

Indiana IAQ

Issue 2

09/01/2009

About Indiana IAQ:

A new kind of newsletter that addresses the concerns of everyone interested in Indoor Air Quality (IAQ) in Indiana. From the many questions and concerns received this newsletter and the ones to follow are developed from specific concerns. Information is collected and applied this way to the articles published.

Who can write in? *Anyone!* Contractors, mitigation technicians, restoration and remediation technicians, real estate professionals, banks, doctors, lawyers, insurance professionals, investors, anyone with an interest in IAQ.

To submit an idea for an article, write to:
IndianaIAQ@solutionsiec.com.

Inside this issue:

- New Test for Fecal Contamination Now Available** 2
- HUD Issues Non-smoking Policies for Public Housing** 3
- ISDH: Flood or Disaster Sanitation Information** 3
- September is Indoor Mold Awareness Month** 4
- Contact Information** 4



Environmental Tobacco Smoke: A Discussion of What, How and Control

As the debate rages on in our country over the usage of Environmental Tobacco Smoke (ETS) in public and private places, I thought that, especially since the new HUD policies on ETS (see page 3 article), a discussion of what ETS is, how it might effect the Indoor Air Quality (IAQ) and one's health, as well as some controlling measures to reduce ETS exposure was in order.

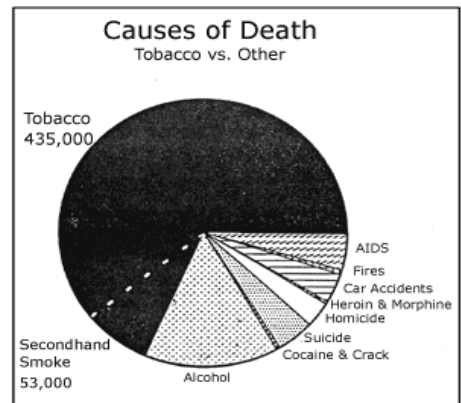
ETS is a combination of two forms of smoke: sidestream smoke and exhaled mainstream smoke. Sidestream smoke is the smoke freshly generated by a burning cigarette; while mainstream smoke is the smoke directly inhaled by a smoker.

According to the United States Environmental Protection Agency (EPA), ETS is classified as a Group A carcinogen; which means that it is known to cause cancer in humans. Prolonged exposure to ETS may cause lung cancer and has been linked to an increased risk of heart disease in nonsmokers.

A lighted cigarette gives off approximately 4,700 chemical compounds. Benzene levels, a known human carcinogen, have been found to be 30 to 50 percent higher in homes with smokers than in nonsmoking households. Carbon monoxide, nicotine and tar particles have also

been identified as the chemicals most apt to impact human health. (Source: Managing IAQ by EPA)

Some of the key symptoms associated with exposure to



Source: Center for Disease Control & Prevention

ETS have included such things as: . . .
(read more on page 3)

Biocide Usage on Mold

Biocides are toxic chemicals or physical agents capable of killing or inactivating one or more groups of microorganisms, such as Vegetative bacteria, Vegetative fungi, Bacterial spores, Fungal spores, Mycobacteria, Parasites, and Viruses. Some examples of these may include Chlorine, ethanol or

isopropyl alcohol.

Today, there are over 8000 biocides for environmental use that are registered as pesticides with the United States Environmental Protection Agency (EPA). These biocides are mostly aqueous formulations (formed of

matter deposited in or by water) that function as sanitizers, disinfectants, or sterilants designed to kill microorganisms to varying degrees.

But are the use of these biocides enough to rid you of a mold infestation? (read more on page 2)

New Test for Fecal Contamination Now Available

EMSL Analytical, Inc. have a new test to determine the presence of fecal or sewage contamination! The new test is based on the extended work Westmont, NJ is doing for the United States Environmental Protection Agency (EPA) to develop a more specific and more rapid test for fecal contamination in the indoor environment.

