24.01.01.W1.33AR Chemical Hygiene Plan

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Procedure Summary

Environmental Health and Safety at WTAMU is composed of two distinct but integrated environmental safety departments that report to the Vice President of Research and Compliance. Academic and Research Environmental Health and Safety (AR-EHS) is responsible for research and academic related compliance, which includes laboratory and academic research and the associated compliance committees. Fire and Life Safety (FLS- EHS) is responsible for fire related compliance and conducts fire and life safety inspections of campus buildings and assists with the testing of all fire detection and suppression systems.

Supplements TAMUS Regulation 24.01.01

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Acronyms used in Chemical Hygiene Plan

A&M	Agricultural & Mechanical
ACGIH	American Conference of Governmental Industrial Hygienists
AR-EHS	Academic and Research - Environmental, Health & Safety
BBP	Bloodborne Pathogen
CHP	Chemical Hygiene Plan
EHS	Environmental, Health & Safety
EXP	Exposure Control Plan
IARC	International Agency for Research on Cancer
M	Molar
mA	milliamps
MSDS	Material Safety Data Sheet
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PPE	Personal Protective Equipment
REL	Recommended Exposure Limit
SDS	Safety Data Sheet
SOP	Standard Operating Procedures
TLV	Threshold Limit Value
TOXNET	An online toxicology information source
UPD	University Police Department
WTAMU	West Texas Agricultural & Mechanical University

1. Purpose

The Chemical Hygiene Plan is intended to protect West Texas A&M University (WTAMU) faculty, staff, students, and visitors from physical and chemical health hazards associated with laboratory environments.

2. Scope

This procedure applies to all West Texas A&M University laboratories, to all employees and students of the University, and the external organizations who work in or use any WTAMU laboratory. **Remember, safety is everyone's responsibility.**

3. Contact Information

- Emergencies
  - General emergency: 911
  - WTAMU Police Department Emergency: (806) 651-2300
  - City of Canyon Fire Department: (806) 655-5010
  - City of Canyon Police Department: (806) 655-5005
  - Poison Control: 1-800-222-1222
  - WTAMU AR-EHS: (806) 651-2270
  - WTAMU FLS-EHS: (806) 651-2134
- Non-Emergencies
  - For small spills or with questions or concerns about lab safety contact AR-EHS at 651-2270.

4. Procedures

5.1 Standard Operating Procedures

- Only Lab Supervisors can authorize experiments.
  - Laboratory Supervisors are faculty or staff of WTAMU who are assigned as the individual responsible for controlling or administering the work being conducted in a specific laboratory.
- Any student, faculty, or staff who disregards safety policies or procedures and puts themselves or others at risk is subject to disciplinary actions in accordance with established University procedures. This includes:
  - Unauthorized experiments;
  - Neglect of established protective procedures;
  - Neglect of proper PPE use.

- Lab Supervisors may be held responsible if injury occurs due to failure on their part to enforce safety procedures.
- Never leave biological, radiological, or chemical material or containers unattended outside a laboratory.

5.2 Accidents, Spills

- Follow SDS or Laboratory Chemical Safety Summary recommendations for eye and skin contact, ingestion, respiratory protection, and clean-up.
- For small spills follow the instructions on the chemical spill kits located in each laboratory.
  - Contact AR-EHS (651-2270) for assistance or to pick up and replace a spill kit.
- For large spills immediately evacuate the area and call 911 or 2300.

5.3 Avoidance of Routine Exposure

Every chemical has the potential to be harmful which is why students, faculty, and staff of WTAMU shall treat **ALL** chemicals as if they are harmful to human health.

- All chemical mixtures shall be treated as hazardous at its most hazardous component. When risk is unknown, treat as extremely hazardous.
  - For assistance contact AR-EHS.
- Do not allow direct contact with any chemical.
  - Wear eye and hand protection as directed by the SDS for the chemical being used at all times while in the laboratory.
  - Follow personal protective equipment (PPE) recommendations provided in SDS.
    - ❖ Wear lab coats, aprons, or a combination of both to minimize chances of exposure, and remove lab coats and aprons prior to exiting the laboratory.
    - ❖ Inspect gloves prior to use.
    - ❖ Wash hands immediately upon removal of gloves.
  - Wear respirators and other PPE as recommended by the SDS, Laboratory Chemical Safety Summary, NIOSH Pocket Guide to Chemical Hazards, TOXNET, or other reputable source.
    - ❖ Contact AR-EHS for assistance in PPE selection or to determine permissible exposure levels (PEL).
- Concentrations above the OSHA PEL shall be considered a hazardous condition and require immediate actions to either reduce the concentration or exit the laboratory and notify AR-EHS. In the event that a chemical does not have an OHSA PEL, use either the NIOSH REL or the ACGIH TLV whichever is more protective (contact AR-EHS for assistance).
- Do not use smell or taste to identify any chemical.

- Release of toxic substances into warm or cold rooms (recirculated air) shall not be allowed.
- Use fume hoods appropriate for the work to be conducted.

5.4 Chemical Selection and Handling

- Prior to working with any chemical, assure that the quality of the available ventilation system is appropriate.
- The quantity of chemical being used should be as small as possible to complete the required work.
- Any use of methanol or other flammables should be either avoided completely or restricted to minimal amounts, which have been safely dispensed at remote locations.
- Bulk containers of flammable liquids must never be positioned or handled near viewing audiences, especially when there are potential ignition sources present.
- Chemicals shall be handled in the manner recommended in the SDS.
- Read and adhere to the chemical labels and SDS before handling any chemical.
- Know chemical and physical hazards associated with the chemicals being used in the laboratory and ensure you have the proper training, equipment, and procedures in place to safely conduct work.
- Proper PPE must be worn when handling hazardous chemicals.
- Do not hold chemical containers by their cap.
- Point test tubes away from yourself and others in the laboratory.
- When using carts to transport chemicals, only carts with side rails shall be used.
    - Two carts will be made available in ANS and kept in the basement.
    - One cart will be made available in KRC.
    - If the carts are unavailable, contact AR-EHS at 651-2270 for a cart.
- Always add acid to water "A to W dilution", not the other way around. (**Note:** *mixing concentrated acids/bases with water can cause violent reactions, use caution*)
- Do not mix organic chemicals with oxidizers.
- Separate incompatible chemicals during storage and do not mix incompatible materials, for assistance contact AR-EHS.
    - See Appendix A for chemical compatibility storage groups and a list of chemicals within each group.

5.5 Eating, Drinking, Smoking

- Smoking shall not occur in any WTAMU laboratory.
- Eating and drinking shall not be allowed in a laboratory that has chemical, biological, or radiological materials. This includes the chewing of gum, tobacco, and the use of snuff or medications of any kind.

- Do not place hands or fingers in or near the mouth.
- Do not place hands near the face. This includes the application of cosmetics.
- Wash hands immediately and thoroughly when leaving the laboratory even if gloves were worn.
- Food items shall not be allowed in a laboratory.
    - Exceptions based on the researcher's need can be made, contact EHS.
    - If exceptions are made, food items intended for human consumption shall be stored in a refrigerator (labeled "FOOD ONLY") that contains no chemical, biological, or radiological materials.
    - Refrigerators used to store/hold items for lab use shall not contain food items for human consumption and shall be labeled "RESEARCH ONLY" and "NO FOOD ORDRINK".

5.6 Equipment and Glassware

- Proper equipment selection and maintenance is essential to a safe laboratory.
- Inspect all glassware and equipment prior to each use.
    - Follow manufacturer recommendations for inspections and maintenance.
    - Documentation of all equipment inspections and maintenance are the responsibility of the Lab Supervisor and maintenance and inspection records must be stored in a binder specific for that piece of equipment. Lab Supervisors may contact AR-EHS for assistance in scheduling maintenance or inspections and record keeping.
    - Dispose of damaged or broken glassware in broken glass containers.
        - Contact AR-EHS to supply or pick up broken glass containers.
- Glassware must be properly handled and stored. Any glassware with cracks or chips must not be used and must be discarded immediately in an approved broken glass container.
- Vacuum-jacketed glassware must be handled with extreme care to prevent implosion.
- Do not handle broken glass with bare hands.
    - Use tongs, tweezers, puncture-resistant gloves, or brush/broom and dustpan.
- Use extreme caution when using force to attach or remove hosing or other items to or from glass.
    - Always wear appropriate PPE to ensure hands, body, and eyes are protected.

5.7 Exiting the Laboratory

- Ensure work area is clean and uncluttered prior to exiting.
- Ensure all chemicals are properly labeled and stored before exiting.
- Ensure hotplates are unplugged and no open flames exist before exiting.
- Remove lab apparel prior to exiting the laboratory.
- When leaving a laboratory, always wash your hands as soon as feasible.

5.8 Horseplay

- Horseplay shall not be allowed in WTAMU laboratories.
    - Horseplay may distract, startle, or confuse other workers/students and may create hazardous situations.

5.9 Mouth Pipetting

- The use of mouth suction (pipetting, siphoning) shall not be allowed.
- Always use mechanical means to create suction.

5.10 Personal Apparel

- Long hair, including facial hair, and loose clothing shall be confined at all times in a laboratory.
- Shoes shall be worn at all times in a laboratory.
    - Sandals, perforated shoes, and mesh shoes are not recommended for students. Staff and lab personnel shall wear proper shoes for the chemical and quantity being used as directed by the SDS.
- Minimize skin exposure as appropriate by wearing clothing which covers the legs to the ankles and covers arms to the wrists or cover exposed skin with a lab coat or appropriate PPE.
    - Follow guidance of SDS or contact AR-EHS.

5.11 Personal Protection Equipment

Personal Protective Equipment (PPE) includes all clothing and work accessories designed to protect employees from workplace hazards. Protective equipment should not replace engineering, administrative, or procedural controls for safety; it should be used in conjunction with these controls. Employees must wear protective equipment as required and when instructed by a supervisor.

