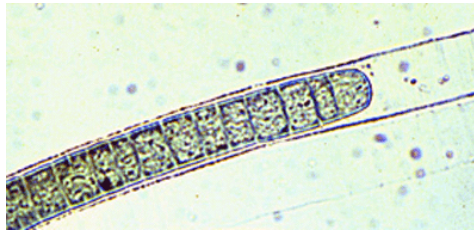
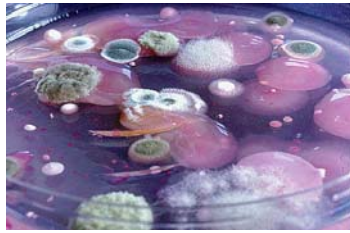


# MVOC – Microbial Volatile Organic Compound Analysis

## *ESIS Environmental Health Laboratory*



Microbial Volatile Organic Compounds (MVOC's) are the microbial metabolites that are released during mold growth. The typical musty type mold odor often associated with mold growth is a complex mixture of organic compounds. Many of these compounds are alcohols. Mold can grow wherever there is a water source and the nutrients to grow on. Most building materials including wood, cellulose, wallboard and ceiling tiles can provide the necessary nutrients to grow mold if it remains wet or moist. Even dust collected on glass filters, condensate pans or air supply diffusers can provide nutrients for mold growth. While the MVOC's themselves might cause some individuals with asthma or other respiratory problems some irritation or allergic reaction the primary use of MVOC sampling would be to sample where traditional spore impaction or mold collection is inaccessible or not practical (i.e. inside walls, crawl spaces). The following lists the 42 MVOC's that are analyzed:

Acetone	Ethyl Isobutyrate	Isopropanol	3-Methyl-2-pentanone	3-Octanone
Acetophenone	Furan	Isopropyl Actetate	5-Methyl-3-heptanone	1-Octen-3-ol
Anisol	2-Heptanone	Isovaleraldehyde	2-Methylfuran	2-Octen-1-ol
1-Butanol	Hexanal	2-Methyl-1-butanol	3-Methylfuran	1-Pentanol
Dimethyl Disulfide	2-Hexanone	2-Methyl-1-propanol	2-Nonanone	2-Pentanol
Ethanol	3-Hexanone	2-Methyl-2-butanol	1-Octanol	2-Pentanone
2-Ethyl-1-hexanol	2-Isobutyl-3-methoxypyrazine	3-Methyl-1-butanol	2-Octanol	2-Pentylfuran
2-Ethylfuran	2-Isopropyl-3-methoxypyrazine	3-Methyl-2-butanol	3-Octanol	<i>a</i> -Terpineol

**Note:** Geosmin and 2-Methylisoborneol upon request (water borne)

When sampling for MVOC's, it is recommended that indoor and outdoor samples be submitted, including samples from both problem and non-problem areas. A comparison of the chemicals detected and concentrations may provide information about the source of hidden mold growth or origin of other odors detected using the GC/MS analysis. Samples are collected in passivated canisters.



### Benefits

- Useful technique when looking for odors or VOC's of unknown source.
- Detect active mold growth before spores are produced.
- Can detect mold in hard to access areas.
- Quicker TAT than air collection and culture technique (typically 2 weeks). Rush/24 hour TAT is available.
- Parts per trillion (ppt) detection limits using passivated canisters.

ESIS Environmental Health Laboratory provides the specially cleaned canisters or thermal desorption tubes that are used to collect the air sample. In addition to the above list of MVOC's, the lab will report total volatiles quantitated as toluene and will report the presence of other volatile compounds through the use of a GC/MS library match on five additional compounds. This allows you to simultaneously quantify a total VOC's concentration and to identify other volatile organics that might be causing the unknown odor. Please contact the laboratory for more information or to obtain media.

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