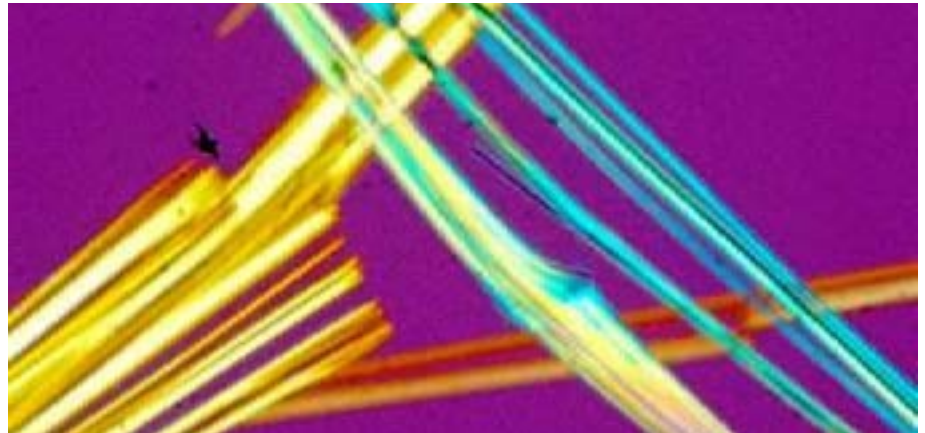


SGS FORENSIC LABORATORIES HAS A COMPREHENSIVE ARRAY OF ANALYTICAL METHODS TO MEET YOUR **ASBESTOS TESTING** NEEDS, KEEPING YOU IN THE SUCCESS ZONE.

FACT SHEET - 2020

Whether you are testing asbestos in air, water, building materials, soil/rock, settled dust or vermiculite attic insulation, we have a comprehensive array of tests and analytical methods to meet your needs. We also provide secondary Rotameter Calibrations for most air sampling applications as outlined in the OSHA TECHNICAL MANUAL – SECTION II: CHAPTER 1.



Following you will find our list of 27 (and growing) specialized asbestos tests that we run in our world-class laboratories. The list is organized by matrix and method to make it easy to navigate. Let us know how many samples you need for each method your project requires and we will get an accurate quote to you within 24 hours or less.

ASBESTOS IN AIR

Asbestos fibers in the air are generally tested by one of two methods, either PCM (phase-contrast microscopy) or TEM (transmission electron microscopy). These two methods are drastically different and should be understood before the testing begins. With PCM, a pump is used to draw air through a filter, then we take a portion of the filter and examine it under a microscope for evidence of fibers. The process is relatively quick and will identify fibers in the air, but may miss the presence of microscopic fibers. In addition, PCM cannot identify asbestos

and non-asbestos fibers. So, you can determine the concentration of fibers in the air. With TEM, we prepare air samples onto a unique grid where the preparation is bombarded with electrons inside an electron microscope. This process allows the microscopist to distinguish between asbestos and non-asbestos fibers at a very fine level of detail.

- NIOSH 7400A Airborne Fiber Count (PCM) 5.5 f/mm²
- NIOSH 7400 8hr TWA Airborne Fiber Count (PCM) 5.5 f/mm²
- NIOSH 7400B Fiberglass Count (PCM)
- Rotameter Calibration- Asbestos Air Sampling
- EPA 40 CFR part 763 AHERA (TEM)
- EPA Contract 68-02-3266 Yamate Level I and II (TEM)
- NIOSH 7402 PCM-Equivalent (TEM)
- ISO 10312 Direct Preparation (TEM)
- ISO 13794 Indirect Preparation (TEM)

- CARB Modified AHERA Natural Occurrences of Asbestos Site Monitoring

ASBESTOS IN BULK BUILDING MATERIALS

Building materials including floor tiles and roofing tars and dust samples are analyzed by TEM. Analyses may be qualitative, semi-quantitative or quantitative and involve a variety of sample preparation techniques including gravimetry.

