

Chemical Hygiene Plan



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REVISION STATUS

CONTACT(S)	IMPLEMENTATION DATE	COMMENTS
Heather Vogt, EHS Manager	May 2022	Created plan

Safety Personnel

Name	Position	Phone
A&M-Texarkana University Police Department	Emergency Responders	903-334-6611 or 6611 from any campus phone
Emergency	Emergency Responders	911
Heather Vogt	EHS Manager	903-334-6794 or 6618 from any campus phone
Christina Hogan	CHO/Laboratory Coordinator	903-334-6756 or 6756 from any campus phone
Jessica Lefors	BSO Laboratory Coordinator	903-334-6703 or 6754 from any campus phone

Laboratory Room Locations

Building	Rooms	Room Assigned to the PI (Y/N)	Shared Facility (Y/N)
Science & Technology	201, 202, 302, 302A, 304, 304A	Chemistry	Yes
Science & Technology	108, 203, 205, 206, 208, 210, 301, 301A, 306	Biology	Yes

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Introduction

Texas A&M University-Texarkana strives to implement policies and protocols that will establish and maintain a safe working environment in all instructional and research laboratories. These policies and protocols will keep exposure to potential laboratory hazards at the lowest possible levels by ensuring that students, faculty, and staff observe the safety practices and guidelines outlined in this Chemical Hygiene Plan (CHP).

Responsibility

Although it is the responsibility of everyone using the laboratories to adhere to all of the safety policies and protocols, certain responsibilities lie with specific university positions as outlined below:

Laboratory Coordinators

- Ensure that all laboratory workers have received laboratory safety training.
- Maintain records documenting all laboratory training of students, faculty, and staff.
- Maintain up-to-date copies of the A&M-Texarkana CHP and Safety Data Sheets (SDS) in the laboratories.
- Enforce the use of the procedures outlined in the A&M-Texarkana CHP.
- Ensure all laboratory equipment is properly maintained and in good working order.
- Make weekly inspections of chemical storage and eye wash, drench hose, and safety showers; document and send to EHS monthly.
- Make monthly inspections of laboratory, laboratory work areas, and safety equipment; document and send to EHS monthly.
- Submit and then track work order requests for repair. Follow-up on repairs each week.

Laboratory workers (Students, Work-study students, Teaching/Research Assistants)

- Follow the safety procedures and protocols outlined in the A&M-Texarkana CHP.
- Wear required Personal Protective Equipment (PPE) and adhere to laboratory dress code (outlined in Personal Hygiene section of CHP).
- Report any injuries, spills, or other incidents to laboratory coordinators immediately.
- Request information/assistance when unsure about how to handle a hazardous chemical.

Environmental, Health, and Safety (EHS)

- Ensure that all laboratory coordinators have received laboratory safety training.
- Bi-annually, conduct an oversight inspection of laboratory inspection records, documentation, and review work orders for timely submission and problem resolution.
- Once per semester, conduct a quality control inspection of laboratory, laboratory work areas, and safety equipment.
- Maintain a library of SDSs and other safety resources.

Heads of Academic and Administrative Units

- Make budget arrangements for health and safety improvements.
- Work with faculty to adapt and implement the CHP.

Noncompliance with Safety Protocols

The following steps will be taken in response to noncompliance to this Chemical Hygiene Plan:

Students

- Any student in violation of safety dress code or not properly utilizing PPE will not be permitted in the laboratory until the condition is corrected, which may result in an unexcused absence.
- Any student conducting unauthorized experimentation or who disregards safety protocols which puts themselves and/or others in danger will be subject to disciplinary actions in accordance with university policy.

Laboratory supervisors

- Laboratory supervisors failing to enforce safety protocols will receive one email notification to take immediate steps to correct the problem and then EHS will be notified.
- If no action is taken, the laboratory supervisor will receive a written notification of the safety violation(s). Corrective action is required within 14 days.
- If the problem continues, a notification of the safety violation(s) will be sent to the Department Chair and the Dean of the College.
- Any violation that results in a high or unacceptable risk to students or others will be immediately reviewed by the EHS, Laboratory Coordinators, Department Chair, and Dean of the College, if necessary. Disciplinary action may include immediate suspension.

Laboratory Safety Training

All individuals who may be exposed to hazardous chemicals at A&M-Texarkana are required to undergo Laboratory Safety Training. The A&M-Texarkana laboratory coordinators are responsible for ensuring that all students, faculty, and staff are

properly trained in the use of hazardous chemicals and equipment in the laboratory BEFORE they are allowed to work in the laboratories. The laboratory coordinators are responsible for the following training:

- Content and location of the Chemical Hygiene Plan, Laboratory Safety Manual, Hazard Communication Plan, and SDS provided by the laboratory coordinators.
- Potential hazards and administering first aid when chemicals are involved.
- Signs and symptoms of overexposure to chemicals and how to detect potentially harmful exposures.
- Understanding the permissible exposure limits in the laboratories.
- The proper location and use of safety equipment such as safety showers and eyewashes, first aid kits, fire extinguishers, chemical spill kits, fire alarms, emergency exits, and emergency phone numbers.
- Laboratory-specific training for students, faculty, and staff that will be routinely working in the laboratories.

