



Hudson Valley Community College Compressed Gas Safety Guidelines

1.0 INTRODUCTION

Due to the high pressure and nature of their contents, compressed gas cylinders require special handling by trained personnel. Physical hazards and property damage are potential consequences of a ruptured or damaged cylinder. Hazards are also associated with the contents of compressed gas cylinders, including displacement of oxygen, fire and explosion, or adverse health effects.

This document provides requirements for the safe handling and storage of compressed gas cylinders at Hudson Valley Community College.

2.0 SAFE PRACTICES

The following practices shall be observed when handling or transporting all compressed gas cylinders:

2.1 Handling

- Always secure the cylinder to a suitable hand truck or cart during transport.
- Never carry the cylinder by the valve, regulator or protective cap.
- Never roll, drag or slide a cylinder.
- Never drop or allow a cylinder to strike other cylinders or surfaces.
- Always assume a cylinder is pressurized; handle carefully and avoid bumping or dropping it
- Never tamper with pressure relief devices.
- Never remove product or hazard labels from a cylinder.
- Never drop cylinders from trucks or any raised surface to the ground.
- Never handle oxygen or other oxidizing gas cylinders with greasy, oily hands or gloves. The reaction between oxygen and hydrocarbons can be violent, even when small quantities are involved.
- Never use a gas cylinder as a roller for moving materials or for supporting other items.

2.2 Storage and Use

- Keep protective valve caps installed when not in use or connected to a regulator.

- Ensure that all compressed gas cylinders, whether in use, in transit, or in storage, are fastened securely in an upright position.
- Compressed gas cylinders shall be used or stored only in well-ventilated areas or within mechanically ventilated cabinets.
- Regulators shall be approved for the specific compressed gas being used.
- Cylinders shall not be placed where they could contact an exposed electrical circuit.
- Store adequately secured cylinders upright on solid, dry, level footings.
- Store cylinders away from sources of intense heat (furnaces, steam lines, radiators).
- Ensure that cylinders stored or used in public areas are protected against tampering and damage.
- Cylinders shall not obstruct exit routes or other areas that are normally used or intended for the safe exit of people.
- Cylinders containing oxidizing gases (oxygen, nitrous oxide, etc.) shall be stored separately from flammable gases or combustible materials. The minimum separation requirement is either a distance of 20 ft or a noncombustible firewall at least 5 ft high with a fire resistance rating of at least ½ hour.

2.3 Posting and Hazard Identification

- Placards, container labels, and markings provide available information on the products involved. The safety data sheet (SDS) for the product(s) or other recognized emergency response guides should be consulted for the specific hazards, safety precautions, and related emergency response information.

2.4 Operation

- Before installing a regulator on a compressed gas cylinder, vacuum the valve port clean or crack the valve gently to expel any foreign material. Do not perform this task if the gas in the cylinder is toxic, reactive, or flammable.
- Open the cylinder valve slowly.
- Never use a wrench on a cylinder valve that will not rotate manually.
- Stand clear of pressure regulator gauge faces when opening the cylinder valves.
- Never leave pressure on a hose or line that is not being used. To shut down a system, close the cylinder valve and vent the pressure from the entire system.

2.5 Empty Cylinders

- Leave some positive pressure (a minimum of 20 psig) in empty cylinders to prevent "suck-back" and contamination.
- Close the valves on empty cylinders to prevent internal contamination, remove the regulators and replace the protective cap.
- Store empty cylinders separately from full cylinders.

3.0 PROTECTIVE APPAREL

Protective Apparel worn during cylinder changeouts shall include, at minimum, the following:

3.1

- Safety shoes shall be worn during cylinder transport and handling.
- Safety glasses with side shields or safety goggles shall be worn during connection or disconnection of cylinders.

4.0 REFERENCES

4.1 Fire Code of New York State Chapter 30 Compressed Gases.

4.2 Compressed Gas Association. CGA P-1-2000. Safe Handling of Compressed Gases in Containers.

4.3 Compressed Gas Association. Handbook of Compressed Gases, Fourth Ed. 1999.

4.4 [Occupational Safety and Health Administration. 29 CFR 1910.101. Compressed Gases.](#)

4.5 NFPA 55. Standard for the Storage, Use and Handling of Compressed and Liquefied Gases in Portable Cylinders.