Standard Operating Procedure

LOCAL SAFETY OFFICER: Sarah Koester
PRIMARY USERS: Everyone in group
ROOM: ESL 216A (Clean Facility Microfluidics Fab)
P.I.: David A. Weitz
DATE: May 2007

TYPE OF RESEARCH: Microfluidic fabrication facility

HAZARDS: UV lamp

PROTECTIVE CLOTHING THAT MUST BE USED FOR ALL WORK:

- **Safety Glasses** - Must be employed when working with any process that could throw off debris. This includes spin coating equipment.
- **Face Shields** - Must be employed when working with any potentially violent reactions or when working with glassware that is under pressure or vacuum. Should also be worn when etching with Hydrofluoric Acid. Check MSDS section on protective clothing for each chemical in use. The correct antidote should always be kept nearby whenever HF is in use. The antidote is available in the Chem stock room.
- **Safety Goggles** - Must be worn when working with any chemicals that could cause eye damage. Check the MSDS section on protective clothing for each chemical in use. The MSDS are on the web at (http://www.uos.harvard.edu/cgi-bin/msds/msds_bl.pl) and some are also placed in the cabinet in ESL 226.
- **Aprons** - Should be worn when working with corrosives such as strong acids or bases. Check the MSDS section on protective clothing for each chemical in use.
- **Gloves** - Must be worn when working with any chemicals or cryogens. Proper glove selection is critical. Check the MSDS for all

chemicals in use. At the Safety Committee web site (http://www-safety.deas.harvard.edu) under "Safety Committee Services" can be found a listing of glove type vs. chemical. If there is any question, see Lenny Solomon or your local safety officer.

GENERAL HOUSEKEEPING RULES:

1. Do not enter the “clean” section of the room without donning the proper clean suit.
2. Be respectful of other people when using shared facilities and clean up after yourself.
3. Returned borrowed tools ASAP to the tool chest from which they came.
4. Any glassware should be cleaned and hung to dry and/or put away before leaving the room.
5. Clutter should be avoided.
6. Please close the boxes containing the pipette tips after use.

WASTE DISPOSAL RULES:

1. All glass should be disposed in an appropriate Broken Glass Waste Box.
2. All plastic should be disposed in an appropriate Plastic Waste Box.
3. ALL sharps (including razor blades and syringes) are considered a biohazard and must be disposed of in an appropriate Sharps Collection container.
4. Everyone must have current Hazardous Waste Disposal training which includes the initial "live" training by EH&S and annual "on line" refresher training.
5. All chemical waste must have a university provided Hazardous Waste Tag on it. The tag should be properly filled out with **all of the information except the date** when the container **first** has waste put into it. The date is filled in when the container becomes FULL. Writing on the container itself is not acceptable.
6. **Satellite Accumulation Areas** are located in the fume hood in 215. All Hazardous Waste requires secondary containment. Do not store incompatible chemicals (i.e. acids and

bases) in the same secondary containment tray and **should be stored** in in the SAA. Do not store incompatible chemicals (i.e. acids and bases) in the same secondary containment tray.

7. When a waste bottle is filled, the Hazardous Waste Tag must be DATED and EH&S must be called at once for waste pick-up. The number to call is on the green SAA sign posted in the area.

CHEMICAL STORAGE:

- Chemicals should be stored in the appropriate safety cabinet (flammables, acids, bases) in ESL 215. No chemical should be left in a fume hood unless actively in use. The exception is Hazardous Waste which may be stored in a fume hood designated for this purpose (with a green SAA sign).

SPECIAL TRAINING REQUIRED:

1. All lab personnel who work with chemicals should have Chemical Safety***** training.
2. All lab personnel who generate Hazardous Waste must have current Hazardous Waste Disposal***** training which includes the initial "live" training by EH&S and annual "online" refresher training which is located through http://www.uos.harvard.edu.
3. All persons working with lasers should have Laser Safety***** training.
4. All personnel who would like to use the Physics Machine Shop must take the Machine Shop course with Stan Coutreau which includes machine shop safety training.

*** All of the above mentioned training is offered annually through the DEAS Safety Committee.**

CHEMICAL SPILL CLEAN-UP PROCEDURES:

1. Small spills should be cleaned up by those in the lab. There are **Spill Kits** located in 302 ESL (Maintained by Todd Perry).
2. For large spills, clear the area of personnel and call the EH&S control center at **5-2852**.

OTHER RELEVANT COMMENTS:

1. Do not attempt to use ANY equipment which you are not trained to use.
2. Any room with HF in it must have Calcium Gluconate easily accessible in the same room. Be sure to check the expiration date and replace as necessary. Calcium Gluconate is available in the Chemistry or Biology stockrooms.
3. Basic medical kit is near the yellow cabinet in ESL 215.
4. The **Eye Wash** is located by the sink in the room.
5. The **Safety Shower** is located in front of the room.
6. If you have any questions ask your local safety officer.