

Portable Torch Safety

SafetyNet #: 138

UC Davis Policy and Procedure Manual Chapter 290, Section 86 requires all portable torch units used on campus to include separate gas cylinder and torch unit assemblies connected via a properly rated hose. Torches attached directly to gas cylinders are specifically prohibited.

Department Responsibilities

- Implementing a written departmental portable torch use program.
- Ensuring all employees using portable torches receive initial and annual refresher training for:
 - a. Potential hazards associated with portable torch use
 - b. Proper inspection and use of equipment
 - c. Standard Operating Procedures developed within each department
 - d. Safety procedures and the use of personal protective equipment.
 - Providing appropriate equipment.

Employee Responsibilities

- Checking the condition of the torch, hose and cylinder prior to work and informing the supervisor immediately if any equipment is found defective.
- Following standard operating procedures and manufacturer's guidelines.

General Torch Safety Precautions

- Read and follow operating instructions and cautions and familiarize yourself with the torch before lighting or using. Review instructions and cautions periodically to maintain awareness. Do not try to operate before reading instructions.

- Keep torch out of reach of anyone who has not read instructions. Do not point torch towards face, other persons or flammable objects. Never attempt to use torch as a cigarette lighter.
- Disconnect cylinder when not in use.
- Never attempt to modify the torch construction and never use unapproved accessories or fuels.
- Be extra careful when using the torch outdoors on sunny or windy days. Bright sun makes it impossible to see the torch's flame. Wind may carry the torch's heat back towards you or to other areas not intended to be heated. Windy conditions may also cause sparks to be blown into other areas with combustible materials.
- Treat the torch as you would any fine tool or instrument. Do not drop or otherwise abuse.
- Do not use a leaking, damaged or malfunctioning torch.
- When brazing, always wear goggles having an ANSI Z87.1 1979 Shade No. 4 or No. 5 lens.
- Never use a torch or paint stripper to remove lead-based paint indoors or in any confined area.
- Heating a surface may cause heat to be conducted to adjoining surfaces that may be combustible or become pressurized when heated. Always check to make sure no unintended parts or materials are being heated. Whenever there is a possibility that unintended parts or materials are being heated, wait at least two hours before leaving the area.
- Work only in well-ventilated areas. Avoid the fumes from fluxes, lead-based paint and all metal heating operations. Be especially careful to avoid fumes from cadmium plating and galvanized metal – remove these coatings in the area to be heated by filing or sanding prior to heating.
- Avoid contact of flux with skin or eyes.
- Always place your work on firebrick. If you are not sure it is firebrick, do not use. Ordinary brick and concrete can explode when subjected to high temperatures. Do not work on wood or metal surfaces. Always shield your work.
- Always wear protective gloves and use proper tools to handle hot work.
- Be aware that the tip of the torch can get extremely hot during use. Take precautions to protect yourself and others from accidental burns. Never use the torch on or near highly combustible material. Be especially careful around motor vehicles or any gasoline-fired products and beware of hidden fuel lines and tanks.
- Always make certain the torch is placed on a level surface when connected to the fuel cylinder to reduce the risk of accidental tip over. Be sure the torch is not pointed in a direction that could cause nearby objects to ignite when torch is set down.
- Never attempt to repair or heat a gasoline tank, a chemical drum, an aerosol can, a compressed gas container or any container that held flammable liquid or gas or any other chemical. Heating these is extremely dangerous, especially after they have been "emptied."
- When thawing pipes, be very careful not to overheat surrounding materials. Use a heat

shield.

- Always have a fire extinguisher and a bucket of water near the torch and work area. Do not place them in the flame path or in a location where you could not reach them should a fire break out.

General Torch Caution

- DO NOT use torch with the fuel cylinder tipped more than 60 degrees from its upright position as this may cause torch to flare.
- DO NOT attempt to replace orifice. The orifice has a special filter and should not need replacement. As a safety feature, the burner tube may bend if the torch is dropped. This feature protects the orifice and the regulator of the torch.
- If the torch is damaged in any way, return it for repairs.

General Torch Warning

- The propane cylinder contains gaseous and liquid propane. If the torch is moved rapidly, tilted too far to the side or upside down, the liquid can enter the valve and cause the flame to flare or extinguish. To prevent this, adjust the torch to a ¼" long inner flame and let the torch warm-up for 5 minutes prior to such movement, and then slowly re-adjust as necessary once the torch is in the desired operating position.
- Make sure torch is cool before tightening or removing accessories. Check all joints and couplings periodically to insure against loose connections. With valve open, without lighting, test all connections with soapy water. If bubbles appear, gas is leaking and torch must be repaired. NEVER USE A FLAME TO CHECK FOR LEAKS. Make this test in a well-ventilated and spark-free area, and where there are no open flames.
- Never attempt to light the torch with a setting that would result in a main flame less than one quarter inch (1/4) long. An excessively short flame will cause lighting difficulties, will result in inefficient heating and may damage the ignition mechanism.
- Cold weather operation:
 1. In cold weather, the size of the flame will be smaller. To produce a larger flame, pre-warm the cylinder to room temperature prior to use.
 2. There is a greater possibility that the flame will extinguish when the torch is turned upside down in cold weather
- NOTE: As a safety feature, the burner may snap if the torch is dropped, in which case the burner must be replaced.

References

1. [UC Davis Policy & Procedure Manual, Section 290-86 – Hazardous Operations](#)[1]
2. [Safety Information](#) [2]

Contact

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More information

<https://safetyservices.ucdavis.edu/health-safety-staff-listing> [3]

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Source URL (modified on 07/06/18 12:15pm): <https://safetyservices.ucdavis.edu/safetynet/portable-torch-safety>

Links

[1] <https://ucdavispolicy.ellucid.com/documents/view/329>

[2] <http://www.bernzomatic.com/articles/general-safety-information/>

[3] <https://safetyservices.ucdavis.edu/health-safety-staff-listing>