

# Generic Best Practices Procedures for Ammonia in Ice Rinks

(Always follow your employers safe work procedures)



## ⚠ Why Ammonia is Dangerous

Ammonia ( $\text{NH}_3$ ) is commonly used as a refrigerant in ice rinks. It's a colorless gas with a strong, sharp odor—like window cleaner. Ammonia is dangerous **because it's toxic and corrosive** to the lungs, eyes, and skin, and it can be explosive in high concentrations.



### Common properties of ammonia:

- Lighter than air (will rise)
- Strong smell at low concentrations
- Reacts strongly with water (including your eyes and lungs)

## 📖 Health Effects on the Human Body

### Exposure Route Effect

**Inhalation** Burning nose, throat, and lungs; coughing; difficulty breathing

**Eyes** Severe irritation, possible blindness

**Skin** Burns, blisters, irritation

**Ingestion** Severe internal burns (rare at work, but possible during spill cleanup)



**Personal Example:** “During an early morning shift, a co-worker opened a valve too quickly. A small leak of ammonia vapour hit his face. He immediately felt burning in his nose and eyes. Because he reacted fast—holding his breath, exiting, and using eyewash—he recovered quickly.”

## ⚠ When Accidents Typically Happen



- During maintenance or repair of refrigeration systems
- Improper opening/closing of valves
- Hose or pipe failure
- Leaks from seals or fittings
- Poor ventilation or unnoticed small leaks
- Emergency venting from the compressor room

## Safe Work Procedures

### 1. Training First

- Only trained, authorized staff should work around ammonia systems.

### 2. Inspect Before Entry

- Check for unusual smells, sounds, or frost buildup on lines.
- Monitor for leaks using approved ammonia sensors.

### 3. Ventilate Properly

- Always ensure exhaust fans are operating in compressor rooms.
- Never work alone when entering an enclosed or high-risk space.



### 4. Valve Operation

- Open valves slowly and always stand to the side (not above or in front).
- Use tools designed for ammonia system fittings.

### 5. Know the System

- Familiarize yourself with the refrigeration layout.
- Know where shutoff valves, detectors, and ventilation systems are.

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## Personal Protective Equipment (PPE)

Task	Recommended PPE
General work	Safety boots, ammonia-resistant gloves, safety glasses
Valve adjustments	Same as above + face shield
Maintenance work	Chemical-resistant suit, full face respirator (with ammonia cartridges) or SCBA if gas concentration is unknown

Task	Recommended PPE
Emergency response	Full SCBA gear + chemical suit

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## What to Do in an Emergency

### If you smell ammonia:

1. **Leave the area immediately**—don't wait.
2. **Pull the alarm** and **notify others**.
3. **Call 911** and the emergency response team.
4. **Use emergency ventilation switches** if safe to do so.
5. **Do not re-enter** until declared safe by trained personnel.



### If exposed:

- **Eyes/Skin Contact:** Use emergency shower or eyewash for at least 15 minutes.
  - **Inhalation:** Move to fresh air immediately. Seek medical attention.
  - **Report the exposure** to a supervisor, even if it feels minor.
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## Checklist for Ammonia Safety

- I know the signs of ammonia exposure
  - I know where emergency exits and showers are
  - I wear proper PPE for each task
  - I never work alone in a high-risk area
  - I report leaks or unusual smells immediately
  - I know the emergency procedures
  - I've had ammonia safety training this year
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*“Think of ammonia like fire—it’s powerful, useful, but dangerous. Treat it with respect every time you walk into the plant room.”*