- Review the WTAMU Personal Protective Equipment Procedure.
- Always wear the appropriate hand and arm protection.
- Select and wear appropriate body protection.
- Select and wear appropriate hearing protection.
- Use safety glasses or safety goggles as required.
- Do not wear contact lenses in laboratories without full eye protection.
- Use proper head and foot protection as needed.
- Respirators must be used when dealing with inhalation hazards above regulated or recommended atmospheres.
    - Contact AR-EHS prior to respirator use.

5.12 Housekeeping

- Work areas shall remain clean and uncluttered.
- Safety equipment must remain clear of obstructions at all times, such as fire extinguishers, safety showers, and eyewash stations.
- Breaker panels require a clearance of 3 feet from the front of the panel and appropriate width to allow a person to access the panel unobstructed.

5.13 Planning

Proper planning is essential in creating a safe work environment when handling chemicals. WTAMU has adopted many procedures that Lab Supervisors need to be familiar with.

- Know the locations of exits and all emergency exit routes prior to conducting any experiment.
- Know emergency phone numbers prior to conducting any experiment.
  - General emergency: 911
  - WTAMU Police Department Emergency: (806) 651-2300
  - City of Canyon Fire Department: (806) 655-5010
  - City of Canyon Police Department: (806) 655-5005
  - Poison Control: 1-800-222-1222
  - WTAMU AR-EHS: (806) 651-2270
  - WTAMU FLS-EHS: (806) 651-2134
- Know all chemical and physical hazards associated with chemicals being used.
  - Select procedures based on chemical and physical hazards.
  - Select equipment based on chemical and physical hazards, examples include:
    - ❖ Fume hoods designed for explosives or perchloric acid.
    - ❖ Lead aprons, gloves, etc. when working with radiation.
    - ❖ Cryo-protective PPE when dealing with cryo-chemicals.
    - ❖ Shields for high pressure experiments.
    - ❖ Class D fire extinguisher for combustible metals.
      - Sand is also a good extinguishing media if fire extinguishers aren't readily available.
- Know the location and proper operation of all safety equipment.
- Understand proper disposal of chemicals.
  - Prior to generation of waste chemicals contact AR-EHS for assistance in waste characterization and proper management.

5.14 Unattended Operations

WTAMU understands that certain experiments require continuous operation. In the event that experiments need to run unattended, the Laboratory Supervisor must plan for possible interruptions in utility services. Operations should be designed to be fail-safe, and plans must be made to avoid hazards in case of failure.

- Arrange to have someone check on your equipment while you are away if possible.
  - Ask a competent and trained colleague.
  - Contact AR-EHS.
  - Contact UPD.
- If a loss of utilities have the potential to create a hazardous condition or atmosphere, **UPD MUST be notified** of the situation and the potential hazard that may arise from utility interruption.
  - Loss of power to equipment using natural gas
  - Loss of power resulting in temperature increases when explosive vapors may form

5.15 Hood Use

Laboratory fume hoods are designed to protect laboratory personnel by preventing contaminants such as chemical vapors, dusts, mists, and fumes from escaping into the laboratory environment. Laboratory fume hoods also provide lab personnel with a physical barrier to chemicals and their reactions. Lab Supervisors should be familiar with the WTAMU Fume Hood Procedure.

- Fume hoods are inspected annually and must have the date of inspection affixed to the chemical fume hood. Contact AR-EHS in the event that a fume hood's inspection has expired.
- Do not put your head in the hood when contaminants are being generated.
- Verify that the fume hood exhaust system and controls are operating correctly.
- Hoods should not be routinely used as a waste disposal mechanism for volatile materials. If a flammable storage cabinet is not available, the hood may be used to store volatile chemicals waiting to be picked up by AR-EHS. The volatile chemicals must be in proper containers, closed, and have proper labeling.
- Do not store chemicals or apparatus in the hood. Store hazardous chemicals in an approved safety cabinet.
- Place any heat generating equipment in the rear of the hood to minimize the effect of convection currents on the airflow in the hood.
- Keep the slots in the hood baffle free of obstruction by apparatus or containers.
- Place large apparatus to the rear of the hood and raise it off the surface with two to three inch blocks to allow airflow under the object and into the lower rear baffle.
- Minimize foot traffic past the face of the hood.
- Keep laboratory doors and windows closed as drafts may interfere with proper vent hood operation.
- Do not position fans or air conditioners in a manner that will direct airflow across the face of the hood and interfere with containment.

- Do not block air supply vents or exhausts in the room.
- Do not remove the hood sash or panels except when necessary for apparatus setup. Replace sash or panels before operating.
- Do not place electrical receptacles or other spark sources inside the hood when flammable liquids or gases are present. No permanent electrical receptacles are permitted in the hood unless approved by the manufacturer.
- Spills should be neutralized and cleaned immediately.
- Wear proper PPE when dealing with hazardous substances.
- Do not open the sash rapidly.
- If fumes or odors are present, stop work, leave the fume hood running, close the sash and contact AR-EHS.
- Use an approved sash when dealing with potentially explosive materials.

5.16 Vigilance

- Remain alert to notice unsafe conditions and take immediate actions to either correct unsafe conditions or evacuate the laboratory.
- Be aware of others in the laboratory and report any symptoms of exposure to the Laboratory Supervisor immediately.
- Working in a laboratory while under the influence of any substance that impairs one's judgment or ability to work safely is not allowed at WTAMU.
- Be aware of work being conducted in neighboring laboratories, especially if that work is being conducted alone. Take the time to check up on lone workers.
- Report unauthorized individuals to UPD immediately.
- Never use your key or swipe access to allow another person entry into a laboratory.

5.17 Waste Disposal

Lab Supervisors must comply with WTAMU procedures regarding waste. Remember, chemicals are not declared as "waste" until AR-EHS makes that determination. Contact AR-EHS regarding any questions about chemicals that are no longer needed in your laboratory.

- Biological Waste
  - All contaminated sharps are to be discarded as soon as feasible in sharps containers located as close to the point of use as feasible.
    - ❖ Contact AR-EHS to have sharps containers removed or replaced.
  - Regulated waste, other than sharps, is placed in appropriate containers that are closable, leak resistant, labeled with a biohazard label, and closed prior to removal. If outside contamination of the regulated waste container occurs, use approved secondary containment or decontaminate with 15% Clorox solution and call AR-EHS for assistance in waste disposal.

5.18 Working Alone

WTAMU understands that the nature of research can sometimes require laboratory personnel to work alone. WTAMU recommends that no lab personnel ever work alone, if at all avoidable.

- Working alone in a laboratory can be dangerous. WTAMU prohibits working alone when using hazardous materials and equipment or hazardous procedures.
- Take extra precaution when working alone with high speed equipment.
- Take extra precaution when working alone with equipment that poses a risk of fire or electrocution.
- Use the "buddy" system if possible. Working alone must be approved by the Laboratory Supervisor prior to conducting work.
    - The Laboratory Supervisor must know the work to be done and the time the work will be conducted.
- If others are in the building, lone workers shall notify at least one other person as to the work being conducted, the room, and the timeframe the worker expects to be alone in the laboratory.
    - If no one is in the building, reconsider working alone. If work must be done contact the University Police Department and inform them of the work being conducted, the location, and the timeframe expected.
- If work must be conducted behind locked doors, notify someone in the immediate area with key or swipe access to the laboratory prior to starting work.

5.19 Radiation Safety

Any faculty or staff member who desires to work with radioisotopes or radiation-producing devices must apply for and receive a permit from AR-EHS and the applicable federal or state permit. In addition, laboratory personnel who work with sources of radiation must receive formal training in equipment operation, safety guidelines, and emergency procedures.

- Contact AR-EHS for "Radiological Safety Program Procedure Manual".
    - Review the WTAMU Radiation Safety Procedure. Items covered in WTAMU Radiation Safety Procedure include:
        - Ionizing and Non-ionizing Radiation
            - Lasers
            - Magnets
            - Microwaves
            - Radiation-producing devices
        - Selection and use of engineering controls, administrative procedures, and PPE.
            - For assistance contact AR-EHS.
- Radioactive materials may only be used for purposes specifically described in the license.
- Never eat, drink, smoke, handle contact lenses, apply cosmetics, or take or apply medicine in the presence of radioactive material.

- Food and drinks must not be allowed in a laboratory containing radioactive materials.
- Experiments must be planned to minimize exposure by reducing time, using shielding, increasing distance from the radiation source, and utilizing monitoring and decontamination practices.
- Proper PPE must be used by all personnel in a laboratory running experiments with radioactive materials.
- An accurate inventory of all radioisotopes must be maintained.
- All waste materials from experiments involving radioactive materials must be checked for contamination before discarding.
- Place all materials that are known or suspected to have radioactive contamination in appropriate radioactive waste containers.

5.20 Cryo-material

Cryogens can cause extreme tissue damage and are particularly dangerous due to the risk of asphyxiation.

- Complete WTAMU required training for cryogenic material. Contact AR-EHS to assign the training.
- Use cryo-material in a well ventilated area.
- Ensure pressure relief devices are properly functioning.

5.21 Compressed Gas

- Inspect each cylinder
- Call AR-EHS to have any empty cylinders removed as soon as the cylinder is known to be empty, and contact AR-EHS for any cylinders that are no longer being used. Empty cylinders should be labeled as "EMPTY".
- Select the smallest cylinder needed to perform the required work.
  - Cylinders containing toxic gasses should not exceed a lecture-size gas bottle (2'X12')
- Use a cylinder cart to move cylinders.
  - Never roll a cylinder or lay a cylinder on its side.
  - Do not allow a cylinder to fall or strike anything.
  - Do not allow a cylinder to be struck by anything.
  - Never move a cylinder without safety caps.
- Lab personnel shall not refill cylinders. Contact AR-EHS to have empty cylinders removed and replacement cylinders delivered.
- Cylinders must be properly secured at all times both during storage and in the laboratory.
  - Secure cylinders in an enclosure with a length of chain anchored at both ends to masonry or stone walls or use approved tank straps affixed to an immovable object.
  - Tanks shall be secured at a height of 2/3 the height of the tank or midway between the waist and shoulder of the tank.

