UNIVERSITY OF DELAWARE DEPARTMENT ENVIRONMENTAL HEALTH & SAFETY STANDARD OPERATING PROCEDURE: BUNSEN BURNER SAFETY

Description

This standard operating procedure outlines the handling and use of Bunsen burners. Review this document and supply the information required in order to make it specific to your laboratory. In accordance with this document, laboratories should use appropriate controls and personal protective equipment when using Bunsen burners.

Bunsen burners produce a single open flame by burning a continuous stream of flammable gas used for heating, sterilization, and combustion.

Potential Hazards

Bunsen burners present burn and fire hazards due to the high-temperature open flame that is produced.

Engineering Controls

Biological safety cabinets (BSCs) and disposable sterile items obviate the need for open flames when aseptic conditions are needed. If an open flame absolutely must be used in a BSC, recommended alternatives such as electrical incinerators or touch-plate micro burners are available.

Work Practice Controls

Bunsen burner safety – best practice:

- **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 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.

Personal Protective Equipment (PPE)

Wear standard laboratory attire including safety glasses and avoid wearing synthetic clothing.

Exposures/Unintended Contact

 **Report all emergencies, suspicious activity, injuries, spills, and fires to UDPD by calling 911 or 302-831-2222 (cell phone).** 

Contact DEHS for advice on symptoms of chemical exposure, or assistance in performing an exposure assessment.

Report all work related accidents, injuries, illnesses or exposures to DEHS at 302-831-8475, within 24 hours and completing and submitting the First Report Form: http://www.udel.edu/ehs/generalhs/downloads/FirstReportInjury.pdf

Complete the EHS Near Miss form and submit to DEHS as necessary:
http://www.udel.edu/ehs/forms/downloads/nearmiss.pdf

Release/Leak Procedure

- When a gas leak occurs, ***personal safety should always come first***.
- Alert and clear everyone in the immediate area where the gas leak occurred.
- Open outside windows, if possible & safe to do so.
- Avoid breathing gas.
- Contact DEHS 302-831-8475 for release assistance.

Training of personnel

All personnel are required to complete the ***Lab Safety Training at http://www.udel.edu/ehs/training/training-req.html*** Furthermore, all personnel shall read and fully adhere to this SOP when working with Bunsen burners.

Certification

I have read and understand the above SOP. I agree to contact my Supervisor or Lab Manager if I plan to modify this procedure.

Name	Signature	UD ID #	Date

Prior Approval required – Is this procedure hazardous enough to warrant prior approval from the Principal Investigator? ☐ **YES** ☐ **NO**

Principal Investigator _____ **Revision Date** _____