COMMITMENT

Johns Hopkins is fully committed to providing a safe and healthful work environment for every employee. Sometimes it is necessary for employees to work with or around potentially hazardous substances. In these instances, it is important that employees are aware of the substances identity, health-related and physical properties and the work practices required to minimize potential hazards.

POLICY

It is the policy of Johns Hopkins to develop and implement a Chemical Hygiene Plan. The JHU Safety Manager of the Department of Health, Safety and Environment will assume the responsibilities of the Chemical Hygiene Officer for Johns Hopkins and is responsible for measures which create a safe laboratory environment. Each department with laboratory environments shall designate a Departmental Chemical Hygiene Officer.

REFERENCES

29 CFR 1910.1450 "Occupational Exposure to Hazardous Chemicals in Laboratories"

Johns Hopkins Safety Manual: Management of Hazardous Chemicals, HSE 703

Johns Hopkins Safety Manual: Registry of Highly Hazardous Chemicals, HSE 704

RESPONSIBILITIES

JHU Safety Manager	Staff training to supplement laboratory supervisors training.
	Laboratory inspections
	Monitoring hoods and other protective devices.
	Approval of procedures involving toxic and highly hazardous chemicals.
	Development of a procedure for the ranking hazards associated with specific procedures.
	Develop personal protective equipment guidelines based upon the hazards associated with specific procedures.
	Monitoring employee exposure to chemicals as needed.
	Review of designs for new construction.
	Emergency response to hazardous material spills.
	Advise staff on personal protective equipment.
	Oversee the handling of hazardous materials.
	Oversee the disposal of excess hazardous materials.
Departmental Designee	Act as Chemical Hygiene Officer for their department.
	Act as liaison between the Johns Hopkins Chemical Hygiene Officer and the Department.
	Assemble an inventory list of all chemicals in the Department.

Faculty/Principle Investigator/Supervisor	Provide a safe environment within the laboratories under their control.
	Ensure written procedures and chemical hazard information are accessible to laboratory personnel.
	Request assistance from the safety officer as needed regarding hazard information and training.
	Provide specific training on the hazards of the chemicals used and proper chemical handling techniques.
	Ensure that laboratory employees follow proper procedures in the handling and disposal of chemicals.
	Ensure that staff complies with the Hazard Communication Program.
	Maintain a list of all chemicals under their control.
	Identify and label each procedure to be utilized according to the Hazard Ranking developed by the JHU Safety Manager.
	Train all students on proper safety procedures and the procedures for emergencies.
	Ensure that all containers are properly labeled and appropriate warning signage is displayed.
	Ensure that all students have and use appropriate protective equipment.
	Ensure that all hazardous material is disposed in accordance with approved procedures.
Laboratory Staff and Student	Handle all chemicals safely.
	Adhere to established policies and procedures.
	Follow safe work practices.
	Wear appropriate personal protective equipment.
	Staff and students with preexisting medical conditions which may place them at an increased risk of adverse affects must contact Occupational Health Services.

GENERAL PROCEDURES

The following procedures are to be followed by all employees, faculty and students in the laboratory.

- Lab coats should be worn at all times in the laboratory. Lab coats should not be worn outside the laboratory.
- Hands should be washed after removing protective gloves and prior to leaving the laboratory.
- There is to be no eating or drinking in the laboratory.
- Mouth pipetting is forbidden.
- Splash goggles should be worn when handling hazardous liquids.
- Face shields that effectively block UV light should be worn when visualizing or photographing with UV light.
- Protective gloves should be worn to prevent skin contact with any potentially hazardous substance.
- Chemicals with harmful vapors should be handled within the fume hoods whenever possible. (A volatile compound with a TLV of less than 50 ppm should be handled only in a fume hood).
- Adhere to the following procedures when utilizing the fume hood:
  - Check to see that the hood is operating
  - Keep all operations six (6) inches back from the hood face
  - Keep baffle slots and airfoil free of obstructions.
  - Keep sash height to a minimum.

- Do not put head into the hood.
- Do not store chemicals or apparatus in hood.
- Do not dispose of chemicals in the fume hood.

Highly Toxic or Hazardous Chemicals

Procedures which require the use of a highly toxic or hazardous chemical must be registered with and approved by Health, Safety and Environment. A chemical is considered highly toxic and/or hazardous if it meets one of the following criteria:

- A listed human or suspected human carcinogen as listed in the ACGIH TLV Booklet.
- A chemical that has a level that is immediately dangerous to life and health (IDLH) of five (5) parts per million (ppm) or less as published by the National Institute of Occupational Safety and Health (NIOSH). See list of extremely toxic chemical substances.
- A known human mutagen or teratogen.
- A chemical which has a
  - LD50 of 50 mg/kg or less when administered orally to albino rats
  - LD50 of 200 mg/kg or less when administered by continuous contact for 24 hours to the bare skin or albino rabbits
  - LC50 in air of 200 ppm or less of gas or vapor or 2 mg/liter or less of dust mist or fume when administered by continuous inhalation to albino rats.

