

## **Basic Laboratory Equipment Safety: Compressed Gas Cylinders at UTIA**

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### **What is a compressed gas cylinder?**

A compressed gas cylinder is a tank or vessel used to store a variety of gasses under extreme pressure.

### **What is the primary hazard when using a compressed gas cylinder?**

Compressed gases present a unique hazard. Depending on the particular gas, there is a potential for simultaneous exposure to both mechanical and chemical hazards.

- **Mechanical/Physical hazards:** Weight of cylinder can cause crushing injuries from falling and the internal pressure of the tank can cause the cylinder to become a rocket if the cylinder valve is broken off.
- **Chemical hazards:** Gases contained within compressed gas cylinders can be toxic, flammable, oxidizing, corrosive, inert, or some combination thereof. Because the chemical is in gaseous form and pressurized, it can quickly contaminate a large area in the event of a leak in the cylinder, the regulator, or any part of the system after the regulator; therefore, familiarity with the chemical hazards of the gas is necessary.

### **What are some basic safety procedures to follow when using a compressed gas cylinder at UTIA?**

- Read the SDS and label for all of the materials
- Know all of the hazards (fire/explosion, health, chemical reactivity, corrosivity, pressure) of the materials
- Store compressed gas cylinders in cool, dry, well-ventilated areas, away from incompatible materials and ignition sources.
- Store, handle and use compressed gas cylinders securely fastened in place in the upright position. Never roll, drag, or drop cylinders or permit them to strike each other.
- Leave the cylinder valve protection cap in place until the cylinder is secured and ready for use.
- Discharge compressed gases safely using devices, such as pressure regulators, approved for the particular gas.
- Never force connections or use homemade adaptors.
- Ensure that equipment is compatible with cylinder pressure and contents.
- Carefully check all cylinder-to-equipment connections before use and periodically during use; to be sure they are tight, clean, in good condition and not leaking.
- Carefully open all valves, slowly, pointed away from you and others, using the proper tools.
- Close all valves when cylinders are not in use.
- Wear the proper personal protective equipment
- Know how to handle emergencies such as fires, leaks or personal injury.