Previous sampling designs were found suspect in laboratory experiments when applied to the indoor environment because the Coliforms, E. coli, fecal strep and enterococcus sampled-for were organisms that often grew in water, soil, sediments and on vegetation in uncontaminated environments. (E.



Bacterioides fragilis

coli is found in clean environments in the tropics.) This new test uses PCR based methods of sampling to look for Bacteroides.

Bacteroides is a genus of Gram-negative, bacillus bacteria. Bacteroides species are non-endospore-forming, anaerobes, and may be either motile or non-motile, depending on the species. Testing for Bacteroides has many advantages over the traditional total coliforms, fecal coliforms, Fecal Streptococcus, Enterococcus, and E. coli tests.

Some of these are: Bacteroides is absolutely specific for fecal contamination; since Bacteroides outnumbers coliforms by 1000:1 and outnumbers E. coli by 10,000:1, the chances of finding it are greatly enhanced over traditional tests; Coliforms, E. coli, Fecal strep and enterococcus are culture based tests (which means

these are tests for living organisms only). Unfortunately these groups of organisms die once outside of the gut and are not culturable. This means that a negative result does not mean that there is no fecal contamination present in the indoor environment! Bacteroides tests overcome this by their method of collection, PCR test, which allow us to detect live, dead, or viable but not culturable bacteria!

This test is useful for water, swabs, soil, sediments, and bulk samples.

Author: EMSL Analytical, Inc. is a nationwide, full service, analytical testing laboratory network providing Asbestos, Mold, Indoor Air Quality, Microbiological, Environmental, Chemical, Forensic, Materials, Industrial Hygiene and Mechanical Testing services. Visit EMSL at www.emsl.com.

Biocide Usage on Mold

(CONTINUED FROM PAGE 1)

When you are determining what biocide you want to use, don't just jump on the chlorine bandwagon. There are a few factors that have to be considered:

1. Consider the nature of the organism; its type and the extent of contamination.
2. Consider biocide effectiveness and suitability for the application you want to use it.
3. Consider the hazard posed by the biocide you intend to use.

When a biocide gets registered with the EPA the product will have a label providing useful information regarding usage, ingredients, safety and precautionary statements, claims the manufacturer makes for the product, among other things. Label claims are approved following EPA review of efficacy data generated using standard methods such as those by the Association of Official Analytical Chemists. *Since testing is standardized, claims by the manufacturer are not based on in-use evaluations on the variety of materials and surfaces that may be found in buildings.*

Keeping that in mind, biocide application and effectiveness can be affected by:

1. Use concentration - Each has an optimal effectiveness at certain concentrations (ex. Ethanol or isopropyl alcohol can be used effectively at a concentration of 70 – 75%).
2. Dwell time (contact time) - Most require a dwell time of fifteen minutes in order to be effective.
3. pH - Chlorine is more effective on the acid side and less on the alkaline side. If the surrounding environment is alkaline it can neutralize chlorine.
4. Temperature - Benzalkonium chloride becomes less effective against certain microorganisms at lower temperatures for example.
5. Nature of the organism - Some spe-

cies of Penicillium are known to accumulate copper and can be resistant to copper containing biocides.

While it is true that biocide usage may be effective if applied properly and can be used for easy to apply, topical applications, there are a few things to consider when using biocides. Biocides are toxic

chemicals, which means they have low to high toxicity to humans; after all, they are life-killing (bio-life; Cide-kill) agents. Re-emissions (aldehydes and chlorine) can be harmful.



Mold growing through anti-microbial paint

Additionally, biocides can be inactivated by organic material; have

limited efficacy against a broad range of microorganisms; may react with or damage some building components; left-over organics may be a nutrient source; and they are not capable of ...

(read more on page 4)

ETS: A Discussion of What, How, and Control

(CONTINUED FROM PAGE 1)

upper respiratory irritation, coughing, wheezing, sneezing, headache, sinus problems, allergic and asthmatic responses, as well as burning and tearing eyes in persons wearing contact lenses.

