P0041
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CLEAN ROOM SAFETY COURSE OUTLINE

I PURPOSE

II RESPONSIBILITIES

A. UNIVERSITY

1. Provide a safe working environment.
2. Comply with all applicable laws.
3. Maintain a working knowledge of and inform the campus community about applicable laws and regulations.

B. DEPARTMENT CHAIRS, PRINCIPAL INVESTIGATORS

1. Ensure the safety of those working under their direction.
2. Provide training to those under their direction.

C. SUPERVISOR

1. Chemical hazard communication
   a. Labeling
   b. MSDS (Material Safety Data Sheet)
   c. List of hazardous substances

2. Emergency and hazardous materials response
   a. Training
   b. Posting of procedures

D. INDIVIDUAL

1. *FOLLOW SOUND HEALTH AND SAFETY POLICY.*

2. *REPORT ANY EMERGENCY OR HAZARDOUS SITUATION IMMEDIATELY.*

3. *COMPLY WITH APPLICABLE POLICIES AND PRACTICES.*

III RESOURCES

A. SUPERVISOR

B. MSDS SHEETS (Material Safety Data Sheets)

Give detailed information on hazards and handling of chemicals.

C. HANSEN LABS SAFETY—DOUG ANDRIJASEVICH

Source for MSDS

Reference information and resources

D. HEALTH AND SAFETY DEPARTMENT

IV CHEMICALS

A. PURCHASING

1. University purchasing rules on chemicals are more restrictive than on other equipment and materials. Purchases must go thru purchasing department.

2. It is the purchaser's responsibility to see that a copy of the MSDS is on file in the GP-B MSDS file.

3. All purchases of chemicals shall be logged in the GP-B chemical inventory list located in Room 129.

4. Buy only as much as you need. Minimize the quantity for storage and disposal.

B. STORAGE

1. Types of hazards:
   a. Flammables-flash point below 100°F
   b. Corrosives
   c. Toxics

2. Allowed quantities Tables 9A and 9B
   a. Room 132 is separate from remainder of HEPL.
   b. Flammable liquids within flammables cabinet <120 gallons outside of cabinet 30 gallons. But not more than 15 gallons of Class I-B e.g. acetone, isopropanol, and methanol.

3. Combinations
   a. Do not store flammables and corrosives together. Prevent from mixing under any circumstances.
   b. Provide mechanical separation between storage classes of materials. Secondary containment for liquids, partitions, solid dividers for solids.
   c. Label everything! The law allows you to transfer into a container for immediate use, without labeling the container, but if you then leave the area, it is a violation. Therefore, it is required that you label any container which at all times is not in your immediate vicinity.

C. HANDLING

1. Use proper Protective gear at all times. At a minimum, this includes gloves and goggles or face shield. Detailed information is provided in the MSDS as to the required protective gear. Your supervisor shall also inform you what protective gear is required and shall provide that protective gear.

2. The use of contact lenses when working with chemicals or in the chemical handling area is prohibited.

D. DISPOSAL

1. All chemicals must be properly disposed of. Generally this means placing them in a properly labeled container of a material similar to that of the original container, and having this waste picked up by Health and Safety.

2. The following specific prohibitions shall be adhered to:

   - No solvents may be poured down the sewer.

- No solution with a pH outside the range 4.5 to 10 may be poured down the sewer.
- No solution containing toxic components or heavy metals may be poured down the sewer.
- No toxic materials or heavy metals, e. g. mercury, may be disposed of in the trash.
- No solutions containing HF (Hydroflouric acid) may be poured down the sewer.

3. More detail on disposal is provided in the document WASTE STORAGE and DISPOSAL FOR GP-B HEPL FACILITIES. A copy of which is located with the chemical inventory list in Room 129.

VI ELECTRICAL

A. There are three primary electrical hazards. Personal injury, fire and damage to equipment. To provide electrical safety the following rules should be followed.

1. Use proper grounding and insulation.
2. Limit current and/or power to safe levels.
3. Understand proper operation of equipment before using.
4. **THINK FIRST—THEN DO**

B. A major contributor to most electrical accidents is a disorderly work area.

1. Limit the use of extension cords and loose wiring.
2. Organize equipment layout.
3. Remove from the work area and properly store unused equipment.

VII RADIATION

A. There are several types of radiation hazards in the laboratory, e.g. RF power supplies, UV lamps, lasers, and ionizing radiation.

B. The primary sources of ionizing radiation within GP-B are the sealed source isotopes used with the Betascope. Special training is provided for those using this equipment. The greatest hazard is from ingestion in the case the sealed source is damaged.

C. The other sources of radiation hazards are electromagnetic sources. They primarily cause burns and are most dangerous to the eyes. The use of proper shielding and enclosures are required. Special caution is necessary when doing repair and troubleshooting or with modified equipment.