Standard Operating Procedures

Adhere to the following safety guidelines at all times when working in A&M-Texarkana laboratories:

- Before working in the laboratory, be familiar with safety procedures including locations of the nearest exits and emergency shutoff valves (primary and secondary egresses).
- Know the locations of emergency safety equipment in the laboratory (i.e., shower, eye wash, fire extinguishers, first aid kit, chemical spill kit, etc.).
- Wear proper attire at all times as exposed skin is prone to splashes, burns, lacerations, etc. Anyone not wearing proper attire will be asked to leave the laboratory immediately and may not reenter until properly attired. Proper attire includes the following:
 - Long pants or skirts covering legs (no shorts, capris, short skirts, etc.)
 - Long sleeved shirt and/or laboratory coat
 - Closed toe shoes capable of protecting the wearer from direct exposure by absorbing nuisance quantities of laboratory chemicals that may fall or splash on them (i.e., no sandals, flip-flops, high heels, or mesh-style shoes, etc.) what about the Nike mesh style or even those Toe style shoes? Athletic shoes and feet covers are now pushing the boundaries of what may be perceived as safe, but may not be.
 - Long hair must be tied back tightly and securely
 - No dangling jewelry, hats, or large hair accessories
 - Additional appropriate personal protective equipment (e.g., gloves, eye protection, splash shields, aprons) may be required for hazardous activities)
- Appropriate PPE is to be worn at all times while in the laboratory, but it is NOT to be worn outside of the laboratory.

- Bulky items such as backpacks, other bags, and coats are not to be brought to individual workstations. These items must be placed in lockers, cubbies, or coat room.
- Chemical stock bottles are never to be brought to individual work stations. Workers are to dispense needed amounts into small containers and carefully bring these to the work station. Unused chemicals are never to be returned to chemical stock bottles.
- When using chemicals, refer to the appropriate safety information, such as Safety Data Sheets (SDSs), Standard Operating Procedures (SOPs), and equipment operating instructions, and follow the recommended safe practices.
- Mouth pipetting of any liquid in the laboratory is strictly prohibited.
- Laboratory waste is to be properly disposed when finished with a laboratory session. Take care to place hazardous chemical wastes in their proper waste containers. If unsure how to dispose of waste, ask a laboratory supervisor. Do not assume it is safe to dispose of laboratory waste in the trash or sink.
- When using Bunsen or Meker burners, be sure that the flame is properly adjusted. Seek assistance if unsure how to accomplish this. Never leave an open flame unattended.
- When working with hazardous materials, be sure to properly use fume hoods and biological safety cabinets as required.
- Be aware of what others are doing around you and any hazards that may exist between chemicals and procedures in adjacent work spaces.
- Avoid touching face/mouth with hands or writing implements while working in the laboratory.
- Do not force glass tubing into rubber stoppers. Lubricate fire polished tubing, use a glass tubing inserter, and protect hands with proper PPE when inserting tubing.
- Dispense chemicals only into approved chemistry glassware.
- Laboratory bench and table tops are to be wiped clean of chemicals BEFORE and AFTER each session of use.
- Unauthorized experiments are NOT permitted.
- Do not work alone in the laboratory; always be sure that someone else is present in case of an emergency.

Personal Hygiene

To minimize exposure to hazardous chemicals, all workers should wash hands frequently, especially after handling chemicals, changing gloves, and before leaving the laboratory.

Personal Protective Equipment (PPE)

Protective eyewear is required for anyone (including visitors) in a laboratory where hazardous chemicals are being used. This includes safety glasses, safety goggles, and/or full-face shield, which shall be determined based on the type and quantity of chemicals used. Personal prescription glasses and contact lenses are NOT considered protective eyewear and must be supplemented with the aforementioned PPE(s).

Protective clothing must be worn at all times when working with chemicals. Any exposed skin should be covered with long sleeves/pants and a laboratory coat. The laboratory coat must be laundered regularly and never worn outside of the laboratory. Loose fitting clothing must be secured at all times, especially when working with open flames or rotary equipment. Additional protective clothing (e.g., aprons, shoe covers) may be required when working with certain chemicals.

Gloves must be used when working with hazardous materials. The type of gloves required will depend on the nature of the hazardous substance in use (e.g., chemical resistant gloves should be worn for contact with corrosive or toxic substances and substances of unknown toxicity) (Appendix E).

Respiratory hazards can be controlled using ventilation or respiratory protection. When a potential inhalation hazard exists, the label or SDS will contain special warnings. Take appropriate precautions when handling these substances. Controlling inhalation exposures through engineering controls (ventilation) is always the preferred method; use hazardous chemicals inside of a fume hood or biological safety cabinet.

Emergency Procedures

All incidents and injuries must be reported to laboratory coordinators, EHS, and University Police immediately. An incident form must be completed and kept on file.

For all major incidents call **911** for minor incidents contact EHS and UPD. Always allow for self-administration whenever possible to prevent exposure to bloodborne pathogen exposure.

Chemical Spills

For all chemical and other material spills please reference the TAMUT Spill Management Procedure.

