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Anhydrous Ammonia

in Methamphetamine Production

Overview

Increased theft and diversion of anhydrous ammonia (ammonia gas) indicate the growing use of the "Nazi" method of methamphetamine production, which continues to spread from the Midwest to many other areas of the United States. Anhydrous ammonia is a colorless, pungent gas legitimately used as a fertilizer and as a refrigerant in commercial air-conditioning systems. It is illicitly used to produce methamphetamine. Methamphetamine laboratories are frequently located near agricultural areas in order to facilitate access to anhydrous ammonia using theft or diversion. Because methamphetamine producers are migrating to new areas, law enforcement officials and commercial anhydrous ammonia suppliers need to be aware of and be able to identify precursor and essential chemicals used in the production process. Unfamiliarity with this process could lead to injuries to both law enforcement officers and civilians and to the improper disposal of chemicals.

Nazi Method

The Nazi method of production became popular during the mid- to late-1990s throughout the Midwest. The popularity of this method is no longer confined to the Midwest, and it is now used throughout much of the United States. According to the El Paso Intelligence Center, Nazi laboratory seizures increased from 439 in 1998 to 2,912 in 2000, and 1,233 laboratories were seized during the first 5 months of 2001. The Nazi method is used as far east as Ohio and Arkansas and as far west as Washington. Nazi method laboratories have also been seized in California and Arizona, states where methamphetamine producers have traditionally used either the hydriodic acid/red phosphorus method or the iodine/red phosphorus method.

Methamphetamine Laboratory Seizures, United States

Year	"Nazi" Method	Total
1998	439	3,015
1999	1,767	6,415
2000	2,912	6,426
2001*	1,233	2,088

Source: El Paso Intelligence Center.
*5 months

The Nazi method of production, also known as the Birch Reduction method or the Dissolving Metal Reduction method, combines ephedrine/pseudoephedrine, an active metal—usually sodium or lithium—and anhydrous ammonia in order to produce methamphetamine. Sodium is significantly more dangerous to use than lithium and reacts more explosively with water. Sodium is a hazardous chemical and is not commonly sold directly to individual consumers. Most clandestine laboratory operators who attempt to purchase sodium pass themselves off as legitimate academic researchers or representatives of chemical, industrial, or pharmaceutical firms. Lithium is typically recovered from new lithium batteries, while sodium is usually purchased from commercial sources. Sodium and lithium are available through local chemical supply houses, as are small quantities of anhydrous ammonia.

Most ingredients used to produce methamphetamine using the Nazi method are inexpensive, readily available, and can be purchased over the counter. Ether, lighter fluid, mineral spirits, paint thinners, Coleman fuel, and Epsom salts are common ingredients used in the production process. Nazi methamphetamine laboratories generally produce small amounts—typically 1 to 4 ounces—of high-purity methamphetamine.

Theft and Diversion

Anhydrous ammonia is commonly used by farmers as a fertilizer. Its 82 percent nitrogen content makes it particularly efficient. Anhydrous ammonia has been safely and successfully used for a half century by farmers to grow basic crops such as corn, soybeans, and wheat. Farmers store anhydrous ammonia as a pressurized liquid in large tanks in their fields. Anhydrous ammonia is frequently stolen from storage facilities situated on farmlands or from retail facilities selling agricultural supplies. Some employees of these facilities, laboratory operators, and individuals who sell chemicals on the black market may be involved in the theft and diversion of anhydrous ammonia. In order to steal anhydrous ammonia, thieves often remove locks from the tanks with bolt cutters and use garden or vacuum hoses to siphon the ammonia from tanks. They collect the ammonia in open containers or empty propane tanks. Since thefts may be as little as a gallon or two and the tanks may hold as much as 100,000 gallons, some thefts are not detected. Thieves may also steal entire tanks containing anhydrous ammonia. Thefts from farms and retail facilities are so frequent in some agricultural areas of the country that security measures are increasingly being employed. Alarms, surveillance cameras, barricades, fencing, motion detection devices, and special locks on tank valves are now common.

Law enforcement officers in areas not traditionally associated with methamphetamine production are increasingly discovering anhydrous ammonia thefts as illustrated by the following:

Arkansas—In February 2001, police near Little Rock were tipped off about the presence of an anhydrous ammonia tank concealed in a storage shed in a rural area. Police investigated and found a stolen 1,000-gallon tank on a trailer in the shed. The tank had been stolen from a farmer in East Prairie, Arkansas, placed on a trailer, and towed to the shed in Little Rock. Police also found numerous small, portable tanks in the shed indicating they were to be filled with anhydrous ammonia and sold to methamphetamine laboratory operators.

Idaho—In January 2001, two men were involved in a shoot-out with a game warden after they were seen stealing anhydrous ammonia from a farmer's tank. The suspects fled before being arrested but were later apprehended.

Indiana—Police in Bartholomew County believe that a noxious ammonia cloud was caused by thieves who tried to steal anhydrous ammonia from a 1,000 gallon tank in March 2001. Approximately 800 gallons of ammonia escaped after seeping from a punctured valve seal; the resulting ammonia cloud took hours to dissipate because of damp and windless conditions.

Kansas—The Kansas Bureau of Investigation (KBI) reports frequent thefts of anhydrous ammonia from farms and farming cooperative businesses in that state. The thefts have become so frequent that the KBI has begun using various alarms and surveillance cameras at anhydrous ammonia storage sites. When interviewed about the thefts, several suspects reported that they could sell a gallon of anhydrous ammonia for $1,000 to individuals who produce methamphetamine.

Louisiana—In October 2000, residents of the rural farming town of Bonita were evacuated after thieves left a valve open on an anhydrous ammonia tank, resulting in the formation of an ammonia cloud. State troopers were able to close the valve, but 10,000 to 13,000 gallons of ammonia were released.

