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Personal Protective Equipment
Lab Policy

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Personal protective equipment is not to be relied on as the only means to provide protection against hazards. But in conjunction with guards, engineering controls and *sound laboratory practices*.

1.0 Responsibilities:

1.1 It is every one's responsibility to understand and adhere to all Solid State Electronic lab policies and procedures.

1.2 Failure to follow any of the lab policies or procedures may lead to removal from the lab.

2.0 **References:**

2.1 29 CFR 1910.132 Personal Protective Equipment

2.2 R.40813301-R40813398, Michigan General Industry Safety Standard

2.3 ANSI Z87.1-1989, American National Standard Practice for Occupational and Educational Eye and Face Protection

2.4 Material Safety Data Sheets (MSDS)

2.5 OSEH, http://www.umich.edu/~oseh/, Guide number: IHS012 Personal Protective Equipment, General

3.0 **Engineering and Administrative Controls:**

3.1 N/A

4.0 **Eye and face protection:**

4.1 Contact lens ***cannot*** be worn in any of the Solid State laboratories.

4.2 Appropriate eye protection must be worn at ALL times. The only exception to this rule is when looking into a microscope.

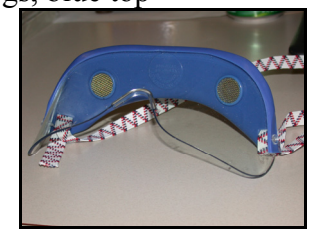
4.2.1 When looking in a microscope, place eye protection in your lap or hold in your hand, so that you remember to place back on when through with the scope.

4.3 Eye protection must meet ANSI Z87.1-1989 code. All safety glasses must have 87.1 printed on them.

4.3.1 Safety glasses with top and side shields

4.3.2 Safety glasses with top and side shields that fit over prescription glasses.

4.3.3 Visor gogs, blue top



4.3.4 Safety goggles

4.3.5 Prescription safety glasses with top and side shields.
4.3.5.1 http://www.umich.edu/~oseh/ppeappc.pdf

4.3.6 Placing eye protection on top of your head is inappropriate.

4.4 Face shield: shall be worn anytime an individual is working with toxic or corrosive chemicals.

4.4.1 Face-shields are considered a secondary form of protection

4.4.2 The face shield shall be worn over Visor-gogs or safety goggles, not safety glasses.

5.0 **Body Protection:**

5.1 No dangling jewelry is to be worn in the clean room.

5.2 Shoes must have a closed heel and toe. Toes must be completely covered.

5.3 High heels are not permitted.

5.4 You must wear long trousers, or the equivalent. No shorts.

5.5 Gowning

5.5.1 Put on blue booties and enter the gowning room.

5.5.2 Retrieve a mask and place over bridge of nose and mouth.

5.5.3 Bouffant cap must cover all hair and ears.

5.5.4 Place hood over top of bouffant cap.

5.5.5 Coverall, avoid having any part of suit touch the floor while stepping into it.

5.5.6 Tuck hood into coverall and zip fully.

5.5.7 Over boots: Do not step on bench to tie your boots. Also do not have over boot touch the "dirty" side of bench.

5.5.7.1 Place foot into boot and swing leg over the bench, you are now stepping on the "clean" side of bench. Tie boot, then repeat for next foot.

5.5.8 Place safety glasses on.

5.5.9 Enter clean room and retrieve the proper type and size glove.

5.6 De-Gowning

5.6.1 To degown, start from the bottom and work your way up.

5.6.1.1 Gloves/over boots/coverall/safety glasses/hood/bouffant cap/etc.

5.6.2 Store everything in your locker. All dirty items (over boots) will go in locker first, with cleaner items (hood, bouffant cap) on top.

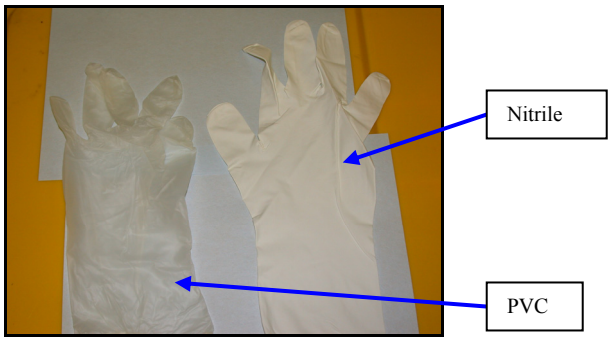
5.6.3 Once you leave the lab, wash your hands.

5.7 Acid resistant aprons: Shall be worn any time an individual is working with toxic or corrosive chemicals.

5.8 Vinyl sleeve covers: should be worn over the cuff of your glove.

5.8.1 When removing sleeve covers, ensure that there are NO chemicals on your gloves before sliding off sleeve covers.

6.0 **Hand Protection:**



6.1 Use the appropriate glove for the task.

6.2 Gloves must be worn at all times in the clean room.

6.2.1 Do not leave clean room with gloves on.

6.2.2 Always wash hands after you leave the clean room.

6.3 PVC: These should be worn for all non-process work.

6.3.1 Non-Process work: Growth monitoring, thin films bay, plasma bay, SEM or test/characterization.

6.3.2 Do NOT use for chemicals.

6.3.3 Color: clear

6.4 Nitrile: Are latex-free and used for wet processes and handling of wafers between process steps.

6.4.1 Color: white or blue

6.5 Trionic gloves: Shall be worn over the latex gloves when using any toxic or corrosive chemicals.

6.5.1 Color: yellow

7.0 **Respirator:**

7.1 The university requires a lung function physical before anyone is allowed to wear any type of respirator.

7.2 All respirators MUST be obtained through OSEH. Using a respirator purchased from a building supply store is unacceptable.

7.3 See policy on Respirator for proper use.

8.0 **Care of PPE:**

8.1 If a splash or drip of chemical is suspected during your work, wipe off your protective gear immediately.

8.2 Damaged or worn out equipment must be replaced.

8.3 Before wearing any PPE, give it a visual inspection. Check for tears or holes.

8.3.1 Test gloves (Trionic) for pinholes, by blowing glove up with air and checking for leaks.

8.4 Before removing gloves, always wash well with DI water. Wash only the outside of the gloves.

8.5 Concentrate on keeping the outer portion of the gloves away from exposed skin. This can transfer chemicals on to your skin. It can also transfer organics on to your wafer.

9.0 **Accidents:**

9.1 Report all accidents (injuries, spills, fires) to the SSEL manager or other SSEL staff. For emergencies during non-business hours, call the SSEL on call member at (734) 764-4127 or the Dept. of Public Safety at (734) 763-1131.