

# VWR® Surface Air System (SAS) monitoring instruments

01. ENVIRONMENTAL  
HEALTH AND AIR  
QUALITY

02. COMPLETE RANGE  
OF SAS MODELS

03. A COMPLETE RANGE  
OF CONTACT PLATES  
AND PETRI DISHES



# Table of contents

Environmental health  
and air quality  
**Page 3**

Complete range of  
SAS models  
**Pages 4-5**

SAS Super ISO USB  
100 – 180  
**Pages 6-7**

Duo SAS Super 360  
**Pages 8-9**

SAS Super IAQ  
**Pages 10-11**

SAS Super Isolator  
**Pages 12-13**

SAS Super Pinocchio II  
**Pages 14-15**

SAS Pinocchio CR  
**Page 16**

A complete range of contact  
plates and Petri dishes  
**Pages 17-19**

Contact-Weight  
microbiological surface  
sampler  
**Page 20**

eCount™ colony counter  
**Page 21**

Equipment services  
**Page 22-23**



# Environmental health and air quality

Many industries including pharmaceutical and food companies, hospitals, schools and workplaces in general need to determine the level of environmental microbial contamination. This helps provide protection for both product quality and the health of workers in accordance with International Standards (e.g. Pharmacopoeia, Good Manufacturing Practices and ISO) and guidelines. Since the 1980's the SAS (Surface Air System) has been considered a reference instrument for portable air microbiological samplers.

- U.S. Pharmacopeia chapter 1116 describes the Surface Air System sampler as 'Methodology and instrumentation for qualification of viable airborne microorganisms'
- International space agencies have been using the SAS system on board the orbital station for monitoring microbiological environment
- SAS instruments are used every day in the most important pharmaceutical industries all around the world

## VWR IS ABLE TO OFFER CUSTOMERS A COMPLETE PACKAGE FOR MICROBIOLOGICAL SAMPLING OF SURFACES AND AIR

- Air samplers for applications based on active air sampling, accommodating one or two plates with culture medium
- Ready to use contact plates or Petri dishes, for sampling surfaces or air in combination with specific SAS instruments
- Contact-Weight standardises microbiological control of surfaces with contact plates

## SAS A FLEXIBLE SYSTEM

Specific models are designed to be used in cleanrooms classified according to ISO 14644-1 and fully validated according to ISO 14698 and EN 17141, other instruments are available for open areas not classified by HACCP controls, for SBS (Sick Building Syndrome) investigations or for the control of air conditioning HVAC (Heating Ventilation Air Conditioning).

A dedicated range of VWR media for environmental control is available in ready to use Petri dishes or contact plates for the implementation of microbiological monitoring of surface and air control in any environment. Empty or ready to use Petri dishes and contact plates are packed appropriately for classified, controlled, ambient or occasional samples in different environments offering a cost effective sampling programme.

## AN OPEN SYSTEM

The same instrument can be used with standard 55 mm contact plates or with traditional 90 mm Petri dishes using simple accessories.

Specific models only for Petri dishes or contact plates are also available.

- Use the same kind of contact plate for air and surface sampling
- Applicable to cGLP and cGMP air sampling operations
- Appropriate for establishing data on a microbial level in selected environments
- Organise sequential sampling to obtain a more representative air sample under actual operating conditions

# Surface Air System (SAS)

## SAS SUPER ISO 100/180 USB

Directly derived from the SAS instrument used on the 'International Space Station', the SAS Super ISO USB 100 and SAS Super ISO USB 180 have been specifically designed for pharmaceutical and hospital sectors. Portable and easily positioned, they operate with long life rechargeable batteries. SAS Super ISO USB 100 and SAS Super ISO USB 180 are differentiated by differences in constant airflow (100 l/min and 180 l/min respectively); this choice depends on the application and allows continuous or sequential sampling from a few minutes to several hours. Both models provide facilities for data management of different implemented sampling programmes. The data can be stored on the SAS instrument itself or downloaded by means of the USB port.

The SAS Super ISO USB is fully validated according to ISO 14698 and compliant with USP chapter 1116.



## DUO SAS SUPER 360

When environmental contamination is very low, and the number of samples to be performed is high, operational duration can be an important factor in the choice of SAS instrument. Two sampling heads that operate simultaneously to sample 1000 l of air in less than 3 minutes is the solution. The simultaneous sampling on two heads also allows you to obtain statistically representative results when using the same type of media for both plates. It is also possible to use two different media for the same sampling cycle (e.g. TSA or PCA for Total Bacterial Count and SDA for yeasts and moulds). Sampling on the two heads can halve sample process time, which is a real advantage for busy users.



## SAS SUPER IAQ

Designed specifically for general Indoor and Outdoor Air Quality control, this SAS instrument is lightweight and durable to operate in any situation. Ideal for environmental control in food industries, water treatment plants (outdoor application) and for use by environmental hygienists.



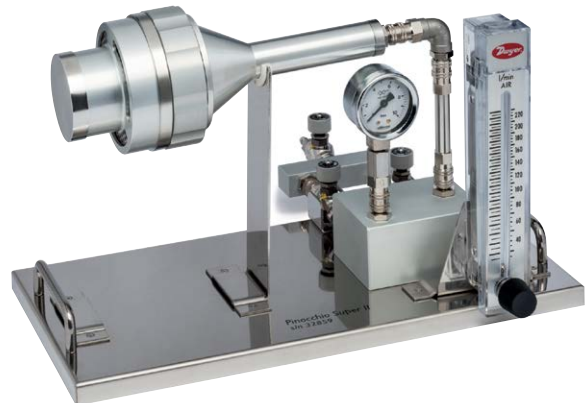
**SAS SUPER ISOLATOR**

SAS Super Isolator instruments (available with airflows of 100 l/min and 180 l/min) have been created for the specific monitoring of the closed environments of isolators Restricted Access Barriers Systems (RABS), ensuring their complete separation from outside influences. The SAS instrument control unit is placed outside and connected to the aspirating head using a simple electrical connection. All possible typical contamination sources of the vacuum sampling system are removed using the SAS Super Isolator. An interesting application of this air sampler is that several heads can be controlled by a single SAS control unit providing a practical and economical solution.