- Do not purchase bottles if at all avoidable. Leasing bottles ensures WTAMU laboratories do not become cluttered with empty or half empty bottles.
- Cylinders must be labeled with the contents and the hazards of the chemical. Do not rely on the color of the bottle for identification.
- If label is unclear or defaced it must immediately be marked as "UNKNOWN" and AR-EHS must immediately be notified.
- Lab personnel shall not carry out reactions in, or apply heat to, an apparatus that is a closed system unless it has been designed and tested to withstand pressure.
- Use appropriate tools when assembling equipment and valves and never use excessive force.
- Tubing shall not be used to support any weight.
- Do not over tighten fittings.
- Thread connections must match and only parts in good condition shall be used.
    - Tapered pipe threads must not be joined with parallel machine threads.
    - Do not force threads.
- Teflon tape or thread lubricant may be used as appropriate.
    - Never use oil or lubricant on any equipment that will be used with oxygen.
- Select the correct tubing for the chemical being used.
    - Be careful when using copper tubing as it will harden and crack with repeated bending.
    - Metals can become brittle when used with hydrogen or corrosive gasses.
    - Certain alloys containing nickel or iron can generate carbonyls in carbon monoxide atmospheres. Carbonyls like $NI(CO)_4$ can be toxic by absorption or inhalation.
    - If using acetylene or ammonia, lab personnel shall not use vessels or equipment containing copper or silver; this includes joints and solder.
    - Equipment made of copper, brass, zinc, tin, silver, lead, and gold shall not be allowed to come in contact with mercury; this includes joints and solder.
- Always depressurize prior to making any leak corrections or adjustments to the apparatus.
    - Never attempt to repair a cylinder while it contains gas pressure.
- Valve caps shall be kept on the cylinder at all times when the cylinder is not being used.
- Cylinders should be stored in well ventilated areas.
    - Do not store near flames, sparks, sources of heat, or electrical circuits.
    - Cylinders need to be kept below 130°F.
- When opening the cylinder valve, stand to the side in the event that the face on the regulator becomes a projectile.
- Cylinders stored outside may become home to a variety of biting or stinging insects. Take extra precaution when approaching these cylinders.
- If gasses are bubbled into liquids or reaction mixtures make certain to use proper traps to prevent back flow of the liquid into the gas cylinder.
    - Check valves are also recommended for gas supply lines.

5.22 Corrosives

- Remember acids and bases are corrosives.
- When carrying corrosive materials, always use two hands on the bottle with one hand under the bottle. Only carry one bottle at a time.
- Wear proper PPE when handling corrosive chemicals.
  - Chemical splash goggles shall be worn at all times when handling corrosives in liquid state (**Note:** *full face shields shall be worn when handling concentrated acids of 10M or more*).
    - ❖ Wear the same PPE as the person handling corrosive materials if you are in the immediate area where corrosives are being used.
  - Face shields are recommended (required for 10M and above).
  - Chemical resistant gloves and aprons should be worn.
  - Sandals, perforated shoes, and mesh shoes are not recommended for students. Staff and lab personnel shall wear proper shoes for the chemical and quantity being used as directed by the SDS.
  - The Laboratory Supervisor is responsible for ensuring proper PPE is being utilized in his/her laboratory.
- Minimize large volumes of corrosives.
- Exercise extreme caution when working with concentrated acids or bases.
- Always add corrosive materials to water not the other way around. Remember "A to W Dilution".

5.23 Electrically Powered Laboratory Equipment

- Before using any piece of equipment, the user must be trained in the proper use of the device and use it only as it is intended.
- All personnel must know the location of any emergency shutoff switches and be aware of the inherent mechanical and electrical hazards associated with the equipment in use.
- All personnel must be aware of the voltage they are using (**10mA can hurt you, 80mA – 100mA can be fatal**)
- Check the condition of any wires, plugs, and panels before using equipment and report any damaged materials.
- Unplug hotplates and any other thermal equipment after each use. If possible, unplug any equipment that is not in use.
- When using electrically powered equipment, make sure that you have adequate space to work safely and that you do not pose a threat to those around you.
- Extension cords are not permissible as permanent or fixed wiring. Extension cords must be unplugged and properly stored when not in use.

5.24 Fire, Explosion

- No more than 10 combined gallons of any flammable materials are allowed outside of the flammables storage cabinet in the laboratory at any time.
- Any experiments involving flammable material must be done in a well ventilated area or in a fume hood, and away from any ignition sources.
- Any individuals handling flammable material must be aware of the hazards that material represents, not just in its current form but also any form it may degrade into during the course of the experiment. For assistance contact AR-EHS 806-651-2270.
- In the event of a fire or explosion related emergency, relocate to a safe area and contact local emergency professionals
  - General emergency: 911
  - WTAMU Police Department Emergency: (806) 651-2300
  - City of Canyon Fire Department: (806) 655-5010
  - City of Canyon Police Department: (806) 655-5005
  - Poison Control: 1-800-222-1222
  - WTAMU AR-EHS (806) 651-2270
  - WTAMU FLS-EHS (806) 651-2134

5.25 Pressurized and Vacuum Operation

- Do not use material that will corrode the pressurized vessel.
- Do not carry out reactions in, or apply heat to, an apparatus that is a closed system unless it has been designed and tested to withstand the generated pressure.
- Operators of pressurized vessels shall record any and all instances of overpressure or over-temperature that occur.
- Run reactions under pressure in metal equipment, if possible. If glass is required, use a metal reactor with a glass or Teflon liner instead of a glass vessel under pressure.
- If running a small scale reaction at low pressure in a glass vessel, the operator shall wrap the vessel in a cloth or mesh that can contain any broken glass in the event the vessel fails.
- Glass vessels under pressure shall be no more than three-quarters full.

5.26 Carcinogens

- Work with "Select Carcinogens" must have prior approval from the Chemical Hygiene Officer.
- Select Carcinogens include any substance that:
  - Is regulated by OSHA as a carcinogen
  - Is listed under the category "Known to be carcinogenic" by the Annual Report on Carcinogens published by the National Toxicology Program.
  - Is listed under Group 1 by the International Agency for Research on Cancer.
  - Is listed in either Group 2A or 2B by IARC or under the category, "reasonably anticipated to be carcinogenic" by NTP, and causes statistically significant tumor incidence in experimental animals in accordance with any of the following criteria:
    - After inhalation exposure of 6-7 hours per day, 5 days per week, for a significant portion of a lifetime to dosages of less than 10 mg/m(3);
    - After repeated skin application of less than 300 (mg/kg of body weight) per week; or
    - After oral dosages of less than 50 mg/kg of body weight per day.
  - **APPENDIX B** contains a list of "Select Carcinogens". **Note:** *APPENDIX B is not all inclusive. New chemicals are added as they are discovered to be carcinogens.* EHS encourages Laboratory Supervisors to regularly ensure the chemicals being used are not "Select Carcinogens". Links to resources are included in APPENDIX B.
- Large scale or long term experiments with carcinogens shall be kept below the occupational exposure limits for the substance in use.
- Proper PPE must be in use by all personnel handling carcinogenic material.
- Place carcinogenic material that is no longer needed into a proper container and contact AR-EHS to remove the material from the laboratory.

5.27 Acute Toxicants

Take special precautions when dealing with chemicals known to cause adverse health effects. Conduct a Toxicity Risk Assessment of any chemicals expected to be used in the laboratory (**Note**: *AR-EHS is available for assistance upon request*):

- Consult sources of information, such as:
  - SDS
  - NIOSH Pocket Guide to Chemical Hazards
  - TOXNET
  - AR-EHS
- Evaluate the type of toxicity.
  - Acutely toxic
  - Corrosive
  - Irritant

- Sensitizer
- Carcinogens
- Neurotoxins
- Others

➢ Evaluate possible routes of exposure.
- Inhalation
  - ❖ Inhalation hazards are a safety concern.
- Ingestion
- Absorption
  - ❖ Substances readily absorbed through the skin are a safety concern.
- Injection

➢ Evaluate quantitative information on toxicity.

➢ Select procedures to reduce exposure.
- Engineering controls
- Administrative procedures
- PPE

➢ Prepare contingencies
- First aid
- Containment

5.28 Chemical Procurement

All materials associated within the range of research and teaching must be purchased by the Office of Academic and Research Environmental Health and Safety. The WTAMU Chemical Procurement Process and the online order form are available on the AR-EHS SOP website: Standard Operating Procedures | WTAMU

➢ Laboratory Supervisors are the only authorized personnel to access chemicals stored in chemical store rooms. AR-EHS will retrieve chemicals stored in chemical store rooms upon request.

5.29 Field Work

Laboratory work may extend into the field. Field work may expose researchers, faculty, staff, and students to potential risks not outlined in this Chemical Hygiene Plan. It is the responsibility of the Laboratory Supervisor to ensure that safety precautions for potential risks are adhered to while in the field. Potential risks include:

➢ Thermal Stress: See 24.01.01.W1.14AR - WTAMU Thermal Stress Prevention Management Procedure.

➢ Heavy Equipment: See 24.01.01.W1.17AR - WTAMU Mobile and Heavy Equipment Management

Procedure.

- Agricultural Risks: See 24.01.01.W1.25AR- WTAMU Agriculture Safety Procedure.
- Workplace Hazards
- Encounters with poisonous or wild animals
- Fire
- Inclement Weather
- Lightning Strike

5.30 Exposure Control Plan

The primary principle of biological safety is containment. The term containment refers to a series of safe methods for managing infectious agents in the laboratory. Exposure Control Plans are an integral part in biological safety and must be prepared for site-specific conditions. The elements of biological safety are covered in 24.01.01.W1.23AR - WTAMU Biological Safety Procedure. AR-EHS can assist Laboratory Supervisors in preparing an exposure control plan.

- Laboratory Supervisors must notify AR-EHS if there is any potential for exposure to blood borne pathogens prior to conducting work.
- In the event that laboratory personnel are exposed to any media with the potential to transmit blood borne pathogens, Laboratory Supervisors must immediately notify AR-EHS.

