

# Abrasive Blasting Sampler

For Heavy Metals

- 4 L/min flow rate enhances sensitivity
- Withstands mechanical stress during blasting
- Low sensitivity to wind direction and velocity
- Protects filter from overloading by large particles thrust onto the sampler
- Provides equal distribution of particle loading and low intersample variation
- Prevents filter damage from rebound particles
- Follows closely the ACGIH/ISO sampling criteria for inhalable particulate mass
- Reduces electrostatic effects
- Small and lightweight
- Uses most 25-mm filter materials
- Reduces oversampling of very large particles
- Suitable for collecting bioaerosols for viable or non-viable analysis



*Abrasive Blasting Sampler for Heavy Metals Consists of a Button Sampler and Protective Shield*

## **SKC Abrasive Blasting Sampler**

SKC has combined the sampling efficiency of the patented<sup>†</sup> Button Sampler for inhalable dust with the protection of a specially designed shield to create the SKC Abrasive Blasting Sampler for Heavy Metals. The reusable SKC Button Aerosol Sampler is a filter sampler with a porous curved-surface inlet designed to improve the collection characteristics of inhalable dust (< 100 µm aerodynamic diameter), including bioaerosols for total non-viable or viable microbial count. The conductive stainless steel inlet reduces electrostatic effects and contains evenly spaced holes that act as sampling

orifices for multi-directional sampling capability and low sensitivity to ambient air effects. When combined with the protective shield, the Button Sampler becomes an efficient sampler for heavy metals in abrasive blasting environments\*.

<sup>†</sup> U.S. Patent Nos. 5,954,845 and 5,958,111

\* The SKC Abrasive Blasting Sampler for Heavy Metals is **not** suitable for sampling silica. Silica is commonly found in abrasive blasting. However, sampling for silica using OSHA Method ID 142 requires a cyclone.



# Abrasive Blasting Sampler

For Heavy Metals

## Sampler Proven Effective in Abrasive Blasting Environments

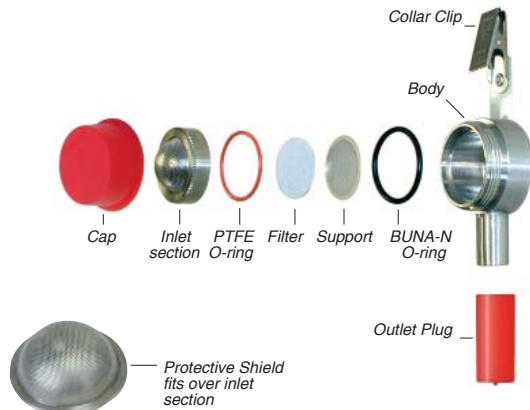
The SKC Abrasive Blasting Sampler for Heavy Metals has been used to monitor the personal exposure of workers performing abrasive blasting at four U.S. Military facilities. The sampler reliably withstood blasting operations that included very high particle concentrations containing metals such as lead, cadmium, and chromium. The sampler provided recoverable samples and meaningful exposure information.

## Operation

The SKC Abrasive Blasting Sampler for Heavy Metals is easy to operate. Simply load the conditioned and weighed 25-mm filter into the sampler, reassemble it, push the shield into place over top of the inlet, and clip it to a worker's collar. Connect the sampler to a sample pump capable of 4 L/min flow rate for personal exposure sampling following the ACGIH/ISO inhalable criteria. The pump can be clipped to the worker's belt. The sampler shows the same sampling efficiency standing freely as it does attached to a worker.



Worker Wearing  
Abrasive Blasting Sampler  
for Heavy Metals



## Performance Profile

**Flow Range:** 4 L/min  
The Button Sampler closely follows the ACGIH/ISO inhalability curve at 4 L/min. This provides optimum sampling. Sampling efficiency is maintained within  $\pm 30\%$  at flows ranging from 2 to 5 L/min.

**Construction:**  
**Sampling inlet:** conductive stainless steel  
**Body:** aluminum  
**Support screen:** stainless steel  
**Clip:** stainless steel and nylon  
**O-rings:** PTFE (inlet) and BUNA-N (body)

**Filter:** 25 mm

## Ordering Information

Description	Cat. No.
Abrasive Blasting Sampler Kit includes Button Sampler and protective shield	225-367

Accessories	Cat. No.
Button Sampler Calibration Adapter	225-361

Filters (25 mm) A filter pore size of 1.0 $\mu\text{m}$ or larger is recommended to reduce back pressure.	Cat. No.
Glass fiber, 1.0 $\mu\text{m}$ , pk/500	225-702
Polyvinyl chloride (PVC), 5.0 $\mu\text{m}$ , pk/100	225-8-04
PTFE with PMP support (Teflo®)†**, 3.0 $\mu\text{m}$ , pk/50	225-1711†**
Mixed cellulose ester (MCE), 1.2 $\mu\text{m}$ , pk/100	225-1912
Gelatin‡, sterilized, pk/50	225-9551

† Back pressure on PTFE filters can vary within the same lot.

\*\* Maximum operating temperature is 464 F (240 C) based on the PMP support ring.

# Gelatin filters dissolve when placed on agar.

## References

Kalatoor, S., Grinshpun, S., Willeke, K., "New Aerosol Sampler with Low Wind Sensitivity and Good Filter Collection Uniformity," *Atmospheric Environment*, Vol. 29, No. 10 (1995), pp. 1105-1112

Hauck, B., Grinshpun, S., Reponen, A., Reponen, T., Willeke, K., Bornschein, R., "Field Testing of New Aerosol Sampling Method With a Porous Curved Surface as Inlet," *American Industrial Hygiene Association Journal*, Vol. 58, No. 10 (1997), pp. 713-719

Aizenberg, V., England, A., Grinshpun, S., Willeke, K., Carlton, G., "Metal Exposures Among Abrasive Blasting Workers at Four U.S. Air Force Facilities," *Applied Occupational and Environmental Hygiene*, to be published in 2000

## SKC Limited Warranty and Return Policy

SKC products are subject to the SKC Limited Warranty and Return Policy, which provides SKC's sole liability and the buyer's exclusive remedy. To view the complete SKC Limited Warranty and Return Policy, go to <http://www.skcinc.com/warranty.asp>.

