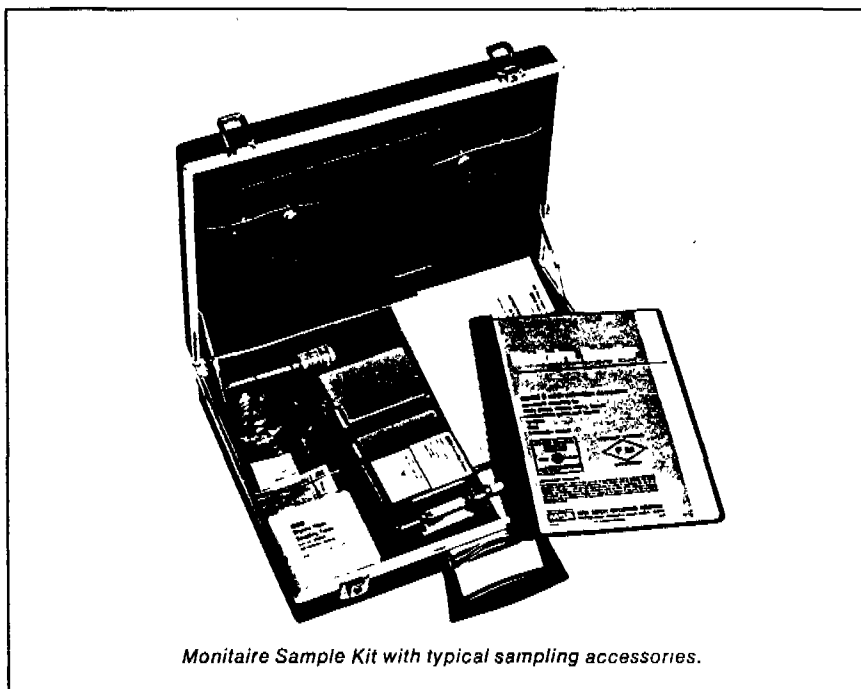
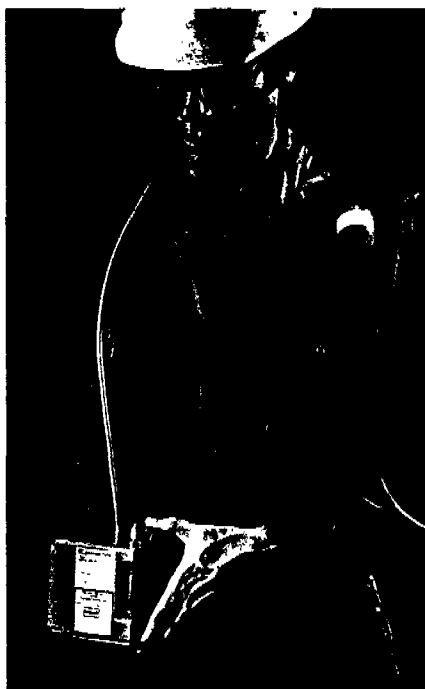


Monitaire™ Sampler, Model S



Monitaire Sample Kit with typical sampling accessories.

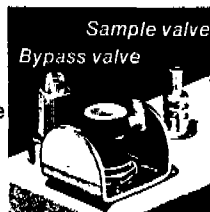
Application

The Monitaire™ Sampler, Model S, by MSA provides the necessary vacuum for sampling atmospheres which may contain certain toxic and combustible gases, vapors, dusts, fumes, and mists.

Description

The Monitaire Sampler, Model S, is a rechargeable battery-operated diaphragm pump which supplies a vacuum source for many atmospheric testing devices including filter paper holders, charcoal tubes, impingers, and numerous MSA portable gas detection instruments. Flow rate is adjustable. Pump can be clipped to a worker's belt so that a continuous air sampling can be made over several working hours.

The Model S pump features a dual-valve assembly: a sample valve controls the sample flow directly, and a bypass valve controls bypass air which may enter through the center of the stem.