5.31 Circumstances requiring approval from the Chemical Hygiene Officer

The following activities require prior approval from the Chemical Hygiene Officer before any lab work can begin.

- Work involving highly reactive or energetic (explosive) compounds or reactions.
- The capture, transportation, housing, experimentation, and any other work or interactions involving poisonous creatures.
- The acquisition, use, and disposal of the following substances:
  - Select carcinogens (see 4.1.25 of this document for definition)
  - Highly acute toxins
  - Radioactive materials
  - Air reactive substances
  - Water reactive substances
  - Reproductive Toxins

5.32 Laboratory Specific/Chemical/Equipment/Process Hygiene/Safety Plan

A chemical/equipment/process hygiene/safety plan is a written program developed to establish procedures, protective equipment and standard work practices that promote a safe work environment for all Academic

and Research lab personnel handling hazardous chemicals/equipment/process in the workplace. At West Texas A&M University, laboratory personnel are responsible for the preparation of their Lab Specific Chemical/Equipment/Process Hygiene/Safety Plan. The plan may cover one or more rooms/laboratories associated with a work group and should consider all health and safety issues when work involves the use of hazardous chemicals/equipment/processes (APPENDIX F).

5. Responsibilities

- A Research Compliance Officer and Chemical Hygiene Officer shall be established for WTAMU.
  - The Research Compliance Officer has ultimate responsibility for chemical hygiene at WTAMU.
  - The Chemical Hygiene Officer's responsibilities are:
    - Development and implementation of chemical hygiene policies and practices.
    - Management of procurement, use, and disposal of chemicals.
    - Audits.
    - Knowledge of legal requirements concerning regulated substances.
    - Improvement of chemical hygiene program.
- Laboratory Supervisors
  - Laboratory Supervisors are faculty or staff of WTAMU who are assigned as the individual responsible for controlling or administering the work being conducted in a specific laboratory.
  - Responsible for all experiments that occur in their laboratories.
  - Responsible for implementation of all WTAMU safety procedures and must ensure that safety procedures are followed by all occupants of supervised laboratories.
  - Must ensure laboratory personnel know all chemical and physical hazards associated with the work being conducted in their laboratories.
  - Responsible for ensuring all laboratory personnel have required training for the work being conducted in their laboratories. Documentation of required training will be maintained for at least three years past the last day of work of all laboratory personnel.
  - Must establish safe procedures based on chemical and physical hazards.
  - Must report any evidence of exposure to laboratory staff to AR-EHS immediately.

6. Training

West Texas A&M University Environmental Health and Safety will follow the Texas A&M University System Policy 33.05.02 Required Employee Training. Staff and faculty whose required training is delinquent more than 60 days will have their internet access terminated until all trainings are completed. Only Blackboard and Single Sign-on will be accessible. Internet access will be restored once training has been completed. Student workers whose required training is delinquent more than 30 days will need to be terminated by their manager through Student Employment.

7. Record Retention

No official state records may be destroyed without permission from the Texas State Library as outlined in Texas Government Code, Section 441.187 and 13 Texas Administrative Code, Title 13, Part 1, Chapter 6, Subchapter A, Rule 6.7. The Texas State Library certifies Agency retention schedules as a means of granting permission to destroy official state records.

West Texas A&M University Records Retention Schedule is certified by the Texas State Library and Archives Commission. West Texas A&M University Environmental Health and Safety will follow Texas A&M University Records Retention Schedule as stated in the Standard Operating Procedure 61.99.01.W0.01 Records Management. All official state records (paper, microform, electronic, or any other media) must be retained for the minimum period designated.

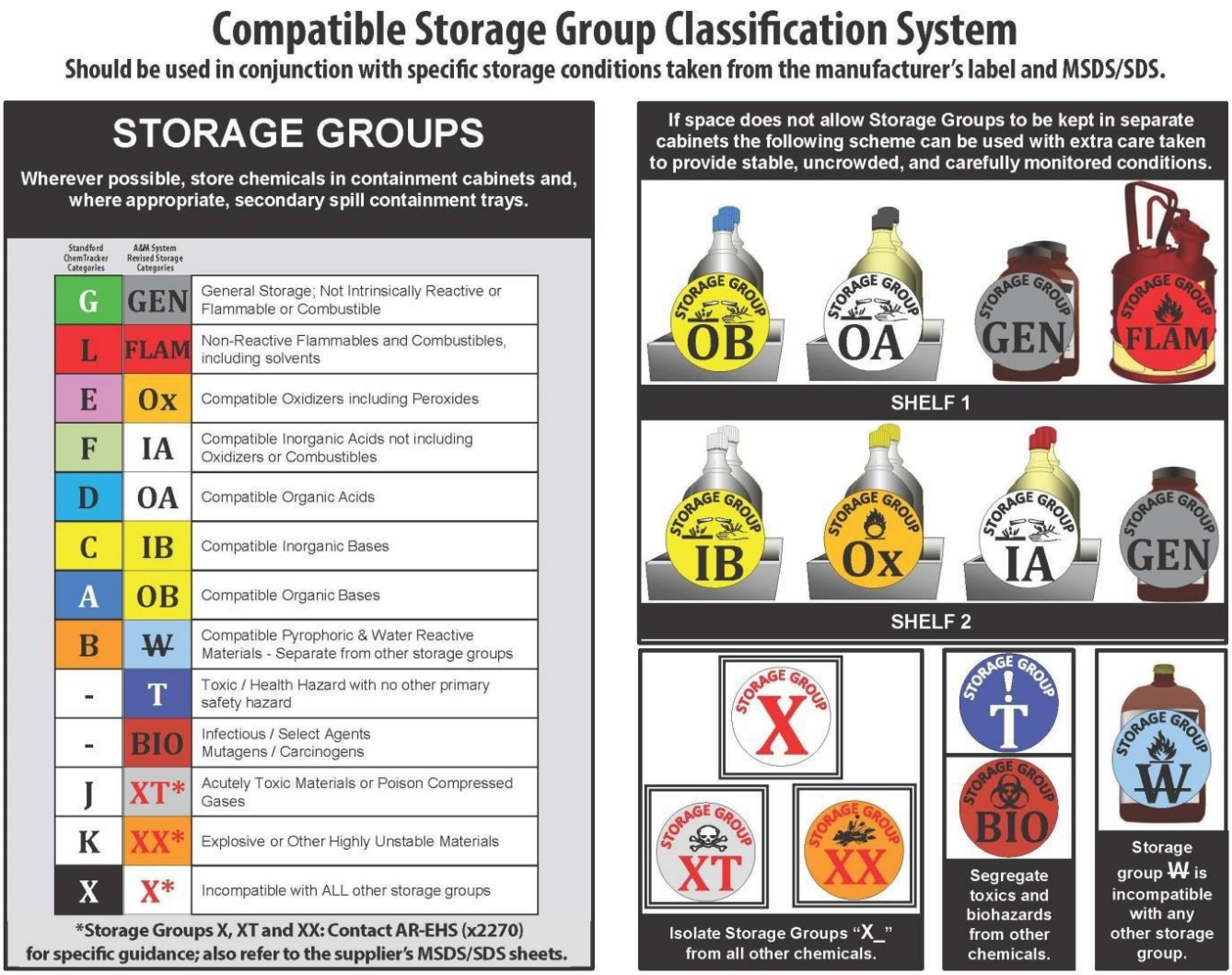
8. Incident Investigation

WTAMU considers any unusual event as an incident. An incident has neither a positive nor a negative connotation and is by definition an event or occurrence **(Note:** *An Incident Report Form is attached to this CHP in* ***APPENDIX D)***.

- ALL incidents at WTAMU will be investigated. These investigations allow WTAMU students, faculty, and staff the opportunity to participate in the safety culture WTAMU has created, and ensure that any occurrence, no matter how small it may seem, is critically examined to confirm WTAMU is providing safe laboratory conditions.
- Initial Incident Investigations will be conducted with the Laboratory Supervisor and AR-EHS.
  - If a pattern of unsafe procedures or conditions emerges, the following procedures will apply:
    - The Vice President of Research and Compliance and AR-EHS will meet with the Laboratory Supervisor to discuss concerns as indicated by prior Incident Investigations.
    - If further actions are necessary, the Vice President of Research and Compliance and AR-EHS will meet with the Department Head and, if necessary, the Dean of the College in order to bring resolution to the identified concerns.

Contact Office
WTAMU Environmental Health and Safety
(806) 651-2270

APPENDIX A



Chemical Compatibility Storage Groups 1

Chemical Compatibility Storage Groups

Storage Group A: Compatible Organic Bases	
Identifier	**Name**
100-46-9	Benzylamine
100-85-6	Benzyltrimethylammonium hydroxide
108-91-8	Cyclohexylamine
111-42-2	Diethanolamine
109-89-7	Diethylamine
75-04-7	Ethylamine
107-15-3	Ethylenediamine
110-89-4	Piperidine
102-71-6	Triethanolamine
121-44-8	Triethylamine

Storage Group A: Compatible	Organic Bases
Storage Group B: Compatible	**Pyrophoric and Water Reactive Materials**
Identifier	**Name**
7783-70-2	Antimony pentafluoride
98-88-4	Benzoyl chloride
353-42-4	Boron trifluoride compound with methyl ether
594-19-4	*Tert*-Butyllithium
156-62-7	Calcium cyanamide
16853-85-3	Lithium aluminum hydride
4111-54-0	Lithium diisopropylamide
7580-67-8	Lithium hydride
7439-93-2	Lithium metal (e.g. in THF)
124-63-0	Methanesulfonyl chloride
917-54-4	Methyllithium solution (and other alkyls)
7440-09-7	Potassium metal
17242-52-3	Potassium amide
16940-66-2	Sodium borohydride
7646-69-7	Sodium hydride
7440-66-6	Zinc (fume or dust)

Storage Group C: Compatible	Inorganic Bases
Identifier	**Name**
1336-21-6	Ammonium hydroxide
17194-00-2	Barium hydroxide
1305-62-0	Calcium hydroxide
21351-79-1	Cesium hydroxide
1310-65-2	Lithium hydroxide
1310-58-3	Potassium hydroxide
1310-82-3	Rubidium hydroxide
1310-73-2	Sodium hydroxide
18480-17-4	Strontium hyrdroxide

