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Drugs, Politics, and Culture: Final Paper

Methamphetamine: Dangerous Drug Craze and Toxic Pollutant

According to the Office of National Drug Control Policy, methamphetamine is the most prevalent synthetic drug on the streets of America today (McEwan 2003). It creates an intensely pleasurable and relatively long-lasting high, making it attractive to addicts. Methamphetamine, also called meth, crystal meth, speed, ice, and several other street names, can be manufactured cheaply through easily-obtained, store-bought materials, which makes it a popular drug to be synthesized by those with no knowledge of or experience with chemicals. As a result, meth labs have surfaced all over the United States. Though they are currently more concentrated in the western part of the country, especially California, they are quickly spreading to encompass even the eastern half (National Institute on Drug Abuse 2006). The consequences of the spread of meth labs are dire, not only because of the drug's unpleasant effects on its users, but because of the environmental hazards (natural and human) of every methamphetamine lab. This paper will discuss background on methamphetamine and the labs where it is produced; the hazards surrounding its production; and finally the cleanup of existing labs and the prevention of new labs.

Methamphetamine is a Schedule II drug, which means that it has high potential for abuse, has few medical uses (it is sometimes prescribed for narcolepsy, attention deficit disorder, and on occasion obesity), and is available only through a non-refillable prescription. When taken recreationally, it is generally ingested, sniffed, smoked, or injected, with ingestion having the least potent effects and injection having the most. Chemically, meth stimulates an excessive

release of dopamine in the brain, creating a high for its user that lasts several hours and is followed by an agitated state that can sometimes lead to violent behavior. Prolonged use has numerous negative medical effects (National Institute on Drug Abuse 2006).

In the short term, meth causes a rush (extreme euphoria), followed by a high which lasts several hours. Users usually encounter increased wakefulness, a higher level of physical activity, and decreased appetite (hence methamphetamine's occasional prescription as an anti-obesity drug). People who are using meth often feel an increased sense of well-being (National Institute on Drug Abuse 2006).

Users may binge on meth to try to prolong the euphoria that they experience in the first few minutes of administering the drug, often suffering from serious effects. High doses of meth can elevate the body temperature to dangerous levels and cause convulsions, as well as damage nerve terminals in dopamine-containing regions of the brain. Other negative effects of meth use in the short term include general irritability, anxiety, and apprehension (O'Dea 1997), and meth also destroys tooth enamel, giving users "meth-mouth" (Jefferson 2005).

Users who continue to use meth for long periods of time experience addiction. Since they build up a tolerance to the drug, addicts may increase the amount or potency of their drug dosage, administer the drug more frequently, or change the method of administering the drug (if sniffing the drug no longer gets them high, they may begin to inject themselves). Addicts also exhibit violent behavior and repetitive motor activity, become continually anxious or confused, and suffer from insomnia. Prolonged excessive use of meth could result in cardiovascular problems such as rapid heart rate, increased blood pressure, irregular heartbeat, inflammation of the heart, or damage to small blood vessels in the brain, eventually causing stroke (National Institute on Drug Abuse 2006).

Constant bingeing by meth users can produce intense paranoia, visual and auditory hallucinations, rage, and violence. Many meth users also experience psychosis that involves general paranoia and hallucinations, formication (the feeling of insects crawling on the skin), mood disturbances, and delusions. For some addicts psychosis could result in suicidal or homicidal thoughts. Up to 50% of the user's dopamine-producing brain cells could be damaged, and there is also damage to the serotonin-producing brain cells. Users who try to quit using meth after prolonged use suffer from withdrawal symptoms such as depression, anxiety, fatigue, paranoia, aggression, and intense cravings (National Institute on Drug Abuse 2006).

Despite the slew of negative effects it can bring about, meth and its counterparts – such as ice, a purified form of meth that is smoked in a glass pipe, has even more intense effects than meth, and provides the user with a high that can last up to twelve hours -- has become and remains a popular drug because of its availability, relatively low cost, and intensely euphoric effects. In fact, as of 2000, 4% of the American population, or 12 million people, had tried methamphetamine (National Institute on Drug Abuse 2006). One of the reasons why meth is so popular is because it is synthetically produced, and can be produced by anyone with access to a drugstore, even people with little or no chemistry knowledge.

