PLAINTIFF'S EXHIBIT

UC-5217

INSTRUCTIONS FOR SAMPLING OF AIRBORNE ASBESTOS FIBERS

UCASB00752016

ASBESTOS FIBER DUST COUNT
BY
MEMBRANE FILTER METHOD

EQUIPMENT

Sampling Cassette:

The sampling cassette, ready for use, consists of seven parts, assembled in this sequence:

1. Red plastic plug in center opening of base.
2. Clear plastic base, with air distribution channels radially molded into face.
3. Felt pad (similar to blotting paper), for equalization of air distribution.
4. Millipore Type AA Filter Paper.
5. Clear plastic retaining ring (to hold filter and pad in place) fitting snugly into plastic base.
6. Clear plastic cover, which fits snugly into retaining ring.
7. Blue plastic plug for center opening of plastic cover. For our sampling method, this plug is never removed from cover. Disregard word "inlet" molded into cover around center hole. For our tests, the full cover is removed.

NOTE: SEE PHOTOS NOS. 1, 2 & 3

Sampling Pump:

This is a miniaturized, portable suction pump, with built-in rotameter for measuring rate of air flow into the pump, and adjustable valve for regulating air flow rate. It is powered by a built-in rechargeable

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battery which, on full charge, is capable of 8-10 hours of operation at an air flow rate of 2 liters per minute.

For charging pump battery, follow the instructions in the sheet furnished by Mine Safety Appliances Company, the pump's manufacturer. When the charger is not plugged into an electrical outlet, it should be disconnected from the pump, to avoid discharging the pump's battery through the charger.

NOTE: SEE PHOTOS NOS. 4, 5 & 6

SAMPLING PROCEDURE

New cassettes shipped from the Millipore Corporation are completely assembled with filters and pads in place, ready to use. After each use, these cassettes can be reassembled for future use.

At no time should the sampler touch the face of the filter paper with his finger or any object. The clear plastic cover (containing the blue plug) is never removed until actual testing has begun.

To the sampling pump, attach 1/4" I.D. clear plastic tubing to the sampling air inlet on the top of the pump. The other end of the tubing is slipped over the short extension on the cassette base, after removing the red plug. (Do not lose this plug).

Sampling is to be done in the normal breathing zone of the workers. As designed by MSA, the pump is intended to be attached to the operator's belt by the clip provided, while the cassette should be attached to his shirt or work clothes in the lapel area by the clip provided. An effort should be made to keep the open face of the cassette aimed in a generally

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downward direction, rather than upward.

NOTE: SEE PHOTO NO. 7.

If attaching to the operator's person is not practical, the pump, cassette, and connecting tubing should be placed at breathing level on some suitable support for the duration of the test, in the general working area, again with the open end of the cassette aimed in a generally downward direction.

When the equipment is properly positioned, the test is started in this manner:

1. Remove entire top cover (not just blue plug), exposing full area of filter supported by retaining ring.

   NOTE: SEE PHOTO NO. 8.

2. Start pump, by pressing down on starter button on top of pump body. (Another push will stop pump).

3. Regulate air flow rate through filter by means of screwdriver adjustment on top of pump body. All asbestos fiber tests are made at an air intake rate of 2 liters per minute. For this rate, the ball in the rotameter tube is centered on the orange band, with pump in a vertical position.

   Periodic checks of this flow rate should be made during the course of the test, simply by glancing at the ball position, with pump in a vertical position. Variations of pump position during the test will not affect air flow rate, but the rotameter will read correctly only when vertical.

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4. A suitable timer should be started to time the duration of the test. For recommended test intervals, see attached section on Duration of Sampling Periods.

