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BSC

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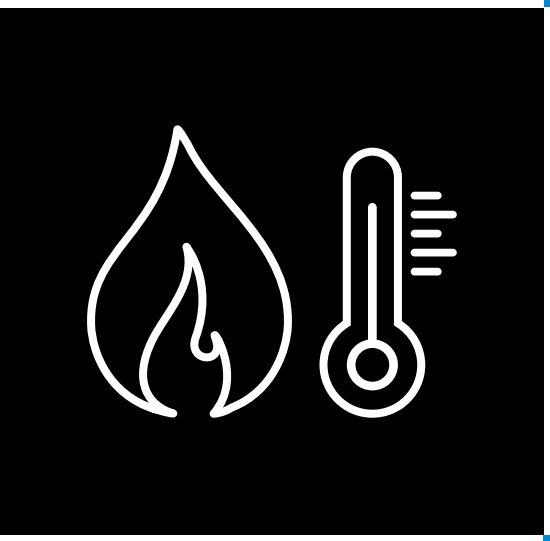
Does heat really affect protection?



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Baker Science Director

Scan the QR to watch the presentation given by Kara at the 2018 ABSA Scientific Session.

There are a lot of rules, 'guidelines', rumors and myths for using a biosafety cabinet, we'll be exploring:

Which are true? Which are not? Why?

If you have any BSC myths you want tested, send them to us! We'll get some answers

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Heat sources in a Biosafety cabinet compromise experimental and user protection

Keeping a contamination free environment in the laboratory has commonly been achieved by one of two ways:

1. Flame
2. Biosafety Cabinet (BSC)

It has been frequently observed that the two practices have been combined, where a heat source has been used within the BSC.

Also, it has been said that this practice could lead to a loss of BSC Containment, as flames require flammable gasses and cause hot air to rise.

We decided to put these practices to the test!

Several heat sources were evaluated in two sizes of BSC, using smoke for airflow visualization, particle counting for air cleanliness, and aerosol microbiological testing to show containment.

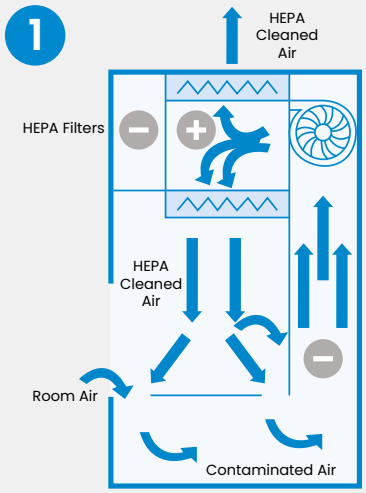

Figure 1.
Sideview diagram of a Class II Type A2 BSC.

Figure 2.
Heat Sterilizers. From left to right, the Bacti-Cinerator, Spirit Lamp, Standard Bunsen Burner, and High Heat Bunsen Burner.

Ultimately, it was shown that large flamed burners were found to have the most detrimental effects on the ability of the BSC to maintain containment, especially in the center of the work area, while the smaller heat sources were variable.

As a result, due to the variable outcome from location to location, and between burner types, it has been concluded that using a heat source within a BSC cannot be recommended!

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