

Your **COMPLETE** Source for Air Sampling Cassettes and Equipment



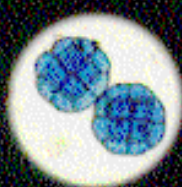
ZEFON AIR-O-CELL



Zefon
INTERNATIONAL

PARTICLES COLLECTED WITH AIR-O-CELL™

The Zefon Air-O-Cell is specifically designed for air sampling in the collection of mold spores, pollen, and other organic and inorganic particulate. The Air-O-Cell is small (37mm diameter) for convenient positioning where needed. Air-O-Cell cassettes are sealed and serialized, insuring the collection surface will not become contaminated, while providing positive chain-of-custody. The Air-O-Cell also offers superior collection efficiencies due to the extremely high tack surface of the sample collection slide which is optically clear and smooth for ease of examination. Shown are examples of typical specimens collected with the Air-O-Cell.



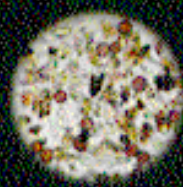
ACACIA POLLEN



DIESEL PARTICLES



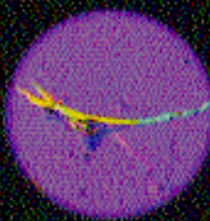
TREE FERN



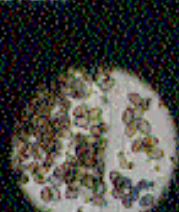
SMUT-LIKE SPORES



ALGAE



CELLULOSE FIBER (PLM)



