WELLESLEY COLLEGE CHEMICAL HYGIENE PLAN

Revised May 2016, December 2019

The Occupational Safety and Health Administration’s (OSHA) [Laboratory](https://www.google.com/url?q=https://www.osha.gov/SLTC/laboratories/index.html&sa=D&ust=1502997561597000&usg=AFQjCNGMyof2VLCfFOvMRPExN_WYB6fQQw) Standard was established to ensure that those who work in laboratories are informed about the hazards of chemicals and are protected from chemical exposures.  OSHA’s website on [Chemical Hazards and Toxic Substances](https://www.google.com/url?q=https://www.osha.gov/SLTC/hazardoustoxicsubstances/&sa=D&ust=1502997561597000&usg=AFQjCNGP8SYpkYORM9NxAmgNupVCt9-dQQ) provides information on the health and physical hazards of chemicals in the workplace.   The Lab Standard requires employers to implement a Chemical Hygiene Plan (CHP) and establish safe working practices.

The Chemical Hygiene Plan at Wellesley College covers employees (faculty and staff) and students who work in laboratories at the Science Center where hazardous chemicals are used.  Departments covered by this Plan are: Biological Sciences, Chemistry, Engineering, Geosciences, Neuroscience, Physics and any other department that uses chemicals in a laboratory within the Science Center.  The CHP is one portion of a “Laboratory Safety Plan”, which covers all aspects of safety in the laboratory.

OSHA requires that the CHP address each of the elements noted in the table below: 1) Standard Operating Procedures, 2) Control Measures (ie. fume hoods, personal protective equipment), 3) Information and Training, 4) Medical Consultations, 5) Responsible Personnel,
6) Emergencies and 7) Recordkeeping.  Additional details on each section are provided following the table.

Key contacts for this Plan are listed below.    Phone numbers start with 781-283-XXXX.

* Campus Police at x 2121 (non-emergency) or x 5555
* Health Services (medical for students) at x 2810
* BI Deaconess in Needham (medical for employees) (781) 453-3041
* Cathy Summa, Science Center Director, x 3104
* Facilities Management Service Request Line x 2767
* Dawn Toon, EHS Officer x 2762
* Victor Hult, EHS Officer x 3483
* Science Center Office x 3000
* Suzanne Howard, EHS Director & Chemical Hygiene Officer x 3882

**CHEMICAL HYGIENE PLAN TABLE**

**OSHA Requirements                Specifics cited in Regulation                Wellesley College                               Resources
                                                                        Program**