Meth is usually produced in secret underground laboratories, of which there are two types: super labs and mom and pop labs. Super labs produce 80% of the methamphetamine that is sold, while mom and pop labs generally produce small amounts for use by the producers and their close friends. Mom and pop labs are much more dangerous because they are generally run by people with little or no experience with chemicals, are much less organized than super labs, and are generally located in the producers' homes or in tents or trailers they have obtained for that purpose. Since labs can be built anywhere (kitchens in homes, trailers, underground vaults,

garages) and since they are so easily assembled and disassembled, they are difficult to detect. They are also usually located in remote areas; this is to avoid detection because of their strong chemical odors and to provide the meth producers with a sparsely-populated dumping ground for the toxic waste the labs produce (McEwan 2003).

The producers of methamphetamine are called “cooks.” Though most of them do not have any chemistry experience or background, they learn to manufacture meth by watching other meth cooks, by reading underground publications, or while in prison (McEwan 2003). Meth recipes are also easily accessed online (see Appendix A for an example). In California, where meth production is a booming business, Mexican traffickers are taking over drug production and distribution. These operations, which are highly organized and produce huge amounts of meth, are taking over the business of the Californian mom and pop meth labs, and may even start replacing other, larger suppliers. Their size and clout among drug traffickers has enabled them to assemble a highly organized way to obtain chemicals, produce the drug, and distribute it to addicts. Because they are so well connected (often, they have so many contacts in the drug world that they produce more than one type of drug), the Drug Enforcement Administration (DEA) considers them to be the biggest danger to the drug trade (McEwan 2003).

The basic method for making methamphetamine involves extracting the pseudoephedrine from cold medicine and combining it with a number of chemicals such as iodine crystals, muriatic acid, and red phosphorous. (For a complete list of chemicals that methamphetamine contains, see Appendix B.) All of the chemicals in meth are toxic and extremely dangerous, but all can be extracted from pharmaceutical drugs, cleaning fluids, and other substances that are readily available in drug and hardware stores. When “cooked” together, the chemicals produce the highly addictive, potentially lethal drug that is methamphetamine.

The combination of uneducated cooks, unregulated meth recipes, and highly toxic and dangerous ingredients makes methamphetamine labs dangerous for anyone who comes in contact with them or the waste they produce. This includes the cooks themselves, their children or others who live in their homes, people who live near the meth labs, and law enforcement officials who approach or enter the labs.

Many of the chemicals that are used in the production of methamphetamine are explosive and if not handled properly could result in serious physical injury to the meth cooks; they endure explosions, chemical burns, fires, chemical spills, and toxic fumes to continue their illegal drug production (McEwan 2003). Chemical fumes, which are highly concentrated inside a meth lab because the windows are often kept sealed to increase privacy and prevent odors from leaving the lab, can be absorbed through the skin and lungs, so being surrounded by these fumes causes fainting, sickness, severe damage to vital organs and the central nervous system, or even death (O'Dea 1997). As shown in more detail in Appendix B, exposure to the compounds used to manufacture meth cause ailments from kidney damage and reproductive disorders to liver damage and cancer. The presence of chemical fumes also dramatically increases the risk of fires and explosions; even a spark from plugging in an appliance could set off a fire (Arizona Drug 2006). By making the decision to manufacture methamphetamine, meth cooks are deciding to subject themselves to potentially lethal health problems.

While meth cooks are deciding to expose themselves to the dangers of meth, others in their households are being forced to do the same. Children who live in the households of meth cooks are considered to be at especially high risk, perhaps even higher risk than the adults who are cooking the meth. Children absorb chemical fumes through their skin and lungs at a higher rate than adults because of their faster respiratory and metabolic rates. They may also be exposed

to toxic wastes, byproducts of meth production, that are present in the lab or have been dumped outside. Children who are exposed to chemical fumes and toxic wastes may suffer from ailments like anemia, neurological damage, and respiratory problems. In addition, a child living in a home that has been converted into a methamphetamine will be surrounded by dangerous chemicals and objects (like drug paraphernalia or weapons used by meth cooks to defend their labs) which could be mistaken by a child for edible items or playthings. Children being raised by meth cooks are usually neglected or abused, since their parents are generally addicted to the drug and are unable to provide them with adequate care (Arizona Drug 2006).

Those living near a meth lab are at risk from the chemical fumes and potential explosions that could occur in the lab. Anyone who responds to an incident (an explosion or fire) without knowing that there is a meth lab present is in great danger (McEwan 2003). Meth labs are so dangerous that federal law requires that anyone who knowingly approaches a meth lab must be a federally trained agent wearing protective, fire-proof clothing and an oxygen mask (Illinois Attorney General 2006).