DRY ROT SPORES



PINE POLLEN



SMUT-LIKE SPORES



CHAETOMIUM



CURVULARIA



STACHY BOTRYS



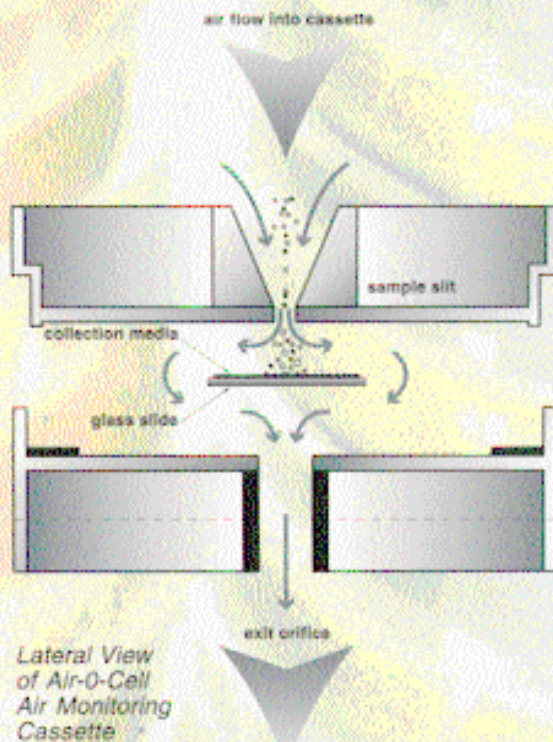
SKIN CELLS

SOURCE: DAN BAXTER
ENVIRONMENTAL TESTING ASSOCIATES

ZEFON AIR-O-CELL™ AIR MONITORING CASSETTE

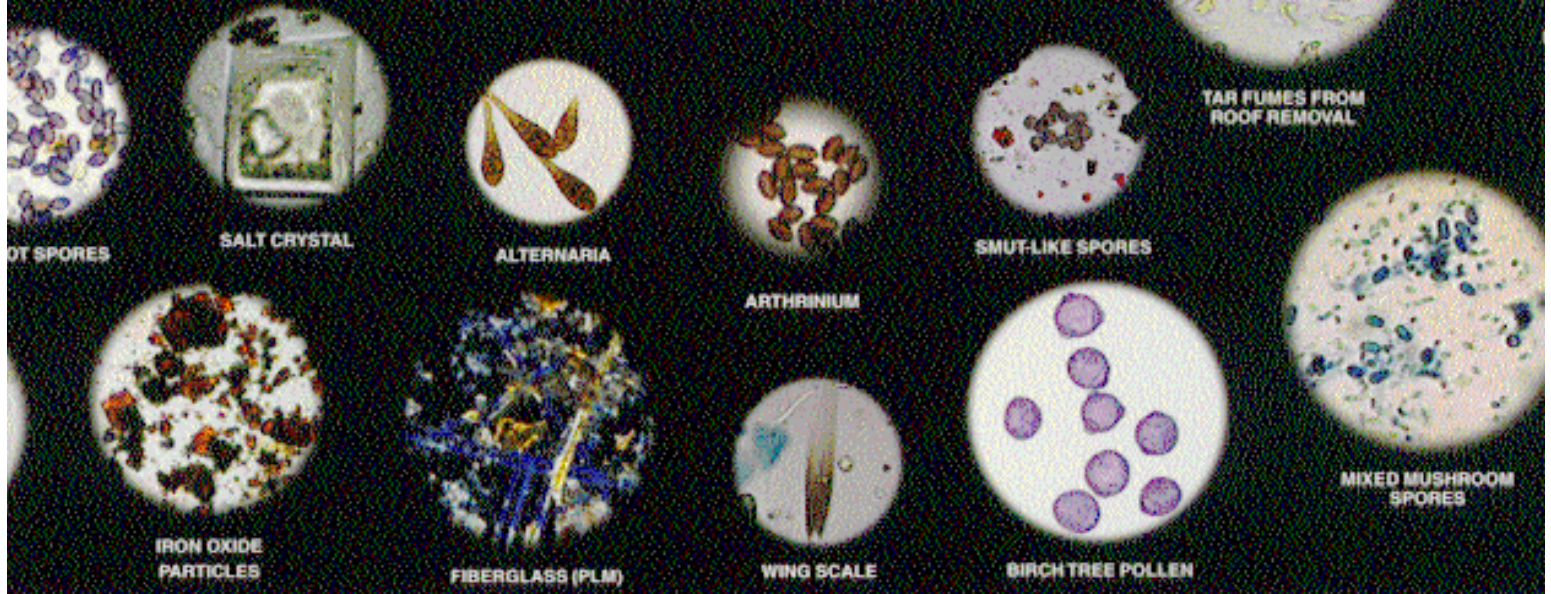
The Air-O-Cell, manufactured and distributed by Zefon International, is a unique sampling device specially designed for the rapid collection and analysis of a wide range of airborne aerosols. The Air-O-Cell cassette collects both viable and non-viable particulate such as mold spores, insect parts, particles, fiber glass, cellulose, combustion particles, pollen, skin cell fragments, fly ash, copier toner particles, and much more.

The Air-O-Cell operates upon the principle of inertial impaction. Air flow is accelerated as it is drawn through the tapered inlet and directed through a slit towards a small slide containing an optically clear collection media. Particles become impacted upon the media and the air flow continues out the exit orifice.



Air-O-Cell is, quite simply, one of the most convenient tools we have found for evaluation of IAQ. It can be an effective method for identifying airborne molds, pollens, and other particulates. We have also found it useful as a 'microvac' sampler for collecting surface-dust mites and skin cells."

Roman J. Narconis, Jr., President/CEO, Global Environmental Laboratories, Inc., St. Louis, Missouri



