SKC PERSPECTIVE

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# ASBESTOS

## ASBESTOS AIR MONITORING

**ASBESTOS**...just the mere mention of the word arouses dismal feelings of health hazards, litigation and a myriad of problems. But it was not so long ago that asbestos was considered a solution rather than a problem. Before the mid-1970's asbestos was used extensively in buildings for fireproofing, insulating, acoustical and decorative purposes. It was non-combustible, durable and had a high tensile strength. But in the 1970's the Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA) began to be concerned about the potential health hazards associated with exposure to asbestos fibers. Medical evidence revealed that inhaling asbestos fibers can lead to asbestosis mesothelioma, lung cancer and various other forms of cancer. The degree of hazard associated with asbestos is dependent upon the potential for fiber release including location, accessibility, condition, friability, contact with air currents and population behavior. There are presently three acceptable methods to control asbestos hazards: enclosure, encapsulation and removal. Removal is often the method of choice since it will permanently alleviate the problem.

Air monitoring is an integral part of an asbestos abatement program. Monitoring is conducted:

**Before** - abatement begins to determine ambient fiber levels
**During** - the project to assess fiber levels both inside and outside the work area
**After** - the project has been complete to determine if clearance levels have been met

With the additional emphasis being placed on asbestos abatement presently, the field of air monitoring has become quite sophisticated. SKC is there every step of the way to provide the necessary air sampling equipment and technical support.

## ASBESTOS SAMPLE ANALYSIS

Current standards issued by the Occupational Safety and Health Administration (OSHA) for industrial workplaces and sampling protocols issued by NIOSH are based upon analysis by phase contrast microscopy (PCM). PCM has been used for many years and is generally a reliable, rapid and inexpensive means for assessing airborne asbestos. However, PCM has two drawbacks which limit its usefulness in abatement projects: sensitivity and specificity. Technologically, the method of choice is transmission electron microscopy (TEM). TEM has an extremely low sensitivity and is specific for asbestos. Because of these characteristics, TEM is usually encouraged following final cleanup to determine if the clearance levels have been met. However, cost, turn-around time and availability limit the widespread use of TEM at this time. Scanning electron microscopy (SEM) has also been used to analyze asbestos samples. SEM lies midway between PCM and TEM in its advantages and disadvantages. However, because there is no standard method for asbestos analysis by SEM, it is not widely used.

*NEW OSHA STANDARD EFFECTIVE JULY '86*

*PEL: 0.2 fibers/cc*

*OSHA Reference Method #1 calls for 25 mm filters, but use of 37 mm filters is acceptable.*

*Sampling using specifications in NIOSH Method 7400 are acceptable for the new OSHA standard.*

*Copies of NIOSH Method 7400 are available from SKC Customer Service Department at no charge*

*800-752-8472*
*In PA: 800-242-1276*

## ASBESTOS HOTLINES

1. For information on the asbestos content of consumer products, contact the Consumer Product Safety Commission's hotline:
   1-800-638-2772
2. For information on laboratories that can perform analysis of asbestos bulk samples, contact EPA's RTI hotline:
   1-800-334-8571
3. For technical information and EPA documents, contact EPA's TSCA hotline:
   1-800-424-9065
4. For a list of state hazardous waste agencies, contact the RCRA hotline:
   1-800-424-9346
5. For information on programs to train contractors in asbestos handling and abatement techniques, contact:
   1-800-835-6700
6. For all your air sampling equipment, contact SKC, Inc.:
   1-800-752-8472
   (In PA: 800-242-1276)

## ASBESTOS ABATEMENT SITES ARE VERY WET ENVIRONMENTS. KEEP IN MIND THE FOLLOWING PRECAUTIONS...

1. Air sampling pumps should be covered (e.g. in a plastic bag) to avoid pulling water into the internal mechanism.
2. Avoid wetting the filter cassettes as the filters will rupture when wet.
3. All electrical equipment should be properly grounded and insulated to reduce the potential for electric shocks. (Don't forget burglar alarms and fire alarms; they are a source of unexpected electrical wires.)
4. Elevate electrical wiring whenever possible to keep it away from the wet floor.
5. Workers should be trained to avoid the slipping hazard posed by the wet floor. Rubber boots may be a good alternative to booties.
6. Wet asbestos is very heavy. Ergonomic concerns should be addressed at the onset of the project.
7. Asbestos wetting agents can cause dermatitis. Personal protective equipment and personal hygiene are essential.
8. Waste water may require filtering. Asbestos conditioning wastes are not considered hazardous according to the Resource Conservation and Recovery Act (RCRA). However, some states and local authorities have more stringent regulations.


