Biosafety Cabinets

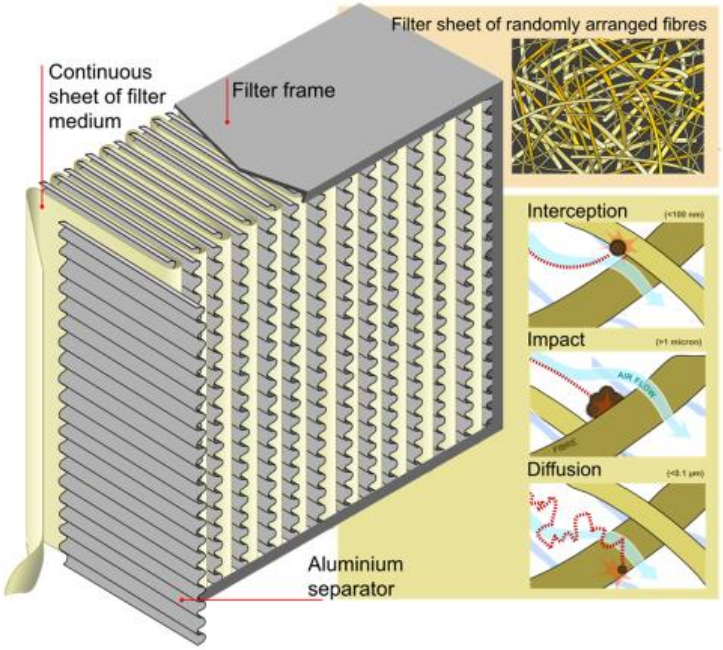
•**Biosafety cabinets** (BSC, biological safety cabinets) are enclosed, ventilated laboratory workspace areas designed to protect the user, products and surrounding environment from pathogens such as **viruses and bacteria**.

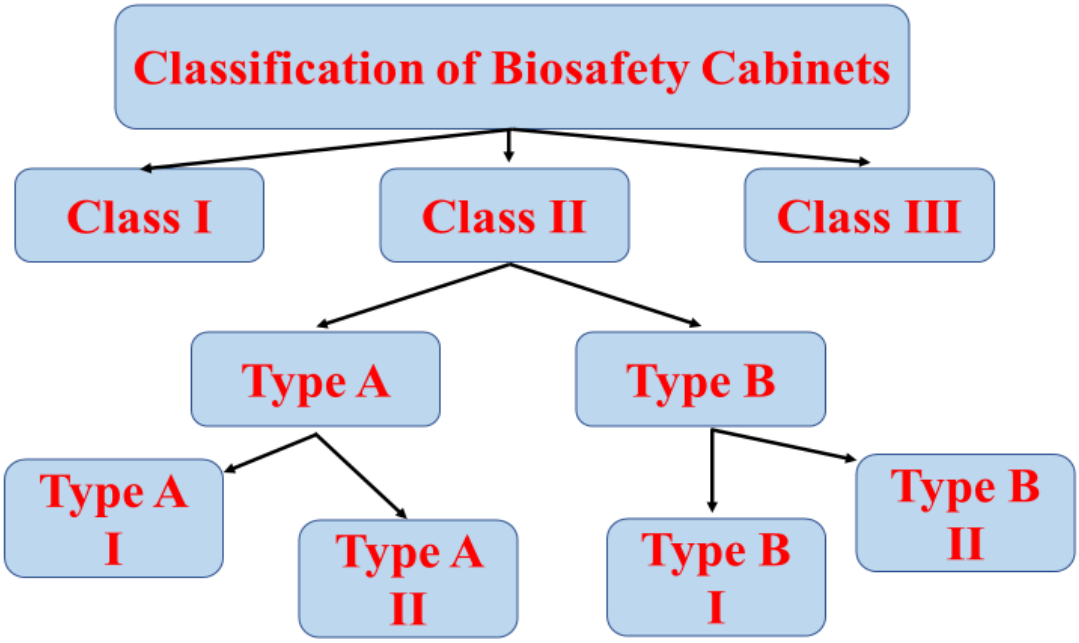
•All exhaust air is **High efficiency particulate air** (HEPA) filtered to remove hazardous agents such as viruses and bacteria.

•BSC are used in many laboratories including clinical and research labs.

