

Compressed Gas Safety

Overview

The use of compressed gases (e.g., oxygen, nitrogen, hydrogen, and chlorine) is essential at Northwestern to support research, construction and renovation projects, and maintenance activities, such as welding. While compressed gas use is common, it is critical that you understand how to properly store, handle, and dispose of cylinders to ensure your safety and the safety of your colleagues.



Understanding the hazards

The hazards associated with compressed gases are both physical and chemical.

- Physical hazards are present in all types of compressed gas cylinders, regardless of contents, and include high amounts of potential energy – which can turn the cylinder into a dangerous projectile if not properly handled.
- Chemical hazards are specific to the contents of the compressed gas cylinder and can be corrosive, toxic, flammable, oxidizing, or a combination of these hazards. Always read, understand, and adhere to cylinder labels and refer to [safety data sheets](#) (SDS) for specific safety information.

Tips for Success When Talking to Your Team

Preparation is Key: Keep the topic relevant to your work. Work with your team to review potential compressed gas hazards in your work areas and procedures to stay safe.

Stay Positive: Keep the focus on what can be done to create a safe workplace instead of focusing on what has gone wrong in the past.

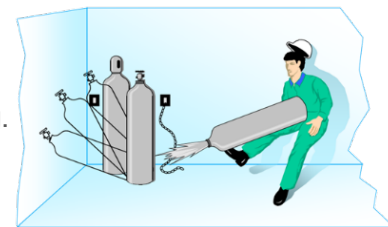
Share a Story, Ask for a Story: Storytelling is a powerful method to convey information. Stories from your employees make the topic even more relatable.

Under pressure

Compressed gas cylinders can have an internal pressure of up to 2,500 pounds per square inch (psi) or more. As such, any mishandling can be hazardous. Special storage, handling, and disposal precautions are necessary to control the hazards associated with compressed gases.

Storage

- Secure upright with a tight chain or strap to prevent them from tipping or moving.
- Store in a well-ventilated location free from vehicle traffic, excessive heat, corrosive conditions, and electrical circuits.
- Ensure cylinder valves are completely closed and protection devices (e.g., caps) are secured.
- Never store in a location that could block exit routes or safety equipment, such as fire extinguishers.



Handling

- Handle cylinders carefully and ask for help when handling larger cylinders to avoid injury.
- Use a cart or hand truck to transport cylinders when feasible.
- Use the appropriate [personal protective equipment](#) (PPE), such as safety glasses, material handling gloves, and protective footwear to avoid injury.

Disposal

All gas cylinders no longer in use must be disposed of properly, regardless of whether they are full, partially full, or empty. There are two general types of compressed gas cylinders – **returnable** and **non-returnable**. Contact your supervisor to ensure they are disposed of properly.

Learn more: Complete [Compressed Gas Safety](#) online training.

Report all injuries: [Online](#) or call (847) 491-5582.

Safety at Home

One of the most common compressed gases found at home is propane for grilling. Follow the tips below to keep you and your loved ones safe:



- Only use grills outside and at least 10 feet away from structures (e.g., siding, wood decks) and trees.
- Clean grills after every use to avoid fat and grease buildup, which is a fire hazard.
- Never leave a propane grill unattended to avoid the risk of fire or injury.

For Additional Information Contact Environmental Health and Safety at ehs@northwestern.edu.