

**UAA Chemistry Department
Lower-Division Teaching Laboratory
Safety Agreement and Procedures**

1. General Procedures

- a. Any person who intends to use chemistry department teaching laboratory facilities (lab or laboratory herein) shall first participate in a safety orientation conducted by trained university personnel. This safety orientation shall include, at a minimum, an overview of the UAA Chemical Hygiene Plan (CHP) and the Chemistry Department Teaching Laboratory Safety Agreement and Procedures (SAPs).
- b. All students, visitors, and employees shall abide by and all employees shall enforce the CHP and SAPs. These protocols are in place to minimize health and safety risks. Failure to do so shall result in administrative action.
- c. Pets are not allowed in chemistry laboratories. Service animals are permitted in accordance with ADA regulations.
- d. Chemicals, equipment, and other university property may not be removed from chemistry labs without notification of the lab coordinator and the expressed written consent of the laboratory manager.

2. Laboratory Safety

- a. Students shall not gain access to teaching labs without the presence or permission of their instructor. If a teaching laboratory contains students, lab instructors shall not be absent from said teaching laboratory for longer than five minutes at a time. If only one student is present / remains, the student shall physically leave the lab whenever the instructor leaves the lab. Said student shall not re-enter the lab without the presence of the instructor.
- b. The number of students permitted to each lab shall not exceed the number of stations available in the laboratory.
- c. Visitors are not permitted in laboratories without the expressed written permission of the laboratory coordinator, safety training as outlined in section 3.7 of the CHP, and notification of the lab manager and Department Chair. Request for entry is evaluated on a per case basis. Lab instructors should contact the lab coordinator directly regarding this matter.
- d. Horseplay and unauthorized experiments are strictly forbidden.

- e. Laboratories shall be kept clean and orderly. Chemicals and equipment stored in laboratories should be organized and not pose any hazards or be in violation of fire codes.
- f. Spills involving innocuous solutions should be wiped up immediately. If the spill involves hazardous compounds, or if it is uncertain whether the solution is hazardous, the instructor should be notified immediately to ensure cleanup using the appropriate materials. Classmates should be informed of the spill so they can avoid the area.
- g. If an experiment has special safety considerations not covered in these SAPs, the lab instructor and the lab manual shall instruct students explicitly on how to safely perform the experiment and appropriately discard waste.
- h. Waste should be deposited in the appropriate receptacle.
 - i. If glassware is broken, notify the instructor immediately and prevent students from accessing the area containing the broken glass. The instructor will clean up the broken glass using a brush and dustpan and discard the materials in a broken glass disposal box.
 - ii. Hazardous chemicals should be disposed in labeled waste containers in the fume hood(s).
 - iii. Non-toxic, non-hazardous aqueous solutions with a pH between 6 and 8 should be disposed down the drain only if permitted under all current applicable EPA, CDC, NIH, DEC, and MOA regulations and policies.
 - Non-toxic, non-hazardous aqueous solutions with a pH below 6 should be disposed in an acid waste container.
 - Non-toxic, non-hazardous aqueous solutions with a pH above 8 should be disposed in a base waste container.
 - iv. Non-hazardous solid waste should be disposed in a garbage bin labeled "Non-hazardous Waste".
 - v. Recyclable paper should be discarded in recycling bins.
- i. Injuries and incidents should be reported to the lab instructor immediately. An online report shall be completed by the affected party and lab instructor as soon as possible, but no later than 8 hours after the incident. The online report portal can be found at:

<https://www.uaa.alaska.edu/about/administrative-services/departments/facilities-campus-services/ehsrms/>
- j. Knowledge of the location and operation of all emergency equipment is prudent. Emergency equipment includes safety showers, eyewash basins, fire extinguishers, fire blankets, fume hoods, first aid kits, glass disposal boxes, protective gloves, phones, and MSDS / SDS binders.
- k. Emergency equipment, including showers and eyewash basins, shall always remain unobstructed within a 36" radius.

- l. All exits shall be clearly marked, be unobstructed at all times and be used during an emergency, natural disaster, or ordered building evacuation. Emergency escape routes shall be posted by all doors.
- m. In the advent of a visible fire or the sound of a building fire alarm, everyone should remain calm and follow their instructor's directions for evacuating the building. See the current University Incident Action Plan for employees and students "Fire Alarm - Academic Building" at:

https://www.uaa.alaska.edu/about/administrative-services/departments/university-police-department/_documents/evacalarmiap-2.pdf
- n. In the event of an earthquake, everyone should remain calm, get under a bench or stand against an inside wall. Do not stand in a doorway or against windows. When the shaking stops, check for personal injuries and then determine whether anyone else is injured. Promptly follow the instructor's verbal directions regarding any building evacuation.
- o. During a building evacuation, if time and safety permits, shut off all electrical devices and stop any chemical procedures. Collect personal belongings then calmly proceed to exit the building via the nearest and safest exit. Do not use the elevators. Offer aid to injured parties. Once outside, stay at least 50 to 100 feet from any buildings. Do not leave the class evacuation assembly point until the instructor has personally accounted for everyone in your class.