Storage Group D: Compatible	Organic Acids
Identifier	**Name**
64-19-7	Acetic acid
79-10-7	Acrylic acid
65-85-0	Benzoic acid
98-07-7	Benzotrichloride
98-88-4	Benzoyl chloride
10043-35-3	Boric acid
79-11-8	Chloroactic acid
627-11-2	Chloroethyl chloroformate
77-92-9	Citric acid
79-44-7	Dimethylcarbamyl chloride
64-18-6	Formic acid

Storage Group D: Compatible	Organic Acids
6915-15-7	Malic acid
108-31-6	Maleic anhydride
7697-37-2	Nitric acid
139-13-9	Nitrilotriacetic acid
79-09-4	Propionic acid
7783-00-8	Selenious acid
76-05-1	Trifluoroacetic acid (TFA)
76-03-9	Trichloroacetic acid

Storage Group E: Compatible	Oxidizers, including Peroxides
Identifier	**Name**
21205-91-4	9-BBN
13473-90-0	Aluminum nitrate
7789-09-5	Ammonium dichromate
7790-98-9	Ammonium perchlorate
13446-10-1	Ammonium permanganate
7727-54-0	Ammonium persulfate
10022-31-8	Barium nitrate
10124-37-5	Calcium nitrate
1305-79-9	Calcium peroxide
19004-19-4	Cupric nitrate
506-93-4	Guanidine nitrate
937-14-4	3-Chloroperoxybenzoic acid
7722-84-1	Hydrogen peroxide
10099-74-8	Lead nitrate
13840-33-0	Lithium hypochlorite
10377-60-3	Magnesium nitrate
10034-81-8	Magnesium perchlorate
13138-45-9	Nickle nitrate
7697-37-2	Nitric acid
79-21-0	Peracetic acid
7601-90-3	Perchloric acid
7778-50-9	Potassium dichromate
7757-79-1	Potassium nitrate
7722-64-7	Potassium permanganate
7727-21-1	Potassium persulfate
17014-71-0	Potassium superoxide
7761-88-8	Silver nitrate
15630-89-4	Sodium carbonate peroxide
7775-09-9	Sodium chlorate
7758-19-2	Sodium chlorite
2893-78-9	Sodium dichloro-s-triazinetrione
10588-01-9	Sodium dichromate
7681-52-9	Sodium hypochlorite
7631-99-4	Sodium nitrate
7632-00-0	Sodium nitrite

Storage Group E: Compatible	Oxidizers, including Peroxides
10101-50-5	Sodium permanganate
1313-60-6	Sodium peroxide
7775-27-1	Sodium persulfate
7791-10-8	Strontium chlorate
10042-76-9	Strontium nitrate
1314-18-7	Strontium peroxide
87-90-1	Trichloro-s-triazinetrione (trichloroisocyanuric acid, TCCA)

Storage Group F: Compatible	Inorganic Acids, not including oxidizers or combustibles
Identifier	**Name**
7790-93-4	Chloric acid
10034-85-2	Hydrioic acid
7647-01-0	Hydrochloric acid
7664-39-3	Hydrogen fluoride solution
7664-38-2	Phosphoric acid
7664-93-9	Sulfuric acid

Storage Group G: Not Intrinsically	Reactive or Flammable or Combustible
Identifier	**Name**
7151-41-2	Abamectin [avermectib b1]
640-19-7	Acetamide, 2-fluoro
62-74-8	Acetic acid, fluoro-,sodium salt
1752-30-	Acetone thiosemicarbazide
53-96-3	2-Acetylaminofluorene
79-06-1	Acrylamide
814-68-6	Acrylyl chloride
111-69-3	Adiponitrile
309-00-2	Aldrin
60-09-3	4-Aminoazobenzene
92-67-1	4-Aminodiphenyl
82-28-0	1-Amino-2-Methylanthraquinone
54-62-6	Aminopterin
504-24-5	4-Aminopyridine
61-82-5	Amitrole
101-05-3	Anilazine [4, 6-dichloro-*N*-(2-chlorophenyl)-1, 3, 5-triazin-2-amine]
90-04-0	*o*-Anisidine
7440-36-0	Antimony
7440-38-2	Arsenic
1303-28-2	Arsenic pentoxide
7784-34-1	Arsenic trichloride
1327-53-3	Arsenic trioxide
86-50-0	Azinphos-methyl

Storage Group G: Not Intrinsically	Reactive or Flammable or Combustible
7440-39-3	Barium
56-55-3	Benz[a]anthracene
98-87-3	Benzal chloride
55-21-0	Benzamide
98-16-8	Benzenamine, 3-(trifluoromethyl)-
100-14-1	Benzene, 1-(chloromethyl)-4-nitro
98-05-5	Benzenearsonic acid
108-98-5	Benzenethiol
92-87-5	Benzidine
50-32-8	Benzo[a]pyrene
57-64-7	Benzoic acid, 2-hydroxy-, compound with (3as-cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3,b]indol-5-ylmethylcarbamate ester (1:1)
100-44-7	Benzyl chloride
140-29-4	Benzyl cyanide
7440-41-7	Beryllium powder
91-59-8	Beta-naphthylamine
82657-04-3	Bifenthrin
92-52-4	Biphenyl
534-07-6	Bis(chloromethyl) ketone
542-88-1	Bis(chloromethyl) ether
28772-56-7	Bromadiolone
75-25-2	Bromoform (tribromomethane)
74-83-9	Bromomethane
75-63-8	Bromotrifluoromethane (halon 1301)
81-88-9	C.I. food red 15 (Rhodamine B)
97-56-3	C.I. solvent yellow 3
7440-43-9	Cadmium
1306-19-0	Cadmium oxide
2223-93-0	Cadmium stearate
7778-44-1	Calcium arsenate
56-25-7	Cantharidin
51-83-2	Carbachol chloride
644-64-4	Carbamic acid, dimethyl-, 1-[(dimethylamino)carbonyl]-5-methyl-1h-pyrazol-3-yl ester
63-25-2	Carbaryl [1-naphthalenol, methylcarbamate]
1563-66-2	Carbofuran
56-23-5	Carbon tetrachloride
57-74-9	Chlordane
115-28-6	Chlorendic acid
532-27-4	2-Chloroacetophenone
4080-31-3	1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride
75-45-6	Chlorodifluoromethane (HCFC-22)
67-66-3	Chloroform

Storage Group G: Not Intrinsically	Reactive or Flammable or Combustible
107-30-2	Chloromethyl methyl ether
5344-82-1	1-(o-Chlorophenyl)thiourea
542-76-7	3-Chloropropionitrile
63938-10-3	Chlorotetrafluoroethane
75-88-7	2-Chloro-1,1,1-trifluoro-ethane (HCFC-133a)
75-72-9	Chlorotrifluoromethane (CFC-13)
1982-47-4	Chloroxuron
10025-73-7	Chromic chloride
7440-47-3	Chromium
64-86-8	Colchicine
56-72-4	Coumaphos
5836-29-3	Coumatetralyl
1319-77-3	Cresol (mixed isomers)
95-48-7	*o*-Cresol
535-89-7	Crimidine
4170-30-3	Crotonaldehyde
123-73-9	(e)-Crotonaldehyde
64-00-6	*m*-Cumenyl methylcarbamate
21725-46-2	Cyanazine
506-68-3	Cyanogen bromide
506-78-5	Cyanogen iodide
675-14-9	Cyanuric fluoride
66-81-9	Cycloheximide
94-75-7	2,4-D (2,4-Dichlorophenoxyacetic acid)
2971-38-2	2,4-D Chlorocrotyl ester
94-11-1	2,4-D Isopropyl ester
94-82-6	2,4-DB
919-86-8	Demeton-s-methyl
101-80-4	4,4'-Diaminodiphenyl ether
101-77-9	4,4'-Diaminodiphenylmethane
615-05-4	2,4-Diaminoanisole
95-80-7	2,4-Diaminotoluene
25376-45-8	Diaminotoluene (mixed isomers)
333-41-5	Diazinon
53-70-3	Dibenzo(a, h)anthracene
132-64-9	Dibenzofuran
96-12-8	1,2-Dibromo-3-chloropropane
106-93-4	1,2-Dibromoethane (ethylene dibromide)
84-74-2	Dibutyl phthalate
99-30-9	Dichloran [2,6-dichloro-4-nitroaniline]
95-50-1	1,2-Dichlorobenzene
541-73-1	1,3-Dichlorobenzene
106-46-1	1,4-Dichlorobenzene
91-94-1	3,3'-Dichlorobenzidine
75-27-4	Dichlorobromomethane
764-41-0	1,4-Dichloro-2-butene
75-71-8	Dichlorodifluoromethane (cfc-12)

