Bureau of Environmental Health
Health Assessment Section

"To protect and improve the health of all Ohioans"

Meth Lab Cleanup

ODH best-practice guidance document

The local health district responsibility:

Ohio's local health districts have no legal mandate to address meth labs. However, local health departments often serve as contacts and sources of information for concerned residents, fire and EMS-EMA officials, law enforcement agencies, child protection services and even real estate representatives. Often these above-mentioned sources ask the local health department to provide cleanup guidance and/or attest to the safety of re-occupancy of a home or a room where a meth lab operated. Local governmental agencies can address cleanup of these sites under their local building code laws and/or the health department could use their authority to require the cleanup of former meth labs under their public health nuisance laws.

In August of 2009, the U.S. EPA published *Voluntary Guidelines for Methamphetamine Laboratory Cleanup* www.epa.gov/oem/methlab.htm. EPA prepared this document to provide voluntary cleanup guidelines to homeowners, cleanup contractors, industrial hygienists, policy makers and others involved in meth lab cleanup. However, some states have established their own cleanup standards and cleanup numbers and some certify cleanup contractors.

Meth labs hazards:

Studies by national research centers and public health agencies demonstrate conclusively that active meth lab "cooks" pose an acute public health hazard through chemical exposures and the risk of fire or explosion to the "cookers," others in the structure at the time, and potentially to first responders at the onset of a meth lab seizure. But much less is known about the public health threat, acute or chronic, posed by chemical residuals in indoor environments in former meth labs in homes, motel rooms and other commercial properties.

Meth lab hazard when actively "cooking" meth:

- High level health risk hazard mostly from inhalation of vapors and gases.

Meth lab hazard after "cooking" meth:

- Significantly lower with possible health risks from direct contact with meth residues and residual chemical wastes.

***** To view a listing of meth's toxic chemicals and the public health dangers, visit on-line at: www.odh.ohio.gov/odhPrograms/eh/hlth_as/hlth_as2.aspx -- Select Health Assessment Section Fact Sheets from left side bar menu and then select "Meth – A Public Health Issue" in the meth section --

EQUIPMENT

Pyrex or Corning dishes ◇ Jugs/bottles ◇ Paper towels
Coffee filters/ ◇ Thermometer ◇ Cheesecloth ◇ Funnels
Blenders ◇ Rubber tubing/gloves ◇ Pails/buckets
Gas cans ◇ Tape/clamps ◇ Internet documents/notes
Strainers ◇ Aluminum foil ◇ Propane cylinders (20-lb)
"*How To Make Methamphetamine*" books ◇ Hotplates
◇ Plastic storage containers/ice chests ◇ Measuring cups
Towels/bed sheets ◇ Laboratory beakers/glassware

CHEMICALS

Alcohol (isopropyl or rubbing) ◇ Toluene (brake cleaner)
Ether (engine starter) ◇ Sulfuric Acid (drain cleaner)
Red Phosphorus (matchbook/road flares) ◇ Salt (table/rock)
Iodine (heat dip or flakes/crystal) ◇ Lithium (batteries)
Trichloroethane (gun solvent) ◇ MSM (cutting agent)
Sodium Metal ◇ Methanol/Alcohol (gasoline additives)
Muriatic Acid ◇ Anhydrous Ammonia (farm fertilizer)
Sodium Hydroxide (lye) ◇ Pseudoephedrine (cold tablets)
Ephedrine (cold tablets) ◇ Acetone ◇ Kitty Litter

What is clean? What is safe? How do you make these determinations?

The following bulleted points are considerations public health officials must take into account when asked the above questions:

- No two meth labs are alike.
- There are no widely-embraced rules, regulations or numbers to guide property assessment and cleanup of former meth labs.
- There are no health-based national standards regarding acceptable levels of chemical contaminants in indoor residential air environments.
- Most of the identified chemicals of concern associated with active meth lab operations are volatile organic compounds (VOCs) that have relatively short half-lives (often measured in hours).
- Many of the VOCs used in meth production are common household products regularly used and/or stored in the home. Indoor air in most homes, especially those with cigarette smokers, will usually exceed the health-based minimum risk standards.
- There is no consensus with regard to how much cleanup is necessary. Former meth lab cleanup plans run the gamut from removing carpet, drapes and furniture, to replacing gypsum (drywall) walls and ceilings, to doing nothing.
- Meth lab cleanups, as required by some states, are not cheap. Experience in Oregon indicates average cleanup costs of \$6,500/1,000 ft^2 of property with an additional cost of an up-front assessment of \$1,400.

