

# 2019-2020 PRODUCT CATALOG



**International Edition**



*The Professionals Choice for Air Sampling Equipment*



# SAMPLING MEDIA & CASSETTES



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# Air-O-Cell® Bioaerosol Cassette



The Air-O-Cell® is a unique sampling cassette designed for the rapid collection of a wide range of both viable and non-viable aero-allergens including mold spores, pollen, insect parts, skin cells, fibers and inorganic particulate.

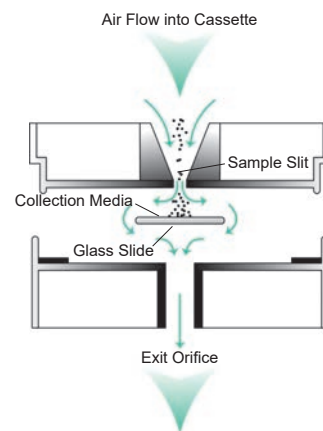
**Features:**

- Industry proven & accepted
- Independently validated
- Laboratory preferred, easy to analyze
- Proven results
- No sample loss during shipping & handling
- Pre-loaded, no slides to prepare

The Air-O-Cell operates upon the principle of inertial impaction. Particulate laden air is accelerated as it is drawn through the cassette's tapered inlet slit and directed towards a small slide containing the collection media, where the particles become impacted, and the air flow continues out the exit orifice. The adhesive nature of the collection media prevents the collected particulate from blurring or washing off during the staining process, and eliminates sample loss from vibration during handling and shipment.

After sampling is completed, the cassettes are sent to a laboratory, where the slides are removed and direct microscopic analysis can be immediately performed. The collection media is compatible with a wide range of biological stains and refractive index oils, allowing direct qualitative and quantitative analysis of organic and inorganic particulate.

Air-O-Cell can be used with any standard off-the-shelf sampling pump capable of drawing 15 LPM open flow, including the Zefon® Bio-Pump® Plus, a convenient battery powered hand-held pump for ease of sampling.



## Examples of Particulate Collected with Air-O-Cell®



PRODUCT	DESCRIPTION
AOC050	Air-O-Cell® Air Sampling Cassettes, 50/bx
AOC010	Air-O-Cell® Air Sampling Cassettes, 10/bx
AOCCAL	Air-O-Cell® In-Line Calibration Adapter, each



# Air-O-Cell® Sampling Starter Kits

Starter kits are an easy, convenient way to get everything you need to begin sampling for mold. Each kit comes in a convenient toolbox-style carrying case and includes basic set-up and use instructions.

Ultimate Kit Shown



PRODUCT	BASE KIT	SAMPLING MEDIA
Z-LITE-BMKIT (120v) Z-LITE-BMKIT230 (230v)	<b>Basic Kit:</b> Z-Lite™ IAQ Pump (Includes Integrated Combination Flow Meter/Regulator Valve) Tubing Sampling Stand Bioisolation Filter Toolbox Style Carrying Case	10 Air-O-Cell® Cassettes
Z-LITE-DMKIT (120v) Z-LITE-DMKIT230 (230v)	<b>Deluxe Kit:</b> Z-Lite™ IAQ Pump (Includes Integrated Combination Flow Meter/Regulator Valve) Tubing Sampling Stand Bioisolation Filter Toolbox Style Carrying Case	20 Air-O-Cell® Cassettes 25 Bio-Tape™ Slides 10 Mold Swabs
Z-LITE-UMKIT (120v) Z-LITE-UMKIT230 (230v)	<b>Ultimate Kit:</b> Z-Lite™ IAQ Pump (Includes Integrated Combination Flow Meter/Regulator Valve) Tubing Sampling Stand Bioisolation Filter Toolbox Style Carrying Case	50 Air-O-Cell® Cassettes 50 Bio-Tape™ Slides 50 Mold Swabs 10 Inner Wall Attachments



Don't forget to attend training classes for the proper use of this equipment and testing of mold. Our starter kits provide everything you need to begin testing along with general instructions on using the equipment. This is not intended to replace formal instruction, nor is it intended to teach how to perform an inspection. If you need help in locating a reputable training company, contact our sales department and tell them your needs. They can guide you in the right direction for upcoming training classes by various organizations.

# MoldSNAP™ Sampler

A cost effective first-line mold screening tool that efficiently and reliably collects mold and allows for simple lab analysis.

MoldSNAP™ is designed as a first-line mold screening tool that can be easily used by home inspectors to get preliminary information on whether a mold problem may exist and further investigation is warranted. MoldSNAP is a type of “spore trap” impactor that uses slit impaction as the collection mechanism. This is important as slit impaction is not only the most reliable collection method, it is an industry recognized method that allows superior mold spore collection.

Features:

- 5 Liters x 5 minute sampling
- Quick, low volume sample
- Industry proven collection & analysis method
- Easy for labs to analyze
- Pre-loaded, no media to prep in the field



### Currently using the Micro5® product for mold sampling?

Upgrading to MoldSNAP is not only easy, but provides many benefits. It is easy because all of your current pump equipment is compatible with MoldSNAP, and MoldSNAP offers an industry standard collection method that is universally recognized.

PRODUCT	DESCRIPTION
MS050	MoldSNAP™ Sampler, 50/bx

Note: Limited shelf life

## Inner Wall Sampling Attachments

Zefon® Inner Wall Attachments are used in conjunction with Air-O-Cell®, MoldSNAP™, or Via-Cell® cassettes to non-destructively access microbial contamination in a wall cavity.



To use, simply drill a 3/8" hole (preferably by hand). Connect the tubing attachment to the cassette and insert the tube into the wall.



AOCWS10-KIT

PRODUCT	DESCRIPTION
AOCWS10-KIT	Air-O-Cell® Wall Sampling Adapter Starter Kit, Includes 10 adapters and a plunger rod
AOC-WS10	Air-O-Cell® Wall Sampling Adapters Only, 10/pk
SNAPWS10-KIT	MoldSNAP™ Wall Sampling Adapter Starter Kit Includes 10 adapters and a plunger rod
SNAP-WS10	MoldSNAP™ Wall Sampling Adapters Only, 10/pk

# Via-Cell® Bioaerosol Sampling Cassette

The Via-Cell® bioaerosol sampling cassette is designed to collect both viable and non-viable bioaerosols, maintain viability of the viable mold spores and prevent growth during transport to the laboratory. Simply connect it to any pump calibrated to 15LPM and run your sample. The key to the Via-Cell is that the media used for collection maintains viability of spores and allows several analysis options.



## One Sample, Multiple Analysis Options

### Culturable Sampling

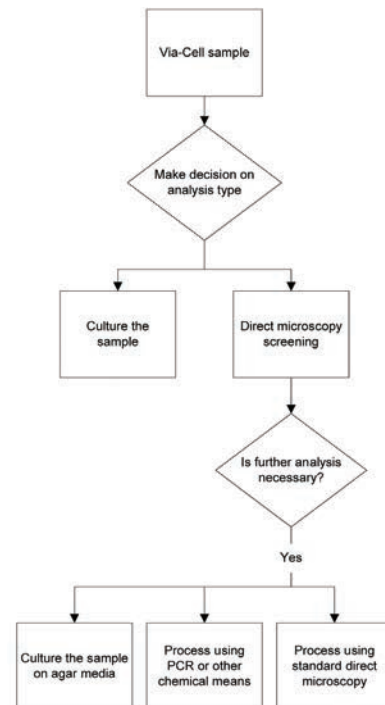
The Via-Cell sampler is the perfect tool for collecting viable organisms and culturing them on agar plates. Simply dilute the media in sterile water and transfer to a culture plate.

### PCR Analysis

The Via-Cell utilizes a water soluble collection media which is ideal for PCR and other chemical types of analysis. Once the sample is diluted in water, it can be transferred most anywhere.

### Direct Microscopy

Samples collected using the Via-Cell sampler may be “pre-screened” using direct microscopy methods, which allows the analyst to decide if additional analysis techniques are needed, which may include culturing or standard direct microscopy analysis.



PRODUCT	DESCRIPTION
VIA010	Via-Cell® Air Sampling Cassettes, 10/bx

Note: Limited shelf life

# Bio-Culture™ Microbial Air Sampler



APB-7080ZZ

The Bio-Culture™ air sampler is the smallest, most cost effective and easiest to use sampler available for microbial air sampling. The Bio-Culture air sampler features a selectable, continuous, constant sample flowrate and is simple to operate. No tools are required. Its quiet operation allows unobtrusive sampling in a variety of applications.

Features:

- Flow rate - 30-120LPM (user adjustable)
- Uses standard 90mm x 15mm petri dishes
- Sampling head design of 380 1mm diameter holes
- Battery powered - runs for 6-8 hours (depending on flow rate, battery maintenance and backpressure)
- Tripod mounting threads on bottom of unit - allows 90 degree sampling
- Sampling head may be sterilized by autoclave or gas torch
- Built-in timers of 1, 2, 5, and 10 minutes
- Optional calibration head allows field calibration of flow rate with a NIST traceable calibrator

(Note: A calibration head is required to calibrate the Bio-Culture™ pump, however it can be used to calibrate multiple pumps)

PRODUCT	DESCRIPTION
APB-7080ZZ	Bio-Culture™ Pump, 120V Includes pump, standard 120V charger, pencil torch, carrying case and manual
APB-708200	Bio-Culture™ Pump, 240V Includes pump, standard 240V charger, pencil torch, carrying case and manual
APB-7080ZZ-KIT	Bio-Culture™ Pump and Calibration Kit, 120V Includes pump, calibration head, standard 120V charger, pencil torch, carrying case and manual
APB-7082ZZ-KIT	Bio-Culture™ Pump and Calibration Kit, 230V Includes pump, calibration head, standard 230V charger, pencil torch, carrying case and manual



## Bio-Culture™ Calibration Head

The Bio-Culture™ calibration head is a NIST traceable venturi calibrator with 1% accuracy that allows users to calibrate the flow of the Bio-Culture pump themselves without having to send the pump out for service or calibration.

Features:

- Allows flow calibration at flow rates between 30-120LPM
- Designed for use with impeller fan type pumps like the Bio-Culture, which require calibration devices with very little backpressure resistance
- Provided with a certificate of calibration traceable to NIST standards

PRODUCT	DESCRIPTION
APB-708500	BioCulture™ Calibration Head



# Zefon® A6 Impaction Sampler

The Zefon® A6 Impactor Sampler is an exact replica of the popular Andersen N-6 single stage impactor\*. The A6 impactor is an aluminum device consisting of a top inlet “cone”, a sampling head impactor stage which contains 400 precision drilled holes and a base section, which holds the agar media. The sampler is held together by three spring clamps and sealed with two o-ring gaskets. When air is drawn through the sampler, multiple jets of air direct any airborne particles toward the surface of the agar collection media surface where the particles are impacted and collected. The agar collection media is then sent to a laboratory for analysis.

\* Performance tests indicate that there is no statistical difference between the Andersen N-6 impactor and the Zefon® A6 impactor.

## Features:

- Proven technology for viable sampling
- Identical to other single stage samplers, at a lower cost
- Uses 100mm x 15mm petri dishes
- Meets NIOSH Method 0800 and 0801 requirements



## Specifications:

- Flow Rate: 28.3 LPM (1 ACFM)
- Particle Size Cut Point: .65 µm
- Sampler Size: 4.25” diameter; 2.87” height; weight 1.23 lbs
- Material: Aircraft grade Aluminum

## Kit Contents:

- Zefon® A6 Impaction Sampler
- Pump capable of pulling 28.3 LPM
- Pump flow meter
- ¼” ID Tubing
- Tripod stand
- Carrying case

PRODUCT	DESCRIPTION
Z-A6	Zefon® A6 Impactor
ZHV00-A6-KIT	Zefon® A6 Impactor Kit, 120V Includes impactor, pump, flow meter, tubing, tripod and carrying case
ZA0043	Tripod Impactor Stand
Z-A6-CAL	Adapter for in-line impactor calibration



Accurate results when using an A6 Impactor depend on proper measurement of flow through the impactor inlet. This can be best measured using a bubble or dry piston flow calibrator traceable to NIST standard (such as a Bios Defender or Gilian® Gilibrator) set up with the A6 impactor “in-line”. To t your impactor “in-line”, be sure to order the Z-A6-CAL adapter, which fits over the impactor inlet and allows tubing to be connected to it.





# Bio-Tape™ - Standardized Method for Surface Sampling

Bio-Tape™ provides a standardized surface sampling method used for the determination of possible microbial, bioaerosol, and inorganic dust contamination. It provides the ability to quickly take a sample and measure the relative degree of contamination. It is especially useful when sampling valuable or non-transportable materials and is very effective on smooth areas of concern.

The properties of the media and the slide material of the Bio-Tape make the product ideal for Scanning Electron Microscopy (SEM). Now surface samples can be taken with the lift method using *Zefon*® Bio-Tape and yield significant analysis results for material composition.



Features:

- Provides sample consistency
- Individually serialized for traceability
- Prevents cross contamination
- Eliminates problems of placing tape in a zip bag, or broken glass slides
- Samples may be archived by the laboratory for later review
- Requires less laboratory prep time

PRODUCT	DESCRIPTION
BT0025	Bio-Tape™ Slides, 25/bx
BT0050	Bio-Tape™ Slides, 50/bx
BT0500	Bio-Tape™ Slides, 500/bx

Note: Limited shelf life

## Sterile Surface Swabs

Sterile surface swabs are an easy way to sample suspect areas for mold contamination. Simply swab the suspect area and submit to a laboratory where the sample will be cultured and the type of mold identified. Each swab comes in an easy to use container for sampling, transport and storage. Swab kits include 10 swabs and 10 sterile 10cm x 5cm templates.



PRODUCT	DESCRIPTION
ZA0020	Mold Swab Kit - Includes 10 swabs and 10 templates
ZA0023	Mold Swabs Only, 50/pk

## Zefon® Carpet Sampling Cassettes

Zefon® Micro-Vac Carpet/Dust sampling cassettes are designed to be used with a vacuum pump to collect fibers and particulate from carpets and other dusty areas. For ease of collection, there is a special inlet with a 45° angle and all come preloaded with a filter and support pad. Cassettes are available as single cassettes or as part of a carpet sampling kit.



