled in pink plates)	120	1.46016.0120
TSA – ICR 30 mL	20 120	1.46001.0020 1.46001.0120
TSA +LT – ICR 30 mL (with neutralizers lecithin, Tween® 80)	20 120	1.46050.0020 1.46050.0120
TSA +LTHTh – ICR 30 mL (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate)	20 120	1.46069.0020 1.46069.0120
TSA +LTHThio sedi. ICR (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate)	20 120	1.46786.0020 1.46786.0120
TSA +LT+ Cephase – ICR (with neutralizers lecithin, Tween® 80, β-lactamases for inactivation of penicillins, all generations of cephalosporins and carbapenems)	20 120	1.46076.0020 1.46076.0120
TSA w. Penase LTHThio sedi. ICR (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate, penase for inactivation of penicillins)	20 120	1.46799.0020 1.46799.0120
<b>150 mm Settle Plates</b>		
TSA LTHThio sedi. ICR 150 mm (3 plates, each triple-packed – with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate)	18	1.46820.0018
<b>90 mm Settle Plates (triple bagged, gamma-irradiated, lockable)</b>		
TSA +LTHTh 90 mm ICR+ (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate)	20 120	1.46683.0020 1.46683.0120
TSA + LTHThio sedi. ICR+ (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate)	20 120	1.46787.0020 1.46787.0120
TSA +LT 90 mm ICR+ (with neutralizers lecithin, Tween® 80)	20 120	1.46684.0020 1.46684.0120
TSA 90 mm ICR+	20 120	1.46685.0020 1.46685.0120
TSA +LT +Cephase-ICR+ 90 mm (with neutralizers lecithin, Tween® 80)	120	1.46700.0120
TSA w. Penase LTHThio sedi. ICR+ (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate)	20 120	1.46800.0020 1.46800.0120
SDA +LTHTh-ICR+ 90 mm (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate)	20 120	1.46702.0020 1.46702.0120
Veg. Pept. Agar w. LTHThio sedi.-ICR+ (with neutralizers lecithin, Tween® 80, histidin, sodium thiosulfate)	20 120	1.46804.0020 1.46804.0120
<b>90 mm Settle Plates (single bagged, non-lockable)</b>		
SDA – LI acc. EP	20 120	1.46028.0020 1.46028.0120
SDA + Chloramphenicol – LI 30 mL	20 120	1.46003.0020 1.46003.0120
SDA +LTHTh – LI 30 mL (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate)	20 120	1.46052.0020 1.46052.0120
TSA – LI 30 mL EP+USP	20 120	1.46004.0020 1.46004.0120
TSA +LTHTh – LI 30 mL (with neutralizers lecithin, Tween® 80, histidine, sodium thiosulfate)	20 120	1.46002.0020 1.46002.0120

