

Chemical Hygiene Plan

1. Purpose & Applicability of the Hazard Communication Program

In order to improve communication and training associated with the use of hazardous substances in the College of Chemistry, the Hazard Communication Program has been established. This program has been designed to maintain a healthy work environment by increasing employee awareness of workplace chemicals and their potential health effects, safe work practices, and emergency procedures.

This hazard communication program applies to the use of all chemicals and chemical products known to be present in College workspaces and which employees may be exposed under normal use conditions or in a foreseeable emergency. Typical chemicals covered by this program include solvents, machine oils, adhesives, chemical reagents, cleaning agents, floor strippers, paints and varnishes, compressed gases, inks, copier toners and other chemical products. One notable exception is the use of laboratory chemicals during normal laboratory activities in chemistry research labs. Health and safety requirements for chemical usage in laboratories is covered under the College of Chemistry's Chemical Hygiene Plan.

This written plan is intended to partially satisfy regulations promulgated under Title 8, California Code of Regulations, Section 5194 "Hazard Communication".

2. Access to the Written Program

The written Hazard Communication Program is available to all employees, their representatives, and contractors. Additional copies of this program are available through the College of Chemistry, Health & Safety Program (CCHASP) located at 317 Lewis Hall.

3. Responsibilities

Staff Supervisors

Supervisors have the primary responsibility of implementing the hazard communication program for all activities under their control. Specifically, these responsibilities include:

Ensuring that MSDS's are readily available to employees.

Ensuring that all chemicals are labeled, marked or tagged and that appropriate hazard warning information is contained on each label. Labels must be in English.

Maintaining a list of all chemicals used in the workspace under their control.

Providing training to all employees as outlined in the training section of this plan.

Individual Employees

All College employees are responsible for taking the initiative to utilize the information sources within the Hazard Communication Program and to practice safe chemical handling.

College of Chemistry Health and Safety Program (CCHASP)

Under the direction of Michael Kumpf, Director of the College of Chemistry Health & Safety Program, CCHASP Staff members will assist supervisors and principal investigators in implementing the Hazard Communication Program in their units on a request basis. Assistance to supervisors may involve, helping to obtain MSDS's for certain materials, and interpreting MSDS information and making recommendations about methods of minimizing exposure to specific chemicals.

CCHASP also maintains the back-up set of "hard copy" MSDS sheets in 305 Lewis. MSDS's that are provided by supervisors are maintained in this location.

4. Hazard Recognition/Determination

The College of Chemistry will rely on hazard determinations performed by the chemical manufacturers, importers and distributors for all chemicals obtained commercially. Information present on manufacturer's labels and MSDS's will therefore serve as the basis for determining the hazards of chemicals used in the College. In addition, chemicals which appear in the following references or lists are to be considered health or physical hazards:

California Code of Regulations, Title 8, §339 Director's List of Hazardous Substances.

California Code of Regulations, Title 8, § 5155 "Airborne Contaminants"

Threshold Limit Values for Chemical Substances in the Work Environment, American Conference of Governmental Industrial Hygienists (ACGIH)

National Toxicology Program (NTP), Sixth Annual Report on Carcinogens, 1991

International Agency for Research on Cancer (IARC), IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Vols. 1 - 53, and Supplements 1 - 8, World Health Organization

CFR Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration

5. Hazardous Chemical Inventory

Every unit or department within the College of Chemistry shall keep an inventory of all hazardous chemicals used by the unit. Preparation and submittal of a chemical inventory is the responsibility of the supervisor for the unit or department. Inventories must be submitted electronically to the Office of Environment, Health & Safety by using the "Chemical Inventory and Safety Information System" - CISIS. The College of Chemistry Health & Safety Program (CCHASP) provides training to supervisors in the use of the CISIS. Supervisors should also keep a "hard copy" of their chemical inventory in a location that is accessible to all employees.

The identity of all hazardous substances appearing on the “Hazardous Chemicals Inventory” list must be the same names of those that appear on the manufacturer’s label and on the Material Safety Data Sheet (MSDS). The chemical inventory serves as an index to the MSDS file for the unit.

6. Material Safety Data Sheets

Location and Accessibility

Material Safety Data Sheets (MSDS) provide valuable information concerning the hazards of the chemicals we work with in the College. A Material Safety Data Sheet (MSDS) containing the information required by the Hazard Communication Standard will be kept for each hazardous substance listed on the “Hazardous Chemicals Inventory.” The most current MSDS supplied by the chemical manufacturer or distributor shall be kept on file.