Storage Group G: Not Intrinsically	Reactive or Flammable or Combustible
111-44-4	Dichloroethyl ether
75-09-2	Dichloromethane (methylene chloride)
91-93-0	3,3'-Dimethoxybenzidine-4,4'-diisocyanate
91-97-4	3,3'-Dimethyl-4,4'-diphenylene diisocyanate
127564-92-5	Dichloropentafluoropropane
97-23-4	Dichlorophene [2,2'-methylene-bis(4-chlorophenol)]
120-83-2	2,4-Dichlorophenol
105-67-9	2,4-Dimethylphenol
696-28-6	Dichlorophenylarsine
76-14-2	Dichlorotetrafluoroethane (cfc-114)
62-73-7	Dichlorvos
1464-53-5	Diepoxybutane
38727-55-8	Diethatyl ethyl
814-49-3	Diethyl chlorophosphate
297-97-2	O,O-Diethyl *O*-pyrazinyl phosphorothioate
78-53-5	O,O-Diethyl *S*-[2-(diethylamino)ethyl] phosphorothiolate
71-63-6	Digitoxin
101-90-6	Diglycidyl resorcinol ether
94-58-6	Dihydrosafrole
55-91-4	Diisopropylfluorophosphate (DFP)
60-51-5	Dimethoate
60-11-7	4-Dimethylaminoazobenzene
57-97-6	7,12-Dimethylbenz[a]anthracene
91-93-0	3,3'-Dimethoxybenzidine-4,4'-diisocyanate
2524-03-0	Dimethyl chlorothiophosphate
91-97-4	3,3'-Dimethyl-4,4'-diphenylene diisocyanate
105-67-9	2,4-Dimethylphenol
131-11-3	Dimethyl phthalate
77-78-1	Dimethyl sulfate
2300-66-5	Dimethylamine dicamba
534-52-1	4,6-Dinitro-*o*-cresol
78-34-2	Dioxathion
82-66-6	Diphacinone
957-51-7	Diphenamid
122-39-4	Diphenylamine
107-49-3	Diphosphoric acid, tetraethyl ester
541-53-7	Dithiobiuret
72-20-8	Endrin
50-14-6	Ergocalciferol
563-12-2	Ethion
13194-48-4	Ethoprop
541-41-3	Ethyl chloroformate
759-94-4	Ethyl dipropylthiocarbamate [EPTC]
371-62-0	Ethylene fluorohydrin
107-21-1	Ethylene glycol

Storage Group G: Not Intrinsically	Reactive or Flammable or Combustible
96-45-7	Ethylene thiourea
542-90-5	Ethylthiocyanate
52-85-7	Famphur
55-38-9	Fenthion [*o*, *o*-dimethyl *o*-[3-methyl-4-(methylthio)phenyl]ester, phosphorothioic acid
144-49-0	Fluoroacetic acid
359-06-8	Fluoroacetyl chloride
51-21-8	Fluorouracil
944-22-9	Fonofos
107-16-4	Formaldehyde cyanohydrin
23422-53-9	Formetanate hydrochloride
76-13-1	Freon 113 [ethane, 1, 1, 2-trichloro-1, 2, 2-trifluoro-]
76-44-8	Heptachlor
87-68-3	Hexachloro-1, 3-butadiene
118-74-1	Hexachlorobenzene
77-47-4	Hexachlorocyclopentadiene
67-72-1	Hexachloroethane
1335-87-1	Hexachloronaphthalene
70-30-4	Hexachlorophene
822-06-0	Hexamethylene-1, 6-diisocyanate
51235-04-2	Hexazinone
51-75-2	Hn2 (nitrogen mustard-2)
555-77-1	Hn3 (nitrogen mustard-3)
79-19-6	Hydrazinecarbothioamide
123-31-9	Hydroquinone
102-36-3	Isocyanic acid, 3,4-dichlorophenyl ester
465-73-6	Isodrin
4098-71-9	Isophorone diisocyanate
108-23-6	Isopropyl chloroformate
80-05-7	4,4'-Isopropylidenediphenol
120-58-1	Isosafrole
78-97-7	Lactonitrile
7439-92-1	Lead
58-89-9	Lindane
554-13-2	Lithium carbonate
121-75-5	Malathion
109-77-3	Malononitrile
93-65-2	Mecoprop
950-10-7	Mephosfolan
149-30-4	2-Mercaptobenzothiazole (MBT)
5124-30-1	1,1-Methylene bis(4-isocyanatocyclohexane)
1600-27-7	Mercuric acetate
7487-94-7	Mercuric chloride
21908-53-2	Mercuric oxide
7439-97-6	Mercury
760-93-0	Methacrylic anhydride

Storage Group G: Not Intrinsically	Reactive or Flammable or Combustible
920-46-7	Methacryloyl chloride
30674-80-7	Methacryloyloxyethyl isocyanate
558-25-8	Methanesulfonyl fluoride
950-37-8	Methidathion
16752-77-5	Methomyl
94-74-6	Methoxone (4-chloro-2-methylphenoxy) acetic acid (MCPA)
72-43-5	Methoxychlor [benzene, 1,1'-(2, 2, 2-trichloroethylidene)bis[4-methoxy-]]
151-38-2	Methoxyethylmercuric acetate
80-63-7	Methyl 2-chloroacrylate
56-49-5	3-Methylcholanthrene
74-87-3	Methyl chloride
101-14-4	4,4'-Methylenebis(2-chloroaniline) (mboca)
101-61-1	4,4'-Methylenebis(N,N-dimethyl) benzenamine
60-34-4	Methyl hydrazine
74-88-4	Methyl iodide
924-42-5	*N*-Methylolacrylamide
298-00-0	Methyl parathion
676-97-1	Methyl phosphonic dichloride
556-64-9	Methyl thiocyanate
502-39-6	Methylmercuric dicyanamide
7786-34-7	Mevinphos
90-94-8	Michler's ketone
50-07-7	Mitomycin c
1313-27-5	Molybdenum trioxide
76-15-3	Monochloropentafluoroethane (CFC-115)
6923-22-4	Monocrotophos
3173-72-6	1,5-Naphthalene diisocyanate
54-11-5	Nicotine
65-30-5	Nicotine sulfate
92-93-3	4-Nitrobiphenyl
55-63-0	Nitroglycerine
88-75-5	2-Nitrophenol
100-02-7	4-Nitrophenol
62-75-9	*N*-Nitrosodimethylamine
621-64-7	*N*-Nitrosodi-*N*-propylamine
86-30-6	*N*-Nitrosodiphenylamine
59-89-2	*N*-Nitrosomorpholine
100-75-4	*N*-Nitrosopiperidine
99-55-8	5-Nitro-*o*-toluidine
630-60-4	Ouabain
78-71-7	Oxetane, 3,3-bis(chloromethyl)-
104-94-9	*p*-anisidine
56-38-2	Parathion
12002-03-8	Paris green
106-47-8	*p*-chloroaniline

Storage Group G: Not Intrinsically	Reactive or Flammable or Combustible
95-69-2	*p*-chloro-*o*-toluidine
106-44-5	*p*-cresol
100-25-4	*p*-dinitrobenzene
76-01-7	Pentachloroethane
87-86-5	Pentachlorophenol (PCP)
594-42-3	Perchloromethylmercaptan
85-01-8	Phenanthrene
108-95-2	Phenol
88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro- (dinoseb)
58-36-6	Phenoxarsine, 10,10'-oxydi-
95-54-5	1,2-Phenylenediamine
108-45-2	1,3-Phenylenediamine
624-18-0	1,4-Phenylenediamine dihydrochloride
104-49-4	1,4-Phenylene diisocyanate
59-88-1	Phenylhydrazine hydrochloride
62-38-4	Phenylmercury acetate
90-43-7	2-Phenylphenol
2097-19-0	Phenysilatrane
103-85-5	Phenylthiourea
57-41-0	Phenytoin
947-02-4	Phosfolan
13171-21-6	Phosphamidon
57-47-6	Physostigmine
124-87-8	Picrotoxin
51-03-6	Piperonyl butoxide
100-01-6	*p*-nitroaniline
10124-50-2	Potassium arsenite
506-61-6	Potassium silver cyanide
106-50-3	*p*-phenylenediamine
23950-58-5	Pronamide
1120-71-4	Propane sultone
70-69-9	Propiophenone, 4'-amino
109-61-5	Propyl chloroformate
129-00-0	Pyrene
91-22-5	Quinoline
106-51-4	Quinone
82-68-8	Quintozene [pentachloronitrobenzene]
78-48-8	S,S,S-tributyltrithiophosphate (DEF)
81-07-2	Saccharin (manufacturing, no supplier notification)
94-59-7	Safrole
7440-22-4	Silver
7631-89-2	Sodium arsenate
7784-46-5	Sodium arsenite, solid
124-65-2	Sodium cacodylate
128-04-1	Sodium dimethyldithiocarbamate
13410-01-0	Sodium selenate

Storage Group G: Not Intrinsically	Reactive or Flammable or Combustible
10102-18-8	Sodium selenite
10102-20-2	Sodium tellurite
57-24-9	Strychnine
505-60-2	Sulfur mustard (mustard gas H)
77-81-6	Tabun
79-94-7	Tetrabromobisphenol A
630-20-6	1,1,1,2-Tetrachloroethane
79-34-5	1,1,2,2-Tetrachloroethane
64-75-5	Tetracycline hydrochloride
78-00-2	Tetraethyl lead
3689-24-5	Tetraethyldithiopyrophosphate
597-64-8	Tetraethyltin
119-64-2	Tetrahydronaphthalene
75-74-1	Tetramethyllead
7440-28-0	Thallium
6533-73-9	Thallous carbonate
62-55-5	Thioacetamide
59669-26-0	Thiodicarb
62-56-6	Thiourea
614-78-8	Thiourea, (2-methylphenyl)-
137-26-8	Thiram
1314-20-1	Thorium dioxide
95-53-4	*o*-Toluidine
8001-35-2	Toxaphene
68-76-8	Triaziquone [2, 5-cyclohexadiene-1, 4-dione, 2, 3, 5-tris(1-aziridinyl)-]
24017-47-8	Triazofos
1983-10-4	Tributyltin fluoride
52-68-6	Trichlorfon [phosphonic acid, (2, 2, 2-trichloro-1-hydroxyethyl)-, dimethyl ester]
1558-25-4	Trichloro(chloromethyl)silane
71-55-6	1,1,1-Trichloroethane (methyl chloroform)
120-82-1	1,2,4-Trichlorobenzene
79-00-5	1,1,2-Trichloroethane
75-69-4	Trichlorofluoromethane (CFC-11)
327-98-0	Trichloronate
88-06-2	2,4,6-Trichlorophenol
96-18-4	1,2,3-Trichloropropane
88-05-1	2,4,6-Trimethyl-aniline
824-11-3	Trimethylolpropane phosphite
76-87-9	Triphenyltin hydroxide
51-79-6	Urethane (ethyl carbamate)
1314-62-1	Vanadium pentoxide
81-81-2	Warfarin
129-06-6	Warfarin sodium
87-62-7	2,6-Xylidine
28347-13-9	Xylylene dichloride