|  |  |  |  |
| --- | --- | --- | --- |
| **1.** **Standard Operating Practices** and Procedures to be followed when using hazardous chemicals in the laboratory |  | Practices in Science Center labs to include general rules for working with chemicals, chemical storage, housekeeping, inspections, waste management and working alone. | Carolina Biological [Safety Do’s and Don’ts](https://www.google.com/url?q=http://www.carolina.com/teacher-resources/Interactive/lab-safety-instructions/tr11076.tr&sa=D&ust=1502997561603000&usg=AFQjCNF5tx_bKpNhA2_by_OpjCcFaP3FVg).[Safety in Academic Chemistry Labs](https://www.google.com/url?q=http://www.acs.org/content/dam/acsorg/about/governance/committees/chemicalsafety/publications/safety-in-academic-chemistry-laboratories-students.pdf?_ga%3D1.212319250.763299830.1459526407&sa=D&ust=1502997561604000&usg=AFQjCNHbHPlgKEePBQtL1erU723YMoA0-w) - ACS Pub[Prudent Practices in the Laboratory](https://www.google.com/url?q=http://www.nap.edu/catalog/4911/prudent-practices-in-the-laboratory-handling-and-disposal-of-chemicals&sa=D&ust=1502997561605000&usg=AFQjCNFpr1q7VgyuKs6BqjGV2S6BZKm54g) - National Resource Council |
| **1.A.** Additional protection for work with particularly hazardous substances (PHS).   | This includes select carcinogens, reproductive toxins, and substances with a high acute toxicity.  Provisions shall include a designated area, use of containment devices, safe removal of waste, and decontamination procedures. | Each laboratory is responsible to maintain a chemical inventory and identify PHS.  Written SOPs should be developed by users, with EHS support as needed, to ensure exposure levels are controlled.   | Duke University’s [list](https://www.google.com/url?q=https://www.safety.duke.edu/sites/default/files/PHSInfoSheet.pdf&sa=D&ust=1502997561607000&usg=AFQjCNGUdmQqfPQ4nOAMfQZvFAiSEznW5w) of PHS.MIT [info](https://www.google.com/url?q=https://ehs.mit.edu/site/content/particularly-hazardous-substance-review-160-mit-chemicals&sa=D&ust=1502997561608000&usg=AFQjCNGRJOWclNwGWolkZEzhQ9sQvXY1yQ) on PHS.  UCLA [info](https://www.google.com/url?q=https://www.ehs.ucla.edu/research/lab/chem/sop&sa=D&ust=1502997561609000&usg=AFQjCNHq4xkmQZJMnJ4ajfqqS8coKDwymw) on SOPs.Wellesley College [Peroxide-formers SOP](https://www.google.com/url?q=http://www.wellesley.edu/sites/default/files/assets/departments/ehs/files/standard_operating_procedure_peroxides_final.pdf&sa=D&ust=1502997561609000&usg=AFQjCNHbQgqJGpyzl0aZfGcubwZ0tIOzdw) |
| **1.B.** Lab Specific Safety Operating Procedures (SOPs) |  | When needed, procedures involving the use of hazardous chemicals should be documented and included in the Plan for that lab.  Personnel involved in the lab should know and understand SOPs specific to their lab. | Wellesley College [SOP Template](https://www.google.com/url?q=http://www.wellesley.edu/safety/lab%23forms&sa=D&ust=1502997561612000&usg=AFQjCNEwYCwndfCpbih0iCJfItW8LdX6hw)OSHA’s [Laboratory Safety Guidance Document](https://www.google.com/url?q=https://www.osha.gov/Publications/laboratory/OSHA3404laboratory-safety-guidance.pdf&sa=D&ust=1502997561612000&usg=AFQjCNGleFT4OTQ2VhN9uPGuoeYVOOc0Ew) |
| **2.** How to determine and implement **control measures** to reduce exposure to hazardous chemicals | Examples of control measures are engineering controls, use of personal protective equipment (PPE), and controls for the use of extremely hazardous chemicals | Laboratory personnel must implement appropriate control measures to ensure that chemical exposures are maintained below regulatory limits and as low as reasonably achievable. Control measures can be categorized as administrative or procedural controls, engineering controls, and personal protection. | OSHA Regulatory Limits known as Threshold Limit Values (TLVs) are noted in [Table](https://www.google.com/url?q=https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table%3DSTANDARDS%26p_id%3D9992&sa=D&ust=1502997561615000&usg=AFQjCNH6PSw3W83SYeRJR3r1lTimW-gJpA) Z.1 |
| **2.A.** Actions to ensure **fume** **hoods** (and other protective equipment in the lab) are working properly | [*Appendix A*](https://www.google.com/url?q=https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table%3DSTANDARDS%26p_id%3D10107&sa=D&ust=1502997561617000&usg=AFQjCNFvFdmAKPER-uPv-zs80C3Z-rQEEg)of the OSHA Lab standard states “the best way to prevent exposure to airborne substances is to prevent their escape by the use of hoods and other ventilation devices”.   | All users should understand when to use a fume hood and how it operates.EHS conducts annual testing of chemical fume hoods.  Any hood malfunctions should be reported to the Science Center Instrumentation Specialists or the Service Center at x 2767.  | OSHA [Quick Facts](https://www.google.com/url?q=https://www.osha.gov/Publications/laboratory/OSHAquickfacts-lab-safety-chemical-fume-hoods.pdf&sa=D&ust=1502997561619000&usg=AFQjCNFzluE9GTnebBD_5zvBuOuvOWMzuA) on Chemical Fume Hoods[Prudent Practices](https://www.google.com/url?q=http://www.nap.edu/catalog/12654/prudent-practices-in-the-laboratory-handling-and-management-of-chemical&sa=D&ust=1502997561620000&usg=AFQjCNFf_3Jy8KscsPsCGpTmT6FJ8olE1A) 2011, Chapter 9.Info on EHS Lab Safety Website on [Fume Hoods](https://www.google.com/url?q=http://www.wellesley.edu/safety/lab%23fume&sa=D&ust=1502997561621000&usg=AFQjCNHxhTGRTIIke3IaLsTMngkuFxHSiw) |
| **2.B.**When a lab operation, procedure or activity shall require **prior approval**. |  | Given the diversity of chemicals used and research conducted, it is the responsibility of individual lab supervisors to establish prior approval criteria. These criteria should be incorporated into the lab’s SOPs.  Science Center prior approvals include the use of PHS, working alone and other items noted in the text of this document. |  |
| **3.** Provisions for employee **information and training**.  Info provided should include: **a)** hazards of chemicals present in the work area; **b)** copy of the OSHA standard, **c)** how to obtain the CHP, **d)** exposure limits; **e)** signs and symptoms associated with exposure to hazardous chemicals; **f)** available reference materials that includes safety data sheets.   | Training includes:  **a)** how to detect the presence or release of a hazardous chemicals, **b)** physical and health hazards of chemicals in the work area, **c)** measures to be taken to protect oneself (work practices, emergency procedures, PPE to be used) and **d)** specific provisions of the College’s CHP. | General lab safety training is provided by EHS for faculty, staff and students at the beginning of each semester and the summer session.  Students are required to receive annual training.  Faculty and staff *must* participate in training every 3 years.  Records for training are kept on google-drive and managed by the EHS Office.  Lab Supervisors (includes ISLs, PIs or other responsible faculty or staff member for a lab) shall provide lab specific training.   | OSHA [Laboratory](https://www.google.com/url?q=https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table%3DSTANDARDS%26p_id%3D10106&sa=D&ust=1502997561628000&usg=AFQjCNHPsW2LJZuz4JbjaEl_OqTLJAzhLA) Standard.OSHA [Hazard Communication](https://www.google.com/url?q=https://www.osha.gov/dsg/hazcom/index.html&sa=D&ust=1502997561629000&usg=AFQjCNFap5Lg1lI1VU5TKwXPZuzqZE_8iQ) Standard.Wellesley College Safety Data Sheets [Information](https://www.google.com/url?q=http://www.wellesley.edu/safety/sds&sa=D&ust=1502997561629000&usg=AFQjCNGYaLTrDplgr-VkO4l2Y_M7kTTzcg)US Department Health and Human Services [Enviro-Health Links on Lab Safety](https://www.google.com/url?q=http://sis.nlm.nih.gov/enviro/labsafety.html&sa=D&ust=1502997561630000&usg=AFQjCNEHXC7NV_S3JvR8StqrTtxKey5Z7A) |
| **4.** Provision for **medical consultation & examinations** | This section applies if an employee or student develops signs or symptoms of exposure to hazardous chemicals used in the lab, OR when exposure monitoring indicates levels above the action levels for an OSHA regulated substance OR if an event takes place (spill, leak) resulting in the likelihood of an exposure. | Students are referred to [Health Services](https://www.google.com/url?q=http://www.wellesley.edu/healthservice&sa=D&ust=1502997561632000&usg=AFQjCNGLW8Wwbz4xSwnw_jEQ0q_-eGjaOA) at x 2810.  Employees are referred to the [BI Deaconess](https://www.google.com/url?q=http://www.bidneedham.org/departments/occupational-health-services&sa=D&ust=1502997561633000&usg=AFQjCNFzhp8cWOtRqnMGRAJ4sYsYTQpreQ) in Needham.  All medical exams and consults are performed at no cost to the employee.  At the time of the exam, 1) the identity of the chemical, 2) the conditions of exposure, 3) associated signs and symptoms, and 4) a hardcopy or online reference to the Safety Data Sheet should be provided to the medical professional.  A written opinion from the exam shall be provided to the employee and include any recommendation for further medical attention, results of the exam and any associated tests.   |  |
| **5.** **Responsible** **personnel** for implementation of the CHP |  | Responsible personnel involved in implementation of this Plan - the Science Center Director, Chemical Hygiene Officer,  the EHS Office, the Laboratory Supervisor, the Chemical Safety Committee, Faculty, Lab Users (students and staff), other departments on campus, visitors and the general public.   |  |
| **6.**Preparing for and Responding to **Emergencies** |  | Information on emergency contacts, fire extinguishers, spill kits, accident reporting, etc below. | The Science Center Emergency Response Guide, available from EHS, should be posted in all teaching and research laboratories.[Guide for Chemical Spill Response](https://www.google.com/url?q=http://www.acs.org/content/acs/en/about/governance/committees/chemicalsafety/publications/guide-for-chemical-spill-response.html&sa=D&ust=1502997561638000&usg=AFQjCNGTrOfOo75ChpCP8kCfSffX2NhDtA) - ACS |
| **7. Records and Recordkeeping** | Maintain a record for each employee on any measurements taken to monitor exposure and any medical consultations or exams to include tests or written opinions. | Records will be maintained by the EHS Office and or Human Resources as applicable.    |  |

This Plan will be reviewed and evaluated for effectiveness at least annually.  Updates will be made as needed.  All employees involved in this Plan should review on an annual basis.

