

## OXYGEN/ACETYLENE WELDING AND CUTTING

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(For assistance, please contact EHS at (402) 472-4925, or visit our web site at <http://ehs.unl.edu/>)

Follow these safety tips when using a torch.

- Inspect equipment and ensure it's in good working condition and free of oil before each use.
- Blow out cylinder valves before attaching regulators.
- Release adjusting screw on regulators before opening cylinder valves.
- Purge oxygen and acetylene lines before lighting the torch.
- Open cylinder valves slowly. Do not stand directly in front of the regulator while opening.
- Light torch with friction lighter or stationary pilot flame.
- Do not use acetylene at pressures higher than 15 psi.
- Light acetylene before opening oxygen valve on torch.
- When lighting torch, point away from persons and combustibles.
- Keep cylinders upright, chained to a support, and always use an appropriate cart to move. While moving cylinders have the protective collar screwed into place to protect the valves.
- Keep cylinder caps in place when cylinders are not in use.
- Store oxygen cylinders away from cylinders with flammable gases (greater than 20 feet or separated by a fire barrier at least 5 feet tall).
- Do not allow acetylene gas to come in contact with unalloyed copper. An explosion could result due to formation of copper acetylide.
- Immediately repair oxygen and acetylene leaks.
- Do not store overnight with pressure on the regulator.
- Ensure that flashback arrestors are installed between the regulator and the hose if the torch does not have one built into its handle.
- Always use a pressure regulator. Use the proper regulator for each gas and pressure range.
- Never force connections that do not fit. Watch out for connectors with faulty seats; get rid of them.
- Check connections for leaks. Use soapy water or its equivalent. Do not use a flame.
- Remove leaking cylinders from inside storage and notify the supplier.

- Do not tamper with or attempt to repair cylinder valves. Notify the supplier.
- Keep hoses, cables, and other equipment clear of passageways, stairs, ladders, etc.
- When a cylinder is empty, close its valve and mark it “EMPTY”.
- Replace or repair damaged equipment, including hoses.
- Take steps to prevent sparks from falling through floor cracks, etc. Remove or protect combustible material in “falling spark” zones.
- Remove combustibles at least 35 feet from hot work. If combustibles cannot be relocated 35 feet from hot work, complete a hot work permit (See EHS SOP “Hot Work”).
- Keep a Class ABC Fire Extinguisher near.
- Before cutting or welding on an “empty” container, be sure it does not contain flammable vapors or any residues that might burn or give off flammable or toxic vapors.
- Keep flame and hot slag off of concrete. Intense heat may cause flying particles of concrete.
- Provide adequate ventilation whenever welding or cutting around cadmium zinc, lead, fluorine compounds, or other toxic materials.
- Keep sleeves and collars buttoned on clothing.
- Wear gloves and eye protection with the appropriate shade:
  - Soldering 2
  - Torch Brazing 3 or 4
  - Light Cutting, up to 1 inch 3 or 4
  - Medium Cutting, 1 inch to 6 inches 4 or 5
  - Heavy Cutting, 6 inches and over 5 or 6

Source: AWS ANSI Z49.1 “Safety in Welding and Cutting.”