

Microorganism Biosafety Level 1 and 2 Standard Microbiological Practices

Biosafety Level of Microbiologics Products _____

All microorganism products distributed by Microbiologics have a biosafety level (BSL) of 1 or 2. Microbiologics adheres to the BSL designation used by the culture collection from which it obtained the microorganism strain. To find out the BSL of a catalog number, go to the Microbiologics website and use the search box to bring up information about the microorganism.

It is imperative to handle microorganisms safely. Many of the requirements for using BSL 1 and 2 microorganisms are listed below. The requirements are based on the CDC manual, Biosafety in Microbiological and Biomedical Laboratories (BMBL), and the WHO manual, Laboratory Biosafety Manual. Microbiologics recommends customers consult these manuals which are available at no cost online.

BSL-1 Risk _____

BSL-1 organisms pose no, or low, risk to individuals and communities. BSL-1 organisms may cause disease in individuals with immune systems that are suppressed or compromised.

Features of a BSL-1 Laboratory _____

- There is a sink for hand washing.
- It is designed for easy cleaning.
- Protective clothing such as lab coats or uniforms are available.
- The laboratory supervisor is trained in microbiology or a related science.
- The standard microbiological practices listed below are followed.

BSL-1 Standard Microbiological Practices _____

- Restrict access to laboratory.
- Wear gloves.
- Thoroughly wash hands before leaving the laboratory, after handling viable material, and after removing gloves.
- Do not eat, drink, store food, smoke, apply cosmetics, or handle contact lenses in the laboratory.
- Do not use mouth to pipet.
- Dispose of sharps in a biohazard, puncture-resistant container.
- Minimize splashes and aerosols. Wear eye protection when splashes are possible.
- Decontaminate work surfaces after work is completed or if viable material is spilled.
- Decontaminate all cultures and stock microorganisms. If materials are to be transported outside of the laboratory for decontamination, place them in a sturdy, leak-proof container.

Follow local, state and country transport regulations if decontamination is to take place outside of the facility.

- Place a sign with the universal biohazard symbol at the entrance to any area where microorganisms are sorted or handled.
- Maintain a pest control program.
- Train laboratory personnel on safe handling and risks of biohazardous material annually. Inform women of childbearing age of the risk of handling certain strains such as *Listeria monocytogenes*.

BSL-2 Risk _____

BSL-2 microorganisms pose a moderate risk of individual infection, but a low risk of community infection.

Features of a BSL-2 Laboratory _____

- There is a sink for hand washing.
- It is designed for easy cleaning.
- It contains a biosafety cabinet and an eyewash station.
- Personnel are trained in handling pathogenic microorganisms.
- Access to laboratory is restricted when microorganisms are being handled.
- A method for sterilization of laboratory wastes is available.
- The standard microbiological practices listed below are followed.
- Inward airflow and a controlled ventilating system are desirable.

BSL-2 Standard Microbiological Practices _____

In addition to BSL-1 standard practices adhere to the following for BSL-2 microorganisms:

- Advise all personnel entering the laboratory of potential hazards.
- Provide a biosafety manual defining how to decontaminate biohazardous material.
- Train laboratory personnel on safe handling of biohazardous material.
- Place all hazardous material in a biohazard container. Ensure that the container does not leak.
- Routinely decontaminate laboratory equipment.
- Do not permit animals or plants in the laboratory if they are not work-related.
- Carry out procedures, which pose a risk of splashing or spraying aerosols, in a biological safety cabinet or other primary containment equipment.
- Wear gloves and protective clothing such as laboratory coats, gowns or uniforms.
- Remove gloves and protective clothing and wash hands before leaving laboratory.

References _____

Center for Disease Control (CDC): 1999. *Biosafety in Microbiological and Biomedical Laboratories (BMBL)* 5th Edition

Noble, M. *Prevention and Control of Laboratory Infections. Manual of Clinical Microbiology*, 10th Edition. 2011.

World Health Organization (WHO): 2004. *Laboratory Biosafety Manual*, 3rd Edition.