

Purpose

This document is intended to serve as a reminder of safe work practices and is not a complete presentation of this topic. It should be used by individuals trained and competent in this subject. It is not intended to replace or supersede company procedures, industry standards and/or applicable governmental laws and regulations.

Applications

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|-------------------------|---------------------------|
| Oxygen Cylinders | Acetylene Cylinders |
| Nitrogen Cylinders | Chlorine Cylinders |
| Breathing Air Cylinders | Sample Bombs (Cylinders) |
| LPG Tanks | Calibration Gas Cylinders |

Hazards

- Many cylinders contain high pressure and can become projectiles if the valve is broken off;
- Cylinders can contain materials which may be incompatible with certain metals or hydrocarbons, for example , oxygen with hydrocarbons; hydrogen sulfide with iron;
- Cylinders may contain flammable or toxic materials;
- Oxygen will react with hydrocarbons to spontaneously ignite; and
- Over-pressuring equipment and fittings

General Information

Guidelines

Handling Cylinders

- Do not move cylinders without properly installing the protective cap over the valve (except for breathing air cylinders). Do not use the cap for lifting the cylinder.
- Cylinders moved by crane or derrick should be secured in a basket or similar device. Use of slings, ropes or electromagnets for lifting cylinders is prohibited.
- Cylinders should not be allowed to strike each other.
- Cylinders should not be used for rollers, supports or any purpose other than to contain gas.

Using Cylinders

- Never use a cylinder of compressed gas without a pressure-reducing regulator attached to the cylinder valve, except where the total system is specifically designed to handle maximum cylinder pressure.
- Use regulators and pressure gauges only with gasses and pressure rating for which they are designed and intended. For example, do not use glycerin-filled gauges for oxygen cylinders because it may catch fire or explode.
- Never use oil or grease as a lubricant on valves or attachments to oxygen cylinders because it may catch fire or explode.

Guidelines (Continued)

- Cutting torch rigs should be equipped with backflow check valves to prevent flashback to the regulator.
- Always close the cylinder valve before attempting to stop leaks between the cylinder and regulator.
- Hydrotest certification of the cylinder should be current.
- Cylinder must have proper markings and legible content labeling.(DOT, ANSI, CSG)
- With the exception of breathing air, compressed gas cylinders should not be taken into confined spaces.
- Cylinders should not be placed where they could become part of a electrical circuit.
- Only qualified and trained persons should refill, ship and maintain cylinders.
- Use proper wrenches to tighten connections on cylinders; do not “hammer” or force connections.

Storing Cylinders

- Properly secure cylinders in an upright position.
- Do not move cylinders without properly installing the protective cap over the valve (except for breathing air cylinders).
- Do not store oxygen cylinders within 20 feet of combustible gas cylinders or near any other combustible substance such as oil, grease, or acetylene where a fire could result, unless protected by a wall at least five feet high, having a fire resistance rating of at least 30 minutes. This requirement does not apply to oxygen cylinders attached to a cutting torch unit.
- Store cylinders in a safe, dry, well-ventilated area that limits corrosion damage and deterioration.
- Store empty cylinders separately, with empty cylinders plainly identified as empty.

LPG Tanks

Due to the variance in sizes of LPG tanks and the governing regulations, refer to DOT 49 CFR 171-178, NFPA 58 and ASME for specific regulations on the following:

- Filling requirements
- Safety Relief valve requirements
- Tank labeling and marking
- Spacing
- Transportation
- Construction

References

OSHA 1910.252 & 253 Cutting, Welding and Brazing

Department of Transportation Regulations for Transportation of Hazardous Materials

Compressed Gas Association P-1 (Handling Compressed Gas in Containers)

Compressed Gas Association C-7 (Labeling and Marking Gas Containers)

Compressed Gas Association C-6 (Standards for Visual Inspection of Containers)

Compressed Gas Association C-4 (Marking Portable Containers to Identify Material)
National Fire Protection Association 50; 51; 58; 59A; (Fire Protection for Flammable
Gasses)

ANSI Z49.1 Standard on Safety in Welding and Cutting

ANSI B57.1 Valve Inlet and Outlet Connections

Manufacturer's Specifications for Breathing Apparatus