SKC INC.
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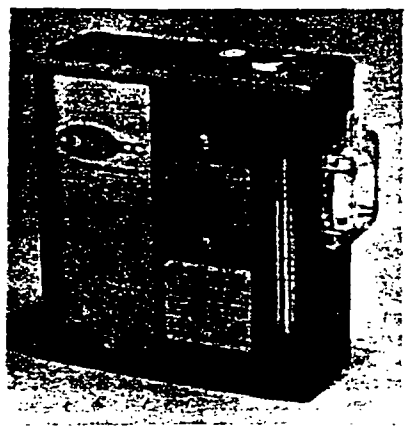
# Universal Flow Personal Sampler

Only $395.00



## FEATURES:

- Constant Flow
- Range 1 to 4000 ml/min.
- Handles Back Pressures to 30" $H_2O$ over most used flow range
- Intrinsically Safe
- Handles all NIOSH/OSHA Tests
- Built-in Flowmeter
- Ultra Quiet Operation
- Tamper Resistant
- Less than 2 lbs.
- Moisture Trap & Filter

## SPECIFICATIONS

| | |
|---|---|
| **Constant Flow** | Automatic Electronic Correction for changes in back pressure at the sample media |
| **Flow Range** | One to 750 ml/min. in low-flow mode, 750 to 4000 ml/min. in high-flow mode. |
| **Flow Readout Rotameter** | 1-5 liters |
| **Pump Case** | Sturdy, rugged, suitable for active worker in work environment. |
| **Valves, Diaphragms** | Silicone |
| **Belt Clip** | Sturdy stainless steel |
| **Dimensions** | 5" x 4.5" x 2" |
| **Weight** | Less than 2 lbs. |
| **Carrying Case** | Sturdy, lightweight plastic |
| **Carrying Case Dimensions** | 8" x 12" x 3¼" - Single Pump Kit<br>16" x 20½" x 8½" - 5 Pump Kit |

ST0045758

**Aircheck VIII High Volume Personal Sampler, as described complete with battery pack.**

| Description | Catalog No. | Price/Each |
|---|---|---|
| Pump Only | 224-43 | $ 395.00 |
| Single Pump Kit | 224-43K | $ 512.50 |
| Five Pump Kit | 224-43K5 | $2562.50 |

## FILTERS AND ACCESSORIES

Air monitoring for asbestos is done by pulling a known volume of air through a filter of specific type and pore size. The original method for asbestos monitoring (NIOSH P&CAM 239, developed in 1977) calls for a mixed cellulose ester filter of 37mm diameter and 0.8um pore size. In 1984 NIOSH issued a revised method (7400) to improve sensitivity and reproducibility. Method 7400 specifies a 25mm mixed cellulose ester filter with a 0.8 to 1.2um pore size. Also recommended is a 50mm electrically conductive extension cowl for personal sampling to reduce electrostatic effects on fiber sampling. Both methods are currently being used. SKC supplies filters and accessories for either method.

## SKC COLLECTION EQUIPMENT FOR ASBESTOS

| DESCRIPTION | DIAM (mm) | CATALOG NO. | PRICE/QTY |
|---|---|---|---|
| PRELOADED CASSETTES, 3-SECTION, | | | |
| with 0.8 um pore size, MCE filter | 25 | 225-3-06 | $100.00/50 |
| | 37 | 225-3-01 | 78.50/48 |
| PRELOADED CASSETTES, ASSEMBLED WITH COWL, | | | |
| with 0.8 um pore size, MCE filter | 25 | 225-3-12 | 65.00/25 |
| with 1.2 um pore size, MCE filter | 25 | 225-3-13 | 65.00/25 |
| FILTER CASSETTE BLANKS, | | | |
| 3-section, clear polystyrene | 25 | 225-3-25 | 116.00/50 |
| 3-section, clear polystyrene | 37 | 225-3 | 16.00/10 |
| | | | 153.60/100 |
| FILTERS, WITH SUPPORT PADS | | | |
| mixed cellulose-ester, 0.8 um pore size | 25 | 225-19 | 30.00/100 |
| mixed cellulose-ester, 0.8 um pore size | 37 | 225-5 | 48.00/100 |
| COWLS, | | | |
| reusable, conductive plastic | 25 | 225-3-07 | 10.00/5 |
| reusable, aluminum | 37 | 225-3-08 | 15.00/3 |

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