MANY USES

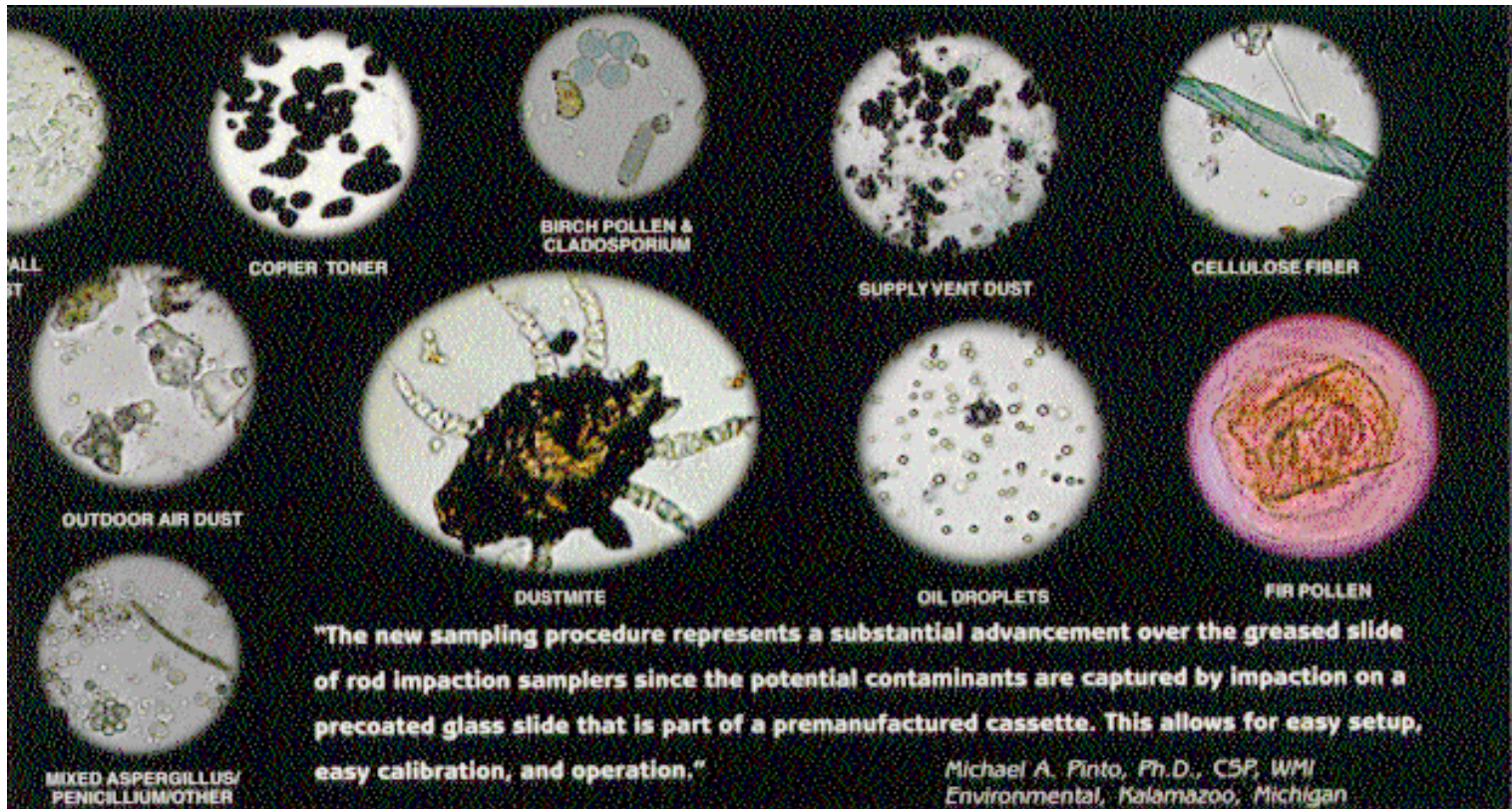
The Air-O-Cell is simple to use. Microscopic analysis of particulate is counted and quantified by examination of deposition traces by a qualified laboratory. The Air-O-Cell sampling method is ideal for, but not limited to:

- Indoor air quality
- Wall cavity sampling
- Micro-Vac sampling for clean rooms
- Airborne monitoring for clean rooms
- Particle allergen testing for pollen, molds, and other particles
- Flood remediation and restoration monitoring
- Stack emissions for fly ash and dusts
- Fiber analysis

PARTICLE CUT SIZE

The particle cut size was obtained experimentally by measuring collection efficiency of the sampler with liquid (oleic acid) particles, at various sampling flow rates.

Particle bounce was evaluated with monodisperse solid spherical test particles (PSL) of the following geometric diameters: 1.6, 2.15, 2.45, 2.75, 2.9, 3.5, and 5.1 μm . Particle bounce was also investigated with fungal spores of *Penicillium* molds. These species cover the lower size range of fungal spores that are typically collected by the Zefon Air-O-Cell sampler. It was seen that collection efficiency varied as a function of: 1) flow rate differences and 2) particle size and surface characteristics. Experimental data for the different test particles has shown that the spiny fungal spores



"The new sampling procedure represents a substantial advancement over the greased slide of rod impaction samplers since the potential contaminants are captured by impaction on a precoated glass slide that is part of a premanufactured cassette. This allows for easy setup, easy calibration, and operation."

*Michael A. Pinto, Ph.D., CSP, WMI
Environmental, Kalamazoo, Michigan*

bounce more than the solid spherical particles with a smooth surface. When the sampling flow rate is set at 15 lpm, the collection efficiency for *all* types of particles investigated is about the same. Therefore, the recommended sampling flow rate is 15 lpm.

