**Safe Bunsen Burner Use General Guidelines**

 General Guidelines are an essential component of the University of Regina’s Health & Safety Management System. This general guideline has been created to provide a set of **Do’s & Don’ts** on how to use a Bunsen burner. It is expected that the general guidelines will assist in the creation of a lab-specific Safe Operating Procedure.

 All general guidelines along with the related Safe Operating Procedures pertaining to you or your group’s activities should be kept in a location central to the work being performed and readily available to the individuals involved in the task.

**Natural Gas Bunsen Burners**

Bunsen burners are commonly used for heating (e.g., distillation, fixing cells onto slides) and sterilization (e.g., sterilizing inoculations loops).

* Bunsen burners present fire hazards. Place the Bunsen burner away from any overhead shelving, equipment, or light fixtures by at least 12 inches.
* Remove all papers, notebooks, combustible materials, and excess chemicals from the area.
* Tie-back any long hair, dangling jewelry, loose clothing.
* Before each use inspect hose for cracks, holes, pinch points, or any defects. Ensure the hose fits securely on the gas valve and burner.
* Like with all equipment, preventative maintenance is crucial. Test for hose leaks by spreading slightly watered-down dish soap or Snoop on the hose and watch for bubbles forming once you turn on the gas.
* Notify others in the lab that the burner will be in use.
* Use a sparker/ lighter with extended nozzle to ignite the burner. Never use a match.
* Adjust the flame by turning the collar to regulate airflow and produce an appropriate flame for the experiment (usually a medium blue flame).
* **Do not leave flame unattended and never leave the lab while the burner or gas is on.**
* If you smell natural gas in the area you may have a leak, immediately shut off gas, leave area, and contact Campus Security at 306.585.4999 or Health, Safety & Wellness at 306.585.4776.
* 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 lab.
* Aerosolization of infectious materials can occur when inoculation loops are sterilized in the open flame of a Bunsen burner; therefore, microincinerators, electric Bunsen burners, or disposal loops are recommended as alternatives.
* Sustained open flames are prohibited inside biological safety cabinets because of the disruption of airflow patterns and potential for damaging the filters. When suitable non-flame alternatives are not available, touch-plate microburners that provide a flame on demand may be used.

**Alternatives to Natural Gas Bunsen Burners**

**Electric Bunsen Burners**

* An electric Bunsen burner combines the efficiency of a gas burner with the safety and control of an electric heater. (For an example, see: <http://www.daigger.com/store/electric-bunsen-burner3540/19255?section=21>).
* When used in a biological safety cabinet, an electric Bunsen burner should be placed at the rear to help minimize disruption of the air curtain at the front of the cabinet.

**Microincinerators**

* Microincinerators are often equipped with shields to minimize the dispersal of aerosols. (For an example, see: <https://us.vwr.com/store/catalog/product.jsp?catalog_number=101412-622#header>. This Bact-cinerator sterilizes loops and needles safety and conveniently by preventing infectious spatter and/or cross contamination. It also safeguards personnel from an open flame or hazardous gas.)
* When used in a biological safety cabinet, the equipment should be placed at the rear of the cabinet to help minimize disruption of the air curtain at the front of the cabinet.

**Disposable Loops and Inoculating Needles**

* Single-use disposable loops are sterile and can be used in a biological safety cabinet as an alternative to reusable loops requiring sterilization with a burner or microincinerator. However, they will add to the amount of waste requiring decontamination.
* Disposable loops should be placed in a leak-proof, puncture-resistant waste container immediately after use.