



**Bureau of
Environmental Health
Health Assessment Section**

"To protect and improve the health of all Ohioans"

Meth Lab Clean-up

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 clean-up 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 clean-up of these sites under their local building code laws and/or the health department could use their authority to require the clean-up of former meth labs under their public health nuisance laws.

Currently there are no national standards or guidelines that prescribe how to properly clean a meth lab. However, some states have established their own clean-up standards, clean-up numbers and certify clean-up contractors. Although these state governments have statutory authority to require clean-up of former lab sites, the clean-up numbers established are numbers based upon the detection limits of the analytical equipment used and are not health-based clean-up standards.

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:

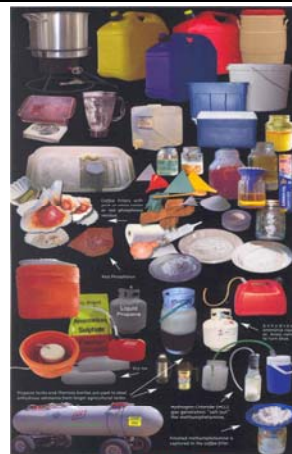
- High level health risk hazard mostly from inhalation of vapors and gases.



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 • Funnel
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 (denatured or rubbing) • Toluene (drugs cleaner)
Ether (organic solvent) • Sulfuric Acid (drugs cleaner)
Red Phosphorus (methamphetamine base) • Salt (sublimated)
Iodine (test dip or falsify/posit) • Lithium (battery)
Trichloroethane (gas solvent) • MSM (baking agent)
Sodium Metal • Methanol/Alcohol (antenna additive)
Muriatic Acid • Anhydrous Ammonia (drug solvent)
Sodium Hydroxide (lye) • Pseudoephedrine (drug solvent)
Ephedrine (drug solvent) • 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 clean-up 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 clean-up is necessary. Former meth lab clean-up plans run the gamut from removing carpet, drapes and furniture, to replacing gypsum (drywall) walls and ceilings, to doing nothing.
- Meth lab clean-ups, as required by some states, are not cheap. Experience in Oregon indicates average clean-up costs of \$6,500/1,000 ft² of property with an additional cost of an up-front assessment of \$1,400.

What are other states doing?

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

The trends in recent years focus clean-up activities on sampling residual meth levels, residual metals and total VOCs in the indoor air. ODH suggests there are problems with establishing clean-up numbers derived from the detection limits of the analytical equipment used and not demonstrated health-based clean-up 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 clean-up, 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 clean-up 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.

Meth Lab Clean-up Guidance:

The Ohio Department of Health is supporting the Minnesota Process-Based Clean-up Guidance as the best-practice standard for cleaning up former meth lab sites in Ohio. The goal of this standard is to eliminate the exposure to the former meth lab contamination by reducing and isolating any residual meth and lab chemical contamination.

Conduct a rigorous meth lab clean-up!

- 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)
- 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
- Consider structure use and material for non-occupancy areas for cleaning plan



If a meth lab, chemicals or waste are identified, presume meth 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**

For more information:

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References:

ASTHO Issue Brief: Cleaning-up Clandestine Methamphetamine labs: The Role of State Public Health Agencies. June 2005.

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