

Button Aerosol Sampler

Chemical or Biological Inhalable PM Sampling

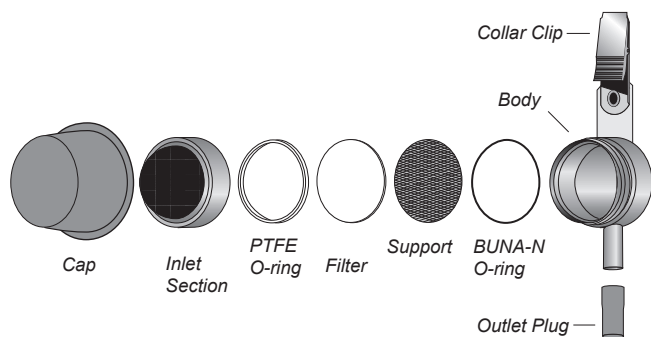


The reusable SKC Button Aerosol Sampler is a filter sampler with a porous curved-surface inlet designed to improve the collection characteristics of inhalable dust (< 100- μm aerodynamic diameter), including bioaerosols for viable or non-viable analysis. The curved, multi-orificed inlet, made of conductive stainless steel, reduces electrostatic effects and reduces sensitivity to wind direction and velocity. The proximity of the filter to the inlet minimizes transmission losses and provides equal distribution of particle loading and low intersample variation. The Button Sampler closely follows the ACGIH/ISO sampling criteria for inhalable particulate mass at 4 L/min. A convenient conductive plastic transport case is available for shipping the filters to a laboratory for analysis.

Collection of Inhalable Bioaerosols

The SKC Button Aerosol Sampler provides superior collection of inhalable particles including bacteria and fungal spores. Use the Button Sampler with a 25-mm membrane filter such as MCE or PVC to collect bioaerosols for non-viable analysis. Using SKC gelatin filters with the Button Sampler helps to maintain survival of stress-sensitive microorganisms during short sampling periods for viable analysis. Polycarbonate filters are ideal for sampling multiple bioaerosols. The Button Sampler is used with a sample pump capable of 4 L/min for personal inhalable particulate sampling following the ACGIH/ISO criteria.

- 4 L/min flow rate enhances sensitivity for low exposure limits
- Closely follows the ACGIH/ISO sampling criteria for inhalable particulate mass
- Inlet design reduces oversampling of very large particles and sensitivity to wind direction/velocity
- Suitable for area or personal sampling
- Stainless steel construction reduces electrostatic effects
- Suitable for collecting bioaerosols for viable or non-viable analysis-- autoclavable



Button Aerosol Sampler

For Low-level Inhalable PM Sampling

Performance Profile

Flow Rate: 4 L/min^Δ

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; see *Filters at below right*

Analysis: **Inhalable dust:** Gravimetric (GR)
Fungal spores: Epifluorescence microscopy, immunoassay, or polymerase chain reaction (PCR)
Metals: X-ray Fluorescence (XRF)

Autoclavable: Up to approximately 273.2 F (134 C). Collar clip and BUNA-N O-ring should **not** be autoclaved.

Tubing: 1/4-in ID

Δ The Button Sampler closely follows the ACGIH/ISO inhalability curve at 4 L/min. This provides optimum sampling.

References

Clark Burton, N., et al., "Physical Collection Efficiency of Filter Materials for Bacteria and Viruses," *Annals of Occup. Hyg.*, Sept. 2006, pp. 1-9

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Aizenberg, V., Grinshpun, S., Willeke, K., Smith, J., Baron, P., "Performance Characteristics of the Button Personal Inhalable Aerosol Sampler," *American Industrial Hygiene Association Journal*, Vol. 61, 2000, pp. 398-404

Wang, C., et al., "Field Evaluation of Personal Sampling Methods for Multiple Bioaerosols," March 23, 2015, doi.org/10.1371/journal.pone.0120308

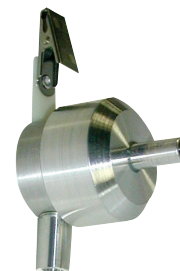
Gao, P., Chen, B., Baron, P., Soderholm, S., "A Numerical Study of the Performance of an Aerosol Sampler with a Curved, Blunt, Multi-Orificed Inlet," *Aerosol Science and Technology*, Vol. 36, 2002, pp. 540-553

Yao, M. and Mainelis, G., "Analysis of Portable Impactor Performance for Enumeration of Viable Bioaerosols," *Jnl. of Occ. and Env. Hyg.*, 4:7, 2007, pp. 514-524, <https://doi.org/cxd7kk>

Operation

The SKC Button Sampler is easy to operate. Simply unscrew the inlet section, remove the PTFE O-ring, place a conditioned and weighed 25-mm filter on the stainless steel support screen, replace the O-ring, and screw the inlet section back onto the sampler. Connect the Button Sampler to a personal sample pump; clip the sampler onto a worker's collar and the pump to the worker's belt. Sample for the appropriate time period.

An easy-to-use calibration adapter is available for the Button Sampler. Simply push the calibration adapter onto the Button Sampler inlet and connect the adapter inlet to a calibrator. Calibrate to 4 L/min.



Button Sampler with Calibration Adapter

Ordering Information

Description	Cat. No.
Button Sampler , requires a 25-mm filter, see below	225-360
Button Sampler Pump Kit includes Button Sampler, standard AirChek XR5000 Sample Pump, single charger with cable, 3 feet (0.9 meter) Tygon tubing, and calibration adapter; requires a 25-mm filter, see below	100-240 V 210-4121
Accessories	
Button Sampler Calibration Adapter	225-361
Filter Transport Case , for 25-mm filters, conductive plastic	225-67

Filters (25 mm)	Cat. No.
Glass fiber , pk/500	225-702
Polyvinyl chloride (PVC) , 5.0 μm, pk/100	225-5-25
PTFE[‡] with PMP support ring , 3.0 μm, pk/50	225-1711
Mixed cellulose ester (MCE) , 1.2 μm, pk/100	225-1912
Gelatin[†] , sterilized, pk/50	225-9551
Polycarbonate , 0.8 μm, pk/100	225-1601

† Gelatin filters dissolve when placed on agar.

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