HEPA Filter

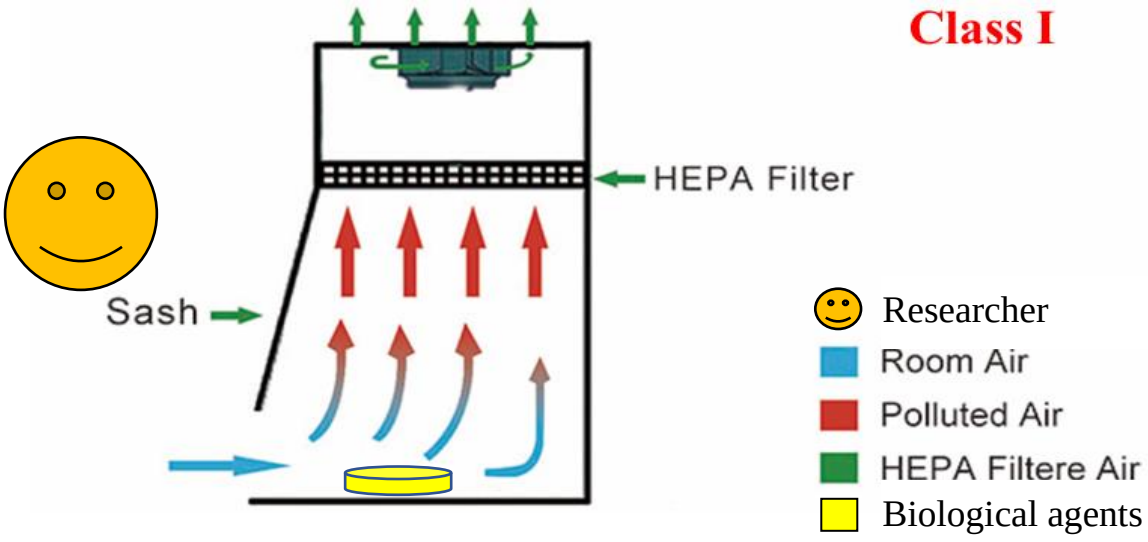
They are designed to remove a broad range of airborne contaminants, such as,
- Fine dust
- Bacteria (size ≤ 0.3µm)
- Pollen.





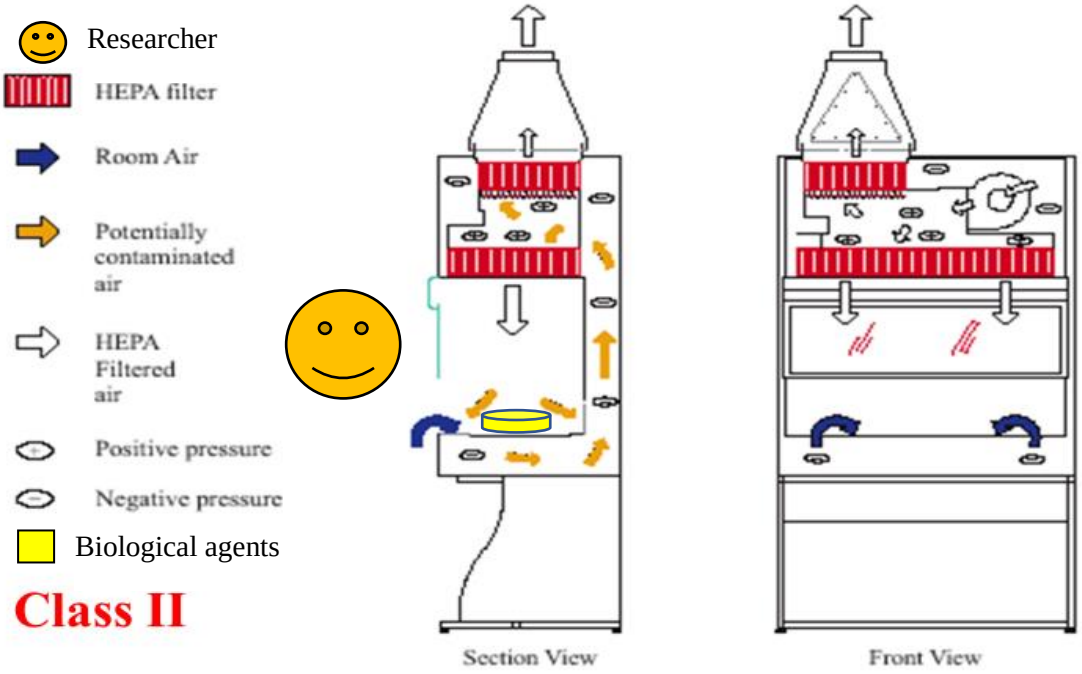
Class I

- Class I BSC are **partially enclosed** work stations that protect the **worker and the environment** from contamination.
- They are used in microbiology labs.
- They are suitable to use for biological agents from risk group 1, 2 or 3
- It has an open front (for access to the materials inside)
- Negative air pressure to pull air from outside of the cabinet.
- HEPA filter that air from inside the cabinet goes through, before returning to the lab or being vented outside, to remove the contaminants.