The bypass valve permits the pump to operate efficiently by compensating for sample-flow restrictions. Low sample-flow requirements or highly restrictive sample devices introduce a pressure differential which must be reduced. The bypass valve introduces atmospheric air directly into the pump, reducing the pressure differential; the bypass may be

partially or totally closed at higher sample rates. Proper bypass settings are specified in the instruction materials that are part of the Monitaire Sampler Kit.

A tube fitting on the exhaust side of the pump permits use of the Monitaire Sampler for pressure operations.

The battery charger has two charging rates to charge the Model S pump overnight or over week-ends; fully charged battery will run the pump continuously for up to eight hours.

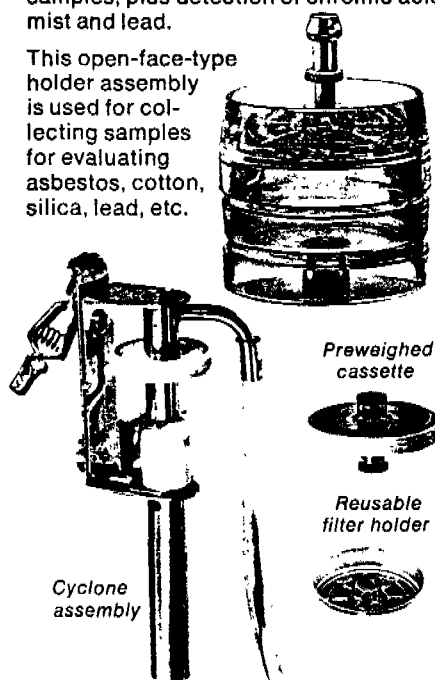


The Monitaire Sampler Kit, Model S, includes: self-contained battery-operated pump, battery charger, instruction manual, pump maintenance card, and attaché-type carrying case with room for accessories.

Sampling methods

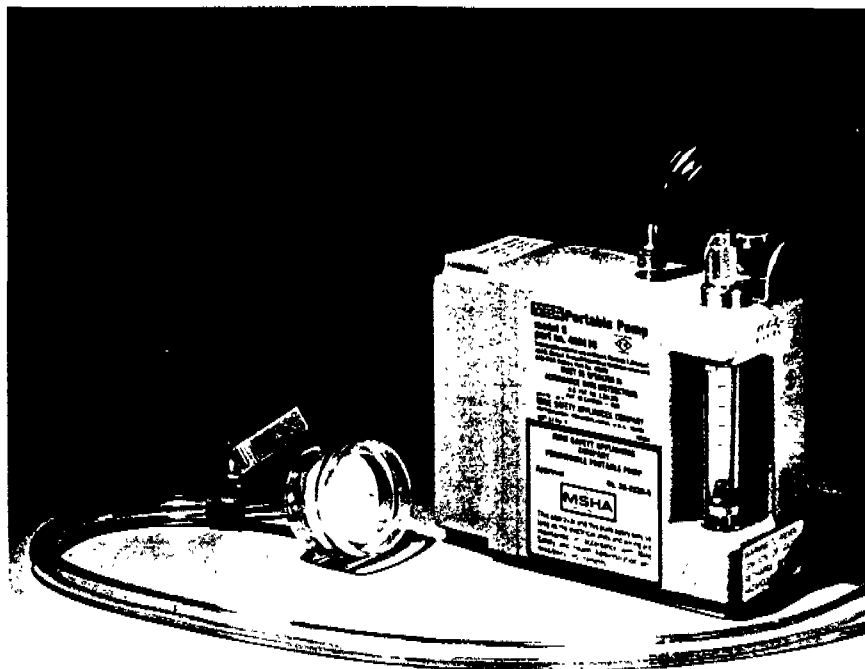
Dust and mist collection. Filter paper holders adapt the Model S pump to the collection of dust, fiber, and particulate samples, plus detection of chromic acid mist and lead.

