

Ammonia

What is ammonia?

Ammonia is a corrosive, colorless gas with a sharp odor. Some liquids release ammonia gas. Ammonia is used to make household cleaners, refrigeration units, fertilizers, explosives, fuels and other chemicals. Humans and animals release ammonia in urine.

How can I be exposed to ammonia?

People are usually exposed to ammonia by breathing air that contains the gas. Liquids that contain ammonia can cause exposure by direct contact with the liquid or by breathing ammonia gas released from the liquid. Animal waste, fertilizers, and household cleaners are the most common sources of ammonia. Decaying plants or animals, coal or wood fires, and marshes all release small amounts of ammonia into the air.

Larger amounts of ammonia can be released in the air near farms and industries. Farms have high levels of ammonia due to animal waste storage and the use of liquid ammonia as fertilizer. People who live downwind of large cow, hog, or chicken farms may be exposed to ammonia.

Sewage treatment plants may release high ammonia levels. Industrial sites that store ammonia or use it as a refrigerant can release high levels if the chemical leaks or is spilled. Transportation accidents may also release dangerously high amounts of ammonia.

People who keep a lot of pets indoors and who do not clean up the animal waste may have high levels of ammonia.

What are the effects of exposure to ammonia?

Ammonia levels below 1 part per million (ppm) are not expected to cause health problems. Exposure to household ammonia gas above 1 ppm can cause irritation of the eyes, nose, and throat of some people. Most people can begin to detect ammonia odors when it is at least 1 ppm. Exposure to more concentrated levels (above 25 ppm) can cause headaches, nausea, and intense burning of the eyes, nose, throat, and skin.

Exposure to very high levels of ammonia gas can cause serious burns and permanent damage to the eyes and lungs. Individuals with asthma and emphysema may be particularly sensitive to ammonia. When liquids that contain ammonia are swallowed, severe burns of the mouth, throat, and stomach can occur.

How can I avoid being exposed to ammonia?

- Store household cleaners out of sight and reach of young children.
- Follow the manufacturer's instructions when using strong household cleaners (increased ventilation may be required).
- Never enter agricultural or industrial areas that might contain high levels of ammonia without appropriate training and protection.
- If there is a large ammonia spill, evacuate the area and call the fire department.
- Liquid ammonia fertilizer is hazardous and must be handled with caution.
- **Never mix ammonia-containing solutions with household bleach.** Highly toxic gases are released.

What should I do if I suspect a problem?

Ammonia has a very strong odor. If ammonia cannot be smelled, it is probably not concentrated enough to be harmful. If you can smell ammonia, health effects are possible. If strong ammonia odors are present in your home or environment, and if eye, nose, or throat irritation is occurring you should leave the area and call the fire department. If someone has swallowed ammonia, call 911.

Elderly people, children, and people with lung diseases, such as asthma or emphysema, may be especially sensitive ammonia. Avoid continued ammonia exposure with this population.

For more information

- Contact the Wisconsin Division of Public Health, Bureau of Environmental Health, PO Box 2659, Madison, WI 53701-2659, (608) 266-1120; or
- Visit the department's website, www.dhs.wisconsin.gov/eh



Developed by the Wisconsin Division of Public Health,
Bureau of Environmental Health
1 West Wilson, Madison WI 53701
P-00810 (revised 11/00)