Methamphetamine labs also endanger the health of law enforcement officials, especially those who are unaware of the presence of a particular lab. Law enforcement officials who approach a lab may be maimed or killed by the drug producers, who are anxious to protect their labs and would go to a great extent to do so; in fact, when when labs are cleaned up, it is not uncommon to find firearms or explosives that the drug producers had planned to use for this purpose (O'Dea 1997). Some mom and pop lab cooks also use booby traps made of exposed nails or explosives to protect their labs (Arizona Drug 2006). If law enforcement officials do manage to enter a meth lab unharmed, they still face the danger of being exposed to chemical

vapors and highly volatile substances. Most injuries of law enforcement officials occur because of inhalation of dangerous chemicals (Illinois Attorney General 2006).

Besides posing health risks to the meth cooks, their housemates and neighbors, and law enforcement agents, methamphetamine labs also have hazardous effects on the environment and on people who might be using nearby resources. For each pound of methamphetamine produced, five to six pounds of toxic waste (including lye, red phosphorous, hydriodic acid, iodine, contaminated meth cooking utensils, and tools for administering drugs like hypodermic needles) are produced. Most waste is dumped by the meth cooks into rivers, streams, sewage areas, and other open areas (Helson 2000), and sometimes the waste is also buried, causing pollution of groundwater (O'Dea 1997).

The dumping of toxic waste in bodies of water and open areas causes the contamination of ground and surface water, posing a major hazard to anyone whose water supply is piped from these sources. Crops located on nearby farmland could become contaminated, and though the impact on local agriculture is as yet unknown, it is thought to be significant (Guevara 2003). In California, toxic waste from meth labs has been known to kill livestock and large areas of trees and vegetation. The waste is also harmful to anyone who might accidentally stumble upon a dumping site (Illinois Attorney General 2006).

As dangerous as proximity to a meth lab is the cleanup of one. Standards of the cleanup of meth labs is often dictated on a state-by-state basis, as for the state of Colorado. There are eight major steps in the cleanup of a meth lab according to the Colorado Department of Public Health and Environment: airing out of the lab, gross cleanup of the lab, removal of contaminated items, detergent water washing of the lab, cleanup of the ventilation system, encapsulation

(sealing) of the area, decontamination of the plumbing system, and cleanup or disposal of personal belongings (Colorado Department of Public Health 2003).

Airing out before cleanup begins is an important step because it allows the toxic fumes of volatile chemicals that have been contained in the lab to dissipate. The lab should also be aired out for three to five days after cleanup is completed, and then tested for persistent signs of chemicals. If chemicals are still present at this time, cleanup needs to be repeated. Gross cleanup of the lab refers to the testing of liquids for corrosive qualities and the safe absorption and packaging of noncorrosive liquids; neutralization of acids and bases so that they can be safely transported away from the site; and the testing of septic tanks to see if there are meth byproducts present. During the next step, removal of contaminated items, any contaminated items that were used during meth production should be disposed of safely. Next, during detergent water washing of the lab, all surfaces should be washed thoroughly and the waste water should be disposed of as though it is a toxic waste. The ventilation system at the site should be thoroughly cleaned as well, since chemical particles clog the air filters and will continue to be released into the air unless filters are replaced. Internal surfaces should be repainted so that any chemical residue that remains on the walls will be sealed and can no longer become airborne and inhaled; if, after a few days, stains reappear on the walls through the paint, more thorough cleaning of the site's interior may be required. The plumbing system must be flushed with large amounts of water to reduce the concentration of chemicals that has been disposed of through the system, since toxic wastes are often flushed down the toilet or drain. This portion of the cleanup is very dangerous because there are sometimes chemicals that have been disposed of in the plumbing system which are highly explosive when they come in contact with air, and so people cleaning the plumbing

system must take extra precautions. Finally, any personal belongings left behind at the site must be either cleaned thoroughly or disposed of (Colorado Department of Public Health 2003).

Because methamphetamine labs are so dangerous, and, as just described, their cleanup must be very thorough and conducted by specially-trained individuals, the cost of cleanup is very high. When a meth lab is seized, companies from the private sector who specialize in meth lab cleanup are hired by the DEA to dispose of the hazardous waste. The DEA's hazardous waste cleanup program, along with the Office of Community Oriented Policing Services (COPS), supports and funds most lab cleanup operations in the United States. From 1992 to 2002 the number of lab cleanups jumped from 394 to over 7,000, and as of 2003 the average cleanup cost for a single lab was \$1,900, which includes only the cleanup of waste like chemical containers and waste products and not the removal of contaminated septic tanks or soil or decontamination of buildings and homes (Guevara 2003; O'Dea 1997).

