

Recognizing Former Meth-labs

Caoimhin Connell, Industrial Hygienist

Recognizing a methlab.

The most common questions we receive is “What are the signs of a methlab?” “How do I recognize a methlab?” and similar questions regarding how to identify clandestine drug operations.

In the following discussion, we have presented a variety of photographs of methlabs, and parameters of methlab identification, and the difficulties in answering this question, regarding identification. FACTs facilitates an 8 hour law enforcement sensitive course on recognizing methlabs and an eight hour certified OSHA meth-lab training course for the [general public](#). Even after participants have attended the course, they merely have a peep-hole in the recognition of a lab. As such, the brief discussion provided here will not provide adequate information necessary to equip one to conclusively rule in, or rule out, the presence of a methlab.

The identification of a methlab is not straight forward since there are different levels to the question. Is the question being posed from:

- 1) a legal aspect?
- 2) a criminal aspect?
- 3) a property liability aspect?
- 4) an hazardous substance exposure aspect?

Depending on the above context of the question, the answer will change.

Legal Aspects

The definition of a "methlab" varies from State to State; that which is considered to be a meth lab in Colorado may legally be considered little more than a messy house in Delaware, for example. Some states have no particular definition of what constitutes a methlab, whereas other states, like [Colorado](#), have very broad and well defined parameters of what constitutes a methlab, (where even the mere possession of meth in a property will constitute a methlab).

Recent work by Industrial Hygienists at the National Jewish Hospital in Denver, Colorado indicate that a single use of methamphetamine, by smoking, would result in an average residential area ambient airborne concentration of methamphetamine ranging from 35 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to over 130 $\mu\text{g}/\text{m}^3$. ¹ The NJH scientists found that smoking methamphetamine just once in a residence can result in surfaces being contaminated with methamphetamine. The authors concluded: "If methamphetamine has been smoked in a residence, it is likely that children present in that structure will be exposed to airborne methamphetamine during the "smoke" and to surface methamphetamine after the 'smoke'".

Recently, FACTs addressed the County Sheriffs Of Colorado and gave a lecture on alternative enforcement actions available to Colorado Law Enforcement Agencies. During that lecture, we presented calculations which demonstrated that a single episode of smoking meth in a residence produced sufficient airborne methamphetamine to contaminate 18,500 square feet of surface area in a home to a concentration exceeding 0.5 micrograms per 100 square centimeters of surface area ($0.5 \mu\text{g}/100 \text{ cm}^2$).

It is imperative that before one can legally determine if a particular property constitutes a methlab, one must first determine the legal definition of a methlab in their state or county.

Criminal Aspects

Similar to the legal question, the criminality of a methlab may vary state to state, county to county, and even city to city. Throughout United States jurisdiction, meth is considered to be a Schedule II drug under the Controlled Substances Act. However, each local jurisdiction may have its own statutes and legislation on what constitutes “manufacturing,” and the criminal aspects of the elements needed for prosecuting a methlab owner.

Not only are there a variety of dissimilar production methods, but each method can be broken down into distinct segments that may be performed at different locations. Since the end product in most of those segments is not methamphetamine, a person may not be prosecuted for carrying out that one step; even though the resulting contamination to a property may pose a very serious threat to an occupant's health.

Property Liability

If a landlord rents a space to a tenant, and the landlord suspects the space may have been used as a methlab, what is their liability? If the seller of a home sells a property to a prospective buyer, and the seller knows or believes the property to have been used for meth related activities, what is their liability? What is the obligation of the buyer to ask the question? Will an home inspector, conducting a standard pre-buy inspection, be able to discover evidence of a methlab? Should an home inspector even be expected to have sufficient training to find such evidence?

Very few home inspectors, if any at all, have received proper training to identify or rule out the presence of a methlab in a residence. Contamination, its existence, migration and significance is not within the realm of the professional home inspector. For that reason, many states stipulate that only an industrial hygienist is permitted to perform methlab assessments. Industrial Hygienists engaged in methlab assessments typically have received specific training in toxicology, sampling theory, migration modeling, analytical chemistry, and instructions on methlabs and how to manufacture meth using a variety of methods. Often, the necessary training is restricted to law enforcement and first responders only, but may be extended to individuals who have demonstrated a legitimate need to know these details.

