Biological Safety Cabinets (BSCs) - guide for use

1. Selecting the wrong cabinet
2. Assuming that the previous worker decontaminated the cabinet after use
3. Overfilling the cabinet with work materials
4. Placing items in the front grill
5. Working too close to the front edge/front grill
6. Moving arms in & out of the cabinet
7. Discarding materials to a waste container outside the cabinet and not into one inside the cabinet
8. Not decontaminating materials before withdrawing them from the cabinet
9. Relying on the UV light to decontaminate the interior of the cabinet
10. Using Bunsen burners, vortexes & centrifuges inside the cabinet
11. Using volatile chemicals & radionucleotides inside the cabinet

BSCs are all about AIRFLOW, and that
***the interior compartment is potentially contaminated*.**

The following, from the Canadian Biosafety Standards and Guidelines (1st edition), has been modified.

General

BSCs provide effective primary containment for work with infectious material or toxins when they are properly maintained and used in conjunction with good laboratory work practices. Worker protection is provided through a continuous stream of inward air a HEPA filter, back into the containment facility. BSCs that are used as cage changing stations may require more frequent filter replacement, due to filter loading.

Class II (AS 2252.2)

In addition to providing protection to workers and the containment facility environment, Class II BSCs also provide work (or product) protection. Room air is drawn into the cabinet through the front opening, is drawn through HEPA filters either back into the cabinet or out into the containment facility.

Class III

Class III BSCs are fully enclosed to provide work protection, and maximum worker and environment protection. They are designed for work with high risk pathogens. All cabinet penetrations are airtight and the BSC is kept under negative pressure by a dedicated exhaust system. Manipulations are performed through attached heavy-duty long sleeved gloves, which prevent direct contact with biological material.

Installation (AS 2252.4)

Movements in the vicinity of BSCs can easily counteract the basic safety feature of the cabinets, which is the generation and maintenance of an air curtain at the front aperture. Changes in air movement at the face of the cabinet can be due to situations such as the location of the room air supply/exhaust grilles, opening/closing room doors, people walking behind the operator while using the cabinet, the operator pushing themselves away from the cabinet

Open flames are prohibited