



ECKERD COLLEGE

Safe Operating Procedure

(2/04)

COMPRESSED GAS CYLINDERS

Improper handling of compressed gas cylinders can result in adverse physical (i.e., explosions, fires, etc.) or health (e.g., chemical exposures) effects. This SOP provides general safety procedures for handling, storing, and using compressed gas cylinders. Monographs published by the Compressed Gas Association provide detailed information relative to specific gases. See also: <http://www.pp.okstate.edu/ehs/links/gas.htm>.

- Provide training to students on the installation and use of fittings, valves, regulators and other ancillary equipment.
- Use an appropriate hand-truck to move cylinders. Strap the cylinder onto the hand truck before moving, and ensure that the cylinder valve cap is securely in place. Do not roll cylinders or permit them to drop.
- Strap all cylinders, full or empty, securely in an upright position.
- **Do not** remove the cylinder valve cap until the cylinder has been secured at the point of use.
- Inspect the valve assembly for damage. Return the cylinder to the manufacturer if damage is noted. Do not use the cylinder.
- Inspect ancillary connections, valves, regulators, tubing, and other devices used with compressed gases regularly. Replace when signs of damage or deterioration are noted.
- Use an appropriate regulator for the gas and pressures involved. Regulators are not all created equal. There are special regulators for hydrogen, oxygen, and acetylene gases.
- Use fittings and tubing that is compatible with the contents of the container. For example, copper fittings are incompatible with acetylene and can form explosive deposits. Oxidizing gases are particularly hazardous when in contact with oil, grease, or other organic substances.

- Open cylinder valves slowly and while pointed away from the operator. Ensure that pressure reducing regulators are installed prior to opening a high pressure cylinder valve.
- Always close the cylinder valve of an apparently empty cylinder before disconnecting the regulator.
- Mark all empty cylinders as "empty" or "MT."
- Be especially careful with cylinders of corrosives (e.g., hydrogen chloride). Improper maintenance or damage can cause the entire valve to come off and release the contents of the cylinder.
- Do not store cylinders in hallways or other egress areas.
- Storage areas for full cylinders should be well ventilated, where the ambient temperature will not exceed 125° F. Segregate cylinders of incompatible gases.
- Should there be a suspected leak, close all regulator valves and tighten the packing nut. If the leak continues, notify the supplier (if local) and initiate the following procedures.
 - > If the leak is minor, secure the cylinder next to a fume hood.
 - > If the leak is major, evacuate individuals from the area and call 9-911.