For major spills contact **911**, UPD, and EHS. For minor spills contact UPD and EHS.

If you do not have the proper equipment and/or training or if you feel that you cannot do it safely do NOT attempt to clean up a spill.

Emergency Safety Equipment

Safety Shower/Eye Wash/Drench Hoses are present in each of the laboratories and adjoining preparatory rooms. All persons working in a laboratory should be familiar with the operation of the shower and eye wash station. Safety showers and eye wash stations will be tested once a week by laboratory personnel. In addition, safety showers will be tested for temperature and flow rate annually.

Fire Extinguishers are located in each of the laboratories and adjoining preparatory

rooms. Fire extinguishers are ABC rated for fires. Do not use ABC fire extinguishers on fires involving combustible metals (e.g., magnesium, titanium, potassium and sodium), strong alkalis, strong oxidizers, and isocyanic acids. Laboratory supervisors will be trained in fire extinguisher use. Fire extinguisher checks are conducted monthly and inspections/maintenance will be performed once a year by qualified individuals.

Safe Handling and Storage of Chemicals

Chemical Procurement

The Laboratory Coordinator shall establish guidelines for the procurement of all laboratory chemicals and shall be responsible for all hazardous chemicals purchased for A&M-Texarkana laboratories. All employees involved in the receiving of chemicals shall be properly trained on the proper handling, storage, and disposal procedures. All received chemicals must have proper labels, SDS, and proper packaging; packages arriving without the aforementioned materials and/or damaged or leaking packages/containers will not be accepted.

Chemical Inventory

- Upon receipt of a chemical, the laboratory coordinators will add it to the master chemical inventory list and date the chemical bottle.
- Outdated chemicals or chemicals no longer of use or value are to be disposed of according to the chemical waste disposal protocol.
- Chemical inventory is to be maintained and updated monthly.
- EHS will inspect the chemical inventory list each semester to maintain compliance.
- An updated copy of the chemical inventory list will be kept in the laboratory and a copy will be sent to EHS after each modification.

Safety Data Sheets (SDSs)

- Upon receipt of a chemical, the laboratory coordinators will add the SDS to each of the SDS binders located in the laboratories, laboratory preparatory rooms, the Lab Coordinators office, the EHS office, and CIL online portal.

Laboratory Equipment

Electrical Equipment

- All electrical equipment must be UL listed and/or FM approved
- All electrical equipment must be properly grounded
- Extension cords will not be used on a permanent basis
- All electrical equipment must be checked for:
 - Good working condition
 - Cords are not damaged in any way

Autoclaves

- All laboratory workers must use proper PPE, including heat resistant gloves, when operating this equipment.
- All operators of this equipment must be instructed on proper use and follow all guidelines.
- Use indicator tape on each load to verify sterilization.
- Users must fill out the required information in the “Autoclave Log” binder.
- Autoclave sterility tests using biological indicators must be conducted on a regular basis, and details must be recorded in the “Autoclave Log” binder.
- Use caution when handling pressurized containers; superheated liquids may spurt.
- Use red biohazard autoclave bags to autoclave. After material is cooled, place the autoclave bag and its contents inside a regular black trash bag before disposing of autoclave waste in the normal trash.
- **Do not:**
 - Place sharp/pointed items into an autoclave bag; use a rigid sharps container instead.
 - Overfill an autoclave; allow room for steam to effectively move around objects.
 - Mix contaminated and clean items together in same autoclave cycle.
 - Leave an operating autoclave unattended; someone must be in the general vicinity in case of malfunction.
 - Lift a bag from the bottom to load or unload; always lift from top to avoid injury on potential sharp items.
 - Seal a liquid container with a cork, stopper, or fully tightened lid as it may result in an explosion

Centrifuges

- All laboratory workers must use proper PPE when operating this equipment.
- All operators of this equipment must be instructed on proper use and follow all guidelines.
- Whenever possible, use plastic centrifuge tubes to avoid breakage issues.
- Inspect ALL centrifuge tubes for flaws before each use. Dispose of any damaged/unusable tubes.

Refrigerators

- Laboratory refrigerators are to be used for laboratory materials only; no food or drink is to be stored in these refrigerators under any circumstances.
- Flammable materials that require refrigeration must not be placed in standard refrigerators. Use only flammable-material refrigerators for these chemicals.
- All materials must be properly dated and labelled.

Environmental Chambers

- All laboratory workers must use proper PPE when operating this equipment.
- All operators of this equipment must be instructed on proper use and follow all guidelines.

Incubators

- All laboratory workers must use proper PPE, including heat resistant gloves, when operating this equipment.
- All operators of this equipment must be instructed on proper use and follow all guidelines.

Drying Ovens

- All laboratory workers must use proper PPE, including heat resistant gloves, when operating this equipment.
- All operators of this equipment must be instructed on proper use and follow all guidelines.
- Do not use ovens to dry any chemical that is volatile and may cause a health hazard or acute or chronic toxicity.
- Organic compounds are not to be dried in these units.

