

INDOOR AIR QUALITY SAMPLING INSTRUCTIONS

NOTE: All agar plates, swabs and Andersen samplers should be shipped by overnight carrier to Analytical Services at the address listed below. Send a copy of your paperwork to Analytical Services secured in a zip-lock baggie inside the box. Samples need to be packed with ice packs to be kept cool (Not frozen!) and sent in a padded, insulated container to prevent wide fluctuations in temperature.

Analytical Services, Inc.
130 Allen Brook Lane
Williston, VT 05495
Attn: Sample Log-in
1-800-723-4432

If you have questions about any aspect of any procedure, please contact us at 1-800-723-4432 and ask for Client Services.

Instructions for Andersen 1 or 2 Stage Sampler:

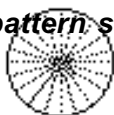
Please Note: We do not recommend sampling on Fridays as the samples should be incubated as soon as possible. However, if Friday sampling is unavoidable, all samples should be refrigerated until they are shipped via overnight delivery on Monday for receipt at our laboratory Tuesday morning.

The following procedures should be followed when performing microbiological aerosol sampling with the Andersen single stage or dual stage viable particle sampler:

1. A vacuum source capable of providing 15 inches of mercury pressure or greater must be connected to the sampler in order to achieve adequate suction. A flow meter is required on the exhaust port of the vacuum in order to assure a constant air flow of 1.0 SCFM (28.3 L/min).
2. Connect the vacuum pump to the Andersen unit without plates in the unit. Turn on the pump and allow it to equilibrate for 1-2 minutes. Be sure the rotameter is in a straight vertical position. Slowly adjust the rotameter knob to set the flow at 1 SCFM. (Read the middle of the ball.) Note - when adjusting, turn the knob slightly (no more than 1/4 turn) and allow it to equilibrate before continuing to adjust it.

Please Note: As a check on appropriate sampling air flow and lack of air leakage, make sure impactor marks are clearly visible on the agar surface after sample collection.

A Awagon wheel pattern should appear:



3. Always wear surgical gloves to prevent contamination.
4. Unscrew the teflon screws and take the sampler apart. Do not contaminate the surface with your fingers. Hold only on edges of sampler, not plenum.

5. Always put two petri dishes **of the same type** into the 2-stage sampler for each exposure (i.e: fungi & bacteria are separate exposures).

Please note: If you are using the Andersen Single Stage sampler (N6), put only one petri dish in 1 sampler at a time.

Plates used for the Andersen sampler are as follows:

<u>Label</u>	<u>Exposure</u>	<u>Color</u>
MEA	fungi	transparent tan
R2A	aerobic bacteria	no color/clear
TSA	thermophilic actinomycetes	transparent tan
BHIBLA (blood agar)	pathogenic bacteria	red
Cellulose	<i>Stachybotrys</i> sp.	Translucent/white specks

Each plate (Petri Dish) consists of two halves. The lid is clear and the bottom contains agar (impact media), which may be clear, tan, or red. Do not open the plates until they are ready to be put into 1 Andersen sampler. They are sterile and easily contaminated.

6. With a permanent marker, label each plate on the bottom half (which contains the agar) with the following information and record all data on data sheet provided:
 - a. facility
 - b. date
 - c. specific location
 - d. duration of sampling (seconds, minutes, etc.)
 - e. "upper plate" or "lower plate" (assuming 2 stage unit)
7. When opening the petri plate, place the cover into the ziploc bag you designate for the sample. Leave the cover in the bag until the plate is removed from the Andersen. This will prevent contamination.
8. For typical indoor office/industrial settings, Analytical Services recommends collecting a two minute sample for bacteria and/or fungi. For extremely clean environments, such as surgical areas, fifteen to thirty minutes may be necessary for bacteria and/or fungi. As the organisms might be injured, due to drying, sampling times should not exceed 30 minutes. **Note: Check for the Wagon Wheel pattern.**

PLEASE NOTE: TRIP BLANKS AND FIELD BLANKS ARE STRONGLY RECOMMENDED in order to detect contamination that may occur in transit or during sampling.

- Trip Blank: Simply label one of the unopened plates of each type as a Trip Blank with the date, project, etc.
- Field Blanks: Load one type of media plate(s) into Anderson but do **not** turn the pump on. Remove the plate(s) and label as Field Blank with the date, time, location, etc. Repeat with the other type of media plate(s). Proper field sampling procedures recommend that a Field Blank be taken at each sampling *location* within a building.

As no growth is expected from these blanks, you will be charged only the cost of the media plates used. However there may be additional analytical charges if growth appears and further analysis is required.

DISINFECTION! It is necessary to disinfect the sampler between locations (i.e., between samples collected from Room A and Room B). However, if you are sampling for fungi, bacteria, and/or Actinomycetes in the same location (Room A) it is not necessary to disinfect the sampler between exposures. To disinfect the sampler, wipe down all exposed surfaces with a sterile alcohol pad. Wear latex gloves so that your skin does not contaminate the exposed surfaces of the sampler. Then purge the sampler (without any plates inserted) for one to two minutes at the next location. Label and insert the plates as described above and collect the samples from the second location (Room B).

