



### HAZARDS

Compressed gas cylinders must be properly stored, transported, and handled to prevent accidents or injuries. The hazards associated with compressed gas cylinders include potential exposure to flammable, combustible, explosive, corrosive, or poisonous environments; asphyxiation due to displacement of oxygen; cold burns or frostbite; projectile objects arising from a dropped or damaged cylinder or an incorrectly fitted regulator; and sprains, strains, bruises or fractures due to improper manual handling.

Please observe the following safety information when handling compressed gas cylinders, familiarize yourself with the appropriate Material Safety Data Sheet, and contact your supervisor for instruction on the proper selection and use of regulators, piping, fittings and related connections, leak testing and emergency procedures.

### PERSONAL PROTECTIVE EQUIPMENT

The following personal protective equipment is required when transporting gas cylinders:

- Safety glasses
- Steel-toed safety shoes (users who transport frequently); or
- External steel-toe cap overshoes (users who transport infrequently)

General purpose work gloves are also recommended to protect against handling injuries.

### TRANSPORT AND HANDLING

Compressed gas cylinders should only be transported by those familiar with hazards and who have received prior hands-on training.

- Visually inspect cylinders for any indication of damage or leakage. If a cylinder is leaking, close the valve, place a warning tag and report to your supervisor. Do not transport until repaired.
- All cylinders should be properly marked to identify the contents. Check label to ensure it corresponds to the expected gas.
- Only move cylinders using a suitable cart designed for cylinder transport and secure in an upright position.
- Transport cylinders with the regulator removed, valve closed and safety cap in place.
- If you need to move a cylinder between floors, travel with it in the elevator to ensure it is properly secured. Do not leave an unaccompanied cylinder in the elevator. Ensure no one else is in the elevator during transportation.
- Do not lift cylinders by the cap with magnets, chains or slings; do not pull, drag, drop, or slide cylinders.

## **STORAGE**

- Cylinders should be stored in a dry, well-ventilated area away from extreme temperatures and combustible materials.
- Store in an upright position and secure to prevent falling or rolling.
- Larger cylinders must be strapped or chained to a secure object. At minimum, ensure the cylinder is secured between its mid-point and shoulder.
- Smaller cylinders must be secured as above, or in an appropriate rack (i.e. lecture bottles).
- The valve on a compressed gas cylinder must be kept closed when the cylinder is not in use.
- A cylinder not in use must have the regulator removed and the safety valve cap in place.
- Store only the amount of compressed gas required for the specific application.
- An empty cylinder must be identified as being empty and must be stored separately from other compressed gas cylinders and capped.
- Store cylinders away from areas of high traffic and emergency exits.

## **REGULATORS AND CONNECTIONS**

- Never use a compressed gas cylinder without a regulator that will safely reduce the cylinder pressure.
- Visually inspect the regulator for damage. Ensure the regulator is approved for the specific gas and it is rated and marked for the maximum pressure rating of the cylinder.
- Use an appropriate wrench when fitting regulators and do not force cylinder valve connections that do not readily fit. Do not apply oil/grease/WD40 or Teflon tape on gas connections to cylinder.
- A leak test must be performed to check the regulator-cylinder valve seal prior to use (i.e. Static Pressure test or Snoop test).
- Slowly open the cylinder valve to avoid damaging the regulator. Do not stand directly in front of a regulator attached to a compressed gas cylinder when the valve is being opened.

## **EMERGENCY PROCEDURES**

- It is extremely important to have the safety cap in place during transport. A damaged or severed valve can cause the cylinder to become a missile.
- If a cylinder starts to fall, do not attempt to catch it. Stand back and let the cylinder fall to the ground to avoid a physical injury. With the safety cap in place, cylinders can generally withstand a fall and not result in damage to the valve or cylinder body.
- If a cylinder has a minor leak, close the valve, place a warning tag and report to your supervisor.
- In the event of a large uncontrolled gas release, evacuate the area, notify your supervisor and contact Campus Security at 721-7599.
- If there is an injury call 911 and Campus Security at 721-7599 to seek medical assistance.