



Chemical Name	Ammonia
Chemical Category (if applicable)	Inorganic gas
Synonyms	Anhydrous ammonia; Hydrogen nitride; Trihydrogen nitride; and Azane
CAS Number	7664-41-7
CAS Name	Ammonia
EC (EINECS) Number	231-635-3
Other identifier (Please specify)	GPS0049

## Description

- Ammonia is used as an intermediate chemical in the production and synthesis of other nitrogenous chemicals, in nitrogenous fertilizers, in household cleaning products, and as a refrigerant.
- Ammonia is used in closed systems to prevent exposure. However, accidental exposure can occur at the production facility or at other manufacturing, packaging or storage facilities that handle ammonia. Persons involved in maintenance, sampling and testing activities, or in the loading and unloading of ammonia cylinders are at risk of exposure, but worker exposure can be controlled with the use of proper general mechanical ventilation and personal protective equipment. Workplace exposure limits, acute exposure guideline levels, and emergency response planning guidelines for ammonia have been established for use in worksite safety programs. Please see the Safety Data Sheet (SDS) for additional information.
- Ammonia is a colorless, corrosive, alkaline gas with a very pungent odor. It is stable under normal conditions of storage in which cylinders are 1) protected from physical damage by being stored upright and firmly secured to prevent falling or being knocked over, 2) stored in a cool, dry, well-ventilated area of noncombustible construction away from heavy traffic areas and emergency exits, and 3) stored at temperatures that do not exceed 450°C (842°F). Ammonia will react exothermically with acids and water. Ammonia has potentially explosive reactions with strong oxidizers, and it will form explosive mixtures in air with hydrocarbons, chlorine, fluorine and silver nitrate. It reacts to form explosive products, mixtures or compounds with mercury, gold, silver, iodine, bromine, silver oxide and silver chloride. It is incompatible with acetaldehyde, acrolein, boron, chloric acid, chlorine monoxide, chlorites, nitrogen tetroxide, perchlorate, sulfur, tin and strong acids. Avoid contact with galvanized surfaces, copper, brass, bronze, mercury, gold and silver; a corrosive reaction will occur.
- The corrosive and exothermic properties of ammonia can result in immediate damage (severe irritation and burns) to the eyes, skin, and mucous membranes of the oral cavity and respiratory tract. Contact with liquid ammonia can cause frostbite. Inhalation of ammonia can irritate the lungs causing coughing and/or shortness of breath. Higher exposures may cause a build-up of fluid in the lungs (pulmonary edema) with severe shortness of breath and result in death.

## Description (Continued)

- This product safety summary is intended to give general information about the chemical or categories of chemicals addressed. It is not intended to provide an in-depth discussion of all health and safety information. Additional information on the chemical is available through the applicable SDS which should be consulted before use of the chemical. The product safety summary does not supplant or replace required regulatory and/or legal communication documents. Statements concerning use of our products are made without warranty that any such use is free of patent infringement and are not recommendations to infringe any patent.
- Repeated or prolonged inhalation exposure to ammonia may lead to permanent lung damage. Ammonia is not considered a reproductive or developmental toxic agent.
- The cancer risk for ammonia is considered low.
- In the aquatic environment, ammonia dissociates rapidly in water and can harm aquatic organisms such as fish, invertebrates and algae, with the degree of toxicity being influenced by the pH and temperature of the affected water body.
- Emergency Response Planning Guidelines (ERPG) for an exposure to ammonia for up to one hour in duration following accidental acute release have been established by the American Industrial Health Association (AIHA):
  - ERPG-1 (minor irritation) 25 ppm
  - ERPG-2 (serious toxicity) 50 ppm
  - ERPG-3 (potentially lethal) 750 ppm
- Acute Exposure Guideline Levels (AEGL) for ammonia have been established by the Environmental Protection Agency (EPA):

	10 min	30 min	60 min	4 hr	8 hr
<b>AEGL 1</b> (Nondisabling)	30 ppm (21 mg/m <sup>3</sup> )	30 ppm (21 mg/m <sup>3</sup> )	30 ppm (21 mg/m <sup>3</sup> )	30 ppm (21 mg/m <sup>3</sup> )	30 ppm (21 mg/m <sup>3</sup> )
<b>AEGL 2</b> (Disabling)	220 ppm (154 mg/m <sup>3</sup> )	220 ppm (154 mg/m <sup>3</sup> )	160 ppm (112 mg/m <sup>3</sup> )	110 ppm (77 mg/m <sup>3</sup> )	110 ppm (77 mg/m <sup>3</sup> )
<b>AEGL 3</b> (Lethal)	2,700 ppm (1,888 mg/m <sup>3</sup> )	1,600 ppm (1,119 mg/m <sup>3</sup> )	1,100 ppm (769 mg/m <sup>3</sup> )	550 ppm (385 mg/m <sup>3</sup> )	390 ppm (273 mg/m <sup>3</sup> )

- Facilities that use 10,000 pounds or more of anhydrous ammonia must comply with the Process Safety Management (PSM) Standard, 29 CFR 1910.119. A key provision of this standard is the requirement for the employer to conduct a hazard analysis for each process, i.e., a careful review of what could go wrong and what safeguards must be implemented to prevent releases of highly hazardous chemicals such as ammonia. Process hazard analyses must be updated and revalidated at least every five years and retained for the life of the process.

## Useful Resources

For more information about this product, [contact AdvanSix](#). Also see the following links:

- [ATSDR Toxicological Profile for Ammonia](#)
- [U.S. EPA Acute Exposure Guideline Levels for Ammonia](#)
- [OECD Screening Information Dataset for Ammonia](#)
- [World Health Organization, IPCS, Environmental Health Criteria 54 - Ammonia](#)

### Contact AdvanSix

To learn more about ammonia visit

[AdvanSix.com/chemicalintermediates](https://www.advansix.com/chemicalintermediates)

or call:

**1-844-890-8949** (toll free, U.S./Can.)

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