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**W. Phan/J. Wright**

**Updated Sean Young 2023**

# Chemical Hygiene Plan

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## Foreword

Pomona College is committed to providing a safe working environment in academic and research laboratories for its employees. The purpose of the Chemical Hygiene Plan (CHP) is to make laboratory personnel aware of potentially hazardous chemicals and to provide guideline to work safely with hazardous chemicals. This plan is required by the State of California pursuant to Title 8, Section 5191 and the OSHA Laboratory Standard (29 CFR 1910.1450).

Laboratory personnel are responsible for their own safety and are required to follow the guidance in this document and minimize the risks of potential exposures or release of hazardous materials while working in the lab. Departments may choose to go “above and beyond” this document and implement additional health and safety protocols. Implementation of the Chemical Hygiene Plan depends on the cooperation of all members of the campus community, including department chairs, faculty, laboratory staff, students, the Campus Safety Committee, and The Claremont Colleges Services Office of Environmental Health & Safety.

## Roles and Responsibilities

### **Pomona College**

College President

The President of Pomona College, G. Gabrielle Starr, has the final responsibility for the safety and health of the faculty, students, and staff working at the College.

Vice President and Dean of the College

The Vice President and Dean of the College has assigned oversight responsibility for the Chemical Hygiene Plan to Associate Dean Pierre Englebert. The Associate Dean has the responsibility and the authority to see that the Chemical Hygiene Plan is written, updated, and implemented.

Office of Facilities and Campus Services

The Director of Facilities is responsible for the physical maintenance of campus laboratory and chemical storage spaces, including maintenance, repair, and replacement of the eyewash stations/showers, hoods, autoclaves, fire extinguishers, and earthquake restraints. You may contact Director of Facilities, Kevin Austin, Kenyon House, at x74150.

Assistant Director of Facilities and Housekeeping

The responsibilities of the Assistant Director of Facilities and Housekeeping, Orlando Gonzales, Kenyon House, x70895, include:

1. Ensure that housekeeping staff who work in laboratories are trained in safety procedures and know the College’s procedure for handling emergencies.
2. Communicate with housekeeping staff in the event of a release of hazardous chemicals.
3. Serve as a member of the campus safety committee.

Environmental Health and Safety Officer (EH&S Officer or EHSO)

The Environmental Health and Safety Officer is an employee of Pomona College who is qualified by training and experience to provide technical guidance on the development and implementation of the provisions of the Chemical Hygiene Plan. The Environmental Health and Safety Officer has the following responsibilities:

1. Review and update the Chemical Hygiene Plan annually.
2. Investigate laboratory accidents and chemical exposures.
3. Respond to incidents involving the release of hazardous chemical, biological, or radioactive material and arrange for clean-up.
4. Act as a liaison between the Departments, Office of the Dean of the College, Office of Facilities and Campus Services, and The Claremont Colleges Services Office of Environmental Health and Safety for laboratory safety issues.
5. Maintain records of training, exposure monitoring, and medical examinations.
6. Ensure that students receive general lab and chemical safety training.
7. Provide additional training on specific safety topics as-needed.
8. Assist in the development of SOPs for particularly hazardous substances.
9. Ensure that regular inspections and testing of the eyewashes, safety showers, fume hoods, and fire extinguishers are performed.
10. Assist faculty in conducting annual laboratory inspections, and provide assistance and guidance in correcting identified issues.
11. Arrange, when requested, for workplace air samples to determine the amount and nature of airborne contamination, and inform employees of results.

Department Chairs

Department chairs have the responsibility to ensure that the Chemical Hygiene Plan is implemented by faculty and laboratory supervisors in their departments. The responsibilities of the department chair include:

1. Ensure that all faculty and staff comply with the safety requirements of the department.
2. Ensure that an adequate number of spill kits are available in the department.
3. Maintain in the department office or library a set of Safety Data Sheets for chemicals used in the department, or ensure that all laboratory personnel have access to an up-to-date list of SDSs through CHIMERA.

Faculty and Laboratory Supervisors

The laboratory supervisor or instructor for a course or laboratory space is the person responsible for the research laboratory and prep rooms. The primary responsibility of the supervisor is to implement the Chemical Hygiene Plan. Duties include the following:

1. Ensure that all work is conducted in accordance with the Chemical Hygiene Plan.
2. Identify potential laboratory hazards, at a minimum by conducting an annual laboratory inspection.
3. Ensure that all academic personnel (faculty, staff and students) who work with hazardous materials are familiar with, and have been trained in the requirements of, the CHP.
4. Request assistance as needed regarding hazard information or training.
5. Maintain an inventory of all hazardous chemicals under their control, updated at least annually.
6. Ensure that all hazardous substances are correctly labeled and appropriate warning signage is displayed.
7. Provide SOPs for the use of all particularly hazardous substances.
8. Ensure that all hazardous waste is labeled and handled in accordance with the College’s procedures.
9. Maintain a set of Safety Data Sheets for hazardous chemicals used in the laboratory space, or ensure that all laboratory personnel have access to an up-to-date list of SDSs through CHIMERA.
10. Ensure that all safety checks have been performed prior to the use of equipment.
11. Help with the clean-up of small spills as specified in Standard Operating Procedures and the **Chemical Spills** section of the CHP.
12. Report laboratory injuries to the Environmental Health and Safety Officer.
13. Ensure laboratory workers receive chemical- and procedure-specific training as needed.

The Claremont Colleges Services

The Office of Risk Management and Benefit Administration

The Office of Risk Management and Benefit Administration works with faculty and staff to develop and implement appropriate policies and to ensure regulatory compliance. It also provides or arranges for training as needed beyond that provided by the Pomona Environmental Health & Safety Officer. It manages workers’ compensation for all employees of the Claremont Colleges and works with the EH&S Officer and Pomona Human Resources in cases of chemical or laboratory injury.

The Office of Campus Safety

The Office of Campus Safety is the first responder to emergencies of any kind. It provides first aid and assists in evacuations until the arrival of first responders and assists law enforcement and other emergency service providers as needed.

## Emergency Call Numbers

| **Campus Department or Agency** | **Extension** | **Full Phone Number** |
| --- | --- | --- |
| Campus Safety | X72000 | (909) 607-2000 |
| Environmental Health & Safety Officer | X77359 | (909) 607-7359 |
| TCCS Environmental Health & Safety | X77233 | (909) 607-7233 |
| TCCS Worker’s Compensation | X79493 | (909) 607-9493 |
| Director of Facilities | X74150 | (909) 607-4150 |
| Associate Dean’s Office | X18497 | (909) 621-8497 |
| Pomona Valley Health Centers Urgent Care |  | (909) 865-9977 |

## Laboratory Safety

### General Lab Safety Rules

#### Personal Apparel & Hygiene

1. Do not eat, drink, smoke, chew gum, or apply cosmetics or lip balm in the laboratory.
2. Do not store food or drink inside the laboratory unless it is used for experimental purposes. In such instance, label the food or drink as “Laboratory use only.”
3. Wash hands with soap and water whenever leaving the laboratory, changing work stations, or if you suspect there may have been skin contamination.
4. Do not touch common surfaces (door handles, computers, cell phones, etc.) with gloves or lab coats. Do not wear PPE outside of the laboratory unless needed to transport hazardous materials between lab areas.
5. Constrain long hair, loose clothing, and jewelry that might come in to contact with hazardous materials or become caught in equipment.
6. Avoid direct inhalation of chemicals; do not smell or taste anything in the lab and do not pipet by mouth.