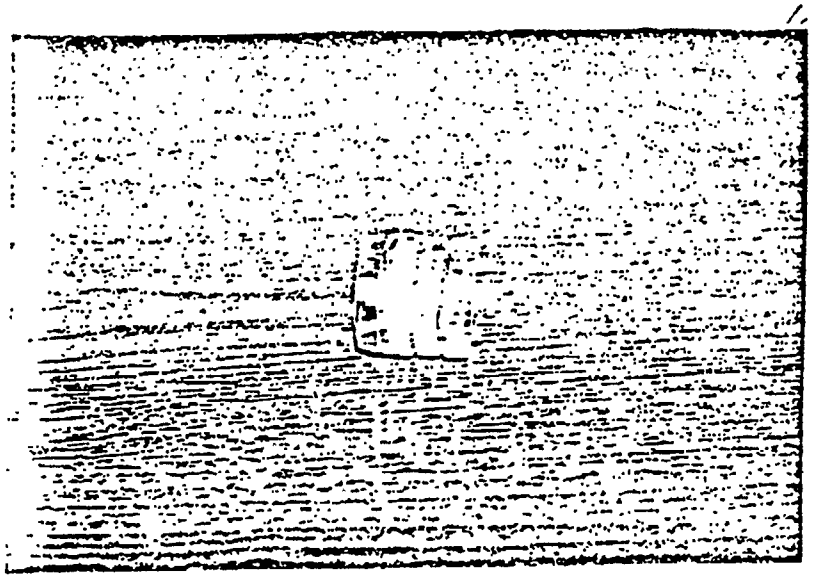
A test is terminated in this manner:

1. Stop pump, by pressing down on button on top of pump body.
2. Immediately cover open face of the cassette with clear plastic cover (containing blue plug), which is pressed down firmly into the retaining ring.
3. Remove tubing from base of cassette, and return the red plug to opening in base.
4. Check elapsed time for the test.

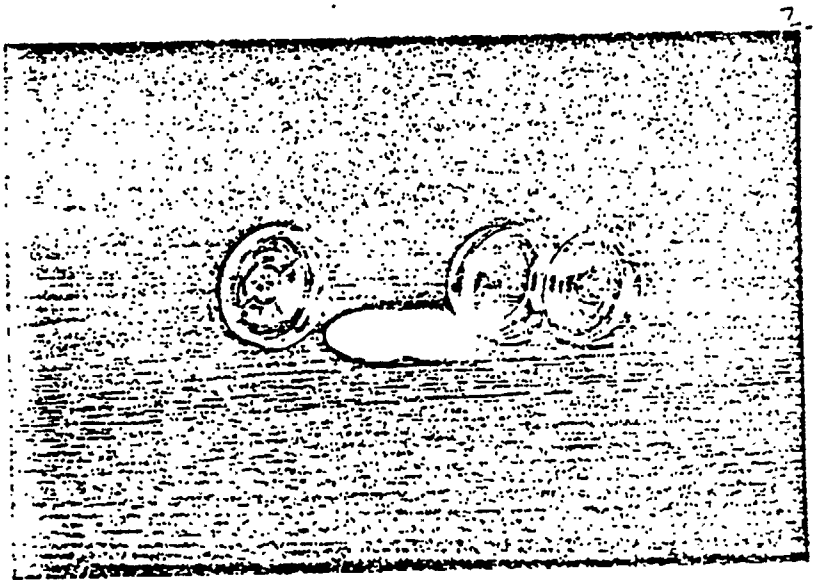
The duration, location and all pertinent data for the test are then entered on a sample identification card.

The cassette is sealed for shipment by encircling in a band of 1" masking tape, sealing both seams of the assembly. Do not use cellophane tape, as it is difficult to remove, and unnecessarily complicates reuse of the cassettes.

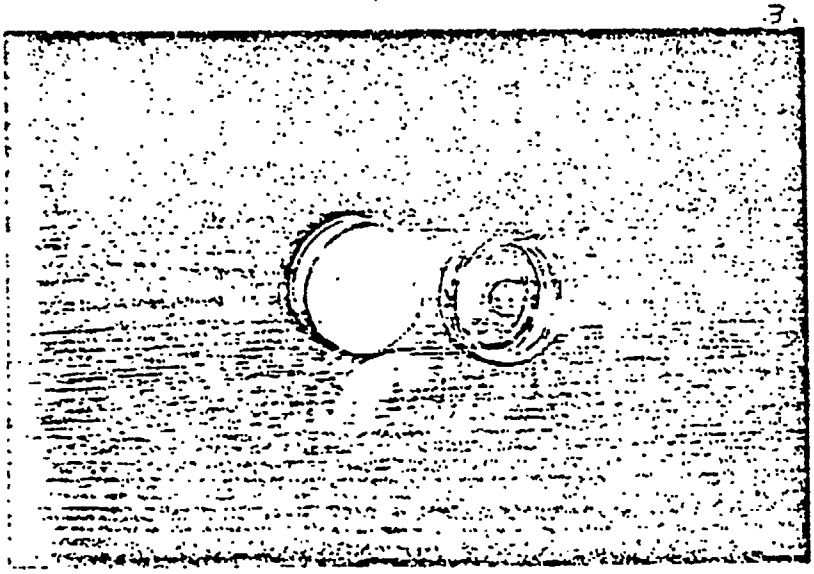
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1. Complete cassette, assembled with filter and pad in place.

