

## Toolbox Talk

# ACETYLENE AND OXYGEN CYLINDER SAFETY

#004-<https://careertrainings.org>



## INTRODUCTION

Safe handling of acetylene and oxygen cylinders is essential to prevent fires, explosions, and health risks. This talk provides key guidelines on recognizing hazards, following safe practices, and being prepared for emergencies to ensure a safe work environment.



## PREVENTION

### Storage:

- Store cylinders upright and securely fastened to prevent tipping.
- Separate oxygen and acetylene cylinders by a minimum of 20 feet or use a fire-resistant barrier between them.
- Keep cylinders in well-ventilated areas away from direct sunlight, heat sources, or open flames.

### Handling:

- Inspect cylinders for damage or leaks before use.
- Use cylinder carts or dollies with chains or straps for safe transport.
- Keep valves closed when cylinders are not in use.

### Usage:

- Use a regulator designed for each specific gas cylinder.
- Open valves slowly to prevent rapid gas release.
- Use flashback arrestors to prevent flames from traveling back into the cylinder.



## OBJECTIVES

- Identify potential hazards associated with acetylene and oxygen cylinders.
- Understand preventive measures for safe handling, storage, and usage.
- Learn essential do's and don'ts to reduce risks.
- Prepare for emergency responses to potential accidents involving cylinders.

## DO'S

- Use proper PPE (Personal Protective Equipment), including gloves, safety goggles, and aprons.
- Test for leaks regularly with a soapy water solution (do not use open flames).
- Label cylinders clearly for easy identification.
- Report any damaged or defective cylinders to supervisors immediately.
- Use non-sparking tools when handling cylinders.

## DON'TS

- Don't store cylinders near electrical circuits, heat sources, or in confined areas.
- Don't tamper with safety devices or regulators on cylinders.
- Don't lift cylinders by the valve cap or handle them roughly.
- Don't use acetylene at pressures exceeding 15 psi.
- Don't allow oil, grease, or other flammable substances to come into contact with oxygen cylinders or fittings.

## POTENTIAL HAZARDS

- **Fire/Explosion:** Flammable gases like acetylene can ignite with minimal sparks if exposed to oxygen.
- **Asphyxiation:** Leaking gas can displace oxygen in confined spaces, leading to suffocation.
- **Pressure Hazards:** High-pressure gas can lead to burst hazards or accidents if cylinders are damaged or improperly handled.
- **Cylinder Tipping or Falling:** A cylinder falling over can damage valves, leading to uncontrolled gas release.



## EMERGENCY PROTOCOLS

### Leak Detection:

- Evacuate the area immediately if a significant leak is detected.
- Use ventilation to clear the area of gas if possible.

### Fire:

- If a fire occurs, shut off the gas supply if it can be done safely.
- Use appropriate fire extinguishers (e.g., Class ABC).

### Explosion:

- Alert nearby personnel and evacuate.
- Follow emergency response plans for severe incidents.

### First Aid:

- Provide fresh air and oxygen if affected by fumes and seek immediate medical attention for burns or inhalation injuries.

## CONCLUSION

Safe handling and storage of acetylene and oxygen cylinders are crucial for preventing fires, explosions, and health risks. Follow safety guidelines, wear proper PPE, and be prepared for emergencies to protect yourself and others. Safety is everyone's responsibility—stay vigilant and report any issues.



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# TOOLBOX TALK

## TITLE: ACETYLENE AND OXYGEN CYLINDER SAFETY

### INTRODUCTION

The safe handling of acetylene and oxygen cylinders is critical to preventing fires, explosions, and serious injuries. These gases are highly reactive and must be handled, stored, and used properly. Today's talk covers key hazards, safe practices, and emergency procedures.

### OBJECTIVES

- Identify hazards associated with oxygen and acetylene cylinders
- Understand safe storage, handling, and usage practices
- Learn essential do's and don'ts
- Be prepared to respond to emergencies involving gas cylinders

### POTENTIAL HAZARDS

- **Fire/Explosion:** Acetylene is highly flammable and can ignite بسهولة when exposed to oxygen
- **Asphyxiation:** Gas leaks can displace oxygen in confined spaces
- **Pressure Hazards:** Cylinders are under high pressure and may burst if damaged
- **Tipping/Falling:** Falling cylinders can damage valves and cause uncontrolled gas release

### Prevention Measures

#### Storage

- Store cylinders upright and secure them to prevent tipping
- Keep oxygen and acetylene at least 20 feet apart or separated by a fire-resistant barrier
- Store in well-ventilated areas away from heat, sparks, and open flames

#### Handling

- Inspect cylinders for damage or leaks before use
- Use proper carts with chains or straps when moving cylinders
- Keep valves closed when not in use

#### Usage

- Use the correct regulator for each gas
- Open valves slowly to prevent pressure surges

- Install flashback arrestors to prevent flames traveling back into the cylinder

## **Do's**

- Wear proper PPE (gloves, safety goggles, protective clothing)
  - Check for leaks using a soapy water solution (never use a flame)
  - Clearly label cylinders
  - Report damaged or defective cylinders immediately
  - Use non-sparking tools when handling cylinders
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## **Don'ts**

- Don't store cylinders near heat sources or electrical circuits
  - Don't tamper with regulators or safety devices
  - Don't lift cylinders by the valve cap
  - Don't use acetylene above 15 psi
  - Don't allow oil or grease to contact oxygen cylinders
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## **Emergency Procedures**

### **Gas Leak**

- Evacuate the area immediately
- Ventilate the area if it is safe to do so

### **Fire**

- Shut off gas supply if it can be done safely
- Use appropriate fire extinguishers (Class ABC)

### **Explosion Risk**

- Alert others and evacuate immediately
- Follow emergency response procedures

### **First Aid**

- Move affected persons to fresh air
  - Seek immediate medical attention for burns or inhalation injuries
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## Conclusion

Proper handling and storage of acetylene and oxygen cylinders are essential to preventing serious incidents. Always follow safety procedures, wear the correct PPE, and stay alert. Safety is everyone's responsibility—report hazards and act immediately when something is unsafe.

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