



Texas A&M University-Commerce
Department of Engineering and Technology

Engineering and Technology Laboratories
Safety Policies and Guidelines

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Introduction

People who work in scientific laboratories are exposed to many kinds of hazards. This can be said of most workplaces; in some, the hazards are well recognized and the precautions to be taken are obvious. Laboratories, however, involve a greater variety of possible hazards than do most workplaces, and some of those hazards call for precautions not ordinary encountered elsewhere. Therefore, this manual has been provided to inform and guide the laboratory worker in safe practices which should help to avoid injury.

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Controlling Laboratory Risks

Administrative and engineering controls can help minimize laboratory risks. However, safety conscious workers using good laboratory practices are the most important component of laboratory safety. The following factors are important for safe laboratory operations:

Adequate Facilities - Proper ventilation, non-slip surfaces, hand washing facilities.

Available and Appropriate Safety Equipment - Personal protective equipment, laboratory equipment, safety devices on laboratory equipment, and instruments.

Appropriate Emergency Equipment - Fire extinguishers, eye wash stations, spill equipment.

Appropriate Procedures - Good housekeeping, personal hygiene (e.g., washing hands.)

Knowledgeable Workers - Experienced, trained.

If an incident occurs, respondents need to know the names and telephone numbers of the people responsible for laboratory operations. Contact information is posted in the laboratories.

Properly trained and experienced workers have the greatest ability to control laboratory risks. By using good laboratory practices, workers can minimize hazards, exposure, contamination, and work place accidents.

Safe Laboratory Practices

To ensure laboratory safety, follow safe laboratory practices, including the following:

1. Know about the chemicals and hazards associated with your laboratory.
2. Know what to do in emergency situations.
3. Know how to read and interpret Material Safety Data Sheets (MSDSs).
4. Wear personal protective equipment, as appropriate. For contact lens wearers it is especially important to wear appropriate eye protection because the contacts may increase injury from chemical splashes or vapors.
5. Do not eat, drink, apply cosmetics, or use tobacco products in the laboratory.
6. Do not work alone in a laboratory.
7. Use extreme care when working with needles, blades, and glass.
8. Use a mechanical pipetting device. (NEVER mouth pipette.)
9. Clean contaminated equipment and spills immediately.
10. Do not allow children in the laboratory.
11. Keep laboratory doors closed.
12. Hallways, corridors, and exit ways must be kept clear. Do not locate (even temporarily) laboratory equipment or supplies in these areas. If equipment is to be located outside of the lab space - it must be labeled with emergency contact information.

IMPORTANT: Never underestimate the hazards associated with a laboratory. If you are unsure about what you are doing, get assistance. Do not use unfamiliar chemicals, equipment, or procedures alone.

There are four fundamental elements of equipment safety:

1. Use the Correct Equipment
2. Know How to Operate the Equipment
3. Inspect the Equipment
4. Use the Equipment Properly

Use equipment for its intended purpose only. Do not modify or adapt equipment without guidance from the equipment manufacturer or the Safety Office. Do not defeat, remove, or override equipment safety devices.

Working in a laboratory requires various types of equipment. To ensure equipment safety, you must be familiar with the following:

1. Equipment operation
2. Applicable safeguards
3. Maintenance requirements

Always inspect equipment before using it. Ensure that the equipment meets the following requirements:

1. Controls and safeguards are adequate and functional
2. Location is safe (and well ventilated, if necessary)
3. Equipment works properly

IMPORTANT: Disconnect any equipment that is unsafe or does not work properly and remove it from service. Notify the safety officer and/or faculty member of the problem.

Refer to other sections in this manual for specific information on operating laboratory equipment, such as saws, hand tools, drill presses, etc.

Construction Materials & Processes Laboratory

Laboratory Risks-Saw, Hand Tool, Slips, Trips, and, Lifting.

General safety/operating procedures.