#### Lab Practices & Housekeeping

1. Never perform unauthorized experiments.
2. Do not work alone in the laboratory if procedures being done are hazardous.
3. Report violations of laboratory safety rules to your supervisor or the Responsible Person for the lab.
4. Avoid practical jokes or other behavior that might confuse, startle, or distract other laboratory personnel.
5. Inform your lab instructor and take additional precautions if you are experiencing health issues that may affect safety (e.g. recent blood donation, seizure disorder, susceptibility to fainting). You are not obligated to reveal any medical condition, only to inform the lab instructor of the safety concern.
6. Keep work area neat and uncluttered. Clean up immediately after each experiment.

#### Labeling & Signage

1. Provide appropriate warnings about hazards present or experiments in process and restrict laboratory entry to authorized personnel only.
2. Label all secondary chemical containers with their contents and associated hazards, including water.

#### Chemical Storage & Safety

1. Prior to using any material, make sure to read and understand the SDS and ensure that you have access to the SDS on CHIMERA.
2. Do not store incompatible chemicals together (as designated by the SDS in Section 10).
3. Clean up minor spills immediately, if it is safe to do so. See the **Minor Spills** section of the CHP.
4. Discard expired or unneeded chemicals as hazardous waste.
5. Label peroxide-forming or unstable chemicals with test-by/expiration dates and dispose of any expired containers. See the **Peroxide Formers** appendix.
6. Use secondary containment for storing or transporting chemicals.
7. Store flammable materials in a flammable cabinet or approved refrigerator when not in use. Keep flammable materials away from heat, ignition sources, and sources of sparks. Ground large (>5 gallons) containers during transfer.
8. Store corrosive materials in secondary containment inside a well-ventilated corrosive cabinet. Separate acids from bases, and organic acids from mineral acids. Never add water to a concentrated corrosive material. Corrosive materials should never be stored above eye-level.
9. Gas cylinders must be stored upright, chained at two points to a wall or other fixed structure, and capped whenever not in active use.
10. When working in an area where cryogenic liquids are stored, always ensure there is sufficient ventilation, and an oxygen monitor if necessary, to avoid a buildup of gas leading to an oxygen-deficient atmosphere. To avoid burns when handling cryogenic liquids or objects that have recently come in contact with cryogenic liquids, wear specific cryogen protective gloves.

### Personal Protective Equipment (PPE) and Safety Equipment

Personal Protective Equipment (PPE)

The OSHA Personal Protective Equipment Standard (29 CFR 1910.132) provides general guidelines for the proper use of personal protective equipment for research and instructional laboratories.

1. A lab coat must be worn at all times in laboratories when working with, or adjacent to, hazardous chemical, biological, or radioactive materials. Lab coats must be appropriately sized and buttoned to their full length. Lab coat sleeves must cover the arms to prevent skin exposure while wearing gloves.
2. Full length pants, or equivalent, and closed-toe shoes must be worn at all times while working in the laboratory area to prevent skin exposure below the lab coat. Cropped pants, shoes with open tops, or clothing with open sections (e.g. ripped jeans) are not appropriate.
3. Chemical resistant gloves, protective gloves, or equivalent must be worn when handling hazardous chemical, biological, or radioactive materials, or when a physical hazard requiring protective gloves is posed. Laboratory personnel should consult the Safety Data Sheet (SDS) for the material and the glove manufacturer’s chemical resistance guidance to ensure proper selection of gloves.
4. Safety glasses, chemical splash goggles, or equivalent must be worn when handling, or adjacent to, hazardous chemical, biological, or radioactive materials, or when a physical hazard requiring eye protection is posed. All eye protection must meet ANSI requirements and be appropriate for the hazards present.
5. Damaged and/or defective PPE must be removed from use immediately. Contaminated PPE should be either disposed of as hazardous waste or decontaminated. Lab coats should **only** be cleaned using specialized professional laundry services, which will be provided by each department.
6. Some experiments and/or operations in the laboratory may necessitate additional PPE. Laboratory personnel should consult the SDS, any relevant SOPs, the EHSO, and other regulatory or safety guidance sources to determine the appropriate PPE.

#### Fume Hoods

1. Fume hoods should be tested at least annually to ensure sufficient flow rate, and the testing date and flow rate should be specified on the hood.
2. Storage inside the hood should be limited, and equipment should not be within 6” of the front or back of the hood.
3. While the fume hood is in use, the fume hood sash should be lowered as much as possible, and should never be raised above the recommended maximum height. Fume hood sashes should be lowered when not in use.

#### Spill Kits

Chemical

1. Each laboratory must have easily accessible chemical spill kits that include suitable materials for effectively addressing spills depending on the specific chemicals present in the lab.
2. It is required to replenish chemical spill kits after utilization or upon the expiration of kit contents.

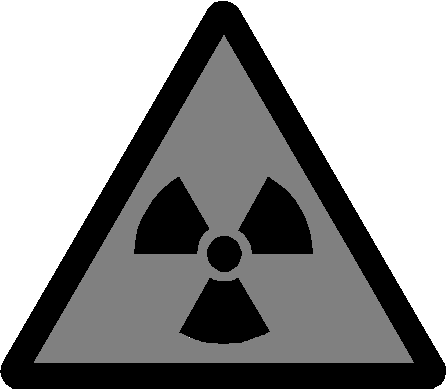
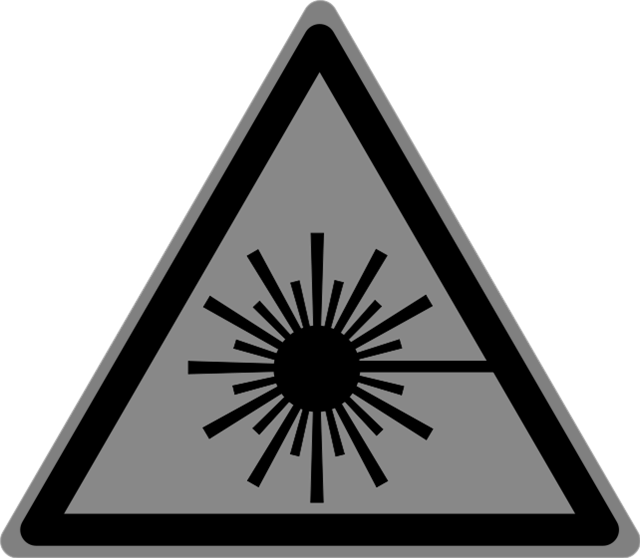
Biological

1. Bio labs should be equipped with appropriate bio spill kits, containing necessary materials for the proper cleanup and disinfection of spills relevant to the lab's activities.
2. Maintenance of biological spill kits is essential, necessitating a check and refreshment every six (6) months to ensure the effectiveness of disinfecting agents. Refilling of kits is mandatory following utilization or when kit components reach their expiration date.

#### Emergency Equipment

1. All laboratory personnel should know the location of the nearest fire alarm pull, as well as the evacuation route and Emergency Assembly Point (EAP) for their location.
2. Each lab should have a fire extinguisher with a valid, non-expired testing tag. Class D fire extinguishers should be present in labs with large amounts of water-reactive or flammable metals.
3. Each lab should have a safety shower and eyewash with a testing tag that is tested on a monthly and annual basis as laid out in the **Safety Shower and Eyewash** appendix.

### Biosafety, Laser Safety, and Radiation Safety



The hazards associated with biohazardous materials (BSL1 and above), lasers (Classes 3B and 4), and radioactive materials should be addressed in a lab-specific SOP. Please consult the Biosafety Program, Laser Safety Program, or Radiation Safety Program documents for detailed guidance. However, general guidance on signage and training is provided here.

