



## Microbiology Sampling Protocol

### For use with Via-Cell Cassettes

This is a general list of procedures to follow in order to ensure quality and accuracy of analysis. Please refer to the User Manual of the cassette and / or pump for a complete list of instructions.

Field Equipment:      Calibrated High Volume Pump (or Zefon Bio-Pump), Timer, Via-Cell Cassettes, Permanent Marker, Latex Gloves

- 1) Before testing, be sure the flow rate of your pump is calibrated to 15 L/min\* using a rotameter (refer to owner's manual of pump for any special calibration methods). Wear gloves or be sure hands are clean.
- 2) Be sure to have at least three extra cassettes for each job: one for outside sample(s), one for a non-complaint / non-suspect area (if possible), and one for a blank sample. As a general rule, use at least one air cassette for every 1,000 square feet of space to be tested. NOTE: Be sure each cassette is not expired and has been stored in an environment free of excess dust, moisture, and/or extreme temperatures.
- 3) Using the tear strip, tear open the re-sealable foil package. Using a permanent marker, write a unique sample number or the location of sampling on the foil package. NOTE: To view the cassette serial number, remove the blue inlet cap and view through the top of the cassette; the serial number is printed on the slide inside the cassette. Immediately replace the blue cap.
- 4) Once you are ready to sample, remove the blue outlet plug; connect the cassette to the sampling pump using flexible tubing, or insert the cassette into the mini-pump machine as instructed by the user manual.
- 5) Determine the appropriate sampling duration. Refer to Table 1 for Zefon's Sampling Recommendations.\*\*\*
- 6) Remove the blue inlet cap, and turn the pump on. Store the plug and cap in the foil package. Sample for the allotted time. NOTE: Zefon notes that the cassette can be oriented in any vertical or horizontal direction and in confined spaces (e.g. ducts, plenums, wall cavities).

Table 1: Recommended Sampling Intervals for the Via-Cell Cassette

Site Location	Sampling Duration (Minutes)	Total Volume
Clean, dust-free indoor space or Outside sample	10.0**	150 L/min
Indoors with high activity	5.0	75 L/min.

Indoors with visible excess dust	1.0	15 L/min.
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7) Turn the pump off, remove the cassette from the tubing or the bio-pump, and replace the blue plug and cap on the cassette immediately. NOTE: Do not pull the tubing off the cassette while the pump is on; this may cause a suction pull to crush the slide inside the cassette.

8) Place the Via-Cell cassette back into the foil package, and seal it closed. Be sure the red safety seal label is applied overtop the foil package in order to ensure sample integrity.

9) Write the sample information on the SanAir Technologies Laboratory Chain-of-Custody. NOTE: For Culture Analyses, there is no need to fill out the “Turn-Around-Time” as C1 results take a standard 5 – 10 days.

Sample Number (i.e. a unique sample number or the serial number of cassette)

Sample Identification (e.g. location of sampling)

Sample Type (AC)

Analysis Type (A1/A2 and / or C1)

Turn-Around-Time (For A1/A2: 3, 6, 24, or 48 hours)

Total Volume: Total Volume in Liters is equal to the flow rate of your pump (e.g. 15 L/min) multiplied by the duration of sampling (e.g. 5 minutes). For example, an air cassette sample that was pulled for 5 minutes on a pump calibrated to 15 L/min would have a total volume of 75 L/min ( $15 \text{ L/min} \times 5 \text{ min} = 75 \text{ L/min}$ )

Time (Start – Stop): In order to keep track of the duration of sampling, the start and stop times of sampling (or the total time for sampling) may be noted. NOTE: If the start and stop times are noted on the COC, but the Total Volume is left blank, then the flow rate of the pump must be noted in Special Instructions so that the Total Volume can be calculated.

10) Sample the remaining sites, following steps 3 - 9 for each cassette.

11) Make sure the package used for shipping is well cushioned to avoid breakage. Refrigeration of samples is not necessary during storage or shipment. Ship to SanAir Technologies Laboratory immediately so that samples arrive within 24 hours of sampling.

\* Zefon International recommends the flow rate always be set at 15 L/min for optimal collection efficiency for all particle types found in indoor and outdoor air.

\*\* Longer sampling durations may be ideal in the winter months.



\*\*\* Zefon International notes that longer or shorter collection times may be needed according to the “specific conditions” of the environment to be sampled.

#### References

Via-Cell Bioaerosol Sampling Cassette, Laboratory and User Manual (Zefon International, 2000)

Via-Cell™ is a registered trademark of Zefon International. For more information contact Zefon at [www.zefon.com](http://www.zefon.com).