Description	Ord. No.
<b>MAS-100® portable Microbial Air Samplers</b>	
<b>MAS-100 NT® air sampler</b> (1 unit in hard carrying case, battery, 300-hole perforated lid, dust cover, mains charger, USB cable, 3 mm allen key, and USB stick with all documentation)	1 09191.0001
<b>MAS-100 NT® with Filter</b> air sampler (1 unit in hard carrying case, battery, 300-hole perforated lid, dust cover, mains charger, USB cable, 3 mm allen key, and USB stick with all documentation)	1.17274.0001
<b>MAS-100 NT Ex®</b> air sampler, explosion proof (1 unit in hard carrying case, battery, 300-hole perforated lid, dust cover, mains charger, USB cable, 3 mm allen key, and USB stick with all documentation)	1.09194.0001
<b>MAS-100 NT Ex® with Filter</b> air sampler, explosion proof (1 unit in hard carrying case, battery, 300-hole perforated lid, dust cover, mains charger, USB cable, 3 mm allen key, and USB stick with all documentation)	1.17275.0001
<b>MAS-100 VF®</b> (1 unit in hard carrying case, battery, 300-hole perforated lid, dust cover, mains charger, USB cable, 3 mm allen key, and USB stick with all documentation)	1.17103.0001
<b>MAS-100® Regulus</b> (digital Anemometer for automatic calibration of MAS-100® Air Samplers except MAS-100 CG Ex®)	1.19153.0001
<b>Accessories portable MAS-100® Microbial Air Samplers</b>	
<b>MAS-100 NT®</b> Dust Cover, aluminum	1.09084.0001
<b>MAS-100 NT®</b> Perforated Lid, aluminum, 300-hole	1.09195.0001
<b>MAS-100 NT®</b> Perforated Lid, aluminum, 400-hole	1.09088.0001
<b>MAS-100 NT®</b> Perforated Lid, aluminum, 300-hole, edge protected	1.19363.0001
<b>MAS-100 NT®</b> Perforated Lid, aluminum, 400-hole, edge protected	1.19364.0001
Contact Plate Adapter (not necessary for MAS-100 VF®)	1.09214.0001
Perforated lid aluminum 400 x 0.7 mm for non-lockable contact plates	1.09213.0001
Perforated lid aluminum 300 x 0.6 mm for lockable and non-lockable contact plates	1.19149.0001
Perforated lid with clamps aluminum 400x0.7 mm (compatible with Growth Direct Cassettes)	1.19166.0001
Tripod	1.09326.0001
Quick Adaptor for Tripod (not suitable for MAS-100 Eco®)	1.09223.0001
<b>MAS-100 Eco®</b> Tripod Adapter	1.09127.0001
Mounting Kit for Filter (for MAS-100 NT®/NT Ex® including HEPA H13 filter)	1.17276.0001
HEPA H13 Filter 74 mm (for MAS-100 NT®/NT Ex® with filter or with filter mounting kit)	1.17278.0001
<b>MAS-100®</b> Tube Adaptor (not suitable for MAS-100 Eco®)	1.09224.0001
<b>MAS-100 NT®</b> Li-Ion Battery (fits MAS-100 NT®/VF® )	1.09208.0001
<b>MAS-100 NT®</b> Mains Charger (fits to all versions MAS-100 NT®/NT Ex®)	1.09200.0001
<b>MAS-100 VF®</b> Power supply	1.17104.0001
<b>MAS-100 VF®</b> Petri dish clamps, 3	1.17171.0001
<b>Compressed Gas Testing</b>	
<b>MAS-100 CG Ex®</b> air sampler with sampling head (100 L/min), hose, mains charger, operator's manual on USB stick	1.09327.0001
<b>MAS-100 CG Ex®</b> Sampling Head	1.09237.0001
<b>Validation Protocols (A4)</b>	
<b>MAS-100 VF®</b> Functional Testing Report (A4)	MAVFA4FT1
<b>MAS-100 NT®</b> Validation Protocol (A4)	MANTA4VP2 & MANTA4TR1
<b>MAS-100 CG Ex®</b> Validation Protocol (A4)	MACGA4VP1

Note: The 300-hole perforated lid is compatible with legacy systems, but a specific calibration is required.



# Isolators and RABS

## Ordering information

Description	Ord. No.
<b>MAS-100 Iso Microbial Air Samplers</b>	
<b>MAS-100 Iso MH</b> <sup>®</sup> Control unit, 1 head	1.17174.0001
<b>MAS-100 Iso MH</b> <sup>®</sup> Control unit with Profibus, 1 head	1.17177.0001
<b>MAS-100 Iso MH</b> <sup>®</sup> Control unit with Ethernet, 1 head	1.17178.0001
<b>MAS-100 Iso MH</b> <sup>®</sup> Control unit, 2 heads	1.17118.0001
<b>MAS-100 Iso MH</b> <sup>®</sup> Control unit with Profibus, 2 heads	1.17144.0001
<b>MAS-100 Iso MH</b> <sup>®</sup> Control unit with Ethernet, 2 heads	1.17145.0001
<b>MAS-100 Iso MH</b> <sup>®</sup> Control unit, 3 heads	1.17146.0001
<b>MAS-100 Iso MH</b> <sup>®</sup> Control unit with Profibus, 3 heads	1.17147.0001
<b>MAS-100 Iso MH</b> <sup>®</sup> Control unit with Ethernet, 3 heads	1.17148.0001
<b>MAS-100 Iso MH</b> <sup>®</sup> Control unit, 4 heads	1.17149.0001
<b>MAS-100 Iso MH</b> <sup>®</sup> Control unit with Profibus, 4 heads	1.17155.0001
<b>MAS-100 Iso MH</b> <sup>®</sup> Control unit with Ethernet, 4 heads	1.17157.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Isolator System	1.09168.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Control unit with Profibus	1.09173.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Control unit with Ethernet	1.09174.0001
<b>MAS-100<sup>®</sup> Regulus</b> (digital Anemometer for automatic calibration of MAS-100 <sup>®</sup> Air Samplers except MAS-100 CG Ex <sup>®</sup> )	1.19153.0001 in preparation
<b>Accessories MAS-100 Iso</b>	
<b>MAS-100 Iso NT</b> <sup>®</sup> Dust Cover, Stainless Steel	1.09644.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Perforated lid, stainless steel, 300-hole edge protected	1.09189.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Perforated lid, stainless steel, 400-hole edge protected	1.09222.0001
Perforated lid stainless steel 300x0.6 mm with edge protection and handle	1.19154.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Base for sampling head, stainless with Tri-Clamp <sup>®</sup> device and gasket	1.09328.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Easy clean base for sampling head, stainless steel, with 1 Tri-Clamp <sup>®</sup> device & 1 gasket	1.17091.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Silicone screen gaskets for easy clean base	1.17099.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Silicone Gasket	1.17084.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Tri-Clamp <sup>®</sup> device, stainless steel	1.09440.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Elbow Joint with 2 Tri-Clamps <sup>®</sup> devices	1.17083.0001
Silicone Tubing 3 m	ATBTUBE01
HOSE Connector, 1 1/2-inch to 25.4 mm hose, SST316L (Set of 2)	FPPF01501
4" Opticap <sup>®</sup> XL 4 Capsule Filters	KTGRA04TT3
5" Opticap <sup>®</sup> XL 5 Capsule Filters	KTGRA05TT1
10" Opticap <sup>®</sup> XL 10 Capsule Filters (to be used for filtration of exhaust air of MAS-100 Iso Line and CG Ex <sup>®</sup> )	KTGRA10TT1
<b>MAS-100 Iso NT</b> <sup>®</sup> IP54 Kit	1.17159.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Remote Control (not suitable for MAS-100 Iso MH <sup>®</sup> )	1.17181.0001
<b>MAS-100 Iso MH</b> <sup>®</sup> RS232, cable 10 m	1.17098.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Power Supply	1.17182.0001
<b>MAS-100 Iso MH</b> <sup>®</sup> Power Supply	1.09784.0001
<b>MAS-100 Iso NT</b> <sup>®</sup> Pressure Test Kit	1.17085.0001