Biosafety

1. Place biohazard warning signage on laboratory entrances, work surfaces for biohazardous material use, and biohazardous material storage areas.
2. All work surfaces must be disinfected after use, if a spill has occurred, or prior to use by another laboratory worker.
3. Autoclave users must additionally receive training on autoclave use and safety.

#### Laser Safety

1. Place laser warning signage on laboratory entrances, and clearly mark the nominal hazard zone (NHZ) if applicable.
2. Eye protection appropriate for the type of laser should be available and used by laboratory personnel.
3. For Class 4 lasers, a laser-in-use warning system for personnel entering the laboratory should be in place. Additionally, the system must have an emergency off switch accessible to users.
4. The beam path should be set up to avoid intersecting doors or windows, and to be off-set from high-traffic areas and eye level.

#### Radiation Safety

1. Place radiation warning signage, including trefoil sign, notice to employees, emergency procedures, and emergency call numbers, on laboratory entrances.
2. Place trefoil signage on work surfaces for radioactive material use, and radioactive material storage areas.
3. Additional PPE and/or shielding should be available and used as needed by laboratory personnel.
4. New users of radioactive materials must receive in-person, hands-on, lab-specific, well-documented training from the EHSO prior to beginning work.

### Safety Data Sheets (SDS**)**

The Hazard Communication Standard requires that manufacturers and distributors of hazardous materials provide safety data sheets (SDS) for all hazardous materials. The SDS provides detailed health and safety information about the specific chemical and makes recommendations for proper handling and PPE.

Prior to using any hazardous material, laboratory personnel should read and understand the relevant SDS, available through CHIMERA at [www.pomona.edu/SafetyDataSheets](http://www.pomona.edu/SafetyDataSheets) to all users of Claremont Colleges wireless networks; alternatively, hard copies can be provided in the laboratory. In order to fulfill regulatory obligations and ensure that all necessary SDS are available through CHIMERA, an accurate chemical inventory must be maintained.

Standard Operating Procedures (SOPs)

SOPs must be lab-specific and describe the step-by-step procedures involved in handling a material. The laboratory Responsible Person must write this SOP, sign it, and ensure that all laboratory personnel handling the material, or working in close proximity with it, have read and signed the SOP.

Lab-specific SOPs are required for all Particularly Hazardous Substances (PHSs) as mandated by the OSHA Laboratory Safety Standards. PHSs include select carcinogens, reproductive toxins, and materials with a high degree of acute toxicity (CFR 1910.1450(e)(3)(viii)). See the **Lab Specific SOP Template** appendix for an example format. Lab-specific SOPs may additionally be required at the discretion of the EHSO.

A list of materials in a lab that fall under this requirement may be found using the “Requires SOP” search in CHIMERA. Additionally, SOP templates for commonly used reagents are provided in the SOP Template Library on the Pomona EH&S Sakai site.

Laboratory Safety Rules for Minors

The presence of minors in campus laboratory spaces requires precautions based on their age and role in the laboratory, and there are additional limitations on what hazards minors may be exposed to. Minors whose parent or guardian is a Pomona College employee are exempt from these requirements while under direct supervision of their parent or guardian.

Any laboratory injury or hazardous material exposure that involves a minor must be reported immediately by the EHSO to Campus Safety in order for the On-Call Dean to notify the minor’s parent or guardian.

Enrolled Students

Enrolled students under 18 years of age should be permitted to participate in all regular teaching laboratory work and will receive standard laboratory safety training, but must have a waiver from their parent or guardian to work directly with:

* Biohazards at Level 2 or above
* Radioactive materials (sealed or unsealed)
* X-ray producing equipment
* Carcinogens, reproductive toxins, highly toxic materials, or other high-hazard materials identified on the “Requires SOP” report from CHIMERA

Auditors & Summer Program Students

Minors who are not enrolled students at the College but who are auditing or taking a class, or are participating in a lab-based summer program (e.g. PAYS), may participate in general laboratory work but may not be exposed to:

* Biohazards at Level 2 or above
* Radioactive materials (sealed or unsealed)
* X-ray producing equipment
* Carcinogens, reproductive toxins, highly toxic materials, or other high-hazard materials identified on the “Requires SOP” report from CHIMERA

These minors must also receive age-appropriate in-person safety training from the EH&S Officer. Exceptions to these rules will require written approval of the EH&S Officer and a waiver from the minor’s parent or guardian.

#### Campus Visitors

Minors who are visiting the campus, or who are participating in one-time outreach events, should be more carefully supervised and must be limited in their access to laboratory spaces. Minors in this category must not be allowed in close proximity to:

* Any hazardous chemical or biological materials and waste in the laboratory; this includes being within range of a potential splash.
* Sharps, sharps containers, and broken glass boxes.
* Contaminated surfaces or equipment.
* Equipment that can pose a fire or health risk if misused (e.g. lasers, hot plates, high-voltage equipment).

Additionally, a Pomona College laboratory faculty or staff member must be present in the laboratory with the minor(s) at all times, and must inform the EHSO prior to allowing minors into the laboratory space.

Laboratory Safety and Disabilities

Students, faculty, and staff with disabilities, including those with temporary disabilities due to injury or illness, may have additional needs for PPE, safe laboratory procedures, or laboratory equipment. The EHSO will assist laboratory supervisors in making any accommodations needed for safety.

Laboratory supervisors for students with disabilities should receive a notification from the student and/or the Dean of Students office as early as possible to inform them of any accommodations needed in the laboratory. Meeting with students to assess any safety or accessibility concerns prior to beginning laboratory work is highly recommended.

PPE  
Persons with disabilities may need additional PPE, which will be provided to them by the EHSO or their laboratory supervisor. Examples of additional PPE that may be provided include:

* Using a shoe cover for a cast or “boot” from a foot injury
* Wearing a chemical-resistant apron while using a wheelchair
* Purchasing alternative gloves due to contact allergies

Safe Laboratory Procedures & Equipment

Persons with disabilities may need equivalent alternative procedures, additional equipment, or assistance to perform procedures that pose a safety hazard. Examples of alternative procedures include:

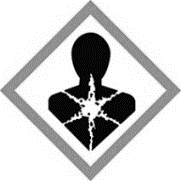
* Using smaller reagent bottles that are easier to lift
* Providing a “lab helper” to perform inaccessible tasks
* Providing additional lower work surfaces accessible from a wheelchair
* Using a digital pH meter instead of a pH color strip for a person with limited color vision

## Chemical Hazard Classifications

Under the OSHA Hazard Communication Standard, which uses the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS), the hazards posed by chemicals are classified as physical or health hazards, and assigned to the categories described below. These hazard categories are displayed as pictograms.

