



Mold and Sewage Inspection Professionals

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What is an Industrial Hygienist? An Industrial Hygienist, commonly referred to as an IH, is a professional that is certified to inspect buildings for molds and other allergens, bacteria, as well as other contaminants that can be found in the air such as volatile organic compounds (VOCs), specialized gases and formaldehyde. Not all IH's are certified so do take the time to ask.

What is a Certified Industrial Hygienist? A Certified Industrial Hygienist, commonly referred to as a CIH, is a professional certified by the American Board of Industrial Hygiene (ABIH) who also inspects buildings for bacteria, molds and other allergens, and other contaminants that can be found in the air. Having a CIH involved for report review and consultation can be most advantageous in litigated or complicated cases.

When should I hire an Industrial Hygienist? It is beneficial to hire an Industrial Hygienist (IH) when you need help determining or need clarification of the contaminants involved. Many times mold is not the only offender, such as when the water that caused the mold sat stagnant for a long period of time and/or came from ground or sewage contaminated water. In some cases, other household allergens like pet dander or volatile organic compounds from new building materials are the offender. Your IH can listen to the specifics of your situation help guide you to the best cost effective strategy and determine what type of documentation will be most beneficial. Spend your money wisely.

When do I need to test before remediation and when is post remediation testing enough? If you have a qualified remediation contractor who is confident of the offender (mold, bacteria, VOC, pet allergens, etc.) and has provided a logical remediation plan, you may not need an Industrial Hygienist (IH) in the beginning. You will however, want to hire an IH to perform post remediation testing along with a visual investigation prior to removing any protective barriers or restoring any finished building materials.

Why is it so difficult to get anyone who is not an Industrial Hygienist or Certified Industrial Hygienist to use the word Mold? Well, it really comes down to liability. Mold can come in many different shapes and colors. Unless that mold is properly tested and analyzed via microscope, no one should make such a statement. Even certified professional that sees and smells a variety of molds on a daily basis should refer to it as "suspect mold" until it is tested. Mold on building materials can be a variety of colors (green, black, white, pink, etc) and have different characteristics (raised, not raised, hair-like, able to root into building materials, surface growing, etc.). Regardless of the color, amount, or characteristics of the mold, if it is present on building materials indoors, it should be removed and removed properly.

Will my insurance cover this? That is a question best answered by your insurance agent or adjustor. Your agent or adjustor can let you know what is or is not covered and what your limits of financial coverage are. On a mold claim, it is common that mold is not covered while the water damage is.

The internet is full of information about mold. Where is the best place for me to look for guidance? The New York City Department of Health and Mental Hygiene, the Environmental Protection Agency, and the Institution of Inspection Cleaning and Restoration (IICRC) are all good sites to refer to in order to make sure you and your team of professionals are following the standards of the industry.

Why involve an Industrial Hygienist?

- **If you are not sure if you have a mold problem**
 - Use your senses first (VISUAL, SMELL)
 - If already on-site, start with your Mold Remediation Contractor
 - Or call an Industrial Hygienist to investigate
 - **If you know you have a mold problem and need a scope of work for your remediation contractor**
 - Visual first
 - If reports of health issues and/or smell but no visual....then AIR TEST
 - **Remediation Oversight**
 - Hidden impact can cause the job to increase
 - **Post Remediation Clearance Investigation & Sampling**
 - The **do it yourself kits** can give a false positive
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Types of Sampling?

- Bulk } Rarely used
 - Tape }
 - Surface
 - Mold
 - But Bacteria mostly
 - Non-viable air - Air-O-Cell
 - Viable air – Agar Plate
 - **OFF TO LAB WITHIN 24 HOURS**
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What else should I expect out of my Industrial Hygienist?

- Timely response – mold can grow within 24-48 hours
- Moisture Testing of Materials
- A Humidity Check
- A scope of work that your remediation contractor can work from, with **NO GREY AREAS**
- Liability Coverage & Pollution Insurance – **PASS THE LIABILITY**



MOISTURE CONTROL & MOLD PREVENTION TIPS FOR HOMEOWNERS

TIP #1 - ACT QUICKLY

When there is a water leak indoors, act quickly to dry all affected materials immediately if possible. Mold can begin to grow within 24 to 48 hours if not properly dried. Be aware that water can get trapped behind baseboards and wick up the drywall and inside the wall cavity. It is a good idea to call a water restoration contractor for advice, as they specialize in this sort of dry-down procedure and can advise you of the appropriate dry-down procedure for your situation. If you have visible mold or suspect mold, be sure to use dehumidifiers for drying instead of high-powered air movers or fans as these high-powered air movers and fans can cause cross contamination of the mold into other areas of the house.

TIP #2 – TAKE PREVENTATIVE STEPS TO AVOID WATER/MOISTURE INTRUSION

1. Clean a repair roof gutters regularly.
2. Make sure the ground slopes away from the building foundation, so that water does not enter or collect around the foundation.
3. Keep air conditioning drip pans clean and the drain lines unobstructed and flowing properly.
4. Keep indoor humidity under 60%. Optimal range for relative humidity in an indoor environment is between 30% and 50%. A humidity meter can be purchased at your local hardware store for less than \$100.
5. If you see condensation or moisture collecting on windows, walls or pipes act quickly to dry the wet surface and reduce the moisture source. Condensation can be a sign of high humidity.
6. Vent appliances that produce moisture (clothes dryers, stoves, etc.) to the outside where possible.
7. Use air conditioners and/or dehumidifiers when needed.
8. Use exhaust fans or open windows whenever showering, cooking, running the dishwasher, dishwashing, etc.