PROCEDURES

Chemical Spill Procedure

1. EVALUATE THE SPILL
   a. Are the materials Innocuous, Corrosive, Flammable, Toxic or Explosive?
   b. Identify all materials by common or chemical name.
   c. Estimate how much is spilled.
   d. Evaluate the degree of danger to patients, staff or visitors.
   e. Evaluate the degree of danger to equipment or property.
2. CONTAIN THE SPILL. Utilize any action designed to prevent the spilled material from spreading and causing increased damage.
3. EVACUATE the area if the spill cannot be contained, OR if the spilled material produces irritating odors, flammable vapors or explosive vapors. (extinguish all spark or ignition sources).
4. CLEAN up the spilled material.
   a. Spills of innocuous material can be cleaned up by laboratory personnel or equipped staff.
   b. Spills of acids, bases and flammables can be cleaned up by laboratory personnel using appropriate neutralizers/absorbents and proper personal protective equipment.
   c. Spills of toxic or explosive materials, and large spills of corrosive or flammable materials shall be handled by HSE. *Immediately call the Emergency Telephone Number for your campus: East Baltimore - 5-4444; Homewood - 911; Other Buildings - 911*. Have the following information available:
      - Your name and phone number.
      - Precise location of spill.
      - Exact description of what was spilled (make sure you state any compounds which may form toxic compounds).
      - Any steps you have taken to control the spill.
      - Any injuries that have occurred.
5. DISPOSE of all contaminated materials in accordance with this Policy.
6. Employees who have been exposed to hazardous chemicals due to a spill or other uncontrolled situation shall promptly report to the Occupational Injury Clinic for their campus or to an Adult Emergency Room when the Clinic is not operating. A Report of Incident shall be completed by the individual's supervisor.

7. Consult HSE at 5-5918 with any question regarding chemical spills and spill clean up.

Chemical Disposal

Unwanted chemicals must be disposed of through the Department of Health Safety and Environment according to the following guidelines:

- All chemicals must be identified by its specific name, the laboratory disposing of it, the principal investigator and a contact person's name and phone number. Label all bags, boxes or bottles with an indelible ink marker or with labels that adhere tightly.
- Mixture should be identified as to its chemical composition and concentration. Nonspecific designations such as "waste solvent" or "waste acids" are not acceptable.
- All waste chemicals are to be sorted in containers of similar construction to the container in which the manufacturer shipped the original material.
- All chemicals should be transported on carts using a route which will minimize the exposure to the general public in case of an accident. The chemicals should be transported using secondary containment designed to hold the entire contents of the waste container in the event of breakage.
- No infectious, red bag, or radioactive material will be accepted.
- Chemicals are not to be left at any of the chemical collection sites unless someone from HSE is there to receive it.
- Separate bottles or glassware from contaminated lab waste or spill clean up material.
- Chlorinated and non-chlorinated solvents should not be mixed for disposal.
- PCBs, PCDFs, pyridine and mercaptan compounds must be segregated from other chlorinated and non-chlorinated chemicals and appropriately labeled.
- Arrangements for the pick-up of large quantities of chemicals and questions about specific waste chemical handling should be directed to HSE.

TRAINING

Every employee is required to attend training on the Hazard Communication Program. Information on laboratory-specific procedures and the hazards associated with these laboratory procedures will be provided by the supervisor or principal investigator. Health, Safety and Environment is available to assist in the development or presentation of appropriate training.

MONITORING OF EXPOSURE

Employees who may be exposed to a chemical above the OSHA Action Level (AL) or Permissible Exposure Level (PEL) will have their breathing zone monitored by Health, Safety and Environment to determine exposure level.

MEDICAL CONSULTATION

Employees exposed to a hazardous material above the Action Level or Permissible Exposure Level, as a result of a spill, leak or explosion or exhibits signs of overexposure, are to be evaluated under procedures established by Johns Hopkins. See HSE Policy on Incident and Injury Reporting. Employees who exceed the OSHA Action limit for substance with which they work will be placed in the appropriate medical monitoring program.

RESPIRATORY PROTECTION

Those individuals who are determined by the JHU Safety Manager or designee to require respiratory protection will be placed in the respiratory protection program and will be provided appropriate respiratory protection.

REVIEW CYCLE

Annually