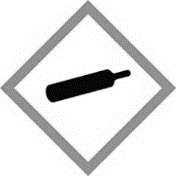
### Globally Harmonized System

#### Health Hazard



* Carcinogen
* Mutagen
* Reproductive Toxin
* Target Organ Toxin
* Aspiration Toxin

#### Gas Cylinder



* Gas Under Pressure

#### Skull and Crossbones



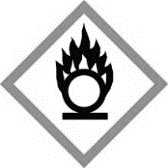
* Acute Toxin (fatal or toxic)

#### Flame



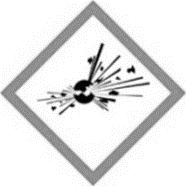
* Flammable
* Pyrophoric
* Self-Heating
* Emits Flammable Gas
* Self-Reactive
* Organic Peroxide

#### Flame Over Circle



* Oxidizer

#### Exploding Bomb



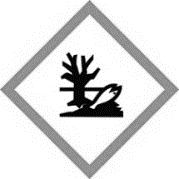
* Explosive
* Self-Reactive
* Organic Peroxide

#### Exclamation Mark



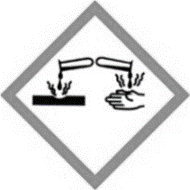
* Irritant
* Sensitizer
* Acute Toxin (harmful)
* Narcotic Effect
* Ozone Hazard

#### Environmental Hazard



* Aquatic Toxicity

#### Corrosion



* Corrosive to Skin
* Damaging to Eye
* Corrosive to Metal

### Health and Environmental Hazards

**Acute Toxicity** is defined by the LD50 or LC50 for a given material. Based on these values, acutely toxic materials are assigned a category of 1-5, with 1 being the most acutely toxic, and 5 being the least.

**Skin Corrosion** refers to irreversible skin damage caused by direct exposure to a material.

**Skin Irritation** refers to reversible skin damage or inflammation caused by direct exposure to a material.

**Eye Effects** includes both ***serious eye damage***, the occurrence of tissue damage or loss of vision or visual acuity due to exposure to a material, and ***eye irritation***, changes to the eye that resolve within 21 days.

**Sensitization** includes both ***respiratory sensitization***, the hypersensitivity of the respiratory system after exposure to a material, and ***skin sensitization***, the allergic reaction of the skin caused by exposure to a material.

**Germ Cell Mutagenicity** is the increased incidence of heritable mutations occurring as a result of exposure to a material.

**Carcinogenicity** is the increased incidence of cancer or tumor development occurring as a result of exposure to a material.

**Reproductive Toxicity** refers to increased incidence of infertility, sexual dysfunction, or offspring developmental toxicity occurring as a result of exposure to a material.

**Target Organ Systemic Toxicity** refers to systemic health effects, narcotic effects, respiratory tract irritation, and any other significant health effect not addressed elsewhere in the GHS classification system; this includes reversible or irreversible effects, immediate or delayed symptoms, and single or repeated exposures.

**Aspiration Toxicity** is the occurrence of significant health effects or injury to the respiratory system following the inhalation or entry of a material into the respiratory tract.

**Acute Aquatic Toxicity** is the capacity of a material to inflict significant injury on aquatic organisms or ecosystems from a single or short-term exposure.

**Chronic Aquatic Toxicity** is the capacity of a material to inflict significant injury on aquatic organisms over the lifetime of an organism.

### Physical Hazards

**Explosives** are materials which, without the addition of other materials, can potentially generate gas such that they can cause direct physical damage to their surroundings. This classification also includes pyrotechnic materials that do not produce gases.

**Flammable Gases** are gases that have a flammable range at 20°C and 101.3kPa in ambient air.

**Flammable Aerosols** are pressurized compressed, liquefied, or dissolves gases in non-refillable containers designed to release their contents in suspension. Aerosols are considered flammable unless they contain ≤1% flammable material and have a heat of combustion of >20 kJ/g.

**Oxidizing Gases** are gases which may intensify fire by providing oxygen.

**Gases Under Pressure** are gases either pressurized to ≥280 Pa at 20°C, or stored as a refrigerated liquid.

**Flammable Liquids** are liquids with a flash point of ≤93°C.

**Flammable Solids** are solids that can be easily ignited by friction or by brief contact with an ignition source.

**Self-Reactive Substances** are materials that may react spontaneously to decompose in an exothermic reaction.

**Pyrophoric Liquids** are liquids that may ignite within 5 minutes of being in contact with air, regardless of quantity.

**Pyrophoric Solids** are solids that may ignite within 5 minutes of being in contact with air, regardless of quantity.

**Self-Heating Substances** are materials that do not fall under the pyrophoric classification, but in which in large quantities may ignite after extended contact with air.

**Substances Which in Contact with Water Emit Flammable Gases** are materials that either become flammable or give off flammable gases when in contact with water.

**Oxidizing Liquids** are liquids which may intensify fire by providing oxygen.

**Oxidizing Solids** are solids which may intensify fire by providing oxygen.

**Organic Peroxi**des are organic materials which contain an R–O-O-H or R-O-O-R structure; these materials are frequently shock sensitive, may decompose explosively, and can be reactive.

**Substances Corrosive to Metal** are materials which may corrode or damage metals that they come in contact with.

## Hazardous Waste

### Disposal Overview

1. Do not discard hazardous chemical, biological, or radioactive materials in the trash or sink.
2. Any water or solvent used to rinse contaminated containers, glassware, or equipment shall be treated as hazardous waste.
3. Dispose of empty containers larger than 5 gallons, or that contained materials classified by the EPA as Extremely Hazardous Substances, as hazardous waste.
4. Thoroughly rinse empty chemical storage containers (not for extremely hazardous substances, <5 gallons), deface (but do not destroy) the label, and dispose of the container as trash or in a glass disposal bin depending on the material.
5. Dispose of blades, syringes, or other sharps in an approved sharps container, and glass or pipets that pose a puncture hazard in a broken glass waste box.
6. Unless completely empty, aerosol cans must be disposed of as hazardous waste.

### Labeling and Containers

1. Label all hazardous waste containers with their complete contents, hazards, accumulation start date, physical state, location, and generator information (name, address, and EPA ID) **when the first drop of waste is generated**. See the **Hazardous Waste Label** appendix for format, or download the fillable PDF from the Pomona EH&S Sakai site.
2. Hazardous waste containers should be clean, in good condition, and made of a material compatible with their contents. Dry waste should be double bagged in clear plastic bags.
3. To prevent overflows, do not fill hazardous waste containers above 90%.
4. Do not combine incompatible waste streams in one container.
5. Do not combine waste streams with different physical states in one container.

### Storage and Containment

1. Designate a specific location in the laboratory for hazardous waste storage.
2. Store hazardous waste containers in secondary containment with the cap or lid closed unless actively adding waste.
3. Do not store containers of incompatible hazardous chemical waste together; consult the SDS for the waste components to determine compatibility. Also see the **Chemical Incompatibility Matrix** appendix.
4. Do not store hazardous waste containers beyond 180 days; each department will coordinate a location and time for hazardous waste pickup approximately every 90 days.

## Laboratory Injuries

### Students (except Student Workers)

Non-Urgent: No Medical Treatment Required

1. Student informs PI/laboratory supervisor of injury.
2. The PI/laboratory supervisor completes the “**Accident Investigation Form**” in Appendix E and emails the form to the EH&S Officer within 48 hours.
3. The EH&S Officer adds the incident to the list of minor injuries on the Lessons Learned report and emails the form to the department chair and Associate Dean.

Non-Urgent: Medical Treatment Required

1. Student calls Campus Safety at x72000 to report the incident. Campus Safety comes to the scene to provide necessary first aid and/or transport to Student Health Services (or Pomona Valley Health Centers Urgent Care, if after hours).
2. Student informs PI/laboratory supervisor of injury.
3. The PI/laboratory supervisor completes the “**Accident Investigation Form**” in Appendix E and emails the form to the EH&S Officer within 48 hours.
4. The EH&S Officer adds the incident to the list of minor injuries on the Lessons Learned report and emails the form to the department chair and Associate Dean.
5. The PI/laboratory supervisor completes the “**Accident Investigation Form**” in Appendix E and emails the form to the EH&S Officer within 48 hours.