**SAS SUPER PINOCCHIO II**

The microbiological testing of compressed gas requires dedicated instruments other than normal air samplers. SAS Super Pinocchio II is specifically designed for this application, simplifying this activity as much as possible. A practical advantage of using the SAS Super Pinocchio II is that the instrument requires no external power supply because, controlled by the pressure of a gas line, it conveys the same gas on the agar plate playing the 'impact on agar' approach described in chapter 1116 of the U.S. Pharmacopoeia. SAS Super Pinocchio II is the ideal instrument for all areas requiring microbiological testing of compressed gases.



**SAS PINOCCHIO CR VERSION**

The microbiological gas sampler is a portable equipment used to determine the level of existing microbiological contaminants in the compressed gas during aseptic manufacturing operations. This equipment allows a simple and cheap testing of sterility in compressed gas. This version is built in stainless steel and it is designed for clean room application.



# Air samplers for clean rooms and sterile areas

The microbiological air sampler created for pharmaceutical companies and hospitals.

Improvements of the new device.

## SAS SUPER ISO 100/180 USB – USP'S

### TYPICAL APPLICATIONS

Control and validation of cleanrooms, isolators, restricted access barriers (RABS), microbiological laboratories, biotechnology premises and vaccine production plants including operator safety.

Ideal for control of environmental contamination in operating theatres, hospitals and clinics.

### PERFORMANCE

- Data management compliant with CFR 21 part 11
- Compliant with USP chapter 1116 and ISO 14698-1
- Up to 70.000 litres of air with up to 300 memorised sampling cycles
- Sampling rate accurately maintained by speed sensor
- Design avoids turbulence in unidirectional airflow and re-aspiration of tested air in accordance with ISO specifications
- Provides total traceability - IQ OQ validation protocols available
- Automatic reminder in case of expired calibration
- 8 pre-fixed modifiable sampling configurations

### DATA TRANSFER

- Sampling data can be downloaded on a PC in both non modifiable or Excel formats
- Data download by USB
- Instrument configuration via USB Stick
- Data management in accordance with CFR 21 part 11
- Infrared transfer of sampling data to PC

### CFR 21 PART 11

The SAS SUPER ISO USB 100 and SAS SUPER ISO USB 180 air samplers are compliant with 21 CFR Part 11. They feature an electronic audit trail as well as a variety of security and monitoring functions for individual operators.



**SAS SUPER ISO IS THE FASTEST 'IMPACT TO AGAR' AIR SAMPLER ON THE MARKET**

ACCESSORIES

	<p>Single-use heads for air samplers Cat.No. 710-0891</p>		<p>Battery charger with interchangeable plug, 90 – 260 V Cat.No. 710-2253</p>		<p>Stainless steel holder for table and wall Cat.No. 710-0963</p>		<p>Lightweight aluminium carrying case Cat.No. 710-1697</p>
	<p>Adapter for Petri dishes Ø 90 mm Cat.No. 710-0882</p>		<p>Infrared remote control Cat.No. 710-0969</p>		<p>Soft carrying case Cat.No. 710-0896</p>		

TECHNICAL SPECIFICATIONS

Approx. sampling time for sampling 1000 l	6 min with SAS Super ISO 180 USB 10 min with SAS Super ISO 100 USB
Powered to ensure a full day of sampling	Operates from mains
Battery life	70.000 l (SAS Super ISO 100 USB) 40.000 l (SAS Super ISO 180 USB)
Power	8,4 V - 2,7 amp/h
Size	120x125x275 mm
Weight	1800 g

REFERENCES

1. USP chapter 1116 'Microbiological evaluation of cleanrooms and controlled environments'
2. EU guide for GMP - 'Manufacture of sterile medicinal products control medicines and inspection'
3. ISO Standard 14698-1 - 'Cleanrooms and associated controlled environments biocontamination control - Part 1: General principles and methods'
4. FDA - '2004 guidance for industry on sterile drug products by aseptic processing - Pharmaceutical current good manufacturing practice'

For a complete system - please order the sampler you require, a battery charger and the appropriate head.

SAS Super ISO USB without aspirating head and battery charger	Cat.No.
SAS Super ISO 100 USB for contact plates	710-2088
SAS Super ISO 100 USB for Petri dishes	710-2090
SAS Super ISO 180 USB for contact plates	710-2087
SAS Super ISO 180 USB for Petri dishes	710-2089
<b>Accessories</b>	
Battery charger with universal plug for both models (this is mandatory for the correct functioning of this instrument)	710-2253
Soft carrying case	710-0896
Aluminium carrying case	710-1697
SAS-Holder table and wall stainless steel	710-0963
Adapter* to convert contact plate model to accept 90 mm Petri dishes	710-0882
SAS stainless steel Petri head + aluminium adapter	710-0877
SAS aluminium Petri head + adapter	710-0879
IQ OQ validation protocols for SAS Super ISO 100 and 180 USB	710-0956
Infrared remote control for SAS Super ISO USB	710-0969

Aspirating heads	Cat.No.
<b>For contact plates, Ø 55 mm</b>	
Stainless steel	710-0880
Aluminium	710-0892
Sterile daily heads	710-0890
<b>For Petri dishes, Ø 90 mm</b>	
Stainless steel	710-0878
Aluminium	710-0886
Sterile daily heads	710-0891

\* An aspirating head for 90 mm Petri dishes has to be used with this adapter.

# Air samplers for quick sampling in clean rooms and sterile areas

The only portable microbiological air sampler with two aspirating heads.

Suitable for use in all fields of application.