7345PCCC



Z045CC

PRODUCT	DESCRIPTION
Z045CC	25mm Micro-Vac Cassette, 3pc Static Conductive Cowl, 0.45µ MCE filter
Z045CC-KIT	25mm Micro-Vac Carpet Kit Includes: (10) Z045CC cassettes, (10) 10cm x 10cm sampling templates and 10 zip style sample bags
7345CC	37mm Micro-Vac Kit with 0.45µm MCE filter
7345PCCC	37mm Micro-Vac Kit with 0.4µm Polycarbonate filter
7345PCCC-KIT	37mm Micro-Vac Carpet Kit Includes: (10) 7345PCCC cassettes, (10) 10cm x 10cm sampling templates and 10 zip style sample bags

## Zefon® Carpet and Dust Vacuum Collection Nozzle



Sample collection simplified! All that is needed is a household vacuum cleaner with hose attachment. This unique dust collector fits directly onto the end of the vacuum hose.

When you vacuum carpets and bare floors, the nozzle collects dust into its internal filter chamber. When finished, remove the collection nozzle, replug, and send the entire piece to the laboratory for analysis.

Fits most standard household vacuum cleaners.

PRODUCT	DESCRIPTION
ZA0059	Zefon® Carpet and Dust Vacuum Collection Nozzle



## Transport Vials



Transport vials are ideal for sample collection, storage, and safety. Made from virgin polypropylene. Available Sterile or Non Sterile.

Features:

- Screw cap that has a molded-in sealing ring for a leakproof fit
- Conical tubes with freestanding units
- Tubes are autoclavable
- Graduation marks provide accurate references
- Write-on area on side

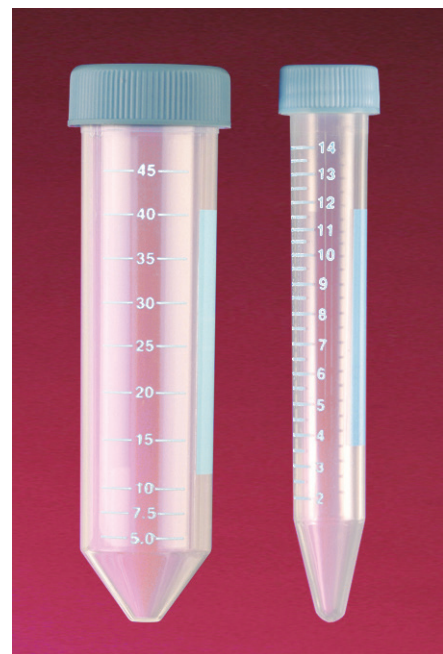
PRODUCT	DESCRIPTION
SS-3261	Transport Vials, 50ml, Blue caps, non sterile, 500/cs
SS-3262	Transport Vials, 50ml, Blue caps, sterile, 500/cs
SS-3264	Transport Vials, 50ml, Blue caps attached, non-sterile, 500/cs

## Centrifuge Tubes

Premium quality general purpose centrifuge tubes with molded in graduations.

Features:

- Easy to read with molded in graduations
- Superior clarity and durability
- 50ml: Made from premium Polypropylene copolymer for excellent chemical resistance; withstands temperature extremes of -40°C to 125°C; high centrifugation of 6000 RCF
- 15ml: Made from Polypropylene which has excellent chemical resistance and can withstand 6400 RCF
- Leakproof Seal: Molded in seal-ring ensures a leakproof seal without the contamination problems associated with cap liners.



PRODUCT	DESCRIPTION
SS-3216	Centrifuge Tubes, 15ml Polypropylene, Sterile 50/tray, 500/cs
SS-3220	Centrifuge Tubes, 15ml Polypropylene, Non Sterile, Bag of 500
SS-3250	Centrifuge Tubes, 50ml Co-Polymer, Sterile, 25/tray, 500/cs
SS-3253	Centrifuge Tubes, 50ml Co-Polymer, Non Sterile, 25/tray, 500/cs

## Lead Surface Wipes

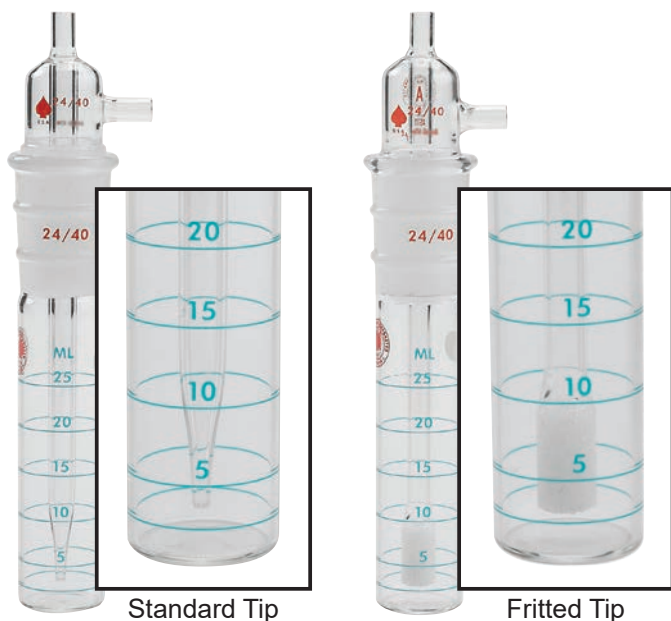


These lead wipes are used for the collection and sampling of lead in settled dust. Our formulation does not contain lanolin, aloe, or other interfering oils which may alter lab test results. The rayon substrate is easily digested in nitric acid.

Features:

- Actual size: 5" W x 8" H
- Date of Manufacture Lot # stamped on back
- Meets ASTM E1792-96 requirements for lead dust sampling wipes
- Listed in the AIHA policy on sampling materials for lead in surface dust

PRODUCT	DESCRIPTION
AR-LWIPE100	Lead Wipes, 100/pk
AR-LWIPE1000	Lead Wipes, 1000/pk



## Impingers and Bubblers

For collecting various airborne gases, vapors and particulates using a high flow personal sampling pump.

Impingers are special glass tubes designed to collect airborne contaminants by bubbling the sampled air at a high flow rate through a method specific absorbing liquid inside. The liquid used can then be analyzed to determine airborne contaminate levels.

*Zefon*<sup>®</sup> midget impingers consist of 2 pieces of glass fitted together using a 20/40 ground joint. They have a capacity of 25ml with a graduated scale along the side in 5ml. Each features a nozzle tip which is precisely located in relation to the bottom of the impinger.

Features:

- Fully encircling graduation marks every 5 ml
- 7mm inlet and outlet openings compatible with 1/4" ID tubing

IMPINGER	SIZE	DESCRIPTION	PRODUCT
Standard Midget	25ml	Standard, 2pc, glass, 5ml increments	ZA0095
Fritted Midget (bubbler)	25ml	Fritted, 2pc, glass, 5ml increments	ZA0096









# 25mm Asbestos Sampling Cassettes

*Zefon*<sup>®</sup> offers PCM and TEM 25mm conductive air sampling cassettes designed and manufactured to meet all applicable NIOSH, AHERA, OSHA, and EPA standards. The cassette housings are manufactured in-house from high quality polypropylene and are individually assembled and preloaded under stringent quality control standards. Once assembled, each cassette is individually tested prior to packaging for shipment. Random lot sample testing is performed daily by an independent laboratory to ensure compliance with asbestos regulations. Laboratory results are available upon request. Each cassette is banded and marked with a serial number and bar code.

Features:

- 2" Conductive Extension Cowl
- 3 Piece Housing
- Meets regulatory requirements
- Each cassette comes with a unique serial number

CASSETTE TYPE	PCM			TEM
				
FILTER TYPE	MCE	MCE	MCE	MCE
FILTER SURFACE	 PLAIN WHITE	 WHITE WITH BLACK GRID	 WHITE WITH GREEN GRID	 PLAIN WHITE
PORE SIZE	0.8µ	0.8µ	0.8µ	0.45µ + 5.0µ
HOUSING STYLE	25mm W/ Conductive Cowl	25mm W/ Conductive Cowl	25mm W/ Conductive Cowl	25mm W/ Conductive Cowl
COLOR CODE	BLUE	BLUE	BLUE	GREEN
APPLICATIONS	Asbestos	Asbestos	Asbestos	Asbestos
STANDARDS	NIOSH 7400 OSHA ID 160	MDHS 39/4	MDHS 39/4	NIOSH 7402 AHERA
PACK SIZE	50/box	50/box	50/box	50/box
PRODUCT NUMBER	Z008BA	Z0086A	Z00866A	Z045BA



Each *Zefon*<sup>®</sup> 25mm cassette undergoes stringent quality control that includes a 100% inspection for the correct filter/pad combination and a 100% inspection to ensure no filter parchment paper is present.

Then each lot of cassettes has numerous sample blanks verified by an independent laboratory to have acceptable background fiber counts as per NIOSH requirements.

**The Professionals Choice for Air Sampling Equipment**

# Zefon® Asbestos Bulk Sampling System

Zefon® 3" Steel Sampling Modules (cutter sleeves) for asbestos bulk sampling. Extremely strong and durable. More robust than similar modules manufactured from copper. Compatible with the Zefon® solid aluminum T handle or the EMS T handle.



PRODUCT	DESCRIPTION
ZA0070	Zefon® Asbestos Bulk Sampling Modules, 3" Length, 100/case
ZA0071	Zefon® T-Handle, Solid Aluminum
ZA0072	Zefon® Power Drill Driver

## Asbestos Bulk Sampling Equipment



Wonder Makers Asbestos Bulk Sampling is the safest, most efficient way to collect bulk samples and project a professional image. It makes the way inspectors have been taking samples obsolete. This small compact device uses individual cutter sleeves in airtight transport containers for maximum safety and accuracy.

### Features:

- Compact, lightweight design
- Eliminates cross contamination
- Is easy to use
- Encourages full-depth samples
- Removable cutter eliminates field decontamination and cross contamination problems
- Complies with OSHA asbestos regulations
- Cutter sleeves packed in see through slim vials with a write on surface and tight fitting cap
- Small bore reduces fiber release during sampling
- Double length cutters available for extra deep samples
- Complete with rugged carrying case and detailed instructions

PRODUCT	DESCRIPTION
WM-10	Bulk Sampling Starter Set Includes 2 handles, 2 plungers, 100 cutter sleeves, 100 slim vials and carrying case
WM-11	Double Length Bulk Sampling Starter Set Includes 2 handles, 2 double length plungers & 100 6 3/4" cutter sleeves in slim vials
WM-100-100	100 Cutter Sleeves in Slim Vials
WM-100-1000	1000 Cutter Sleeves in Slim Vials
WM-110-100	100 Double Length Cutter Sleeves in Slim Vials
WM-102	Handle
WM-105	Handle and Plunger
WM-103	Plunger
WM-111	Plunger for Double Length Cutter Sleeves
WM-107	Plunger Adapter
WM-104	Slim Plunger
WM-112	Plunger, Double Length, Slim
WM-12	Mini Sampling Pack, includes: pouch with assorted cutter sleeves, handle and filter
WM-13	Wonder Fill Insulation Repair Kit Fill insulation core holes using a 16oz squeeze bottle (approx. 250 repairs)
WM-15	Power Driver - attach cutter sleeve to power driver and cordless drill
WM-16	Coring Arm - attach a cutter sleeve to a 3' rod for sampling from a distance
WM-17	Additional 5' sections for coring arm



# Preloaded Air Sampling Filter Cassettes



25 MM



37 MM

*Zefon*<sup>®</sup> offers a complete line of air sampling cassettes manufactured to meet all applicable NIOSH, OSHA, and EPA standards. All cassette housings are manufactured in-house from polystyrene or polypropylene and are available in two or three piece configurations. Cassettes are individually assembled and preloaded under stringent quality assurance standards with only the finest quality membrane and support pads.

Features:

- Fully assembled, preloaded and ready to use
- Leak free construction eliminates sample loss
- Configurations available to conform with most NIOSH standards that require filter cassettes
- Wide selection of filter membrane types
- Available with *Zefon*<sup>®</sup> Solu-Sert<sup>™</sup> or Gravi-Sert<sup>™</sup> filter capsules installed
- Sterile models available for fluid contamination sampling and microbiological analysis.
- Ultra Pure PTFE models available for pharmaceutical compound sampling.
- Custom configurations available. Contact *Zefon*<sup>®</sup> sales for more information.

