

Biotechnology scientists assignment

[Technology](#)



**ASSIGN
BUSTER**

Laboratory Safety Persons carrying out the protocols in the laboratory may encounter various hazardous or potentially hazardous materials including: radioactive substances; toxic chemicals and carcinogenic, mutagen, or iatrogenic reagents; and pathogenic and infectious biological agents. Most governments regulate the use of these materials; it is essential that they be used in strict accordance with local and national regulations.

Cautionary notes are included in many instances throughout the manual, and mom specific guidelines for working safely with chemicals are provided below (and references therein). However, we emphasize that users must proceed with the prudence and precautions associated with good laboratory practice, under the supervision of personnel responsible for implementing laboratory safety programs at their institutions and in compliance with designated guidelines of federal, state, and local officials. It is not possible in the space available to list all the precautions to be taken when handling hazardous chemicals.

Many texts have been written about laboratory safety; see Literature Cited for a selected list of examples. Obviously, all national and local laws should be obeyed as well as all institutional regulations. Controlled substances are regulated by the Drug Enforcement Administration. By law, Material Safety Data Sheets must be readily available. All laboratories should have a Chemical Hygiene Plan [CUFF Part 1910. 1450] and institutional safety officers should be consulted as to its implementation. Help is (or should be) available from your institutional Safety Office. Use it. Chemicals should be stored properly.

For example, flammable chemicals (e. G. , ethanol, methanol, acetone, methyl ethyl ketene, petroleum distillates, toluene, benzene, and other materials labeled flammable) should be stored in approved flammable storage cabinets, and flammable chemicals requiring refrigeration should be stored in explosion-proof refrigerators. Oxidize should be segregated from other chemicals, and corrosive acids (e. G. , sulfuric, hydrochloric, nitric, periodic, and hydrofluoric acids) should also be stored in a operate cabinet, well-removed from the flammable organics. Facilities should be appropriate for the handling of hazardous chemicals.

I particular, APPENDIX B hazardous chemicals should only be handled in chemical fume hoods, not in laminar flow cabinets. The functioning of these hoods should be periodically checked. Laboratories should also be equipped with safety showers and eye-washing facilities. Again, this equipment should be tested period make sure that it functions correctly. Other safety equipment may be require depending on the nature of the materials being handled. In addition, researchers should be trained in the proper procedures for handling hazardous chemicals as well as other areas of laboratory operations, e. . , handling of compressed gases, use of cryogenic liquids, operation of h voltage power supplies, etc. Before starting work, have a plan for dealing with spills or accidents; coming up with a good plan on the spur of the moment is difficult. For example, have the appropriate decontaminating or neutralizing agents pre close at hand. Small spills can probably be cleaned up by the researcher. In the case of larger spills, he area should be evacuated and help sought from those experienced and equipped for dealing with spills, e. G. , your ins safety department.

Protective equipment should include, at a minimum, eye protection, a lab coat, and gloves. Sandals, open-toed shoes, and shorts should not be worn. In certain circumstances other items of protective equipment may be necessary, e. G. , a face shield. Different types of gloves exhibit different chemical resistance properties; listings of these properties are available (Forgoers and Keith, 1 Gloves should, however, be regarded as the last line of offense and should be changed if they become contaminated, because many types of chemicals pass relatively freely thro rubber.