Shipping Instructions:

- a. Using parafilm, tape completely around the circumference of each dish. This is absolutely necessary to prevent contamination. Do not simply tape over the dish. You must completely seal the edge with tape.
- b. Each agar plate should be placed in its own ziploc bag.
- c. Plates should be kept cool after collection and during shipment to prevent growth of microorganisms until they reach the laboratory for processing. **It is important that the plates do not freeze during shipment.**
- d. Using bubble wrap, carefully pack all agar plates. Make sure box is labeled "Fragile" and "This Side Up". Be certain that everything is packed very carefully - assume it will be handled roughly by the carrier. Agar plates, swabs and Andersen samplers should be sent by overnight carrier to Analytical Services at the address listed on the front page. Send a copy of your paperwork to Analytical Services in the box.

Instructions for the Burkard Sampler:

Purge the sampler with test air by placing it at the first sampling point and turning it on by plugging in power supply and throwing black switch on bottom of unit without a slide inserted. Purge for two minutes.

After purging, turn the sampler off and insert test slide. A small area of each slide is coated lightly with a specially formulated grease to trap spores, pollen, particles, etc. This side must be **up** when inserted into the sampler. Do not touch the greasy side of the slide.

Insert slide into opening when red dots are lined up. Push in all the way, then close the sampling chamber by turning the ring.

Turn sampler on and time for two minutes. In clean environments sampling time may be extended to 5-15 minutes. Remove slide, label it and put it back into the box. Record the sampling data on the data sheet provided. Do not allow the greasy sides of the slides to contact each other or the long side of the box.

Instructions for Sampling with Zefon Cassettes

Label the cassette with the sample identification number and location.

Attach the outlet of the cassette to a pump which has been calibrated using a rotameter. Recommended flow rate is 0.5 SCFM (15 L/min.).

Remove and retain tape seal covering the sample inlet and start the sampling pump.

Sample for

- One (1) minute if location is an indoor environment with heavy renovation or industrial dust
- Five (5) minutes if location is an indoor environment with high activity and personnel
- Ten (10) minutes if sample location is a clean office or outdoors (no visible dust)

Turn off the pump and reseal the sample inlet with original tape seal, remove from pump and replace the plug in the outlet port.

Place in Ziploc baggie and ship overnight delivery as per instructions on front page.

Instructions for Sampling with Rodac Contact Plates:

Select the appropriate media for the target microorganisms (MEA for fungi, R2A for environmental bacteria).

Samples are collected by gently pressing the exposed media onto a sample site. Samples may be collected from smooth surfaces, such as desks, tables, walls, air ducts, etc., or irregular surfaces such as air diffusers, upholstered furniture, carpets, etc.

To collect a sample, unwrap the Parafilm from around the perimeter of the plate. Remove the lid and gently press the exposed media directly onto the sample site. Do not twist or rotate the plate while it is in contact with the surface.

Lift the plate straight up off the sample surface and recap it immediately. Wrap the entire perimeter of the plate with Parafilm to seal the plate and prevent contamination of the sample.

Label bottom of the plate with your sample identification number. Use a permanent marker.

Collect additional samples as necessary. Prior to shipping, place each plate in a separate baggie. Wrap all plates securely in bubble wrap to prevent damage during transit.

Place plates in shipping container *right side up* and label container *This Side Up*.

Samples do not need to be sent on ice, but should be sent in a padded, insulated container to prevent wide fluctuations in temperature.

Instructions for Sampling with Swabs:

To use, peel back outer package and remove culturette.

Break internal plastic ampule located at bottom of culturette by placing fingers on the bottom and squeezing. A distinct crushing sound should be heard.

Grasp cap/swab assembly and remove. Do **not** touch the sterile cotton tip or shaft of swab at any time. Limit time of exposure to air prior to sampling.

Swab area of surface to be sampled by touching cotton tip to surface and rotating and rubbing back and forth. **PLEASE NOTE:** *If quantitative results are desired (enumerations as opposed to colony type counts), the dimensions of the area swabbed must be measured and reported to the lab. (Please see footnote)*

Place swab back into tube, taking care not to touch tip or shaft of swab.

Label tube containing the swab with - facility, specific location, date and indicate testing you desire (i.e. bacteria/fungi/both).

Ship Culturette assembly back to Analytical Services, Inc. where it will be analyzed for fungi and/or bacteria.

Legionella, Mycobacterium Swabs:

Unscrew cap and remove swab.

Add 4-5 ml of sample water, wet the swab.

Swab area of concern (i.e. showerhead) and place swab into container.

Tighten screw cap and wrap in parafilm.

* ASI recommends Colony Type Counts (CTC) and identification of bacteria and fungi recovered from swabs. We do not recommend total enumeration of colony forming units (CFU) due to data interpretation difficulties and other issues.