## PVC Preloaded Filter Cassettes

DIAMETER	PORE SIZE	HOUSING STYLE	NOTES	U/M	PRODUCT
25MM	5.0µ	2-Piece, Styrene		50/bx	525PVC
	5.0µ	2-Piece, Styrene, Banded		50/bx	525PVC-CB
	5.0µ	2-Piece, Styrene, Banded	Match Weighed Filters**	50/bx	5M52P
	5.0µ	2-Piece, Styrene, Banded	Pre Weighed Filter**	50/bx	5P52P
	5.0µ	2-Piece, Styrene, Banded	Pre Weighed Gravi-Sert Filter capsule	50/bx	5P52P-GS*
	5.0µ	3-Piece, Styrene		50/bx	535PVC
	5.0µ	3-Piece, Styrene, Banded	Match Weighed Filters**	50/bx	5M53P
	5.0µ	3-Piece, Styrene, Banded	Pre Weighed Filter**	50/bx	5P53P
37MM	5.0µ	2-Piece, Styrene		50/bx	725PVC
	5.0µ	2-Piece, Styrene, Banded		50/bx	725PVC-CB
	5.0µ	2-Piece, Styrene, Banded	with Security Band	50/bx	725PVC-SB
	5.0µ	2-Piece, Styrene, Banded	Match Weighed Filters	50/bx	7M52P
	5.0µ	2-Piece, Styrene, Banded	Pre Weighed Filter**	50/bx	7P52P
	5.0µ	2-Piece, Styrene, Banded	Pre Weighed Gravi-Sert Filter capsule	50/bx	7P52P-GS*
	5.0µ	3-Piece, Styrene		50/bx	735PVC
	5.0µ	3-Piece, Styrene, Banded		50/bx	735PVC-CB
	5.0µ	3-Piece, Styrene, Banded	Match Weighed Filters**	50/bx	7M53P
	5.0µ	3-Piece, Styrene, Banded	Pre Weighed Filter**	50/bx	7P53P
	5.0µ	4-Piece, Conductive, Banded	Pre Weighed Filter** EoS FTIR	10/bx	7P54P-CF-FTIR

\* Complete details about the Gravi-Sert Filter capsule and the benefits it offers can be found on Page 25

\*\* Complete details regarding Match and Pre Weighed filter cassettes can be found on Page 26-27

## MCE Preloaded Filter Cassettes

DIAMETER	PORE SIZE	HOUSING STYLE	NOTES	U/M	PRODUCT
25MM	0.45µ	3-Piece, Conductive, Cone Style	Filter with Black Grids	50/bx	534AGMCE-CF
	0.45µ + 5.0µ	3-Piece, Cone Style with 2" Conductive Cowl	Banded For Asbestos TEM	50/bx	Z045BA
	0.8µ	2-Piece, Styrene		50/bx	528MCE
	0.8µ	2-Piece, Styrene	Solu-Sert Filter Capsule*	50/bx	528MCE-SS
	0.8µ	2-Piece, Styrene, Banded	Solu-Sert Filter Capsule*	50/bx	529MCE-SS
	0.8µ	3-Piece, Styrene		50/bx	538MCE
	0.8µ	3-Piece, with 2" Conductive Cowl	Asbestos PCM, Banded	50/bx	Z008BA
	0.8µ	3-Piece, with 2" Conductive Cowl	Banded, Black Grid Filter	50/bx	Z008GA
	0.8µ	3-Piece, with 2" Conductive Cowl	Banded, Green Grid Filter	50/bx	Z008GGA
	1.2µ	3-Piece, Conductive	Filter with Black Grids	50/bx	5312GMCE-CF
	1.2µ	3-Piece, Conductive, Cone Style	Filter with Black Grids	50/bx	531AGMCE-CF
	1.2µ	3-Piece, with 2" Conductive Cowl	Banded, Black Grid Filter	50/bx	Z012GS
	1.2µ	3-Piece, with 2" Conductive Cowl	Banded, Green Grid Filter	50/bx	Z0012BS
37MM	0.45µ	3-Piece, Styrene		50/bx	7345MCE
	0.45µ	3-Piece, Styrene	Sterile	50/bx	PS7345MCE
	0.45µ	3-Piece, Styrene	Sterile, Black Grid Filter	50/bx	PS7345GMCE
	0.45µ	3-Piece, Conductive		50/bx	734MCECF
	0.45µ + 5.0µ	3-Piece, Conductive		50/bx	7345MCECF
	0.45µ	4-Piece, Styrene	Filter placed between spacer rings	50/bx	7445MCE-C
	0.45µ	4-Piece, Conductive	Filter placed between spacer rings	50/bx	7445MCECF-C
	0.45µ	4-Piece, Conductive	Black Grid Filter placed between spacer rings	50/bx	7445GMCECF-C
	0.8µ	2-Piece, Styrene		50/bx	728MCE
	0.8µ	2-Piece, Styrene	Solu-Sert Filter Capsule*	50/bx	728MCE-SS
	0.8µ	2-Piece, Styrene, Banded		50/bx	729MCE
	0.8µ	2-Piece, Styrene, Banded	Solu-Sert Filter Capsule*	50/bx	729MCE-SS
	0.8µ	2-Piece, Styrene, Banded	Match Weighed Filters**	50/bx	7M92M
	0.8µ	2-Piece, Styrene, Banded	Match Weight Filters** Cellulose Support Ring with Security Band	50/bx	7M92M-R-SB
	0.8µ	2-Piece, Tenite	Fuel Monitor ***	50/bx	728MCE-TN
	0.8µ	2-Piece, Tenite	Match Weighed Filters** For Fuel Monitoring ***	50/bx	7M92M-TN
	0.8µ	3-Piece, Styrene		50/bx	738MCE
	0.8µ	3-Piece, Styrene	Sterile	50/bx	PS738MCE
	0.8µ	3-Piece, Styrene	Sterile, Black Grid Filter	50/bx	PS738GMCE
	0.8µ	3-Piece, Conductive		50/bx	738MCECF
	0.8µ	3-Piece, Styrene, Banded		50/bx	739MCE
0.8µ	3-Piece, Styrene, Banded	with Security Band	50/bx	739MCE-SB	
0.8µ	3-Piece, Styrene, Banded	Match Weighed Filters**	50/bx	7M93M	
0.8µ	3-Piece, Styrene, Banded	Match Weighed Filters** with Security Band	50/bx	7M93M-SB	

\* Complete details about the Solu-Sert Filter capsule and the benefits it offers can be found on Page 24

\*\* Complete details regarding Match Weighed filter cassettes can be found on Page 27

\*\*\* Meets requirements of ASTM D2276

## Polycarbonate Preloaded Filter Cassettes

DIAMETER	PORE SIZE	HOUSING STYLE	NOTES	U/M	PRODUCT
25MM	0.4μ	3-Piece, with 2" Conductive Cowl	Banded	50/bx	Z004PC
	0.45μ + 5.0μ MCE	3-Piece, with 2" Conductive Cowl	Banded	50/bx	Z045PC-MCE
	0.8μ	3-Piece, with 2" Conductive Cowl	Banded	50/bx	Z008PC
37MM	0.2μ	3-Piece, Styrene	Sterile	50/bx	PS7302PC
	0.4μ	2-Piece, Styrene		50/bx	7245PC
	0.4μ	3-Piece, Styrene		50/bx	7345PC
	0.4μ	3-Piece, Styrene	Sterile	50/bx	PS7345PC
	0.4μ	3-Piece, Styrene	Endotoxin Free	50/bx	PS7345PCEFC*
	0.8μ	2-Piece, Styrene		50/bx	728PC
	0.8μ	3-Piece, Styrene		50/bx	738PC

\* These cassettes are specially manufactured to ensure there is no background interference when sampling endotoxins. Each lot is carefully checked and verified by an independent laboratory for endotoxins before product is released for shipment.

## Glass Fiber Preloaded Filter Cassettes

DIAMETER	PORE SIZE	HOUSING STYLE	NOTES	U/M	PRODUCT
37MM	1.0μ	2-Piece, Styrene	Type AE Glass Fiber	50/bx	721GF
	1.0μ	3-Piece, Styrene	Type AE Glass Fiber	50/bx	731GF

## Quartz Preloaded Filter Cassettes

DIAMETER	PORE SIZE	HOUSING STYLE	NOTES	U/M	PRODUCT
37MM	0.45μ	3-Piece, Styrene		50/bx	734TQ

## PTFE Preloaded Filter Cassettes

DIAMETER	PORE SIZE	HOUSING STYLE	NOTES	U/M	PRODUCT
	1.0μ	2-Piece, Conductive, Cone Style	PTFE with PTFE Support	50/bx	521PTFE
	1.0μ	2-Piece, Conductive, Cone Style	PTFE with PTFE Support PE Support Pad	50/bx	521PTFE-PE
	1.5μ	2-Piece, Ultra Pure Pharmaceutical Grade	PTFE with PTFE Support	50/bx	5215PTFE-PHARM*
	1.5μ	3-Piece, Ultra Pure Pharmaceutical Grade	PTFE with PTFE Support	50/bx	5315PTFE-PHARM*
37MM	0.45μ	3-Piece, Styrene	PTFE with PP Support	50/bx	7345TF
	0.45μ	3-Piece, Solvent Resistant PP	PTFE with PP Support	50/bx	7345TF-PP
	1.0μ	2-Piece, Styrene	PTFE with PP Support	50/bx	721TF
	1.0μ	3-Piece, Styrene	PTFE with PP Support	50/bx	731TF
	2.0μ	2-Piece, Styrene	PTFE with PTFE Support	50/bx	722PTPT
	2.0μ	2-Piece, Styrene, Opaque	PTFE with PTFE Support Cellulose Support Ring for NIOSH 5508/5515	50/bx	722PTPT-OP
	2.0μ	2-Piece, Styrene, Banded	PTFE with PTFE Support	50/bx	722PTPT-WB
	2.0μ	3-Piece, Styrene	PTFE with PTFE Support	50/bx	732PTPT

\* These cassettes are specially manufactured using an ultra pure pharmaceutical grade plastic and pure PTFE filters designed to have extremely low extractables to eliminate any interference when sampling pharmaceutical compounds.



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# Solu-Sert™ Soluble Filter Capsule



The Solu-Sert™ filter capsule is a self-contained filter “cassette capsule” that captures all particles collected by a filter cassette. It consists of an MCE filter membrane sealed to a cellulose shell to create the capsule. This capsule is then inserted into a *Zefon*® 2-Piece filter cassette with a support pad as a complete unit. After sampling the entire capsule is removed, digested in an acid solution, and then analysis performed. This process eliminates the need to rinse or wipe the cassette interior to account for “wall deposits” and makes it ideal for performing airborne metals analysis.

**Features:**

- Contains 100% of the sample collected within the capsule.
- Meets NIOSH requirements for including “wall deposits” as part of the sample.
- Suitable for 33 elements under NIOSH method 7306.
- Easy laboratory processing with NO rinsing or wiping.
- Lightweight shell design contributes to less background and improved limits of detection vs using a heavier weight shell.

**Applications:**

Solu-Sert™ is suitable for collecting the following contaminants under NIOSH Method 7306:

ELEMENTS						SPECIFICATIONS	
Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Shell Material:	Cellulose Acetate
Calcium	Chromium	Cobalt	Copper	Indium	Iron	Filter:	0.8µm pore size, mixed esters of cellulose (MCE)
Lanthanum	Lead	Lithium	Magnesium	Manganese	Molybdenum	Weight:	~200 mg @ 50% RH
Nickel	Phosphorus	Potassium	Selenium	Silver	Strontium		
Tin	Tellurium	Thallium	Titanium	Tungsten	Vanadium		
Yttrium	Zirconium	Zinc					

Solu-Serts have been shown to exhibit background levels at or below the detection limit of 25 elements. Measurable background levels of Ca, Mg and P, have been detected, however these levels are not significant in relation to the Occupational Exposure Limit (OEL) for e.g., Ca, (OH)2, MgO or H3PO4. (Background levels as presented by NIOSH in “NIOSH Guidelines for Aerosol Sampling”, Pg 33). Link: NIOSH Guidelines for Aerosol Sampling.

PLEASE NOTE that Solu-Sert™ is not appropriate for gravimetric analysis. Due to the hygroscopic nature of cellulose, tare weights will not be reproducible. For gravimetric analysis using a cassette capsule, use the Gravi-Sert™.

PRODUCT	DESCRIPTION
CLCL-C2550	25mm Solu-Sert™ Filter Capsule, 50/pk
CLCL-C3750	37mm Solu-Sert™ Filter Capsule, 50/pk
528MCE-SS	25mm 2pc Cassette Preloaded with Solu-Sert™ Capsule, 50/bx
529MCE-SS	25mm 2pc Cassette BANDED Preloaded with Solu-Sert™ Capsule, 50/bx
728MCE-SS	37mm 2pc Cassette Preloaded with Solu-Sert™ Capsule, 50/bx
729MCE-SS	37mm 2pc Cassette BANDED Preloaded with Solu-Sert™ Capsule, 50/bx



# Gravi-Sert™ Filter Capsule

Now available pre-weighed and pre-loaded!

The Gravi-Sert™ filter capsule is a self-contained filter “cassette capsule” that captures all particles collected by a filter cassette. It consists of a PVC filter membrane sealed to a static-dissipative PVC shell to create the capsule. This capsule is then weighed and inserted into a *Zefon*® 2-Piece filter cassette with a support pad as a complete unit. After sampling the entire capsule is removed and weighed.

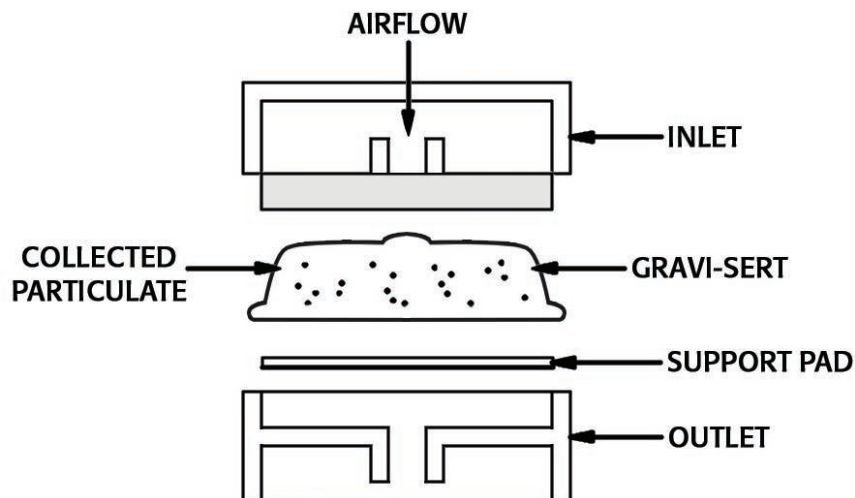
Features:

- Contains 100% of the sample collected within the capsule.
- Manufactured from weight-stable PVC materials.
- PVC shell is static-dissipative.
- Meets NIOSH requirements for including “wall deposits” as part of the sample.



## How it works

Air flows into the filter cassette through the inlet and continues into the Gravi-Sert™. Particulate is then contained within the Gravi-Sert™ while the airflow continues through the filter membrane and exits out the cassette outlet.



NIOSH 0600 requires use of a Dorr-Oliver Cyclone. See Dorr-Oliver Cyclone on page 39.

## Applications:

Gravi-Sert™ is suitable for collecting the following contaminants:

CONTAMINANT	NIOSH METHOD	SPECIFICATIONS
Carbon Black	5100	Shell Material: PVC (static-dissipative)
Dust - Total	0501	Filter: 5.0µm pore size, Polyvinyl chloride (PVC)
Dust - Respirable	0600	Weight: ~300 mg @ 50% RH

PRODUCT	DESCRIPTION
PVPV-C3750	37mm Gravi-Sert™ Filter Capsule, 50/bx
PVPV-C2550	25mm Gravi-Sert™ Filter Capsule, 50/bx
7P52P-GS	37mm 2pc Cassette Preweighed with Gravi-Sert™ Filter Capsule, 50/bx
5P52P-GS	25mm 2pc Cassette Preweighed with Gravi-Sert™ Filter Capsule, 50/bx



## Gravimetric Pre-Weighed Cassettes

Gravimetric analysis samples require filters to be weighed both before and after sampling to determine the amount of contaminate collected. *Zefon*® pre-weighed cassettes eliminate the inconvenience of pre-weighing filters by providing the filter weight on each cassette prior to sampling.

