

Compressed Gas Cylinder Safety

*County of Henrico Risk Management
Loss Prevention*



October 2nd 2013

Classification of Gas Cylinders

- Flammable Gases
- Oxygen and Oxidizing Gases
- Acid and Alkaline Gases
- Highly Toxic Gases
- Cryogenic Liquefied Gases
- Inert Gases

Segregation of Gas Cylinders

- Flammables
 - Methane, Propane, Hydrogen
- Reactive
 - Acetylene, Vinyl Chloride, Tetrafluoroethylene
- Oxidizers
 - Hydrazine, Hydrogen
- Corrosives
 - Ammonia, Methylamine, Chlorine
- Oxygen and nitrous oxide cylinders must be separated from flammables by minimum of 20 feet.

Identification of Contents of Compressed Gas Cylinders

- Clearly label all cylinders
- Labels should be durable
- Do not accept cylinders that are not clearly labeled
- Color-coding is not a reliable means of identification
 - Cylinder colors vary from supplier to supplier
- If cylinder contents cannot be identified:
 - Mark as “Contents Unknown”
 - Contact the manufacturer



Transporting Gas Cylinders

- A cylinder cart should always be used
 - Do not roll, drag, or slide cylinders
- Transport cylinders with valve caps
 - Do not lift cylinders by the cap
- Do not transport with the regulator attached
- Cylinders must be fastened securely in upright position



Storage of Compressed Gas Cylinders

- Properly secure at all times
 - Straps, belts, or chains
- Keep valve caps on unless the cylinder is being used
- Store in a well ventilated area
 - Keep away from heat or ignition sources
 - Keep away from electrical circuits
- Segregate Oxygen cylinders (empty or full) from fuel-gas cylinders and combustible materials
 - 20 feet minimum distance
- Store flammable gas cylinders away from oxygen, nitrous oxide cylinders, or oxygen charging facilities.
- Segregate full and empty cylinders
 - Label empty cylinders to prevent confusion
 - Empty cylinders should be returned to Central Receiving/Vendor



Use of Compressed Gas Cylinders

- Always use the proper regulator for the gas in the cylinder
- Do not allow oil or grease to come in contact with cylinders or valves
- Attach the regulator securely before opening the valve
- Open the cylinder valves **SLOWLY**; stand to the side of regulator when opening valve
- Do not attempt to repair cylinder valves while a cylinder contains gas pressure



Things Not To Do

- Never roll a cylinder to move it.
- Never carry a cylinder by the valve.
- Never leave an open cylinder unattended.
- Never leave a cylinder unsecured.
- Never grease or oil the regulator, valve, or fittings of an oxygen cylinder.
- Never refill a cylinder.
- Never use a flame to locate gas leaks.
- Never attempt to mix gasses in a cylinder.



Examples of Proper Storage



Things to Remember

- Always wear eye protection when working with compressed gases
- Only use regulators that have both high and low pressure gauges
- Never refill a cylinder or use a cylinder for storing any material.
- The greatest hazard to a user of compressed gases is asphyxiation
- Remember, except for oxygen and air, ALL GAS IS AN ASPHYXIANT