Chemical Storage

- Flammable chemicals must be stored in the labelled flammable chemical cabinet.
- Corrosive chemicals must be stored in the labelled corrosive chemical cabinet.
- Never store liquid chemicals above eye level.
- Never stack chemicals of any kind on top of each other.
- Chemicals are to be rotated so oldest chemicals are used first.
- Segregate chemicals according to hazard class (Chemical Hazards section).
- Waste should be collected in a designated fume hood or satellite accumulation area. Waste must be properly labelled and sealed according to Hazardous Waste Disposal Procedures (Safe Disposal of Chemicals section).

Chemical Hazards

Flammable and Combustible

Flammable substances are those that readily catch fire and burn in air. Flammable liquids are those that have a flashpoint (lowest temperature at which the liquid produces enough vapor to ignite) below 100°F and a vapor pressure that does not exceed 40 pounds per square inch (psi) at 100°F. In addition to liquids flammable substances are also solids and gases. Examples of flammable gases are acetylene, ethylene oxide, and hydrogen. Flammable solids are those that are capable of producing fires as a result of friction or heat retained from production that, if ignited, produce serious transportation hazard. A combustible liquid is one which has a flash point at or above 100°F. Organic acids are combustible with many being liquids.

- Explosive gases and solids are also part of the flammable and combustible group.

Light, mechanical shock, heat, and certain catalysts can act as initiators of explosive reactions. One example of an explosive mixture is a suspension of oxidizable particles, such as magnesium powder or zinc dust, in air. Explosives include nitrates, chlorates, perchlorates, and picrate.

- Pyrophoric chemicals are those substances that react so rapidly with air and its moisture that the ensuing oxidation and/or hydrolysis led to ignition. Ignition can be instantaneous, delayed or occur only if the material is finely divided or spread in a diffuse layer. Some examples are: finely divided metals, such as calcium, magnesium, and zirconium; metal or non-metal halides, such as diethylethoxyaluminum. Spontaneous (instantaneous) ignition or combustion occurs when a substance reaches its ignition temperature without the application of external heat. Substances capable of spontaneous combustion include alkali metals such as sodium and potassium, finely divided pyrophoric metals and phosphorus.
- Water sensitive compounds react exothermically and violently with water, particularly if it is present in limited quantities, since no significant cooling effect will occur. Some examples of water-reactive chemicals would include alkali and alkaline earth metals such as potassium and calcium; anhydrous metal halides, such as aluminum bromide and germanium chloride.
- Peroxidizable substances slowly react under ambient conditions with atmospheric oxygen to initially form peroxides. Some peroxide formers are ethers, liquid paraffins, and olefins. Peroxides are extremely sensitive to shocks, sparks, or other forms of accidental ignition. Since these chemicals are packaged in an air atmosphere, peroxides can form even though the packages have not been opened. Unless inhibitor was added by the manufacturer, sealed containers should be discarded within one (1) year of receiving.
- See **(Appendix D)** for more information on Peroxide forming chemicals and peroxide testing.

Corrosives

Corrosives include strong acids, strong bases, dehydrating agents, and oxidizing agents. These chemicals erode the skin, damage the eyes, and cause severe bronchial irritation.

- Strong Acids: All concentrated acids can damage the skin and eyes. Nitric, chromic, and hydrofluoric acids are particularly damaging because of the types of chemical burns they inflict. When handling these chemicals, rubber gloves, rubber apron, and face shield must be used.
- Strong bases: Common bases include: sodium hydroxide, potassium hydroxide, and ammonia. Metal hydroxides are extremely damaging to the eyes. When handling these chemicals, the appropriate gloves **(Appendix E)**, rubber apron, and face shield must be used.
- Dehydrating agents: Strong dehydrating agents include concentrated sulfuric acid, sodium hydroxide, phosphorous pentoxide, and calcium oxide. These substances can cause severe burns on contact with skin because of their affinity for water.

- Oxidizers: Oxidizers can be defined as any material that readily yields oxygen or other oxidizing gas, or that readily reacts to promote or initiate combustion of combustible materials.

Safe Disposal of Chemicals

- Hazardous chemicals used in the A&M-Texarkana laboratories will be disposed of in a safe, approved manner consistent with all applicable laws and the A&M-Texarkana Campus Waste Management Program.
- Laboratory staff should use the smallest quantity of hazardous substance that is practical to generate the least amount of hazardous waste.
- Review experimental protocols with the goal of substituting non-hazardous or less hazardous reagents, using micro-scale procedures, and using materials that can be easily neutralized or detoxified.
- Laboratory staff must include the neutralization of the chemical at the end of their current process to reduce the amount of waste.

Compressed Gas Procedures

- Cylinders of compressed gas must be securely held (e.g., cylinder stand; individually strapped or chained to a wall or bench top).
- When a cylinder is not in use, it must be capped.
- Cylinders must always be stored in a secure, upright position.
- Cylinders must only be transported using an appropriate dolly and must be chained to the dolly at all times during movement. Avoid moving cylinders that are uncapped and/or that have regulators attached.
- Keep cylinders of flammable gases away from sources of heat or open flame.
- Do not tamper with the safety features of gas cylinders.
- Keep no more than one in-use and one spare cylinder of a gas in the laboratory at the same time.

