

## Got Mold?

### Introduction

I am fairly certain that the majority of this publication's readership has heard a thing or two about toxic mold in the past months. The issues range anywhere from seller disclosure to personal injury litigation and everything in between like contractor workmanship defects ('oops we forgot the vapor barrier') and the exclusion of water damage and mold clean-up (remediation) coverage under your homeowner's policy. It's true that toxic mold issues are out in front and gaining momentum along with much public attention.

### Background

Mold has been around since life has existed on our planet. It is literally found in many colors, shapes and sizes all over the globe. Mold belongs to its own Family of earthly organisms called Fungi (there are also Animals and Plants). The Fungi family includes molds, mildew, yeast, mushrooms and puffballs. Molds have no chlorophyll and therefore do not need sunlight to grow and reproduce. Mold essentially breaks down (digests) organic material releasing the nutrients (and spores) into the ecosystem. The key idea here is that molds consume their food sources like wood, wallboard and the like. Whenever water permeates the building envelope or is present from other sources (cooking, bathing), you often get accumulation, deposition and saturation (humidity, condensation, and water damage) as well as the potential for mold growth (moist, warm, available food and oxygen).

### Identification

Molds reproduce themselves by releasing seeds or spores into the air and water cycle and are carried on air currents or transported to other locations. If conditions are right, they will colonize their new damp environs. In addition to spores, mold often emits odorous gases called microbiological volatile organic compounds or mVOC's (fungi flatulence?). The mVOC's are responsible for the musty odor associated with mold contamination. Some molds also produce metabolic poisons called mycotoxins that kind of act as a natural defense shield from other biological 'consumers'. Molds that produce mycotoxins are called 'toxic molds'. More than 400 mold species are known to produce mycotoxins, however there is relatively little scientific information directly linking mycotoxins with adverse health effects (i.e. no established safe exposure limits).

### Health Effects

All molds have the potential to cause adverse health effects usually by either inhalation or dermal contact (skin, eye, nose) of the spores, fragments or metabolites. Mold can produce and emit allergens, irritants and in some cases mycotoxins. The type and severity of the human health effect depends on:

- The kind of mold(s) present
- The extent of the individual exposure
- Ages of the exposed population
- Pre-existing sensitivities, allergies, and medical conditions

Toxic molds have been reported to aggravate (irritate) asthmatic conditions (coughing and

difficulty breathing) and induce hypersensitivity pneumonitis (similar symptoms to bacterial pneumonia). People with weakened immune systems may be more vulnerable to infections caused by molds or their by-products. Certain fungi also cause skin disease such as 'athlete's foot' and yeast infections.

### **Investigation**

The primary cause of mold growth is the presence of water, moisture and/or humidity. Obvious water damage, visible mold or musty odors should be addressed immediately. The source(s) of the water must be identified, isolated and the extent of damage assessed. Water may be seeping into the building through places like windows, doors, vents, pipes, roof leaks, stucco siding, etc. What if mold cannot be visibly observed, but there is a persistent musty odor in the occupied space? Follow the trail of any known or suspect water intrusion evidence to locate chronically wet (concealed) areas to find hidden mold. The use of equipment such as boroscopes or moisture meters can help pinpoint visible mold in wall cavities or other wet areas thereby focusing remediation resources on correcting the root cause.

### **Sampling and Testing**

Currently, there are no binding standards for 'acceptable levels' of mold in buildings, homes or schools. So when sampling and testing are performed, the indoor results are usually compared to the outdoor results. S&T are not the first choice of attack if you have limited dollars to spend. It is more important to remove the mold and solve the moisture problem. Sampling may help locate the source of mold contamination, identify some of the species present and differentiate between mold, soot and dirt.

### **Remediation**

Prevent mold growth in the first place by drying out water damaged materials within forty-eight hours. Keep susceptible areas clean and dry. Relative humidity should be maintained at less than 60%. Key remediation steps include:

- Selection of a Project Manager
- Assessment of the mold problem
- Inventory water damaged and mold-damaged materials
- Communicate with building occupants
- Identify source(s) or cause(s) of water intrusion
- Select qualified and professional personnel from companies that specialize in different aspects such as cleaning carpet or dehumidifying air
- Write and implement a remediation plan

When is remediation considered complete? Use professional judgement and common sense in all cases. Generally, it is when the water problem is fixed, water (mold)-damaged materials (furnishings) have been cleaned, dried or removed and there is no visible mold, or detectable musty odors. Indoors fungal counts will be at least equal to or less than outdoor counts.

### **Liability**

The California Toxic Mold Protection Act (CTMPA) was passed in 2001 and went into effect January 1, 2002. There were six articles established within the legislation: General Provisions, Guidelines for the Identification of Mold, Guidelines for Remediation, Disclosures, Enforcement, and Implementation. CTMPA created a framework by establishing administrative committees with specific task timetables and progress report deadlines. From a disclosure perspective, the law requires different soft measures that have yet to be established like corrective actions to take when mold counts exceed allowable limits and the development of a standard disclosure form and standards for mold testing and remediation accreditation. On the legal front, many plaintiffs are filing toxic tort lawsuits using legal theories ranging from seller non-disclosure, bad faith, and personal injury to Proposition 65.

### **Summary**

Toxic mold is an emerging issue that requires close attention. Mold has been around forever and is nurtured by the right combination of moisture, heat, food and oxygen. Some molds produce irritating by-products called mycotoxins that can cause sickness and trigger allergic or asthmatic reactions in certain susceptible individuals. Investigating mold problems can be difficult especially if the mold is not visible, but a lingering musty odor is present. Sampling and testing are usually done to confirm that remediation activities have been effective in reducing indoors fungal counts well below outdoor counts for a similar set of circumstances. Timely and accurate disclosures and reasonable building occupant accommodations can go along way towards pre-empting future litigation.

### **References**

1. United States Environmental Protection Agency (USEPA), Office of Air and Radiation Indoor Environments Division, "Mold Remediation in Schools and Commercial Buildings", March 2001.
2. New York City Department of Health, Bureau of Environment and Occupational Disease Epidemiology: "Guidelines on Assessment and Remediation of Fungi in Indoor Environments", April 2000.
3. FRESH Training Concepts: "The TOXIC MOLD Workbook", July 2002

### **About the Author**

FRESH Training Concepts (FTC) was founded in 1989 by Daniel Felperin CIH, CSP, REA I. FTC has forged a unique niche by providing high quality management and technical consulting services using simplified and effective behavior-based management strategies to comply with written regulations as well as motivating employees to be aware and involved participants in the day-to-day operations while accepting responsibility for personal safe behavior on and off the job. [Click here to contact Daniel and Fresh Training Concepts.](#)

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