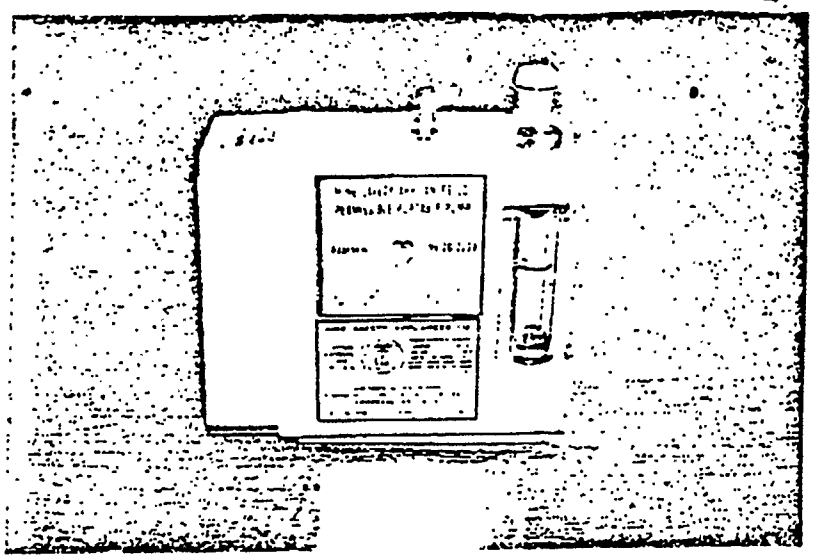


2. Disassembled cassette, with components in sequence.

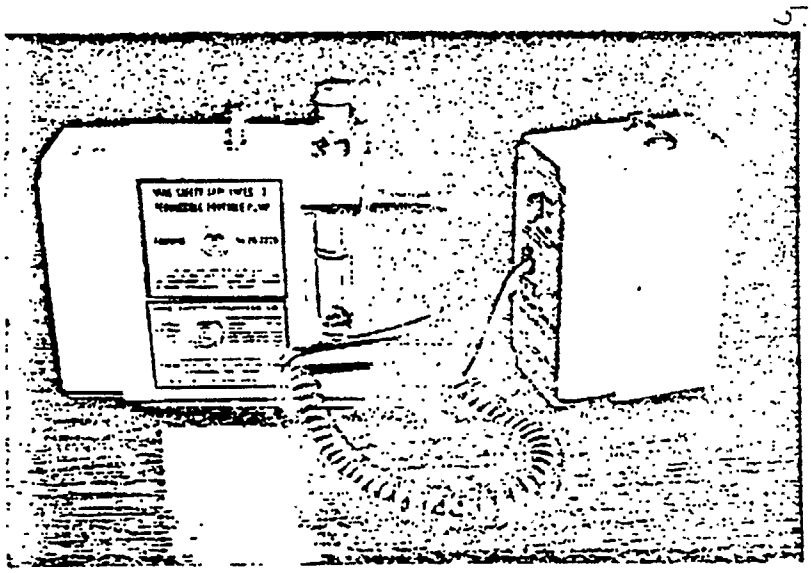


3. Cassette, filter held in place by retaining ring, cover removed, ready for asbestos sampling.

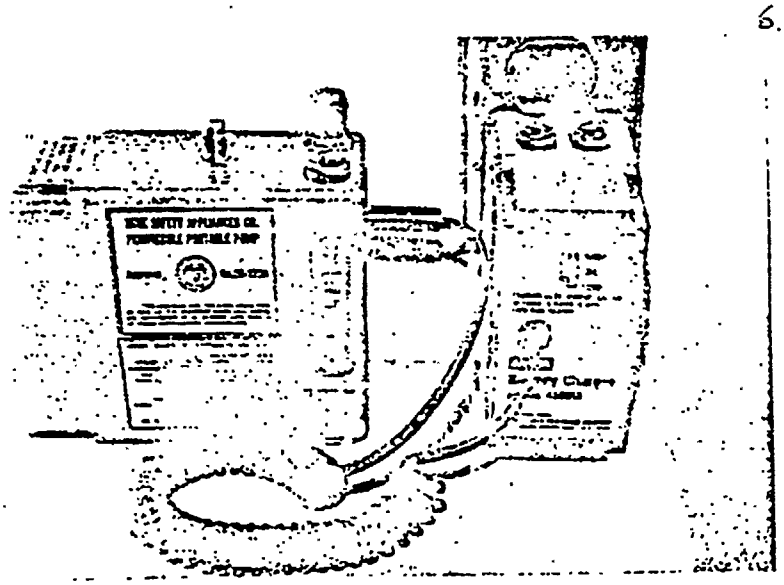
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4. Mine Safety Appliances' Personal Air Sampling Pump, Model G.



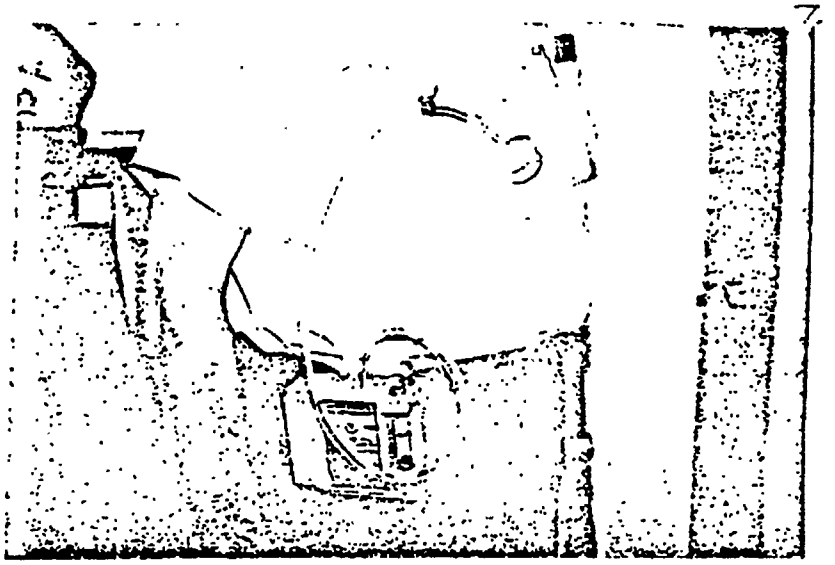
5. Sampling Pump attached to Battery Charger.