3. Personal Safety

- a. Consult your healthcare provider prior to attending any chemistry laboratory if you have any special medical conditions (asthma, epilepsy, pregnancy, breastfeeding, etc.) or any other medical concerns. Voluntarily inform your instructor of any relevant medical condition(s) that could pose a safety hazard to yourself or others.
- b. Smoking, eating and drinking are strictly forbidden in laboratories. Any visible food / drink container shall be discarded in a garbage bin. Gum and mints are considered food items. Food and beverage containers may not be left on the floor outside laboratory doors as they pose tripping and slipping hazards. Finish consuming all food and drink items prior to entering lab, and place empty containers in the garbage bin outside the laboratory or in a backpack. Shelves outside labs may be used to temporarily store unfinished food and drinks.
- c. Appropriate attire is required in all laboratories at all times. The function of clothing in the chemistry laboratory is two-fold. It serves as a modesty shield and provides a temporary barrier between spilled chemicals and bare skin. Clothing should be chosen appropriately. Shorts, capris, tights, skirts, and sleeveless shirts are not appropriate forms of clothing. Pants / jeans / slacks should be

worn with the pant legs covering both legs completely. Long-sleeved shirts should have tight-fitting sleeves to prevent catching on and knocking over glassware and equipment. Shirts should cover the entire torso. Feet should be covered completely with the appropriate shoes, up to the ankle and including the heel. Open-toed shoes, sandals, crocs, slip-ons, and high heels are inappropriate footwear. The function of shoes in the chemistry laboratory is to prevent glass from penetrating the foot, prevent chemicals from soaking into the shoes, prevent the trapping of chemicals next to the skin, and to prevent slipping. Non-suede leather shoes with a non-slip tread is strongly recommended.

- d. Long hair must be tied back or restrained in such a way that vision will not become impaired and hair will not come in contact with any chemicals or equipment.
- e. Dangling jewelry is not permitted and must be removed before entrance to the laboratory is gained. Whenever contact with chemicals is anticipated, all jewelry and other personal ornaments worn below the elbow (including watches and rings) should be removed and stored in a secure location.
- f. The application of all make-up, including lip balm and Chap Stick®, is strictly prohibited in laboratories.
- g. Specific procedures must be fully read and understood prior to gaining entrance to a chemistry laboratory. All hazardous characteristics of chemicals should be known prior to lab. These may be found in the Material Safety Data Sheet (MSDS) or Safety Data Sheet (SDS) for each chemical and / or the lab manual.
- h. Students shall notify their instructor at the beginning of each lab meeting if contact lenses are being worn. Avoid the use of contact lenses in the chemistry lab unless absolutely necessary. In addition, it is the student's responsibility to research whether a specific chemical used in lab is incompatible with contact lenses. This information may be found in the MSDS / SDS for said chemical. If not, the information may be obtained from an eye doctor or chemical manufacturer. This should be done prior to any lab meetings / classes.
- i. All laboratory occupants shall take necessary and prudent measures to minimize direct chemical exposure. Personal protective equipment (PPE) shall be worn by all persons in the laboratory, appropriate to the PPE recommendations in the MSDS / SDS of the chemical(s) in use, or as stated by the instructor. This includes but may not be limited to goggles that meet ANSI standard Z87.1-2003 or Z87+ and are indirectly vented and splash-proof, lab coats, and non-permeable gloves. At a minimum, all laboratory occupants shall wear goggles when chemicals and / or glassware are in use. In addition, the fume hood shall be used anytime hazardous chemicals are present. These are chemicals considered as toxins, small particulate matter, volatile, offensive, or flammable. Personal lab coats shall be worn whenever encounters with chemicals are

anticipated. When a personal lab coat is worn, it must be placed in an adequately sized plastic bag at the end of each lab session in order to prevent contamination of backpacks, books and other clothing. Said lab coat shall be laundered thoroughly and by itself after each lab session, even if no spilling occurred. If a major spill occurs on a lab coat, the coat shall be removed promptly and the instructor shall outline the appropriate procedure for cleaning the contaminated lab coat. The student shall then be given a loaner lab coat with which to finish the lab session (if appropriate).

