

Compressed gases

Compressed gases

Gases which have been stored in containers such as cylinders or pipelines under immense pressure. There are an endless variety of compressed gases available, to name a few:

- Oxygen
- Propane
- Nitrogen
- Helium
- Acetylene
- Hydrogen
- Nitrous Oxide
- Carbon Dioxide
- Ammonia
- Chlorine



Compressed gas cylinders might contain only one type of compressed gas or a special blend with multiple types of gases.

Health effects

- Health hazards will vary from gas to gas. Consult the Safety Data Sheet (SDS), cylinder labels, other sources.
- Released gases can displace oxygen from an area creating an asphyxiation hazard.
- Gases can be extremely cold when released to atmospheric pressure. Frostbite to exposed skin or eyes can occur.

Physical hazards

- Under EXTREME pressure. Cylinders must be protected against damage and collision.
- Gases may be incompatible with other gases and must be physically segregated. Acetylene must be stored at least 25 feet from oxygen.
- To prevent BLEVEs (Boiling Liquid Expanding Vapor Explosions), kill or remove all vegetation and other combustible material from outdoor, bulk storage of flammable gases (i.e., Propane).

Work practices

- Store cylinders (empty or full) in designated areas. Protect from impact, tipping, etc.
- Valve protection caps must be used when possible.
- **Cylinders must ALWAYS be secured in an upright position using methods which provide adequate physical strength and integrity.**
- Never use unapproved materials, such as PVC pipe, in pipelines, manifolds, or other systems.
- Never drag cylinders or roll them on edge. Always use a cart and secure the cylinder to it.
- Watch out for signs of leakage, such as odor, frost, hissing sounds, etc.
- There is no such thing as an “empty” cylinder. All cylinders should be assumed to contain residues.

Personal Protection

Always wear Personal Protective Equipment (PPE), including goggles and gloves (if required) when making/breaking compressed gas connections.

First Aid

Consult section 4, First Aid Measures, of the Safety Data sheet for the specific gas in use. Review procedures for first aid prior to working with compressed gases.

Questions

If you have questions on this topic, please contact Health, Safety, and Risk Management at (612) 626-6002. <https://www.hsrp.umn.edu/>