

Ammonia exposure during storage or use

What is the potential risk?

Workplaces that transport, store, or use ammonia during industrial processes may be at risk of an accidental release of ammonia, potentially exposing workers to a toxic process gas. If workers inhale unsafe amounts of ammonia gas, they may suffer respiratory distress and unconsciousness, skin or eye irritation, freezing injuries, or even death.

Ammonia is a colourless gas with a strong odour that may be used in refrigeration systems, power generation, or other industrial and manufacturing processes. During transport and storage, ammonia is compressed in a pressurized environment. If there is a leak or damage to the process or storage equipment, ammonia gas may be released, potentially exposing workers or members of the public to toxic levels.

There have been incidents of ammonia release in B.C. that have resulted in worker injuries. Workers in workplaces that use ammonia as a refrigerant or for other industrial processes may be at risk of exposure to ammonia. These workplaces may include public pools and ice rinks, food processing facilities, and ice manufacturing facilities.

What industries may be at risk?

- Food and beverage product manufacture
- Warehousing
- Transportation and related services
- Supermarkets
- Food and beverage wholesale
- Local government

How can I reduce the risk in my workplace?

As an employer, you need to know if there is the potential for the risk identified in this advisory to be present in your workplace. It's your responsibility to regularly inspect your workplace, and to ensure that your safety procedures and practices control the risk. The following information highlights some of the sections of the Occupational Health and Safety (OHS) Regulation and Guidelines that are most relevant to this risk.

Sections 6.116–6.132 of the OHS Regulation cover the requirements for toxic process gases, one of which is ammonia.

The Regulation requires that employers implement an exposure control plan meeting the requirements of Section 5.54.

The BC Fire Code and Part 3 of the BC Building Code also place additional duties on the employer regarding the control of risks relating to the storage and handling of flammable substances.

Guidelines G6.116 to G6.127 also address toxic process gases.

Where can I find resources?

You can access the following resources on [worksafebc.com](https://www.worksafebc.com):

- Book: [Ammonia in refrigeration systems](#)

For more information on how we identified this risk, visit [worksafebc.com/emergingrisks](https://www.worksafebc.com/emergingrisks).