This open-face-type holder assembly is used for collecting samples for evaluating asbestos, cotton, silica, lead, etc.



This respirable dust sampler uses a cyclone and preweighed filter cassette or filter holder to collect only the respirable fractions of a variety of dusts, such as coal and silica.

This holder assembly adapts the Model S pump to chemically detect chromic acid mist and lead dust and fumes. Collection data are given on chart at right.

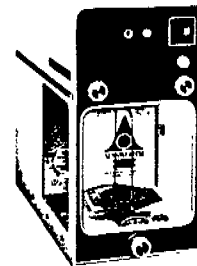


Sampling data for chromic acid mist and lead dust and fumes

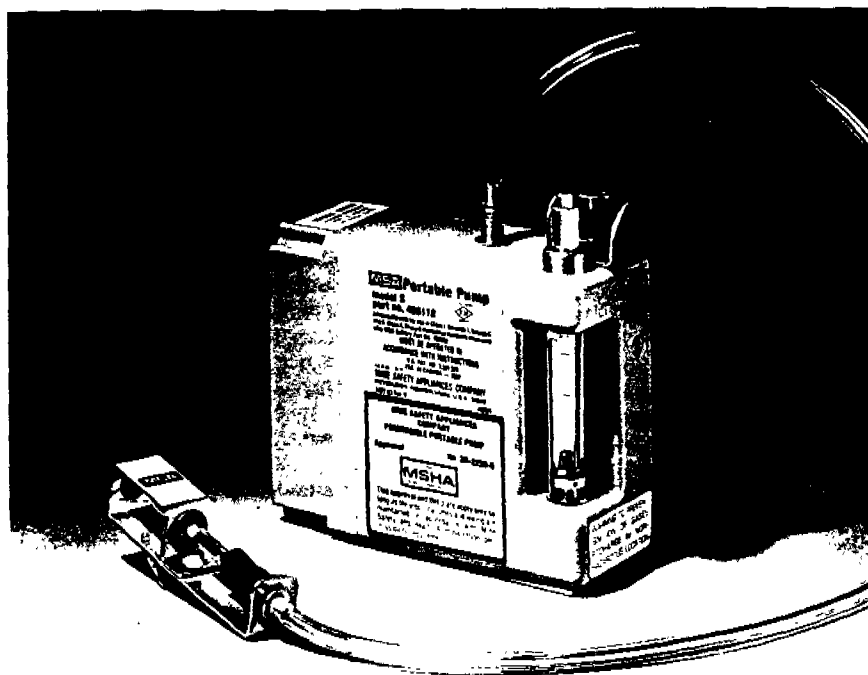
Measured Component	Threshold Limit Value for 1979	Calibration Range	Sampling Time
Chromic acid mist	0.05 mg/m ³	0.05-1.4 mg/m ³	1 to 105 minutes
Lead dust and fumes	.15 mg/m ³	.05-6.3 mg/m ³	1½ to 48 minutes

Filter weighing balance

Hazards of dust are often evaluated on a weight basis. A high degree of sensitivity (.01 milligram) is required to relate collected samples to Threshold Limit Values. The Ainsworth Model 22MF Balance from MSA meets these requirements.



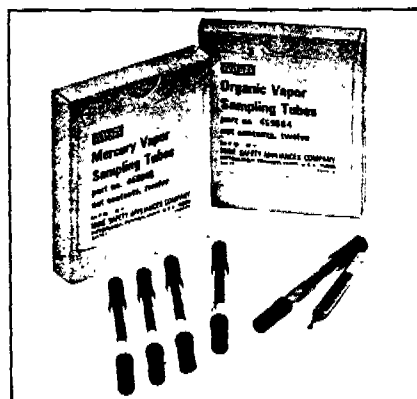
3M 115085



Charcoal sampling tubes. When used with the Monitaire Sampler, Model S, and the MSA Tube Holder, MSA Charcoal Sampling Tubes provide for efficient collection of organic and mercury vapors for subsequent analysis using laboratory equipment. Each tube has two separate layers of charcoal: a sample section and a reference section.