**1 – Standard Operating Practices**

SOPs are written instructions to describe activities and achieve tasks on a uniform basis .  SOPs are recommended for procedures that pose a potential risk to the health and safety of personnel.

**1.1. General Procedures when working with Chemicals in Laboratories**

(a) Assigned work practices and schedules should be followed unless a deviation is authorized by the laboratory supervisor.
(b) Unauthorized experiments should not be performed.
(c) Plan safety procedures before beginning any operation.
(d) Follow standard operating procedures at all times.
(e) Always read the Safety Data Sheet (SDS) and label before using a chemical.
(f) Wear appropriate PPE at all times.
(g) To protect your skin from splashes, spills and drips, always wear long pants and closed-toe shoes.
(h) Use appropriate ventilation when working with hazardous chemicals.
(i) Pipetting should never be done by mouth.
(j) Hands should be washed with soap and water immediately after working with any laboratory chemicals, even if gloves have been worn.
(k) Eating, drinking, smoking, gum chewing, applying cosmetics, and taking medicine in laboratories where hazardous chemicals are used or stored is strictly prohibited.
(l) Food, beverages, cups, and other drinking and eating utensils shall not be stored in areas where chemicals are handled or stored.
(m) Laboratory refrigerators, ice chests, cold rooms, and ovens shall not be used for food storage or preparation.
(n) Contact the laboratory supervisor, Principal Investigator, CHO or EHS office with all safety questions or concerns.
(o) Know the location and proper use of safety equipment such as the closest spill kit, eye wash station and safety shower.
(p) Maintain situational awareness.
(q) Make others aware of special hazards associated with your work.
(r) Notify supervisors of chemical sensitivities or allergies.
(s) Report all injuries, accidents, incidents, and near misses.
(t) Unauthorized persons should not be allowed in the laboratory.
(u) Report unsafe conditions to the laboratory supervisor or CHO.
(v) Properly dispose of chemical wastes.
(w) Working alone in Science Center labs is prohibited unless authorized by the Department and Science Center Director.

**1.2. Managing Chemicals in Laboratories**

**1.2.1 Chemical Procurement**:

(a) Information on proper handling, storage, and disposal should be known to those who will be involved before a substance is received.
(b) Only containers with adequate identifying labels should be accepted.
(c) Ideally, a central location should be used for receiving all chemical shipments.
(d) Shipments with breakage or leakage should be refused or opened in a chemical hood.
(e) Ideally, only the minimum amount of the chemical needed to perform the planned work should be ordered.
(f) PHS chemicals should be approved prior to purchase.
(g) Proper protective equipment and handling and storage procedures should be in place before receiving a shipment.

**1.2.2 Chemical Storage:**

(a) Chemicals should be separated and stored according to hazard category and compatibility.
(b) Follow Safety Data Sheets (SDS) and label information for storage requirements.
(c) Maintain existing labels on incoming containers of chemicals and other materials.
(d) Labels on containers used for storing hazardous chemicals must include the chemical identification and appropriate hazard warnings.
(e) The contents of all other chemical containers and transfer vessels, including, but not limited to, beakers, flasks, reaction vessels, and process equipment, should be properly identified.
(f) Chemical shipments should be dated upon receipt and stock rotated.
(g) [Peroxide formers](https://www.google.com/url?q=http://www.wellesley.edu/sites/default/files/assets/departments/ehs/files/standard_operating_procedure_peroxides_final.pdf&sa=D&ust=1502997561644000&usg=AFQjCNF1Y4iIm4iA_rUnS_7B3ce7v3uEHw)shall be dated upon receipt, again dated upon opening, and stored away from heat and light with tight fitting, non-metal lids.  Dispose of peroxide-formers according to the [Peroxide-former SOP](https://www.google.com/url?q=http://www.wellesley.edu/sites/default/files/assets/departments/ehs/files/standard_operating_procedure_peroxides_final.pdf&sa=D&ust=1502997561644000&usg=AFQjCNF1Y4iIm4iA_rUnS_7B3ce7v3uEHw)
(h) Open shelves used for chemical storage should be secured to the wall and contain 3/4-inch lips. Secondary containment devices should be used as necessary.
(i) Consult the SDS and keep incompatibles separate during transport, storage, use, and disposal.
(j) Oxidizers, reducing agents, and fuels should be stored separately to prevent contact in the event of an accident.
(k)  A minimum amount of chemicals should be stored in the chemical fume hoods and on benchtops.  No chemicals should be stored on the floor, in areas of egress, or in areas near heat or in direct sunlight.
(l) Laboratory-grade, flammable-rated refrigerators and freezers should be used to store sealed chemical containers of flammable liquids that require cool storage. Do not store food or beverages in the laboratory refrigerator.
(m) Highly hazardous chemicals should be stored in a well-ventilated and secure area designated for that purpose.
(n) Flammable chemicals should be stored in a spark-free environment and in approved flammable-liquid containers and storage cabinets. Grounding and bonding should be used to prevent static charge buildups when dispensing solvents.

**1.2.3 Chemical Handling:**

(a) A risk assessment should be conducted by the lab instructor, PI or other responsible party prior to beginning work with any hazardous chemical for the first time.
(b) All SDS and label information should be read before using a chemical for the first time.
(c) Trained laboratory workers should ensure that proper engineering controls (ventilation) and PPE are in place.

**1.2.4 Chemical Inventory:**

(a) Lab personnel will be required to keep an accurate inventory of the chemicals stored in each space under their control (labs, refrigerators, freezers, cabinets, etc) and update it on an annual basis.
(b) Unneeded items should be disposed of appropriately

**1.2.5 Transporting Chemicals:**

(a) Secondary containment devices should be used when transporting chemicals.
(b) When transporting chemicals outside of the laboratory or between stockrooms and laboratories, the transport container should be break-resistant.
(c) High-traffic areas should be avoided.
(d) Use carts when appropriate.

**1.2.6 Safety Data Sheets:**

(a)  Must be readily available.
(b) If chemical substances are developed in the lab, a determination of its hazards must be made and appropriate training provided by the Lab Supervisor.

**1.2.7 Transferring Chemicals:**

(a) Use adequate ventilation (such as a fume hood) when transferring even a small amount of a particularly hazardous substance (PHS).
(b) If chemicals from commercial sources are repackaged into transfer vessels, the new containers should be labeled with all essential information on the original container.

**1.2.8 Shipping Chemicals:** Outgoing chemical shipments must meet all applicable Department of Transportation (DOT) regulations and should be authorized and handled by trained personnel.

**1.3. Food and drink** – Food and drink shall not be consumed or stored where chemicals are used and or stored.  In the Science Center this includes the entire L wing and labs in the E wing and Sage Hall.