TIP #3 – INCREASE VENTILATION & PREVENT CONDENSATION

1. Increase ventilation indoors by opening doors and/or windows when practical. Use fans as needed.
2. Cover cold surfaces, such as cold water pipes, with insulation.

TIP #4 – WHEN GOING OUT OF TOWN

1. If it does not conflict with other units or an automatic sprinkler system, shut off the water at the main into the residence. If there is a conflict, shut down the water at every fixture in the house. Flush the toilets after the water is shut off so that in case the tank cracks there won't be any water to leak out (or very little).
2. If out of town for a long period of time, you may also want to consider shutting off the water heater and draining it.

Mold References:

New York City Dept of Health and Mental Hygiene - <http://www.nyc.gov/html/doh/html/epi/mold.shtml>

- Facts about mold
- Mold guidelines

Environmental Protection Agency (EPA) - <http://www.epa.gov/mold/>

- Mold publications
- Mold course

Book – Environmental Microbiology by Maier, Pepper and Gerba

- Bacterial and fungal information
- Cultural methods for fungi
- Cultural media and methods for bacteria

Book – Bioaerosols Assessment and Control by ACGIH – www.acgih.org

- ACGIH - American Conference of Governmental Industrial Hygienists
- Investigation Strategy
- Health effects of bioaerosols
- Building walkthrough
- Air sampling
- Sample analysis
- Data interpretation

Book – Crawlspace Science – What to have done and why by Janesky

- Ventilation
- Fixing ground water leakage
- Keeping dry



INDOOR AIR CONTAMINANTS

HEALTH EFFECTS

Biological Contaminants

Bacteria, viruses, fungi (molds) pollen, cockroach dander, dust mites, dander

eye, nose, and throat irritation; shortness of breath; dizziness; lethargy; fever; digestive problems; asthma; infections, influenza and other infectious diseases

Carbon Monoxide

Colorless, odorless gas

fatigue; chest pain; impaired vision and coordination; headaches; dizziness; confusion; nausea; flu-like symptoms

Tobacco Smoke

Gases and particles from tobacco

eye, nose, and throat irritation; headaches; lung cancer; heart disease; Increased risk of bronchitis and pneumonia and ear infections; decreased lung function

Formaldehyde

Chemical used in industry for a variety of purposes. Formaldehyde off-gases, and is also a by-product of combustion.

eye, nose, and throat irritation; headaches; wheezing and coughing fatigue; memory loss; depression; skin rash; severe allergic reaction; cancer

Volatile Organic Compounds (VOCs)

Highly evaporative chemicals containing Carbon and hydrogen that release gases into the atmosphere

eye, nose, and throat irritation; headaches; loss of coordination; dizziness; damage to liver, kidney, and nervous system; fatigue; cancer

Pesticides

Chemicals used in farming

eye, nose, and throat irritation; damage to central nervous system; kidney damage; headache; dizziness; muscle twitching; nausea; cancer

Particulates

Particulates (small pieces of matter), such as a particle of dust or fiber

eye, nose, and throat irritation; respiratory infections and bronchitis; skin irritation; lung cancer

INDOOR AIR CONTAMINANTS

HEALTH EFFECTS

Asbestos

Naturally occurring fibrous mineral found in many building materials such as acoustic insulation, fire-proofing, roofing and flooring.

lung cancer; mesothelioma;
asbestosis

Lead

Toxic metal found in water, paints and other materials.

problems with the central nervous
system, kidneys and blood cells;
convulsions; coma; death

Radon

Colorless, odorless, radioactive gas

lung cancer



Indoor Environmental Testing, LLC is an environmental consulting firm dedicated to helping our clients create healthy indoor environments. Our experienced team of professionals includes Industrial Hygienists and Certified Industrial Hygienists.

Our Environmental Services Include:

- Microbial Investigations – Mold
- Bacterial Investigations – Sewage
- Volatile Organic Compounds (VOCs) Investigations
- Allergen Investigations
- Remediation Oversight
- Airborne, Surface & Bulk Testing

We provide services throughout Oregon and Washington from our office located in Clackamas, Oregon.

As we are exclusively a consulting firm, not a contractor or a laboratory, our clients are assured of obtaining unbiased, cost-effective recommendations. Our field personnel are certified by the International Indoor Air Quality Commission (I.I.A.Q.C.) for mold and indoor air quality inspections. IET strictly uses AIHA-EMLAP accredited laboratories.

Mold Investigations

IET's staff focuses on investigating indoor environments for mold and potential sources of water intrusion. We offer a preliminary mold inspection, complete with report, professional interpretation and suggestions concerning mold removal and remediation. Once remediation is conducted by the remediation professional, IET then provides a post remediation clearance investigation which can include the collection and analysis of indoor air and surface mold samples and a clearance report with professional interpretation of qualitative and quantitative results.

Bacterial Investigations

Some water losses involve sewage. In this case, we will complete an investigation and provide recommendation for bacterial removal and remediation. Once bacterial remediation is complete, IET will conduct a post remediation clearance investigation and surface sampling for the presence of Coliforms, *Escherichia coli* and *Enterococcus* to determine if bacterial remediation was

successful. Our clearance investigation package includes a full report and professional interpretation of the laboratory results.

VOC Investigations

Homes and other buildings with newer materials (new construction, renovations) can have VOCs off-gassing into the interior air causing irritation to the occupants. In this case, we will complete an investigation, including indoor air quality (IAQ) sampling for VOCs and provide recommendations based on our findings.

Allergen Investigations

Allergens such as dust mite, cockroach, rodent, or cat dander can be found in homes and businesses and can cause irritation to the occupants. In this case, we will complete an investigation, including carpet dust sampling for allergens and provide recommendations based on our findings.