Handling Compressed Gases

Compressed gases are capable of creating environments that are explosive, reactive, flammable, oxidizing, oxygen deficient, extremely cold, corrosive or otherwise extremely hazardous to health, depending upon the product contained in the cylinder.

Most compressed gas cylinders are very heavy, and remain so whether they are empty or full, as their contents are in gaseous form and weigh very little. Cylinders containing product in liquid or liquefied form are extremely heavy when full, but less so when empty. Acetylene cylinders are designed with a heavy filler material in addition to the gas product itself. The safest way to move any cylinder is with a cylinder cart.

Medical gases, or gases that are intended for human consumption, must be handled by personnel with specific training on such gases. For example, gases such as Breathing Air are marked to indicate they are specifically for breathing, however, most gasses are not intended for human consumption in any form.

Facts About Oxygen

- Oxygen is NOT “Air” and Air is not “Oxygen”
- Normal Oxygen concentration is the Air we breathe is about 21%
- Oxygen has a narrow acceptable range of safety, when Oxygen levels drop below 19.5%, this is considered to be Immediately Dangerous to Life and Health (IDLH).
- If Oxygen levels are above 23.5% it is dangerous because it creates an Oxygen enriched atmosphere.

Let it Fall

If you notice that a gas cylinder is falling over, let it fall. Back away and let it fall to the ground. Do not try and catch the gas cylinder because chances are you are going to get hurt trying to catch it. After you have let the gas cylinder fall, use proper lifting techniques to upright the fallen cylinder.

Squat down as level with the cylinder as possible. Get close so that your arms are bent and not extended. Use two hands on the cylinder to lift it. If possible, push the bottom of the cylinder up to a fixed object to keep the cylinder from sliding when lifted. If you need help, make sure to ask for it.
General Do’s and Don’ts

**Always**

- Familiarize yourself when storing flammable gases
- Wear safety glasses with side shields
- Return cylinders to your supplier with approximately 25 pounds per square inch
- Move cylinders by using a specifically designed cylinder cart
- Wear proper PPE for the job
- Securely apply protective valve caps on cylinders when idle or in transport. Many cylinders contain pressures in excess of 2000 pounds per square inch or more. A broken valve resulting from a falling cylinder is all it takes for the cylinder to become an unguided missile.
- Keep a fire extinguisher available where compressed gases are stored
- Segregate full cylinders from empty cylinders
- Read the label, know the gas properties, and review the SDS
- Perform a check of your equipment to look for possible leaks
- Secure cylinders with two chains

**Never**

- Store cylinders where they can come in contact with objects at extreme temperatures
- Store Cylinders where they can come in contact with corrosive materials
- Store cylinders where they can become part of an electrical circuit. Store cylinders away from electrical switches, outlets and extension cords
- Store cylinders where water is freestanding or may collect
- Transfer gas from one cylinder to another. Gas transfers activities require special training and qualifications
- Attempt to adapt or modify valve components on cylinders or gas apparatus
- Conceal damage, contamination, arc burns, or attempted repairs to a cylinder
- Use cylinders as a support, doorstop or a coat rack
- Lift cylinders by the protective valve cap or by use of a magnet
- Move cylinders by rolling them on their side