

# FACT SHEET: Compressed Gas Cylinders

## Safe Handling and Storage



Compressed gas cylinders are used throughout Tulane in patient care areas, laboratories and facility operations. Compressed gases and cylinders must be properly stored, transported and used, to prevent injury and accidents and to maintain regulatory compliance. Compressed gases can cause fires, explosions, oxygen deficient atmospheres and toxic gas exposures. Physical hazards can result from high pressure and the weight and size of cylinders.

### ✓ NEED TO KNOW:

1. Cylinders must **ALWAYS** be stored upright and secured in a rack or anchored to a structure by chains or belts.
2. Always tag empty cylinders to be picked up by a vendor as “Empty”.
3. “E” sized oxygen cylinders used in patient care areas must be stored in areas that are posted as “Full and In Use” or “Empty”.
4. Be aware of specific hazards associated with each type of gas.

### STORAGE AND TRANSPORT:

- Compressed gas cylinders must always be in an upright position and supported, whether full or empty. Acceptable methods of support include:
  - Wall-mounted or bench-mounted gas cylinder brackets;
  - Chains or belts securely anchored to walls or benches; and,
  - Free-standing dollies or carts designed for gas cylinders.
- All cylinders must have the valve protection cap in place except when in use.
- All cylinders must have labels clearly identifying the contents.
- Cylinders used by laboratories should be labeled with the lab contact information.
- OEHS must adhere to storage limits and use requirements set forth by the National Fire Code and NFPA for laboratory, non-laboratory, and health care settings.
- For storage in patient care areas, “E” oxygen cylinders must be in racks or areas labeled “Full and In Use” or “Empty”.
- Use appropriate dollies or hand trucks to transport cylinders.
- **ONLY USE** service elevators to transport cylinders.
- Separate compressed gases from incompatible materials or conditions (i.e., sources of heat and ignition).

### USING COMPRESSED GAS CYLINDERS:

- Keep cylinder valves closed except when the cylinder is being used.
- Check regulators for damage and leaks before using and ensure regulator valve is shut before its removal.
- Open valves slowly and assure the valve outlet is pointed away from people.
- Use face shields and proper long-cuffed cryo-gloves for cryogenic gases.
- Use only non-ferrous MRI safe cylinders, regulators, and accessories in MRI zones.
- When using dangerous gases (e.g., as ammonia, hydrogen cyanide, hydrogen sulfide, methylamine, and nitric oxide), refer to OEHS’s Laboratory Chemical Safety Policy and Safety Data Sheets for guidance.

### ! KEY SAFETY PRECAUTIONS:

- **Oxygen Displacement:** Sudden or uncontrolled release of inert gases (e.g., nitrogen, argon, CO<sub>2</sub>) in an enclosed space may result in displacement of breathable oxygen. Oxygen sensors should be placed in environments where large amounts of these gases are stored.
- **Explosion and Fire Hazards:** A release of a flammable gas (e.g., acetylene, hydrogen) combined with a spark or heat source could result in an explosion.
- **Toxic Effects:** Inherent danger of toxic gases require volume limits and other special storage requirements.
- **Physical Hazards:** Large cylinders are awkward, heavy, and must be handled properly to avoid strains and impact injuries.
- **Projectile Hazard:** Damage to a cylinder could cause a rapid release of gas resulting in a projectile hazard.

### 📱 MORE INFO:



### ADDITIONAL RESOURCES:

- OSHA-1910.101: [Compressed Gases \(General Requirements\)](#)
- New Orleans Fire Department: [City of New Orleans Fire Prevention Code](#)