## DUO SAS SUPER 360

### TYPICAL APPLICATIONS

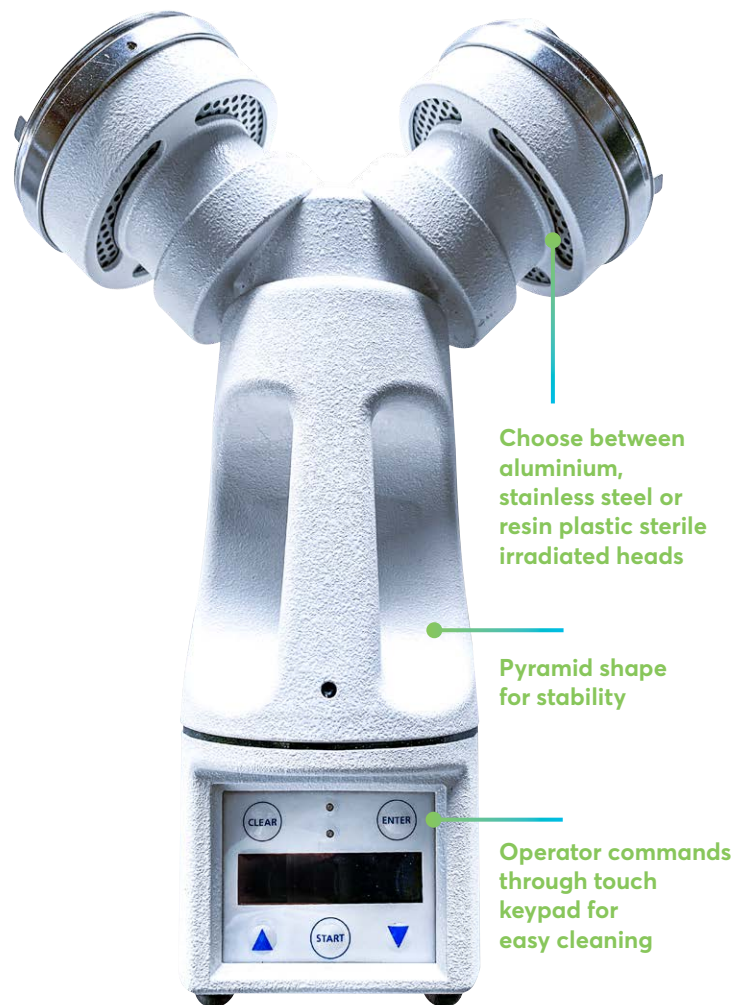
Control and validation of cleanrooms, isolators, RABS microbiological laboratories, biotechnology premises, vaccine production plants, operating theatres, hospitals and clinics. In particular, DUO SAS Super 360 is used when saving time is an important criteria.

### PERFORMANCE

- Compliant with USP chapter 1116 and ISO 14698-1
- IQ OQ validation protocols available
- Over 40.000 l of air
- Up to 100 memorised sampling cycles
- Design avoids turbulence in unidirectional airflow and re-aspiration of tested air in accordance with ISO specifications
- Total traceability
- Fingertip calibration system control without opening the instrument
- Easy calibration monitoring

### DATA TRANSFER

- Can be downloaded onto a PC in both non modifiable (.sas) and Excel formats
- Sampling data to PC



**DUO SAS 360 CAN REDUCE SAMPLING TIME BY UP TO 70%!**



ACCESSORIES



TECHNICAL SPECIFICATIONS

Airflow rate	180 l/min
Sampling head	Aluminium, stainless steel or plastic (certified ready to use)
WxDxH	260x110x352 mm
Weight	2,2 kg

For a complete system - please order the sampler you require, a battery charger and the appropriate head.

DUO SAS Super 360 without aspirating head and battery charger	Cat.No.
For contact plates	710-0867
For Petri dishes	710-0866
<b>Accessories</b>	
Battery charger with universal plug (this is mandatory for the correct functioning of this instrument)	710-2253
Soft carrying case	710-0888
Aluminium carrying case	710-0876
SAS-Holder table and wall stainless steel	710-0963
Adapter* for Petri dishes, Ø 90 mm (only for Duo SAS Super 360 for contact plates)	710-0882
SAS stainless steel Petri head + aluminium adapter	710-0877
SAS aluminium Petri head + adapter	710-0879
IQ OQ validation protocols for Duo SAS Super 360	710-0957
SAS software for downloading data for Duo SAS Super 360 (to use with interface)	710-0975
Interface cable for software for Duo SAS Super 360	710-0964
Infrared remote control for Duo SAS Super 360	710-0962

\* An aspirating head for 90 mm Petri dishes has to be used with this adapter.

Aspirating heads	Cat.No.
<b>For contact plates, Ø 55 mm</b>	
Stainless steel	710-0880
Aluminium	710-0892
Sterile daily heads	710-0890
<b>For Petri dishes, Ø 90 mm</b>	
Stainless steel	710-0878
Aluminium	710-0886
Sterile daily heads	710-0891

WHY USE THE DUO SAS?

- Use different media in each head to capture different microorganisms
- Use the same media in each head for greater confidence
  - TSA plates on left and right aspirating heads to calculate an average result and to obtain a more reliable and realistic number of Colony Forming Units (CFU)
  - TSA plates on left and right aspirating heads to monitor a higher volume of air in cleanrooms (360 l/min)
  - TSA plates on left and right aspirating heads to reduce operator time during air monitoring (about 3 min for 1000 l of air)
  - TSA or PCA plates on left aspirating head and SDA plate on right for a simultaneous double control of Total Bacterial Count and yeast/moulds

REFERENCES

1. USP chapter 1116 'Microbiological evaluation of cleanrooms and controlled environments'
2. ISO Standard 14698-1 - 'Cleanrooms and associated controlled environments contamination control - Part 1: General principles and methods'
3. FDA - '2004 guidance for industry on sterile drug products by aseptic processing - Pharmaceutical current good manufacturing practice'
4. ACGIH - 'Guideline for assessment of bioaerosol in the indoor environment'

# Air samplers for controlled environment different than sterile areas

The microbiological air sampler created for control in the food industry, water treatment plants and environmental health.

