



bioaerosol

Air Sampling Bioaerosol sampling



Bioaerosol contamination is a growing concern in today's indoor environments. Because bioaerosol contamination may be hard to detect by sight or smell, a thorough evaluation may be necessary to positively confirm its presence and initiate an investigation into the possible source.

Evaluation may involve the collection of bulk air and/or wipe samples followed by analysis at a qualified environmental microbiology laboratory.

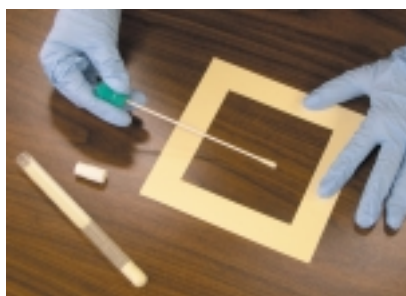
Samples are collected using a variety of sampling techniques.

Principle of Sampler	Flow Rate Operation	(L/min)	Contaminants	Sampler Advantages	Sampler Limitations	See Page
BioSampler	Collection into swirling liquid.	12.5 (sonic flow).	Fungi (viable & total), endotoxins, and bacteria.	<ul style="list-style-type: none"> • Sampling time up to 8 hours. • High collection efficiency. • Reduces particle bounce and re-aerosolisation; preserves viability. • Use of non-evaporating liquids. 	<ul style="list-style-type: none"> • Less efficient collection of hydrophobic bacteria & spores. • Water-based collection liquids. 	80
IOM with Multidust Foam Disc	Filtration using porous foam disc & membrane filter.	2	Fungi (viable & total) and bacteria.	<ul style="list-style-type: none"> • Bioaerosols defined by different size fractions (inhalable, respirable). • Personal bioaerosol sampling. • Economical. • Better micro-organism survivability. 	<ul style="list-style-type: none"> • Dessication. • Breaking/deformation. • Limited viability with standard filters. 	
BioStage Single-stage Impactor	Impaction onto agar	28.3	Fungi (viable) and bacteria.	<ul style="list-style-type: none"> • Easy-to-use. • Organisms remain intact and viable. • Cost-effective. • Time-proven collection method. • Meets NIOSH Methods 0800 and 0801. 	<ul style="list-style-type: none"> • Particle blow off/bounce. • Particle impaction. • Short sample times. 	79
Surface Swab Kit	Wipe sample	N/A	Fungi (viable & total) and bacteria.	<ul style="list-style-type: none"> • Easy-to-use. • Fast sampling. • Non-destructive. • Characterises source contamination. 	<ul style="list-style-type: none"> • Samples must be handled aseptically. • Multiple samples should be taken. • Re-aerosolisation of microbes. 	91

Sterile Surface Swab Kit For Biological Sampling

The easy-to-use **Surface Swab Kit** is ideal for determining the relative degree and type of biological contamination in an area.

This non-destructive method can be used safely on most surfaces and materials.



Description	Part No.
Surface Swab Kit for Bioaerosols Includes 10 sterile swabs in transport tubes and 10 templates	225-2402

Bioaerosol sampling

The Biostage

The **Biostage** single-stage bioaerosol impactor operates on the principle of inertial impaction and meets NIOSH Method 0800 and 0801 specifications for sampling indoor and outdoor air for viable micro-organisms including bacteria, fungi and actinomycetes.

Made of precision-tooled aluminium, the sampler contains an inlet cone, jet classification stage, and base plate held together by three spring clamps and sealed with two O-ring gaskets.

The impactor stage contains 400 precision-drilled holes. Air is drawn through the impactor and accelerated to direct airborne particles toward the surface of the agar collection medium.

The BioStage is used with a sample pump capable of 28.3 L/min



Easy Operation

The BioStage is easy to use. Simply connect the BioStage to a vacuum pump capable of 28.3 L/min. and check pump flow rate with a rotameter. Remove the inlet cone and jet classification stage and place an agar* plate with medium (available from your laboratory) on the base of the sampler. Replace the jet classification stage and inlet cone. Secure with the spring clamps. Sample for an accurately known time (e.g., 10 minutes).

After sampling, remove the agar plate, seal it, label it and cover with ice packs. Send the plate to a qualified laboratory for microbial analysis.

*Agar media not available directly from SKC

Applications

- Indoor Air Quality (IAQ) studies
 - Filter & clean room efficiency studies
- Pharmaceutical production
 - Brewery fermentation
 - Food processing areas
- Sewage treatment plants
 - Hospital environments
- Cosmetic manufacturing
 - Grain processing and transportation

See also

The Indoor Environment
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Surface Sampling
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Air Sampling Kits
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Description	Part No
BioStage Single Stage Bioaerosol Sampler	225-9611
BioStage 200 has 200 holes and operates at 14.15 L/min for sampling in half the time	225-9610
Tripod Stand for BioStage, telescopes to 5 ft.	225-9536
Calibration Adaptor	225-9537

The BioSampler®

Efficient Collection of Bioaerosols into Swirling Liquid

About the SKC BioSampler

The SKC **BioSampler**® is a glass collection device resembling an impinger. Specific features are incorporated into this patented* design to allow high collection efficiency of total or viable bioaerosols for sample times of up to 8 hours.

Advantages of the BioSampler

- Patented* swirling liquid method minimises re-aerosolisation, reduces particle bounce and preserves microorganism integrity and viability.
- Can be used with non-evaporating collection liquids such as **ViaTrap**® mineral oil, which has a viscosity much higher than water.
- When used with **ViaTrap**, collection efficiency stays constant over an eight-hour sampling period.
- All glass construction allows easy cleaning, sterilising, autoclaving and reuse.
- Samples can be analysed using a variety of methods.

Sampling with the BioSampler

The BioSampler is designed to operate with a sonic flow **BioLite** pump (Part No. 228-9610).

The BioSampler's three tangential nozzles act as critical (sonic) orifices, each permitting 4.2 L/min of ambient air to pass through resulting in a total flow rate of approximately 12.5 L/min.

BioSampler Applications

Indoor air quality investigations
 Infection control in hospitals and veterinary clinics
 Quantification of micro-organisms in agricultural dust
 Biological research
 Infectious disease investigations in public buildings
 Safety concerns in food handling and processing plants
 Workplace exposures in industries such as pulp and paper mills or wastewater treatment plants



Description	Part No	
BioSampler BioSampler, 3-piece glass includes inlet section, outlet section, and collection vessel	20 ml 5 ml	225-9595 225-9593
BioSampler Collection Vessel (bottom) and ground joint cap, for transporting samples	20 ml 5 ml	225-9596 225-9596A
ViaTrap Collection Media , special mineral oil for bioaerosol sampling	125 ml 500 ml 1 litre	225-9598A 225-9598 225-9599
BioSampler Mini Kit includes 1 BioSampler, two 20 ml collection vessels (bottoms) with caps, 1 BioSampler case with mounting rod, and 1 ViaTrap (125 ml)		225-9597