- EPA-600/R-93-116 Asbestos in Building Materials
- NESHAP 400 Point Count (PLM) < 1%
- EPA-600/R-93-116 400 Point Count/with Matrix Reduction (PLM) 0.25%
- EPA-600/R-93-116 1,000 Point Count/with Matrix Reduction (PLM) 0.10%
- Chatfield Protocol (TEM semi-quantitative) 0.1%
- Chatfield Protocol (TEM semi-quantitative) 0.005%

THE OPERATIONS OF FORENSIC ANALYTICAL LABORATORIES INC. ARE NOW PART OF THE SGS GROUP, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY AND WILL, FROM NOW ON, OPERATE UNDER THE NAME OF SGS FORENSIC LABORATORIES.

- EPA 600/R-93/116 (TEM Quantitative) 0.005 weight% (variable)
- TEM Drop Mount Qualitative Absence/presence

ASBESTOS IN VERMICULITE ATTIC INSULATION

This method provides a procedure for the rapid characterization of fibrous amphibole constituents of vermiculite attic insulation. Vermiculite from Zonolite Mountain near Libby, MT is likely to contain fibrous amphiboles and was widely used as attic insulation or sound dampening material throughout the continental U.S. TEM confirmation of samples determined to be negative by PLM is recommended. The sample is dried, weighed, placed in a beaker and suspended in water. After stirring, the sample is allowed to separate into 'sinks', 'floats' and 'suspended' fractions. The sinks and floats fractions are dried, weighed and analyzed by PLM. If no amphibole fibers are detected, further analysis of the suspended fraction by TEM is recommended.

- EPA-600/R-04/004 Cincinnati Method (PLM) <1.0%
- EPA 600/R-04/004 Cincinnati Method (TEM) 0.005%

ASBESTOS IN SOIL AND ROCK (NOA)

This method involves fine milling of the sample (typically aggregate) to create a completely homogenous mixture. This maximizes the possibility of detection and increases the accuracy of quantification. The analysis can be performed by Polarized Light Microscopy (PLM) or Transmission Electron Microscopy (TEM) utilizing the widely recognized EPA/600/R-93/116 method. The TEM analysis is used to confirm 'None Detected PLM results, with analytical sensitivities as low as 0.001% and as even lower to meet the most stringent requirements.

- CARB 435 400 Point Count Naturally Occurring Asbestos (PLM) 0.25%
- CARB 435 1000 Point Count Naturally Occurring Asbestos (PLM) 0.10%
- CARB 435 Soil and Rock-Naturally Occurring Asbestos (TEM) 0.001%

ASBESTOS IN MICRO-VACS AND WIPES (TEM)

"Microvac" samples are analyzed quantitatively to determine surface contamination resulting from settling asbestos dust. TEM is an excellent alternative to the exclusive reliance on PLM and may be used when resolution is required to identify asbestos-containing material (ACM) to less than 1%.

- ASTM D5755 Microvac, Asbestos s/Area (TEM) 1000 s/cm2 target (variable)
- ASTM D5756 Microvac, Asbestos Mass per Area 0.24 pg/cm2 target (variable)
- ASTM D6480 Surface Wipe, Asbestos s/Area (TEM) 1000 s/cm2 target (variable)
- EPA 600/J-93/167 Carpet Fiber, Asbestos s/Area (TEM) 5000 s/cm2 target (variable)

ASBESTOS IN WATER

Water samples are analyzed for asbestos under a protocol which conforms to that detailed in EPA's National Primary and Secondary Drinking Water Regulations and EPA Method 100. Special sampling containers and sampling instructions are provided to clients. The TEM laboratory is accredited by the State of California for the analysis of asbestos in drinking water and wastewater.

- EPA 600/R-94/134 Drinking Water (TEM) 0.2 MFL
- EPA 100.1 (EPA 600/R-94/134) Waste Water(TEM) 0.2MFL
- EPA 100.2 Drinking Water (TEM) 0.2MFL



SGS is the world's leading inspection, verification, testing and certification company. SGS is recognized as the global benchmark for quality and integrity. With more than 94,000 employees, SGS operates a network of over 2,600 offices and laboratories around the world.

TO FIND OUT MORE ABOUT SGS FORENSIC LABORATORIES SERVICES CONTACT +1 800 827 3274, EHS.CLIENTCARE@SGS.COM OR VISIT WWW.SGSGALSON.COM/ASBESTOS