



Ammonia Chemical Safety

Anhydrous Ammonia Awareness and Response Guide

Anhydrous ammonia is used in refrigeration systems throughout the facility. It is colorless, highly irritating, and can cause severe injury or death at high concentrations. Every employee working near refrigeration equipment needs to understand the hazards, symptoms, and emergency response steps.

KEY FACTS	
Odor Threshold	People detect ammonia at 5-50 ppm. Irritation begins at 25-50 ppm. Serious effects occur above 100 ppm.
Delayed Effects	Injury to eyes, lungs, and skin may continue to develop for 18-24 hours after a severe exposure.
First Aid	Move to fresh air, flush with water. There is no specific antidote. Medical evaluation is required.
Not Cancer-Causing	Anhydrous ammonia is not known to cause cancer. Most people recover fully from a single low exposure.

WHAT IS ANHYDROUS AMMONIA

Anhydrous ammonia is a colorless gas with a sharp, suffocating odor. It is used as a refrigerant in large industrial cooling systems.

People can detect it by smell at concentrations as low as 5-50 ppm. Irritating effects begin at 25-50 ppm. Effects become serious above 100 ppm.

Exposure to very high concentrations can cause death from a swollen throat or chemical burns to the lungs.

IMMEDIATE HEALTH EFFECTS



Burning sensation in the eyes, nose, and throat even at low concentrations.

At higher doses: coughing, choking, difficulty breathing, wheezing.

Eye exposure to concentrated gas or liquid ammonia can cause serious corneal burns or blindness.

Skin contact can cause chemical burns.

Severity of symptoms depends directly on the level and duration of exposure.

WHAT TO WATCH FOR AFTER EXPOSURE

Seek medical evaluation immediately if you experience any of the following:

Continued coughing, difficulty breathing, or shortness of breath

Wheezing or a high-pitched voice after the exposure

Chest pain, tightness, or increased pain from exposed areas

Increased redness, discharge, or worsening of any skin burn

Nausea, vomiting, or stomach pain after inhalation or ingestion

MEDICAL TESTING AFTER SEVERE EXPOSURE

- Blood and urine analysis to assess systemic effects.
- Chest X-ray and pulmonary function tests to evaluate lung injury.
- Special eye examinations if eye exposure occurred.
- Testing is not required for every exposure, but should be considered after any significant event.

Symptoms can develop or worsen for up to 24 hours. Always seek medical evaluation after any ammonia exposure.

AMMONIA EXPOSURE RESPONSE CHECKLIST

Take these steps immediately if exposure occurs.



- ☐ Activate the alarm and notify supervisor immediately
- ☐ Move all persons upwind and away from the release area
- ☐ Call 911 if anyone has been exposed or release cannot be controlled
- ☐ Move exposed person to fresh air immediately
- ☐ Flush eyes with clean water for at least 15 minutes
- ☐ Flush affected skin with large amounts of water
- ☐ Remove contaminated clothing carefully
- ☐ Seek medical evaluation even if symptoms seem minor

This document is part of the Meat Institute Worker Safety Series, supporting Reporting Metric A4: Supervisors lead safety huddles and toolbox chats regularly with hourly workers.

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