

Methamphetamine Basics

What is methamphetamine?

Methamphetamine, commonly referred to as “meth”, is a toxic and highly addictive drug that is illegally made in makeshift labs. It is commonly referred to as “crank”, “speed”, “ice” or “chalk”. Meth is an illegal substance and has a high potential for abuse and addiction.

Short-term effects of using meth include euphoria and rush, increased activity, and decreased fatigue. Long-term effects include hallucinations, insomnia, anxiety, aggressiveness, and damage to the central nervous system. Meth use often results in increased blood pressure, which can cause irreversible brain damage and strokes.

Two methods for making methamphetamine are the anhydrous ammonia method and the Red Phosphorus method. The anhydrous ammonia method is most commonly used in Minnesota.

Where are meth labs located?

Methamphetamine labs have been found in single and multiple family homes, hotel rooms, campgrounds, parks, storage buildings, and rental trucks. Meth labs are often located in remote areas because of the telltale odors they produce. Another reason these labs are located in rural areas is because there is an ample supply of anhydrous ammonia that is available at nearby farms. ❖

WHO TO CONTACT

The first point of contact for concerns regarding a potential meth lab is always your local law enforcement agency. From there, you may contact the Minnesota Duty Officer at (651) 649-5451 (metro area) or (800) 649-0798 (statewide) for assistance. They will work with the Minnesota Department of Health and Minnesota Pollution Control Agency should further investigation be warranted. ❖

Close to Home

Methamphetamine in Minnesota

The number of makeshift meth labs in the Midwest is on the rise. In Minnesota, methamphetamine lab incidents reached new heights, with 309 reported incidents in 2003 and a notable increase during the first half of 2004⁽¹⁾. The quality of methamphetamine produced in Minnesota is also disturbing; the Minnesota Department of Health estimates that imported meth is between 2% to 15% pure, whereas the Minnesota-made meth is testing between 85% to 95% purity⁽²⁾.

In 2004, the annual cost of meth lab-associated enforcement in Pine County was estimated to be \$980,000⁽³⁾. The estimated cost for one meth lab incident in Ramsey County was \$150,000⁽⁴⁾.

The Minneapolis Star Tribune reported in a November 17, 2004 article: “It (meth) has been on the increase steadily year after year,” said Rich Clark, sergeant for the Ramsey County Sheriff’s Office narcotics unit. “Meth is far and away the drug of choice in Ramsey County.”

In 2003, methamphetamine lab incidents in Minnesota reached new heights.

Minnesota Responds

Minnesota has responded to the increase in meth-related activity by adopting ordinances at the local level. Between September 2003 and May 2005, the percentage of counties that are either researching the possibility of a meth-related ordinance or already have one in place rose from 57% to 97%. Many city and county ordinances can be found online at <http://www.health.state.mn.us>. ❖

Potential Meth Labs

Warning Signs

While most labs are discovered by drug enforcement or local law enforcement agencies, 20 to 30% of labs are found because of explosions⁽⁵⁾.

Warning signs may include:

- *Strong or unusual odors.* Odors that have been encountered at meth labs include solvents, ammonia, ether, vinegar, or other sour smells.
- *Increased nighttime activity*
- *Excessive amounts of trash*
- *Unusual security systems*
- *Blocked-off windows or windows covered with foil*
- *Discoloration of structures and pavement*

Blue or green fittings mean danger!

Propane tanks are often used to transport stolen anhydrous ammonia. The ammonia reacts with the brass fitting on the tank and results in a blue or green discoloration. If you see a propane tank with a discolored fitting, *do not approach the container!* These tanks can explode when moved because the brass degrades to the point where the ammonia can blow the fitting out of the tank⁽⁶⁾.

Suspicious materials

Never handle materials that look suspicious. Unmarked trash bags can contain contaminated glassware and needles, and skin contact may result in burns or poisoning. Moving a bag with unknown contents can expose the contents to water or air, which could cause an explosion. ❖

HOUSEHOLD HAZARDS

The most common chemicals used in meth labs are over-the-counter cold and asthma medications containing ephedrine or pseudoephedrine as decongestants. Other chemicals commonly found in meth labs include household solvents, corrosives, and metals. The table to the right lists chemicals that are frequently encountered at meth lab sites. ❖

Concerns for Onsite Wastewater Professionals

Currently, there are no health precautions or guidelines related to meth lab waste for onsite wastewater professionals. The most commonly dumped or flushed chemicals are solvents (see table below). Upon entering a septic tank, the chemicals are generally diluted by the liquid in the tank, and thus would not classify as hazardous waste⁽⁷⁾. Depending on the type and concentration of the chemical, the bacterial community in the tank may be able to degrade it before it would leave the tank. The case study on the next page describes how one operator identified and handled a meth lab that was discharging to an onsite cluster system in Minnesota.