Supervisors must maintain a current set of all MSDS’s that pertain to the chemicals in their operation. MSDS’s should be filed alphabetically in a well marked binder (or binders) that is accessible to all employees. Supervisors must inform their employees of the location of the MSDS set and it must be available at all times during all work shifts.

Supervisors must provide information to their employees on any new or revised MSDS’s, within 30 days of receipt, for new or existing chemicals. This information may indicate any increased risks to health and safety or measures necessary for employees to protect themselves as compared to those stated on the previous sheets.

As a back-up and to assist in obtaining MSDS information during emergencies, the College maintains a “master set” of MSDS’s in 305 Lewis Hall. 305 Lewis is a small room dedicated to MSDS storage. It is always unlocked and is accessible 24 hr. a day. Although the facility contains thousands of MSDS sheets, it may not be entirely inclusive of all materials present in the College at any one time. Therefore, it is imperative that supervisors maintain up to date MSDS files for their units.

Requesting MSDS’s from the Manufacturer/Distributor

Prior to ordering a new chemical, supervisors or their designee for a particular unit must check the unit’s MSDS files to see if a current MSDS for the material is already on file. If the correct MSDS is not on file or if the material has never been ordered before, supervisors must inform the manufacturer or distributor that an MSDS is to accompany the shipment. Preferably, the MSDS should accompany the shipment inside the box in which the chemical is transported.

CCHASP will be notified if a complete MSDS is not obtainable from a manufacturer or distributor. The Safety Officer will send a written request for the MSDS. If the manufacturer or distributor fails to provide the MSDS, they should be reported to EH&S and their product will no longer be used or purchased until a MSDS has been received. EH&S will forward a complaint to Cal/OSHA concerning the manufacturer or distributor not providing the requested

MSDS.

MSDS Arrival

When the chemical arrives in the workplace, supervisors or their designees will check to see if an MSDS was shipped with the order. If no MSDS was shipped and one was requested, the supervisor will immediately inform the manufacturer and ask them to fax or mail one directly to them. Once the MSDS is received, the supervisor will copy it and place the original in the MSDS binder for the unit. The copy will be sent to CCHASP (Michael Kumpf's mailbox in 410 Latimer Hall) to be included in the College's main MSDS collection in 305 Lewis Hall.

7. Container Labels

It is College of Chemistry policy that original and/or secondary containers of hazardous substances be properly labeled. Each supervisor will ensure that all containers have either the original manufacturer's label or a generic label which includes the following:

- a) Product identity (trade, product, or chemical name)
- b) Appropriate hazard warnings (health and physical hazards)

Labeling requirements do not apply for chemicals transferred from a labeled container into another container (i.e. measuring cups, mixing jugs, etc.) which is intended for the immediate use of the person who performed the transfer. Note that immediate use implies the chemical will be used during the work shift. Secondary containers must be labeled if the material is to remain in the container for any length of time after the work shift. All label information must be in English.

No label shall be defaced or removed when material is received or in use. Employees should ensure that all containers are labeled and report to their supervisors all deficiencies.

8. Hazardous substances in unlabeled pipes

Supervisors must ensure that all pipes containing hazard materials (i.e. natural gas lines, waste lines) are labeled with the contents of the pipe. Employees are not to work on any unlabeled pipes until the contents of the pipe are determined and appropriate safety precautions have been determined for the work. Employees should notify their supervisors whenever their work involves disturbing unlabeled pipes. Campus EH&S will assist the supervisor in determining a safe operating procedure for working on such pipe(s).

9. Employee Information & Training

Initial Hazard Communication Training

Initial training on the Hazard Communication Program is given to all new employees by their

immediate supervisor (see Section 3 of the College of Chemistry Health and Safety Manual-the Injury and Illness Prevention Program). Information provided in the initial Hazard Communication Program training includes:

describing the Hazard Communication Standard and emphasizing the Right to Know concept
informing employees about the written program and how to obtain a copy
how to interpret and access MSDS information
review of labeling requirements (containers and pipes)

Additional information concerning hazard reporting and abatement and emergency response must also be discussed in the context of the College's Injury & Illness Prevention Program (Section 3 of the College of Chemistry Health and Safety Manual).

Information & Training on Specific Chemical Hazards

In addition to the initial training requirements detailed above, supervisors shall provide employees with information and training on the specific hazardous substances in their work areas. This training must be provided within 30 days of an employee's initial assignment or reassignment, and whenever a new substance is introduced into the work area. This includes temporary employees and contractors.