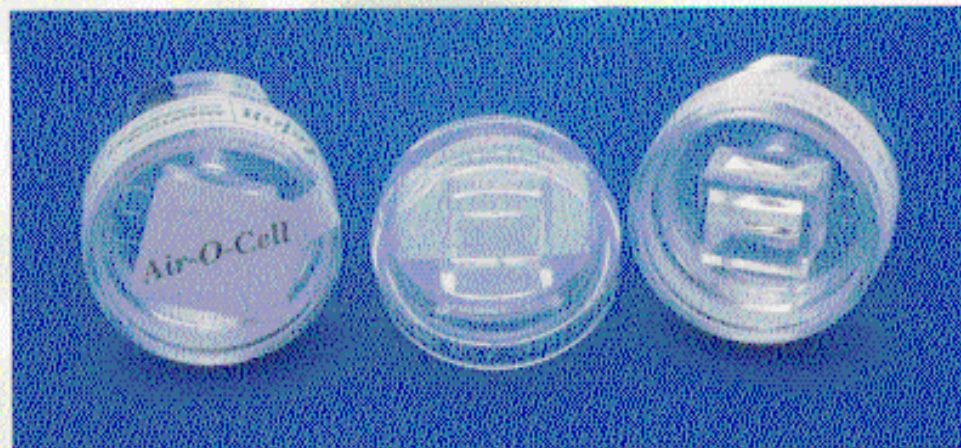
SAMPLING FLOW RATE	10	15	20	25	30
50% PARTICLE CUT POINT SIZE	3.2	2.6	2.2	2.0	1.8

(PLUS OR MINUS 5%)

THEORETICAL MEASUREMENT AND EXPERIMENTAL DETERMINATIONS ON THE 2500-AIR-O-CELL SAMPLER'S PARTICLE CUT SIZE WAS EVALUATED BY KLAUS WILKER, PH.D., PROFESSOR, DEPARTMENT OF ENVIRONMENTAL HEALTH, UNIVERSITY OF TUCUMAN

"The Air-O-Cell sampler is extremely efficient at obtaining high quality samples in indoor and outdoor air quality investigations. This new method now makes accurate analysis possible at a lower cost and in one tenth the time than traditional filter sampling and has allowed me to provide my clients with a high quality, cost effective service."

Daniel M. Baxter, Environmental Testing Associates, San Diego, California





ZEFON MINI-PUMP

The Zefon Mini-Pump Kit is a convenient hand-held pump designed for exclusive use with the Air-O-Cell Bioaerosol Air Sampling Cassette. The pump delivers an adjustable flow rate, utilizing a portable battery pack, with built-in TIMER for *unattended* sampling. The rechargeable battery pack can also operate in AC mode with adapter/charger. The kit comes complete

with pump, battery pack, charger, special rotameter, and carrying case. A handy desktop stand for the Zefon Mini-Pump is also available to hold the pump in an upright position for hand-free usage. The stand also threads onto a multi-section tripod for elevated sampling.

ZEFON QUIET PUMP

The Zefon Quiet Pump was created to be the area sampling pump of choice. Available in either *HIGH* or *MEDIUM* volume, the Quiet Pump features a durable chemical and water resistant housing which reduces operating noise. The Quiet Pump has a lockable air flow valve, hour meter, internal cooling fan, replaceable HEPA filters, On/Off switch, and an integral three-section stand. The Quiet Pump is a desirable option when conducting indoor air quality studies.



SAMPLING RECOMMENDATIONS

The Air-O-Cell Air Sampling Cassette is designed to operate at a recommended flow rate of 15 lpm. Lower flow rates may result in a lower collection efficiency of particles. Higher flow rates may damage the morphology of some materials or result in the loss of large particles (50 μm or larger).

The following table illustrates sampling intervals for environmental dust conditions:

OUTDOOR SAMPLING ON A CLEAN, WINDLESS DAY:	10 - 60 MINUTES
CLEAN OFFICE ENVIRONMENT OR OUTDOORS:	10 MINUTES
INDOOR ENVIRONMENT, HIGH ACTIVITY PERSONNEL:	5 MINUTES
INDOOR ENVIRONMENT WITH DRYWALL RENOVATION:	1 MINUTE
INDOOR ENVIRONMENT WITH INDUSTRIAL DUST:	1 MINUTE
INDOOR ENVIRONMENT WITH VISIBLE DUST EMISSIONS:	5 MINUTES

For further technical documentation about the Zefon Air-O-Cell™ or for additional literature, call our Customer Service Department between 8:30 am to 5:30 pm EST at 1-800-282-0073

We can also assist you in placing an order.
Fax: 1-727-323-6965

Visit us at www.zefon.com



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