Urgent: Medical Treatment Required

1. Student calls Campus Safety at x72000 to report the incident. Campus Safety comes to the scene to provide necessary first aid and will call paramedics if warranted.
2. Campus Safety notifies the On-Call Dean and Senior Administrator on Call (SAOC), who notifies the EH&S Officer.
3. The EH&S Officer notifies the PI/laboratory supervisor, the department chair, the Dean of the College’s Office, the Dean of Students’ Office, and the Communications Office.
4. The PI/laboratory supervisor completes the “**Accident Investigation Form**” in Appendix E and emails the form to the EH&S Officer within 24 hours.
5. The EH&S Officer will provide both the completed “**Accident Investigation Form**” and a “Lessons Learned” report to the department chair, and to the Dean of the College’s Office, and the Dean of Students’ Office for distribution.

### Employees (including Student Workers)

Non-Urgent: No Medical Treatment Required

1. Worker informs PI/laboratory supervisor of injury.
2. The worker and PI/laboratory supervisor complete an “**Employee’s Report of Accident**” and a “**Supervisor’s Report of Accident**” from the TCCS website or EH&S Sakai site and email the forms to the EH&S Officer, the TCCS Workers Compensation Administrator, and Pomona College Human Resources within 48 hours **even if medical treatment or first aid is declined**.
3. The EH&S Officer adds the incident to the list of minor injuries on the Lessons Learned report.

Non-Urgent: Medical Treatment Required

1. Worker calls Campus Safety at x72000 to report the incident. Campus Safety comes to the scene to provide necessary first aid and/or transport to health services.
   1. If the injured employee requests medical treatment at an occupational clinic, their supervisor or HR representative must request a medical treatment authorization from TCCS Workers’ Compensation.
2. Worker informs PI/laboratory supervisor of injury.
3. The worker and PI/laboratory supervisor complete an “**Employee’s Report of Accident**” and a “**Supervisor’s Report of Accident**” from the TCCS website or EH&S Sakai site and email the forms to the EH&S Officer, the TCCS Workers Compensation Administrator, and Pomona College Human Resources within 48 hours.
4. If the injured employee is placed on modified duties and/or is placed off work and wishes to file a workers’ compensation claim, they must be provided the entire Workers’ Compensation packet (DWC 1 Form, EE Report, Supervisor Report, MPN Acknowledgment Receipt, and Salary Continuation Form) to return to either their HR representative or the Workers’ Compensation Administrator. Alternatively, the employee may inform HR or Workers’ Compensation in writing that they do not wish to file a workers’ compensation claim.
5. The EH&S Officer adds the incident to the list of minor injuries on the Lessons Learned report. If medical treatment beyond first aid is required, the TCCS Workers Compensation Administrator may record the injury on the OSHA Form 300 log.

Urgent: Medical Treatment Required

1. Worker calls Campus Safety at x72000 to report the incident. Campus Safety comes to the scene to provide necessary first aid and will call paramedics if warranted.
   1. If the injured employee requests medical treatment at an occupational clinic, their supervisor or HR representative must request a medical treatment authorization from TCCS Workers’ Compensation.
2. Campus Safety notifies the Senior Administrator on Call (SAOC), who notifies the EH&S Officer.
3. The EH&S Officer notifies the PI/laboratory supervisor, the department chair, the Dean of the College’s Office, the Dean of Students’ Office (if relevant), and the Communications Office.
4. The worker and PI/laboratory supervisor complete an “**Employee’s Report of Accident**” and a “**Supervisor’s Report of Accident**” from the TCCS website or EH&S Sakai site and email the forms to the EH&S Officer, the TCCS Workers Compensation Administrator, and Pomona College Human Resources within 24 hours.
5. If the injured employee is placed on modified duties and/or is placed off work and wishes to file a workers’ compensation claim, they must be provided the entire Workers’ Compensation packet (DWC 1 Form, EE Report, Supervisor Report, MPN Acknowledgment Receipt, and Salary Continuation Form) to return to either their HR representative or the Workers’ Compensation Administrator. Alternatively, the employee may inform HR or Workers’ Compensation in writing that they do not wish to file a workers’ compensation claim.
6. The EH&S Officer will provide both the completed “**Accident Investigation Form**” and a “Lessons Learned” report to the Dean of the College’s Office, and the Dean of Students’ Office (if applicable) for distribution. If applicable, the TCCS Workers Compensation Administrator will report a severe injury to OSHA within 24 hours (or 8 hours for a fatality) and to CalOSHA within 8 hours, and will also record the injury on the OSHA Form 300 log.

### ***Available Medical Service***s

#### **TravCARE Nurse Line**

(855) 385-6037

For on-the-job related injuries, all TCCS employees have access to the 24/7 TravCARE Nurse Line. Bilingual nurses are available in both English and Spanish. Employees will need to provide the name of their college and supervisor as well as their direct phone number and work location. At the end of the call, the nurse will provide the employee with a recommendation on a course of treatment and provide medical authorization if appropriate. A report of the call will be sent to the TCCS Workers’ Compensation Administrator, at which point it will be communicated to the employee’s HR representative.

Student Health Services (Tranquada)

757 College Way, Claremont, CA 91711 (in front of Honnold Library)

(909) 621-8222 (On campus–ext. 18222)

Fax: (909) 621-8472

If Student Health Services is closed when an injury occurs and where non-urgent medical attention is required, Campus Safety or the On-Call Dean from the respective colleges will transport the student to the nearest medical center.

Pomona Valley Health Centers Urgent Care

1601 Monte Vista Avenue, Ste. 190

Claremont, CA 91711

909-865-9977

8:00 a.m. - 8:00 p.m. Monday through Friday

9:00 a.m. - 5:00 p.m. weekends and holidays

## Hazardous Material Spills

Spills must be cleaned up only by trained personnel. Clean up a spill of hazardous material only if the following conditions are met:

1. You know what the spilled materials are and what hazards they pose.
2. You understand the clean up protocols and you have adequate clean up materials in the laboratory.
3. You have the proper Personal Protective Equipment (PPE) to do the clean up.
4. If you feel comfortable and feel that no personal injuries will result from cleaning the spill.
5. There is no secondary situation (e.g. a fire) present.

### **Minor Hazardous Material Spills**

A minor spill is a spill that can be cleaned up in 5-10 minutes and the quantity of the spilled material is less than 100g / 500 mL (or the amount specified by the SOP for the process). In an event of a minor spill in which there is no potential for personnel exposure, laboratory personnel may choose to clean up a spill based on:

1. The size, area, and quantity of the spill
2. The availability of clean up materials in the laboratory
3. The toxicity and hazardous properties of the chemical
4. The presence of other trained personnel to assist with cleanup

#### Minor Chemical Spill Procedures:

1. Alert people in the surrounding immediately of the spill and turn off all ignition sources near the spill.
2. Confine the spill to a small area and prevent it from reaching drains.
3. Check the SDS for PPE, cleanup materials, and procedures for cleaning up the spill. Contact the EH&S Officer if assistance is needed.
4. Use the appropriate spill kit to absorb the spill. Double-bag used absorbent and contaminated materials in clear plastic bags and dispose of it as hazardous chemical waste. Do not dispose the chemical or any contaminated cleanup materials in the sink or in the trash can.
5. Clean the spill area with soap and water. Treat the water and any additional clean up materials as hazardous chemical waste.