*Zefon*® begins the process of manufacturing pre-weighed cassettes by letting each filter equilibrate to the environmental conditions of 68° F and 50% relative humidity. Filters are then weighed using advanced microbalance equipment which records the weight. After reading the weight, filters are removed, placed into cassettes and sealed with a label bearing the weight and a unique serial number.

Features:

- Each cassette labeled with weight and serial number
- Use of pure homopolymer PVC filters provides excellent weight stability
- PVC filters specially designed with no silica and low ash properties



Environmental conditions can have a significant effect on filter weight readings. When using *Zefon*® pre-weighed cassettes, it is important that the post sample weighing is performed under the same environmental conditions used at the *Zefon*® factory. Those conditions are set at a temperature of 68° F and a relative humidity of 50%.

Using *Zefon*® pre-weighed cassettes does not comply with OSHA directives which require both the “tare weight” and “secondary weight” to be performed on the same microbalance and environmental conditions. If complying with this directive is a concern, match-weighed cassettes are a good alternative way to save time and still comply with the directive.

DIAMETER	PORE SIZE	HOUSING STYLE	WEIGHT TOLERANCE	U/M	PRODUCT
25MM	5.0µm	25mm 2-Piece Styrene	15µg	50/bx	5P52P
	5.0µm Gravi-Sert™	25mm 2-Piece Styrene	15µg	50/bx	5P52P-GS
	5.0µm	25mm 3-Piece Styrene	15µg	50/bx	5P53P
37MM	5.0µm	37mm 2-Piece Styrene	15µg	50/bx	7P52P
	5.0µm Gravi-Sert™	37mm 2-Piece Styrene	15µg	50/bx	7P52P-GS
	5.0µm	37mm 3-Piece Styrene	15µg	50/bx	7P53P
	5.0µm	37mm 4-Piece Conductive FTIR	15µg	10/bx	7P54P-CF-FTIR
47MM	5.0µm	47mm 3-Piece Conductive	15µg	32/bx	4P53P-CF

**The Professionals Choice for Air Sampling Equipment**

# Gravimetric Match-Weighed Cassettes

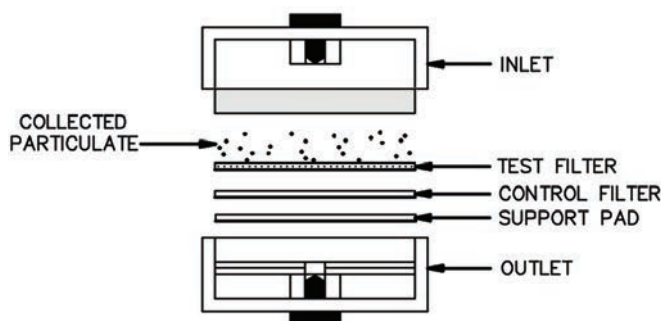
Gravimetric analysis samples require filters to be weighed both before and after sampling to determine the amount of contaminate collected. *Zefon*® match-weighted cassettes eliminate the need of weighing filters before sampling by providing 2 filters which are matched in weight. The top filter collects particulate and the bottom filter serves as a control. After sampling, both filters are weighed and the difference in weight equals the amount of contaminate collected.

*Zefon*® uses the most advanced microbalance equipment and technology available to produce premium quality weighed cassettes. Our process includes manufacturing under strict environmental controls to ensure weight reproducibility and numerous quality checks to ensure consistent weights. The end result is a quality product at a competitive price.

Features:

- Each cassette labeled with serial number
- Color coded to indicate filter type
- Preloaded - ready to use

## Matched Weighed Configuration



FILTER	HOUSING STYLE	BAND COLOR	TOLERANCE	U/M	PRODUCT	
MCE 0.8µm	25mm 2-Piece Styrene	Blue	50µg	50/bx	5M92M	
	25mm 3-Piece Styrene	Blue	50µg	50/bx	5M93M	
	37mm 2-Piece Styrene	Blue	50µg	50/bx	7M92M	
	37mm 2-Piece Styrene	Blue with Security Band	50µg	50/bx	7M92M-R-SB	
	37mm 2-Piece Tenite	None	50µg	50/bx	7M92M-TN*	
	37mm 3-Piece Styrene	Blue	50µg	50/bx	7M93M	
	37mm Filter Only	None	50µg	50 Pairs	FMCE837-MW50	
	47mm Filter Only	None	50µg	50 Pairs	FMCE847-MW50	
PVC 5.0µm	25mm 2-Piece Styrene	Red	20µg	50/bx	5M52P	
	25mm 3-Piece Styrene	Red	20µg	50/bx	5M53P	
	37mm 2-Piece Styrene	Red	20µg	50/bx	7M52P	
	37mm 3-Piece Styrene	Red	20µg	50/bx	7M53P	
	37mm Filter Only	None	20µg	50 Pairs	FPVC537-MW20	
		47mm Filter Only	None	20µg	50 Pairs	FPVC547-MW20

\* Meets requirement of ASTM D2276

The weight tolerance of match weighed filters references the maximum difference in weight from the test (top) filter and the control (bottom) filter. A stated tolerance of 50µg means that the control filter may differ in weight no more than 50µg from the test filter. This is important to know during post sample weighing as the weight tolerance of the 2 filters needs to be considered when calculating results.

During manufacture, filters with matched weights (within the given tolerance) are inserted into the cassette in random order. Thus, it is possible for the control filter to weigh more than the test filter before sampling (within the given tolerance). If the control filter still weighs more after sampling, a sample likely was not collected. Please check your equipment for proper operation and pump flow.



# MCE Membrane Filters

Mixed Cellulose Ester (MCE) Filter Membrane Discs are manufactured from a mixture of cellulose acetate and cellulose nitrate. MCE membrane filters are one of the most widely used filters in both air monitoring and analytical applications.

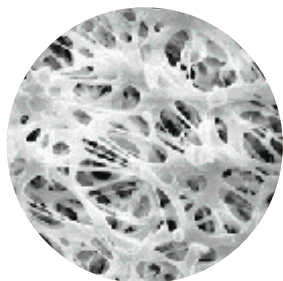


DIAMETER	PORE SIZE	FILTER SURFACE	NOTES	U/M	PRODUCT	
25MM	0.2µ	Plain White	○	100/pk	FMCE0225	
	0.45µ	Plain White	○	100/pk	FMCE425	
	0.45µ	Black Grids	⊗	100/pk	FGMCE425	
	0.8µ	Plain White	○	100/pk	FMCE825	
	0.8µ	Plain White	○	Match Weighed Pairs	50 pairs	FMCE825-MW50
	0.8µ	Black Grids	⊗	100/pk	FGMCE825	
	0.8µ	Green Grid	⊗	100/pk	FGGMCE825	
	1.2µ	Plain White	○	100/pk	FMCE125	
	1.2µ	Black Grids	⊗	100/pk	FGMCE125	
	5.0µ	Plain White	○	100/pk	FMCE525	
37MM	0.2µ	Plain White	○	100/pk	FMCE0237	
	0.45µ	Plain White	○	100/pk	FMCE4537	
	0.45µ	Black Grids	⊗	100/pk	FGMCE4537	
	0.8µ	Plain White	○	100/pk	FMCE837	
	0.8µ	Plain White	○	Includes 34mm Pads	100/pk	FMCE837-T1*
	0.8µ	Plain White	○	Match Weighed Pairs	50 Pairs	FMCE837-MW50
	0.8µ	Plain White	○	Match Weighed Pairs	50 pairs	FMCE837-T1-MW50*
	0.8µ	Black Grids	⊗	100/pk	FGMCE837	
	1.2µ	Plain White	○	100/pk	FMCE137	
	1.2µ	Black Grids	⊗	100/pk	FGMCE137	
5.0µ	Plain White	○	100/pk	FMCE537		
47MM	0.2µ	Plain White	○	100/pk	FMCE0247	
	0.45µ	Plain White	○	100/pk	FMCE4547	
	0.45µ	Black Grids	⊗	100/pk	FGMCE4547	
	0.8µ	Plain White	○	100/pk	FMCE847	
	0.8µ	Plain White	○	100/pk	FMCE847-T1*	
	0.8µ	Plain White	○	Match Weighed Pairs	50 Pairs	FMCE847-MW50
	0.8µ	Plain White	○	Match Weighed Pairs	50 Pairs	FMCE847-T1-MW50*
	0.8µ	Black Grids	⊗	100/pk	FGMCE847	
	0.8µ	Green Grid	⊗	100/pk	FGGMCE847	
	1.2µ	Black Grids	⊗	100/pk	FGMCE147	
	1.2µ	Plain White	○	100/pk	FMCE147	
	5.0µ	Plain White	○	100/pk	FMCE5047	

\* Meets requirements of ASTM D2276



## PVC Membrane Filters

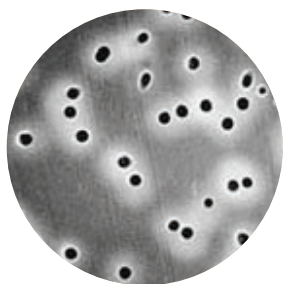


Polyvinyl Chloride (PVC) Membrane Filters are excellent membrane filters for sampling airborne metals, silica, and dust. Comprised of inherently low ash pure homopolymer PVC, these filters are particularly well suited to provided interference-free silica determinations. Low moisture pick-up and low tare weight assure gravimetric stability.

Features:

- Specified for use in numerous NIOSH and OSHA methods
- Suitable for gravimetric analysis and respirable dust sampling

DIAMETER	PORE SIZE	TYPE	NOTES	U/M	PRODUCT
25MM	5.0μ	GLA-5000		100/pk	FPVC525
	5.0μ	GLA-5000	Match Weighed	50 Pairs	FPVC525-MW20
37MM	5.0μ	GLA-5000		100/pk	FPVC537
	5.0μ	GLA-5000	Match Weighed	50 Pairs	FPVC537-MW20
47MM	5.0μ	GLA-5000		100/pk	FPVC547
8" x 10" Sheet	5.0μ	GLA-5000		10/pk	FPVC8X10



## Polycarbonate Membrane Filters

Polycarbonate track-etch (PCTE) membrane filters are manufactured from polycarbonate films. They feature a smooth flat surface, exhibit well-controlled pore size and shape, and have very low levels of extractables. Naturally hydrophobic.

DIAMETER	PORE SIZE	TYPE	NOTES	U/M	PRODUCT
25MM	0.2μ	Polycarbonate		100/pk	FPC225
	0.4μ	Polycarbonate		100/pk	FPC4525
	0.8μ	Polycarbonate		100/pk	FPC825
	5.0μ	Polycarbonate		100/pk	FPC525
37MM	0.2μ	Polycarbonate		100/pk	FPC0237
	0.4μ	Polycarbonate		100/pk	FPC4537
	0.8μ	Polycarbonate		100/pk	FPC837
47MM	0.4μ	Polycarbonate		100/pk	FPC447
	0.8μ	Polycarbonate		100/pk	FPC847

## PTFE Membrane Filters



PTFE membrane filters provide excellent chemical resistance and are suitable for use in the most aggressive sampling environments.

Features:

- Strong, chemically resistant membrane
- Naturally hydrophobic
- Suitable for gravimetric sampling
- Compatible with autoclave or ETO sterilization

### ZePore™ PTFE Membrane with PTFE Support

The *Zefon*® ZePore™ is a unique PTFE membrane with a laminated PTFE support layer that provides improved handling combined with the superior chemical resistance pure PTFE provides. It is the best alternative to the discontinued Pall® Zefluor™ brand of PTFE membrane. The ZePore is suitable for use in particulate and gravimetric sampling, and the pure nature of the PTFE eliminates the need to pre-wash the membrane before some procedures.

DIAMETER	PORE SIZE	TYPE	NOTES	U/M	PRODUCT
25MM	1.0µ	Laminated PTFE		100/pk	FPTFE125
37MM	1.0µ	Laminated PTFE		50/pk	FPTFE137
47MM	1.0µ	Laminated PTFE		50/pk	FPTFE147

### PTFE with a Laminated Polypropylene Support Layer

These PTFE filters have a polypropylene backing laminated onto them to improve durability and ease of handling.

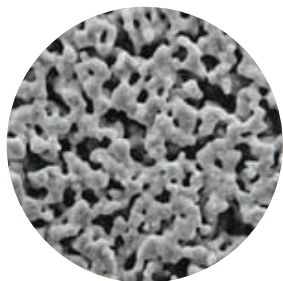
DIAMETER	PORE SIZE	TYPE	NOTES	U/M	PRODUCT
37MM	0.45µ	Laminated PP		100/pk	FPTP4537
	1.0µ	Laminated PP		100/pk	FPTP137
47MM	0.45µ	Laminated PP		100/pk	FPTP4547

### PTFE with a PMP (polymethylpentene) Support Ring (Teflo™)

Featuring a polymethylpentene (PMP) support ring bonded to the base PTFE material. Suitable for use in PM10 and PM2.5 dichotomous and other air sampling techniques.

DIAMETER	PORE SIZE	TYPE	NOTES	U/M	PRODUCT
25MM	3.0µ	Laminated PMP Ring		50/pk	FPTPMP325
37MM	2.0µ	Laminated PMP Ring		50/pk	FPTPMP237
47MM	2.0µ	Laminated PMP Ring		50/pk	FPTPMP247

## Silver Membrane Filters



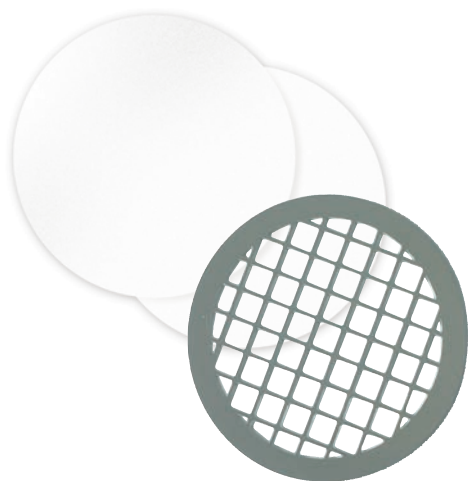
Silver Metal Filter Membranes are pure metallic silver (99.97% pure silver) and are available with particle retention ratings of 0.45 or 0.8 microns. Silver metal membranes are used in a variety of filtration applications, and their ability to withstand extreme chemical and thermal stress makes them ideal for applications involving aggressive fluids and/or high temperatures.

