

TOOL BOX TALKS

Compressed Gas Cylinder Safety

Hazards associated with compressed gases include oxygen displacement, fires, explosions, and toxic gas exposures, as well as the physical hazards associated with high pressure systems. Special storage, use, and handling precautions are necessary in order to control these hazards. Carelessness, abuse and complacency can result in disaster.

WORKSAFE TIPS

Remember - the greatest physical hazard represented by the compressed gas cylinder in the laboratory is the tremendous force that may be released if it is knocked over!

STORAGE OF CYLINDERS

- Cylinders must be secured at all times to a fixed location - a wall, work bench, etc.
- Cylinders must be secured at a point approximately 2/3 of its height, using appropriate material - chain, plastic coated wire cable, commercially available cylinder straps, etc.
- Do not store gas cylinders in public hallways, beneath egress stairways or other unprotected areas;
- Cylinders must be secured individually, i.e., one restraint per cylinder.
- Cylinders should be segregated in hazard classes while in storage, at the minimum, oxidizers (such as oxygen) must be separated from flammable gases.
- Empty cylinders should be isolated from filled cylinders.

TRANSPORTING CYLINDERS

- When not in use the valve protection cap must be in place to protect the valve;
- Never drag, slide or roll the cylinder - get a cylinder cart or truck and use it!
- Keep the protective cap covering the valve - never transport with the regulator in place;
- Make sure the cylinder is secured to the cart during transport.

BEFORE USE

- Make sure the cylinder is equipped with the correct regulator.
- Always use the regulator designed for the material in use, and be especially careful that under no circumstances is grease or oil used on regulator or cylinder valves because these substances may cause an adverse, dangerous reaction within the cylinder.
- Place the cylinder so that the valve handle at the top is easily accessible at all times.
- Open the valve slowly and only with the proper regulator in place - the valve should be opened all the way.
- Never leave a valve part way open - either open it all the way or close it all the way.
- The valve should never be left open when equipment is not in use, even when empty; air and moisture may diffuse through an open valve, causing contamination and corrosion within the cylinder.

DURING USE

- Never heat the cylinder to raise the pressure of the gas - this may defeat the safety mechanisms built in by the supplier.
- Keep the cylinder clear of all sparks, flames and electrical circuits.
- Never rely on the color coding to identify the gas! Different manufacturers may use different coding systems.
- Don't use oxygen in place of compressed air.
- Don't use copper fittings or tubing on acetylene tanks - explosion may result.
- Wear PPE appropriate for the hazard potential of the material being worked with.

Work SAFE

Smart, Accident-Free Environments