Laboratory Design and Ventilation

- Heating and cooling should be adequate for the comfort of workers and operation of equipment. Before modification of any building HVAC, the impact on laboratory or hood ventilation should be considered, as well as how laboratory ventilation changes may affect the building HVAC. No change should be attempted without first consulting facilities maintenance and EHS.
- A negative pressure differential should exist between the amount of air exhausted from the laboratory and the amount supplied to the laboratory to prevent uncontrolled chemical vapors from leaving the laboratory.
- Local exhaust ventilation devices should be appropriate to the materials and operations in the laboratory.
- The air in chemical laboratories should be continuously replaced so that the concentrations of odoriferous or toxic substances do not increase during the workday.
- Laboratory air should not be recirculated, but should be exhausted directly outdoors.

- Air pressure should be negative with respect to the rest of the building. Local capture equipment and systems should be designed only by an experienced engineer or industrial hygienist.
- Ventilation systems should be inspected and maintained on a regular basis. There should be no areas where air remains static or areas that have unusually high airflow velocities.

Fume Hood Operation and Maintenance

The fume hood is one of the most important pieces of safety equipment in an A&M-
Texarkana laboratory. The fume hood is intended for use during all procedures which
pose a significant inhalation or fire hazard. A properly maintained and working fume
hood provides a continuous wall of air flowing through the face of the fume hood.

- All work involving hazardous chemicals should be performed inside a ventilation hood.
- Check the inspection sticker to make sure that the hood has passed inspection in the last year.
- Before any work involving hazardous chemicals is performed, make sure that the fume hood is working.
- If the hood is equipped with a face velocity indicator, check the air flow readings at several sash heights, especially at the planned sash working height, to ensure that the hood is operating within its acceptable range
- Fume hoods should be used with the sash open no more than comfortably necessary to conduct the work and never more than the indicated maximum sash height. The sash should be closed when a person is not actively working at the hood.
- Keep all equipment at least 6 inches inside the face of the hood to prevent disruptive air flow patterns.
- Maintain an air space under large equipment by placing it on blocks to allow air currents to freely pass under the equipment.
- Do not use the fume hood as a storage cabinet. Excessive storage can obstruct airflow and cause areas of low air velocity at the face opening.
- Do not put your face or head inside the hood.
- Do not use perchloric acid in an A&M-
Texarkana fume hood, as it is not designed for the use of this chemical.
- Minimize sources of cross drafts (open windows, doors, fans, heavy foot traffic, etc.) which may pull contaminated air from the hood.
- Ensure all fume hood users are aware of the safety procedures in case of emergency.

Fume Hood Inspections

- Fume hoods shall be inspected and certified on an annual basis by a qualified person.
- The laboratory coordinators and EHS will maintain a copy of the fume hood certification and a label will be placed on the hood indicating the date

inspected, the person/company performing the inspection and that the hood is in proper working order.

- In the event a fume hood fails an inspection, a warning sign shall be posted indicating the fume hood is out of service for repair and the hood shall not be operated for any reason until properly repaired.
- Any observed decline or failure of operation warrants an immediate shut-down of the hood and the laboratory coordinators and EHS shall be notified to initiate repairs and post warning signs that the hood is inoperable.

Exposure Monitoring

It is the policy of A&M-Texarkana to investigate all suspected overexposures to chemicals in a prompt and timely fashion. In the event of overexposure, after the immediate event, the laboratory coordinators shall document all chemicals and circumstances involved in the overexposure. A copy of the document shall be sent to the TAMUT EHS and the A&M System office of EHS, where it shall be maintained and be accessible to the employees. The overexposure document should include:

- Accidental breakage of hazardous material container
 - A skin rash or irritation because of contact with a chemical
 - Caustic splash to eyes, face, or body
 - Symptoms such as nausea, dizziness, and others
-
- Monitoring will be necessary for substances regulated by federal or state agencies only if there is reason to believe that exposure levels for the substance routinely exceed the Permissible Exposure Limit (PEL) for the substance. If monitoring is performed and this initial monitoring shows no evidence of exposure, the monitoring may be discontinued.
 - If initial monitoring indicated an exposure above PEL, then steps shall be taken to reduce exposure and remedial actions recommended by EHS shall be implemented to reduce exposure levels. A follow up by EHS shall be conducted to monitor exposure levels within 60 days. All monitoring results and activities shall be available for employees upon request by contacting the laboratory coordinators or EHS

Medical Consultation and Evaluation

An opportunity to receive medical consultation shall be provided at no cost or loss of pay to the employee and considered as a regular Worker's Compensation claim under the following circumstances:

- a. When signs or symptoms develop associated with exposure to a hazardous material
- b. When exposure to hazardous material is above the "Action Level" or PEL established for the chemical based on the SDS

Appendix A: Employer's First Report of Injury or Illness

DWC FORM-001

The **employer** is required to file an **Employer's First Report of Injury or Illness** [DWC FORM-001 Rev. 10/05] with the injured worker's insurance carrier, and the injured claimant or the claimant's representative within 8 days after the employee's absence from work or receipt of notice of occupational disease.

