







## COMPRESSED GAS CYLINDER HANDLING

CSUSM is required to maintain an inventory of compressed gas cylinders and tracks locations where they are used. Departments are responsible for informing the Office Safety, Health and Sustainability of what type, volume and where compressed gas cylinders are used. Best practices include:



-  Cylinders must be capped when not in use. Do not move or transport a cylinder without the safety cap properly attached to the cylinder.
-  Use an approved cylinder cart to transport cylinders.
-  Compressed gas cylinders should not be used or stored in poorly ventilated areas.
-  Keep cylinder valves close when not in use, even when empty.

### Restraint Systems

A chain restraint system is the primary approved method to secure a gas cylinder in the upright position. **These restraint systems must be installed by a qualified person.** Chain restraint systems are installed so that when properly connected chains are positioned at 1/3 and 2/3 height of the cylinder to prevent accidental toppling or tipping in an earthquake.

Nylon straps may not be used in place of chain restraints. C-clamp restraint systems are not allowed.



Cylinder **rack restraint systems** used for storage of multiple cylinders and **floor based restraint systems** used for securing single cylinders **must** be approved on a case by case basis by SH&S personnel.

### Incompatible Storage

Oxygen cylinders must be stored at a minimum distance of 20 feet away from flammable gases or highly combustible materials, or separated by a 5 foot firewall.

### Compressed Gas Systems

Installation, re-piping or modification to compressed gas delivery systems that exceed permit amounts will require authorization and post installation inspection by the State Fire Marshal. This provision includes flammable, toxic, corrosive, oxidizing, inert, medical, cryogenic and refrigerant gases.