Besides helping to fund cleanup efforts alongside the DEA, COPS pays for various training courses for law enforcement officials and civilians and gives grants to various agencies in the US that are fighting to stop meth abuse. In 1998, the organization conducted research to determine the most effective ways to improve anti-methamphetamine law enforcement and increase the number of meth labs that are found and cleaned up each year. The study conducted found that education of law enforcement officials is critical, as educated officials are more easily able to pinpoint clandestine meth labs and clean them up without getting hurt. Training public works and hotel and motel staff was found to be helpful because they are more likely and able to identify incidents as being meth-related and report them while keeping themselves safe. Finally, the study reported that general community awareness courses for civilians are helpful because

people are more equipped with the knowledge to identify meth labs, which increases the number of labs which are reported to the authorities (McEwan 2003).

Methamphetamine is a dangerous drug, not only to those who use or produce it, but also to anyone who is exposed to labs where it is produced. Its toxic byproducts harm the environment, polluting watersheds and causing deforestation. Unfortunately, the destruction that methamphetamine brings with it is not enough to stop the meth craze from continuing its eastward sweep across the United States, and even the millions of dollars spent each year on meth abuse prevention and lab cleanup is doing little to slow the growth of the population of meth users. Hopefully, the realization that all people, not just users, are affected by meth will amass a larger group of activists to fight the spread of this toxic drug.

References

Arizona Drug Endangered Children Program

2006 How Do Meth Labs Endanger Children? Electronic document,

<http://www.azag.gov/DEC/HowEndangesChildren.html>, accessed May 15, 2006.

Colorado Department of Public Health and Environment: Hazardous Materials and Waste Management Division

2003 Cleanup of Clandestine Methamphetamine Labs: Guidance Document. Colorado

Department of Public Health and Environment.

Guevara, Rogelio

2003 Statement Before the House Committee on Government Reform: Facing the

Methamphetamine Problem in America. Electronic document,

<http://www.usdoj.gov/dea/pubs/cngrtest/ct071803.htm>, accessed April 21, 2006.

Helson, Gary

2000 Statement Before the House Judiciary Committee on Crime. Electronic document,

<http://www.usdoj.gov/dea/pubs/cngrtest/ct042100.htm>, accessed April 21, 2006.

Illinois Attorney General

2006 Understanding Meth. Electronic document,

<http://www.ag.state.il.us/methnet/understandingmeth/evils.html#environment>,
accessed May 15, 2006.

Jefferson, David

2005 America's Most Dangerous Drug. Electronic document,

<http://www.msnbc.msn.com/id/8770112/site/newsweek/print/1/displaymode/1098/>,
accessed May 8, 2006.

McEwan, Tom, Uchida, Craig, Castellano, Thomas, McGarrell, Edmund, Osnick, Stacy, Pennell, Susan, Putnam, Carol, Schlegel, Kip, Scott, Michael, and Schneider, Matthew

2003 Combating Methamphetamine Laboratories and Abuse: Strategies for Success.

COPS Innovations: A Closer Look. Published by the US Department of Justice.

National Institute on Drug Abuse

2006 What is Methamphetamine? Electronic document,

<http://www.nida.nih.gov/ResearchReports/methamph/methamph2.html#what>,

accessed May 8, 2006.

O'Dea, Patrick, Murphy, Barbara, and Balzer, Cecilia

1997 Traffic and Illegal Production of Drugs in Rural America. Rockville: National

Clearinghouse for Alcohol and Drug Information.

Appendix A

One of the many online recipes for cooking methamphetamine. The availability of such documents and all of the ingredients needed has fueled the cooking of methamphetamine by lay people in their homes, which has led to a high incidence of lab explosions and other hazards.

How To Manufacture Meth -- True Iodine Recipe

by MethodMan

NOTICE: TO ALL CONCERNED Certain text files and messages contained on this site deal with activities and devices which would be in violation of various Federal, State, and local laws if actually carried out or constructed. The webmasters of this site do not advocate the breaking of any law. Our text files and message bases are for informational purposes only. We recommend that you contact your local law enforcement officials before undertaking any project based upon any information obtained from this or any other web site. We do not guarantee that any of the information contained on this system is correct, workable, or factual. We are not responsible for, nor do we assume any liability for, damages resulting from the use of any information on this site.

No lies here folks this recipe will manufacture methamphetamine this will get you into trouble if you do this BE CAREFUL!

