

FACT SHEET

Compressed Gas

Compressed gases are gases stored under pressure. These are typically stored in cylinders and are used for a variety of tasks in the arts, sciences, facilities services, etc. at multiple locations on campus. Compressed gas can present significant safety hazards such as explosion, fire hazards, oxygen displacement, toxic effects, corrosive effects, as well as physical hazards of cylinder rupture, mishandling and poor storage. For this reason, they must be handled carefully by trained individuals. In addition, they must be properly stored, transported and used to prevent potential injury and accidents.

Environmental Health and Safety requires that all installations, servicing and removal of compressed gas cylinders are handled by the cylinder manufacturers or their approved service agents.

Some common types of gases and their hazards



He, Ar, Co₂, N₂
Causes asphyxiation
Can explode if heated



H₂, C₂H₂, CO, CH₄
Burn or explode if ignited with air or oxygen



HCL, CO, H₂S, NH₃
Poisonous, harmful or fatal if it enters to the body



N₂O, O₂, NO, Cl
Burn or explode if ignited with air or oxygen

CONTENT

[Cylinder Hazards](#)

[Safe Handling](#)

[Safe Storage](#)

[Quick reminder](#)

[Identification](#)

[Visual Inspection](#)

[Transportation](#)

[Resources](#)

Safe Handling

- Ensure you are trained to operate and familiar with the hazard properties ([OSHA Haz-Comm Standard](#))
- Turn valves off and place caps on before transport.
- Do not lift by the valve or cap and avoid dragging.
- Labeling should be accurate. Do not identify by color.
- Turn valve off when attaching or detaching regulators.
- Turn valve off when not in use.

Safe Storage

- Store in ventilated, dry, and fire-resistant areas.
- Secure properly in an upright position with the cap on.
- Do not store in walkways or near leading edges.
- Group and store based on the hazard class.
- Store oxidizers 20 ft. away from flammables, or place a 30 minutes fire wall between.
- Store asphyxiants away from oxidizers and sources of sparks, flames, and heat.
- Store empty cylinders separately, if possible.

Quick Reminder!

- *Always cap a cylinder, unless in use*
- **Always secure all cylinders firmly*
- **Never store incompatible gases together (flammable and oxidizing).*
- **Never move cylinders without a carrier*
- **Ask Questions, if unsure!*



The use of compressed gas on campus should be in accordance with recommendations published by the Compressed Gas Association.

<https://www.cganet.com/>
<https://law.resource.org/pub/us/cfr/ibr/003/cga.p-1.1965.pdf>

For more Resources on Compressed gas, see below:
[OSHA 29 CFR 1910.101 Compressed Gases \(General Requirements\)](#)
[1910.102 – Acetylene](#)
[1910.104 – Oxygen](#)
[1910.105 – Nitrous oxide](#)

What To Do

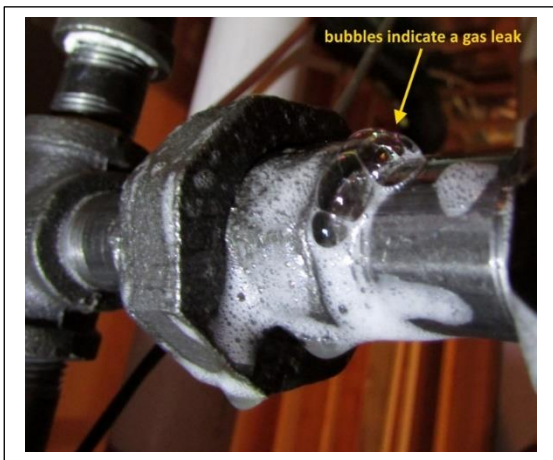
- Store and handle cylinders properly! Always wear PPE!
- Report cylinder concerns to your supervisor!
- Direct additional concerns or questions to EHS.
- Report injuries to your supervisor immediately!
- In an emergency, call 911 and ECU Police (252-328-6787) for immediate assistance!

Transportation

- Cylinders shall not be rolled in the horizontal position or dragged. A suitable cart carrier or similar material handling device designed for cylinder transport should be used with the container properly secured to the device. Never lift cylinders by the cap.
- Care must be taken not to drop cylinders or anything that could damage the cylinder valve as these high pressure vessels have the potential to destroy property and/or injure personnel.

Identification

- The contents of any compressed gas cylinder must be clearly identified.
- The labels applied by the gas manufacturer to identify the cylinder contents shall not be defaced or removed.
- No compressed gas cylinder should be accepted for use that does not legibly identify its contents.
- Never rely on the color of the cylinder for identification.



Visual Inspections

- Inspect cylinders to ensure they are in safe working condition
- Ensure cylinder contents as well as cylinder status (full, empty, or in use) is clearly displayed
- Ensure cylinders are equipped with proper connections as specified by the Compressed Gas Association standards
- Perform visual inspections daily and before each use checking for corrosion, leaks, cracks, etc.
- Visual inspections should include inspection of the cylinder, piping, safety relief devices, valves, protection caps and stems.
- Immediately remove from service if any of the above fail visual inspection