**1.4.** **Housekeeping** – General housekeeping is often overlooked, but is important in keeping laboratory employees safe and research viable.

• Wipe down benchtop surfaces regularly to avoid contaminating the work or employees’ clothing.

• Replace bench liners when visibly contaminated
• Keep areas neat and clean, hallways and exits should be kept clear.

**1.5. Inspection Program**The program should include an appropriate combination of routine inspections, self-audits, program audits, peer inspections, [EHS inspections](https://www.google.com/url?q=http://www.wellesley.edu/sites/default/files/assets/departments/ehs/files/lab_program_review.pdf&sa=D&ust=1502997561648000&usg=AFQjCNHxgCMABrwbQvwmOOHzLzy7STPxQw), and inspections by external entities.  Maintenance and regular inspection of laboratory equipment are essential parts of the laboratory safety program; it ensures that the facility is safe and healthy, workers are adequately trained, and proper procedures are being followed.

Elements of an inspection:

(a) Inspectors should bring a checklist to ensure that issues are reviewed.  A camera may be used to document issues that require correction.
(b) Conversations with workers should occur during the inspection, as they can provide valuable information and allow inspectors an opportunity to show workers how to fix problems.
(c) Issues resolved during the inspection should be noted.
(d) An inspection report containing findings and recommendations will be sent to managing laboratory personnel.
(e) Follow-up inspections should occur to ensure that corrective actions have been implemented.
(f) EHS will maintain inspection reports.

**1.6. Laboratory Access**

• Research labs and support spaces with hazardous chemicals should be secured when unattended.
• Teaching labs should secure hazardous chemicals when labs are unattended.

• If the laboratory plans to have visitors, they must be accompanied by laboratory personnel.

**1.7. Signs**The following signs should be posted:

(a) Emergency telephone numbers of emergency personnel/facilities, supervisors, and laboratory workers;
(b) Location signs for safety showers, eyewash stations, other safety and first aid equipment, and exits; and
(c) Warnings where special or unusual hazards exist.
(d) Exit Signs
(e) Chemical Waste Storage Areas
(f) MWRA Sink Postings
(g) Evacuation Signs

**1.8. Unattended experiments** – Experiments involving hazardous chemicals should not be left unattended.  If circumstances require that the experiment run when the lab is not occupied, seek the approval of the laboratory supervisor in advance and post signage as appropriate.

**1.9. Waste Management** Proper disposal of laboratory wastes is important for the health and safety of everyone in the College community and beyond.  A few basic guidelines are below.  For an in-depth look at laboratory waste management, visit the[EHS Waste Management](https://www.google.com/url?q=http://www.wellesley.edu/safety/waste&sa=D&ust=1502997561652000&usg=AFQjCNEPiWH5k4Drj6t-TTcleMCr_RFa4w)website.

**1.9.1 Solid waste**Solid waste is waste not regulated for special disposal and can be placed in a standard dumpster.  Most solid waste is removed from the laboratory by Custodial Services.  Examples of solid waste include:

1. General waste – papers, plastics, and other non-contaminated trash can be placed in a general trash receptacle.
2. Glass waste – non-contaminated broken or whole glass, glass or plastic pipettes, pipette tips.  Glass waste should be placed in a sturdy, cardboard box with top, lined with a plastic bag.  The box should be clearly marked “Broken Glass – Trash”.

**1.9.2 Universal waste**

1. Batteries.  Batteries may be collected in the appropriate containers at the Sage Hall main entrance.  All batteries over 1.5 volts must have the contacts taped with plastic or electrical tape to prevent fire.
2. Fluorescent lamps.  Fluorescent lamps may be collected in the appropriate container located at the Sage Hall main entrance.  Places lamps into the container lightly to avoid breaking the lamp.

**1.9.3 Chemical waste**

1. Most chemical waste is regulated as hazardous waste.  For assistance in making a waste determination, contact Environmental Health and Safety at 2762
2. Collect chemical waste in an appropriately labeled containers within the laboratory’s hazardous waste satellite accumulation area (SAA). Each department has developed their own method for moving full or unwanted hazardous waste bottles to the Stockroom Fume Hood Main Accumulation Area.  See the EHS Waste Management [website](https://www.google.com/url?q=http://www.wellesley.edu/safety/waste&sa=D&ust=1502997561654000&usg=AFQjCNEPtX4nJDlOXAToB_rSzVThCWEXIg)for information on how your department handles full or unwanted hazardous waste bottles.
3. Waste collected in SAA’s must be posted with signage and follow all rules noted: a) waste bottles to be kept in secondary containment, b) containers should be labled, c) containers to be closed at all times except when pouring, d) waste containers to be properly segregated, e) containers to be in good conditions, and f) only one container per waste stream (ie. cannot have 2 bottles of waste acetone in the same SAA).

**1.9.4 Chemical Sharps -**Safe use and disposal of sharps– Handle and store laboratory glassware with care to avoid damage; do not use damaged glassware since this could lead to chemical exposure. Dispose of broken glassware using broken glass disposal boxes. Razor blades and needles must be disposed of in puncture-resistant hard-sided sharps disposal boxes.  Contact the EHS Office at X 2762 to determine if chemically contaminated razor blades, needles, and glassware need to be disposed of as chemical waste, there are green sharps containers available in the Stockroom for this purpose.

**1.9.5 Mercury-Containing Chemicals and Equipment**

Wellesley College discourages the use of mercury in chemicals or equipment anywhere on campus.  Replace mercury-containing equipment such as thermometers, barometers, manometers and other basic equipment when feasible.  Contact EHS at 2762 when you have mercury-containing equipment for disposal.

**1.9.6 Recyclables** - refer to the Sustainability Office [website](https://www.google.com/url?q=http://www.wellesley.edu/sustainability&sa=D&ust=1502997561656000&usg=AFQjCNEeSGPNIp1uVWChWkB_NBeaNMfQzA) for specific info on what can be recycled.

**1.A. Work with Particularly Hazardous Substances -**Refer to Table

**1.B. Lab Specific Standard Operating Procedures** **-**Refer to Table

**2 – Control Measures**

General precautions for handling all laboratory chemicals should be adopted.  Laboratory personnel should conduct their work under conditions that minimize the risks from both known and unknown hazardous substances. Before beginning any laboratory work, the hazards and risks associated with an experiment or activity should be determined and the necessary safety precautions implemented. Every laboratory should develop policies and procedures for high-risk materials and procedures used in their laboratory. To identify these, consideration should be given to past accidents, process conditions, chemicals used in large volumes, and particularly hazardous chemicals.

