



### ***Moving and Transporting Cylinders***

- Always use a suitable hand truck or similar device to move cylinders.
- Transport cylinders in a secured, upright position.
- When moving cylinders a very short distance and/or into position, the cylinder may be rolled on the bottom edge.
- Never drop cylinders or allow them to strike each other or other objects.
- Cylinders should never be rolled on their side or dragged.
- Remove regulators, close valves and put protective valve caps in place before moving cylinders. Do not lift or move the cylinder by the cap.



sary safety precautions, personal protective equipment and emergency response procedures. Appropriate material safety data sheets and other gas supplier product information must be accessible to compressed gas users.

### ***Getting Assistance***

If you need additional information about gas cylinder use, storage, or transport or would like to view a training video, contact EH&S.

### ***Leaking/Damaged Cylinders***

If a cylinder is damaged, in poor condition, leaking, or the contents are unknown, move it to a safe place (if it is safe to do so) and inform Central Stores or the supplying vendor as soon as possible. Under no circumstances should you attempt to repair a cylinder or valve.

### ***Training***

All personnel utilizing compressed gases must receive training, including the associated hazards of the materials, neces-



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# Compressed Gas Cylinders:



## Safety Under Pressure

## Variety of Gases and Hazards

Compressed gas cylinders are used in a variety of university settings, including maintenance work, fabrication shops, fine arts, and instructional and research laboratories.

Although compressed gases serve WSU in many ways, gases under high pressure present a number of safety and health hazards. Gases may be combustible, explosive, corrosive, poisonous, inert, or a combination of hazards.

Cylinders, if not used properly, may rupture violently, releasing potentially hazardous contents and/or becoming dangerous projectiles. However, gas cylinders are reasonably safe when they are appropriately labeled, used, stored and transported.

## Cylinder Labels

Cylinders must be properly labeled, including the gas identity and the appropriate hazard warning. Cylinders have several stamped markings. The top mark is either a Department of Transportation or an Interstate Commerce Commission designation.

Other stamp markings include service pressure, serial number, hydrostatic test date, and a symbol indicating the identity of the manufacturer.

The label and markings must not be defaced or removed. Cylinders that do not have a label or appropriate stamps must not

be used. Segregate the cylinder and return it to Central Stores or the vendor.

## Using Cylinders

All users should know the identity of the gas and be familiar with the safety, health, flammability and reactivity hazards (refer to the material safety data sheet for each particular gas).

- Visually inspect gas cylinders and their connections prior to each use.
- Make sure all valves, regulators, hoses, gauges, and couplings, are compatible with the cylinder pressure and contents.
- Make sure all cylinder components are clean and free of oil and grease.
- Make sure all connections are tight. Locate leaks by applying soapy water; bubbling areas indicate leaks.
- Use cylinders in an upright position, unless otherwise instructed by the manufacturer.
- Open cylinder valves slowly, always standing away from the face and back of the gauge.
- Turn off all valves when the cylinder is not in use and bleed the lines.
- Always release pressure from the regulator before disconnecting.



- Keep the valve protection cap screwed all the way down on the cylinder's neck except when the cylinder is in use.

## Storing Cylinders

The large amount of potential energy resulting from compression of the gas makes the cylinder a potential rocket or fragmentation bomb, so they must be stored and transported very carefully.

- Store cylinders in a well-protected, well-ventilated, dry location away from open flames and heat sources.
- Storage spaces should be located where cylinders will not be knocked over or damaged by passing or falling objects.
- Full cylinders should be stored separately from empty cylinders.
- Clearly mark empty cylinders with a tag or sign reading "Empty" or "MT".
- Secure cylinders in an upright position to prevent tipping by attaching them to a bench top or individually to the wall with a chain or strap, or placing them in a cylinder holding cage, hand truck, rack or post.
- Group cylinders by types of gas (e.g., flammables, oxidizers or corrosives). Inert gases can be stored with any other type of gas.
- Separate oxygen cylinders from fuel-gas cylinders or combustible materials by a minimum of 20 feet.

**NON-  
FLAMMABLE  
GAS**