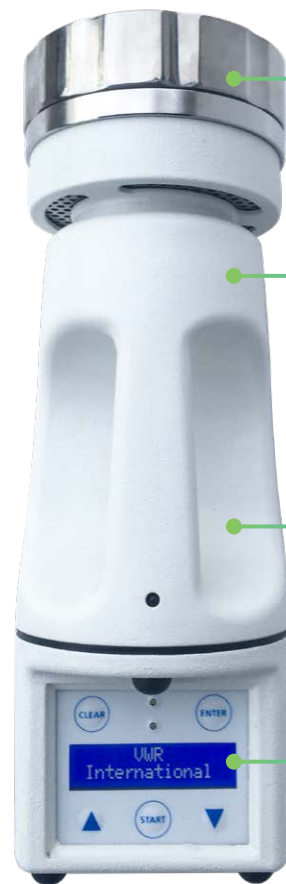
## SAS SUPER IAQ

### TYPICAL APPLICATIONS

- Agro-Food - dairy technologists for control in food production environments with the aim to increase shelf life of products and for HACCP (Hazard Analysis Critical Control Point) applications
- Environmental health for the control of SBS (Sick Building Syndrome) and HVAC (Heating Ventilation Air Conditioning) studies
- Suitable for environmental control in water treatment plants (outdoor application) to ensure the safety of people working or living near treatment areas

### PERFORMANCE

- Airflow rate 100 l/min
- Programmable volume of aspirated air from 1 to 1999 l
- Sampling cycle record
- Delay start
- Digital visual display with indication of number of l/min air, date, operator and location



Choose between aluminium or resin plastic sterile irradiated heads

Robust construction for use in industrial environments

Pyramid shape for stability

Operator commands through touch keypad for easy cleaning



SAS SUPER IAQ IS EASY TO USE  
BASIC INSTRUMENT

ACCESSORIES



TECHNICAL SPECIFICATIONS

Sampling time	300 l in 3 min
Long battery life	8 hours of use without risk of sampling breaks
High sampling autonomy	70.000 l batteries recharged
Power	8,4 V - 2,7 amp/h
Size	105x110x290 mm
Weight	1750 g

SAS Super IAQ air sampler - without accessories	Cat.No.
SAS Super IAQ for contact plates	710-1048
SAS Super IAQ for Petri dishes	710-2149
<b>Accessories</b>	
Aluminium carrying case	710-0875
Telescopic tripod	710-1857
SAS-Holder table and wall stainless steel	710-0963
Battery charger with universal plug	710-2253
Adapter* for Petri dishes, Ø 90 mm (only for SAS Super IAQ for contact plates)	710-0882
SAS aluminium Petri head + aluminium adapter	710-0879
Soft carrying case	710-0896
Remote control	710-0962

Aspirating heads	Cat.No.
<b>For contact plates, Ø 55 mm</b>	
Aluminum	710-0892
Sterile daily heads	710-0890
<b>For Petri dishes, Ø 90 mm</b>	
Aluminium + adapter	710-0879
Aluminium	710-0886
Sterile daily heads	710-0891

\* An aspirating head for 90 mm Petri dishes has to be used with this adapter.

# Air samplers for isolators

The microbiological air sampler created for the control in isolators and RABS in pharmaceutical and food companies and in hospital environments.

## SAS SUPER ISOLATOR

### TYPICAL APPLICATIONS

Control and validation of isolators, RABS and closed systems for drugs, food and beverage production. Several aspirating chambers can be controlled by a single SAS control unit providing a practical and economic solution.

It consists of a programmable unit which remains outside the controlled area which uses 55 mm contact plates or standard 90 mm Petri dishes.

### PERFORMANCE

- Compliant with USP chapter 1116 and ISO 14698-1
- Up to 70.000 litres of air with up to 300 memorised sampling cycles
- Sampling rate accurately maintained by speed sensor and can be positioned anywhere inside the isolator or RABS
- Compatible with the most common sanitising and sterilising agents used inside isolators such as VHP (Vaporised Hydrogen Peroxide)
- Design avoids turbulence in unidirectional airflow and re-aspiration of tested air in accordance with ISO specifications
- Provides total traceability - IQ OQ validation protocols available
- Automatic reminder in case of expired calibration
- 8 pre-fixed modifiable sampling configurations

### DATA TRANSFER

- Special connections for isolators available on request



ACCESSORIES

 <p>Single-use heads for air samplers Cat.No. 710-0891</p>	 <p>Adapter for Petri dishes Ø 90 mm Cat.No. 710-0882</p>	 <p>Additional aspirating chamber Cat.No. 710-0947 Cat.No. 710-0948</p>	 <p>SAS software for downloading data from SAS Super Isolator Cat.No. 710-0975</p>	 <p>Battery charger with universal plug Cat.No. 710-2253</p>	 <p>Infrared remote control Cat.No. 710-0962</p>	 <p>Lightweight aluminium carrying case Cat.No. 710-1697</p>
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TECHNICAL SPECIFICATIONS

Model	SAS Super Isolator 100	SAS Super Isolator 180	Duo SAS Super 360 Isolator
Airflow rate	100 l/min	180 l/min	2x180 l/min
Sampling head	Stainless steel	Stainless steel	Stainless steel
WxDxH	105x110x290 mm	105x110x290 mm	360x160x180 mm
Weight	1,75 kg	1,75 kg	2,1 kg

REFERENCES

1. ISO Standard 14698-1 - 'Cleanrooms and associated controlled environments biocontamination control - Part 1: General principles and methods'
2. USP chapter 1116 - 'Microbiological evaluation of cleanrooms and controlled environments'
3. EU guide for GMP - 'Manufacture of sterile medicinal products control medicines and inspection'

For a complete system - please order the sampler you require, a battery charger and the appropriate head.

An adapter is required when using heads for Petri dishes (90 mm) with samplers for contact plates (55 mm). Sets including a head for 90 mm Petri dishes and the required adapter are available.

