



## EMSL Fluidized Bed Asbestos Segregator (FBAS)

### Method for Measuring Asbestos Releasability in Soil

Most analytical techniques for asbestos in soil are based on the determination of asbestos content in terms of a total weight, volume, or area percent of asbestos in the bulk material. Unfortunately, a percent asbestos result provides very little information about the potential health risk associated with the asbestos present. A low percentage of highly respirable fibers may represent a higher risk than a high percentage of heavy non-aerodynamic bundles or asbestos rock.



The fluidized bed asbestos segregator (FBAS) is an instrument that liberates respirable fibers from soil by air elutriation and then captures those fibers onto a filter for analysis by Transmission Electron Microscopy (TEM). Air elutriation is a process that separates particles based on their size, shape and density using a carefully controlled stream of air flowing through the sample in the opposite direction of sedimentation. The asbestos concentration in the fluid air stream above the elutriation process is determined by isokinetic air sampling and subsequent TEM analysis.

The performance of the FBAS preparation method was evaluated using a variety of standards with various percentages of asbestos, matrix materials (soil and vermiculite) and different types of asbestos (chrysotile and amphibole). Results for the FBAS preparation and analysis are expressed as asbestos structures per gram of soil. Method detection limits achieved so far in these studies are below 0.005% by weight, which is approximately 100 times lower than the detection limits that are usually achieved using other analytical methods for asbestos in soil and other solid media.

EMSL Analytical, Inc. is the leading commercial asbestos testing laboratory at the forefront of cutting edge asbestos methodologies. EMSL holds the exclusive license to the patented FBAS technology with the U.S. Government. EMSL has entered into a Cooperative Research and Development Agreement (CRADA) with the U.S. EPA to conduct research and generate further validation data as well as to draft a standard method through ASTM.

Fluidized Bed Asbestos Segregator (FBAS) sample analysis is conducted via TEM ISO 10312, with tiered analytical sensitivities (AS). Results are reported in asbestos structures per gram (nominally 10 micrometers or less (PM<sub>10</sub>))