Class II

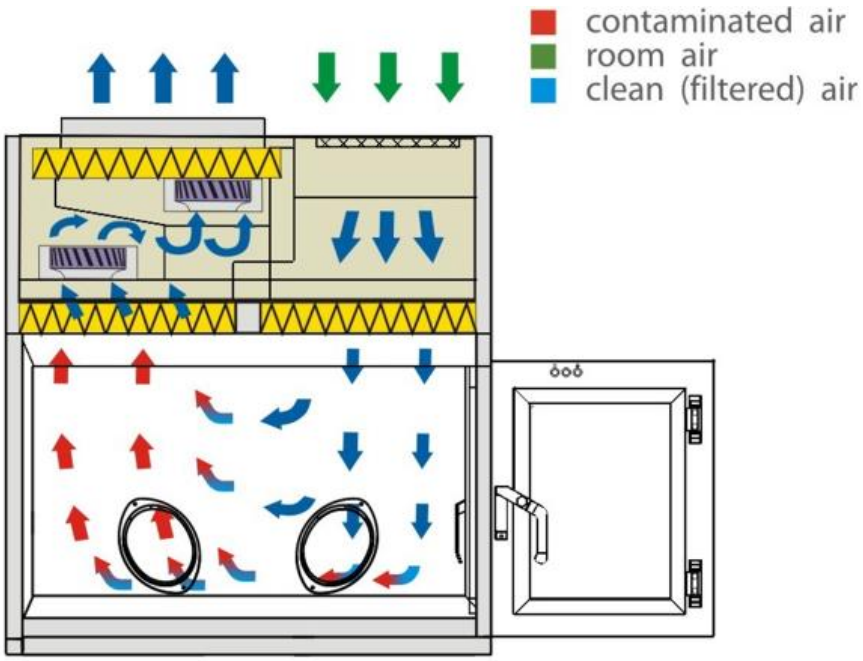
- A class II BSC is a **partially enclosed** workspace.
- It is designed to protect **the researcher and environment** from potentially dangerous samples, **and the samples** from contamination.
- Used in microbiology labs, pharmaceutical labs.
- It is safe for use with agents requiring Biosafety Level 1, 2 or 3 containment.



Class III

- Class III BSC (glove boxes) are **totally enclosed** work areas designed to provide **highest protection degree to the worker, environment, and the sample** from contamination.
- Researchers can manipulate materials inside the class III cabinet by using rubber gloves that are attached to the cabinet.
- They are safe for work requiring Biosafety Level 1, 2, 3 or 4 containment.

Class III



Anaerobic cabinet

•Anaerobic chambers (anaerobic glove boxes) are atmosphere control units designed to be used when **working with oxygen sensitive materials and/or general isolation control**.

•They are used in large clinical or research applications such as **cell culture** applications requiring the ability to **accurately control oxygen, carbon dioxide, temperature and humidity.**

Anaerobic cabinet

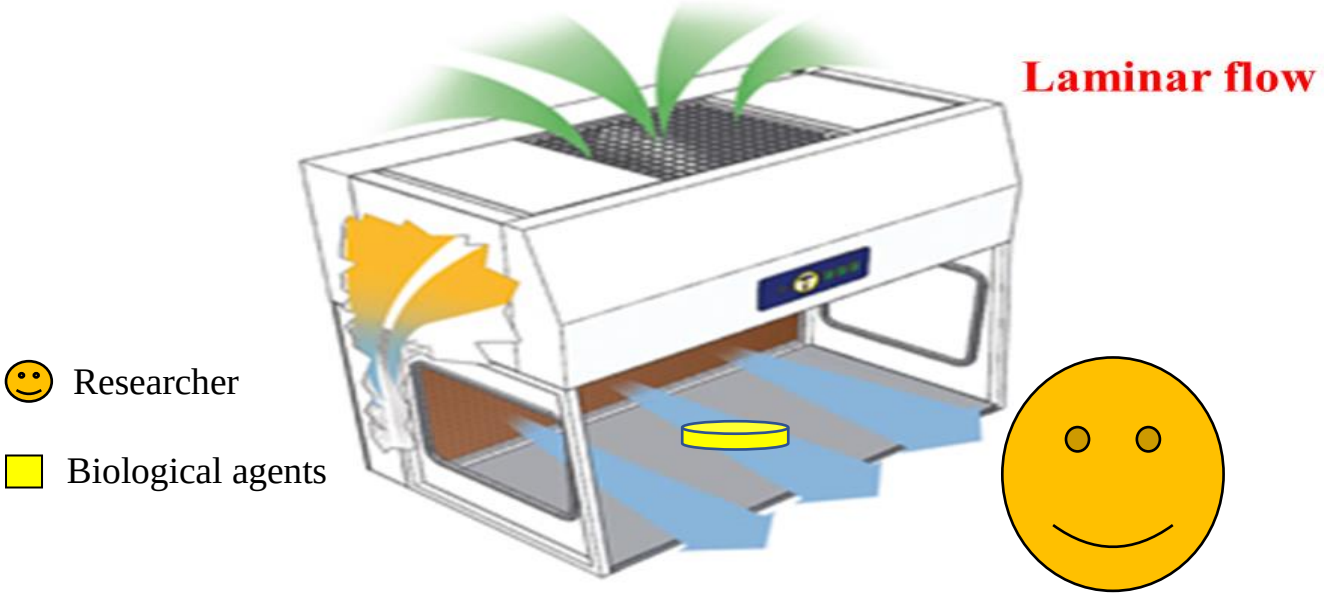
Laminar flow

•A **laminar flow cabinet (tissue culture cabinet)** is a **partially enclosed** bench designed to prevent contamination of tissue culture, biological samples or any particle sensitive materials.

•Air is drawn through a HEPA filter and blown in a very smooth, laminar flow **towards the user**.

•Due to the direction of air flow, **the sample is protected from the user** but **the user is not protected from the sample**.

•They use for Cell line, tissue culture



Working area of a cabinet