Model without aspirating head and battery charger	Cat.No.
SAS Super Isolator 100 for contact plates	710-0943
SAS Super Isolator 100 for Petri dishes	710-0945
SAS Super Isolator 180 for Petri dishes	710-0946
SAS Super Isolator 180 for contact plates	710-0944
Duo SAS 360 Isolator for contact plates	710-0977
Duo SAS 360 Isolator for 90 mm Petri dishes	710-0978
<b>Accessories</b>	
Battery charger with universal plug (this is mandatory for the correct functioning of this instrument)	710-2253
Adapter* for Petri dishes, Ø 90 mm (only for SAS Super Isolator for contact plates)	710-0882
Aluminium carrying case	710-1697
Additional aspirating chamber for contact plates (without aspirating head)	710-0947
Additional aspirating chamber for Petri dishes (without aspirating head)	710-0948
IQ, OQ manual for SAS Super Isolator	710-0954
Infrared remote control for SAS Super Isolator	710-0962
Interface for SAS Isolator software	710-0964
SAS software for downloading data from SAS Super Isolator (to use with interface)	710-0975

Aspirating heads	Cat.No.
<b>For contact plates, Ø 55 mm</b>	
Stainless steel	710-0880
Aluminium	710-0892
Sterile daily heads	710-0890
<b>For Petri dishes, Ø 90 mm</b>	
Stainless steel	710-0878
Aluminium	710-0886
Sterile daily heads	710-0891

\* An aspirating head for 90 mm Petri dishes has to be used with these adapters.

# Air sampler for compressed gases

The microbiological air sampler created to test the microbiological quality of compressed air and gases used in cleanrooms.

## SAS SUPER PINOCCHIO II

### TYPICAL APPLICATIONS

SAS Super Pinocchio II has been created for the microbiological control of air and other compressed gases used in the pharmaceutical and food industries plus other critical fields. The compressed gas is connected directly to the instrument.

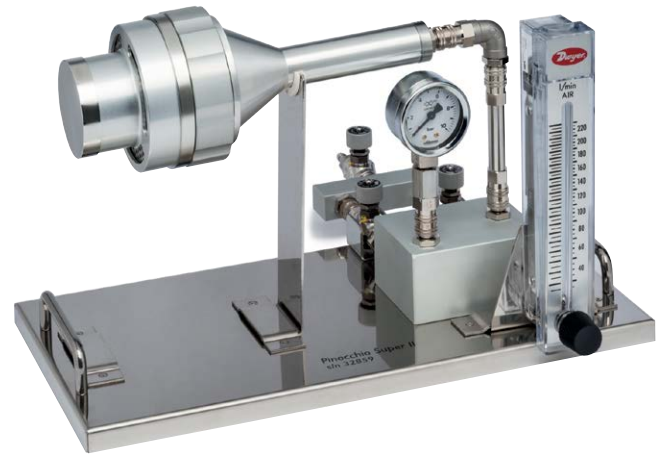
A compressed air source is connected to the SAS Super Pinocchio Super II system and the flow meter regulates the required flow rate, e.g.: 100 l of air/min. The sampling period is timed to obtain the required total sample volume, e.g. 1000 l.

### PERFORMANCE

- Autoclavable
- Calibrated according to International Standards
- IQ OQ validation protocols available
- Standard Operating Procedure (SOP) available
- Unit requires no power and is fully transportable
- Can collect air samples either on contact plates or standard 90 mm Petri dishes

### DELIVERY INFORMATION

Self-contained unit, consisting of connections, airflow meter, pressure gauge, tap, and funnel head complete with plate housing.



**SAS SUPER PINOCCHIO II IS A  
MICROBIAL IMPACTION SAMPLER**

TECHNICAL SPECIFICATIONS

Airflow rate	100 l/min
Material	Stainless steel
Max. temperature	40 °C
WxDxH	400x200x245 mm
Weight	2 kg

SAS Super Pinocchio II with carrying case	Cat.No.
SAS Super Pinocchio II for contact plates	710-0949
SAS Super Pinocchio II for Petri dishes	710-0950
SAS Super Pinocchio II for contact plates with calibrated flow meter	710-0951
SAS Super Pinocchio II for Petri dishes with calibrated flow meter	710-0955
Accessories	
Calibrated flow meter	710-0965
Flow meter, 20 – 200 LPM	710-1981
IQ-OQ manual	710-0976

**INCLUDED**  
Pinocchio Super  
aluminum  
carrying case



Pinocchio aluminum carrying case  
Cat.No. 710-0972



Calibrated flow meter  
Cat.No. 710-0965

# Air sampler for microbiological gas

The microbiological gas sampler is a portable equipment used to determine the level of existing microbiological contaminants in the compressed gas during aseptic manufacturing operations. This equipment allows a simple and cheap testing of sterility in compressed gas.

## SAS PINOCCHIO CR VERSION

### TYPICAL APPLICATIONS

The CR version has been designed and developed for Clean Room environment mostly.

### FEATURES

- 100% stainless steel made
- Completely removable
- Autoclavable in all its parts (except for the flow meter)
- Compactness and lightness
- Calibrated flow meter

### DELIVERY INFORMATION

Ask your local distributor for more information and for the best offer!



SAS Pinocchio CR	Cat.No..
Pinocchio CR Super Petri	710-2151
Pinocchio CR Super Contact	710-2152
Pinocchio CR Super Petri Validated	710-2154
Pinocchio CR Super Contact Validated	710-2153
SAS Pinocchio CR Petri Dishes, 401 Holes, with calibration certificate	710-2150



# A complete range of contact plates and Petri dishes

Ideal for monitoring the microbiological contamination of surface and air inside cleanrooms, isolators, RABS, food industries and hospitals. The triple wrapping ensures that the package itself doesn't contaminate the environment as the first wrapper is removed just before entering the clean area.

