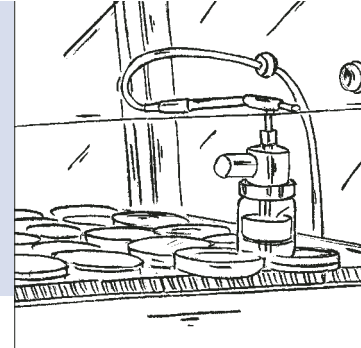


Microbiological testing: The world's leading test method for **safety functions**



■ Microbiological test method used in-house

BERNER International is the only manufacturer in Europe that uses the globally recognised microbiological method for testing the safety functions of safety cabinets in accordance with DIN EN 12469, DIN 12980 and NSF 49 in its own quality assurance, research and development laboratories.



Airflows are exposed to bioaerosols for extensive testing of safety functions in this worst-case scenario. A nebuliser disperses the bioaerosols from an apathogenic spore suspension of *Bacillus subtilis*. Different sampling methods are used to collect data on the contamination caused by leaking bioaerosols and unacceptable bioaerosol levels. The samples are incubated and the data analysed.

Only microbiological safety cabinets (MSC) that eliminate the contamination in these provocation tests quickly and safely correspond to the state of the art and meet our high quality standards. You can rely on microbiologically tested safety cabinets from **BERNER**.



Microbiological testing of personal protection.

■ Perfect personal protection

In terms of occupational safety, containment capability at the working aperture, i.e. personal protection, is the most important function of an MSC. In order to show that the number of biological substances passing through the working aperture remains within permitted limits, we test our safety equipment based on the following parameters:

- Dispersal of $5 - 8 \times 10^8$ CFU* in 5 minutes.
- No more than 10 CFU in six liquid samplers and 5 CFU in two slit-type air samplers.
- 5 or 15 test cycles.

*CFU: colony forming units

■ Reliable product protection

Product protection is essential for ensuring suitable manufacturing and experimental conditions. The number of particles coming from the surrounding area into the work area must not exceed permitted limits. Our product protection must pass the following tests:

- Dispersal of $5 - 8 \times 10^6$ CFU in 5 minutes.
- No more than 5 CFU on all sedimentation culture plates.
- 3 test cycles.



Microbiological testing of product protection.

■ Maximum cross contamination protection

Your product or experiment should be protected from cross contamination from the work area. The number of bioaerosols crossing the work area must not exceed permitted limits. The following tests show strict compliance with these parameters:



- Dispersal of $5 - 8 \times 10^4$ CFU in 5 minutes.
- No more than 2 CFU on all sedimentation culture plates.
- 6 test cycles.

Microbiological testing of cross contamination protection.



the safety system