

Asbestos Fact Sheet

Asbestos is a naturally occurring fibrous mineral whose characteristics lend themselves well to many industrial and residential purposes. Resistant to high temperatures, chemical exposure and wear, asbestos has been widely used in the construction industry. It's long, flexible, fibrous nature enables the mineral to be spun into yarn and woven into fabric or braided into rope. Suspect building materials that may contain asbestos include cement, ceiling and flooring tiles, mastic, caulking, pipe and boiler coverings, insulation, roofing felt and shingles, and vermiculite. According to the US EPA, the houses most at risk for having asbestos containing materials used in their construction were built between 1930 and 1950 however; materials such as textured paints and wall and ceiling patching materials continued to be manufactured with asbestos until the late 1970s.

Associated Health Risks

There are two main classifications of asbestos: amphiboles and serpentines. Amphiboles include Amosite, Tremolite, Crocidolite, Actinolite and Anthophyllite while Chrysotile is the serpentine asbestos fiber. Of these types of asbestos, the most commonly found are Chrysotile and Amosite. While all types of asbestos are cause for concern and regulation, the amphibole group has a much greater potential for causing diseases such as asbestosis, mesothelioma and lung cancer.

Asbestos becomes a health risk when fibers are present in the air that people are breathing. Friable materials, or materials easily crumbled or made into powder, have historically been of primary concern due to the ease with which the contained fibers can become airborne and result in this potential exposure. However, the November 2007 transition of Ontario Regulation 278 to include extensive testing of non-friable materials addresses the concern that aggressive manipulation of these materials during building maintenance or renovation can also result in significantly elevated levels of asbestos fibers in the air as well. Although asbestos use in building materials today is strictly controlled, it was in widespread use up until the 1980s. O. Reg. 278 serves as a guideline that ensures regulated handling of asbestos containing materials, as well as a form of training for proper handling of asbestos containing materials for those working in the construction, renovation and building maintenance industry.



Asbestos Analysis

Paracel Laboratories Ltd. provides two separate analyses for asbestos, polarized light microscopy (PLM) for building materials or bulk samples and phase contrast microscopy (PCM) for air samples. Paracel is a fully accredited facility for asbestos analysis. For The Scope of Accreditation under NVLAP Lab Codes 200812-0 and 200863-0, Paracel is accredited for asbestos in bulk by PLM for our Ottawa and Mississauga locations respectively. For The Scope of Accreditation under CALA Membership Number 1262, Paracel is accredited for asbestos in air samples by PCM.

Polarized Light Microscopy (PLM)

PLM analysis is used in the analysis of bulk building materials. In addition to reporting the specific types of asbestos and their quantities through the use of PLM analysis based on EPA method 600/R-93/116, we also provide information for other fibers. Additional information will also be provided for:

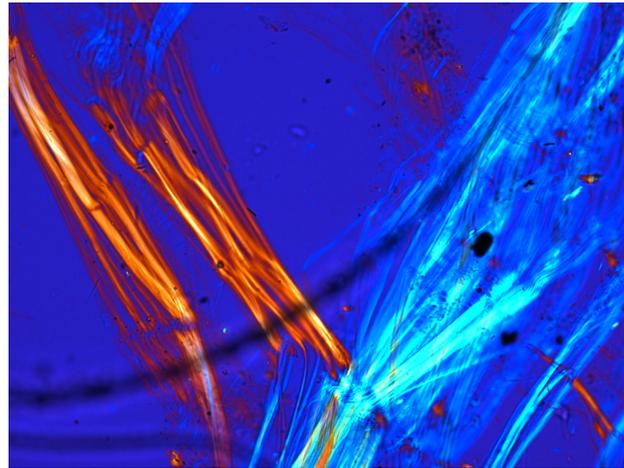
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- Man-made vitreous fibers (MMVF) including fiberglass, rockwool, and refractory ceramics
- Other fibers including wollastonite and polyethylene
- Non-fibers including perlite, calcium carbonate, gypsum and quartz
- Cellulose and unidentified particulate

2400 L (15 L/min for 160 minutes), our detection limit is 0.001 fibers/cc.

Paracel's PLM analysis provides several levels of analysis:

Calibrated visual estimates including 200 point count if necessary (<1%) - detection limit of 0.5%
400 point count – detection limit 0.25%
1000 point count – detection limit 0.1%

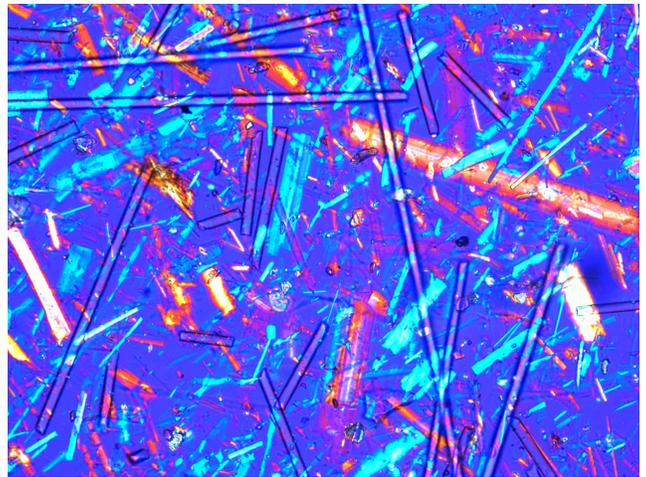


Chrysotile by PLM

Phase Contrast Microscopy (PCM)

PCM is utilized for the analysis of asbestos fibers in air samples. This analysis reports total fibers viewed in an air sample collected using a 0.45-1.2µm MCE (mixed cellulose ester) filter cassette. Total fibers are reported without any distinction between asbestos types or any other fibers that may be present, according to the protocol outlined by NIOSH 7400.

The detection limit for this type of analysis is dependant upon sampling time and flow rate or sample volume based on a minimum of 7 fibers/100 fields viewed of the filter area. For regular monitoring with 1050 L (15 L/min for 70 minutes), our detection limit is 0.003 fibers/cc. For clearance testing with



Tremolite by PLM

Turnaround Times

Paracel offers quick turnaround times (TAT) for both of these sets of analysis, from same day analysis (minimum 4 hours required) for those projects which require data as soon as possible to our standard, industry leading 4 business day TAT. To obtain pricing and TAT information for your specific project, please call any member of the Paracel Service Team.

References

For more information in regards to asbestos in your home, we have provided these helpful references for you:

US EPA Asbestos Home page:

<http://www.epa.gov/asbestos/insulation.html>

1996 CMHC – About Your House – Asbestos:
http://www.cmhc.ca/en/co/maho/yohoyohe/inaiqu/inaiqu_001.cfm

2001 Health Canada – It's Your Health – Health Risks of Asbestos

http://www.hc-sc.gc.ca/iyh-vsv/environ/asbestos-amiante_e.html