## CONTACT PLATES OR PETRI DISHES?

The choice of both plate type and media is key to meet the requirements of the most important Pharmacopoeias, ISO norms and cGMP. Petri dishes are used as 'settle plates' to examine how many microorganisms land on surfaces and measured by leaving an open Petri plate on the surface for 1-4 hours. Contact plates are used to take a direct sample of the surface as the agar touches the surface.

Contact plates also offer the advantage that you can use the same kind of plates for both air and surface control. However, 90 mm Petri dishes give a bigger surface area for colony counting and are especially useful if the expected count on the plate is more than 100 Colony Forming Units.

All VWR contact plates and Petri dishes are available with neutralising agents (Tween, lecithin, histidine, thiosulphate) and with antibiotic neutralising agents (Penicillinase), to prevent underestimation of the microbial count.

- Manufactured under GMP, compliant with Pharmacopoeias and ISO regulations formulations
- Certificate of Irradiation and Growth Promotion test according to International Pharmacopoeias
- VHP resistance studies for the use inside isolators are available (please note that only the blister packaging is hydrogen peroxide resistant)
- Storage at room temperature (contact plate in blister) or between 2 and 14 °C



## REFERENCES

VWR International contact plates and Petri dishes for environmental control comply with the following International Standards:

1. USP chapter 1116 'Microbiological evaluation of cleanrooms and controlled environments'
2. EU Guide for GMP - 'Manufacture of sterile medicinal products control medicines and Inspection'
3. ISO Standard 14698-1 - 'Cleanrooms and associated controlled environments biocontamination control - Part 1: General principles and methods'
4. ISO 18593: 'Microbiology of food and animal feeding stuffs - Horizontal methods for sampling techniques from surfaces using contact plates and swabs'
5. ACGIH - 'Guideline for assessment of bioaerosol in the indoor environment'



**CONTACT PLATES IN BLISTER PACKS - TRIPLE WRAPPED**

Triple wrapped sterile contact plates in blister packs allow you to use one single plate at a time whilst maintaining the packaging of all the other plates. This allows the use of all the plates until the end of their shelf life. Triple wrapped contact plates are packed in a blister with 6 single compartments (6x4 plates per packs).

**CONTACT PLATES IN BLISTER FOR TOTAL BACTERIAL COUNT**

Application fields: Pharmaceutical industries and hospitals, in compliance with EP, USP, ISO

55 mm contact plate media	Filling (ml)	Pk	Cat.No.
Tryptic Soy Agar (TSA)	13	24	271114ZI
TSA with disinfectant neutralisers (Tween, lecithin, histidine, thiosulphate)	13	24	271114TI
TSA with antibiotic and disinfectant neutraliser (Penase, Tween, lecithin, histidine, thiosulphate)	13	24	271114RY

**CONTACT PLATES IN BLISTER FOR YEAST AND MOULDS COUNT**

Application fields: Pharmaceutical and food industries and hospitals, in compliance with EP, USP, EPA, ISO 4833 and ISO 18593

55 mm contact plate media	Filling (ml)	Pk	Cat.No.
Sabouraud 4% dextrose agar (SDA)	13	24	270884ZI
Sabouraud 4% dextrose agar (SDA) with disinfectant neutraliser (Tween, lecithin, histidine, thiosulphate)	13	24	270884TI

**CONTACT PLATES IN BLISTER FOR TOTAL BACTERIAL COUNT**

Application fields: Food industries in compliance with EPA, ISO 4833 and ISO 18593

55 mm contact plate media	Filling (ml)	Pk	Cat.No.
PCA	13	24	270774ZI
PCA with disinfectant neutraliser (Tween and lecithin)	13	24	270774TI



**CONTACT PLATES IN TRIPLE STERILE BAGS**

For larger volume usage, contact plates are also available in bags. The same specifications apply to these plates as for the blister wrapped plates. Plates are packed 5 each in a plastic shrink wrapped pack. Each bag contains 2 packs (10 plates). The box contains 8 bags with a total of 80 plates.

**CONTACT PLATES IN TRIPLE STERILE BAGS FOR TOTAL BACTERIAL COUNT**

Application fields: Pharmaceutical industries and hospitals, in compliance with EP, USP, ISO

55 mm contact plate media	Filling (ml)	Pk	Cat.No.
Tryptic Soy Agar (TSA)	13	80	141114ZI
TSA with disinfectant neutralisers (Tween, lecithin, histidine, thiosulphate)	13	80	141114TI
TSA with antibiotic neutraliser (Penase)	13	80	141114PY
TSA with antibiotic and disinfectant neutraliser (Penase, Tween, lecithin, histidine, thiosulphate)	13	80	141114RY

**CONTACT PLATES FOR YEAST AND MOULDS COUNT IN TRIPLE STERILE BAGS**

Application field: Pharmaceutical and food industries plus hospitals, in compliance with EP, USP, EPA, ISO 4833 and ISO 18593

55 mm contact plate media	Filling (ml)	Pk	Cat.No.
Sabouraud 4% dextrose agar (SDA)	13	80	140884ZI
Sabouraud 4% dextrose agar (SDA) with disinfectant neutraliser (Tween, lecithin, histidine, thiosulphate)	13	80	140884TI
Rose Bengal chloramphenicol agar	13	80	140070ZI

**CONTACT PLATES IN TRIPLE STERILE BAGS FOR TOTAL BACTERIAL COUNT**

Application field: Food industries, in compliance with EPA, ISO 4833 and ISO 18593

55 mm contact plate media	Filling (ml)	Pk	Cat.No.
PCA	13	80	140774ZI
PCA with disinfectant neutraliser (Tween and lecithin)	13	80	140774TI



**CONTACT PLATES WITH LOCKABLE-SECURITY LID FOR THE USE IN CLEAN ROOMS AND STERILE AREAS**

These lockable, gamma-irradiated, triple-bagged plates are particularly suitable for use in restricted areas like isolators and clean rooms. Gently pressing the top of the plate you can lock the lid and assure a safe transport to the laboratory that prevents possible contamination

**Features:**

- The locking lid allows an easy locking of plates after sampling, adding security during transportation and incubation
- A label including a data matrix barcode identifies each plate
- Storage at room temperature with a shelf life of 9 months
- Triple bagged, gamma irradiated (dose of 9-20 kGy)

Description	Pk	Cat.No.
Tryptic Soy Agar + Neutralizing	20 plates Triple bagged, gamma irradiated	15203VS
Sabouraud Dextrose Agar + Neutralizing	20 plates Triple bagged, gamma irradiated	15204VS



**90 MM PETRI DISHES**

As with contact plates, Petri dishes also come with specific media for microbiological control of air and surfaces. These dishes come in sterile triple wrapped packaging which enables the transfer of plates inside low contamination or sterile environments (one of the three external wraps is removed before entry into a clean area). You can choose the best packaging and medium for your needs.