In almost every case where FACTs has been involved and where an home inspector has identified a potential methlab based on visual or olfactory clues, the property has not been a methlab. Similarly, in only one case thus far, has an home inspector properly identified a methlab when it really was there; virtually always, an home inspector will fail to identify a methlab. This is not to cast aspirations on home inspectors, it simply is not their task, nor is it their obligation, nor their responsibility to be able to identify methlabs. Home Inspectors should not be expected to identify methlabs, and they should indemnify themselves against such oversights.

Realtors and Home Inspectors generally report on material facts; their standard of care is necessarily limited to their professions, and training. If a nosey neighbor approached an Home Inspector during an home inspection and told the home inspector that she thinks the previous occupants were meth-heads since she didn't like them, is that material knowledge? If during a home inspection the Home Inspector strikes up a conversation with a beat cop who informs him that a meth-lab was removed from the property, does that raise the standard of care and standard of expectation of what the Home Inspector or Realtor must disclose?

Hazardous Substance Exposure Concerns

For most people, especially those who are purchasing a new home, or contemplating moving into a rental property, the concern is more fundamental. Typically, they are not interested in learning if a methlab was present, they are more concerned with the question "Are there chemical threats and other hazards present in the property that will harm me?" "Am I safe?".

For an Industrial Hygienist, answering that question is the ultimate goal of the methlab assessment. To answer the question, the Industrial Hygienist must ask:

- 1) What, if anything, is present?
- 2) Of those items that are present, which, if any, are contaminants?
- 3) Of those contaminants, if any, that are present, which, if any, pose an exposure potential?
- 4) Of those exposures that are present, which, if any, pose a significant toxicological threat?
- 5) How can I be *confident* I have not overlooked contamination that is present?
- 6) How can I be *confident* I have not reported contamination that is not a problem?

Answering the first question alone requires that the Industrial Hygienist have a sound working knowledge of how meth is made, what contaminants may be present using that method, what is the environmental fate

of each chemical, and how can those contaminants be expected to migrate through the property. To answer that question, the IH must establish an hypothesis and test that hypothesis. An example of the thought process that an IH pursues in answering this question is provided in this [Sampling Protocol](#). This sampling protocol was primarily the work of the FACTs Forensic Industrial Hygienist, [Caoimhín P. Connell](#), and is excerpted from the *State of Colorado Regulations pertaining to the Cleanup of Methamphetamine Laboratories*. (A copy of the regulations is available from our main methlab discussion.)

Recognizing a Meth-Lab

Not all meth-labs have indicators such as odors and/or stains. Indeed, most methlabs encountered by the public will not have any unusual odors or stains. Most meth labs are "invisible." However, most of the residual subjective indicators that are present are stains. Very, very rarely will a methlab have any residual characteristic odor. Most of the time, when we investigate red or pink stains reported by Realtors or Home Inspectors, the staining is not associated with labs. We have processed methlabs which appeared to the naked eye as pristine, and sparkling new – but contained concentrations of methamphetamine and other contaminants at concentrations thousands of times higher than permitted by regulation.

The key to recognizing a methlab necessarily must take into account the totality of the circumstances. Probably, no one indicator will conclusively be used to identify the presence of a lab. Rather, it is the presence of a combination of indicators that will lead the IH to declare a property as a former methlab. We have encountered many myths and inaccuracies some people believe can be used to identify former methlabs. For example, during one class, a participant informed us that she had been told that hair spray applied to a wall, will turn red if a methlab is present - simply not true. Other myths (part of the "CSI Syndrome") include the idea that spray starch applied to a surface will conclusively identify a methlab - again, simply not true. During a recent police raid on an active methlab, the author of this discussion (Connell) and fellow officers applied spray starch to a variety of walls and surfaces in the active methlab; none of the areas of application changed color.

Due to the nature of the business, we cannot disclose here, on the internet, those items which will most profoundly speak to the issue of the presence of a methlab; however, some indicators are listed below. Where the indicator is an hot link, we have provided a photograph of the example. (After viewing the photograph, just hit your browser's "Back" button and return to this page.) Some photos are not suitable for younger viewers, and may contain disturbing images.

