

## OEHS SAFETY BULLETIN

# PERSONAL PROTECTIVE EQUIPMENT

Employees shall receive training concerning the hazards of the chemicals, processes, or instruments used in their work and the measures that they can take to protect themselves from these hazards. Material Safety Data Sheets or other references should be consulted for information on the type of protective measures required for the particular work being performed. Employees should wear appropriate clothing for their safety in performing their job duties.

### Clothing

Clothing that leaves large areas of skin exposed is not suitable when using hazardous chemicals in laboratories. Jewelry and loose clothing, e.g. ties, baggy pants and coats are also inappropriate. To minimize the risk when working with hazardous chemicals, the following personal protective clothing are recommended:

- Lab coats or coveralls should be worn buttoned and with sleeves rolled down, constructed of cotton fabric and be nonflammable, where necessary. Required if personal clothing leaves large areas of skin exposed, e.g. shorts or short sleeve shirts.
- Rubber coated aprons can be worn to protect against corrosive liquids and may be worn over a lab coat or coveralls. Required if personnel are at risk of splashes from corrosive liquids.

### Foot Protection

Shoes which fully cover the feet must be worn in the laboratory. Sandals or perforated shoes are never appropriate, and the wearing of cloth shoes may not be appropriate. Chemical resistant shoe covers can be obtained which may be worn when appropriate shoes are not available. If work is going to be performed that includes moving large and heavy objects such as 55 gallon drums, steel-toed shoes should be considered.

### Personal Protective Equipment Must Be Provided By Departments

Supervisors/ P.I.s shall provide employees with all other necessary personal protective equipment (goggles, gloves, respirator, etc.) as needed to protect employees from chemical or radiation exposure.

### Eyewear and Face Protection

Persons, including visitors, who enter a laboratory where hazardous chemicals are used or stored must wear safety glasses. Persons working with hazardous chemicals must wear safety glasses with side shields (minimum requirement), splash-proof goggles, face shields in combination with goggles or side-shield safety glasses, or other equivalent specialized eye protection. Safety glasses made to an individual's prescription are the financial responsibility of the employee.

Each lab where work with hazardous chemicals occurs should provide employees with:

- safety glasses with side shields that conform to ANSI standard Z87.1-1989,
- impact goggles that include splash protection (indirect vents or non-vented),
- full-face shields that also protect the throat, and/or
- specialized eye protection if applicable, e.g. protection against ultraviolet light or laser light.

The following protection should be utilized as appropriate:

- chemical splash hazard—goggles with splash-proof sides.
- danger of flying particles—impact goggles, or full-face shields with side shielded safety glasses for maximum impact protection.
- chemical splash (esp. corrosives) and danger of flying particles—both full-face shield and splash-proof impact goggles.

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Note: Contact lenses should not be worn in a laboratory because they can trap contaminants beneath them, reducing or eliminating the effectiveness of flushing with water from an eyewash. If it is necessary to wear contact lenses for medical reasons, safety glasses with side shields or safety goggles must be worn over the contact lenses.

## **Gloves**

Gloves must be worn whenever handling hazardous chemicals. Appropriate gloves must be provided for all laboratory employees.

- Any glove can be permeated by chemicals. The rate at which this occurs depends on the composition of the glove, the chemicals present and their concentration, and the exposure time to the glove. Select gloves which provide the protection you need. Glove compatibility charts may be found in catalogues where gloves are ordered.
- If direct chemical contact occurs, replace gloves regularly throughout the day. Wash hands regularly and remove gloves before answering the telephone or opening the door to prevent the spread of contamination.
- Butyl, neoprene, and nitrile gloves are resistant to most chemicals, e.g., alcohols, aldehydes, ketones, most inorganic acids, and most caustics. Disposable latex and vinyl gloves protect against some chemicals, most aqueous solutions, and microorganisms and reduce risk of product contamination. Note: Some people may develop an allergic reaction to latex.
- Leather and some knit gloves will protect against cuts, abrasions, and scratches, but not against chemicals.
- Temperature-resistant gloves protect against cryogenic liquids, flames, and high temperatures.

## **Respiratory Protection**

Persons who may be exposed to harmful mists, smoke, particulates, vapors, oxygen deficient atmospheres, or other hazards must be provided respiratory protection. Whenever possible, engineering controls, e.g. local ventilation, should be utilized to provide this protection. If engineering controls are not otherwise available, a respirator must be provided and used.

Any person required to wear a respirator on the job must be instructed and trained prior to using the equipment. The training must include the nature, extent, and effects of the respiratory hazards to which he may be exposed as well as signs and symptoms of exposure. For respirator fit testing and training, please call the Office of Environmental Health and Safety, Occupational Health and Campus Safety Division, at 471-3511

Before a person is required to wear a respirator on the job, a determination should be made that the individual is physically fit and able to wear a respirator. In some cases it may be necessary for a physician to make this determination.

## **Personal Protective Equipment Must Be Used**

The laboratory supervisor must ensure that appropriate personal protective equipment as described above is worn by all persons, including visitors, in areas where chemicals are stored or handled.

For more information concerning personal protective equipment to be used to avoid exposure to hazardous chemicals in a laboratory call the Office of Environmental Health and Safety, Chemical and Laboratory Safety Division, at 471-3511. Web site: <http://www.utexas.edu/business/oehs>