The **Employer's First Report of Injury or Illness** provides information on the claimant, employer, insurance carrier and medical practitioner necessary to begin the claims process. Details of the claimant's employment and circumstances surrounding the injury or illness are also requested.

Send the specified copies to your **Worker's Compensation Insurance Carrier** and the injured employee. ***Employers – Do not send this form to the Texas Department of Insurance, Division of Workers' Compensation, unless the Division specifically requests a direct filing.**

[Worker's Compensation Rule 120.2]

Employer's First Report of Injury or Illness [DWC FORM-001] can be found at:
http://tamut.edu/About/Administration/Environmental-Health-and-Safety/Workers_Comp.html

Appendix B: Laboratory Incident Report

****To be completed with the Laboratory Instructor in the case of injury, illness, hazardous substance exposure, fire, or spill****

Name of person involved in incident (If applicable):

Employee

Student

Graduate Student

Visitor

Laboratory Instructor:

Class/Lab:

Time and date of incident:

Location of incident:

Details of incident: (nature of incident, e.g., illness, accident, injury. If injury occurred, indicated circumstances and who was involved. Indicate any substance (e.g., amount and kind of chemical or object involved))

What action was taken: (what was done to protect individuals or clean up substance? Also indicate if emergency personnel were contacted and if transport to the hospital occurred.)

Investigated by:

_____ (Print Name)
_____ (Signature)
_____ (Date)

Appendix C: Personnel and Room Locations

Safety Personnel

List the names of key safety personnel. In addition to indicating the individual in charge of the laboratory (i.e., the P.I. or lab manager) and the Laboratory Chemical Hygiene Officer the names of key staff such as building manager or other important individuals should be included.

Name	Position	Phone
A&M-Texarkana	Emergency Responders	903-334-6611
Emergency	Emergency Responders	911
Heather Vogt	EHS Manager	903-334-6794 or 6618 from any campus
Christina Hogan	CHO/Laboratory Coordinator	903-334-6756 or 6756 from any campus
Jessica Lefors	BSO Laboratory Coordinator	903-334-6703 or 6754 from any campus

Laboratory Room Locations

List all rooms in which use of hazardous chemicals will occur:

Building	Rooms	Room	Shared Facility
Science & Technology	201, 202, 302, 302A, 304, 304A	Chemistry	Yes
Science & Technology	108, 203, 205, 206, 208, 210, 301, 301A, 306	Biology	Yes

Appendix D: Peroxide Forming Chemicals

Not an Exhaustive List

Class I: Unsaturated materials, especially those of low molecular weight may polymerize violently due to peroxide initiation. *Discard or test for peroxides after 6 months (liquids) or 12 months (gases).*

- Acrylic acid
- Acrylonitrile
- 1,3-butadiene (chloroprene)
- Chlorotrifluoroethylene
- 1,1-dichloroethene
- Methyl methacrylate
- Styrene
- Tetrafluoroethylene
- Vinyl acetate
- Vinyl chloride
- Vinyl pyridine
- Vinylidene chloride

Class II: The following chemicals are a peroxide hazard upon concentration (distillation/evaporation). A test for peroxides should be performed if concentration is intended or suspected. *Discard or test for peroxides 6 months after container is opened.*

- Acetal
- Cumene
- Cyclohexene
- Cyclooctene
- Cyclopentene
- Diacetylene
- Dicyclopentadiene
- Diethylene glycol dimethyl ether (diglyme)
- Diethyl ether
- Dioxane (p-dioxane)
- Ethylene glycol dimethyl ether (glyme)
- Furan
- Methyl acetylene
- Methyl cyclopentane
- Methyl-*t*-butyl ketone
- Tetrahydrofuran
- Tetrahydronaphthalene
- Vinyl ether

Class III: Peroxides derived from the following compounds may explode without concentration. *Discard 3 months after opening container.*

- Divinyl ether
- Divinyl acetylene
- Diisopropyl ether
- 1,1-dichloroethene
- Potassium metal
- Potassium amide
- Sodium amide (sodamide)

Peroxide Detection Tests

**Do not test Class III peroxidizables suspected or known to contain peroxides. Contact your Chemical Hygiene Officer **

1. Peroxide Testing Strips – available commercially, turn color in the presence of peroxides
2. Chemical Method I
 - a. Add 1-3 ml of unknown liquid to equal volume of acetic acid
 - b. Add a few drops of 5% aqueous potassium iodide
 - c. Shake.
 - d. Yellow – brown color indicates presence of peroxides

3. Chemical Method II
 - a. Add 1ml of fresh 10% potassium iodide to 10ml of unknown liquid (organic) in 25ml glass cylinder
 - b. Add a few drops of 5% aqueous potassium iodide
 - c. Yellow color indicates presence of peroxides
4. Chemical Method III
 - a. Add 0.5ml of unknown liquid to a mixture of: 1ml 10% aqueous potassium iodide and 0.5ml of dilute hydrochloric acid (to which has just been added a few drops of starch solution)
 - b. Blue – blue-black color within 1 minute indicates presence of peroxides

** NONE of these tests should be applied to materials that may be contaminated with inorganic peroxides (e.g., metallic potassium) **

Appendix E: Chemical Glove Use Chart

(Note: This chart is for general use only. For high hazard or specific chemicals, consult the SDS and a reliable glove selection guide to select glove materials and types specific to the hazards involved.)