**2.1 Perform Risk Assessments for Hazardous Chemicals and Procedures Prior to Laboratory Work:**

(a) Identify chemicals to be used, amounts required, and circumstances of use in the experiment. Consider any special employee or laboratory conditions that could create or increase a hazard. Consult sources of safety and health information and experienced scientists to ensure that those conducting the risk assessment have sufficient expertise.
(b) Evaluate the hazards posed by the chemicals and the experimental conditions. The evaluation should cover toxic, physical, reactive, flammable, explosive, radiation, and biological hazards, as well as any other potential hazards posed by the chemicals.
(c) Select appropriate controls to minimize risk, including use of engineering controls, administrative controls, and personal protective equipment (PPE) to protect workers from hazards. The controls must ensure that OSHA’s Permissible Exposure Limits (PELs) are not exceeded. Prepare for contingencies and be aware of the institutional procedures in the event of emergencies and accidents.

An approach to risk assessment is to answer these five questions:

(a) What are the hazards? (b) What is the worst thing(s) that could happen?, (c) What can be done to prevent this from happening?, (d) What can be done to protect oneself and others from these hazards?, (e) What should be done if something goes wrong?

The hierarchy of controls prioritizes intervention strategies based on the premise that the best way to control a hazard is to systematically remove it from the workplace, rather than relying on employees to reduce their exposure. The types of measures that may be used to protect lab workers  (listed from most effective to least effective) are: engineering controls, administrative controls, work practices, and PPE. Engineering controls, such as chemical fume hoods, physically separate the employee from the hazard. Administrative controls, such as employee scheduling, are established by management to help minimize the employees’ exposure time to hazardous chemicals. Work practice controls are tasks that are performed in a designated way to minimize or eliminate hazards. Personal protective equipment and apparel are additional protection provided under special circumstances and when exposure is unavoidable.

**2.2 Eyewash and Safety Showers**

These devices are located in most labs in the science center.  Keep areas around these units free and clear to allow for quick and easy access.  Eyewashes should be checked weekly.  Safety showers are checked twice a year by the Plumbing Department.

**2.3 Personal Protective Equipment (PPE) and Standard Work Attire:**

It is recommended that a [PPE Hazard Assessment](https://www.google.com/url?q=https://www.osha.gov/dte/library/ppe_assessment/ppe_assessment.html&sa=D&ust=1502997561660000&usg=AFQjCNFNG9vtCUIGc7uR_EROijQEznc_8w) be completed in cases where there are unique hazards not addressed by the general guidelines or written SOPs used by the lab.

**2.3.1 Gloves**

Hazardous laboratory chemicals should not come in contact with skin. Select gloves carefully to ensure that they are impervious to the chemicals being used and are of correct thickness to allow reasonable dexterity while also ensuring adequate barrier protection.   Consult one of the glove penetration guides.  University of Leicester [Glove Selection Guide](https://www.google.com/url?q=http://www.le.ac.uk/eg/safety/coshh/search/protocol/glove-guide-0112.doc&sa=D&ust=1502997561661000&usg=AFQjCNHOhTKid_rNOoxYW7FwCIBa1356Tg), or Ansell’s 8th Edition [Guide](https://www.google.com/url?q=http://www.ansellpro.com/download/Ansell_8thEditionChemicalResistanceGuide.pdf&sa=D&ust=1502997561661000&usg=AFQjCNGazTCX3MFlnkLou0qfe5S86nPo7w) for Chemical Resistance Gloves, or UC Berkeley’s [Glove Selection Guide](https://www.google.com/url?q=http://www.ehs.berkeley.edu/workplace-safety/glove-selection-guide&sa=D&ust=1502997561662000&usg=AFQjCNEPLReXK20ddpsgz-aeJv2arRqa6Q) with video!

In general, nitrile gloves offer better chemical protection than latex gloves, and eliminate the risk of latex sensitivity. Standard nitrile gloves offer good protection for dry chemicals and water-based solutions, but only *limited* protection against some acids and many organic chemicals.   These gloves are not appropriate for heavy contact or total immersion with any chemicals.

If working with chemicals around glassware or sharps, it is important to protect your hands (and your chemical gloves) from cuts and scratches because non-intact skin is more vulnerable to chemical exposures. In these cases, it is advisable to wear a cut- or puncture-resistant glove under your chemical-resistant glove. If the outer glove is damaged, remove both pairs of gloves and wash hands thoroughly before continuing.

NOTE: Replace gloves that have been exposed to chemicals or that appear worn.

**2.3.2 Lab Coat/Skin Protection**

Standard cotton lab coats should be worn (buttoned) whenever there is a possibility of splashes, spills, or other clothing contamination to lab personnel. Additional protective clothing may be indicated in some situations, including:

• Risk of splash with corrosive materials or chemicals that may absorb through the skin - In addition to the standard lab coat, impermeable aprons, sleeves and shoe coverings (or an impermeable coverall), should be worn.

• Risk of splash with cryogens – In addition to the standard lab coat, wear an insulated apron and cryogen gloves.

• Risk of splash with hot liquids – In addition to the standard lab coat, wear a rubberized apron and heat-resistant impermeable gloves.

• Risk of fire – Instead of the standard lab coat, a fire retardant lab coat should be considered for laboratory work involving pyrophorics or large quantities of flammable materials.

**2.3.3 Eye/face protection** – Face and eye protection is necessary to prevent ingestion and skin absorption of hazardous chemicals. At a minimum, safety glasses, with side shields, should be used for laboratory work with hazardous chemicals. Chemical splash goggles are more appropriate than regular safety glasses to protect against hazards such as projectiles, as well as when working with glassware under reduced or elevated pressures (e.g., sealed tube reactions), when handling potentially explosive compounds (particularly during distillations), and when using glassware in high-temperature operations.

**2.3.4 Footwear** – Closed-toed shoes should always be worn in laboratories. Shoes with a closed heel are recommended.

**2.3.5 Respirators** – In situations where the laboratory fume hood or local exhaust does not adequately prevent inhalation exposure, respirators may be necessary. Use of respirators requires medical clearance, annual training, and (in most cases) an annual fit test. For more information, contact EHS at x3882.

**2.3.6 Standard Work Attire** – Wear closed-toe shoes and long pants or other clothing that covers the legs when in a laboratory where hazardous chemicals are used. Additional protective clothing should be used when there is significant potential for skin-contact exposure to chemicals. The protective characteristics of this clothing must be matched to the hazard. Confine long hair and loose clothing.  If working with flammable materials, avoid wearing flammable clothing (such as many synthetics)

**2.A – Chemical Fume Hoods and other Engineering Controls:**

**2.A.1 Chemical Fume Hoods** should be used for:

* Particularly Hazardous Substances that are volatile or that are in powder form,
* Other volatile compounds,
* Chemicals with a strong odor, or
* Other materials as indicated by the chemical or lab specific Standard Operating Procedure.

