

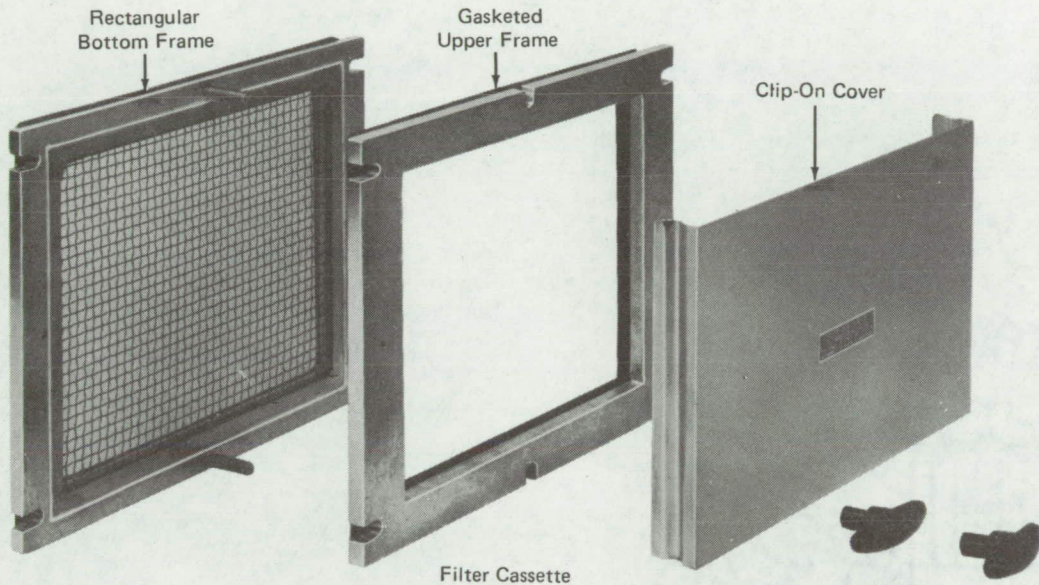
NASA TECH BRIEF

Lewis Research Center



NASA Tech Briefs announce new technology derived from the U.S. space program. They are issued to encourage commercial application. Tech Briefs are available on a subscription basis from the National Technical Information Service, Springfield, Virginia 22151. Requests for individual copies or questions relating to the Tech Brief program may be directed to the Technology Utilization Office, NASA, Code KT, Washington, D.C. 20546.

Filter Cassette For High Volume Air Sampler



A method has been devised for handling 8 x 10-inch (20.3 x 25.4 cm) filters for high volume air samplers to eliminate contamination during transportation, loading, and unloading.

High volume air samples are typically deployed at a number of exposed outdoor locations, such as on top of buildings, to monitor air quality for pollution control purposes. The prior method of handling the filters involved carrying them to the test site in a folder, removing them manually, and placing them by hand in the filter holder of the air sampler. After exposure, the filter was removed manually from the air sampler and placed in a folder for carrying to the laboratory. This procedure does not protect the filter from coming into contact with the hands or gloves of the handler, from blowing against adjacent structures, or from other sources of contamination. Materials contacting the filter from such sources often invalidate the test data. This is particularly critical when the sampling is being done for trace metals

and compounds in the airborne particles.

The innovation consists of a cassette for containing the filter. A rectangular bottom frame supports a screen grid. A gasketed rectangular upper frame fits snugly over the bottom frame. Two bolts with handles secure the parts together. In use, a piece of 8 x 10-inch filter media is placed on the screen grid between the rectangular frames and the frames fastened together in the laboratory. A clip-on cover protects the filter from pre-test exposure. A convenient carrier is used to transport the loaded cassettes to and from the test sites. At each test site, an exposed cassette is removed from the air sampler, covered and placed in the carrier, and an unexposed cassette is uncovered and placed in the air sampler. Thus the filter media is handled only under clean conditions in the laboratory.

Use of the filter cassette eliminates or substantially reduces contamination of the filter media by extraneous material and facilitates handling in general.

(continued overleaf)

Note:

No further documentation is available. Specific questions, however, may be directed to:

Technology Utilization Officer
Lewis Research Center
21000 Brookpark Road
Cleveland, Ohio 44135
Reference: B72-10379

Patent status:

No patent action is contemplated by NASA.

Source: R. B. King, J. S. Fordyce,
L. Rosenblum, and J. Toma
Lewis Research Center, and
J. C. Burr, Jr. of
Cleveland (Ohio) Division of Air Pollution
Control, and
B. L. Burge, of
Environmental Protection Agency
(LEW-11469)