

## DuPage County Environmental, Safety, Health & Property Loss Control Program Gas Cylinder Storage and Use

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**Purpose:** Compressed gas cylinders can be very dangerous if not handled and stored properly. Besides falling on personnel a cylinder can act like a torpedo spiraling through concrete block walls while expelling its contents.

**Policy:** This establishes the minimum requirements for the use, transportation and storage of compressed gas cylinders.

Personnel should seek help when moving cylinders to avoid back and other injuries.

### **Transport:**

- Cylinders should not be dragged or physically carried
- All cylinders are to be transported in a wheeled cart to which the cylinder is secured
- During transport all valves must be closed and capped

### **Storage:**

- Proper storage is critical for the safe usage of compressed and liquefied gases. Cylinder storage areas should be prominently posted with hazard information regarding the gases stored. The NFPA 704 diamond with a cylinder indicated in the “specific hazard” (white) section of the diamond and the corresponding flammability, health and reactivity hazard sections also marked is an accepted method of signage.



- Cylinders should be stored inside a well-ventilated, dry location at least 20ft away from highly combustible materials
- Stored away from stairs and elevators
- Secured upright to a wall, building support or transport equipment
- When a cylinder does not have a regulator on it the cap must be in place
- When not in use, all cylinders must be closed at the cylinder valve, and any gas remaining in hoses bled off through the torch valve.
- Oxygen cylinders must be at least 20ft away from fuel gas cylinders or separated by a 5 foot high non-combustible barrier having a ½ hour fire resistance rating
- Empty cylinders must have their valve closed
- Empty cylinders must be tagged as EMPTY before returning to the storage area
- Compressed gas cylinders must never be used inside confined spaces such as drums, pits, excavations, etc.

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#### Changing Cylinders:

- Whenever a cylinder is changed check for connection leaks on the cylinder as well as connections to adjacent cylinders with soap bubbles or an electronic gas leak detector.
- Cylinders which require a wrench to open the main valve shall have the wrench left in place on the cylinder valve while it is open. Use adequately sized wrenches (12" long) to minimize ergonomic stress when turning tight tank valves. Never apply excessive force when trying to open valves.
- Cylinders with "stuck" valves should be returned to suppliers to have valves repaired.
- Do not attempt to open a corroded valve; it may be impossible to reseal.
- Valves should only be opened to the point where gas can flow into the system at the necessary pressure. This will allow for quicker shutoff in the event of a failure or emergency.
- Use a cylinder cap hook to loosen tight cylinder caps. Never apply excessive force or pry off caps. Return to supplier to remove "stuck" caps.
- Release pressure from systems before connections are tightened or loosened and before any repairs.
- Do **not** use Teflon™ tape on CGA fittings (straight thread) where the seal is made by metal-to-metal contact. Use of Teflon™ tape causes the threads to spread and weaken, increasing the likelihood of leaks.
- Never use adapters or exchange fittings between tanks and regulators.
- Shut-off valves must not be installed between pressure relief devices and the equipment they are to protect.
- Use pressure relief valves in downstream lines to prevent high pressure buildup in the event that a regulator valve does not seat properly and a tank valve is left on.
- Relief valves should be vented to prevent potential buildup of explosive or toxic gases.
- Never allow flames or concentrated heat sources to come in contact with a gas cylinder.
- Never allow a gas cylinder to become part of an electrical circuit.
- Never partially open a tank valve to remove dust or debris from the cylinder inlet.
- Never use cylinder gas as compressed air.
- Pressurize regulators slowly and ensure that valve outlets and regulators are pointed away from all personnel when cylinder valves are opened.