And follow these practices:

* Make sure your fume hood has been certified within the last year. If not, contact EHS to arrange for certification.
* Check the air flow monitor before each use. Most hoods are equipped with Phoenix Controls that display an air velocity reading.  During use, the Phoenix Control should read approximately 100, this is the velocity (in linear feet per minute) of air flowing through the fume hood.  (An alarm should sound if flow is too low or too high.)  Contact the Science Center instrumentation specialists or EHS if a fume hood is alarming.
* Keep the fume hood clear of clutter only those materials necessary to the procedure at hand should be placed inside the hood’s work space. Additional objects in the workspace may affect the hood’s air flow pattern and compromise employee safety.
* Elevate large equipment that must be in the hood at least two inches off the base of the hood interior. This will help air flow as intended inside the hood.
* Keep vertical sashes in the lowest practical position while working.
* Perform work tasks at least 6 to 8 inches behind the hood opening.
* Close the hood sash when not in use.
* A special note for working with perchloric acid - Using perchloric acid in a standard fume hood can lead to accumulation of explosive perchlorate salts in the ductwork. Before using heated (>150°C) OR concentrated (>85%) perchloric acid in any chemical fume hood, contact EHS for approval.
* If your fume hood is not functioning properly, stop working in the hood, then close the sash and label the hood to indicate that it is not working. If hood contents could create a hazardous situation in the room (even with the sash down), leave the room and contact EHS.
* If the lights or plumbing (water, sink drain, air, vacuum, or gas) in the hood are not working, remove hazardous materials from the hood & store in a safe place, then call the Service Center at x 2767 to request a repair.  Maintenance may request that the inside of the hood be cleaned, depending on the nature of the repair.

**2.A.2. Biological Safety Cabinets (BSCs)** – These cabinets are intended for use when working with hazardous biological agents.  Air is drawn into the cabinet circulated through the air grilles, and exhausted through a HEPA filter.  It provided a clean work surface and protects the user and environment from infectious aerosols.

**2.A.3. Laminar Flow Hoods** - or clean benches have HEPA-filtered air blown across the work surface and toward the user.  Air is not filtered before exiting the hood but does provide a clean work surface to protect the materials used in the hood.

**2.A.4. Local Exhaust Ventilation** – Local Exhaust ventilation can be used where there is a localized source of chemical vapors that can be captured. Examples include snorkel-type exhaust and downdraft sinks. Local exhaust should only be installed with the involvement of the facilities.

**2.A.5. Isolation Devices**– These devices physically separate a contaminant-generating process from the work environment. These will often involve a sealed acrylic box, and may be combined with local exhaust.

**2.B – Prior Approvals**

Prior approval must be obtained from the Principal Investigator for designated activities that present specific, foreseeable hazards to researchers. Researchers must be trained in the safe use of designated chemicals prior to beginning research activities with them. Other general considerations regarding operations requiring prior approval:

1. Working Alone is prohibited without the expressed approval of the applicable Department and the Science Center Director.  A Buddy System may be used when working in a lab where there is no use of hazardous substances.
2. Unattended Operations - Procedures carried out continuously or overnight must be planned carefully to avoid hazards and mishaps such as utility failure or cooling water disruption or floods. Arrangements for routine checks and notification to all members of the lab group should be made. Appropriate warning signs must be posted in the area or on the equipment.
3. Lab Supervisors should maintain and post a list of materials/procedures/techniques that require prior approval for their lab.
4. The use of PHSs shall be approved by the Science Center Laboratory Safety Committee.
5. Outdoor experiments involving fire or the installation of temporary structures shall be approved by the Science Center Director.

**3 – Information & Training -**Refer to Table

**4 – Medical Consultations & Exams -**Refer to Table

**5 - Responsible Personnel**

**5.1 Director of the Science Center**

1. The Director of the Science Center has the responsibility and the authority to ensure that the Chemical Hygiene Plan is written, updated and implemented.
2. Brings safety concerns to appropriate senior staff
3. Work with EHS, the chemical safety committee and department chairs to implement the CHP
4. Close down labs if in serious violation of safety

**5.2 Environmental Health and Safety Office -**staff have extensive expertise covering all areas of safety and compliance. EH&S personnel will:

1. Provide information and training to faculty, staff and students.  Track training dates.
2. Arrange, for workplace air samples to determine the amount and nature of airborne contamination, inform employees of the results, and use data to aid in the evaluation and maintenance of appropriate laboratory conditions
3. Coordinate medical consultations as needed.
4. Define extra precautions needed for Particularly Hazardous Substances
5. Serve as a resource to the campus community on laboratory hazardous materials.
6. Waste Management for the Science Center to include weekly central accumulation storage area inspections.
7. Perform laboratory hazard assessments upon request
8. Inspect laboratories and identify hazards and issues of non-compliance
9. Coordinate campus chemical emergency response with Wellesley Fire Department and Campus Police
10. Maintain website containing easily accessible information, guidance, forms, etc.

**5.4 Chemical Hygiene Officer (CHO)**The Chemical Hygiene Officer is responsible for knowing the contents of the relevant regulation (Occupational Exposures to Hazardous Chemicals in Laboratories, 29 CFR 1910.145) as well as the Chemical Hygiene Plan.

1. Keep up with new and updated safety information for labs and bring to the attention of the chemical safety committee
2. Conduct an annual review of the plan and compliance with the plan
3. Support Faculty and Administration to monitor safe procurement, use and disposal of chemicals.
4. Seek ways to improve the Chemical Hygiene Program.
5. Facilitate the campus community’s understanding of, and compliance with, required chemical health and safety regulations
6. Provide technical guidance to Principal Investigators on the development and implementation of Laboratory CHP to include the safe handling, storage, and disposal of chemicals used on campus.

 **5.5 Laboratory Supervisor**

The lab supervisor is the person responsible for a laboratory or space where hazardous chemicals are being used and ensure that all work is conducted in accordance with the Chemical Hygiene Plan.  In research labs this will be the Principal Investigator.   In teaching labs it will be the ISL, Lab Coordinator, or other designated person approved by the Department.  In shared spaces, responsibilities will shift with the use of the space.  Lab supervisors will assume oversight when in a space.

