



UMBC OFFICE OF ENVIRONMENTAL SAFETY AND HEALTH (ESH) PROCEDURE	TITLE: Compressed Gas Cylinders
DATE CREATED: 6/2023	REVISION: 1.0

I. PURPOSE

To comply with the requirements of OSHA 1910.101 – Compressed gases, and to prevent occupational exposure to the physical and chemical hazards of compressed gas cylinders and their contents.

II. SCOPE

This procedure applies to all UMBC employees, student employees, students, contractors, and vendors who are involved in handling, transporting, storing, or using compressed gas cylinders at UMBC.

III. PROCEDURE

Compressed gas cylinders, while an important part of many operations at UMBC, can pose serious physical and chemical hazards to persons and property if improperly handled or stored.

Examples of Hazards:

- Damage to the cylinder or valve can lead to catastrophic loss of pressure, causing the cylinder to launch like a missile and strike a person or an object at very high speeds.
- Damaged or faulty cylinders or valves can cause the contents of the cylinder to leak and can cause suffocation, skin burns, respiratory irritation, fires, even explosions.

Safe Operating Practices

- Ensure you are aware of the hazards of the gases you are working with prior to use. Refer to labels/warnings and Safety Data Sheets.
- Regularly inspect cylinders for leaks or damage. Report any damage or leaks immediately to your supervisor.

- Use only the appropriately-fitting regulator for the cylinder being put into use. Do not force an incompatible regulator to fit.
- Open cylinder valves slowly. Do not force valves that are stuck or difficult to open. Additionally, do not try to pry open or force a valve cap that is stuck. Contact ESH at 5-2918 for assistance.

Storage

- All cylinders must be secured with chains, straps or clamps to prevent tip over, regardless of cylinder size.
- Ensure valves are closed and caps are secured. Do not store a cylinder without its protective cap securely in place.
- Store cylinders in a cool, dry place that is well-ventilated and protected from accidental damage such as striking or falling objects.
- Stored cylinders should be separated by EMPTY and FULL (use signs, labels or tags).
- Cylinders connected to regulators must also be segregated and secured separately from unconnected cylinders.

Handling and Transporting

- Remove the cylinder's regulator and secure the valve cap prior to transport.
- Use a cylinder transport cart, do not transport by hand – cylinders are very heavy and run the risk of being dropped.
- Do not roll, slide, or drag cylinders.

IV. ROLES AND RESPONSIBILITIES

Department/Area Managers, Deans, Administrators

- Ensure department, area, and/or laboratory compliance with respect to use and handling of compressed gases.
- Perform periodic inspections of gas cylinder storage areas to ensure cylinders are stored properly and safely.
- Ensure employees and students in their areas have a sufficient working knowledge of how to safely handle compressed gas cylinders, as well as how to access Safety Data Sheets.
- Notify Environmental Safety and Health (ESH) whenever there is a concern relating to the safety of compressed gases in their area.

Office of Environmental Safety and Health (ESH)

- Provide consultation and technical guidance as it relates to compressed gas cylinders.
- Facilitate training resources to employees and students as needed.
- Perform building and area inspections to ensure compressed gas cylinders are stored, used, and handled safely.
- Follow up and collaborate with area managers and work groups to remediate any gaps in compliance with this procedure.

Employees

- Adhere to the requirements of this policy and all other applicable safety policies.
- Inspect compressed gas cylinders prior to use.
- Promptly notify supervision if a compressed gas cylinder is damaged, leaking, or otherwise compromised.

V. REFERENCES

- UMBC Policy VI-13.00.01 - Environmental Safety and Health Management and Enforcement
- UMBC ESH Procedure - General Safety Rules for UMBC Employees