



COMMON CHEMICAL RELEASE INFORMATION

AMMONIA

Ammonia is the most common chemical spilled in Wisconsin. Recently, an ammonia release was responsible for the evacuation of 1,500 people, the largest evacuation due to a chemical release from 2010 to 2012. Ammonia is water soluble. At low concentrations, it is an irritant. At high concentrations, it can be deadly.

Facts

- Colorless, odorous gas, also known as anhydrous ammonia
- Man-made and naturally occurring

Exposure

- Ammonia can be found in: fertilizer, industrial refrigerant, household and industrial cleaners, and decaying manure.
- Exposure can result from:
 - Inhaling in ammonia from transportation or storage leaks
 - Over-exposure to fertilizer
 - Cleaning solution ingestion, inhalation, or contact

Health Effects

- **Eye Contact:** Ammonia can cause eye irritation and burns. If possible, take out contacts. Rinse eyes with water for 15 minutes.
- **Skin Contact:** Ammonia can cause skin irritation and burns. Flush exposed area with water.
- **Inhalation:** Breathing in ammonia can cause irritation, burns, swelling, and constriction of airways. Remove yourself or victim from the area of contamination to breathe fresh air.
- **Ingestion:** Ingestion of ammonia, though rare, may cause burning and irritation of the mouth, throat, and stomach.
- **Other Symptoms:** Headache, nausea, vomiting.
- **Chronic Exposure:** Repeated exposure to ammonia has been shown to result in asthma-like symptoms and lung damage.

Regulations

According to the U.S. Environmental Protection Agency (EPA), ammonia spills that are 100 pounds or more must be reported.

NATURAL GAS

From 2010 to 2012, natural gas was the second most common chemical released in Wisconsin. Natural gas releases caused the most evacuations of any chemical during this time period.¹² Call the Digger's Hotline at 811 before renovating or digging to prevent punctured pipelines.

Facts

- Colorless, nontoxic gas
- Rotten egg odorant is added to natural gas before distribution by gas companies for easier detection of leaks.

Exposure

- Natural gas is used as an energy source for heating, cooking, and electricity generation. It is distributed by gas companies via underground pipelines.
- Natural gas leaks can result from damaged pipelines. Pipelines can be damaged by:
 - Extreme weather events like tornadoes, hurricanes, and extreme cold
 - Digging and puncturing
 - Buildup of snow and ice on gas meters, pipes, and appliances
 - Collapsed buildings
 - Fire or explosion near the pipeline
 - Under- or overpressure in the pipeline
 - Heavy loading over buried sites

Health Effects

- **Fire or explosion**
- **Suffocation:** Natural gas replaces oxygen in the air and can lead to asphyxiation.
- **Carbon monoxide (CO) poisoning:** CO is a byproduct of burning natural gas. Burning natural gas in an enclosed space with no ventilation may cause carbon monoxide poisoning. Symptoms include nausea, headaches, dizziness, confusion, and unconsciousness.

HYDROCHLORIC ACID

Hydrochloric acid is the third most common chemical spilled in Wisconsin.¹³

Facts

- Odorous, nonflammable, acidic solution
- Also known as aqueous hydrogen chloride and muriatic acid

Exposure

- Hydrochloric acid is used in the production of chlorides, fertilizers, and dyes. It's also used in photographic, textile, and rubber industries. Laboratories use it as a solvent and catalyst.
- Exposure can result from:
 - Occupational exposure during production or use
 - Industrial or transportation leak
 - Improper use in swimming pools
 - Improper use as a disinfectant

Health Effects

- **Dermal Contact:** When hydrochloric acid (HCl) touches your skin or eyes, it will cause irritation and burning due to its acidic properties. Wash skin and eyes with water for 15 minutes after exposure.
- **Ingestion:** Swallowing HCl causes burns and scarring along the digestive tract (mouth, esophagus, and stomach), nausea, vomiting, and diarrhea. If a person ingests HCl, give water or milk to dilute the HCl.
- **Inhalation:** At room temperature, HCl is a gas, called hydrogen chloride. If inhaled, HCl causes coughing, choking, and burning of the throat.

Regulations

According to the EPA, hydrochloric acid spills of 5,000 pounds or more must be reported.

CHLORINE

Chlorine accounts for the majority of chemical spill-related injuries and hospitalizations in Wisconsin, with a total of 52 victims from 2010-2012.^{14,15}

Facts

- Odorous, greenish-yellow gas at room temperature
- Heavier than air and will occupy poorly ventilated areas.

Exposure

- Chlorine is used in disinfectants, water purification, bleach, and treatment of sewage.
- Exposure can result from:
 - Industrial or transportation leak
 - Mixing certain household chemicals (those that contain acid or ammonia) with bleach, which can create chlorine gas
 - Improper chlorination of swimming pools
 - Occupational exposure

Health Effects

- **Eye Exposure:** Symptoms include burns, excessive blinking, involuntary closing, redness, and inflammation.
- **Skin Exposure:** Symptoms include burns, pain, inflammation, and blisters. Liquid chlorine can cause frostbite or chemical burns on the skin.
- **Inhalation:** The most common mode of chlorine exposure. Symptoms include, “rapid, difficult breathing, bluish skin color, wheezing and congestion, cough, nausea and dizziness, burning, irritated throat, swelling or narrowing of the airways, chlorine induced pneumonia, [and] possible lung collapse.”¹⁵

Regulations

According to the EPA, chlorine spills of 10 pounds or more must be reported.



Wisconsin Department of Health Services

Division of Public Health

Climate and Health Program

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