In response to increased public concern over ETS and new evidence of ETS impact on human health, in 1985 three other federal bodies independently arrived at the same conclusion and classification as the EPA, classifying ETS as a carcinogen: the International Agency for Research on Cancer, the Surgeon General, and the National Institute of Occupational Safety and Health. Since that time a number of public notices and policies have been released, leading to the current controversies and debates on usage in public and private places.

Here in Indiana the Department of Health (ISDH) has officially agreed with the EPA assessment of ETS declaring that ETS “*poses a serious public health threat*” and is “*the nations No. 1 carcinogen*”. On its website www.in.gov/isdh/22702.htm the ISDH has listed pediatric and adult health effects of ETS.

Controlling exposure in a building where smoking takes place can be tricky. You should check with your local ordinances that regulate ETS especially if you own a commercial building. Keeping that in mind, here are a couple of suggestions to lowering exposure to ETS: keep smoking areas under negative pressure and keep non-smoking areas positively pressured, utilizing different air handling units (a part of your heating, ventilation and

air-conditioning system) for each area. While air purifiers are no substitute for this they can be used to supplement a properly operating pressurization system. Check with a professional regarding proper air purifier; otherwise, you may be giving yourself a false sense of security.

Author: Jason Yost, CIEC, CMRS, WRT, is owner and operator of SOLUTIONS IEC, and has been in the cleaning, restoration, remediation, mitigation, and IAQ industry for over seventeen years. Jason is an individual member of the Indoor Air Quality Association and a board member of the American Indoor Air Quality Council. Visit Jason's IAQ PRO.FILE at: http://www.iaqa.org/profile_agreement.asp?id=223.

HUD Issues Non-smoking Policies for Public Housing

Less than a month after President Obama signed the Family Smoking Prevention and Tobacco Control Act, the United States Department of Housing and Urban Development's (HUD) Office of Healthy Homes and Lead Hazard Control and its Office of Public Indiana Housing jointly issued Notice PIH 2009-21, Non-Smoking Policies in Public Housing in July 17, 2009. This new Notice from HUD states that, “*Because Environmental Tobacco Smoke (ETS) can migrate between units in multi-family housing, causing respiratory illness,*

heart disease, cancer, and other adverse health effects in neighboring families, this Department is encouraging PHAs (Public Housing Agencies) to adopt non-smoking policies.”

“*Secondhand smoke causes almost 50,000 deaths in adult non-smokers in the United States each year, including approximately 3,400 from lung cancer and another 22,000 to 69,000 from heart disease.*”

Other issues of concern in relation to

ETS that were mentioned in this Notice were “*fires and fire related deaths and injuries*”. The Notice sites, “*In multifamily buildings, smoking is the leading cause of fire deaths*”.

You can read the HUD Notice at www.hud.gov/offices/pih/publications/notices/09/pih2009-21.pdf.

Author: Jason Yost, CIEC, CMRS, WRT, is owner and operator of SOLUTIONS IEC. Visit Jason's IAQ PRO.FILE at: http://www.iaqa.org/profile_agreement.asp?id=223.

ISDH: Flood or Disaster Sanitation Information

Last year the floods came through and changed our perspectives on life in Indiana. In response to these concerns the Indiana State Department of Health has released a website that discusses flood or disaster sanitation information (see www.in.gov/isdh/20401.htm).

For those of you that have not yet visited this website, once there you will find a wealth of information on things related to flood, sewage and mold dam-

ages; well water and septic testing; salvaging food items in damaged structures; rehabilitating content materials; links to the United States Environmental Protection Agency, the Center for Disease Control and Prevention, and Federal Emergency Management Agency; and much more.

For those of you still trying to restore your lives after the flood you will want to reference the current individual

assistance program listed on this page. FEMA “*has approved 30 Indiana counties*” for this assistance.

Also visit the Indiana Flood Victim's eHealth support center linked on this page.