- j. To minimize accidents, always plan the use of appropriate glassware and chemicals prior to starting experimentation. Always use the smallest container feasible and always use the smallest amount of a given chemical to accomplish the goal of the experiment. Never pour directly from a very large container into a very small container as spilling may result. Always use intermediate sized containers to progressively pour from the larger to the smaller container. Where possible, always add acid to water, not the reverse.
- k. Never intentionally inhale any chemicals (solid, liquid or gas). Never ingest (drink or eat) any chemicals. If chemicals come in contact with skin, follow the measures specified in the MSDS / SDS which usually involves rinsing the exposed areas with copious amounts of tepid water. A major spill on a person will require use of a safety shower. Enter the shower as soon as possible, and as soon as possible begin to remove all clothing. Modesty should not prevent one from taking the appropriate safety measures. Chemical contact with eye(s) should be interrupted by flushing both eyes for a minimum of 15 minutes at the eyewash basin. Contacts should be removed as soon as possible after an initial rinsing. The instructor's directions should be followed calmly.
- l. All powered equipment in the chemistry laboratory pose a risk of electrical shock if used inappropriately. It is each student's responsibility to follow all prudent safety measures when working with electrical equipment.
- m. When in use, hotplates pose a burn hazard. It is each student's responsibility to follow all prudent safety measures when working with hotplates.
- n. Individuals who pose a danger to themselves or others by being under the influence of any drug, inhibiting medication or who become violent or threatening will be removed from any laboratory by UAA University Police. See the current University Incident Action Plan for employees and students "Disorderly or Disturbed Person" at:

<http://ehsrms.uaa.alaska.edu/Incident%20Action%20Plans/IAPforEmployees-Disorderly.pdf>

- o. The use of electronic equipment such as cell phones, audio equipment, Bluetooth devices, etc. while in attendance of any laboratory course is prohibited except when placing or receiving an emergency call. All cell phones should be

turned off or placed in the silent or vibration mode and be kept in a pocket, purse, or backpack. Before handling a cell phone, gloves must be removed and hands washed to prevent chemical contamination. If a call is received regarding a family or medical emergency, calmly inform the instructor and leave the room to continue the call. If an emergency occurs inside the laboratory, the hard-wired phone inside the laboratory or a cell phone may be used to contact emergency personnel.

- p. When making an emergency call, dispatch will need to know:
- i. Your name and location (building, room number, building address)
 - ii. The nature of your emergency
 - iii. Type and severity of injuries
 - iv. The suspect description and direction of travel (if applicable)

See the current University Incident Action Plan for employees and students "Calling – In an Emergency" at:

[http://ehsrms.uaa.alaska.edu/CMS/Safety_and_Emergency_Information/Posters and Postings/Reporting an Emergency.pdf](http://ehsrms.uaa.alaska.edu/CMS/Safety_and_Emergency_Information/Posters_and_Postings/Reporting_an_Emergency.pdf)

4. Laboratory Etiquette

- a. Upon entering the chemistry laboratory, students should do the following:
- i. Sign the attendance sheet as soon as possible. This sheet is used to track attendance and to verify student safety should an emergency evacuation occur.
 - ii. Place all non-essential personal items, coats, and non-relevant books in a designated cubby in order to keep bench tops and aisles clutter-free. These items shall not be placed on the floor, bench tops, or in cabinets under sinks. If present, chairs / stools shall be pushed under counter tops when not in use, as to minimize tripping hazards.
 - iii. Submit all work that is due.
 - iv. Clean lab benches with water and paper towels.
 - v. Wash hands with soap and water.
 - vi. Wait for the conclusion of the pre-lab presentation and for all lab occupants to don goggles before removing glassware from drawers and starting the experiment.
- b. Faulty or inoperative equipment should be reported to the instructor immediately.
- c. Never contaminate equipment or solutions unnecessarily. For example, it is inappropriate to pipet directly from a stock solution. Doing so contaminates the stock solution and renders it unusable by anyone. It also results in the wasting of resources.

- d. All cabinets and drawers should be kept closed when not in use to avoid catching and bumping hazards.
- e. All glassware should be cleaned and stored following the protocol below:
 - i. Organic solutions must be disposed in the appropriate waste container. Additionally, this glassware must then be rinsed with distilled water and rinsings disposed in the appropriate waste container before washing the glassware in a sink.
 - ii. Inorganic solutions that are toxic or damaging to the environment must be disposed in the appropriate waste container. Additionally, this glassware must then be rinsed with distilled water and rinsings disposed in the appropriate waste container before washing the glassware in a sink.
 - iii. Always clean used glassware at the lab sink using soap, tap water and a brush.
 - iv. Rinse with distilled water before drying each piece carefully and storing it in the appropriate drawer.
- f. Prior to exiting from the laboratory, verify the following:
 - i. Glassware is clean, dry and placed in the appropriate drawer.
 - ii. Common-use equipment and areas are clean (balances, etc.).
 - iii. Hotplates, MicroLab™ boxes, and thermometers are turned off (where applicable).
 - iv. The computer is logged off or shut down (section dependent).
 - v. Chairs / stools are pushed underneath the counter (where applicable).
 - vi. The lab bench is washed with water and wiped with paper towels.
 - vii. Hands are washed with soap and water.
 - viii. Students are signed out from the lab.
 - ix. All personal belongings are removed from the bench top and other designated locations.
 - x. All coffee cups, water bottles, and food are removed from the shelf outside the lab.
- g. If uncertainty exists regarding any safety measures, request clarification from your instructor.

If you have read and agree to abide by this safety agreement, please sign and date the acknowledgement form provided by your instructor. This form will be on file in the laboratory coordinator's office in CPSB 302Q.