



# Compressed Gas Cylinders

HS94-046E (1-06)

A 5-Minute Safety Training Aid

The use, storage and handling of compressed gas cylinders presents two types of hazards. First is the chemical hazard associated with the cylinder contents (corrosive, toxic, flammable, etc). Second is the physical hazard represented by the cylinder being under pressure. Mishandled cylinders may rupture violently, release their hazardous contents or become dangerous projectiles.<sup>1</sup>

The following paragraph illustrates the deadly nature of compressed gas cylinders.

An industrial explosion which killed three people and injured thirty others involved a single oxygen bottle. The top of the bottle was found high in one of their structures, the bottom buried deep in the ground, and the center portion disintegrated in the form of shrapnel, blowing off arms, legs and decapitating one of the victims. No one could imagine a single oxygen bottle doing this much damage.

**To use, handle, and store cylinders, it is important to know and follow these safety steps:**

- read the cylinder label to identify the contents - the color of the cylinder is not always an identifying factor;
- read the Material Safety Data Sheet (MSDS) and know the safety and first-aid requirements;
- identify the hazards associated with the contents and take the precautions listed on the label/MSDS;
- report unlabeled cylinders to a supervisor so that the supplier can be contacted to provide the correct information or pick up the cylinder;
- never expose a cylinder to spark-producing electrical tools, cigarettes, or open flames;
- cylinders must be secured at all times to prevent falling over (chain, plastic coated wire cable, commercial cylinder strap);
- never attempt to make repairs to cylinders or valves;
- do not use cylinders as rollers;
- do not drop cylinders or allow them to bump violently against each other;
- do not permit cylinders to become part of an electrical circuit;

- never accept cylinders if they have an expired hydrostatic pressure test date;
- do not use grease or oil on oxygen cylinders - do not use greasy or oily gloves on oxygen cylinders;
- do not use cylinders that are dented, cracked, or have other visible damage;
- always move cylinders with a suitable hand truck;
- always store cylinders in an upright, secured position, and in an adequately ventilated area;
- cylinder caps should be secured, straight, and hand tight, whether the cylinder is full or empty;
- never store a cylinder near an actual or potential source of heat;
- never store a cylinder where it will be exposed to weather extremes;
- never store cylinders where heavy objects could fall on them;
- never store acetylene or flammable gas cylinders on their sides (upright only);
- do not store oxygen cylinders within 20 feet of fuel gas cylinders or highly combustible materials; and
- do not store cylinders containing flammable gases such as hydrogen or acetylene in close proximity to open flames or other ignition sources.

**Empty cylinders should be:**

- labeled as empty;
- stored with valve closed and cylinder cap secured;
- stored separately from full cylinders; and
- returned with all original accessories.

## Footnotes

- <sup>1</sup> This information has been taken from several university publications. Language may vary.