The organic vapor sampling tube will collect any organic compound which is capable of being collected, desorbed, and analyzed; such compounds include benzene, carbon tetrachloride, chloroform, dioxane, ethylene dichloride, trichloroethylene, and xylene. The mercury sampling tube collects both elemental and chemically bound mercury vapors, plus particulates containing mercury.

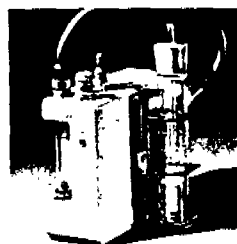
Noncorrosive stainless-steel tube holder has a positive, leak-free seal; built-in clothing clip attaches to lapel to permit sampling near wearer's inhalation zone.



Impinger tests

The Monitaire Sampler can be used with MSA Midget Impinger flask assemblies for dust, gas, and vapor sampling. Total airborne particles are wetted down and collected in the impinger flask. Because of the pump design, a 0.1 cfm sampling rate at 12 in. H_2O vacuum can be obtained. This rate can be maintained for up to eight hours with a fully charged battery.

For sampling toluene diisocyanate (TDI), toluene diisocyanate urea, methylene di-para-phenylene isocyanate (MDI), and polymethylene poly-phenylisocyanate (PMPPi) vapors, an all-glass impinger flask is used with the Model S pump.



Testing with MSA portable gas detection instruments.

The Monitaire Sampler will also provide a continuous vacuum for drawing gas samples through MSA portable detection equipment for testing periods up to eight hours. The test instruments can be placed up to 100 feet from the test location when sampling lines of 1/4-inch ID tubing are used.



MSA gas detection instruments that can be used with the Monitaire Sampler include:

- Portable Gas Indicator Model 20
- Portable Gas Indicator Model 30
- Portable Gas Indicator Model 40
- Explosimeter® Model 2A
- Explosimeter Model 2B
- Explosimeter Model 3
- Explosimeter Model 4
- Explosimeter Model 5
- Explosimeter Navy Type B
- Explosimeter Navy Type E
- Explosimeter AF Navy Type R-1
- Gascope® Model 53
- Gascope Model 60
- Gascope Model 62
- Portable Oxygen Indicator, 0-25% Range
- Portable Oxygen Indicator, 5-40% Range

3M 115086

Appr vals and standards

Sampling pump has MSHA Approval No. 2G-2239-5 as "permissible" for methane/air atmospheres. Factory Mutual Research approved as Intrinsically Safe for Class I, Division 1, Groups C and D, and Class II, Divisions 1 and 2, Group G hazardous locations (as defined by National Electrical Code).

Specifications

Pump

Type: diaphragm
Dimensions: 2½ in. x 5 in. x 5 in.
Weight: 31 oz, including battery
Battery and performance: 6-volt rechargeable battery, 8-hour continuous operation on full battery charge
Flow indication: 0 to 10 scale
Maintenance: (1) valve stems should be cleaned periodically by removing valve and blowing with air; (2) flow-tube assembly is easily removed and replaced; (3) pump and charger should be stored in container when not in use

Battery charger

Dimensions: 2½ in. x 3 in. x 4½ in.
Weight: 12½ oz
Power source: 16-hour rate for overnight charging, 64-hour rate for week-end charging

Ordering information

Catalog numbers

Monitaire Sampler, Model S

- 459660** Kit, complete with pump, charger, maintenance card, instruction manual, and carrying case
- 466118** Pump, Model S
- 456059** Battery charger
- 471600** Charger, 10-unit desk-top model
- 464196** Adapter, external battery charging
- 473102** Pump and valve assembly

Note: This Data Sheet contains only a general description of the Monitaire Sampler, Model S. While uses and performance capabilities are described, under no circumstances should this device be used until the instructions, labels, or other literature accompanying the product have been carefully read and understood and the precautions therein set forth followed. Only they contain the complete and detailed information concerning this product.