1. Each machine will be set up to be free from sensible vibration when the size tool is mounted and run idle at full speed.
2. Saw frames or table saw will be limit the size of the saw blade that can be mounted, so as to avoid over speed caused by mounting a saw larger than intended.
3. Circular saw fences will be set-up so that they can be firmly secured to the table or table assembly without changing their alignment with the saw.
4. All belts, pulleys, gears, shafts, and moving parts will be guarded.
5. Power-driven woodworking machine will be provided with a disconnect switch that can be locked in the off position.
6. No saw, cutter head, or tool collar will be placed or mounted on a machine arbor unless the tool has been accurately machined to size and shape to fit the arbor.
7. A mechanical or electrical power control will be provided on each machine to make it possible for the operator to cut off the power from each machine without leaving his position at the point of operation.
8. All cracked saws will be removed from service.
9. Air-hose and hose connections used for conducting compressed air to utilize equipment shall be designed for the pressure and service to which they are subjected.

Equipment Specific Instructions

Inspection and maintenance of woodworking machinery.

Dull, badly set, improperly filed, or improperly tensioned saws shall be immediately removed from service, before they begin to cause the material to stick, jam, or kick back when it is fed to the saw at normal speed. Saws to which gum has adhered on the sides shall be immediately cleaned.

All knives and cutting heads of woodworking machines will be kept sharp, properly adjusted, and firmly secured. Where two or more knives are used in one head, they will be properly balanced.

Bearings will be free from lost motion and well lubricated.

Arbors of all circular saws will be free from play.

Sharpening or tensioning of saw blades or cutters will be done the department safety officer or Faculty responsible for that lab.

Emphasis is placed upon the importance of maintaining cleanliness around woodworking machinery, particularly as regards the effective functioning of guards and the prevention of fire hazards in switch enclosures, bearings, and motors.

All cracked saws will be removed from service.

Push sticks or push blocks will be provided at the work place in the several sizes and types suitable for the work to be done.

The knife blade of jointers will be installed and adjusted that it does not protrude more than one-eighth inch beyond the cylindrical body of the head. Push sticks or push blocks will be provided at the work place in the several sizes and types suitable for the work to be done.

Hand-fed ripaws/Hand-fed crosscut table saws.

Each circular hand-fed ripaw will be guarded by a hood which will completely enclose that portion of the saw above the table and that portion of the saw above the material being cut. The hood and mounting shall be arranged so that the hood will automatically adjust itself to the thickness of and remain in contact with the material being cut but it shall not offer any considerable resistance to insertion of material to saw or to passage of the material being sawed. The hood will be mounted as to insure that its operation will be positive, reliable, and in true alignment with the saw

Each hand-fed circular ripaw will be furnished with a spreader to prevent material from squeezing the saw or being thrown back on the operator. The spreader will be attached so that it will remain in true alignment with the saw even when either the saw or table is tilted. The provision of a spreader in connection with grooving, dadoing, or rabbeting is not required. On the completion of such operations, the spreader shall be immediately replaced.

Each hand-fed circular ripaw will be provided with non-kickback fingers or dogs so located as to oppose the thrust or tendency of the saw to pick up the material or to throw it back toward the operator.

Band-saws and band re-saws.

All portions of the saw blade shall be enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the table. Band-saw wheels will be fully encased.

Each band-saw machine will be provided with a tension control device to indicate a proper tension for the standard saws used on the machine.

Feed rolls of band re-saws shall be protected with a suitable guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point.

Portable circular saws.

All portable, power-driven circular saws having a blade diameter greater than 2 in. will be equipped with guards above and below the base plate or shoe.

Jointers.

Each hand-fed jointer with horizontal head will be equipped with a cylindrical cutting head, the knife projection of which will not exceed one-eighth inch beyond the cylindrical body of the head.

The opening in the table will be kept as small as possible. The clearance between the edge of the rear table and the cutter head shall be not more than one-eighth inch. The table throat opening shall be not more than 2 1/2 inches when tables are set or aligned.

Each hand-fed jointer with a horizontal cutting head shall have an automatic guard which will cover all the section of the head on the working side of the fence or gage. The guard will automatically adjust itself to cover the unused portion of the head and will remain in contact with the material at all times.

Sanding machines.

Feed rolls of self-feed sanding machines will be protected with a semi-cylindrical guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point.

Each drum sanding machine will have an exhaust hood, or other guard, arranged to enclose the revolving drum, except for that portion of the drum above the table.

Each disk sanding machine will have the exhaust hood, or other guard, arranged to enclose the revolving disk, except for that portion of the disk above the table.

Belt sanding machines will be provided with guards at each nip point where the sanding belt runs on to a pulley.

Portable belt sanding machines.