Features:

- 99.97% pure silver
- High temperature and chemical resistance
- Economical - can be cleaned & reused
- Smooth surface for particle capture and easy observation

DIAMETER	PORE SIZE	TYPE	NOTES	U/M	PRODUCT
25MM	0.45µ	Silver		50/pk	FS2545
	0.8µ	Silver		50/pk	FS258
37MM	0.8µ	Silver		25/pk	FS378

## Filter Supports



These filter supports are used behind filter membranes to support them from collapsing while still allowing free air flow through them.

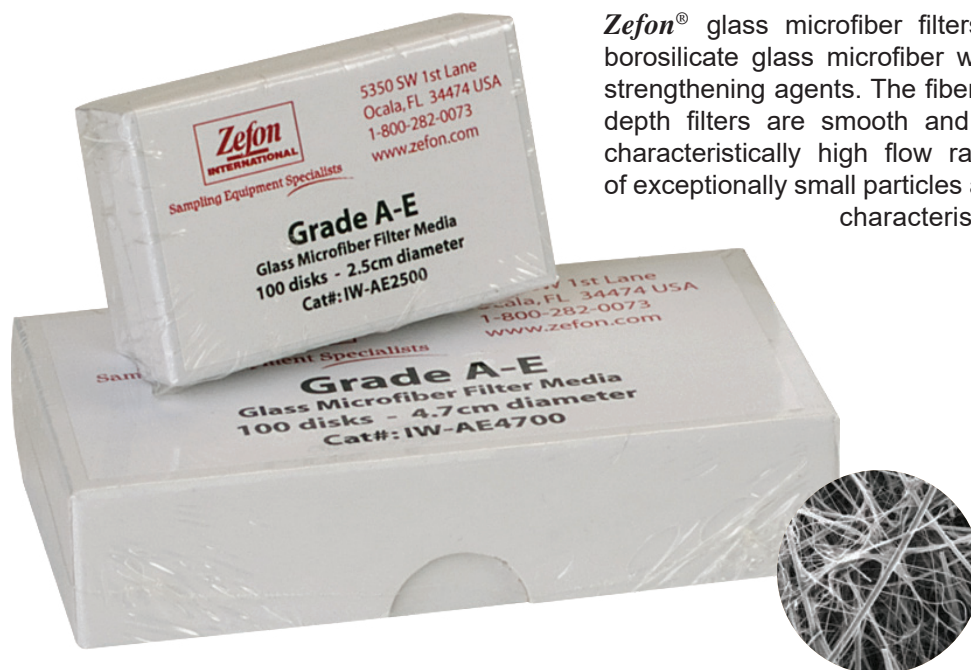
Available in 3 different styles:

- Cellulose pads are made up of 100% pure cellulose and the most common support used in filter cassettes.
- Porous plastic supports work well when sampling chemicals that are not compatible with cellulose.
- Stainless steel grids can be used in a wide range of filter holders and can easily be cleaned and re-used.

SIZE	MATERIAL	NOTES	PACK SIZE	PRODUCT
25MM	Cellulose		100/pk	FSP25
	Porous Plastic		100/pk	PFSP25
	Stainless Steel	Wide Mesh Grid	Each	ZA0014
34MM	Cellulose	Thick Pads	100/pk	FSP34-FM
37MM	Cellulose		100/pk	FSP37
	Cellulose	Support Ring For Use with NIOSH 5506/5515/5044	100/pk	FSP37R
	Porous Plastic		100/pk	PFSP37
	Stainless Steel	Wide Mesh Grid	Each	ZA0015
46.5MM	Cellulose	Adsorbent, Thick	100/pk	FSP465-AH
47MM	Cellulose		100/pk	FSP47
	Stainless Steel	Wide Mesh Grid	Each	ZA0016
8" x 10"	Cellulose		10/pk	FSP8X10



## Glass Fiber Filters



**Zefon**® glass microfiber filters are produced from 100% borosilicate glass microfiber without the use of binders or strengthening agents. The fibers used to manufacture these depth filters are smooth and uniform. This permits their characteristically high flow rates while allowing retention of exceptionally small particles and high load capacity. These characteristics are particularly important in applications involving high concentrations of particulate.

### Grade A-E

Grade A-E is the most popular grade used in air monitoring. Made from binderless borosilicate glass microfiber, it features a fine porosity and fast flow rate, with a 1.0µm size particle retention. DOP efficiency is 99.98%.

SIZE	NOMINAL PORE SIZE	TYPE	NOTES	U/M	PRODUCT
25MM	1.0µ	Grade AE		100/pk	IW-AE2500
37MM	1.0µ	Grade AE		100/pk	IW-AE3700
47MM	1.0µ	Grade AE		100/pk	IW-AE4700
90MM	1.0µ	Grade AE		100/pk	IW-AE9000
8" x 10"	1.0µ	Grade AE		100/pk	IW-AES810

### Grade 934-AH®

Grade 934-AH® is the standard for sampling suspended solids content and related measurements (Standard Methods 2540D and EPA Method 160.2). Made from a binderless borosilicate glass microfiber that enables use up to 550° C while featuring a fine porosity, fast flow rate, and a 1.5µm size particle retention.

SIZE	NOMINAL PORE SIZE	TYPE	NOTES	U/M	PRODUCT
25MM	1.5µ	Grade 934-AH®		100/pk	IW-AH2500
37MM	1.5µ	Grade 934-AH®		100/pk	IW-AH3700
47MM	1.5µ	Grade 934-AH®		100/pk	IW-AH4700
8" x 10"	1.5µ	Grade 934-AH®		100/pk	IW-AHS810

### Other Grades - Specialty

SIZE	NOMINAL PORE SIZE	TYPE	NOTES	U/M	PRODUCT
25MM	1.2µ	Grade C		100/pk	IW-C2500
25MM	0.7µ	Grade F		100/pk	IW-F2500
37MM	0.7µ	Grade F		100/pk	IW-F3700
47MM	0.7µ	Grade F		100/pk	IW-F4700

## PTFE Coated Glass Fibers

These filters are made from pure borosilicate glass microfibers reinforced with woven glass cloth and bonded with PTFE. They feature low air resistance for use in critical aerosol sampling tests that demand filter purity and non-hygroscopic properties such as diesel exhaust, stack emission control, and ambient air monitoring for particulate concentration.

SIZE	PORE SIZE	TYPE	NOTES	U/M	PRODUCT
25MM	Not rated		99.95% (DOP)	100/pk	FGF25-PTFE
37MM	Not rated		99.95% (DOP)	100/pk	FGF37-PTFE
47MM	Not rated		99.95% (DOP)	100/pk	FGF47-PTFE

## Quartz A

Quartz A is a binderless quartz microfiber featuring fine porosity with a 99.999% efficiency in air filtration for the retention of 0.6µm particles in air at a flow rate of 5cm/second. Primarily used in air pollution monitoring, atomic absorption spectroscopy, flame emission spectrometry and other applications where an extremely critical analysis is needed. Effective temperature range of up to 1000 °C.

SIZE	PORE SIZE	TYPE	NOTES	U/M	PRODUCT
25MM	0.6µ	Quartz A		100/pk	IW-Q2500
37MM	0.6µ	Quartz A		100/pk	IW-Q3700
47MM	0.6µ	Quartz A		100/pk	IW-Q4700
50MM	0.6µ	Quartz A		100/pk	IW-Q5000
90MM	0.6µ	Quartz A		100/pk	IW-Q9000

## Heat Treated Quartz Filters

These heat treated Quartz filters are uniquely designed for air monitoring in high temperature and aggressive atmospheres. Heat treated for reduction of trace organics and superior chemical purity. High flow rate and filtration efficiency. Ultra-pure soft waterprocessing to reduce residual ion content.

SIZE	PORE SIZE	TYPE	NOTES	U/M	PRODUCT
25MM	Not Rated	Tissuquartz	432µm thick, Up to 1093°C	100/pk	FTQ25
	2.0-2.2µ	Quartz A, Heat Treated	460µm thick Up to 1150°C	100/pk	IW-HT-Q2500
37MM	Not Rated	Tissuquartz	432µm thick, Up to 1093°C	25/pk	FTQ37
	2.0-2.2µ	Quartz A, Heat Treated	460µm thick Up to 1150°C	100/pk	IW-HT-Q3700
42.5MM	2.0-2.2µ	Quartz A, Heat Treated	460µm thick Up to 1150°C	100/pk	IW-HT-Q4250
47MM	Not Rated	Tissuquartz	432µm thick, Up to 1093°C	25/pk	FTQ47
	2.0-2.2µ	Quartz A, Heat Treated	460µm thick Up to 1150°C	100/pk	IW-HT-Q4700
90MM	2.0-2.2µ	Quartz A, Heat Treated	460µm thick Up to 1150°C	100/pk	IW-HT-Q9000

## Cassette Sealing Shrink Bands



Cassette Sealing Shrink Bands are a unique way to seal a cassette. They are stored in a liquid-filled plastic jar, then removed and placed around the cassette. As the band dries, it shrinks and forms a seal.

### Dr. Z's Cassette Sealing Band Tips



The easiest way to use shrink bands is to simply take a handful of bands out of the jar and place on some paper towels. Remove all excess liquid by patting them dry. Then, place around the cassette. The bands will then begin to dry and in a few hours will form a tight seal.

### 25mm Cassette Bands

PRODUCT	SIZE	COLOR	PACK SIZE
ZA0034	25MM	Clear	100/pk
ZA0036	25MM	Clear	1000
ZA0008	25MM	White	100/pk
ZA0029	25MM	White	1000/pk
ZA0032	25MM	Red	100/pk

### 37mm Cassette Bands

PRODUCT	SIZE	COLOR	PACK SIZE
ZA0035	37MM	Clear	100/pk
ZA0037	37MM	Clear	1000/pk
ZA0007	37MM	White	100/pk
ZA0033	37MM	White	1000/pk
ZA0031	37MM	Red	100/pk
ZA0039	37MM	Red	1000/pk
ZA0030	37MM	Yellow	100/pk
ZA0038	37MM	Yellow	1000/pk
ZA0090	37MM	Blue	1000/pk
ZA0091	37MM	Orange	1000/pk
ZA0048	37MM	Black	1000/pk

### 47mm Cassette Bands

PRODUCT	SIZE	COLOR	PACK SIZE
ZA0041	47MM	Clear	100/pk
ZA0044	47MM	Clear	1000/pk

## Cassette Accessories



Cassette/Cyclone Holder  
ZA0061



Cassette Opener  
ZA0046

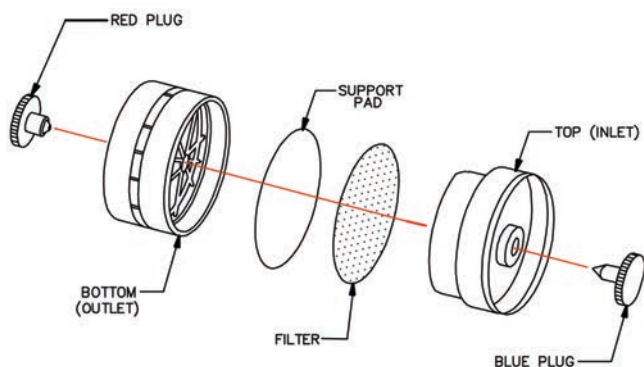


Filter Transport Case  
ZA0010

PRODUCT	DESCRIPTION
ZA0046	Cassette Opener for 25mm, 37mm and Air-O-Cell® Cassettes
ZA0049	Cassette Opener for 47mm and Air-O-Cell® Cassettes
ZA0061	Cassette/Cyclone Holder
ZA0010	Filter Transport Case, 25mm, Conductive



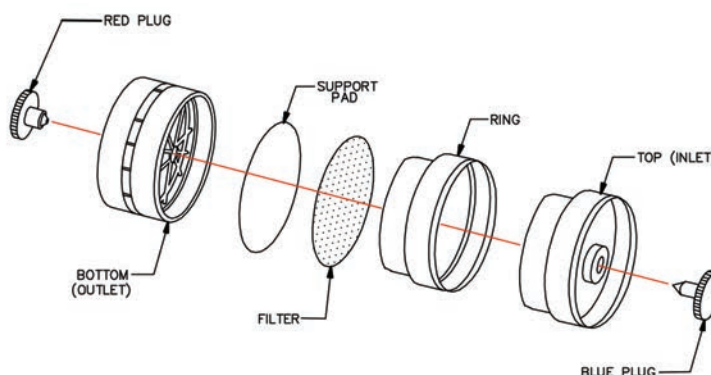
## 2-piece Standard Style Cassette Configuration



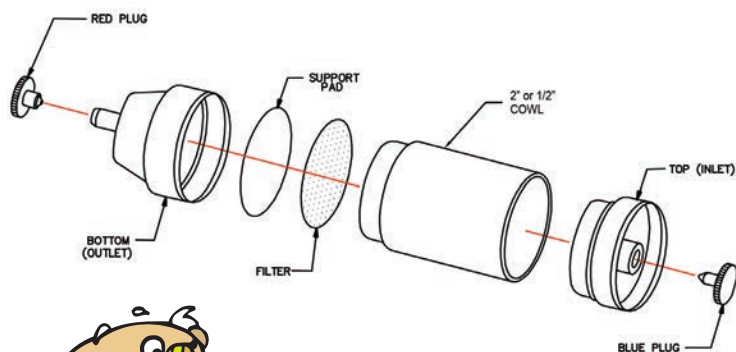
2-piece cassettes are advantageous when only “closed faced” sampling is required. This is because during sampling, contaminants will cling to the walls of the cassette from electrostatic forces. With approximately 35% less surface area in a 2-piece cassette vs. a 3-piece cassette, there is less surface area for contaminants to cling to and thus more contaminant where it should be — on the filter membrane.

## 3-piece Standard Style Cassette Configuration

3-piece cassettes provide flexibility because they can be used for both “open face” and “closed face” sampling as well as connect to cyclones. The main disadvantage would be that 3-piece cassettes have more static charge than 2-piece cassettes, resulting in more potential for sample loss.



## 3-piece Asbestos Style Cassette Configuration



3-piece asbestos style cassettes feature a 2” (50mm) or 1/2” long cowl and can be used for both “open face” and “closed face” sampling. These housings are available with a static conductive cowl or in a clear styrene material.