Type of Glove	Use Against	Disadvantages	Allergens	Cost
Natural rubber latex	Biological and water-based materials Bases, alcohols	Poor against lipids	Latex allergies	Low
Polyvinyl chloride (PVC)	Strong acids, bases Lipids Salts Alcohols Other water solutions	Poor against organic solvents	N/A	Low
Nitrile	Oils, greases Aliphatics Xylene Perchloroethane	Poor against benzene, methyl chloride, trichloroethylene, many ketones	N/A	Low
Neoprene	Oxidizing acids Anilines Phenol Glycol ethers	N/A	N/A	Medium
Butyl rubber	Ketones, esters	Poor against gasoline and aliphatic, aromatic, and halogenated hydrocarbons	N/A	High
Polyvinyl Alcohol (PVA)	Aliphatics, aromatics Chlorinated solvents Ketones (except acetone) Esters, ethers	Water sensitive Poor against light alcohols	N/A	High
Viton	Aromatics Chlorinated solvents Aliphatics Alcohols	Poor against some ketones, esters, amines	•N/A	V. High
Norfoil	Most hazardous chemicals	Poor fit, punctures easily Poor grip, stiff	N/A	High
Stainless steel/Kevlar/Leather	Cut resistant		N/A	High

Appendix F: Chemical Spill Protocols

Acid Spills (hydrochloric or sulfuric acid)

- Neutralize spill with sodium bicarbonate/baking soda or neutralizing spill kit
 - If sodium bicarbonate/baking soda is used: wait until bubbling/fizzing has stopped
 - If neutralizing spill kit is used, no bubbling will be observed since the kits are buffered. Follow directions and be careful not to over-neutralize
- Test pH of the spill with pH paper after neutralization reaction has stopped
- Once the pH is between 6 and 9, the material can be transferred to an appropriate secondary container for disposal

Base Spills (sodium or potassium hydroxide)

- Neutralize spill with **DILUTE** acid such as vinegar, 3M HCl, or citric acid
 - If dilute acid is used: wait until bubbling/fizzing has stopped
 - If neutralizing spill kit is used, no bubbling will be observed since the kits are buffered. Follow directions and be careful not to over-neutralize
- Test pH of the spill with pH paper after neutralization reaction has stopped
- Once the pH is between 6 and 9, the material can be transferred to an appropriate secondary container for disposal

Organic Spills (acetone, benzene, ethylene glycol, formaldehyde, methylene chloride, perchloroethylene, toluene, xylene, 1,3-butadiene)

- Use an absorbent medium such as sand or vermiculite to absorb spill and prevent runoff
- Transfer spilled material into an appropriate secondary container
- Mark the container with the "Hazardous Waste" label and contact the EHS

Solid Waste

- Sweep up and solid material and transfer directly to a secondary container after the spill occurs
- Mark the container with the "Hazardous Waste" label and contact the EHS

For more information on chemical and other material spills please see the **TAMUT Chemical Spill Plan**.

Appendix G: Laboratory Access Form

PURPOSE: The purpose of this form is to document and control access of undergraduate student workers to the laboratories and lab storage rooms at Texas A&M University-Texarkana. *NOTE: This form may be modified to accommodate laboratory class schedules as appropriate. Access will be granted no later than 10:00 PM Monday-Friday.*

_____ is employed as a lab assistant at Texas A&M University-Texarkana for the **Biology / Chemistry** (circle one) program in the Science & Technology Building.

Locations requiring access for the student to perform his/her duties:

Biology	Chemistry
SCIT 108, 203, 205, 206, 208, 210, 301, 301A, 306	SCIT 201, 202, 302, 302A, 304, 304A

Access to the above listed rooms is given from 8:00 AM – 5:00 PM Monday – Friday for the following duties and responsibilities listed in the job description:

- assist in cleaning laboratories each week, ensuring the labs are ready for the following courses that require the classroom
- assist in loading and unloading glassware to/from the dishwasher
- assist in preparing labs for courses as needed
- assist in organizing and inventorying consumables for each lab

This form must be submitted and kept on file for the **Fall / Spring / Summer I & II** (circle one) semester **20__** in which the student worker requires access. Access will be revoked at the end of each semester, and upon the student worker’s termination of employment or graduation, whichever comes first.

By my signature below, I acknowledge that I have been given a copy of the job description for this position and a signed copy of my Student Safety Contract is on file with the college. I understand that my access to these labs is solely to perform my duties as a lab attendant. Furthermore, I understand that this access may be revoked at any time without notice.

