

Loss Control Bulletin

If the top of a pressurized cylinder should break off, the energy released could propel the cylinder over three-quarters of a mile in height. A standard 250 cubic foot cylinder pressurized to 2,500 PSIG can transform the cylinder into a rocket attaining a speed of 34 miles per hour within one-tenth of a second after the break occurs.

The types of compressed gases that are commonly used include but are not limited to:

Acetylene, Hydrogen, Oxygen, Anhydrous Ammonia, Nitrous Oxide, LPG (Liquid Petroleum Gas) – that can include propene, propane, butene, or butane.

When dealing with pressurized cylinders:

- Protect the cylinder itself
- Protect the property surrounding the cylinders
- Protect the people handling the cylinders. Know the rules for safe use, storage, and movement of pressurized cylinders, and know why cylinders must be protected.

When inspecting, storing, moving, and using cylinders, look for:

- Leaks
- Bulging
- Defective valves
- Physical abuse
- Fire or heat damage
- Pitting, rusting, or corrosion

If any of these are discovered, return the cylinders to the supplier or other authorized person.

Storing Cylinders

1. Secure empty and full cylinders to a wall or vertical support in an upright position by use of chains or a rack.
2. Keep valve protective caps in place when the cylinder is not in use.
3. Mark empty cylinders "EMPTY" or "MT".
4. Keep cylinder valves closed when not in use or empty.
5. Keep empty and full cylinders segregated.
6. Keep oxygen cylinders a minimum distance of 20 feet from flammable gas cylinders or combustible materials. If this cannot be done, separate by a non-combustible barrier at least five (5) feet high having a fire rating of at least one-half hour.
7. Leaking cylinders should be taken outdoors away from sources of ignition. The cylinders should be plainly tagged, and the supplier should be promptly notified.

8. Cylinders must be kept away from electrical wiring where they may become part of the electrical circuit.
9. Storage areas for cylinders must be in a cool, dry, and well-ventilated area.
10. Consult your SDS (Safety Data Sheets) for detailed information on the chemical contained in the gas cylinder. Any specific handling and storage precautions are outlined in the SDS. The SDS will also have specific information on the appropriate P.P.E. (Personal Protective Equipment).

Moving Cylinders

1. Use a cylinder cart with the chain restraint in place. Don't use slings or electric magnets.
2. Never use cylinders as rollers for moving material or equipment.
3. Don't drop cylinders or permit them to strike each other.
4. Employees should wear foot protection when moving or transporting cylinders.
5. Unless cylinders are secured on a special truck, regulators shall be removed, valves closed, and valve protective covers in place before cylinders are moved.

Cylinders in Use

1. Return leaking cylinders or cylinders that cannot be opened by hand to suppliers or other authorized personnel.
2. Be sure all connections are tight. Use soapy water to locate leaks. Never use a flame.
3. Keep cylinders away from open flames or sources of heat.
4. Keep cylinder valves, regulators, couplings, hose, and apparatus clean and free of oil and grease.
5. Safety devices and valves must not be tampered with, nor repairs attempted.
6. Close valves prior to moving cylinders, when work is completed, and when cylinders are empty.
7. Always store cylinders in an upright position.
8. Don't attempt to mix gases in a cylinder.
9. No one, except the owner of the cylinder or persons authorized by the owner should refill a cylinder.
10. The cylinder valve should always be opened slowly.
11. Fire extinguishing equipment should be readily available when combustible materials are exposed to welding or cutting operations using compressed cylinder gases.
12. Proper personal protective clothing and equipment should be provided and used.