

## Standard Operating Procedure # *Personal Protective Equipment*

<b>Facility:</b>	Polymer Reaction Engineering Laboratory Department of Chemical Engineering
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<b>Scope:</b>	This SOP details the Personal Protective Equipment (PPE) requirements for work in the Polymer Reaction Engineering Laboratory.
<b>Last Revision:</b>	3/9/2012

### General:

The Laboratory Director has conducted a risk assessment for hazards, selected appropriate PPE and provided equipment to employees. Use of PPE as described in this procedure and in the PPE program will be enforced in this Laboratory by the Laboratory Supervisor/Principal Investigator (LS/PI). This SOP identifies PPE needs and requirements in this laboratory.

### Procedures:

- A. Eye Protection
1. Safety glasses must meet the requirements of ANSI Z87.1 (latest edition).
  2. Safety glasses with side shields or chemical safety goggles are required for employees or visitors who enter the laboratory and are potentially exposed to chemical or mechanical eye hazards.
  3. Face shields with safety glasses underneath or chemical splash goggles are required when transferring or pouring acidic or caustic materials with exceptions as noted below.
  4. Chemical splash goggles must be worn over contact lenses.
  5. Before each use, eye and face protection is to be inspected for damage (e.g., cracks, scratches), cleanliness and proper operation. If deficiencies are noted, the equipment should be cleaned, repaired, or replaced before use.
  6. The following eye protection will be used for the indicated tasks:

Task	Eyewear Type	Location
Polymerization under high temperature and pressure or under vacuum	Safety Glasses with side Shields	Counter in LG Lab
Diluting strong acids or bases	Splash proof goggles or Safety glasses with side shields	Counter in LG Lab
Any other chemical-handling in lab	Safety glasses with side shields	Counter in LG Lab

- B. Gloves

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1. Chemical resistant gloves shall be worn whenever the potential for hazardous skin contact exists. The material safety data sheet for the substance or glove selection charts should be consulted to determine appropriate glove type/material. Glove selection resources will be consulted when employees are unsure what type of glove is necessary for protection against specific chemicals. DES maintains glove selection and MSDS resources on its website at:

<http://www.umd.edu/DES/os/pp e/glove/index.html>  
<http://www.inform.umd.edu/des /os/rtk/msds/index.html>

2. Lab-specific standard operating procedures specify glove requirements for identified routine operations.
3. Gloves shall be removed before touching other surfaces (e.g., doorknobs, faucet handles, and keyboards).
4. Heat resistant gloves shall be used for handling hot objects. Asbestos-containing gloves will not be used.
5. Abrasion resistant gloves (such as leather) should be worn for handling broken glass or for other potentially abrasive situations. They should NOT be used for handling chemicals. Gloves are not necessary if broken glass can be picked up with forceps, dustpan, etc.
6. Before each use, gloves are to be inspected for damage and contamination. If deficiencies are noted, the gloves should be cleaned, repaired, or replaced before use.
7. The following types of gloves will be used for the indicated tasks:

Task	Glove Type	Location
Preparing catalyst	Powder Free Nitrile/Latex Gloves	Shelves in PREL room
Polymerization	Powder Free Nitrile/Latex Gloves	Shelves in PREL room
Autoclaved Materials	Oven Gloves	Counter in LG Lab
Vacuum Oven use	Oven Gloves	Counter in LG Lab
Strong acid / base handling	Powder Free Nitrile/Latex Gloves	Shelves in PREL room
Any other chemical handling in lab	Powder Free Nitrile/Latex Gloves	Shelves in PREL room

#### C. Footwear

1. No sandals or open-toed shoes are to be worn by employees entering UM lab facilities. Shoes should have non-skid soles and should have a reasonable heel height.
2. Safety shoes must be worn if there is potential for injury from heavy objects (e.g., handling drums, cylinders). The LS/PI is responsible for procuring safety shoes if they are determined necessary.
3. Safety shoes must meet the requirements of ANSI Z41 (latest issue).

#### D. Clothing

1. Laboratory coats or other suitable work apparel shall be worn by laboratory employees whenever there is potential for chemical exposure in the work area.
2. Clothing must be cleaned regularly. If a spill occurs on the clothing, it must be decontaminated before reuse. Lab clothing should not be washed with other household clothing.
3. Disposable clothing should be considered when working with highly toxic materials, carcinogens, mutagens, or teratogens. The LS/PI is responsible for determining the need for disposable clothing.

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4. Before each use, clothing is to be inspected for damage, deterioration, contamination. If deficiencies are noted, the clothing should be cleaned, repaired, or replaced before use.
5. Shorts will not be worn in the laboratory.

**Training:**

Employees using PPE must be trained in proper selection, care and use. The LS /PI is responsible for providing training for protective eyewear, footwear, gloves and clothing.