

# Safety Topic: Bunsen Burners and Hotplates

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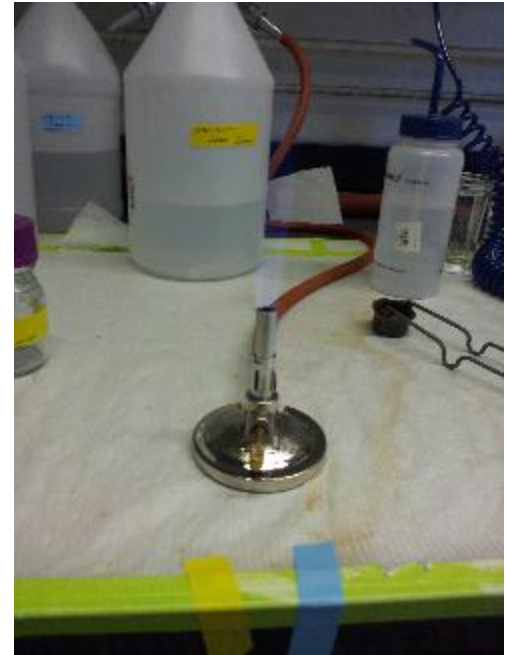
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# Bunsen Burners

- Produces open flame used for heating, sterilization, and combustion
- Utilizes gas readily available in the lab
- Not all flames are created equal
- Can adjust oxygen flow to attain desired flame



# Bunsen Burners Procedures

- **PLACE** the Bunsen burner away from any overhead shelving, equipment or light fixtures.
- **REMOVE** all papers, notebooks, combustible materials and excess chemicals from the area.
- **TIE-BACK** any long hair, dangling jewelry, or loose clothing.
- **INSPECT** hose for cracks, holes, pinched points, or any other defect and ensure that the hose fits securely on the gas valve and the Bunsen burner.
- **REPLACE** all hoses found to have a defect before using.
- **NOTIFY** others in the laboratory that the burner will be in use.
- **UTILIZE** a sparker / lighter with extended nozzle to ignite the Bunsen burner. Never use a match to ignite burner.
- **HAVE** the sparker / lighter available before turning on gas.
- **ADJUST** the flame by turning the collar to regulate air flow and produce an appropriate flame for the experiment (typically a medium blue flame).
- **DO NOT** leave open flames unattended and never leave laboratory while burner is on.
- **SHUT-OFF** gas when its use is complete.
- **ALLOW** the burner to cool before handling. **ENSURE** that the main gas valve is off before leaving the laboratory.

# Hot Plate Procedures

- Use only heat-resistant, borosilicate glassware, and check for cracks before heating on a hot plate. Do not place thick-walled glassware, such as filter flasks, or soft-glass bottles and jars on a hot plate. The hot plate surface should be larger than the vessel being heated.
- Do not use the hot plate in the presence of flammable or combustible materials. Fire or explosion may result – the device contains components that may ignite such material
- Place boiling stones in liquids being heated to facilitate even heating and boiling. Do not evaporate all of the solvent or otherwise heat a mixture to dryness on a hot plate – the glass may crack unexpectedly when heated directly on a hot plate
- Use a medium to medium-high setting of the hot plate to heat most liquids, including water. Do not use the high setting to heat low-boiling liquids. The hot plate surface can reach a maximum temperature of 540 °C
- Do not place metal foil or metal containers on the hot plate – the top can be damaged and a shock hazard may result
- Be careful when removing hot glassware or pouring hot liquids from the hot plate. Use tongs or silicone rubber heat protectors (gripping devices).
- Turn off the hot plate when not in use. The surface of a hot plate stays hot for quite some time – and looks exactly the same as a “cold” hot plate!



# Is it hot?