Belt sanding machines shall be provided with guards at each nip point where the sanding belt runs onto a pulley. These guards shall effectively prevent the hands or fingers of the operator from coming in contact with the nip points. The unused run of the sanding belt shall be guarded against accidental contact.

Abrasive wheel machinery.

Abrasive wheels shall be used only on machines provided with safety guards as defined in the following:

The safety guard will cover the spindle end, nut, and flange projections. The safety guard will be mounted to maintain proper alignment with the wheel.

Grinding machines will be equipped with flanges.

All flanges will be maintained in good condition. When the bearing surfaces become worn, warped, sprung, or damaged they will be replaced.

All contact surfaces of wheels and flanges shall be flat and free of foreign matter.

Drill Press.

Make all drill press adjustments with the power shut off.

Keep all guards and covers on the machine when it is on and running.

Do not exceed the recommended speeds for the type and size of drill bit being used or composition of the stock being drilled.

Insert bit into drill chuck and tighten with the chuck key. Remove chuck key from the drill chuck before starting the drill press.

Use a clamp or vise to securely fasten the stock to the drill press table. Never attempt to handhold stock while drilling.

Support the underside of the stock to be drilled with a backer board secured to the drill press table.

Never start the machine without the table clear of everything except the stock you are drilling.

If a drill bit binds, turn off the drill press and carefully turn drill chuck backwards by hand to free the drill bit.

Never stop the rotation of the drill chuck, spindle, or stock rotating on bit with your hands or fingers.

Always clean the drill press table and work area upon completion of the drilling task. Do not use your hands or blow the drill shavings, use a brush.

Hand tools.

Staff and/or Faculty will not issue or permit the use of unsafe hand tools.

Wrenches, including adjustable, pipe, end, and socket wrenches will not be used when jaws are sprung to the point that slippage occurs.

Impact tools, such as drift pins, wedges, and chisels, will be kept free of mushroomed heads.

The wooden handles of tools will be kept free of splinters or cracks and kept tight in the tool.

Concrete.

No one will be permitted to ride concrete buckets.

No one will be permitted to work under concrete buckets while buckets are being elevated or lowered into position.

No one will be permitted to apply a cement, sand, and water mixture through a pneumatic hose unless wearing protective head and face equipment.

Hydrology/ Soils/ Mechanics of Materials Laboratory

Laboratory Risk-Water hazards, Electrical, Slip, Trips, and Falls and Back Stress, Pinch points, Materials being tested.

General Safety Procedures.

1. Know about the chemicals and hazards associated with your laboratory.
2. Know what to do in emergency situations.
3. Know how to read and interpret Material Safety Data Sheets (MSDSs).
4. Wear personal protective equipment, as appropriate. For contact lens wearers it is especially important to wear appropriate eye protection because the contacts may increase injury from chemical splashes or vapors.
5. Do not eat, drink, apply cosmetics, or use tobacco products in the laboratory.
6. Do not work alone in a laboratory.
7. Use extreme care when working with needles, blades, and glass.
8. Use a mechanical pipetting device. (NEVER mouth pipette.)
9. Clean contaminated equipment and spills immediately.
10. Do not allow children in the laboratory.
11. Keep laboratory doors closed.
12. Hallways, corridors, and exit ways must be kept clear. Do not locate (even temporarily) laboratory equipment or supplies in these areas. If equipment is to be located outside of the lab space - it must be labeled with emergency contact information.

Equipment specific instructions.

Multi-Purpose Teaching Flume.

Take care when opening the switch cabinet and in contact with the electrical equipment.

Repairs must be carried out only by trained personnel.

Protect the switch cabinet against water incursion

Never work underneath the flow channel while it is in operation. Danger of injury from falling objects.

Never adjust the inclination beyond the specified range. One of the supports may slip under load.

Store the system in a frost-free location. There is risk of damage from frost. If the system is at risk from frost drain it.

Fill the tank up to max. 10 cm below the rim.

Take care when working in the operating area of the flow channel, especially with heavy tools. The Plexiglas may break.

Check the tanks, pump and connecting lines routinely for leaks. Leaks may allow large amounts of water to escape unnoticed.

Never allow the system to run unsupervised. Operators must be instructed as to the technical features of the system, especially the safety features.

Never run the system with sediment. The centrifugal pump and variable-area flowmeter would be destroyed.