Storage Group J: Poison	Compressed Gases
Identifier	**Name**
116-15-4	Hexafluoropropylene
7446-09-5	Sulfur dioxide

Storage Group K: Compatible	Explosives or Other Highly Unstable Materials
Identifier	**Name**
556-88-7	Nitroguanidine
88-89-1	Picric acid dry (<10% water)
288-94-8	Tetrazole
124-47-0	Urea nitrate

Storage Group L: Non-Reactive Flammable	and Combustible, Including Solvents
Identifier	**Name**
75-05-8	Acetonitrile
98-86-2	Acetophenone
107-13-1	Acrylonitrile, inhibited
557-40-4	Allyl ether
71-43-2	Benzene
103-50-4	Benzyl ether
110-47-4	Beta-isopropoxypropionitrile
106-99-0	Butadiene
78-92-2	2-Butanol
71-36-3	*n*-Butanol
75-65-0	*tert*-Butanol
78-93-3	2-Butanone (MEK)
141-32-2	Butyl acrylate
8001-58-9	Creosote
110-82-7	Cyclohexane
108-93-0	Cyclohexanol
110-83-8	Cyclohexene
931-87-3	Cyclooctene
142-29-0	Cyclopentene
91-17-8	Decahydronaphthalene
75-43-4	Dichlorofluoromethane (HCFC-21)
77-73-6	Dicyclopentadiene
462-95-3	Diethoxymethane
111-96-6	Diethylene glycol dimethyl ether
109-87-5	Dimethoxymethane
124-40-3	Dimethylamine

Storage Group L: Non-Reactive Flammable	and Combustible, Including Solvents
68-12-2	*N,N*-Dimethylformamide
99-98-9	Dimethyl-*p*-phenylenediamine
51-28-5	2,4-Dinitrophenol
123-91-1	Dioxane
821-08-9	Divinyl acetylene
110-80-5	2-Ethoxyethanol
140-88-5	Ethyl acrylate
75-00-3	Ethyl chloride
107-12-0	Ethyl cyanide
60-29-7	Ethyl ether
100-41-4	Ethylbenzene
74-85-1	Ethylene
110-71-4	Ethylene glycol dimethyl ether
75-34-3	Ethylidene dichloride
115-21-9	Ethyltrichlorosilane
110-00-9	Furan
78-82-0	Isobutyronitrile
98-82-8	Isopropyl benzene
108-20-3	Isopropyl ether
126-98-7	Methacrylonitrile
67-56-1	Methanol
109-86-4	2-Methoxyethanol
74-99-7	Methyl acetylene
96-33-3	Methyl acrylate
96-37-7	Methyl cyclopentane
108-10-1	Methylisobutyl ketone (MIBK)
80-62-6	Methyl methracrylate
109-06-8	2-Methylpyridine
872-50-4	N-Methyl-2-pyrrolidone
1634-04-4	Methyl *tert*-butyl ether
91-20-3	Naphthalene
1122-60-7	Nitrocyclohexane
79-46-9	2-Nitropropane
67-63-0	2-Propanol
107-19-7	Propargyl alcohol
123-38-6	Propionaldehyde
110-86-1	Pyridine
100-42-5	Styrene
109-99-9	Tetrahydrofuran
108-88-3	Toluene
7440-62-2	Vanadium (except when contained in an alloy)
108-05-4	Vinyl acetate
109-93-3	Vinyl ether
1330-20-7	Xylene (mixed isomers)
95-47-6	*o*-Xylene
106-42-3	*p*-Xylene

Storage Group X: Incompatible with all Other Storage Groups	
Identifier	**Name**
107-02-8	Acrolein
107-18-6	Allyl alchol
107-05-1	Allyl chloride
107-11-9	Allylamine
7429-90-5	Aluminum
62-53-3	Aniline
622-79-7	Benzyl azide
7726-95-6	Bromine
109-72-8	Butyllithium
107-07-3	Chloroethanol
76-06-2	Chloropicrin
104-12-1	*p*-Chlorophenyl isocyanate
10210-68-1	Cobalt carbonyl
334-88-3	Diazomethane
78-88-6	2,3-Dichloropropene
64-67-5	Diethyl sulfate
75-78-5	Dimethyldichlorosilane
57-14-7	1,1Dimethylhydrazine
99-65-0	*m*-Dinitrobenzene
121-14-2	2,4-Dinitrotoluene
606-20-2	2,6-Dinitrotoulene
25321-14-6	Dinitrotoluene (mixed isomers)
106-89-8	Epichlorohydrin
151-56-4	Ethyleneimine
302-01-2	Hydrazine
74-90-8	Hydrogen cyanide
7664-39-3	Hydrogen fluoride
13463-40-6	Iron, pentacarbonyl-
556-61-6	Isothiocyanatomethane
79-22-1	Methyl chloroformate
624-83-9	Methyl isocyanate
75-86-5	2-Methyllactonitrile
74-93-1	Methyl mercaptan
78-94-4	Methyl vinyl ketone
74-95-3	Methylene bromide
101-68-8	Methylenebis(phenylisocyanate) (MDI)
98-95-3	Nitrobenzene
7601-90-3	Perchloric acid
98-13-5	Phenyltrichlorosilane
7723-14-0	Phosphorus
10025-87-3	Phosphorus oxychloride
10026-13-8	Phosphorus pentachloride
7719-12-2	Phosphorus trichloride
85-44-9	Phthalic anhydride
88-89-1	Picric acid, moist (10-40% water)
151-50-8	Potassium cyanide

Storage Group X: Incompatible with all	Other Storage Groups
57-57-8	β-Propiolactone
7723-14-0	Red phosphorus
26628-22-8	Sodium azide
64568-18-9	Sodium hydrogen sulfide
60-41-3	Strychnine, sulfate
7446-11-9	Sulfur trioxide
584-84-9	Toluene-2,4-diisocyanate
91-08-7	Toluene-2,6-diisocyanate
26471-62-5	Toluenediisocyanate (mixed isomers)
79-01-6	Trichloroethylene

APPENDIX B

Select Carcinogens by Classification

OSHA Regulated Carcinogens 29 CFR 1910 Subpart Z
1. Asbestos
2. 4-Nitrobiphenyl
3. alpha-Naphthylamine
4. Methyl chloromethyl ether
5. 3,3'-Dichlorobenzidine
6. bis-Chloromethyl ether
7. beta-Naphthylamine
8. Benzidine
9. 4-Aminodiphenyl
10. Ethyleneimine
11. beta-Propiolactone
12. 2-Acetylaminofluorene
13. 4-Dimethylaminoazobenzene
14. N-Nitrosodimethylamine
15. Vinyl chloride
16. Inorganic arsenic
17. Chromium VI
18. Cadmium
19. Benzene
20. Coke oven emissions
21. 1,2-dibromo-3-chloropropane
22. Acrylonitrile
23. Ethylene oxide
24. Formaldehyde Methylenedianiline
25. 1,3-Butadiene
26. Methylene chloride
**This is not all encompassing, for a full list view the online resources for this program.*

NTP Classified "Known to be Carcinogens"
1. Aflatoxins
2. 4-Aminobiphenyl
3. Analgesic Mixtures Containing Phenacetin
4. Aristolochic Acids
5. Arsenic and Inorganic Arsenic Compounds
6. Asbestos
7. Azathioprine
8. Benzene
9. Benzidine
10. Beryllium and Beryllium Compounds
11. Bis(chloromethyl) Ether and Technical-Grade Chloromethyl Methyl Ether
12. 1,3-Butadiene
13. Cadmium and Cadmium Compounds
14. Chlorambucil

NTP Classified "Known to be Carcinogens"
15. 1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea (see Nitrosourea Chemotherapeutic Agents)
16. Chromium Hexavalent Compounds
17. Coal Tars and Coal-Tar Pitches
18. Coke-Oven Emissions
19. Cyclophosphamide
20. Cyclosporin A
21. Diethylstilbestrol
22. Dyes Metabolized to Benzidine (Benzidine Dye Class) (see Benzidine and Dyes Metabolized to Benzidine)
23. Erionite
24. Estrogens, Steroidal
25. Ethylene Oxide
26. Formaldehyde
27. Hepatitis B Virus
28. Hepatitis C Virus
29. Human Papillomaviruses: Some Genital-Mucosal Types
30. Melphalan
31. Methoxsalen with Ultraviolet A Therapy
32. Mineral Oils: Untreated and Mildly Treated
33. Mustard Gas
34. 2-Naphthylamine
35. Neutrons
36. Nickel Compounds
37. Radon
38. Silica, Crystalline
39. Strong Inorganic Acid Mists Containing Sulfuric Acid
40. Tamoxifen
41. 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin
42. Thiotepa
43. Thorium Dioxide
44. Ultraviolet Radiation, Broad-Spectrum
45. Vinyl Chloride
46. X-Radiation and Gamma Radiation
**This is not all encompassing, for a full list view the online resources for this program.*

IARC Classified Group 1
1. Acid mists, strong inorganic
2. Aflatoxins
3. Aluminum production
4. 4-Aminobiphenyl
5. Areca nut
6. Aristolochic acid
7. Aristolochic acid, plants containing
8. Arsenic and inorganic arsenic compounds
9. Asbestos (all forms, including actinolite, amosite)
10. Anthophyllite, chrysotile, crocidolite, tremolite