#### Minor Radiation Spill Procedures

1. Alert people in the area of the spill.
2. Limit access to the spill area to those staff needed for cleanup purposes.
3. Do not allow anyone to leave the contaminated area without first being monitored for contamination using the appropriate survey meter or method.
   1. If contamination is found, have the staff change clothing as necessary. Then re-monitor to ensure no radiation is found on the person.
4. Wear personal protective equipment, including safety goggles, gloves, shoe covers, and long-sleeve lab coat to begin the decontamination process.
5. Place absorbent paper towels over the spill area. If spill is a solid material, then place towel soaked with water over the spills.
6. Place the towels in a clear plastic bag using a forceps or equivalent. Dispose of as radioactive waste.
7. Gently wash the spilled area using normal cleaning agents or commercial decontamination agents.
8. Discard all used cleaning materials as radioactive waste.
9. Survey the area, and repeat cleaning procedure until all radioactive material is removed.

### **Major Hazardous Material Spills**

For a major spill, do not attempt to clean up the spill. If any laboratory personnel are injured or contaminated, refer to the “**Personnel Exposures**” procedures. Any spill outside of the laboratory should be considered a major spill.

#### Major Chemical Spill Procedures:

1. Alert people in the area of the chemical spill.
2. Confine the spill and turn off all ignition sources (flames, electrical devices) if it is safe to do so, then evacuate the laboratory and close the door.
3. Call Campus Safety by dialing x72000.
4. Campus Safety will notify the EH&S Officer and will evacuate the building and prevent re-entry if necessary.
5. The EH&S Officer will notify the PI/laboratory supervisor and the department chair; the SAOC may notify the Dean’s Office and the Communications Office as needed.
6. Based on the severity of the spill and potential for exposure, the EH&S Officer will either call for emergency services, or inform Facilities & Campus Services to close off the area and request that the campus hazardous waste contractor perform a cleanup.

#### Major Radioactive Material Spill

1. Alert people in the area of a spill. Instruct people not involved in the spill or near the spill to leave the area immediately.
2. Do not allow anyone to leave contaminated area without first being monitored for contamination using the appropriate survey meter or method. If contamination is found, have the staff change clothing as necessary. Then re-monitor to ensure no radiation is found on the person.
3. Confine the spill if it is safe to do so, then evacuate the laboratory and close the door.
4. Call Campus Safety by dialing x72000.
5. Campus Safety will notify the EH&S Officer and the Associate Dean On-Call, and will evacuate the building and prevent re-entry if necessary.
6. The EH&S Officer will notify the PI/laboratory supervisor and the department chair; the Associate Dean On-Call may notify the Dean’s Office and the Communications Office.
7. Based on the severity of the spill and potential for exposure, the EH&S Officer will either call for emergency services, or inform Facilities & Campus Services and request that the campus hazardous waste contractor perform a cleanup.

### Personnel Exposure

#### Chemical Exposure

1. Follow the first aid instructions in Section 4 of the SDS for the material.
   1. Generally, for skin exposure, enter the emergency shower and flush the affected area with water for 15 minutes. Remove contaminated PPE and clothing and consider it to be hazardous waste.
   2. Generally, for eye exposure, immediately flush the eyes with water for 15 minutes using the emergency eye wash station.
2. Call Campus Safety by dialing x72000. Campus Safety will come to the scene to provide necessary first aid and will call paramedics if warranted.
3. When seeking medical attention, bring the SDS of the chemical with you and present it to the doctor in attendance.
4. Follow reporting requirements under the Laboratory Injuries section.

#### Cryogenic Liquid Exposure

1. Immediately re-warm the affected area with lukewarm water (not hot water).
2. Call Campus Safety by dialing x72000. Campus Safety will come to the scene to provide necessary first aid and will call paramedics if warranted.
3. Follow reporting requirements under the Laboratory Injuries section.

#### Radioactive Material Exposure

1. Enter the emergency shower and flush the affected area with water for 15 minutes. Remove contaminated clothing and consider it to be hazardous waste.
2. Using an appropriate survey meter or method, determine if any contamination is still present.
3. Call Campus Safety by dialing x72000. Campus Safety will come to the scene to provide necessary first aid and will call paramedics if warranted.
4. When seeking medical attention, inform medical services of the extent of contamination and the type of radiation involved.
5. Follow reporting requirements under the Laboratory Injuries section.

## Laboratory Fires

A fire within the classroom and/or laboratory can grow in both size and severity due to storage of flammable or other hazardous chemicals. Careful consideration must be made when attempting to extinguish a fire of any size. Never use a fire extinguisher if you have never been trained or do not feel comfortable. Never enter a room alone during a fire, or enter a room that is smoke filled. Do not use a fire extinguisher for an electrical fire sparked by live equipment or a gas fire fueled by open valve or broken line; shut down the source before extinguishing the fire.

In case of a fire, all laboratory personnel should:

1. Know the location of the fire extinguisher.
2. Know the location of the fire alarm pull station.
3. Know exit routes and stairway.
4. Learn how to use a fire extinguisher.
5. Know building’s emergency assembly point (EAP)

### Fire Prevention & Preparation

The following are ways to minimize the risk of a laboratory fire occurring:

1. Keep laboratory door closed at all times.
2. Minimize the amount of flammable liquids inside a laboratory
   1. Do not store more than 25 gallons of flammable liquids inside the flammable storage cabinet.
   2. Do not store more than 5 gallons of flammable liquids on the lab bench outside the flammable storage cabinet.
3. Minimize the amount of combustible materials inside the laboratory, especially near flammable material storage areas.
4. Do not store oxidizing materials with flammable or combustible materials.
5. Do not store flammable chemicals near ignition sources.

### Small Fires

A small fire is a fire that is smaller than the size of a regular office trash can. The following procedure can be used during a small fire:

1. Alert the people in the surrounding area of the fire.
2. Identify someone to call Campus Safety by dialing x72000, or if you are alone make the call yourself.
3. A fire within a **contained vessel** can easily be smothered, if it is safe to do so.
4. Use a fully operational fire extinguisher to extinguish a small fire.
5. Even if you completely extinguish the fire, report the incident to the EH&S Officer and Campus Safety.

### Large Fires

A large fire is a fire that is larger than the size of a regular office trash can. Do not try to extinguish a large fire using a fire extinguisher. The following procedures can be used in the event of a large fire:

1. Alert people in the surrounding area of the fire.
2. Evacuate the lab and close the door. For fume hood fires, close the sash.
3. Activate the nearest fire alarm pull station.
4. Call Campus Safety at x72000.
5. Campus Safety will notify the SAOC, who will notify the EH&S Officer.
6. Evacuate the building using the stairwells. Never use the elevator to exit the building during a fire.
7. Do not re-enter the building without Campus Safety authorization.

### Clothing on Fire

1. When your clothes catch on fire, the best course of action is to “**Stop-Drop-Roll-Roll-Roll.”** This will help to smother the fire. Protect your face with your hands. During this time, remember to yell for help!
2. Use a safety shower or fire extinguisher if they are immediately available.
3. Call Campus Safety at x72000 to come to the scene and provide necessary first aid and/or transport to health services.
4. Campus Safety will notify the SAOC, who will notify the EH&S Officer.
5. Follow reporting requirements under the Laboratory Injuries section.

**1) Pull the pin
2) Aim nozzle at base of fire
3) Squeeze the handle
4) Sweep nozzle side to side
Know your extinguisher: Use the correct extinguisher (check your own extinguisher's label for detailed instructions).**

### Fire Alarms

A fire alarm means “**evacuate**.” A fire alarm or flashing strobe lights is a warning of a fire nearby. They may also indicate a drill, or a false alarm. Whatever the situation may be, act as if there is an actual fire and evacuate the building. If you detect a smoke or fire, remember the acronym **RACER**. Keep in mind that these steps do not need to be followed in sequential order. Assess the situation and determine the appropriate course of action.