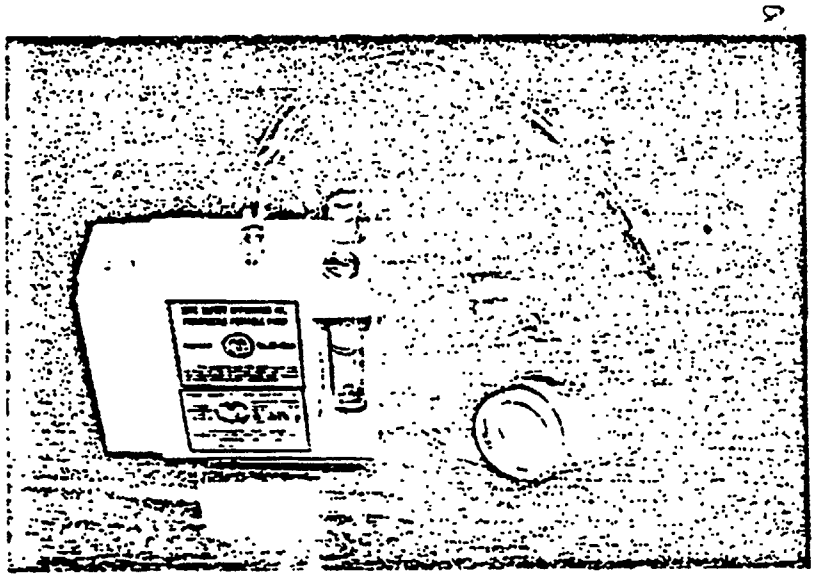
6. Typical charging arrangement.

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Note: Preferred method would be to run hose around the back of person to be sampled and attach to lapel. This puts filter cassette closer to breathing zone.



7. Air Sampler attached to clothing.



8. Sampler ready to use, showing completely open face of filter cassette.

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