

# Standard Operating Procedure

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## Compressed Gases

**Hazard Description:** All compressed gases pose a physical hazard because of the high pressures inside the cylinder. Damaged cylinders may become uncontrolled rockets or pinwheels and cause severe injury. This danger can happen when unsecured, uncapped cylinders are knocked over causing the cylinder valve to break and high-pressure gas to escape rapidly. Poorly controlled release of compressed gas in chemical reaction systems can cause vessels to burst, create leaks in equipment or hoses, or produce runaway reactions. Compressed gases can be either liquified, non-liquified, or dissolved. Depending on the substance, there may also be additional hazards such as fire, explosion, corrosion, asphyxiation, and toxicity.

**Labeling:** Labeling must adhere to the requirements outlined in the Chemical Hygiene Plan. Compressed gases must have a label indicating whether the cylinder is full or empty and the following GHS pictogram:



**Storage:** Storage of compressed gases must adhere to the requirements outlined in the Chemical Hygiene Plan. Cylinders must be secured to wall, floor, or laboratory bench with appropriate cylinder supports. Do not store cylinders with the regulator in place. Cylinder caps should always remain on the cylinder unless a regulator is in place. Cylinders must be stored where they will not become overheated. Avoid storage near radiators, areas in direct sunlight, steam pipes, and heat releasing equipment.

**Handling:** In addition to the requirements outlined in the Chemical Hygiene Plan the following should be considered when handling compressed gases.

- Transport compressed gas cylinders on equipment designed for this function. Never carry or “walk” cylinders by hand.
- Immediately close the cylinder valve after use.
- Leak check gas tubing or piping connections before turning on gas.

**Personal Protective Equipment:** Reference SDS.

**Spill and Decontamination:** If you observe or suspect the hazardous or inert gas is leaking attempt to turn off the cylinder at the cylinder valve if it is safe to do so. If you are unable to turn off the gas or have any doubts, evacuate the area immediately. Prevent others from entering the area. Reference SDS.