The term “closed faced” sampling refers to using a 37mm cassette with the inlet in place and only the plugs removed. Alternatively, “open faced” sampling refers to using a 3-piece cassette and removing the inlet piece, thus creating an “open face”.

# Asbestos Style (Cone Outlet) Cassette Housings

Just like our preloaded cassettes, these unassembled cassette housings feature a leak free design and are manufactured in-house to stringent quality standards.



PRODUCT	SIZE	TYPE	HOUSING STYLE & MATERIAL	PACK SIZE
25MMH	25MM	3-Piece	Asbestos Style with 50mm Conductive Cowl	50/bx
25MMH-SAN	25MM	3-Piece	Asbestos Style with 50mm Cowl, Styrene	50/bx
25MMH-2A	25MM	2-Piece	Asbestos Style, Clear Styrene	50/bx
25MMH-3A	25MM	3-Piece	Asbestos Style with 1/2" Spacer, Clear Styrene	50/bx
25MMH-2A-CF	25MM	2-Piece	Asbestos Style, Conductive PP	50/bx
25MMH-3A-CF	25MM	3-Piece	Asbestos Style with 1/2" Spacer, Conductive PP	50/bx
25MMH-2A-PP	25MM	2-Piece	Asbestos Style, Polypropylene	50/bx
25MMH-3A-PP	25MM	3-Piece	Asbestos Style with 1/2" Spacer, Polypropylene	50/bx
25MMH-3A-LIP	25MM	3-Piece	Asbestos Style with 50mm Cowl & extra Lip to support additional filter & pad on inlet side, conductive PP. For use with NIOSH method 6011.	50/bx

## Cassette Plugs

Fits Zefon® 25mm, 37mm, and 47mm standard and asbestos style housings.

PRODUCT	DESCRIPTION	PACK SIZE
ZA0012	Red Cassette Plugs	100/pk
ZA0013	Blue Cassette Plugs	100/pk



Dr. Z says...

Zefon® takes steps to assure its filter cassettes have a good seal. As part of our standard quality assurance program, random samples of cassettes are tested for leakage. During this test, cassettes are placed under a vacuum load that corresponds with the amount of vacuum load the cassette is likely to see during actual use. To

pass, there must not be more than 1 inch of mercury lost over a period of 30 seconds. Using cassettes that are not sealed properly can result in air leaking through the plastic seams or air that goes around and bypasses the filter. This may result in erroneous results or an underestimated sample size.

## Standard Cassette Housings

Just like our preloaded cassettes, these unassembled cassette housings feature a leak free design and are manufactured in-house to stringent quality standards.



### Standard Style Housings

DIAMETER	TYPE	HOUSING STYLE & MATERIAL	PACK SIZE	PRODUCT
25MM	2-Piece	Standard Style Clear Styrene	50/bx	25MMH-2
	3-Piece	Standard Style Clear Styrene	50/bx	25MMH-3
	Ring	1/2" Spacer Ring Only, Clear Styrene	50/bx	25MMH-1
	Ring	1/2" Spacer Ring Only, Conductive	50/bx	25MMH-1-CF
37MM	2-Piece	Standard Style Clear Styrene	50/bx	37MMH-2
	2-Piece	Standard Style Opaque Colored Styrene	50/bx	37MMH-2-OP
	2-Piece	Standard Style Solvent Resistant PP	50/bx	37MMH-2-PP
	2-Piece	Standard Style Conductive	50/bx	37MMH-2-CF
	2-Piece	Standard Style Tenite	50/bx	37MMH-2-TN
	3-Piece	Standard Style Clear Styrene	50/bx	37MMH-3
	3-Piece	Standard Style Opaque Colored Styrene	50/bx	37MMH-3-OP
	3-Piece	Standard Style Solvent Resistant PP	50/bx	37MMH-3-PP
	3-Piece	Standard Style Conductive	50/bx	37MMH-3-CF
	4-Piece	Standard Style Clear SAN	50/bx	37MMH-4
	4-Piece	Standard Style Conductive	50/bx	37MMH-4-CF
	Ring	1/2" Spacer Ring Only, Clear Styrene	50/bx	37MMH-1
	Ring	1/2" Spacer Ring Only, Conductive	50/bx	37MMH-1-CF
	47MM	2-Piece	Standard Style Conductive	25/bx
3-Piece		Standard Style Conductive	25/bx	47MMH-3-CF

### Material Explanations

Clear Styrene	Opaque Styrene	Polypropylene (Solvent Resistant)	Conductive Black Polypropylene
The most common material, a crystal clear styrene that provide excellent visibility inside the cassette housing.	Manufactured of the same styrene the clear one is, except it is an opaque brown color to prevent transmission of light into the cassette.	A natural polypropylene with a cloudy looking color. Material is resistant to a wide range of chemicals.	Manufactured using a polypropylene that is carbon filled making it conductive when grounded properly.



# Coal Dust Sampling Cassettes



Zefon's Preweighed Coal Dust Sampling Cassettes consist of a sealed outer plastic capsule and an inner pre-weighed filter capsule. The inner capsule contains a 5 micron PVC filter, and stainless steel supports. Each filter cassette is supplied with a sampling data card.

PRODUCT	DESCRIPTION
711361	Coal Dust Sampling Cassette, Non-Regulated, General Purpose Use

Note: Coal Dust Sampling Cassettes are not returnable and Zefon's normal 30 day return policy does not apply to this product.

# Zefon® Heavy Duty 10mm Dorr-Oliver Cyclone

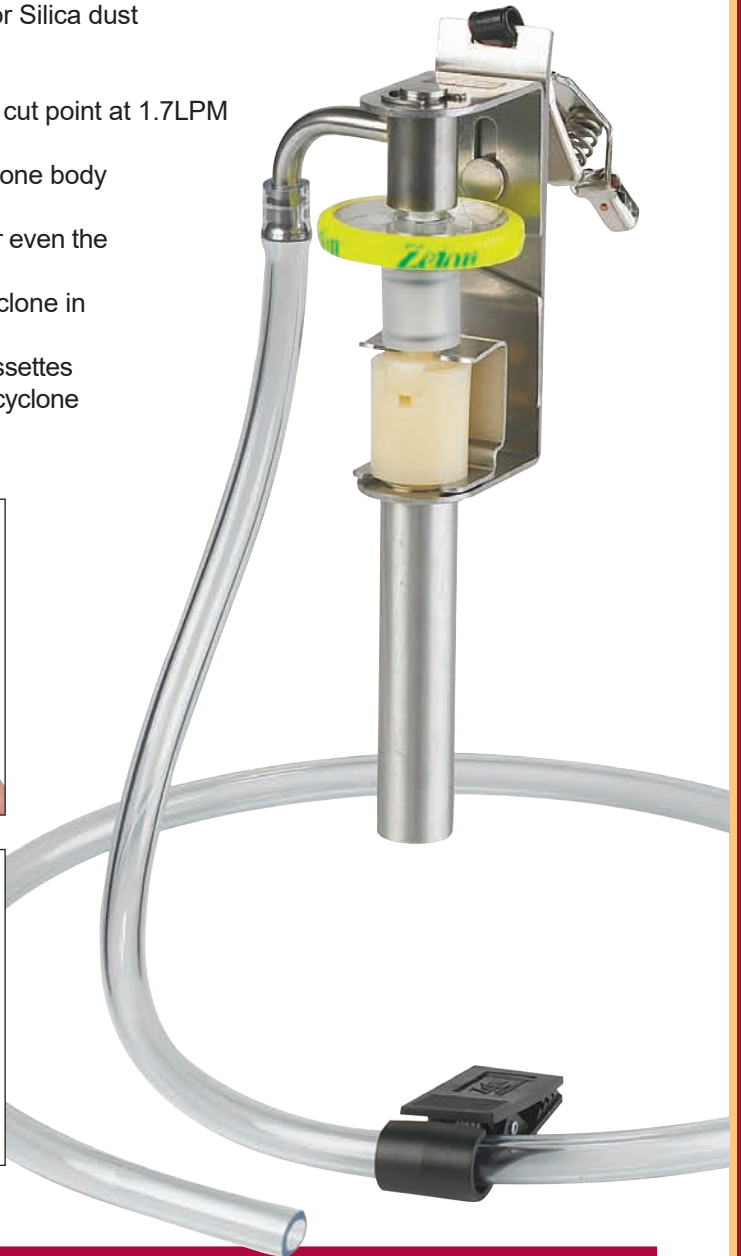
The Zefon® 10mm Nylon Cyclone is designed to separate respirable dust particles from non-respirable particles and allow the respirable particles to be collected on a filter cassette.

## Applications:

- Specified for coal mine dust sampling per 30 CFR, Part 74 (model #456243)
- Designed to fit all standard 37mm Industrial Hygiene (IH) Cassettes (model #10044015)
- Specified in NIOSH method 0600 for Particulates Not Otherwise Regulated, Respirable
- Specified in NIOSH method 7500, 7501, 7601, 7602 for Silica dust

## Features:

- Meets ACGIH/ISO/CEN respirable curve with a 4.0µm cut point at 1.7LPM
- Heavy Duty design withstands harsh environments
  1. Stainless steel protective sleeve fits over the cyclone body for protection.
  2. Strong collar clip with spike will not come off under even the harshest conditions.
  3. Cyclone and holder are designed to orient the cyclone in the proper position for sampling.
  4. Separate couplers for mining cassettes and IH cassettes prevent mixups between the wrong cassette and cyclone and allow easy identification.



PRODUCT	DESCRIPTION
<b>For use with Zefon® Mining Cassettes:</b>	
456243	10mm Nylon Respirable Dust Cyclone for use with Zefon® Mining Cassettes Only
457391	Replacement Plastic Cyclone Coupler for Mining Cassette
<b>For use with Standard Industrial Hygiene Cassettes:</b>	
10044015	10mm Nylon Respirable Dust Cyclone for use with standard 37mm IH Cassettes
457392	Replacement SS Cyclone Coupler for 37mm IH Cassettes

# Zefon® 10mm Static Conductive Nylon Cyclone

A static conductive replica of the 10mm "Dorr-Oliver" Nylon Cyclone.

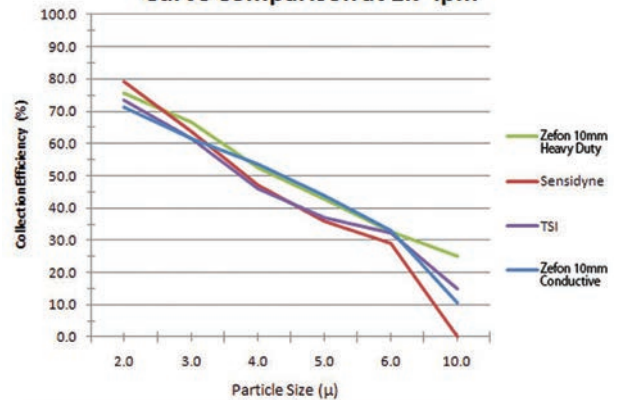
The Zefon® 10mm Conductive Nylon Cyclone (Dorr-Oliver style) is used in conjunction with 37mm filter cassettes to separate dust particles by size with the respirable particles being collected on the filter and larger particles being removed. The collection efficiency curve meets the standards set forth by ACGIH/ISO/CEN for a respirable curve with a median 50% cut point of 4µ when operated at a flow rate of 1.7 LPM. The Zefon® 10mm Conductive Nylon Cyclone has been designed to precisely match the internal workings of the Dorr-Oliver 10mm nylon cyclones currently on the market. This results in performance characteristics which are identical, but also provides the added benefit of being static conductive. The external characteristics of the Zefon® 10mm Nylon Conductive Cyclone have been designed for ease of use and is one of the lightest cyclones for users to wear.



A cassette/cyclone holder is required for use. The cyclone is compatible with Zefon® cassette/cyclone holder #ZA0061 or the SKC holder #225-1.

FLOW RATE (l/min)	APPLICATION	NOMINAL PARTICLE DIAMETER (µm)
1.7	ISO/ACGIH/CEN Convention	4.0
2.0	Other Applications	3.5

10mm Nylon Cyclone Collection Efficiency Curve Comparison at 1.7 lpm



Source: Internal Zefon performance tests with all 4 cyclones under identical conditions.

Features:

- Meets NIOSH requirements for 10mm nylon cyclones as specified in 0600 for nuisance dust and 7500, 7501, 7601 and 7602 for silica dust
- **Conductive** – Eliminates any possible bias in sampling results from static charging
- **Lightweight design** – Only 3.6oz (104g) for the complete assembly including cassette and holder
- Compatible with the Zefon® universal cassette/cyclone holder

PRODUCT	DESCRIPTION
ZA0080	Zefon® 10mm Conductive Nylon Cyclone
ZA0081	Zefon® 10mm Conductive Nylon Cyclone with Cassette/Cyclone Holder
ZA0082	Replacement Grit Pots, 25/pk



# Zefon® Aluminum Cyclone for Respirable Dust

The *Zefon*® Respirable Dust Aluminum Cyclone is used in conjunction with 25mm or 37mm 3 piece filter cassettes to separate and remove larger particles from the respirable particles collected on the cassette's filter. This *Zefon*® cyclone is a replica of the SKC Aluminum Cyclone\*. The inner workings have been precisely machined to exactly match that of the SKC Cyclone with only slight cosmetic changes to the exterior.

As a result, the collection efficiency curve meets the standards set forth by ACGIH/ISO/CEN for a respirable curve with a median 50% cut point of 4 micron at 2.5 LPM flowrate.

A cyclone holder and 25mm or 37mm 3 piece filter cassette are required for use of the *Zefon*® Aluminum Cyclone. Both the *Zefon*® Cassette Cyclone holder (#ZA0061) and the SKC holder (#225-1) are compatible with the *Zefon*® Aluminum Cyclone.

## Features:

- Aluminum construction is static conductive, eliminating interference
- Fully interchangeable with SKC Aluminum Cyclone
- Specified in NIOSH method 0600 for Respirable Particulates, and NIOSH 7500 for Silica, Crystalline
- Lightweight – 30 grams



ZA0060

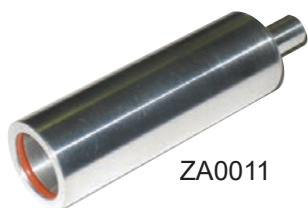
ZA0075



Shown with cassette installed in holder.