Plates are packed in bags with 10 plates in each. The box supplied contains 2 bags of 10 plates, with a total of 20 plates. One pack per bag displays an irradiation indicator.

**90 MM PETRI DISHES**

Application fields: Pharmaceutical industry and hospitals, in compliance with EP, USP, ISO  
Storage: 15 to 25 °C for plates 280882TI, 280882ZI, 281112TI, 281112TI30 and 281112ZI

90 mm Petri dish media	Filling (ml)	Pk	Cat.No.
Tryptic Soy Agar (TSA)	20	60	281112ZI
TSA with disinfectant neutralisers (Tween, lecithin, histidine, thiosulphate)	20	60	281112TI
TSA with disinfectant neutralisers (Tween, lecithin, histidine, thiosulphate) with increased quantity of agar	30	60	281112TI30
TSA with antibiotic and disinfectant neutraliser (Penase, Tween, lecithin, histidine, thiosulphate)	20	20	131114RY
R2A	20	20	130802ZI
Sabouraud 4% dextrose agar (SDA) irradiated	20	60	280882TI
Sabouraud 4% dextrose agar (SDA) with disinfectant neutraliser	20	60	280882ZI
Sabouraud 4% dextrose agar (SDA) with Chloramphenicol	20	20	130884CI

# Contact plate weight applicator

Microbiological surface sampler.

## CONTACT WEIGHT

Used in combination with contact plates, the weight enables the standardisation of microbiological surface control between operators. It applies the same constant pressure for a preset time on the contact plate. This ensures results are directly comparable.

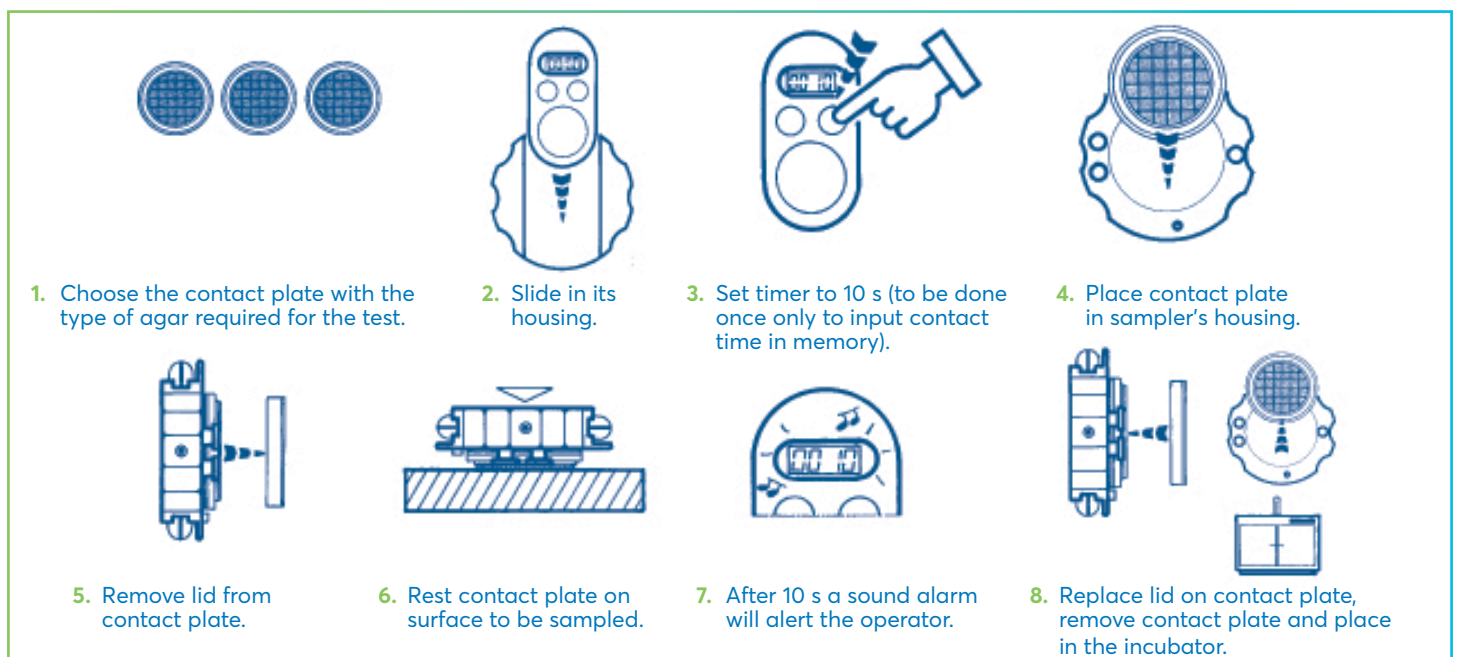
The Contact Weight meets the ISO 18593 Standard and has a sterilisable stainless steel base and pull out digital timer.

