



sartorius stedim
biotech

BACTair™



turning science into solutions

Big Impact.

A New Impact for Microbiological Air Monitoring

As regulations become more stringent, the microbial monitoring of ambient air is increasing importance in today's world. For example, microorganisms can have a major impact on product quality and the production process, and can even pose health hazards.

Air quality plays a key role in the pharmaceutical, biotechnological and food and beverage industries, hospitals and in the field of occupational and environmental protection.

The most frequently used method today for sampling airborne microorganisms is based on the Andersen principle, which traps particles on culture media plate by impaction. In this method, air is suctioned through a sieve, accelerated and directed against a culture medium plate. Due to their inertia, airborne organisms are prevented from

being swept away by the diverted stream of air and are impacted onto the culture medium plate. After sampling, the culture medium plate is incubated and the colonies grown are counted as colony-forming units/m³ of air (cfu/m³).

Sartorius Stedim Biotech has developed a new system for sampling airborne microorganisms that allows impaction onto culture media plates, where the plates function directly as collection heads. This means that the collection properties are integrated right into the culture media plates. Metal sieve plates or metal collection heads with slots, which have to be sterilized for routine samplings on a regular basis are eliminated. Now, non-sterile sieves or slots have become a thing of the past.

The geometry of the culture medium plate and the 400 holes in the sieve plate yield exceptional sampling efficiency, which is generally higher than that of other impaction samplers.



This new method uses the AirPort MD8 air sampler to pump the air stream.



BACTair™ culture media plates are ready-to-connect to the AirPort MD8



BACTair™ culture media plate prior sampling

Only 3 handling steps with BACTair™ provide you with an airborne microorganisms

1) Just connect your BACTair™ plate



2) Sample (Press START)



3) Remove your BACTair™ plate and incubate



BACTair™ Features

- Gamma-sterile
- Integrated disposable sieve
- Pre-filled with agar medium
- Individually packaged

BACTair™ Benefits

- No sterilization required
- No handling of re-usable sieves
- No preparation of media
- No desiccation effects

- Samples 1m³ in just 8 min
- Optimized geometry
- Filled with sufficient amount of media

- Fast sampling
- High recovery efficiency (details on page 6)
- No effects due to evaporation (details on page 6)

- Protection with covers
- And after incubation:
- Optimized geometry
- No correlated sampling head

- The agar surface is protected
- No colony overlapping means no correction factor (details on page 6)
- No complicated correlation of sampling heads and devices

The detection of airborne microbial contamination has never been so easy and so reliable!

exceptional recovery of

BACTair™ saves your labor-time and guarantees reliable results:

Preparation- and sterilization-free procedure reduce the risk of secondary contamination.

Culture media plate properties are maintained from purchase through to sampling.

Detects total viable airborne microorganisms in a very short sampling time.

Easy handling with no risk of secondary contamination.

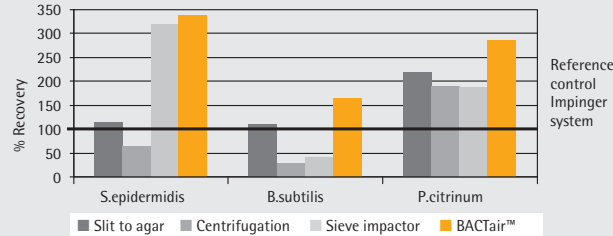
Results are easy to access and evaluate.

Makes your calibration and sampler management fast and easy.

BACTair™
culture media plate
after sampling
and incubation



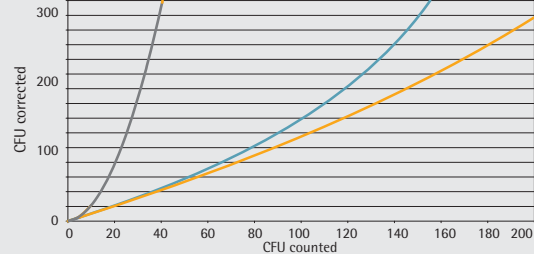
BACTair™ stands for optimized geometry



Recovery Comparison Study

Aerosols of three different bacteria suspensions are released into a sampling channel under defined conditions. At the end of the channel the aerosols are sampled using four different air monitoring methods.

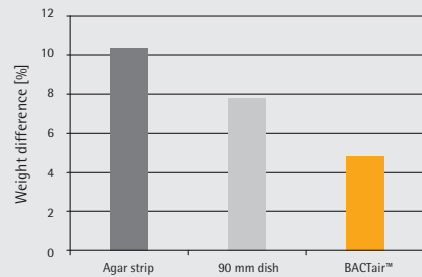
As a reference method two parallel impinger systems were used (100 % recovery). BACTair™ culture media plates show the highest recovery of bacteria due to optimized geometry and complete disposable design.



Correction Factors

The recovery of colony-forming units depends on the number of holes in the sieve plate onto which the air is impacted. The lower the number of holes, the higher is the risk that more than one microorganism will pass into one single hole (colony overlapping).

A correction factor (K) can be calculated mathematically: $K = x \cdot (\ln(x) - \ln(x-n))$
 x = number of holes in the sieve plate
 n = colony count.
 BACTair™ culture media plates provide 400 air impaction holes. A correction factor is only relevant with very high CFU counts.



Evaporation Effects

During the sampling period, agar media may dry out, thus inhibiting the growth of the collected microorganisms. The weight of several BACTair™ culture media plates was measured prior to and after sampling and compared to other impaction agar plates or strips.

Because of its optimal design BACTair™ shows the lowest desiccation effects and enables viable microorganisms to grow under optimal conditions.

The number of impaction-holes and their optimal position in relation to the sampling area are the key to reliable results.

Ordering Information

Description	Order Number
BACTair™ Culture Media Plates	
BACTair™ – culture media plates Tryptic Soy Agar (TSA), 110 mm, individually, sterile packaged, 10 units	14320-110----ACD
BACTair™ – culture media plates Sabouraud agar (acc. USP), 110 mm, individually, sterile packaged, 10 units	14321-110----ACD
Other BACTair™ culture media types on request	
Air Sampler	
AirPort MD8 Air Sampler for BACTair™ culture media plates incl. charger	16757
Accessories	
Adapter for BACTair™ culture media plates on the AirPort MD8 air sampler	17803
Covers for BACTair™ culture media plates, 10 × 2 units individually, sterile packaged	1ZPX-D0002



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