Student Name: _____ Signature: _____ Date: _____

CWID: _____ UIN: _____

Name: _____ Signature: _____ Date: _____

Dean, College of Arts, Sciences, and Education

Submit copies of this signed and completed form to the University Police Department, EHS, and Lab Coordinator(s)

Appendix H: Laboratory Inspection Checklist



Laboratory Inspection Checklist

Contact Information Principal Investigator or Faculty :			
Department:	Building:	Room:	Inspector:
Email:	Phone:	Today's Date:	Today's Time:
Documentation and Training			
1. Chemical Hygiene Plan complete and updated annually.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
2. A current chemical inventory is maintained for all hazardous materials.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
3. Safety Data Sheets (SDS) available at all times. (electronic and/or paper form).	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
4. Employees/students have received lab safety training.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Personal Protection Equipment and Engineering Controls			
5. Personal clothing and shoes cover feet and legs.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
6. Long hair tied back, jewelry or other loose items are covered or removed.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
7. Lab coats worn and made of appropriate material.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
8. Appropriate gloves available and worn.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
9. Goggles/ face shields available and worn.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
10. Respirators are available and used in the laboratory. If yes...	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
a. Respirator training, fit test, and medical evaluation are complete and up to date for each employee.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
b. Respirators are properly cleaned, stored and inspected.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
11. Chemical fume hood/ biosafety cabinets are free of clutter.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
12. Chemical fume hoods/ biosafety cabinets have been certified in the last 12 months.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
General Laboratory Safety			
13. Personnel understand eating and drinking are prohibited in the lab.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
14. Lab is secure; doors are locked when lab is unoccupied.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
15. Aisles are unobstructed and maintained at least 36" apart.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
16. Lab benches and work areas are free of clutter.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
17. Shelves and cabinets are in good condition and free of clutter.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
18. Refrigerator and freezers are labeled not for food storage.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
19. No food or drink are allowed in laboratory use refrigerators.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
20. Equipment is in good repair with evidence of proper maintenance.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
21. All guards and shields are in place.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
22. All equipment safety signs are posted and in good condition.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Chemical Safety			
23. Containers are in good condition, labels are intact and legible.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
24. Chemical containers are properly segregated.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
25. There is no storage of chemicals above eye level.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
26. Flammable liquids are stored in NFPA approved safety cabinets.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
27. Corrosives are stored in acid cabinets.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
28. Peroxide formers are properly labeled and inventory tracked.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA

Compressed and Cryogenic Gas Safety	
29. Gas cylinders are stored upright and are properly secured.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
30. Gas cylinder caps are properly secured when not in use.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
31. Flammable gases are stored separately from oxidizers.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
32. Cryogenic and flammable gases are stored in well-ventilated areas.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
33. Proper regulators are in use.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
34. Cylinders moved using cylinder trucks with regulators removed and caps secured.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Waste Management	
35. Chemical and biological waste are not disposed via trash or drains unless approved by ORCIS.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
36. Storage containers are appropriate for the waste and are in good condition.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
37. Waste containers are properly labeled with date and contents.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
38. Waste container lids are tightly closed unless adding waste.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Emergency Planning & Response	
39. Employees/students demonstrated familiarity with building evacuation procedures and location of fire alarms and exits.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
40. Employees/students demonstrated familiarity with the location and use of fire extinguishers.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
41. Spill control equipment available and employees/students are familiar with their use.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
42. Safety shower and eyewash accessible.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
43. Safety shower tested within the past year.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
44. Eyewash tested monthly.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
45. Emergency procedures and phone numbers are clearly posted.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
46. Fire alarm pull stations are unobstructed.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
47. Fire extinguishers are correct type for hazards present, pressure gauges indicate full and inspection tag is for the current year.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Electrical Safety	
48. Emergency cut-off panels and switches are accessible.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
49. Electrical outlets and outlet strips are not overloaded.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
50. GFCI outlets are present.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
51. Electrical cords are clear of aisles, sinks and are in good condition.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
52. UL listed power strips shall be used. Extension cords are prohibited.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Equipment Safety	
53. Equipment is unobstructed.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
54. Equipment is fastened to a stable surface.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
55. Equipment manual or standard operating procedure is available for any machine that may present an injury hazard.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
56. Equipment guards are in place and interlocks are not defeated.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA

57. Equipment emergency shut-off is functioning and unobstructed.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Other	
58. Lab identification information is current and correct.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
59. Laboratory Safety Manual is current and updated annually.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Comments	

Appendix I: Weekly Eyewash/Drench Hose/Shower Inspection

TEXAS A&M UNIVERSITY-TEXARKANA

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Weekly Eyewash/Drench Hose/Shower Inspection

Check for the following:

- The pathway to the eyewash station is clear of obstructions
- The eyewash fixture is free of obstructions in all directions
- The nozzle dust caps/covers are in place and operating properly
- To test the eyewash station, flush water until clear water flows continually through eyewash head without any leaks, rust, dirt, etc. for approximately 5 seconds. (If problems are evident, call EHS at 903-334-6794)

Call EHS with any questions

Year _____	Week 1	Week 2	Week 3	Week 4	Week 5	Comments:
JANUARY						
FEBRUARY						
MARCH						
APRIL						
MAY						
JUNE						
JULY						
AUGUST						
SEPTEMBER						
OCTOBER						
NOVEMBER						
DECEMBER						

Laboratory Personnel: _____ Department/Room #: _____