Note: The 300-hole perforated lid is compatible with legacy systems, but a specific calibration is required.

Description	Ord. No.
<b>Validation Protocols (A4)</b>	
<b>MAS-100 ISO NT</b> ® Validation Protocol (A4)	MAISA4VP1
<b>MAS-100 ISO MH</b> ® Validation Protocol (A4)	MAMHA4VP1
<b>IsoBag® rapid transfer bag</b>	
<b>IsoBag</b> ® TSA+LT Contact for 190 mm alpha-port 10 x 10 Contact Plates 146195, 55 mm irradiated	1.46784.0100
<b>IsoBag</b> ® TSA+LTHTh Contact for 190 mm alpha-port; 55 mm Contact Plates 146231, irradiated	1.46754.0100
<b>IsoBag</b> ® TSA+LTHThio Contact+ for 190 mm alpha-port lockable 55 mm Contact Plates 146783, irradiated	1.46753.0100
<b>IsoBag</b> ® TSA+LT Settle+ for 190 mm alpha-port 8 x 10 lockable Settle Plates 146684, irradiated	1.46785.0080
<b>IsoBag</b> ® TSA+LTHTh Settle for 190 mm alpha-port 90 mm Settle Plates 146069, irradiated	1.46756.0080
<b>IsoBag</b> ® TSA+LTHTh Settle+ for 190 mm alpha-port 90 mm lockable Settle Plates 146683, irradiated	1.46755.0080
<b>IsoBag</b> ® TSA Settle for 190 mm alpha-port; 90 mm Settle Plates 146001, irradiated	1.46814.0080
<b>IsoBag</b> ® TSA+LT contact+ for 190 mm alpha-port; 55 mm lockable Contact Plates 146552, irradiated	1.46817.0100



IsoBag®  
rapid transfer bag



## Media Fill / Aseptic Process Simulation

### Ordering information

Description	Granulated	Ready-to-use	Package Size	Ordering No.
Tryptic soy broth irradiated	•		500 g	<b>1.00800.0500</b>
			5 kg	<b>1.00800.5000</b>
Tryptic soy broth (in self-collapsing, single-use bag)		•	10 L	<b>1.46316.0001</b>
Tryptic soy broth non-animal, irradiated	•		500 g	<b>1.00550.0500</b>
			5 kg	<b>1.00550.5000</b>
Vegetable peptone broth (in self-collapsing, single-use bag)		•	10 L	<b>1.46332.0001</b>
Thioglycolate broth, non-animal, irradiated	•		5 kg	<b>1.08720.5000</b>

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