Ensure that no small items, such as screws, tubes etc., are swept into the reservoir. Items sucked into the centrifugal pump may destroy it.

Only switch on the pump with the shutoff valve closed. The pressure surge may cause the water in the inflow segment to splash up and out of the channel.

Overshot Weir.

Take care when handling the ventilating tubes. There is danger of serious injury to the eyes.

Take care when handling the thin ventilating tubes. They may be bent and thus rendered useless!

Do not perform assembly and disassembly of the level sensor when water is flowing. Screws or the like may be swept away by the flow and get into the pump.

Radial Gate.

In all circumstances, it is essential to prevent screws or other small parts from being rinsed into the outlet opening of the flow channel HM 160 by water. This would destroy the centrifugal pump.

Carry out assembly and disassembly of the segmented weir only with the water drained off.

After assembly, do not leave any tools in the flow channel. Always secure the segmented weir firmly so that it is not damaged.

Wave Generator Flap-Type.

Take care when opening the control unit and when reaching into the electrical systems: There is a risk of electric shock.

Protect the control unit from water.

Never reach into the crank disk when the wave generator is in operation.

Never leave the system running unsupervised.

Spillway with Ski-jump.

It is essential to prevent screws or other small parts from being rinsed into the outlet opening of the flow channel HM160 by water. This would destroy the centrifugal pump.

The weirs should only be assembled and disassembled when the water has drained off.

Do not leave any tools in the flow channel after assembly.

Always secure the weir with the screw! Otherwise, the weir can come loose and could be damaged.

Adjustable Undershot Weir.

After assembly or disassembly do not leave any tools or tubes lying in the flow channel. They will be swept away by the flow and may get into the pump.

Do not perform assembly and disassembly when water is flowing. Screws or the like may be swept away by the flow and get into the pump.

Before moving the sluice weir loosen the fixing screws. The Plexiglas panels may be scratched.

Always tighten the fixing screws firmly. The sluice weir may be moved by the water pressure and damaged.

Broad Crested Weir.

After assembly do not leave any tools or tubes lying in the flow channel. They will be swept away by the flow and may get into the pump.

Do not perform assembly and disassembly when water is flowing. Screws or the like may be swept away by the flow and get into the pump.

Crump Weir.

After assembly do not leave any tools or tubes lying in the flow channel. They will be swept away by the flow and may get into the pump.

Do not perform assembly and disassembly of the crump weir when water is flowing. Screws or the like may be swept away by the flow and get into the pump.

Syphon Spillway.

In all circumstances, it is essential to prevent screws or other small parts from being rinsed into the outlet opening of the the flow channel HM 160 by water. This would destroy the centrifugal pump.

Assembly and disassembly of the siphon weir may only be carried out when the water has drained off.

After assembly do not leave any tools in the flow channel.

Always secure channel fittings securely in order to prevent damage.

The siphon weir consists of fragile Plexiglas which is not scratch-resistant. Therefore, do not use any abrasive cleaning agents to clean it.

Underwater Weir.

Don not leave any tools in the flow channel after assembly. They will be picked up by the flow and may get into the pump.

Do not carry out assembly or dismantling while water is flowing. There is a risk that bolts etc. may be caught up by the flow and get into the pump.

Venturi-Divce.

Screws or other small items must never be allowed to be carried by the water into the drain opening of the HM 160 flow channel. The centrifugal pump would be destroyed.

Assemble and disassemble the venturi flowmeter only with the water drained out.

After assembly or disassembly do not leave any tools lying in the flow channel.

Always fix attachments fitted in the channel securely, to prevent damage to the attachments.

The side panels of the flowmeter are made of fragile, non-scratchproof Plexiglas. They should therefore not be cleaned with abrasive cleaning agents.

Do not drop the side panels.

Level Gauge.

Take care when handling the probe, it is very sharp and is liable to cause injury.

Do not assemble or disassemble the level gauge over flowing water. Parts falling into the water may be swept away by the flow and get into the pump.

Adjustable Bed Flow Channel.

Electric shock. Always unplug from the mains when working on electrical components.

Repairs should only be done by trained and authorized personnel.

In the case of obvious damage (e.g. damaged electrical cable), do not place the system in operation in any circumstances. If the system is already in operation, switch off immediately.

Always ensure that the electrical parts of the system do not come into contact with water.

Never operate pump in the supply tank without water.