1. Develop and implement the Laboratory CHP.  Document and implement standard operating procedures, detailing all aspects of proposed activities that involve hazardous materials.  This includes conducting a risk assessment to determine what control measures are needed and self-audits to ensure practices and laboratories are compliant with this Plan.
2. Ensure that staff and students receive and understand chemical safety policies, practices, and regulations related to their laboratory’s operation.
3. Prepare procedures for dealing with accidents that may result in the unexpected exposure of personnel, or the environment, to a toxic substance.
4. Report to the Chemical Hygiene Officer or the Safety Committee incidents that cause serious exposure of personnel to hazardous chemicals or materials. Conduct investigations and implement procedures to minimize a repetition of that type of accident. Submit accident reports to the Worker's Compensation Office within 24 hours of the incident
5. Maintain an inventory of hazardous materials in the laboratory and or spaces of oversight to include Safety Data Sheets.
6. Properly dispose of unwanted and/or hazardous chemicals
7. Clean small spills when necessary.
8. Ensure that PPE and required safety equipment are available and in working order and that laboratory staff is trained in their use;
9. Determine training requirements for laboratory workers based on their duties and tasks and ensure appropriate training specific to laboratory operations has been provided;
10. Ensure that staff is knowledgeable on emergency plans, including fires, equipment failure, chemical exposures, and chemical spills;
11. Conduct regular chemical hygiene inspections and housekeeping inspections, including inspection of emergency equipment;
12. Correct any unsafe conditions identified within the laboratory through either self-inspections or inspections by EH&S or other authorized safety professionals.

**5.6 Chemical Safety Committee**

The committee meets at least twice a year.  It is co-chaired by an EHS Office designee and a science center faculty representative from one of the departments represented on the committee; the Departments of Biological Sciences, Chemistry, Physics, Geosciences,Neuroscience and the Greenhouses have membership in the committee. The Science Center Director and CHO will also sit on the committee.  Other members will be appointed as deemed necessary.  New recommendations and practices will be sent to the Science Center Director for review and possible inclusion into the safety program.

**The Committee is tasked with:**

1. Reviewing the findings of recent lab inspections, accidents & incidents, chemical inventory updates, training updates and providing recommendations for continued improvement as appropriate.
2. Periodic review of the Chemical Hygiene Plan;
3. Develop, review, and approve campus policies on issues related to the purchase, use, storage, and disposal of chemicals
4. Review compliance with campus policies and recommend methods to promote compliance
5. Provide a forum for the campus community to raise concerns regarding the safe use, handling, and disposal of chemicals and assist in the resolution of disputes regarding chemical safety issues

**Committee members will:**

1. Serves as a resource for addressing safety related students, faculty and staff concerns.
2. Is the primary communicator between the committee and their respective departments.  Will provide minutes of the meetings to departments.
3. Attend committee meetings and provide input to the committee from their specific departments.;

**5.7 Faculty**

1. Be aware of and follow all Standard Operating Procedures and policies and procedures associated with this Plan;
2. Attend all applicable training; advocate for students and staff to attend needed training.  Provide and document lab specific training.
3. Understand the function and proper use of all personal protective equipment. Wear personal protective equipment when mandated or necessary;
4. Report all facts pertaining to every accident that results in the exposure to toxic chemicals, and any action or condition that exists which could result in an accident;
5. Contact the Chemical Hygiene Officer for any questions or concerns in regards to the implementation and management of this Plan.

**5.8 All Lab Users to include Students, Staff or Visitors**

1. Follow campus and laboratory practices, policies, and SOPs and as outlined in the Campus and Laboratory CHPs;
2. Attend all safety training as required;
3. Understand the function and proper use of all hazard control devices to include PPE, fume hoods, etc..
4. Wear personal protective equipment when mandated or necessary;
5. Check relevant information on the chemical reactivity and physical and toxicological properties of hazardous materials (such as Safety Data Sheets, Prudent Practices in the Laboratory, and related articles found during a thorough literature search) prior to use of the chemical substance
6. Perform only procedures and operate only equipment that they have been authorized to use and trained to use safely
7. Have knowledge of emergency procedures prior to working with hazardous chemicals
8. Report to your supervisor any significant problems arising from the implementation of the Standard Operating Procedures;
9. Report to your supervisor all facts pertaining to every accident that results in the exposure to toxic chemicals, and any action or condition that exists which could result in an accident;
10. Incorporate safety in the planning of all experiments and procedures
11. Routinely check that engineering controls are functioning and ensure that equipment is safe and functional by inspection and preventative maintenance, including glassware, electrical wiring, mechanical systems, tubing and fittings, and high energy sources;
12. Understand the inherent risk of any laboratory procedure;
13. Report any unsafe condition immediately to the PI or other safety personnel;
14. Keep work areas clean and orderly;
15. Avoid behavior which could lead to injury;
16. Dispose of hazardous waste according to university procedures;
17. Consult with the Principal Investigator or with EH&S staff on any safety concerns or questions.

**5.9 Children, Visitors and the General Public (ie. contractors, vendors) to Labs in the Science Center (Entire L-Wing and labs in Sage and the E-Wing)**

Children under 16 years are not allowed in the laboratories unless permission is granted by Science Center Director .   Minors in Wellesley’s  labs must be supervised in person at all times, wear applicable PPE and comply with all lab safety requirements.  The departmental chairperson must approve all events involving minors.

Minors, not enrolled at Wellesley, are permitted in the laboratory only when involved in educational or classroom activities. Programs for school groups who will be working in laboratories must be approved by the Science Center Director.  Leaders of these school groups or camp programs must be appropriately trained to work in the science center.

Visitors must check in at the Science Center Office located in the “mini-focus” area.  .   All visitors to the laboratories must be in compliance with the safety policies outlined in this Plan.   Visitors are permitted in the laboratory as long as they are wearing the correct PPE and escorted by trained authorized personnel.

**6.  PREPARING FOR AND RESPONDING TO EMERGENCIES**

**6.1 Preparedness**

Each lab should consider the types of incidents that could have an adverse effect on people, research efforts, property, and/or the environment and engage in planning efforts aimed at mitigating the impact of the emergency (for example, arranging for critical laboratory equipment to be maintained on emergency power) and on the necessary response for each situation.

**6.1.2 Response actions**- For possible chemical-related incidents, the lab should consider the response actions that will be needed, such as use of spill pads, additional personal protective equipment, and emergency equipment as well as reliance on the College’s resources.  Evacuation of the lab may be necessary in some emergency situations, including some chemical spills.  Therefore, employees need to be familiar with how to get out of the building in the event of an emergency, and the location of the lab’s designated assembly area.

**6.1.3 Written plan** - Where a response will be needed for a chemical-related emergency, a written plan should be prepared by the lab, describing the actions that will need to be taken. This should be included in the Laboratory or Department Specific Chemical Hygiene Plan.

**6.1.4 Resources and Equipment**- Each lab should make sure that it has the equipment and other resources available to implement its emergency plans. The following resources will be necessary for all research and clinical labs; if additional resources are needed,  the Laboratory Supervisor should identify those resources in the written emergency plan, and make sure that they are available.

**6.1.5 Emergency Response & Incident Reporting Guide** - Each lab should post an up-to-date copy of the Laboratory Emergency Response and Emergency Reporting Guide near the exit and/or primary telephone for the lab. This guide lists emergency contacts and procedures for various types of incidents.