PRODUCT	DESCRIPTION
ZA0060	<i>Zefon</i> ® 37mm Aluminum Cyclone for Respirable Dust
ZA0075	<i>Zefon</i> ® 25mm Aluminum Cyclone for Respirable Dust
ZA0062	<i>Zefon</i> ® 37mm Aluminum Cyclone for Respirable Dust with Holder
ZA0076	<i>Zefon</i> ® 25mm Aluminum Cyclone for Respirable Dust with Holder
ZA0061	<i>Zefon</i> ® Universal Cassette and/or Cyclone Holder only
ZA0066	Replacement Grit Pots for Aluminum Cyclone, 25/pk
ZA0067	Replacement O-Rings for Aluminum Cyclone, 5/pk

\*Performance tests indicate no statistical difference between the SKC Aluminum Cyclone and the *Zefon*® Aluminum Cyclone.



ZA0011

## Aluminum Cyclone Calibration Adapter

A chamber specifically designed to fit over the *Zefon*® aluminum cyclone and connect 1/4" ID tubing for flow calibration. This provides the best calibration option by taking an actual measurement as close to the cyclone inlet as possible. Chamber fits both *Zefon*® brand and SKC brand 37mm and 25mm aluminum cyclones.

PRODUCT	DESCRIPTION
ZA0011	<i>Zefon</i> ® Aluminum Cyclone Calibration Adapter



ZA0063

## Zefon® Calibration Jar

The *Zefon*® Cyclone Calibration Jar is a container with all the proper fittings and connections to calibrate Personal Sampling Pumps with the *Zefon*®, SKC, or Dorr-Oliver Cyclones, and inhalable dust samplers.

### Features:

- Compatible with both *Zefon*® and SKC Aluminum Cyclones
- Complete with all fittings and Tygon® tubing for connecting the sampling pump

PRODUCT	DESCRIPTION
ZA0063	<i>Zefon</i> ® 1 Liter Cyclone Calibration Jar (Aluminum Cyclone & <i>Zefon</i> ® Conductive Nylon Cyclone)
ZA0085	<i>Zefon</i> ® 2 Liter Cyclone Calibration Jar (Sensidyne & <i>Zefon</i> ® Dorr-Oliver Cyclone)

# Zefon® NRD Sampler

The Zefon® Personal Nanoparticle Respiratory Deposition (NRD) sampler is designed to size-selectively collect nanoparticles with an efficiency that matches their deposition in the respiratory tract system.<sup>1,2</sup>

Its lightweight, disposable design allows it to be worn easily for personal exposure monitoring while providing the convenience of a preloaded ready to use product.

Features:

- Engineered to collect nanoparticles likely to be deposited in the respiratory tract
- Filters out larger unwanted particles (>300nm)
- Lightweight; Designed to be worn for personal exposure sampling
- Used with a standard 25mm aluminum cyclone
- Compatible with personal sampling pumps capable of a 2.5LPM flow rate at 15" H<sub>2</sub>O backpressure
- Can be analyzed using lower cost chemical analysis vs electron microscopy



## How it works:

### Stage 1

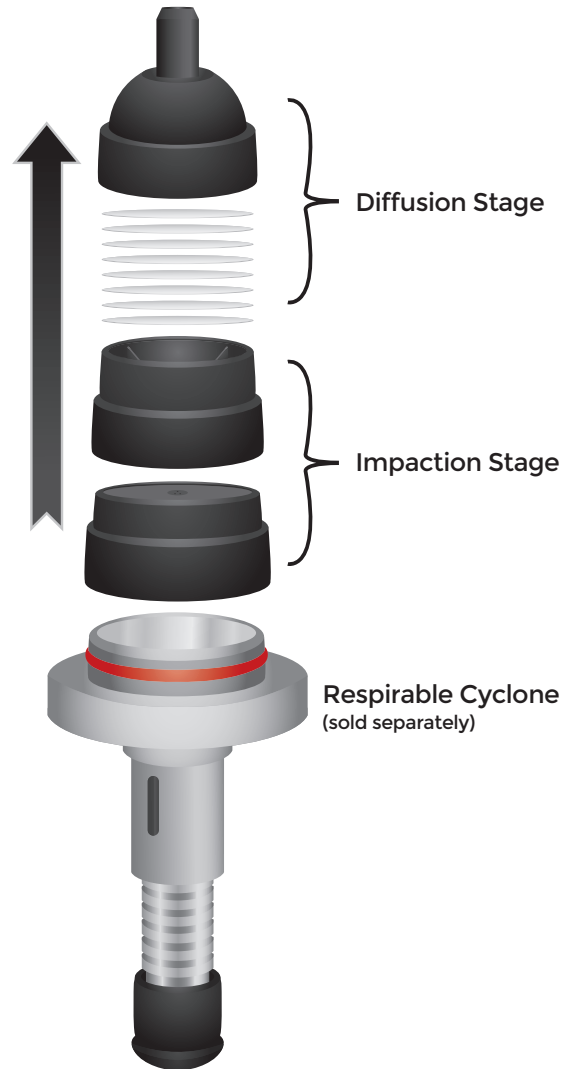
A respirable aluminum cyclone (ZA0075) at a flow rate of 2.5 LPM is used to remove particles larger than 4µm in size.

### Stage 2

Air passes through an impaction stage where particles larger than 300nm are removed using an impaction plate.

### Stage 3

Air passes through a diffusion stage consisting of either Nylon filters or a foam filter, collecting particles <300nm.



PRODUCT SPECIFICATIONS	
<b>Housing Material</b>	Carbon Filled Polypropylene
<b>Filter Material (diffusion stage)</b>	Nylon or Foam Filter
<b>Collection Efficiency</b>	<300nm with an efficiency designed to match the efficiency at which particles deposit in the respiratory tract
<b>Cut-Point (cyclone stage)</b>	4µm
<b>Cut-Point (impactor stage)</b>	300nm
<b>Flow Rate</b>	2.5 LPM

PRODUCT	DESCRIPTION
ZNRD001	Zefon® NRD Sampler with nylon filter
ZNRD020	Zefon® NRD Sampler with foam filter
ZA0075	Zefon® Aluminum Cyclone, 25mm

1. A Personal Nanoparticle Respiratory Deposition (NRD) Sampler. Lorenzo G. Cena, T. Renée Anthony, and Thomas M. Peters, Environmental Science & Technology 2011 45 (15), 6483-6490  
 2. International Commission on Radiological Protection (ICRP). Human Respiratory Tract Model for Radiological Protection, Publication 66; Elsevier Science, Ltd.: Oxford, U.K, 1994.

# Zefon® EoS™ Silica Cassette

The Zefon® EoS™ (End of Shift) silica cassette was designed to work with the new NIOSH silica monitoring approach. This cassette is designed to work with a portable FTIR (Fourier Transform Infrared) for field-based monitoring of respirable crystalline silica. Air samples are taken using a traditional cyclone and the EoS cassette. After sampling, the inlet and outlet of the cassette are removed. The middle section is then placed into a portable FTIR for a direct-on-filter analysis. The results are interpreted through a software program developed by NIOSH called FAST (Field Analysis of Silica Tool). A pre-weighed version of the cassette can be reassembled and sent to a laboratory for respirable dust analysis.



## Features:

- Carbon filled, conductive cassette to reduce wall deposits.
- Can be used for silica and respirable dust analysis.
- Sample stays intact allowing it to be sent to a laboratory if desired.
- Helps provide on-site analysis so immediate controls can be implemented, if needed.



A dust sample is first collected using traditional samplers. The sampling cassette is removed and placed in a portable Fourier-transform infrared (FTIR) instrument in the field. The FTIR instrument examines the dust sample and offers a complete analysis in one to two minutes. Source: Emanuele Cauda, PhD; Lauren Chubb, DrPH; and Valerie Coughanour, MA, MFA. <https://blogs.cdc.gov/niosh-science-blog/2018/02/21/engineers-week-mining>.

PRODUCT	DESCRIPTION
745PVC-CF-FTIR	Zefon® 37mm FTIR Silica Cassette, 5.0µm PVC Filter. 10/bx
7P54P-CF-FTIR	Zefon® 37mm FTIR Silica Cassette, 5.0µm PVC Filter, Pre-weighed. 10/bx

Patent Pending

# Zefon® Disposable Inhalable Sampler

Introducing the latest advancement in Inhalable Sampling

The Zefon® Disposable Inhalable Sampler (DIS) is a unique inhalable sampler with a physical design to replicate the collection of the original inhalable sampler (designed by the Institute of Occupational Medicine (IOM) in Scotland) at a flow rate of 2 LPM.

Features:

- Preloaded, ready to use
- Leak-free design
  - No more assembly errors from mismatched parts from different brands or versions of samplers
  - No more cleaning samplers or cross contamination
  - No more transport clips to worry about
  - No more expenses from sampling heads getting lost or misplaced
- Lower tare weight provides better sensitivity
- Accounts for wall deposits as recommended by NIOSH
- Collection and performance matches that of the original inhalable sampler designed by the Institute of Occupational Medicine (IOM) in Scotland.
- Meets all the same standards shown for the reusable inhalable sampler on page 45 except NIOSH method 5525.

Applications:

- ACGIH definition of inhalable particulate matter
- NIOSH Method 5700 for particulate formaldehyde
- British Method MDHS 14/3 for inhalable dust in air
- British Method MDHS 14/4 for sampling and gravimetric analysis of respirable, thoracic and inhalable aerosols
- British Method MDHS 25/3 for organic isocyanates in air
- British Method MDHS 6/3 for lead in air

### Multi-Sampling Foam

Specially designed foam inserts can be used with the Zefon® DIS to enable the collection of both Inhalable and Respirable particles. When inserted into the DIS, inhalable particles are collected on the foam filter while respirable particles are collected on the filter membrane. Foam filters are available preloaded into the DIS sampler or separately for user installation.



DIS Filter Capsule



Shown with Multi-Sample Foam Inlet Filter - ZA0308

PRODUCT	DESCRIPTION
CLCL-DIS0810	Disposable Inhalable Sampler, Cellulose/MCE Filter Capsule, 10/Bx
PVCL-DIS0810	Disposable Inhalable Sampler, Cellulose/PVC Filter Capsule, 10/Bx
PVPV-DIS5010	Disposable Inhalable Sampler, PVC Filter Capsule, 10/Bx
PVPV-DIS5010P	Disposable Inhalable Sampler, PVC Filter Capsule, Preweighed, 10/Bx
CLCL-DIS0810-F	Disposable Inhalable Sampler, Cellulose/MCE Filter Capsule, with Foam Filter, 10/Bx
CLCL-DIS0810U	Unassembled Disposable Inhalable Sampler, Cellulose/MCE Filter Capsule, 10/Bx
PVPV-DIS5010U	Unassembled Disposable Inhalable Sampler, PVC Filter Capsule, 10/Bx
ZA0308	Foam Inlet Filters, Multi-Sample (for Inhalable & Respirable Collection), 10/pk
ZA0307	Calibration Adapter for Inhalable Sampler

Patent Pending



# Zefon® Inhalable Dust Sampler

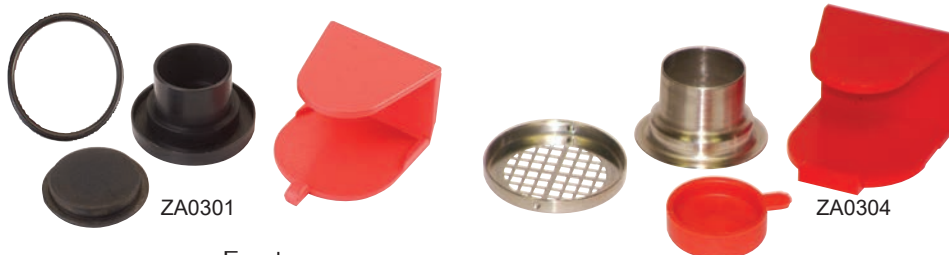
The Zefon® Inhalable Dust sampler is a reusable filter cassette with a sampling head designed to measure the worker's exposure to inhalable particulates and respirable dust. When sampling at the recommended flow rate of 2 LPM, it collects a particle size distribution that includes particles of 100 micron and smaller. This meets the definition set forth by ACGIH for inhalable particulate.

The sampler is comprised of two main parts. The main sampling head, and a removable filter cassette assembly. This allows easy transport of the filter cassettes for analysis while the sampling head can then be reloaded with a new cassette and sampling may continue.

The physical design of the Zefon® Inhalable Dust Sampler is a replica of the sampling head developed by the Institute of Occupational Medicine (IOM) in Scotland during the 1980's and which is currently marketed under license from the IOM by SKC. As a result the Zefon® Inhalable Dust Sampler features identical performance and part interchangeability with the samplers marketed by SKC.



ZA0300



ZA0301

ZA0304

## Features:

- 50% cut point at 100 microns when used at 2 LPM
- Conductive plastic cassette or stainless steel
- Small (128 x 33 x 25 mm) including lapel clip
- Light Weight (<1 ounce or about 25 grams)
- Complies with or meets the requirements of the following standards:
  - ACGIH definition of inhalable particulate matter
  - NIOSH Method 5700 for particulate formaldehyde
  - NIOSH Method 5525 for Isocyanates (stainless steel cassette only)
  - British Method MDHS 14/3 for inhalable dust in air
  - British Method MDHS 25/3 for organic isocyanates in air
  - British Method MDHS 6/3 for lead in air
  - Australian standard for inhalable particulate
  - ISO/CEN for bioaerosols (health-related fractions)

PARTICLE AERODYNAMIC DIAMETER (µm)	INHALABLE PARTICLE MATTER FRACTION COLLECTED (%)
0	100
1	97
2	94
5	87
10	77
20	65
30	58
40	54.5
50	52.5
100	50

PRODUCT	DESCRIPTION
ZA0300	Zefon® Inhalable Dust Sampler with Conductive Plastic Cassette
ZA0303	Zefon® Inhalable Dust Sampler with Stainless Steel Cassette
ZA0301	Inhalable Sampling Cassette with transport clip, plastic
ZA0304	Inhalable Sampling Cassette with transport clip, stainless steel
ZA0308	Foam Inlet Filters, Multi-Sample (for Inhalable & Respirable Collection), 10/pk
ZA0305	O-Rings for Inhalable Sampler, 3/pk
ZA0307	Calibration Adapter for Inhalable Sampler

Each Zefon® Inhalable Dust Sampler comes with the sampling head, 1 cassette assembly and a cassette transport clip. **Filter membrane for the inhalable sampler can be found on pages 28-33.**



ZA0307

# Zefon® Gemini® Twin Port Sorbent Tube Sampler

The Zefon® Gemini® Twin-Port Sorbent Tube Sampler can be used with the Escort ELF®, or just about any other sampling pump able to pull a flow rate of 1.5LPM at 25" of water backpressure. It offers increased flexibility and control in gathering samples through sorbent tubes. If air is being sampled for two or more contaminants, the Gemini can draw samples at independent flow rates through tubes containing different sorbents. In situations where a single contaminant is being sampled, sampling on two tubes of the same type can be done

simultaneously at different flow rates. This type of sampling protects against breakthrough which occurs when a tube's sampling capacity is exceeded because the concentration of a contaminant is higher than anticipated. Duplicate sampling at the same flow rate can also be done to achieve better results.