Common household chemicals in uncommon places .	Common household chemicals in uncommon quantities .	Common household cat litter in uncommon places.	Common household cat litter used in uncommon ways .
Propane bottles with blue or green valves.	Rust appearing on door hinges, keys , cabinet knobs, and light fixtures.	Diffuse red or yellow staining.	Localized red or yellow staining.
Unusual small holes in walls and doors indicating the running of cables.	Hoses , and/or queer pieces of equipment , and glassware or hoses attached to gas-cans with electrician's tape.	Stained coffee filters (stained with or containing something other than coffee).	Jars containing unidentified liquids.
Jars containing bi-phasic materials (a liquid floating atop another liquid, or a liquid atop a settled solid).	Broken battery casings.	Bizarre wall writings or graffiti inside the property. (Example 2)	Stripped match books and striker plates .
Trap doors in floors (here,	Hidden guns ,	Unusual quantities	Dismantled

found in a bedroom closet),(2), (3), and walls (here, an hidden room in a basement).	ornamental knives , ammo.	of pornography, or indiscreetly placed sexual toys.	appliances, clocks, computers.
Chaotic and squalid living areas .	Drug paraphernalia such as meth pipes and bongs .	Coffee grinders stained with something other than coffee.	Dangling fishhooks in attics or crawlspaces.
“Artistic” experimentations .	Unusual burn marks , unreported fires.	Missing or detached smoke detectors.	Unusual ventilation or plumbing .
Modified coolers .	Unusual locations for switches , such as this trigger at the bottom of a closet door.	The presence of fake documents such as license plates and fake identification cards.	Methlabs can also be found in family cars , in campers , and in commercial vehicles .

Many very simple wipe “tests” are available on the market for methamphetamines. These “test kits” frequently are little more than a regular cotton swab wetted with distilled water or rubbing alcohol. The swab is submitted to an analytical laboratory for analysis by gas chromatography.

Usually, the kit can be easily replaced by purchasing a box of Q-tips, and distilled water and submitting the sample to any laboratory that performs the analysis (the cost of which typically ranges from \$35 to \$60). However, these simple wipe tests do not confidently test for methamphetamine, since the area where the sample is collected is not necessarily the area in the house where the methamphetamine is located.

Similarly, the methlab may not be contaminated with methamphetamine at all, but may be contaminated with lead, mercury, iodine, P2P, precursors, and an host of other potentially toxic materials. The value of the “meth test kits” is only as good as the sampler’s knowledge of how to make meth and contamination migration analysis. With these kits, ALL “negative” results should be considered inconclusive, and all "positive" results should be treated with caution.

The confidence of methlab investigations begins and ends with the proficiency of the Industrial Hygienist performing the task. Usually, where law enforcement personnel are able to provide sensitive information to the Industrial Hygienist, methlab assessments can be conducted without the collection of any samples at all. Not covered in this discussion is the very real threat of harm posed by booby traps and antipersonnel devices. Some people erroneously believe the police search and remove these devices from the illegal lab. However, the police do not specifically search and remove these items, rather, they will neutralize any such devices they casually encounter. ALL Industrial Hygienists who engage in any methlab assessments, clan-lab assessments or any environmental contamination evaluations involving controlled substance, must be constantly vigilant of these devices. Most Industrial Hygienists involved in environmental contamination issues at methlabs have received specialized training in locating and identifying improvised explosive devices.

This discussion was created on August 20, 2006, and is a work in progress. We will refine the discussion as time allows. Please feel free to email us with comments or criticisms. Those who have found this page via an internet search engine, may find our other discussions regarding methamphetamine useful. Those pages are available through our main page, available by clicking the Forensic Applications logo below.

To go to our main methamphetamine discussion, click [here](#).

References

I Martyny JW, Arbuckle SL, McCammon CS, Erb N, Methamphetamine Contamination on Environmental Surfaces Caused by Simulated Smoking of Methamphetamine (The publication of this study is currently pending. Copies of the study are available from the Colorado Alliance for Drug Endangered Children.)

Feel free to send Forensic Applications, Inc. an email directly by clicking [here](#)

Forensic Applications, Inc. 303-903-7494