First of all let's talk about supplies:

- 1 Case Regular Pint size Mason Jars (Used for canning)
- 2 Boxes Contact 12 hour time released tablets.
- 3 Bottles of Heet.
- 4 feet of surgical tubing.
- 1 Bottle of Rubbing Alcohol.
- 1 Gallon Muriatic Acid (Used for cleaning concrete)
- 1 Gallon of Coleman's Fuel
- 1 Gallon of Aceton
- 1 Pack of Coffee Filters
- 1 Electric Skillet (If you don't know what iam talking about i will have pics later)
- 4 Bottles Iodine Tincture 2% (don't get the declorized it won't work)
- 2 Bottles of Hydrogen peroxide
- 3 20 Oz Coke Bottles (Plastic type)(with Lids/caps)
- 1 Can Red Devils Lye
- 1 Pair of sharp scissors

- 4 Boxes Book Matches (try to get the ones with brown/red striker pads)
- 1 pyrodex baking dish
- 1 Box exacto razor blades single sided
- 1 digital scale that reads grams
- 2 gallons distilled water \
- 1 Roll Aluminum foil tape

That's what you would have to go buy if you wanted to make meth.

First things first -- the Iodine Crystals. Take one 20 oz, plastic Coke Bottle and pour 4 Bottles 2% tincture into it.

Add Hydrogen Peroxide to this. Use only 1/2 a bottle of Hydrogen peroxide. After this you know, the gallon jug that the Muriatic acid comes in take the cap off and fill this cap level with the acid. Add the acid to the coke bottle (Place in a freezer for at least 30 mins).

While the Iodine crystals are being made we are going to extract the Phsuedo from the Contacts. You are going to need a towel for this so go get one. Take the pills out of one box, add it to one of the mason jars fill with rubbing alchohol just enough to cover the pills let set for 3 minutes. Remove pills and take the towel and wipe the top coating off the pills this will remove the wax. Do the same with the other box of Contacts as well, after this add those wiped off pills only 10 to a clean mason jar. On top of this add 1 bottle of Heat do the same for the other box of Contact. Let these two mason jars with pills, heat stand for 30 minutes. Then shake the jars till pills are completely broke down then let the jars sit again for 4 hours or until the Heats is completely clear . Once clear cyphon the heat off (Not the powder stuff at the Bottom you don't want this it will fuck your dope up).

Well anyway syphon the heat off with a piece of the sergical tubing syphon this into a pyrodex baking dish place in microwave on high till the heat is almost evaporated. Take out of microwave. Now plug up your electric plate set the pyrodex dish on this on about 180 deg continue evaporating till you get a white powder on the pyrodex (Carefull not the burn the phsuedo if it turns yellow it's burned) after you get it dried take a razor blade and scrape this powder up. (put this asside for later use)

Now we are going to get the red phosphorus from the book matches take a pair of scissors and cut along the edge of the phosphorus do the whole four boxes of match book matches then take 1 small coffee cup will work to this coffee cup add about 1/4 the way with Acetone dip the match book strike pads into the acetone for 10 seconds this will loosen the phosphorus so it will be easier to scrape with the razor blades. (put the phosphorus in an empty match book box to let dry. Now it's time to get the iodine crystals get a clean mason jar on top of this place 1 coffee filter and pour the contents of the iodine +muriatic+Hydrogen Peroxide into the filter (do it slowly don't over pour) well once you get though with the filtering on top of the coffee filter will be a black substance (This is iodine crystals) dry them by wrapping in more coffee filters till you get a pretty good thick pile around the original filter place on ground and step on it to get the rest of the liquids off save this for the cook.

next take your digital scales weigh your pills first say you had 2 grams of pill powder then weigh out an equal amount of iodine crystals then for the phosphorus divide the total weight of pills by 3 3 will go into 2 1 time so if you had 2 grams pill powder you should have 2 grams iodine crystal 1 gram phosphorus Now its time to make the cook jars you will need 2 clean mason jars with lids 1 foot surgical tubing poke a hole in both jar lids place one end of the tubing into each jar lid and seal with foil tape (buy this at walmart for about \$ 1.60 well anyway seal off the tubes as well as you can so you should have 2 mason jars with lids that have surgical tubing foiled taped and sealed. ok this is the cook in one mason jar add distilled water in it fill it half way close the lid on it. now get you hotplate hot first at 180 degrees F when the plate get hot then its time to add the Iodine+pill powder to the other mason jar not the one with water in it once you get both Iodine and pill powder to the jar add 6-10 drops of distilled water to this place it on the hotplate now add the phosphorus once you put this in the jar there is going to be a imediatereaction place the other lid with hose onto the jar screw on tightly then turn your hotplate up to 400 degrees f let this cook for 1 hour to an hour and a half the best way to tell when it is done is when the contents of the cook jar doesn't boil anymore once this has happened turn the hotplate off and let the jar cool so you can touch it now its time to see if we have dope once it has cooled open the lid and you should smell rotten egg like smell if it has this smell congrads you have dope now we have to remove the dope from the black goey substance to this jar add about 1/4 cup of distilled water and seal the jar with a lid that has no holes in it and shake the jar till all the substance on the botom of the jar has come off into the water