New Mexico—Law enforcement officials report that methamphetamine laboratory operators are stealing anhydrous ammonia by filling 5-gallon jugs from farm tanks or railroad tanker cars parked at the Santa Fe railroad freight depot in Clovis.

Ohio—Anhydrous ammonia thefts are becoming more common, particularly in southern Ohio, where the chemical is routinely used on cornfields. Law enforcement authorities report employees working at farm supply stores frequently siphon off small amounts of anhydrous ammonia for sale or use. For example, when a 6-foot hose is used to fill anhydrous ammonia tanks, the employee shuts off the valve at the large tank, leaving about one-half gallon of anhydrous ammonia still in the hose. The employee then transfers the anhydrous ammonia from the hose into a small tank to use or sell to methamphetamine laboratory operators.

As more effective theft deterrents are implemented, methamphetamine producers are beginning to find alternative sources for anhydrous ammonia. For example, methamphetamine producers may purchase anhydrous ammonia directly from commercial suppliers. These producers may exhibit a number of suspicious purchase indicators including evasiveness or inability to answer questions about their use of anhydrous ammonia or insistence on taking possession of the anhydrous ammonia rather than having it delivered. (See text box.) Nazi method methamphetamine producers may also attempt to make their own anhydrous ammonia. Several Drug Enforcement Administration (DEA) field offices have encountered illicit production of anhydrous ammonia that involves a mixture of ammonia sulfate, lye, acetone, and dry ice to produce anhydrous ammonia.

Suspicious Purchase Indicators for Sales of Anhydrous Ammonia

- Customer cannot answer or is evasive about agricultural use questions.
- Customer insists on taking possession rather than having it delivered.
- Customer insists on using cash, money order, or cashier's check.
- Customer is a stranger, unfamiliar with area or your business.
- Customer is vague or resists providing personal information.

Source: Drug Enforcement Administration.

The Hazards of Anhydrous Ammonia

Anhydrous ammonia means ammonia "without water." Thirteen hundred gallons of ammonia vapor will dissolve in 1 gallon of water. Because of its high affinity for water, anhydrous ammonia readily absorbs water to create diluted ammonium hydroxide, a component of lye. Anhydrous ammonia is a hydroscopic compound, which means that it seeks water from the nearest source, including the human body. The eyes, lungs, and skin are at greatest risk because of their high moisture content. Caustic burns result when anhydrous ammonia dissolves into body tissue. Most deaths from anhydrous ammonia are caused by severe damage to the throat and lungs. When large amounts are inhaled, the throat swells shut and the victim suffocates. Exposure to vapors or liquids can also cause blindness.

Small propane tanks illegally filled with anhydrous ammonia are commonly found at Nazi method methamphetamine laboratory sites. Propane tanks are not designed to store anhydrous ammonia and can explode if the outside temperature rises, causing pressure inside the tank to build, or if the ammonia eats through the tank. Deteriorated tank valves are a frequent hazard because the valve may leak or break, causing the hazardous gas to be released. The valves on propane tanks used to store anhydrous ammonia turn a bluish color that is easily identifiable.

Education and Legislation

Law enforcement authorities in many states are working with agricultural groups to educate farmers about the use of anhydrous ammonia in the Nazi method of methamphetamine production. The Agricultural Retailers Association (ARA) is actively collaborating with federal and state authorities in order to find solutions that will stop the theft and illegal use of anhydrous ammonia. The fertilizer industry in conjunction with the ARA, the Environmental Protection Agency, and DEA have all issued publications and notices about anhydrous ammonia theft. In addition, the agriculture industry has successfully lobbied several state legislatures to make the theft of anhydrous ammonia a felony.

On October 17, 2000, President Clinton signed into law the Children's Health Act of 2000, which included several freestanding drug bills, one of which pertains to the theft and transportation of anhydrous ammonia for purposes of illicit production of controlled substances. This law makes it illegal to steal anhydrous ammonia or to transport stolen anhydrous ammonia across state lines knowing, intending, or having reasonable cause to believe that it will be used to manufacture a controlled substance. Violators of the law may be sentenced up to 10 years and fined up to $30,000. Funding was also provided to DEA in order for Iowa State University, in conjunction with DEA, to continue and expand its current research into the development of inert additive agents that will render anhydrous ammonia useless in the production of methamphetamine.

Outlook

The unlawful removal, storage, and use of anhydrous ammonia will continue to pose health and safety risks to law enforcement officers and civilians. Anhydrous ammonia theft, endemic throughout the Midwest, has now spread across the country. Frequently, the theft or diversion of anhydrous ammonia is not detected by either law enforcement or industry officials because of the small amounts involved. As a result of the cooperation between law enforcement and industry officials, farmers are increasingly reporting thefts of anhydrous ammonia from their fields. These reports provide law enforcement with intelligence to determine if a methamphetamine laboratory exists in the area. Authorities now recognize the problems associated with the diversion of anhydrous ammonia. Law enforcement officials, researchers, and agriculture and fertilizer industry representatives are working together to find methods to limit diversion of anhydrous ammonia and to reduce methamphetamine production. However, an increase in the illicit production of anhydrous ammonia may occur as additional controls are implemented to reduce the theft and diversion of anhydrous ammonia from farmers and commercial sources.

Sources and Contacts

Agricultural Retailers Association (800) 844-4900

El Paso Intelligence Center, DEA

Environmental Protection Agency
Hotline (800) 424-9346 www.epa.gov/ceppo/

Federal Criminal Codes and Rules

The Fertilizer Institute (202) 675-8250

Industrial Resources Group, Inc.

The National Agriculture Safety Database

University of Minnesota