IARC Classified Group 1
11. Auramine production
12. Azathioprine
13. Benzene
14. Benzidine
15. Benzo[*a*]pyrene
16. Beryllium and beryllium compounds
17. Bis(chloromethyl)ether; chloromethyl methyl ether (technical-grade)
18. Busulfan
19. 1,3-Butadiene
20. Cadmium and cadmium compounds
21. Chlorambucil
22. Chlornaphazine
23. Chromium (VI) compounds
24. *Clonorchis sinensis* (infection with)
25. Coal, indoor emissions from household combustion of
26. Coal gasification
27. Coal-tar distillation
28. Coal-tar pitch
29. Coke production
30. Cyclophosphamide
31. Cyclosporine
32. Diethylstilbestrol
33. Epstein-Barr virus
34. Erionite
35. Estrogen therapy, postmenopausal
36. Estrogen-progestogen menopausal therapy (combined)
37. Estrogen-progestogen oral contraceptives (combined)
38. Ethylene oxide
39. Etoposide
40. Etoposide in combination with cisplatin and bleomycin
41. Fission products, including strontium-90
42. *Heliocobacter pylori* (infection with)
43. Hepatitis B virus (chronic infection with)
44. Hepatitis C virus (chronic infection with)
45. Human immunodeficiency virus type 1 (infection with)
46. Human papillomavirus types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59
47. Human T-cell lymphotropic virus type I
48. Ionizing radiation (all types)
49. Iron and steel founding (occupational exposure during)
50. Isopropyl alcohol manufacture using strong acids
51. Kaposi sarcoma herpesvirus
52. Magenta production
53. Methoxsalen (8-methoxypsoralen) plus ultraviolet A radiation
54. 4,4'-Methylenebis(2-chloroaniline) (MOCA)
55. Mineral oils, untreated or mildly treated
56. MOPP and other combined chemotherapy including alkylating agents
57. Neutron radiation

IARC Classified Group 1
58. Nickel compounds
59. *N*'-Nitrosonornicotine (NNN) and 4-(*N*Nitrosomethyalmino)1-(3-pyridyl)1-butanone (NNK)
60. *Opisthorchis viverrini* (infection with)
61. Painter (occupational exposure as a)
62. 3,4,5,3',4'-Pentachlorobiphenyl (PCB-126)
63. 2,3,4,7,8-Pentachlorodibenzofuran
64. Phenacetin
65. Phenacetin, analgesic mixtures containing
66. Phosphorus-32, as phosphate
67. Plutonium
68. Radioiodines, including iodine-131
69. Radionuclides, alpha-particle-emitting, internally deposited
70. Radionuclides, beta-particle-emitting, internally deposited
71. Radium-224 and its decay products
72. Radium-226 and its decay products
73. Radium-228 and its decay products
74. Radon-222 and its decay products
75. Rubber manufacturing industry
76. *Schistosoma haematobium* (infection with)
77. Semustine [1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea,Methyl-CCNU]
78. Shale oils
79. Silica dust, crystalline, in the form of quartz or cristobalite
80. Soot (as found in occupational exposure of chimney sweeps)
81. Sulfur mustard
82. Tamoxifen
83. 8-Tetrachlorodibenzo-*para*-dioxin
84. Thiotepa
85. Thorium-232 and its decay products
86. *ortho*-Toluidine
87. Treosulfan
88. X-and Gamma-Radiation

APPENDIX C

Compounds with High Levels of Acute Toxicity
1. Acrolein
2. Arsine
3. Chlorine
4. Diazomethane
5. Diborane
6. Dimethyl mercury
7. Hydrogen cyanide
8. Hydrogen fluoride
9. Methyl fluorosulfonate
10. Nickel carbonyl
11. Nitrogen dioxide
12. Osmium tetroxide
13. Ozone
14. Phosgene
15. Sodium azide
16. Sodium cyanide (other cyanide salts)

APPENDIX D

Chemical Request Form

The Chemical Request Form can be filled out electronically here.

APPENDIX E

Incident Investigation Report

Employee/Student Name: _____ Case No: _____

Employee/Student Phone No: _____ Employee/Student Dept: _____

Employee/Student Supervisor: _____

Investigator Name: _____ Investigation Date: _____

Employee/Student Statement (Description of event—before, during, and after)

_____

_____

_____

_____

_____

Event Date/Time:_____Work Related? Yes ☐ No ☐

Event Location:_____Specific Location: _____
(lab, corridor, stairs, outside, etc.) (building, floor, room, column)

Body Part Injured:_____Reported Injury Date/Time:_____

Injury Severity	☐ Observation/Near Miss	☐ First Aid	☐ MTBFA (OSHA)
	☐ Work Restrictions	☐ Lost Time Restriction	
Accident Type	☐ Allergen Exposure	☐ Bitten By	☐ Car/Truck/Motorized Vehicle
	☐ Caught In/Between	☐ Contact w/Chemical	☐ Contact w/Hot Surface
	☐ Environmental Exposure	☐ Ergonomic	☐ Needle Stick
	☐ Pushing/Pulling	☐ Slip/Trip/Fall	☐ Struck Against
	☐ Struck By	☐ Twist/Turn	☐ Other

	Device Type	**Device Brand**
Contaminated Sharp Involved Needle Stick:	_____	_____
Allergic Agent:	_____	_____
Chemicals or Biohazards Involved:	_____	_____
Equipment Involved/ID Number:	_____	_____

Describe Possible Causes

Equipment: _____

Tools/PPE: _____

Environment: _____

Procedure: _____

Personnel: _____

Other: _____

Causal Factors

_____

_____

_____

_____

_____

_____

_____

_____

Recommendations

Corrective Actions/Preventive Actions	Person Responsible	Due Date

Investigator Signature: _____ **Date:** _____

Supervisor Signature: _____ **Date:** _____

Supervisor Comments

Appendix F

West Texas A&M University
Academic and Research Environmental Health and Safety (AR-EHS) Laboratory Research Compliance Laboratory Specific Chemical/Equipment/Process Hygiene/Safety Plan Documentation

A chemical/equipment/process hygiene/safety plan is a written program developed to establish procedures, protective equipment, and standard work practices that promote a safe work environment for all Academic and Research lab personnel handling hazardous chemicals/equipment/process in the workplace. At West Texas A&M University, laboratory personnel are responsible for the preparation of their Lab Specific Chemical/Equipment/Process Hygiene/Safety Plan. The plan may cover one or more rooms/laboratories associated with a work group and should consider all health and safety issues when work involves the use of hazardous chemicals/equipment/processes.

The document provided is a template that can be used by any WTAMU academic and research laboratory. This plan was developed to meet the guidelines of West Texas A&M University/Texas A&M Systems/Local/State/Federal Regulations. Filling in the specific information for your laboratory will complete this plan. Each laboratory's Principal Investigator (PI) is ultimately responsible to develop this plan. PI's can designate a Lab Safety Coordinator who can assist in implementing the plan.

The plan must then be reviewed with everyone working in the laboratory and made readily available to all lab personnel (including employees and students). The plan must be reviewed at a minimum, annually, by the Principal Investigator and the designated Laboratory Supervisor/Safety Coordinator. Each person named within the Chemical Hygiene Plan should have a copy of the AR-EHS CHP, which is referenced in this plan.

This section will be completed by the PI or Laboratory Safety Coordinator for the laboratory unit to outline procedures that are specific to the laboratory. It is a convenient way to compile all required documentation into a single manual.

Introduction

This is the "laboratory/site-specific" part of the Chemical Hygiene Plan (CHP).

Laboratory Director/Principle Investigator: The laboratory director has ultimate responsibility for chemical/equipment/process safety within the laboratory and must, with other administrators, provide continuing support for laboratory chemical hygiene.

Laboratory Safety Coordinator: The laboratory safety coordinator has the responsibility for chemical hygiene in the laboratory, and is designated by the Principle Investigator who can assist in implementing the plan.

Laboratory Workers/Personnel: The laboratory workers/personnel are responsible for planning and conducting each operation in accordance with the institutional chemical hygiene procedures, lab specific SOPs and developing good personal chemical hygiene habits.

It is the responsibility of the Principle Investigator/Laboratory Director/Safety Coordinator to compile, review, and update this information.

1. **Laboratory Location: (BLDG & RM.)** _____

2. **Principle Investigator or Laboratory Director:**

   Name: _____ Office Location (BLDG & RM):_____

   Work Telephone: _____ Alternate Telephone:_____

3. **Department Chair:**

   Name: _____ Office Location (BLDG & RM): _____

   Work Telephone: _____ Alternate Telephone: _____

4. **Laboratory Safety Coordinator (LSC):**

   Name: _____ Office Location (BLDG & RM):_____

   Work Telephone: _____ Alternate Telephone: _____

Certification and Annual Review and Updates

By signing and dating here the Laboratory Safety Coordinator and Principal Investigator certify that this Laboratory/Site-Specific Chemical/Equipment/Process Safety Documentation is accurate and that it effectively provides for the safety of employees and students in this laboratory.

Principle Investigator or Laboratory Director:

Signature: _____ Date: _____

Printed Name:_____

Laboratory Safety Coordinator (LSC):

Signature:_____ Date: _____

Printed Name: _____

I am (check one):

☐ A new employee or student ☐ Beginning a new task involving chemicals

☐ Reviewing the revised addition of the _____

I certify that I have been provided copies of the AR-EHS University Chemical Hygiene Plan and my Laboratory/Site specific Chemical/Equipment/Process/ Safety Plan, and that I have read and understand this SOP. I agree to fully adhere to its requirements.

Signature:_____ Date:_____

Printed Name: _____

By signing and dating here, the Laboratory Safety Coordinator/Principle Investigator certifies that the required annual review (and update, if needed) of the Laboratory/Site-Specific Chemical/Equipment/Process Documentation has been completed, and that this document continues to be accurate and to effectively provide for the safety of all lab personnel in this laboratory/site.

Signature: ______________________________ Date: ____________________

Printed Name: ______________________________ Updated? Yes ☐ No ☐

Signature: ______________________________ Date: ____________________

Printed Name: ______________________________ Updated? Yes ☐ No ☐

Signature: ______________________________ Date: ____________________

Printed Name: ______________________________ Updated? Yes ☐ No ☐

Signature: ______________________________ Date: ____________________

Printed Name: ______________________________ Updated? Yes ☐ No ☐

Signature: ______________________________ Date: ____________________

Printed Name: ______________________________ Updated? Yes ☐ No ☐

Signature: ______________________________ Date: ____________________

Printed Name: ______________________________ Updated? Yes ☐ No ☐

Signature: ______________________________ Date: ____________________

Printed Name: ______________________________ Updated? Yes ☐ No ☐

Signature: ______________________________ Date: ____________________

Printed Name: ______________________________ Updated? Yes ☐ No ☐