Author: Jason Yost, CIEC, CMRS, WRT, is owner and operator of SOLUTIONS IEC. Visit Jason's IAQ PRO.FILE at: http://www.iaqa.org/profile_agreement.asp?id=223.



SOLUTIONS
Indoor Environmental Consulting

"Don't let problems with poor indoor air quality take control of your life. Empower yourself with SOLUTIONS—Indoor Environmental Consulting—today!"

(877) 624-7185

We're on the web!
www.SolutionsIEC.com

September is Indoor Mold Awareness Month!

In 2008 the Governors of Georgia, Michigan, and several other states proclaimed September to be Indoor Mold Awareness Month. Earlier this year the Nevada State Legislature also designated September to be National Indoor Toxic Mold Awareness Month.

This special designation for September is meant to increase public awareness of how indoor molds can adversely affect human health. Since mold problems can occur in virtually any building that has excessive moisture; we all need to be aware of the signs of mold contamination and how to prevent its occurrence in the first place.

SOLUTIONS IEC, the Wabash Valley's *only* board-awarded indoor air quality specialists, supports Indoor Mold Awareness Month. The company has a long tradition of providing not only testing solutions, but also educational information about indoor air quality issues.

SOLUTIONS IEC is devoted to providing unbiased information about mold and other contaminants that can be found in residential and commercial buildings. Information about a number of hazards such as radon, water damage, fire damage, mold and bacterial contaminants can be found at www.SolutionsIEC.com.

Educating the public about preventing or minimizing mold's presence is something that can be accomplished. Providing awareness and education tools helps guard those that are already sensitive to mold exposure and protects those that would otherwise be sensitized to future exposures.

To learn more about indoor air quality testing please contact SOLUTIONS IEC at (877) 624-7185 (Jason directly at 812-229-4097), visit www.SolutionsIEC.com, or email consultants@solutionsiec.com.

Serving all Indiana & Illinois counties!

Biocide Usage on Mold

(CONTINUED FROM PAGE 2)

neutralizing the antigenic properties, endotoxins or mycotoxins left over by bacteria or mold.

Think of it like this: You go into your basement and see what appears to be mold on the drywall. There is some greenish-blue and black growth here and there. You go to clean it with bleach, but the bleach is only effective in suppressing one of the mold types there. The suppression of the one organism may give the other organism(s) an advantage, leading to different control problems.

OR

You treat the mold with your chlorine and it kills the mold growth you see, leaving behind the dead bodies, spores, and potential toxins. In other words, the source of indoor air quality damage has not been removed and the potential for exposure to allergens or other infectious agents may remain even after a successful treatment with a biocide.

With that in mind the American Confer-

ence of Governmental Industrial Hygiene states, *"Effective remediation of water-damaged or microbially contaminated buildings involves (a) the use of appropriate techniques to promote rapid drying, and (b) complete removal of contaminated materials rather than the applications of biocides without these steps."* (ACGIH Bioaerosols: Assessment and Control)

So when you are faced with that friend that, although they are trying to help, is trying to sell you the idea of *"just wipe it down with bleach"*, take the time to get to know the situation and the process of remediation you are considering before implementing them. A professional Indoor Environmentalist or Hygienist can help you identify the nature of the organism and the extent of contamination, some even write protocols (recommendations of care) in their reports.

When looking for a professional to help consult you through a problem, look

for someone that has the following credentials:

1. Make sure they do not remediate their own work, as this is a conflict of interest.
2. Make sure they are insured.
3. Third-party accreditation is strongly recommended.
4. Understand what to expect, making sure to get a protocol written into your report; otherwise, you may walk away with incomplete information and contractor controversy.

Author: Jason Yost, CIEC, CMRS, WRT, is owner of SOLUTIONS IEC, and has been in the cleaning, restoration, remediation, mitigation, and IAQ industry for over seventeen years. Jason is an individual member of the Indoor Air Quality Association and a board member of the American Indoor Air Quality Council. Visit Jason's IAQ PRO.FILE at: http://www.iaqa.org/profile_agreement.asp?id=223.