#### Rescue

1. Rescue people near the smoke and/or fire. If someone is on fire, help them to “**stop-drop-roll-roll-roll.”**

#### Alarm

1. Alert people in the surrounding area of the fire.
2. Activate the nearest fire alarm pull station.
3. Contact campus safety using a campus phone and dial x72000 or (for cell phones) call (909) 607-2000 and provide your name and location.

#### Contain

1. Contain the smoke and/or fire by closing the doors to labs, rooms, stairwells, corridors, and windows. If the fire occurs in the fume hood, lower the hood’s sash.
2. Turn off all ignition sources (open flame, electrical devices).

#### Extinguish or Evacuate

1. Extinguish the fire using the appropriate fire extinguisher if you have been trained, and the fire is smaller than a regular office trash can.
2. If you have not been trained or feel comfortable using a fire extinguisher, then evacuate the building.
3. Do not attempt to extinguish a large fire using a fire extinguisher.

#### Relocate

1. Relocate to the Emergency Assembly Point.
2. Wait for Campus Safety to arrive.
3. Do not re-enter the building without permission from Campus Safety.

### Fire Classification:

#### Class A

Common materials such as paper, wood, or most other combustibles.

#### Class B

Flammable liquids such as gasoline, paint remover, or grease.

#### Class C

Electrical fire.

#### Class D

Combustible metals (usually found in industry or specialized laboratories).

## Earthquakes

In California, earthquakes are always a major safety concern and could happen without warning at any time. The key to preventing injuries or property damage is preparation.

### Earthquake Preparation Checklist

The following is a checklist designed to help your laboratory prepare for an earthquake:

#### Chemicals

1. Are chemicals capped and returned to the storage after use?
2. Are chemical storage cabinets closed and latched?
3. Is there secondary containment for chemical and hazardous waste storage?
4. Are incompatible chemicals stored separately?
5. Is chemical storage above eye level minimized?

#### Equipment & Furniture

1. Are compressed gas cylinders capped when not in use?
2. Are gas cylinders secured in an upright position and chained to the wall or very stable structure?
3. Are chemical storage cabinets secured to the wall to prevent tipping or movement?
4. Are chemical storage shelves equipped with lips or restraints to keep chemicals and glassware in place?
5. Are exits and aisles maintained free and clear of obstructions?
6. Is heavy equipment or furniture that might block exit route secured?
7. Is safety equipment (fire extinguishers, safety showers, eyewashes) accessible and in working condition?
8. Is storage of breakable items such as glassware on open benches or shelves minimized?

#### Personal Preparation

1. Do you know the emergency assembly point (EAP) for your building?
2. Can you identify danger spots (windows, chemical shelves, and objects or equipment which may fall)?
3. Can you identify safe spots to shelter in case of an earthquake (sturdy desk, table, or the laboratory bench)?
4. Do you know the evacuation routes for your building?
5. Do you know where the nearest first aid kit and fire alarm pull are?
6. Do you have a listing of emergency numbers?

### Earthquake Procedures

#### During an Earthquake

1. If you are inside the laboratory, move away from windows, chemical shelves, and objects or equipment which may fall.
2. Take cover underneath a sturdy desk, table, or the laboratory bench (**Drop, Cover, and Hold)**.
3. Be aware that the electricity may go out or the fire alarms or the sprinkler system may be activated.
4. If you are outdoors, stay away from power lines, tall building, and trees.
5. Do not leave the building until the shaking has stopped.

#### After the Earthquake

1. Be prepared for aftershocks.
2. Account for people who were in the lab with you when the disaster struck.
3. Check for injured people or others who might have trouble evacuating the building.
4. Check for fire hazards or spilled chemicals. If it is possible and safe, contain any chemical spills and turn off ignition sources.
5. If a fire has started and it is safe to extinguish the fire, do so.
6. Evacuate to the Emergency Assembly Area, closing doors behind you.
7. When leaving the building, use the stairs instead of the elevator.

## Appendix A: Medical Consultation/Surveillance

All staff and faculty working with hazardous chemicals will be provided with an opportunity to have medical examination, and follow-up examination, if necessary, under any of the following circumstances:

1. The employee develops signs and symptoms of overexposure associated with the chemical to which they may have been exposed in the laboratory.
2. In circumstances where environmental monitoring demonstrates routine chemical exposure above the action level.
3. If an employee is exposed to hazardous chemicals in the event of a spill, leak, or explosion.

In the event of an uncontrolled release of a hazardous material where there is likelihood that the individual may have been overexposed to the hazardous material, the following information is required:

1. The identity of the hazardous material to which the employee may have been exposed.
2. A description of the conditions under which the exposure occurred including, if available, quantitative exposure data.
3. A description of the signs and symptoms of exposure.
4. A copy of the safety data sheet(s) for the chemical(s) involved.

The medical professional performing the examination will provide a written opinion that will not reveal specific findings or diagnosis unrelated to the exposure, but will include:

1. Any recommendation for further medical follow-up.
2. Results of medical examination and any associated tests.
3. Any medical conditions that may be revealed in the course of the examination that may place the employee at increased risk as a result of exposure to a hazardous chemical found in the workplace.
4. A statement by the physician that the employee has been informed of the consultation/examination results and any medical condition that may require further examination or treatment.

## Appendix B: Eyewash and Safety Shower Testing Program

The Occupational Safety and Health Administration (OSHA) requires that employers provide employees with emergency eyewash and shower equipment to all work areas “where the eyes or body of any person may be exposed to injurious corrosive materials” (29 CFR 1910.151(c)). The ANSI Z358.1 standard recommends that this equipment be accessible within 10 seconds of the work area, on the same floor level, and not obstructed.

The eyewash and safety shower shall be inspected on a monthly basis to verify that they are functional and that the flushing fluid is available and clean. The eyewash and shower shall also be inspected on a yearly basis to quantitatively verify the flow rate of the equipment. This testing may be performed by the EH&S Officer, trained departmental personnel, or by a qualified external contractor.

**The monthly eyewash and safety shower inspection shall include the following:**

1. Ensure that access to the equipment is clear and unobstructed.
2. Ensure that there are no broken parts, leakage, or visible damage.
3. Ensure that the eyewash covers are in place and operating properly.
4. Ensure that the safety shower has hands-free functionality.
5. Activate the eyewash unit and ensure that the water flow is continuous and rises to the mark on the plate, but is sufficiently low-pressure to avoid eye injury.
6. Initial and date on the inspection tag attached to the eyewash.
7. Document the inspection on the log sheet.
8. If inspection fails, report it to Facilities & Campus Services for repair.

**The yearly eyewash and safety shower inspection shall include the following:**

1. Let the eyewash run for one minute and verify that at least 1.5 liters (0.4 gallons) of water is collected.
2. Let the safety shower run for one minute and verify that at least 75.7 liters (20 gallons) of water is collected.
3. Check for pressure, rust, leakage, or other problems that might affect the operation of the equipment.
4. Initial and date on the inspection tag attached to the eyewash.
5. Document the inspection on the monthly log sheet.
6. If inspection fails, put a sign on the equipment and report to Facilities & Campus Services for repair at x72236.

## Appendix C: Peroxide Formers

In order to limit the explosion potential created by peroxide formation in ethers and similar compounds, the following requirements must be satisfied:

1. **Container labeling** - In addition to the original manufacture label or secondary label, the container for all peroxide-formers (Class I, II and III as listed below) shall be labeled with the following

* “WARNING PEROXIDE FORMER” or “POTENTIAL EXPLOSIVE PEROXIDE”
* Date of purchase and opening date
* The required discard-by date, and the test-by date if applicable

1. **Disposal requirements** - The discard date is dependent on the type of peroxide former (table below).