next take another clean mason jar and place a coffee filter and filter the cook jars contents though the filter now on the filter is your phosphorus save this for another cook later on just putt it in a dry coffee filter and put it somewhere dry and safe now you have a jar filled with a yellow honey looking substance if its this color you have done good at cooking the dope now to this add colemans fuel fill the jar about full just leave anough room for shaking now add 1-2 table spoons red devil lye let the jar sit for about 5 mins then place lid on the jar and shake the hell out of it then sit the jar somewhere to rest for about 30 mins Now we are going to pull the dope out of the coleman fuel and the product is going to be 90% methamphetamine to do this fallow what i say exactly syphon the coleman fuel into an empty 20 oz coke bottle syphon off much as you can trying not to get the substance off the bottom of the jar once you have the coleman fuel in the coke bottle add about 4-6 coke bottle caps of water to this now add one drop of muriatic acid to the coke bottle place lid on bottle and shake the hell out of it place upside down so it want fall and get your hotplate hot 400 degrees f on top of the hotplate place a clean pyrodex bowl on it now take the coke bottle still upside down and loosen up on the cap let the water drain into the pan don't get any coleman fuel into the pyrodex bowl now the water will evaporate while it is doing this take a coffee cup add acetone to it fill it 1/4 the way up now once the water has dried on the plate take plate off with gloves and add a small amount of acetone to the pyrodex bowl it will sizzle swirl it around and if all works out good ther will be cirle crystals all over the pyrodex bowl scrape up with a razor and enjoy Methamphetamine :-)

This with 2 boxes of Contacts will make anywhere from 2-3 grams meth....

Appendix B

Typical chemicals found in lab sites, their legitimate uses, and the health hazards associated with them.

Typical Chemicals Found in Lab Sites	Common Legitimate Uses	Poison	Flammable	Toxic Vapors	Explosive	Corrosive	Skin Absorption	Common Health Hazards
Acetone	Fingernail polish remover, solvents	X	X	X			X	Reproductive Disorders
Methanol	Brake cleaner fluid, fuel	X	X	X			X	Blindness, eye damage
Ammonia	Disinfectants	X		X		X	X	Blistering, lung damage
Benzene	Dye, varnishes, lacquers	X	X		X	X	X	Carcinogen, Leukemia
Ether	Starters fluid, anesthetic	X	X		X			Respiratory
Freon	Refrigerant, propellants	X		X		X		Frostbite, Lung damage
Hydriodic Acid	Driveway cleaner	X		X		X	X	Burns, Thyroid damage
Hydrochloric Acid (HCl gas)	Iron ore processing, mining	X		X		X	X	Respiratory, Liver damage
Iodine Crystals	Antiseptic, Catalyst	X	X		X	X		Birth defects, Kidney failure
Lithium Metal	Lithium batteries	X				X	X	Burns, Pulmonary edema
Muriatic Acid	Swimming pool cleaners	X		X		X		Burns Toxic vapors
Phosphine Gas	Pesticides	X		X			X	Respiratory failure
Pseudophedrine	Cold medicines	X						Abuse: Health damage
Red Phosphorus	Matches, fireworks	X	X	X	X			Unstable, flammable

Sodium Hydroxide	Drain cleaners, lye	X		X		X	X	Burns, skin ulcers
Sulfuric Acid	Battery acid	X		X		X	X	Burns, thyroid damage
Toluene	Paint thinners, solvents	X	X	X	X		X	Fetal damage, pneumonia
Liquid Lab Waste	None	X	X	X	X	X	X	Unknown long term effects

Table is from Washington State Department of Health: Division of Environmental Health, Office of Environmental Health and Safety. Accessed May 8, 2006. Last updated January 27, 2006. Internet. <http://www.doh.wa.gov/ehp/ts/CDL/methhazards.htm>.