**Features:**

- Valved mechanism allows flow control down to .001 lpm
- Control the flow rate of each port independently
- Includes tube covers to fit both large and small tube sizes



PRODUCT	DESCRIPTION
497697	Gemini® Twin Port Sampling Kit Includes: Gemini Sampler, tube protectors, Y-connectors, clips and carrying case.

## Low Flow Sorbent Tube Holders

Available both with and without flow adjustment. Use non-adjustable when using a sampling pump designed specifically for low flow sampling without adapters. Use adjustable flow to use with standard sampling pumps in constant pressure mode. Tube holder comes setup for 6mm x 70mm tubes. Additional size tube covers may be purchased separately.

PRODUCT	DESCRIPTION
APB-109032	Single Tube Holder with Non-Adjustable Flow
APB-109033	Single Tube Holder with Adjustable Flow (5-100cc)
APB-109030	Single Tube Holder with Adjustable Flow (5-800cc)
APB-109022	Tube Covers, 6mm x 70mm
APB-109024	Tube Covers, 8mm x 110mm
APB-109026	Tube Covers, 10mm x 150mm
APB-109028	Tube Covers, 10mm x 220mm



Sorbent Tube Holder  
#APB-109030

# Zefon® Sorbent Tubes

Zefon® Sorbent Tubes are high quality glass tubes that are packed with accurately weighed, high-purity sorbents. They are designed to adsorb vapors and gases passed over them when used with low flow sampling pumps and fit a variety of tube holders, including the Zefon® Gemini® Twin Port Sorbent Tube Sampler.

Many Zefon® sorbent tubes are divided into sections, with two absorbent sections being most common. The first section is twice the size of the back section and collects the compounds of interest. The second section is a backup section to determine if airborne contaminants breakthrough occurred on the front section.

## Features:

- Highest sorbent material purity for contamination-free samples
- Accurate sorbent weight for uniform testing results
- Uniform pressure drop to assure repeatable sampling results
- Designed to comply with all NIOSH specifications for tube dimensions, sorbent quality, particle size, divider composition and pore size



PRODUCT	SORBENT	SIZE (mm) OD X L	SECTIONS	SORBENT (mg)	TUBE ENDS	SEPARATOR*	SKC EQUIVALENT	U/M
ZST-001	Coconut Charcoal	6 x 70	2	100/50	GS	F/F/W	226-01	50/bx
ZST-001B	Coconut Charcoal	6 x 70	2	100/50	GS	F/F/W	226-01B	1000/bx
ZST-002	Coconut Charcoal	8 x 110	2	400/200	GS	F/F/W	226-09	50/bx
ZST-002B	Coconut Charcoal	8 x 110	2	400/200	GS	F/F/W	226-09B	1000/bx
ZST-003	Coconut Charcoal	10 x 110	2	800/200	GS	F/W/W	226-16	50/bx
ZST-020	Chromosorb	8 x 110	2	100/50	GS	W/W/W	226-107	50/bx
ZST-040	Microlite*	6 X 70	1	200	GS	W/W	226-17-1A	50/bx
ZST-050	Silica Gel	6 X 70	2	150/75	GS	F/W/W	226-10	50/bx
ZST-051	Silica Gel	6 X 70	2	100/50	GS	F/W/W	226-51	50/bx
ZST-054	Silica Gel	8 x 110	2	520/360	GS	W/W/W	226-10-04	50/bx
ZST-058	Silica Gel	10 X 110	2	1040/260	GS	F/W/W	226-22	50/bx
ZST-060	Silica Gel (specially cleaned)	7 X 110	2	400/200	GS	W/W/G/W	226-10-03	50/bx
ZST-070	Tenax	6 x 70	2	30/15	GS	F/W/W	226-35	50/bx
ZST-074	Tenax	8 x 110	2	100/50	GS	W/W/W	226-35-03	50/bx
ZST-080	XAD-2	8 x 110	2	100/50	GS	W/W/W	226-30-04	50/bx
ZST-090	XAD-7	6 X 110	2	100/50	GS	W/W/W	226-95	50/bx

\* Microlite sorbent is equivalent to Hydrar, Carulite, and the SKC Anasorb C300.

**Separator Codes**  
 W: Glass Wool  
 G: Glass Fiber Filter  
 F: Polyurethane Foam

**Tube Ends**  
 GS: Glass sealed  
 GO: Glass open

PRODUCT	DESCRIPTION
GIL-ST-900	Tube Tip Breaker, 5/pk

# EconoGrab™ Tedlar® Gas Sampling Bags



Zefon® EconoGrab™ gas sampling bags are excellent quality, low cost Tedlar® gas sampling bags that feature a single polypropylene fittings and eyelet.

Features:

- Chemically inert Tedlar® film
- Reusable if purged with nitrogen
- Easy storage and handling
- Low cost combined with high quality



Polypropylene Valve Fitting  
Combines the valve and septum into one easy to use fitting.



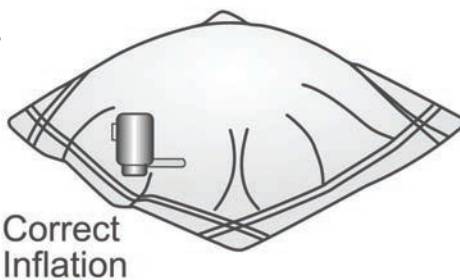
Stainless Steel Valve Fitting  
Combines the valve and septum into one easy to use fitting.

CAPACITY	INTERNAL SIZE	BAG MATERIAL	FITTING TYPE	PRODUCT	U/M
0.5 liter	8.0" x 4.5" (20.3cm x 11.4cm)	Clear Tedlar®	Polypropylene Stainless Steel	EG-PP-05 EG-SS-05	Each Each
1 liter	8.0" x 6.0" (20.3cm x 15.2cm)	Clear Tedlar®	Polypropylene Stainless Steel	EG-PP-1 EG-SS-1	Each Each
3 liter	9" x 11.5" (22.9cm x 29.2cm)	Clear Tedlar®	Polypropylene Stainless Steel	EG-PP-3 EG-SS-3	Each Each
5 liter	9" x 15.5" (22.9cm x 39.4cm)	Clear Tedlar®	Polypropylene Stainless Steel	EG-PP-5 EG-SS-5	Each Each
10 liter	16" x 15" (40.6cm x 38.1cm)	Clear Tedlar®	Polypropylene Stainless Steel	EG-PP-10 EG-SS-10	Each Each
25 liter	17" x 25" (43.1cm x 63.5cm)	Clear Tedlar®	Polypropylene Stainless Steel	EG-PP-25 EG-SS-25	Each Each
50 liter	34" x 19" (86.4cm x 48.3cm)	Clear Tedlar®	Polypropylene Stainless Steel	EG-PP-50 EG-SS-50	Each Each
100 liter	34" x 30" (86.4cm x 76.2cm)	Clear Tedlar®	Polypropylene Stainless Steel	EG-PP-100 EG-SS-100	Each Each



## Dr. Z Tips

- Be sure to flush bags with nitrogen or purified air before use.
- When collecting your sample, do not fill the bag to more than 80% of the rated volume size.
- Avoid shipping EconoGrab bags by air in unpressurized planes.





# Zefon® Tedlar® Bags

Zefon® Tedlar® bags are manufactured from 2 mil Tedlar® PVF (polyvinyl fluoride) film and feature a unique easy to use valve with built-in septum. Bags made from Tedlar® film offer good stability with VOC's and are recommended in many US EPA methods including TCLP and methods TO-3 (VOCs), TO-12 (NMOC), TO-14A (VOCs), TO-15 (VOCs), ASTM D-5504 (reduced sulfur compounds) and a variety of atmospheric gas methods.

Features:

- Unique Zefon® ZP valve is easy to use with built-in PTFE septum
- Includes grommet hanging hole
- Strong 1/4" wide seams



Zefon® ZP style valve



CAPACITY	INTERNAL SIZE	BAG MATERIAL	FITTING TYPE	PRODUCT	U/M
0.5 liter	7.9" x 4.6" (20.1cm x 11.7cm)	Clear 2 mil Tedlar®	ZP Type Polypropylene	EG-ZP-05EA EG-ZP-05	Each 10/bx
1 liter	7.9" x 6.1" (20.1cm x 15.5cm)	Clear 2 mil Tedlar®	ZP Type Polypropylene	EG-ZP-1EA EG-ZP-1	Each 10/bx
3 liter	8.4" x 12.5" (21.3cm x 31.8cm)	Clear 2 mil Tedlar®	ZP Type Polypropylene	EG-ZP-3EA EG-ZP-3	Each 10/bx
5 liter	9.25" x 15.15" (23.5cm x 38.5cm)	Clear 2 mil Tedlar®	ZP Type Polypropylene	EG-ZP-5EA EG-ZP-5	Each 10/bx
10 liter	15.15" x 16" (38.5cm x 40.6cm)	Clear 2 mil Tedlar®	ZP Type Polypropylene	EG-ZP-10	10/bx
25 liter	15.65" x 27.25" (39.8cm x 69.2cm)	Clear 2 mil Tedlar®	ZP Type Polypropylene	EG-ZP-25	5/bx



## Zefon® Tedlar® Bags with Open End and a Clip Seal

Used to collect bulk samples for off-gassing sampling, these bags have one end of the bag left open. Simply insert the item to be sampled, then seal using the provided clip for an air tight seal. Sampling of the off-gassing may be taken using the bags valve with built in septum.

CAPACITY	INTERNAL SIZE	BAG MATERIAL	FITTING TYPE	PRODUCT	U/M
1 liter	7.9" x 6.1" (20.1cm x 15.5cm)	Clear 2 mil Tedlar®	ZP Type Polypropylene	EG-ZP-1-CSEA EG-ZP-1-CS	Each 10/bx
3 liter	8.4" x 12.5" (21.3cm x 31.8cm)	Clear 2 mil Tedlar®	ZP Type Polypropylene	EG-ZP-3-CS	10/bx
5 liter	9.25" x 15.15" (23.5cm x 38.5cm)	Clear 2 mil Tedlar®	ZP Type Polypropylene	EG-ZP-5-CSEA EG-ZP-5-CS	Each 10/bx
10 liter	15.15" x 16" (38.5cm x 40.6cm)	Clear 2 mil Tedlar®	ZP Type Polypropylene	EG-ZP-10-CS	10/bx

# VeriAir Flex™ Manual Inflating Sample Bag

The VeriAir Flex™ patented sample bag design lets you rapidly collect an air sample in a bag without the use of a pump, saving you time and money when compared to other methods. Everything you need to collect a grab sample of air or gas is integrated into a simple, inexpensive system.

The VeriAir Flex sampling bag is ideal for emergency response situations, where an atmospheric air sample can be collected in a hot zone and then moved to a safe zone to be immediately tested with a portable gas chromatograph or other analytical instrument.



**Features:**

- Easy to Use
- Requires no electric pump set up, no pump calibration or required calibration equipment, no batteries to charge, no maintenance and no complex special training even for non-technical personnel.
- Ability to sample with a detector tube before sending to lab.

**Always Ready**

Lightweight, compact, and easily stored or carried, Nextteq's intrinsically safe VeriAir Flex sampling bag has handles made of static dissipative materials and is always ready to collect an air sample anywhere, at anytime.

**Choice of Materials**

Available in either a traditional Tedlar® film or in a durable foil material with internal polypropylene lining suitable for sampling light sensitive compounds.

STEP 1: OPEN VALVE



STEP 2: COLLECT SAMPLE



STEP 3: CLOSE VALVE



PRODUCT	DESCRIPTION
31019	VeriAir Flex™ Manual Inflating Bag, 1 Liter, Tedlar®
31000	VeriAir Flex™ Manual Inflating Bag, 1 Liter, Foil
31029	VeriAir Flex™ Manual Inflating Bag, 5 Liter, Foil

# Deluxe All-in-One Bag Sampling Chamber

A complete all-in-one bag sampling chamber that includes internal pump and battery.



Features:

- Fully integrated internal pump -- no separate pump to buy or connect
- Battery powered (take up to 100 samples on a full charge)
- Fills bag without sample passing through pump
- Overfill cut off switch prevents bag overfilling
- Fits bags sized 0.5L to 1.0L
- Clear lid makes it easy to watch
- Flexible, high purity Tygon® connection tubing
- Purge function to flush bag



PRODUCT	DESCRIPTION
ZA0320	Deluxe All-in-One Bag Sampling Chamber

# Zefon® Gas Sampling Vacuum Chamber

Zefon® gas sampling vacuum chambers are sealed boxes designed to allow Tedlar bags to be directly filled without the sample passing through the air sampling pump or the vacuum source.

Features:

- Fills bag without sample air passing through the pump.
- Durable, heavy duty design.
- Large viewing window allows monitoring of the bag filling process.
- Purge port makes purging and flushing bags easy.
- Easy to use quick-disconnect connections.



PRODUCT	DESCRIPTION
ZA0321	Zefon® Small Gas Sampling Chamber Designed for bags up to 1 liter in size.
ZA0325	Zefon® Large Gas Sampling Chamber Designed for bags up to 5 liters in size. All inlet connections made from stainless steel.





# It shouldn't be such a struggle to get the products you need.

Zefon has the air sampling products you're looking for to make your buying experience easy and hassle free.



*The Professionals Choice for Air Sampling Equipment*

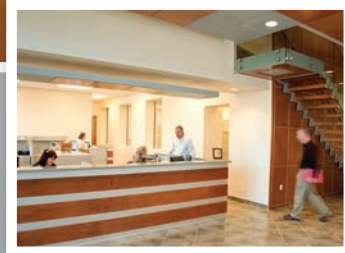
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