This training and information will include:

1. Identification/recognition of any departmental operation where hazardous substances are present
2. Explanation of the purpose and contents of an MSDS, interpretation of the hazard information contained within, and description of the location of the departmental MSDS documents
3. Methods to detect the presence of hazardous substances in the workplace (alarms, odors, etc.)
4. Methods to minimize exposure to hazardous substances in the workplace, including proper hygiene practices, personal protective equipment (PPE), and emergency procedures
5. Specific hazard information covering non-routine work assignments as periodically performed by employees

10. Informing Contractors and Contract Workers

Managers and supervisors are responsible for ensuring that outside contractors/contract workers (contract trades, temporary workers, etc.) can perform their tasks safely. This includes providing the contractor with the following information prior to starting a job:

1. Hazardous substances that they may encounter during their work activities
2. Information on obtaining MSDS's, and on the labeling systems used
3. Precautions which the employees may take to lessen the possibility of exposure by using appropriate protective measures

11. Hazardous Non-routine Tasks

Periodically, employees may be required to perform hazardous non-routine tasks. Prior to starting work on such projects, affected employees are to contact their supervisors for the following information:

1. Specific hazards
2. Protective/safety measures which must be used
3. Measures taken to lessen the hazards including ventilation, PPE, buddy systems, and/or specific emergency procedures

CCHASP and/or EH&S are available to assist supervisors in determining the precautions for non-routine tasks.

12. Emergency Response

The range and quantity of hazardous substances used in the College requires pre-planning to respond safely to chemical spills and emergencies. The clean-up of a small chemical spill should only be done by knowledgeable and experienced personnel that are familiar with the chemical hazards and the personnel protective equipment needed. A minor spill is one that can be handled by the employee(s) safely without assistance. All other chemical spills are to be considered large. Clean-up of a large spill will require contacting the Berkeley Fire Department (9-911 or 911) and/or EH&S Emergency Response Team (2-3073).

Minor (small) Chemical Spills

In the event of a minor chemical spill, if there is no potential for chemical exposure, the following procedures are to be followed:

- Alert all people located in the immediate spill area
- Call the College Emergency Action Directors line at 2-9090 to report the incident
- Consult the MSDS or other relevant safety information to select the proper personal protective equipment
- Use appropriate materials to neutralize and absorb inorganic acids and bases
- For other chemicals, use appropriate absorbent (i.e. vermiculite, diatomaceous earth, spill pads) to cover and absorb the spill.
- Place all remaining solid spill residue, absorbent and contaminated PPE into a white contaminated lab debris bucket for disposal
- If necessary, perform a final cleaning of the spill area using water or other appropriate detergent that is compatible with spill residue

Major (large) Chemical Spill

In the event of a major chemical spill, the primary objective is to take action to insure that

personnel are protected from exposure and to activate the Campus Emergency Response Plan. The following procedures must be followed in any large chemical spill event:

- Attend to injured or contaminated persons and remove them and yourself from exposure
- Alert people in the immediate area to evacuate
- If spilled material is flammable, turn off all ignition and heat sources
- From a safe location, call the Emergency Action Directors line at 2-9090
- Be prepared to report: location of incident, nature of injuries, material spilled, quantity spilled
- Under direction of the Emergency Action Director, assist emergency response personnel by providing relevant information about the incident

Fire

Small fires can be extinguished without evacuation. However, an immediate readiness to evacuate is essential in the event the fire cannot be controlled. Fire extinguishers should be used only by trained personnel.

The following immediate procedures must be followed in the event of a fire:

Small Fire

- Alert others in area and activate the building fire alarm
- Insure that there is a safe exit behind you before attempting to extinguish the fire
- Smother fire or use correct fire extinguisher (only if trained to do so and if you feel comfortable using a fire extinguisher) -- call the emergency action directors line, 2-9090 after extinguishing the fire
- If fire cannot be extinguished easily by smothering or with a fire extinguisher, evacuate to a safe location and call 9-911 followed by 2-9090. Remain accessible to emergency responders to provide information about the fire

Large Fire

- Alert people in area to evacuate
- Close door and windows (if safe to do so) before leaving lab or room
- Activate the nearest fire alarm pull box and call 9-911
- Also call the emergency action directors line at 2-9090
- Evacuate to a safe location or exit building through the stairwell (never take the elevator)
- Remain accessible to emergency responders to provide information about the fire