COMPRESSED GAS CYLINDERS

Scope and Applicability Statement
This document provides general safety procedures and regulatory guidance for employers and workers in accordance with U.S. Occupational Safety and Health Administration (OSHA) standards under 29 CFR 1910 and 29 CFR 1926. These procedures apply to all workplaces where they are implemented as part of a comprehensive safety program.
Customization and Compliance Statement
Employers are responsible for ensuring compliance with all applicable local, state, and federal safety regulations. Workers must adhere to established safety protocols to prevent workplace injuries and illnesses.

Purpose

The purpose of this program is to prevent injury from failure of compressed gas cylinders and to establish requirements for handling, lifting, and storing compressed gas cylinders safely.

Scope

This program applies to all employees and contractors working with compressed gas cylinders in any capacity.

Key Responsibilities

Managers/Supervisors

- Ensure that all employees are aware of the proper handling, storage, and use requirements for compressed gas cylinders.
- Conduct initial training for all new employees and retraining when behaviors indicate additional instruction is needed.

Employees

- Follow all requirements regarding the safe handling, storage, and use of compressed gas cylinders.

Procedure

General

- Cylinders shall not be accepted, stored, or used if there is evidence of denting, bulging, pitting, cuts, neck or valve damage.
- Damaged cylinders must be taken out of service and returned to the owner for removal.

Cylinder Identification

- Gas identification shall be stenciled, stamped on the cylinder, or labeled clearly.
- No compressed gas cylinder shall be accepted for use without a legible identification label.

Handling

- Valve caps must be secured onto each cylinder before moving or storage.

- Cylinders must be transported using a blanket or basket when lifted by mechanical means. Slings, ropes, or electromagnets must not be used for lifting.
- The preferred means to move compressed gas cylinders is with a cart, carrier, or a helper.
- Compressed gas cylinders must not be allowed to strike each other.
- Cylinders with stuck caps should be tagged "Do Not Use" and returned to storage for vendor return.

Storage

- Cylinders must be secured upright in a safe, dry, well-ventilated area to prevent corrosion or deterioration.
- Cylinders must be restrained securely to prevent tipping.
- Restraints must not be attached to electrical conduit or process piping.
- Empty and full cylinders must be stored separately, with all cylinders capped.
- Oxygen cylinders must be stored at least 20 feet away from combustible gas cylinders or separated by a fire-resistant barrier at least 5 feet high with a fire rating of 30 minutes.
- Storage areas for full and empty cylinders must be designated and labeled.

Use

- Cylinders must be equipped with the correct regulators.
- Regulators and cylinder valves must be inspected for grease, oil, dirt, and solvents before use.
- Only tools provided by the supplier should be used to open and close cylinder valves.
- Never force or modify connections.
- Regulators and gauges must be used within their designated ratings.
- Pressure-reducing regulators must be used unless the entire system is designed for the maximum cylinder pressure.
- Valves must be closed when cylinders are not in use.

- Cylinders must not be used as rollers or supports.
- Cylinders must not be placed where they may contact electrical circuits.
- Cylinders must be protected from sparks, slag, or flame from welding, burning, or cutting operations.
- Empty cylinders must be returned to designated storage areas immediately after use.

Inspection of Compressed Gas Cylinders

Supervisors must ensure that compressed gas cylinders are in safe condition, properly stored, and handled correctly. Inspections must align with:

- U.S. Department of Transportation (DOT) Hazardous Materials Regulations (49 CFR Parts 171-179 and 14 CFR Part 103).
- Compressed Gas Association Pamphlets C-6-1968 and C-8-1962.

Inspection Elements:

- Hoses and connections must be checked regularly for damage and stored in cool areas.
- Tank inspections and testing must be documented and visibly marked on the cylinder by the owner.

High-Pressure Cylinders (Service Pressures of 900 psi and Greater):

- Cylinders must be taken out of service and submitted for re-qualification if any of the following are found:
    - Cuts, dings, gouges, dents, bulges, pitting, neck damage, or evidence of fire exposure.
- Retesting and requalification must follow 49 CFR 180.205 and .209.
- Requalification must be conducted per 49 CFR 180.209.

Low-Pressure Cylinders (Service Pressures Less than 900 psi):

- Cylinders that do not require requalification must be taken out of service and condemned if any of the following conditions are found:
    - Tare weight is less than 90% of the stamped weight.

  - Pitting, dents, cuts, bulging, gouges, or fire exposure.

- Cylinders requiring requalification must be removed from service, inspected, and retested when visual inspection identifies defects.
- Requalification of non-damaged cylinders must follow 49 CFR 180.209.

Leaking Cylinders

- Leaking cylinders must be moved to an isolated, well-ventilated area away from ignition sources.
- Soapy water should be used to detect leaks.
- If a leak is found at the junction of the cylinder valve and cylinder, do not attempt to repair it. Contact the supplier for response instructions.

Transportation

- Cylinders must be transported in a vertical secured position using a cylinder basket or cart.
- Rolling cylinders is prohibited.
- Regulators must be removed, and cylinders must be capped before transport.
- Cylinders must not be dropped or allowed to strike violently.
- Protective caps must not be used to lift cylinders.

Empty Cylinder Marking

- Empty cylinders must be handled as carefully as filled cylinders to prevent damage.

Engineering Controls

- Engineering controls such as emergency shutoff switches, gas cabinets, and flow restrictors should be used where possible.
- Emergency eyewash stations should be available where corrosive gases or materials are used.