Contact your local law enforcement agency if you suspect you may be dealing with meth lab waste. Local law enforcement can investigate the site, and if necessary, perform screening tests. Refer to the contact information provided on the first page of this packet if further assistance is needed. ❖

Chemicals commonly found in meth labs

Type of Chemical	Chemical Name	Common Source
Solvents	Toluene	Paint thinner
	Methanol	Anti-freeze "Heet"
	Ethyl Ether	Starting fluid
	Benzene, Xylene, Acetone, Hexane	
Corrosives	Anhydrous Ammonia	On-farm nurse tanks
	Sodium Hydroxide	Lye, "Draino"
	Hydrochloric Acid	Hardware stores
Metals and Salts	Iodine	Iodine Crystals
	Mercury	Thermometers
	Red Phosphorus	Match books
	Lithium	Camera batteries
Over-the-counter medicine	Sodium Metal	
	Ephedrine	Over the counter cold medicines and dietary supplements
	Pseudoephedrine	
	Phenyl-2-propanone	

Onsite Wastewater

Case Study in Minnesota

Ryan Brandt, Vice President of EcoCheck, Inc. discovered a meth lab at one of the onsite wastewater systems he operates and maintains. In Winter 2001/2002, he noticed periodic spikes of influent Carbonaceous Biochemical Oxygen Demand (CBOD) that were ten times stronger than typical domestic waste. After the first few spikes, he began to keep a closer eye on the influent water quality. Specifically, he kept track of pH. A normal pH value for this wastewater was 7.0 – 7.5 Standard Units (SU), but when the CBOD spikes occurred, the pH dropped to 4.0 – 5.0 SU. Abnormally high or low pH values have been associated with other illegal dumpings of meth waste into septic tanks⁽⁷⁾.

Compounds identified in the samples that tested positive for VOCs showed:

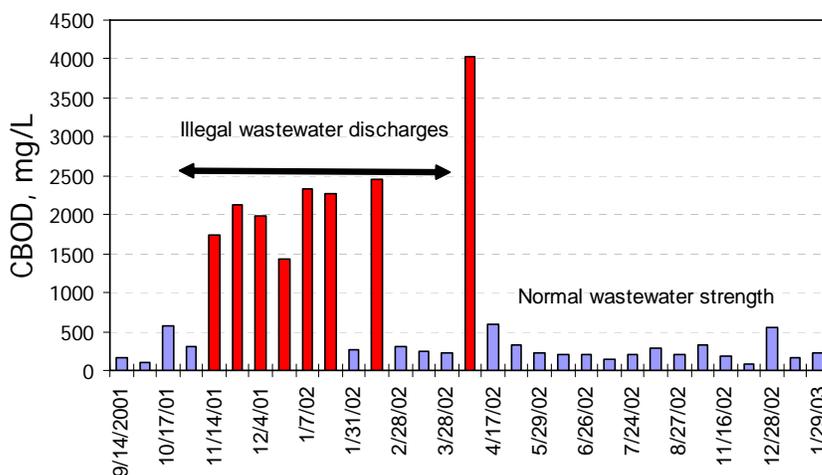
Positive Chemical Hits

- Benzyl Alcohol (used in solvents and paint)
- Phenol (fire hazard, found in urine, disinfectants and over the counter drugs)
- 4-Methyl phenol

Compounds tentatively identified in the samples that tested positive for VOCs showed:

Tentatively Identified Compounds

- 9-Hexadecanoic acid (used in adhesives)
- 3-cyclohexene, 1-methanol alpha
- Benzeneacetic acid (used in perfumes, herbicides and in meth production)
- Benzoic acid, p-tert-butyl (used as a preservative)
- Butanoic acid (used in making alcohol)
- Cholesterol
- Ethanol, 2-butoxy
- Hexadecanoic acid (used in adhesives)
- Propanoic acid (used in herbicides and in making alcohol)
- Pentanoic acid (used in making alcohol)
- Tetradecanoic acid



At this point, Ryan involved the local deputy sheriff and the regional fire department. The deputy sheriff had a good history of the people in the area and ran background checks, and the fire department had the equipment to do some preliminary tests on the wastewater. They tested individual and shared grinder stations and screened the samples for Volatile Organic Compounds (VOCs). For the samples that tested positive, they performed an analysis with a mass spectrometer and called in the Drug Enforcement Administration for assistance.

References

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- (4) Carlson G. (2005) Costs of a Methamphetamine Case in Ramsey County. www.health.state.mn.us/divs/eh/meth/ordinance/ramseycosts.pdf.
- (5) Peterson D.F. (2000) Hazardous Materials - Clandestine Drug Labs. www.health.state.mn.us/divs/eh/meth/lab/dpeterson.pdf.
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- (7) Colorado Department of Public Health and Environment (2005) Questions and Answers Regarding Meth Lab Cleanup Regulations. www.cdphe.state.co.us/hm/methlabregaanda.pdf

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