

USE OF OPEN FLAMES IN BIOLOGICAL SAFETY CABINETS

“Sustained Open Flames To Be Prohibited In A BSC.”

As stipulated by the requirements.

RISKS

1. Disrupts airflow - compromising the protection of you and your research.
 - *Conflicting air flow patterns result in vortexing and turbulence.*
2. Damages the HEPA filter - compromising the cabinet's integrity.
 - *Destruction of filter and seals, leading to loss of containment.*
3. Causes excessive heat build-up within the cabinet.
 - *Inactivates/degrades components in media.*
 - *Makes an uncomfortable working environment.*
4. Presents a potential fire or explosion risk.
 - *Leaking of flammable gas poses a serious fire risk to the entire lab.*

OPTIONS

The use of an open flame in BSC is not allowed at the University of Ottawa. Alternatives for the need to disinfect instruments within a BSC exist:

<p>Use disposable sterile loops, needles and pipettes.</p>	 <p>Disposable sterile loops, needles and pipettes. <small>(Images from Fisher Scientific)</small></p>
<p>Autoclave instruments (loops, needles, pipettes, scissors etc.) before use.</p>	 <p>Centralized autoclave facilities are available at the Faculty of Science and the Faculty of Medicine.</p>

Replace the open flame with a micro-incinerator, or glass bead sterilizer.



Micro-incinerator
(Image from Fisher Scientific)



Glass bead sterilizer
(Image from Agnthos)



*If flame is absolutely necessary, use a touch-plate micro burner for on-demand flame.

(Image from Berkeley Lab)



Bunsen burner
(Image from Fisher Scientific)

Note: OCRO is available for consultation regarding alternatives to the use of open flames in BSC. Email: bio.safety@uottawa.ca.

REFERENCES

1. Public Health Agency of Canada.
2. Garrett, B. (2011). Open flame use in a Class II Biological Safety Cabinet.