

University of Massachusetts/Amherst PPE: Personal Protective Equipment



The following personal protective equipment must be available for laboratory personnel who are working with hazardous materials. It is also appropriate for laboratories to provide safety glasses for visitors and a sign indicating that eye protection is required where hazardous materials are in use.

Personal protective equipment is *not* supplied by EH&S. However, EH&S will assist with recommendations on specific types and uses of protective equipment.

Eye and face protection must be worn in the laboratory when there is a potential for contact with hazardous chemicals or other agents (e.g., non ionizing radiation, biohazardous materials, flying objects.) Please note that all protective eye and face wear should meet American National Standards Institute ANSI Z 87.1, 1989 standards. Visitors' safety glasses are not acceptable for any laboratory procedures. (Contact EH&S for standards).

The type of protection needed depends on the hazard (e.g. chemical, UV, laser, impact). For instance, when laboratory chemicals are used, approved eye protection is mandatory and **chemical splash goggles** are recommended. Goggles should be worn over eyeglasses or **prescription safety glasses** with side shields should be worn. Ordinary prescription glasses do not meet these standards.

When working with severely corrosive or strongly reactive chemicals, with glass wear under reduced and elevated pressures, in combustion and other high temperature operations, and whenever there is a possibility of an explosion or implosion both eye and skin protection are needed and **face shields** are necessary in addition to approved safety glasses. Special safety glasses and face shields may also be required for work with UV light, lasers, and other types of radiation which is absorbed by the eyes or skin (chemical splash goggles are not adequate for these types of work). Please consult with the Radiation Safety group at EH&S.

Laboratory coats and substantial shoes (not open sandals) should be worn when performing laboratory work. Depending on the type of work, additional personal protective equipment, such

as **gloves and aprons** may be necessary. Coats, aprons and gloves should be removed when leaving the laboratory. Gloves should be replaced immediately if they are contaminated or torn. In situations involving extremely hazardous chemicals and/or biologicals, double gloves are recommended. Gloves should be carefully selected for their degradation and permeation characteristics to provide proper protection. The thin, vinyl, or nitrile gloves, popular for their dexterity are not appropriate for highly toxic chemicals or solvents. Prior to using chemicals, consult chemical compatibility information that is provided in manufacturer's catalogs to help you in selecting the proper gloves as well as other protective clothing. More information on specific types and uses of personal protective apparel is available from EH&S.

The use of air-purifying **respirators** for routine laboratory work is not recommended. Respirators are discouraged because they protect only the wearer and require periodic medical monitoring, specific training and fit testing before they can be worn effectively. Properly operating **laboratory fume hoods** provide the best overall protection from chemical hazards, and biological safety cabinets provide the best overall biological protection in the laboratory. That being said, there is a respiratory protection program which addresses the needs of those individuals that do require air-purifying respirators.