Prior to commissioning the system, all persons who operate the system should be briefed on the function and usage of the system.

The experimental section made of Plexiglas must not be cleaned with hot water or with agents that contain abrasive materials.

The rod that is used to adjust the ramp in the experimental section is sealed with a shaft seal (1). Should leaks occur during the operation of the experimental section, the shaft seal can be readjusted by screwing in the knurled bolt.

Basic Heat Pump Demonstrator.

Before opening the main switch cabinet and working on the electrics, disconnect the mains plug, protect the main switch cabinet against water.

In case of danger switch off the main switch and disconnect power to the system by unplugging the mains plug!

The system is under pressure.

The service product (refrigerant R134a) is environmentally hazardous and may escape, suction off the refrigerant properly before carrying out repairs.

Do not adjust the Pressostat. It is factory-set.

Do not adjust the expansion valve.

If the compressor's thermostatic switch is tripped, allow the system to cool off. Check the operating pressures after restarting.

Danger of burns! The pipework from the compressor to the condenser becomes very hot. Do not touch it during operation.

Pipe Friction Panel.

The differential pressure measuring unit must not be connected to the toroidal chambers when the pipe system is being filled and flushed, otherwise the intense pressure pulse may exceed the pressure measurement range.

Circulating Pump Panel.

Reaching into the open switch box can result in electric shocks.

Disconnect from the mains supply before opening.

Work should only be performed by qualified electricians.

Protect the switch box against moisture.

Valve Lost Panel.

The differential pressure measuring instrument is not to be connected with the annular chambers when filling and flushing, since strong pressure surges can lead to a zero point shift in the sensor.

Air Duct System.

When the control cabinet is open, electrical connections are exposed.

Before opening the control cabinet: Pull the plug out.

All work must be performed by trained electricians only.

Strong suction force at the fan inlet. Items and clothing may be drawn in.

Do not reach into the fan outlet.

Do not stand near the fan inlet.

Do not store loose items where they can be drawn in by the fan.

Only operate the fan when a pipe is mounted on the fan outlet.

Sharp edges on the pipes: Wear gloves when handling pipe

Ambient conditions for the operating and storage location, free from dirt and humidity, level and paved surface. Air quality: The air must not contain any corrosive, abrasive, adhesive, toxic, explosive or very moist substances.

Deformation of Frames.

Do not overload the system with weight. Max load 200N

Follow all faculty instructions.

Deformation of Straight Beams.

Do not overload the system with weight

Follow all faculty instructions.

Deformation of Trusses.

Do not overload the system with weight. Max load 200N

Follow all faculty instructions.

Apparatus for Investigating Hooke's Law.

Follow all faculty instructions.

Buckling Tester.

The load cross arm can drop if the clamping screws are loose.

A drop could damage parts of the testing machine located underneath the cross arm. Carefully support the cross arm by hand when loosening the clamping screws. Before removing a rod specimen make sure that the clamping screws are tightened securely.

Pay attention to the top thrust piece when removing the rod specimen.
The hazards mentioned do not apply when the test device is set up horizontally.

Caution when working with brittle materials.

The rod specimen could break suddenly in this case. Pieces of specimen could fly around and cause injuries.

Do not overload device!

The maximum testing force is 2000 N. Overloads can occur if attempts are made to force a loaded rod specimen in the direction opposite that of deflection.

Euler Strut Theory Demonstration Unit.

Follow all faculty instructions.

Verification of Stress Hypotheses (Bending and Torsion Apparatus).

Follow all faculty instructions.

Compression Tester.

Concrete is the only material that will be placed into the compression tester.

When conducting a test keep the guards in place.

Be mindful this machine has several pinch remember to be careful about fingers, hands, arms, or any other body part placement in the machine.

Follow all instructor directions and read the instruction manual for further detail.

Tinsel Tester.

Read and understand the instruction manual thoroughly before attempting to use this equipment.

The load frame of this machine is heavy and care must be used when lifting the machine from the skid or moving the machine. The Load Frame can be lifted using the motorized crosshead or under the base plate.

This equipment is designed for indoor use only. It shall be used in a controlled environment. The area that it is located shall be free from vibrations.

Do not use a sharp object to press any of the keys on the remote controller, This will puncture the membrane cover.

Do not run the pump motor until the oil is placed in the reservoir and the main power phase has been checked.