**6.1.6 Emergency Contact Information** – Each laboratory  or department should keep emergency contact information for laboratory personnel, especially the Principal Investigator and Chemical Hygiene Officer. The purpose of this information is:

* In the event of a fire, flood, or other emergency affecting the lab, to allow emergency response personnel to reach someone in the lab.
* In the event of a lab-related or other incident requiring a member of the lab to seek medical attention, to allow the Lab Safety Coordinator, PI, or department representative to reach a family member or friend of the affected personnel.
* To facilitate contact with the lab in case of emergency (such as fire or flooding in the lab), labs should also post contact information (including after-hours phone numbers) for key laboratory personnel on or near the door to the lab. Science Center administration  has a laboratory door sign template that may be used.

**6.1.7 Eyewashes, drench hoses, and safety showers**– It is very important for laboratory employees to be familiar with the location of the nearest eyewash/drench hose unit and/or safety shower.

**6.1.8 Spill response kits** – Spill kits with appropriate instructions, adsorbents, and protective equipment must be made available in the laboratory so that laboratory employees may safely clean up a minor chemical spill of chemical found in that lab. (Mercury spills are never considered minor – they always require OESO response.)  It is the responsibility of the Laboratory Chemical Hygiene Officer to ensure that it is stocked with needed supplies, and that all employees know where the kit is stored and are trained on how to use it.  Chemical spill cleanup materials can be purchased from most scientific and safety supply vendors. A typical stock for a lab kit might include:

* Spill pads appropriate for your lab
* Neutralizers
* Chemical resistant gloves appropriate for chemicals in the lab

Laboratory employees generally will not have respiratory protection available to them and should not clean up spills that involve hazardous concentrations of chemicals in the air.  Laboratory employees should be familiar with the hazards (including volatility) of the chemicals they work with and should have a sense of the likely need for spill clean-up assistance from the EHS Office or other group, and how to contact available outside assistance. (See Emergency Response section below).

**6.1.9 Portable Fire extinguishers** – [Fire extinguishers](https://www.google.com/url?q=https://www.osha.gov/SLTC/etools/evacuation/portable.html&sa=D&ust=1502997561693000&usg=AFQjCNFgzOvKiGOXSKvQkdIdsVujWavVgA) are available throughout the building, typically along egress paths and exits.   Extinguishers are “ABC” meaning they are capable of extinguishing ordinary combustibles (A), flammable liquids (B), and electrical fires (C).  Labs using potentially flammable metals should contact EHS Fire Safety for information on how to obtain an appropriate Class D extinguisher.   If an extinguisher is used, and needs to be replaced, call Facilities at x 2767.

**6.1.10 Antidotes** – Some laboratory chemicals have acute exposure effects that may be relieved or minimized by an antidote. The laboratory should work with EHS to determine if there are any additional measures to be taken. For example, those who work with hydrofluoric acid (HF) must stock calcium gluconate gel to be used as first aid in case of an HF burn. (Medical attention should still be sought immediately for HF burns.)

**6.2 Emergency Response**

Each lab or department shall designate a meeting location on the exterior of the building to gather in case of an emergency.  The meeting location shall be set back from the building a sufficient distance to prevent injury and shall not obstruct emergency responders from accessing the building.

Most of the following information is also found in the *Wellesley College Science Center Emergency Response Guide for Laboratories*, which should be posted near the main exit and/or main telephone for each lab. Contact EHS if you need a copy of this Guide.

**6.2.1 Minor chemical spills**(those that the laboratory staff is capable of handling without assistance)

* Alert people in the immediate area of the spill.
* Avoid breathing vapors from spill.
* Turn off ignition and heat sources if spilled material is flammable.
* Put on appropriate personal protective equipment, such as safety goggles, suitable gloves, and long-sleeved lab coat.
* Confine spill to small area.
* Use appropriate kit to neutralize and absorb acids and bases.
* Use appropriate kit or spill pads for other chemicals.
* Collect residue, place in appropriate container, and dispose as chemical
* Clean spill area with water.

**6.2.2 Chemical spill on body**

* Flood exposed area with running water from faucet, drench hose or safety shower for at least 15 minutes.
* Remove all contaminated clothing and shoes.
* Follow instructions under Personal Injury, below.

**6.2.3 Hazardous material splashed in the eye**

* Immediately rinse eyeball and inner surface of eyelid with water continuously for 15 minutes.
* Forcibly hold eye open to effectively wash behind eyelids.
* Follow instructions under Personal Injury, below.

**6.2.4 Major chemical spills**

* Alert people in the area to evacuate.
* Turn off ignition and heat sources if spilled material is flammable.
* On campus: Call 5555 from a campus phone or 781-283-5555 from any phone. Off campus: Call 911.
* Attend to injured or contaminated persons and remove them from exposure.
* Have a person knowledgeable of the area available to assist emergency personnel.

**6.2.5 Mercury spills**

For spills on campus, call EHS at 2762 or 3882 and the Facilities Department at 2767 ; after hours, call Wellesley College Police at 5555. For spills off campus, follow local procedures or call 911.

**6.2.6 Personal Injury**

* All work-related injuries and illnesses (including chemical spills onto the body), regardless of the severity, must be reported to the supervisor.
* If needed, students should obtain medical care from Health Services.  Employees should go to the BI Deaconess in Needham. (after hours, call 5555).
* Employees (and or their supervisor) must complete an [Accident Report Form](https://www.google.com/url?q=http://www.wellesley.edu/sites/default/files/assets/departments/humanresources/files/forms/workerscompartform.pdf&sa=D&ust=1502997561699000&usg=AFQjCNGmkGC2WcolZwFXaoAr5AzHNmRZLA) within 24 hours.
* Students (and or their supervisor) must complete the [Incident Report Form](https://www.google.com/url?q=http://www.wellesley.edu/sites/default/files/assets/departments/ehs/files//Sci%2520Ctr%2520Incident%2520Report%2520Form.pdf&sa=D&ust=1502997561700000&usg=AFQjCNGb3J-hIhxKol974aQ2pCJzSd-W8g) within 24 hours.

**6.2.7 Fire**

When the alarm sounds, evacuate the building immediately.  Site-specific fire plans are posted throughout the building for emergency egress pathways.   Other important information is posted on the EHS [Fire Safety](https://www.google.com/url?q=http://www.wellesley.edu/safety/fire&sa=D&ust=1502997561701000&usg=AFQjCNEtkJ4UICEzrxLwzI2kig2Xm2jcdg) web page.

**6.2.8 Other Incidents**

For other incidents/accidents that do not pose immediate danger to people or the environment, call Campus Police at x 5555 to report the incident. If maintenance support is needed, contact Service at x 2767.

**7. Records and Recordkeeping -**Refer to Table