PRACTICE SAFETY WHEN HANDLING ANHYDROUS AMMONIA – NH3

It’s No Secret - NH3 is Hazardous

Anhydrous means “without water”. Because NH3 contains little or no water it aggressively seeks out moisture, be it from the soil or your body. Exposure to NH3 can result in severe freeze burns to skin, eyes, throat, sinuses, and lungs.

NH3 Safety Practices

Personal protective equipment

• Wear NH3-rated goggles and gloves (cuffed), and be fully clothed – long sleeve shirt and pants (no shorts).
• Never wear contact lenses.

Emergency water supply

• Each nurse tank must contain at least a 5-gallon emergency water supply.
• During freezing weather have an extra 5-gallon emergency water supply in the tractor cab.
• An accessible personal eyewash bottle is recommended.
• Have an emergency water supply whenever performing equipment maintenance.
• Keep emergency water supplies clean and accessible at ALL times.

Handling

• NEVER assume NH3 lines are empty, including hoses connected to cold flow/heat transfer units or withdrawal hose.
• Stand upwind when connecting, disconnecting, bleeding lines, or transferring product.
• Handle valves by the body, not by the wheel or latch.
• Close, bleed, disconnect, and secure valves and transfer line when leaving equipment unattended.
• Park equipment downwind from dwellings, people, and livestock.

Transportation

• Adhere to speed limits:
  30 mph towing full nurse tank
  35 mph towing up to two empty nurse tanks
• Display a slow moving vehicle (SMV) emblem visible from the rear of towed assembly.
• Use two independent safety chains of suitable rating and a hitch pin with retainer clip

IF EXPOSED

✓ IMMEDIATELY flood/flush exposed areas with water.
✓ Flood/flush exposed area for at least 15-20 mins.
✓ Seek medical attention as soon as possible.
✓ Tell medical staff that injury was caused by NH3 exposure.
✓ Do not apply oils or ointments, this only worsens injury.
Maintenance of Selective Equipment Components

Hoses

- Immediately replace hosing if bulged, cracked or cut to the cords, soft spots, or separation from hose coupling.
- Always use a withdrawal hose of a correct length.

Coupling Device Assembly

- Coupling device assembly must be installed and maintained per the manufacturer’s specifications consisting of coupling device, double swivel, flat bar.
- Double Swivel: Coupling device must be mounted in a double swivel or other device authorized by the manufacturer that allows the coupling device to move freely in all directions; and separate as needed during an emergency. See Figure 1 for additional details.
- Flat Bar: See Figure 2 for details.

![Figure 1](image1)
Parts of a double swivel and flat bar assembly. Bushings must be used in both bolted connections to allow full movement of the double swivel.

![Figure 2](image2)
Flat bar is securely mounted to the application unit to provide a stable foundation for the coupling device and double swivel.

![Figure 3](image3)
Bleeder (bleed) valves must be installed on both sides of the coupling device. A hydrostatic relief valve (hydrostat) must be positioned on the discharge side of the coupling device and between each pair of shut-off valves. The hydrostat must be 350-400 psi/NH3 rated and be equipped with a rain cap.

![Figure 4](image4)

- Other factors for effective operation of coupling device assembly:
  - Application unit components that may impede the operation of the coupling device assembly must be altered or removed.
  - Never secure the withdrawal hose in a way that impedes the operation of the coupling device assembly.

Safe handling of NH3 involves:

- Preventing exposure by wearing personal protective equipment;
- Having emergency water for flushing exposures; and
- Preventing uncontrolled releases through safe handling, transport, and maintenance.

**REQUIRED INCIDENT REPORTING**

Immediately contact the following:

**Local:** 911

**State:** Minnesota Duty Officer @ 1-800-422-0798 (OUTSTATE) or 651-649-5451 (METRO)

**Federal:** National Response Center @ 1-800-424-8802 if release is 100+ lbs.

For More Information:

Go to the Minnesota Department of Agriculture (MDA) Anhydrous Ammonia (NH3) Program web page:

[http://www.mda.state.mn.us/nh3](http://www.mda.state.mn.us/nh3)

Questions?

Call the MDA at 651-201-6275, or email Ed.Kaiser@state.mn.us.