The proper precautions should be taken when using any wedge acting grip. Most important is the proper lubrication of the back of the wedges. Also important is the length of the grip ends of a specimen must fill at least half the length of the grip to prevent tilting the grip in the crosshead and the grips must always be contained in the crosshead. Refer to Section 6 in the manual for more grip precautions.

The proper precautions should be taken when testing parts or materials that may fragment at failure to contain any fragments that may be released this could be a clear protective shield around the test area or a protective sleeve placed around the specimen. Typically, most mild steels will not pose any hazards and the two broken pieces will be retained in the standard grips.

Some specimens can generate heat during a test and should not be touched immediately without some heat protection such as gloves for the operator's hands.

The machine should never be left unattended during a test.

Hardness Tester.

Be mindful of pinch points.

After a test is completed remove the sample and turn off the power.

When not in use, the hardness tester should be covered with dust shield.

The machine should never be left unattended during a test.

Follow all instructor directions and read the instruction manual for further detail.

Other

There may be other pieces of equipment within the laboratories that may be used from time to time. If you are required to operate a piece of equipment that you do not understand, ask the department safety officer or faculty member responsible for a demonstration and clarification on how to operate the equipment in a safe manner.

Emergency Contacts

University Police Department	903-886-5111 or ext 5111
University Safety Office	903-468-8781 or ext 8781
University Facilities	903-886-5761 or ext 5761
Poison Control	1-800-222-1222
City of Commerce Police, Fire	911

Lock Out-Tag Out Procedure

Obtain the LOTO devices and tags.

1. Affected personnel will be notified by the department safety officer or authorized faculty; of the application and removal of the lockout/tagout devices.
2. Read and understand the equipment-specific energy control procedures.
3. Locate each energy control point on the equipment.
4. Power down the equipment.
5. Isolate the equipment from all hazardous energies sources

LOTO Preparation for Re-Energization

1. Inspect the work area to ensure that all nonessential items, tools, etc., have been removed from the danger zone.
2. Check that all the guarding and safety controls have been properly replaced
3. Notify "Affected personnel" and ensure that all personnel are in a safe location before re-energization.

LOTO Lock and Tag Removal

1. Remove the LOTO locks and tags.
2. Re-energize the equipment/system according to start-up procedures.

Bloodborne Pathogens

TAMUC has a written Bloodborne Pathogen program that complies with Health and Safety Code, Chapter 81, Subchapter H, and analogous to OSHA Bloodborne Pathogens Standard, this program has been adopted by the Department of Engineering and Technology for use in the Engineering and Technology Laboratories.

The following are basic principles of the program:

Universal precautions are observed to prevent contact with blood or other potentially infectious materials. All blood or other potentially infectious materials are considered infectious regardless of the perceived status of the source individual.

Engineering and work practice controls are used to eliminate or minimize exposure to students and staff. Where occupational exposure remains after institution of these controls, personal protective equipment is used. Examples include safety design devices, sharps containers, needleless systems, sharps with engineered sharps injury protection for employees, passing instruments in a neutral zone, etc.

Staff and students will examine and maintain engineering and work practice controls within the work center on a regular schedule. For further details please refer to the Texas A&M University-Commerce Bloodborne Pathogens Standard.

Material Safety Data Sheets

The role of MSDSs is to provide detailed information on each hazardous chemical, including its potential hazardous effects, its physical and chemical characteristics, and recommendations for appropriate protective measures. MSDSs are primarily concerned with information regarding hazardous effects and recommended protective measures. Focus on the sections of the MSDSs that are applicable to your situation.

MSDSs will be readily accessible to students and staff. MSDSs will be kept in a binder in a central location (e.g Ag/IT 125 construction lab and Ag/IT 119 the Dept. of Engineering and Tech office). If there is a reason to develop other mean of dissemination these will be developed using the Texas A&M University-Commerce Health and Safety guidelines. For further details please refer to the Texas A&M University-Commerce MSDS Standard.

Appendix A

Training will be provided for all students, staff, and faculty wishing to work in the laboratories. Training will be taught by the department safety officer or the staff/faculty member that is in charge of that laboratory. Training material has been developed and is on file with the department safety officer and the Texas A&M University-Commerce Training and Development Department. If there are in questions or concerns regarding training or safety policies and guidelines please communicate those to the department safety officer.