- 996097** Maintenance card
- 996338** Instruction manual
- 459662** Carrying case
- 93385** Flow-tube assembly, 0 to 10 range

- 466900** Battery pack, replacement
- 457629** Calibration check unit for sampling pumps

Dust and mist collection accessories

- 92944** Holder assembly, filter disc
- 456243** Holder assembly, respirable dust, complete with cyclone and sampling line assemblies
- 456242** Holder assembly only, respirable dust
- 456228** Cyclone assembly only
- 456226** Sampling line assembly
- 456246** Kit, supplementary parts, including:
 - 1 press/pry tool for 2- or 3-piece aerosol filter holder (456223)
 - 1 brush (625416)
 - 1 tweezer (625417)
 - 3 screens, stainless steel support (456224)
- 625412** Holder, aerosol filter, 2-piece; pkg of 12
- 449347** Holder, aerosol filter, 3-piece; pkg of 10
- 459743** Coupler, sampling line; pkg of 3
- 457392** Coupler, stainless steel, for aerosol filter holder sampling with cyclone assembly
- 457391** Coupler, plastic, for pre-weighed cassette sampling with cyclone holder assembly
- 39642** Balance, filter weighing
- 39643** Carrying case for balance
- 625415** Band, cellulose, jar of 60

Charcoal sampling tubes and accessories

- 459003** MSA Charcoal Sampling Tubes, mercury vapor, pkg of 10

- 459004** MSA Charcoal Sampling Tubes, organic vapor, pkg of 10
- 459054** MSA Tube Holder

Impinger test accessories

- 93470** Connector assembly for Midget Impinger flask
- 93495** Tubing for TDI or MDI flask
- 15134** Impinger flask and nozzle, complete with cap and stoppers
- 14500** Nozzle, impinger, glass
- 14501** Flask, impinger, glass
- 9530** Cap, impinger nozzle
- 52274** Stopper, flask, with one hole
- 42513** All-glass flask and nozzle, less cap and stopper
- 456720** Nozzle, impinger, fritted glass
- 46984** Flask, impinger, fritted glass
- 456812** Bubbler, fritted glass, coarse, for 46984 flask
- 59889** Cap and stopper for nozzle or sidearm
- 14510** Holster, impinger flask
- 92947** Adapter, impinger holder

Filter media for personal sampling pumps

- 625413** Filter, PVC, 5.0 micron pore size, 37 mm dia., Type FWS-B, pkg of 50
- 459733** Filter, PVC, 0.5 micron pore size, 37 mm dia., Type FWS-D, pkg of 50
- 459734** Filter, PVC, 0.8 micron pore size, 37 mm dia., Type FWS-C, pkg of 50
- 463796** Filter, mixed cellulose ester, 0.45 micron pore size, 37 mm dia., pkg of 50
- 463797** Filter, mixed cellulose ester, 0.8 micron pore size, 37 mm dia., pkg of 50
- 463784** Filter, glass fiber, 37 mm dia., Type 934 AH, pkg of 50
- 464324** Filter, silver membrane, 0.8 micron pore size, 37 mm dia., pkg of 50
- 449375** Disc, felt backup, pkg of 25
- 465558** Clarifying liquid (for asbestos)



600 Penn Center Boulevard
Pittsburgh, Pennsylvania 15235 USA
Phone (412) 273-5000 • Telex 812453

Branch offices throughout the United States (Call toll-free 1-800-MSA-2222)
Subsidiaries in Amsterdam • Barcelona • Berlin • Calcutta • Glasgow
Harare • Johannesburg • Lima • Malmö • Mexico City • Milan • Ndola
Paris • Santiago • São Paulo • Singapore • Sydney • Tokyo • Toronto
Representatives in principal cities throughout the world