- Dry heat or steam sterilisable stainless steel base, with pull-out digital timer
- Can be used with different types of contact plates
- According to ISO 18593
- Weight: 500 g



Description	Pk	Cat.No.
Contact Weight surface air samplers for contact plates	1	710-0961
Straight autoclavable container to transfer the Contact Weight in a cleanroom	4	216-8206

## Step by step guide for using the Contact Weight for microbiological control of surfaces.



# Colony counter

The all-in-one eCount™ combines a multifunctional electronic counter and a Sharpie® pen for marking Petri dishes to prevent missing or double-counting colonies.

## ECOUNT™

- Five-digit display
- Touch controls for multiple counts: Up to 32 different zones
- Counter automatically beeps with each count, or select the LED flash mode for a visual alert of each count
- Working temperature from 0 to 50 °C
- Light ergonomic body balanced for easy manipulation

Designed for rapid, accurate counts. Press the lock key to write with the Sharpie® pen without counting. The Sharpie® pen provides highly visible marks on both plastic and glass dishes. Counter accepts both fine and extra fine point Sharpie® pens. Easily change colours for separate counts.



## DELIVERY INFORMATION

Includes a three-volt CR 1220 lithium battery, one fine-point Sharpie® pen and weighted stand.

Description	Pk	Cat.No.
Electronic colony counter	1	710-0596
Replacement pens	12	710-0918

## Avantor Services



## Calibration Services

Air samplers are key to any environmental monitoring programme so regular checking of the volume of aspirated air is imperative to ensure that there are no errors in the monitoring of contamination.

VWR has a comprehensive calibration and service programme on air samplers. We recommend performing air sampler calibration every 6-12 months or sooner if the air sampler has potentially been damaged or the flow rate has been compromised.



# Avantor equipment services

The unique position that Avantor occupies in the market enables us to offer you an extensive range of equipment in addition to a top-class technical service.

Our qualified and factory-trained team of over 30 Service Engineers and our customer-focused administrative team provide support for all of your equipment.

We are committed to providing excellent equipment services and customer service to ensure that all your equipment is installed, repaired and maintained efficiently and effectively throughout its life cycle.

## INSTALLATION

When purchasing all your devices through our sales channel VWR, Part of Avantor, we also offer the technical installation and product training. For this, our Service Coordinators will schedule an installation date in consultation with you. If desired, we can also coordinate the transport of your new device accordingly. Our team of Service Engineers will install the appliance together with you according to the supplier's specifications and declare it conform by means of a test. You will receive an installation report.

## CALIBRATION

The quality of your products and services is increasingly dependent on reliable measurements. Your lab is also subject to specific equipment regulations. By mutual agreement, Avantor Services can calibrate and functionally test all your equipment to ensure their accuracy and reliability. We adjust your equipment or carry out a repair according to the specifications that were agreed upon in consultation.

Our Service Engineers are certified by the relevant suppliers and perform all calibrations in accordance with supplier procedures or ISO standards. For the highest accuracy and reproducibility, all calibrations performed by Avantor Services are traceable to an international or national standard. We supply a fully recognized and traceable calibration certificate with all calibrated measuring instruments. Our calibration services are also available when purchasing new equipment.

## REPAIR

### Onsite repair

Our team of experienced and supplier-trained Service Engineers specialize in repairing all your equipment. They always take a large stock of original spare parts with them during every intervention, so that most repairs can be completed on the first visit.

### Internal repair

Our workshop is equipped for the repair of smaller equipment. After telephone contact with our Service Coordinators, your defective equipment will be picked up by our own drivers for inspection and repair by our experienced and supplier-trained Service Engineers. We will send you a quote within three days of receipt of the equipment. If repairing your equipment turns out to be more expensive than 50% of the purchase value, we will mention this on the quotation.

### Warranty

Avantor Services offers a complete range of equipment with full manufacturer's warranty. If you wish, this warranty period can be extended. In addition, we give you a standard 6-month warranty on our repairs.

## VALIDATION

Advanced measurement devices are used during the validation of your equipment to obtain accurate and reproducible results at all stages of the validation project.



We also offer you extensive support in determining your validation expectations. Our specialized Service Engineers have extensive experience in performing these validation services for large and small companies in all sectors. We can help you control your sterilization process, temperature-controlled environments, laminar flow cabinet, ...

Afterwards you will receive the documentation, protocols and procedures you need to comply with your VMP (Validation Master Plan). This gives you the opportunity to focus on your primary processes.

#### **IQ/OQ/PQ**

By using our IQ / OQ / PQ qualification services you can achieve and maintain compliance with FDA, GMP / GLP, European Pharmacopoeia and ISO. These services assure you that the qualified equipment or instruments meet the required specifications.

By default, we use the supplier's official IQ / OQ protocols. If desired, we can tailor our own Avantor IQ / OQ protocols to your compliance level. As an independent partner, we can guarantee that the validation tests are performed by our certified Service Engineers.

For equipment in daily use, we offer a performance rating (PQ). We will test the equipment in actual operating conditions and document these results in a qualification report.

#### **EQUIPMENT MANAGEMENT**

Avantor has developed the Equipment Manager (VEM) software to keep track of all equipment, but goes beyond maintenance management with numerous service partners. The software handles service requests as well as related documentation, warranties and service contracts. This software is built around a centralized database for your devices, which not only stores the inventory of your devices, but also lists of spare parts, consumption lists, documentation, pictures, SOPs, the status of a device, etc. It tracks the devices serial number or the order IDs and manages warranties, service provider and supplier information, as well as service requests and work orders. In addition, Equipment Manager (VEM) continuously records service data and provides purchasing managers with better information to prepare for the next equipment purchase (downtime, repair costs, total cost of ownership).

#### **SERVICE PROJECTS**

Complex projects, such as a relocation or complete refurbishment of a new laboratory, require a lot of energy and time from your team. In consultation with you, we look for the best solutions to ensure that these projects run smoothly. Our experienced team ensures that your project is seamlessly coordinated with the various partners. We closely monitor delivery times and quality with suppliers, specialized moving companies, contamination experts, external inspectors and our own Service Engineers. We do everything we can to respect your specific wishes and timeline.

# Setting science in motion to create a better world



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