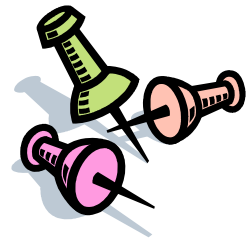




# Safety Note

UNIVERSITY OF CALIFORNIA  
AGRICULTURE AND NATURAL RESOURCES  
ENVIRONMENTAL HEALTH AND SAFETY



Safety Note #122

## BUNSEN BURNER SAFETY



*Photograph Courtesy of Hopland REC*

Bunsen burners are used in many laboratories and pose an injury risk due to the open flame they produce. Open flames are dangerous because they can burn skin and hair, create noxious chemical fumes, serve as an ignition source for other flammable materials, and heat non-flammable surfaces to high temperatures. Injuries related to the use of Bunsen burners include burns from flames, touching heated surfaces, and splashing heated liquids onto the body, skin cuts and eye trauma from exploding glass, and inhalation of noxious chemical fumes. Bunsen burners may use a wick and be fueled by a liquid such as kerosene or have a barrel that is fueled by natural gas.

### Bunsen Burner Safety Precautions

- Before using, always inspect the Bunsen burner for damage or disrepair, including the gas feed tubing or wick, connections to the burner, and wall outlet valve, needle valve, and barrel.
- If a Bunsen burner fails the pre-use inspection, notify your supervisor and remove the Bunsen burner from service by attaching a red tag that states "DO NOT USE." Complete red tag with appropriate information.
- Prior to starting, examine the Bunsen burner work area and vicinity to determine whether flammable materials, gases, or vapors are present or may develop. If it appears they are present or may develop, do not light the Bunsen burner until these hazards have been contained, eliminated, or removed to a safe location.
- Know where the laboratory fire extinguisher and wash station are located and how to use them.
- The procedure for lighting a gas Bunsen burner is as follows: 1). Verify the needle valve and barrel are closed; 2). Open the wall outlet valve; 3). Open the barrel and needle valve  $\frac{1}{2}$  turn; 4). Light the flame using a striker or match; and 5). Adjust the flame for intensity using the needle valve and barrel. Close wall outlet valve first to shut off the gas Bunsen burner. Then close the needle valve and barrel.
- If the flame of a gas Bunsen burner goes out or begins to sputter, turn the wall outlet valve off immediately.
- The procedure for lighting a wicker Bunsen burner is to raise the wick and light it using a match. Lower the wick to shut off the wick Bunsen burner.
- Allow used matches to cool before disposing of them in the trash.
- Never leave a lit Bunsen burner unattended.
- Keep your hair away and hands away from the open flame. Tie long hair back or secure under a cap. Always wear eye protection when using a Bunsen burner.
- Remember that objects heated by a Bunsen burner retain their heat for a long time and while hot, remain a burn hazard. Use tongs or heat-resistant gloves to pick up heated clamps, tripods, rings, screens, glassware, or ceramics.
- Place hot objects on trivets or hot pads.
- Never heat a closed container over a Bunsen burner.
- Carefully monitor liquids as they are heated. Either reduce the heat or remove liquids from the Bunsen burner heat source once they are boiling.
- Always use a Bunsen burner in a fume hood if noxious chemical fumes will be produced during the heating process.