What are other states doing?

States such as Washington, California, Oregon, Arizona, Colorado and Minnesota have established their own standards and guidance for how to clean former meth labs.

The trends in recent years focus cleanup activities on sampling residual meth levels, residual metals and total VOCs in the indoor air. The Ohio Department of Health (ODH) suggests there are problems with establishing cleanup numbers derived from the detection limits of the analytical equipment used and not demonstrated health-based cleanup numbers. Also, the chemicals of concern associated with meth lab operations are VOCs, whose half-lives are measured in hours. Measuring VOCs days, if not weeks, later will not provide an accurate picture of the health risks associated with an active meth lab and may not provide the supportive data to link the current levels of VOCs with former meth lab activities.

Data Gaps & Residual Risk - What we still need to find out:

- Is meth residue a good indicator of hazard?
- Does "sample-able meth" from a material indicate human exposures to meth?
- What is the out-migrating behavior of meth residue from various materials, e.g. through new paint?
- Health Risk Assessments:
  - Is meth residue on surfaces/in materials mobile and available to people through ingestion, inhalation or dermal contact?
- What are the health-based standards for starting and stopping a cleanup, considering a variety of building materials?
- What are the sampling methods and interpretation suited to variety of materials?

What is currently going on in Ohio?

- Established in 2005, the Ohio Workgroup to Address Current and Emerging Drug Trends was created to address the meth lab problem.
  - Members of the workgroup include representatives from the BCI&I, ODADAS, OSHP, ODH, OEPA, ODNR, ODRC, Drug-Free Action Alliance, Ohio Resource Network, the state Supreme Court and representatives from the local public health departments.
- In January, 2006 the Meth Lab Remediation Subcommittee was created to review and evaluate the issues surrounding the cleanup of former meth labs and to develop standards and/or guidance that can be applied uniformly across the state that are protective of public health.
- On February 9, 2006, Senate Bill 53 became state law. This law regulates the sale of pseudoephedrine, the active ingredient used to manufacture meth.
- In August of 2009, the U.S. EPA published *Voluntary Guidelines for Methamphetamine Laboratory Cleanup* www.epa.gov/oem/methlab.htm

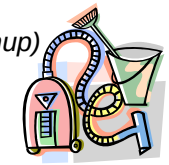
ODH Meth Lab Cleanup Guidance:

ODH continues to support process-based cleanup as the best-practice for cleaning former meth lab sites in Ohio. The goal of this simple, anyone-can-do guidance is to eliminate the exposure to the former meth lab contamination by reducing and isolating any residual meth, the identified concern of former meth labs.

Conduct a rigorous meth lab cleanup!

- Ventilate
- Remove and discard all carpet, furniture, drapes (all porous materials) and low-value contents

- HEPA vacuum to remove some of the meth from rough, porous surfaces
- With a strong surfactant (detergent), wash x2 to prep for priming/sealing and painting (wash down everything from ceiling to floor -- see page 14-15 of the EPA *Voluntary Guidelines for Methamphetamine Laboratory Cleanup)*



- Prime/seal and paint x2 from ceiling to floor (an oil-based paint or a high-gloss latex provides a tough top cover/shell)
- Wash/clean HVAC heating/cooling devices and duct work
- Wash high-value contents if possible

If a meth lab was identified, presume meth residue contamination is throughout the structure. You may not be able to get rid of all the meth, but can get rid of most of it. Three simple rules should be followed:

- **Ventilate, clean and rinse**
- **When in doubt, throw it out**
- **Prime, paint and seal x2**

For more information:

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References:

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Minnesota Department of Health, Clandestine Drug Labs in Minnesota: Health, Safety, and Remediation. March 2004.

Minnesota Department of Health. Meth Users: Signs, Symptoms, and Health Effects. 2004. www.health.state.mn.us/divs/eh/meth/index.html

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