

When is a horizontal & vertical laminar flow or biological cabinet needed?



Horizontal LAF: when is it needed?

Sector	Department
Food Industry	Quality control labs Cell culture labs
Hospitals	Pharmacy, Hematology, Genetic research, blood-bank, General Laboratory, etc...
Cosmetic Industry	Quality control labs Cell culture labs
Optics	Production Labs
Electronics/microelectronics	Production
Pharmaceutical Industry	Quality control labs Sterilization
Veterinary Industry	Quality control labs Sterilization
Universities and R&D centers	Research labs

Only for manipulation of non biohazard samples

Vertical LAF : When is it needed?

Sector	Department
Food Industry	Quality control labs R&D labs
Hospitals	Hematology labs Immunology (cellular culture) Genetics (cellular culture) PCR Techniques R&D labs (samples without biological risk)
Pharmaceutical Industry	Quality control labs R&D labs
Veterinary Industry	Quality control labs R&D labs
Universities & R&D Centres	Pharmacy, Medicine, Veterinary, Biology... Department labs

Only for manipulation of non biohazard samples

BioSafety Cabinet Class II : when is needed?



BSL I II & III under product protection conditions **Pharmaceutical Industry, Hospitals, Veterinary Industry, Universities & R&D Centers**

BSL	Practices	Primary barriers	Secondary barriers
BSL1	Standard microbiological standards	None required	Open bench top sink required
BSL2	BSL 1 practices plus: <ul style="list-style-type: none"> • Limited access • Biohazard warning signs • "Sharps" precautions • Biosafety manual defining any needed waste decontamination or medical surveillance policies	<ul style="list-style-type: none"> • Class I or II BSC's or other physical containment services used for all manipulations of agents that cause splashes or aerosols of infectious materials • Others: Protecting lab clothing, gloves, respiratory protection... 	BSL 1 plus: <ul style="list-style-type: none"> • Autoclave available
BSL3	BSL 2 practices plus: <ul style="list-style-type: none"> • Controlled access • Decontamination of all waste • Decontamination of lab clothing before laundering <ul style="list-style-type: none"> • Baseline serum 	<ul style="list-style-type: none"> • Class I or II BSC's or other physical containment services used for all open manipulations of agents • Others: Protecting lab clothing, gloves, respiratory protection... 	BSL 2 plus: <ul style="list-style-type: none"> • Physical separation from access corridors • Self closing, double door access • Exhausted air not recirculated • Negative airflow into laboratory
BSL4	BSL-3 practices plus: <ul style="list-style-type: none"> • Clothing change before entering • Shower on exit • All material decontaminated on exit from facility	<ul style="list-style-type: none"> • All procedures conducted in Class III BSCs or Class I or II BSC's in combination with full-body, air-supplied, positive pressure personnel suit. 	BSL 3 plus: <ul style="list-style-type: none"> • Separate building or isolated zone • Dedicated supply and exhaust, vacuum and decon systems • Other requirements outlined in the text

Units for manipulation of biohazard samples; where you must protect user & environment, but also the samples