The Safety Guys: What's Cooking?

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We are back with our second article on clandestine drug labs. Our first article in the series provided an introduction to "clan labs," provided a little history and background on the epidemic, and briefly discussed the three phase approach taking the site from discovery to final clean up. After a clan lab is found, specially trained law enforcement personnel must often deal with possible booby traps while securing the site. Crime scene investigators can then move in and process the site for evidence. Following the securing and processing of the clan lab we move into the next phase, which is categorizing the chemicals and wastes and removing the gross contamination from the site. This article discusses the different methods used to make the illegal drugs at clandestine laboratories, the chemicals involved in those methods, and the hazards associated with those chemicals.

In our original article we noted that clan labs can manufacture stimulants, depressants, hallucinogens, and narcotics. However, in 2004 the Drug Enforcement Agency (DEA) found that ninety eight percent (98%) of seized laboratories were producing methamphetamine.[1]Obviously, the health and safety concerns vary based on the type of drug manufactured and the production method used, but given this fact we will focus on methamphetamine production methods.

The "recipes" for "cooking" methamphetamine are relatively simple and unfortunately, easy to obtain, especially with the availability of the internet. The drugs, including methamphetamine, produced in clandestine laboratories can be made with readily available over-the-counter items and chemicals found in drug stores and hardware stores along with common household kitchen utensils. The huge increase in clandestine drug labs and methamphetamine manufacture is due not only to the ease of getting the cooking recipes and the chemicals needed, but also to the low cost of production and the potential large profits from sale of the illegal drugs.

METHAMPHETAMINE MANUFACTURING

There are more than three hundred chemical substances used in manufacturing methamphetamine.[2] These can be divided into two general categories: essential chemicals and precursors. Essential chemicals are the salts, solvents, acids, and alkalines used as reagents and catalysts in the manufacturing process. Although essential to the production, they do not become part of the final molecular structure of the drug. A precursor chemical is critical to the creation of the controlled substance and actually becomes a part of its molecular makeup. For methamphetamine there are a possible thirty four precursor chemicals,[3] the most common of which are ephedrine and pseudoephedrine, common ingredients of over-the-counter cold medicines and diet pills.

The three hundred chemicals are used in more than two hundred different manufacturing methods or recipes currently in circulation.[2] The seemingly endless number of production methods come about because as regulations attempt to control precursor chemicals new and innovative recipes are developed by simply modifying the method for use of available substances. In addition, precursors can be synthesized with readily available chemicals.

The different recipes are really just versions of three basic methods. These basic recipes were developed from sources such as general chemistry and organic chemistry textbooks, the Journal of Forensic Science, Forensic Science International, and counter-culture publications like the Betty Cranker Cookbook and Uncle Fester's Secret Methamphetamine Manufacture. The three basic methods are P-2-P, Red Phosphorus or Red P, and the Nazi or Birch method.

In simple terms methamphetamine production is performed in three general stages. First is the cooking where precursors are mixed with solvents and heated to form the drug base. This is followed by extraction where the base is removed from excess solvents and other undesirable substances. The final stage is commonly referred to as salting or drying where the product is converted to its final usable form and then dried.

P-2-P

This method draws its name from the precursor, phenyl-2-propanone, and is sometimes called the amalgam or mercuric chloride method because of this essential chemical. But the P-2-P method is much less common today than the other two methods. The reason for its drop in popularity is primarily the strict regulation of the precursor chemical and its subsequent difficult procurement. Also, this method takes longer to make the methamphetamine and produces a less potent form of the drug that contains more contaminates which translate into worse side effects.

Chemicals commonly used with this method include methyl alcohol, methylamine, aluminum, ether, sodium hydroxide, and lead acetate in addition to the two already mentioned. Hazards associated with these chemicals are extreme flammability, cor-rosivity, and toxicity. Cooking with this method will leave behind toxic mercury and lead contamination among the other wastes.

RED P

The next most common cooking recipe is the red phosphorus or Red P method. Red phosphorus, a component of safety matches, flares, smoke bombs, and the like, is combined with iodine to make hydriodic acid (HI) which is then used to reduce the precursor (ephedrine or pseudoephedrine) to methamphet-amine. Also called the HI method due to that essential chemical, cooking with the Red P recipe requires the use of other hazardous chemicals such as hydrochloric acid (muratic acid), sodium hydroxide (lye), and a variety of solvents such as Coleman fuel, charcoal lighter fluid, starter fluid, brake cleaner etc., most of which are very flammable. Wastes left behind from this cook include the flammable solvents and sludges, corrosive acids and bases, in addition to reactive yellow or white phosphorus. This method also has the potential to produce very toxic phosphine gas if certain solvents are heated with open flames.

NAZI OR BIRCH

This method is named because of its WWII German inventors. It is also called the Birch Method from the chemical reaction name (Birch-Bekenser Reduction) and the Ammonia Method from the essential chemical anhydrous ammonia, used in manufacturing methamphetamine this way. The same precursors as in the Red P method, ephedrine and pseudoephedrine, are used. This method is rapidly becoming the most popular recipe because of its high conversion rate, low cost of ingredients, and high quality of finished product. It is the fastest of the three methods Terrorism producing a batch of meth in about 45 minutes, start to finish. Purity using this recipe approaches ninety five per- Digital evidence Check-off lists DNA testing Case studies and cent

(95%). Legal issues 16 pages of full-color

Use of the Nazi or Birch method is especially popular in the Investigative equipment rural heartland due the readily available liquid fertilizer (anhy-drous ammonia) found in agricultural operations. This method also uses lithium metal (batteries), sodium metal, and a similar assortment of solvents and acids as the Red P and P-2-P methods. The wastes produced by this recipe are the familiar flammable solvents and sludges, corrosive wastes, and reactive metals lithium and sodium. In addition, the cryogenic anhy-drous ammonia is extremely corrosive and reactive.

SUMMARY

Cooking methamphetamine by any method creates severe hazards and large amounts of dangerous wastes, a minimum of six times the amount of finished product produced. Many of these wastes are flammable, corrosive, reactive, toxic, or explosive. The chemicals and wastes left behind can harm unsuspecting or careless individuals by being inhaled or absorbed through the skin. Health effects can be either acute (short term) or chronic (long term). Burns, rashes, and irritation can result from contact while headaches, nausea, and dizziness are common following inhalation.

Although hazards decrease significantly after cooking has stopped, extreme care should be taken until the production wastes and bulk chemicals are properly removed and disposed. Even so, it is likely that ingredient chemicals, spilled solvents and reagents, unknown byproducts, and methamphetamine particles have been left behind, deposited on walls and most surfaces. Our next article will discuss assessment, clean up, and remediation of these clandestine drug laboratories.

References

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