

I. Purpose

To ensure the safe handling, storage, and use of compressed gases in the workplace by providing training and implementing control measures to minimize hazards associated with compressed gases.

II. Scope

This applies to all employees, contractors, and visitors at Kansas State University who handle, store, or use compressed gases in the workplace. This SOP is designed to minimize risks and ensure safe practices in accordance with OSHA regulations, specifically 29 CFR 1910.101, and guidelines from the Compressed Gas Association (CGA).

III. Responsibilities

1) Environmental Health and Safety (EHS):

- a. Ensure compliance with safety standards, provide training, and oversee the implementation.
- b. Maintain and update this policy.

2) Department Heads

- a. Ensure their department follows this policy.
- b. Assign and communicate responsibilities listed to managers and supervisors.

3) Managers and/or Supervisors:

- a. Enforce safety procedures, conduct regular inspections, ensure employees are trained, and PPE is provided.
- b. Monitor the workplace for hazards associated with compressed gases and take corrective actions as needed.

4) Employees:

- a. Follow safety guidelines, attend training sessions, report hazards or incidents, and use required personal protective equipment (PPE).
- b. Perform regular maintenance and inspections of equipment and systems that use or store compressed gases.
- c. Repair or replace damaged or faulty equipment promptly to prevent hazards.
- d. Coordinate with the EHS department to understand specific hazards.

IV. Procedures

Note: This SOP serves as a general guideline for compressed gas safety in the workplace. It should be adapted to specific workplace settings and hazards as needed.

1) Identification of Compressed Gas Hazards:

- a. Identify the hazards associated with compressed gases, including potential explosive conditions, cryogenic temperatures, and the properties of the gases (flammable, oxidizing, toxic, corrosive, reactive).
- b. Understand the physical and chemical properties of the compressed gases used in the workplace.

2) Cylinder Inspection and Handling:

- a. Inspect compressed gas cylinders before use to ensure they are in good condition, properly labeled, and equipped with the appropriate valves and fittings.
- b. Handle cylinders with care to prevent damage or leakage and use appropriate lifting equipment or carts when transporting cylinders.

3) Storage and Ventilation:

- a. Store compressed gas cylinders in a well-ventilated area away from heat sources, direct sunlight, and flammable materials. Protective caps for cylinders will be kept in place at all times when cylinders are not in use.
- b. Secure cylinders in an upright position using appropriate restraints or chains to prevent tipping or falling.

4) Use of Personal Protective Equipment (PPE):

- a. Wear appropriate PPE when handling compressed gases, including safety glasses, gloves, and protective clothing.
- b. Use respiratory protection when working with toxic or hazardous gases in confined spaces or areas with poor ventilation.

5) Leak Detection and Emergency Procedures:

- a. Implement procedures for detecting and reporting leaks in compressed gas systems, including the use of leak detection devices and alarms.
- b. Develop and communicate emergency procedures for responding to compressed gas leaks, including evacuation routes, assembly points, and procedures for shutting off gas supplies.

6) Cylinder Labeling and Identification:

- a. Ensure that compressed gas cylinders are properly labeled with the name of the gas, the hazard class, and any other pertinent information.
- b. Use color-coded labels and tags to easily identify the contents and hazards of compressed gas cylinders.

7) Compliance with OSHA Regulations:

- a. Ensure that all compressed gas safety practices and procedures comply with OSHA regulations, including those outlined in 29 CFR 1910.101 (Compressed gases).

V. Training and Recordkeeping

1) Employee Training:

- a. Provide comprehensive training to employees on the hazards of compressed gases and the safe handling procedures.
- b. Train employees to recognize signs of compressed gas hazards, including leak detection, cylinder damage, and incompatible materials.

VI. References

- 1) OSHA regulations for compressed gases (29 CFR 1910.101).
- 2) Guidelines from the Compressed Gas Association (CGA) for the safe handling and use of compressed gases.
- 3) Complete the HSI/VIVID Online Training for Compressed Gases.
- 4) HSI Compressed Gas Safety Quick Sheet
https://aicc.hsicontent.com/CourseInfo.aspx/GetCourseResource?file=compressedgassafety_summary.pdf&course=vivid_osh_compogas_nt
- 5) Perform departmental evaluations using the Compressed Gas Self-Inspection Checklist.
https://www.cdc.gov/niosh/docs/2004-101/pdfs/2004-101_Compressed-Gases.pdf
- 6) OSHA 29 CFR 1910., 1915, 1917 and 1926 Compressed Gas.
<https://www.osha.gov/SLTC/compressedgasequipment/standards.html>
- 7) Compressed Gas Association Publications
<https://portal.cganet.com/publicationlist/>
- 8) OSHA 29 CFR 1910.169 Air Receivers: Compressed Gas/Air.
<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.169>
- 9) K-State Pressure Vessels (Lab Safety Manual).
<https://www.k-state.edu/safety/lab/labsafety/topics/specifichazards/pressureVessels.html>

VII. Questions

Direct questions to EHS by phone: 785-532-5856 or email: safety@ksu.edu

VIII. Version History

Version	Description of Change	Effective Date
1	Standardized Format	08-04-2026