* **Class A** should be discarded 3 months after opening. These chemicals form explosive levels of peroxides without concentration, especially after exposure to air. The discard date can be reset if tested for peroxide formation.
* **Class B** should be tested for peroxide formation 12 months after opening, then every 6 months. Discard promptly if not needed.
* **Class C** should be tested for peroxide formation 12 months after opening, then every 12 months. These chemicals may form explosive or shock sensitive peroxides.

| **Class** | **Examples** |
| --- | --- |
| Class A | Butadiene\*, Isopropyl ether, Sodium amide, Chloroprene\*, Potassium amide, Tetrafluoroethylene\*, Divinyl ether, Potassium metal, Vinylidene chloride |
| Class B | Acetal, Acetaldehyde, Benzyl alcohol, 2-Butanol, Cumene, Cyclohexanol, Cyclohexene, 2-Cyclohexen-1-ol, Decalin, Diacetylene gas, Dicyclopentadiene, Diglyme, Diethyl ether, Dioxanes, Ethylene glycol ether acetates, Furan, 4-Heptanol, 2-Hexanol, Methylacetylene gas, 3-Methyl-1-butanol, Methyl cyclopentane, Methyl isobutyl ketone, 4-Methyl-2-pentanol, 2-Pentanol, 4-Penten-1-ol, 1-Phenylethanol, 2-Phenylethanol, Tetrahydrofuran, Tetrahydronaphthalene, Vinyl ethers, and other secondary alcohols |
| Class C | Acrylic acid, Acrylonitrile, Butadiene gas, Chlorobutadiene, Chloroprene, Chlorotrifluoroethylene gas, Methyl methacrylate, Styrene, Tetrafluoroethylene gas, Vinyl acetate, Vinylacetylene gas, Vinyladiene chloride, Vinyl chloride gas, Vinyl pyridine |

\*as a liquid monomer

## Appendix D: Lab-Specific SOP Template

### Overview

Provide an overview of the hazards posed by the chemical or process and the most important safety information.

### Personal Protective Equipment (PPE)

#### Body Protection:

#### Gloves:

#### Eye Protection:

### Standard Procedures

Describe the general laboratory safety procedures for handling the material or performing the process. Include necessary engineering controls, specific warnings or potential hazards, and other general guidance.

Provide the step-by-step, lab-specific procedure that the user will be following in sufficient detail to complete the procedure as written.

### Emergency Procedures

Whenever seeking treatment for a chemical exposure, bring a copy of the SDS and show it to the doctor in attendance.

#### Skin Exposure:

#### Eye Exposure:

#### Inhalation:

#### Minor spill:

#### Large spill:

### Hazardous Waste Disposal

Describe any specific waste procedures or safety guidance.

### Acknowledgment

This SOP has been reviewed and approved by:

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_**Supervisor Name Supervisor Signature Date

By signing below, you acknowledge that you have reviewed this SOP in its entirety, will follow all safety guidance set out both in the SOP and in the campus CHP, and have reviewed the safety data sheets for the associated chemicals.

| **Name** | **Signature** | **Date** | **Supervisor Initial** |
| --- | --- | --- | --- |
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## Appendix E: Accident Investigation Form

**1. Who was injured?**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Last First Middle

Telephone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date of Birth: \_\_\_\_\_\_\_\_\_\_\_

**2. When and where did this happen?**

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_ Time: \_\_\_\_\_\_\_\_ Date Reported: \_\_\_\_\_\_\_\_\_\_\_\_\_

Location (building, room): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3. How did this happen?** What was the person doing at the time of the injury or near miss? Describe in detail the immediately preceding events.

**4. What injuries resulted?** Specify the type of injuries and body part(s) injured. Example: “sprained ankle.”

**5. Was medical treatment needed?**

Was first aid administered? Yes No

If yes, who administered it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Did injured person go to a clinic or hospital? Yes No

Doctor’s Name: \_\_\_\_\_\_\_\_\_\_\_\_ Name of Medical Facility: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Medical Facility Phone: \_\_\_\_\_\_\_\_\_\_\_\_\_

What medical treatment was provided? Describe in detail.

**6. Was the injured person wearing any personal protective equipment?** If yes, list all PPE worn**.**

**7. Were there any witnesses?** Yes  No

Name of witness: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phone number: \_\_\_\_\_\_\_\_\_\_\_

Witness description of the incident:

**8. How could this accident have been prevented?** Provide a summary of causes that contributed to the incident.

Was the injured person trained to perform this task safely? Yes No

If yes, do you have a training record? Yes No

Action taken to prevent a recurrence of this injury/accident:

Injured Person Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Supervisor Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Supervisor Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Once the form has been completed, email a scanned copy of the form to the Environmental Health and Safety Officer.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix F: Hazardous Waste Label – Pomona College**  333 N. College Way, Claremont, CA 91711  **Start Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Department: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Chemical Constituents** (Chemical/% Composition):   |  |  | | --- | --- | |  |  | |  |  | |  |  | |  |  |   **Room: ­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Lab: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ EPA ID:** CAL000093157  (additional space for constituents on reverse)  **Hazard Class (check all that apply):**   | Flammable | Reactive | | --- | --- | | Corrosive acid (pH≤3) | Oxidizing | | Corrosive base (pH≥12.5) | Peroxide-forming | | Toxic  Biohazardous | Environmental hazard  EPA “Extremely Hazardous” |   **Physical State:** Solid  Liquid Gas  **Comments:** **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | **Chemical Constituents (continued):**   |  |  | | --- | --- | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |
| **Questions about Hazardous Waste?**  Call or email the Pomona EH&S Officer:  (909) 607-7359  [katherine.muller@pomona.edu](mailto:katherine.muller@pomona.edu) | Fold into quarters and place in hazardous waste label envelope with the description facing outwards.  Remember the **First Drop Rule**:  Waste containers must have a label before the first drop of waste is added! |

## Appendix G: General Chemical Incompatibility Matrix

Follow the specific incompatibility guidelines for a given chemical based on the information in Section 10 of the SDS. However, these rules hold generally for most chemicals and are a useful reference.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Acids, Inorganic** | **Acids, Oxidizing** | **Acids, Organic** | **Alkalis (Bases)** | **Oxidizers** | **Poisons, inorganic** | **Poisons, organic** | **Water reactives** | **Organic solvents** |
| **Acids, Inorganic** |  |  | **X** | **X** |  | **X** | **X** | **X** | **X** |
| **Acids, Oxidizing** |  |  | **X** | **X** |  | **X** | **X** | **X** | **X** |
| **Acids, Organic** | **X** | **X** |  | **X** | **X** | **X** | **X** | **X** |  |
| **Alkalis (Bases)** | **X** | **X** | **X** |  |  |  | **X** | **X** | **X** |
| **Oxidizers** |  |  | **X** |  |  |  | **X** | **X** | **X** |
| **Poisons, inorganic** | **X** | **X** | **X** |  |  |  | **X** | **X** | **X** |
| **Poisons, organic** | **X** | **X** | **X** | **X** | **X** | **X** |  |  |  |
| **Water reactives** | **X** | **X** | **X** | **X** | **X** | **X** |  |  |  |
| **Organic solvents** | **X** | **X** |  | **X** | **X** | **X** |  |  |  |

**X = Not compatible – do not store together**