

Flaming Inoculating Loops

This SOP applies to using a flaming loop with biohazardous materials at BSL2. Early microbiologists had to rely on open flames to ensure sterility while engaging in certain techniques on the bench. With the advancement of modern technology, including the introduction of the biosafety cabinet, the use of an open flame is almost always no longer necessary. Flaming loops used with biohazardous materials generates aerosols, potentially exposing personnel and the environment to infectious airborne droplets. Sterile disposable loops should be used in place of flaming whenever possible. Open flames inside a biosafety cabinet (BSC) can damage the HEPA filter and lead to buildup of flammable materials. In general, flaming is not necessary inside a BSC because the BSC provides a sterile environment. If a flame is required for the procedure, alternative flaming devices are available for use inside the BSC and require EH&S approval before use.

Procedure:

1. Place alternative flaming device in the biosafety cabinet and heat according to manufacturer's directions.
2. Sterilize your wire inoculating loop by passing it at an angle through the heat source until the entire length of the wire becomes glowing red/orange from the heat. Cool loop before selecting bacteria.
3. Reheat loop after use to sterilize it.
4. Disinfect a 12 inch diameter ring around the base of the heating device to kill any bacteria that was not killed during the heating phase.

Cautions & Considerations

- If disposable loops are used, a flaming device is not needed.
- Bunsen burners must not be used inside a BSC, use an alternative flame device.
- Follow manufacturer's directions for use of alternative flame device.
- Consult with EH&S before employing a flame inside a BSC.

Resources:

- [Biosafety Manual](#)
- [BMBL 5th Edition](#)