

Safety Guide

Key information for Tulane University personnel



Tulane University
Office of Environmental Health and Safety

March 2011

Preface

This Safety Guide is provided by the Tulane University Office of Environmental Health and Safety (OEHS) to familiarize University personnel with important environmental health and safety policies and procedures. The contents of this guide have been kept as concise as possible; many areas have been touched upon only briefly since they require more extensive explanation than this publication is meant to provide.

NOTE:  = **Important topics to be reviewed during new employee orientation**

More detailed information on Tulane's environmental health and safety policies is provided in the "Environmental Health and Safety Policies and Procedures Manual." References to specific sections of the Manual are listed in parentheses next to each topic discussed in this Safety Guide. (Example: P & P Section xx) **The Manual and other safety information are available on-line at <http://www.tulane.edu/oehs>.** Departments are advised to print out at least one hard copy of the Manual for quick and easy reference.

The OEHS also publishes a newsletter called the *Safety Wave* which covers current safety topics of interest. The *Safety Wave* is published quarterly and is emailed to each employee and posted on the OEHS website.

Questions, comments, or requests for additional information should be directed to the OEHS:

OEHS locations:	Main Office Tidewater Building 1440 Canal Street, Suite 1156	Uptown Campus Facilities Services Building
Mailing address:	Tulane University Office of Environmental Health & Safety 1430 Tulane Avenue - TW16 New Orleans, Louisiana, 70112-2699	
Telephone:	Main Office:	504-988-5486
	Uptown Campus:	504-865-5307
Fax:	Main Office:	504-988-1693
	Uptown Campus:	504-862-8981
	Worker's Comp:	504-988-2196
	Bloodborne Pathogens:	504-988-2297
Web Site:	http://www.tulane.edu/oehs	

THIS PUBLICATION SUPERSEDES ALL PREVIOUS PUBLICATIONS

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Scope

This document applies to all Tulane University departments and facilities except the Hospital and Clinic. It applies primarily to personnel at the uptown campus, the Health Sciences Center (TUHSC), and the Primate Center (TNPRC). Because Tulane has facilities and operations in several geographic locations, specific procedures may vary. These may include:

- Where to report for medical treatment of work related accidents or illnesses.
- Emergency procedures for fires, chemical spills, hurricane preparedness, etc.
- Disposal of hazardous (radioactive, chemical, biological) waste.



Be sure to familiarize yourself with the specific environmental health and safety policies and procedures at your facility.

Background [\(P & P Section 2\)](#)

With the promulgation of the Occupational Health and Safety Act in 1970 and subsequent creation of the Occupational Safety and Health Administration ([OSHA](#)), Tulane University was prompted to establish the Office of Environmental Health and Safety (OEHS). The OEHS has grown to encompass a wide range of environmental health and safety responsibilities. It essentially functions as an advisory department for the University. A [service directory](#) that delineates some of the specific responsibilities and program areas of OEHS personnel is maintained on the OEHS website.

It is the University's policy to provide a safe and healthful environment for students, visitors, faculty, and staff. Tulane University also strives to serve the community as a concerned neighbor and will not conduct any activity which might jeopardize the environmental health and safety of the surrounding community.

Departmental Safety Representatives (DSRs) [\(P & P Section 2\)](#)

Tulane has an Environmental Compliance Management System in place which consists of the Policy Committee, the Operations Committee and the Departmental Safety Representatives (DSRs). Each unit within Tulane has been asked to appoint at least one person as a DSR. Basically, DSRs act as a liaison between their unit at Tulane and the OEHS. DSR's are the key to a unit's environmental health and safety compliance. More information on the DSR program is provided on the OEHS website.




Check with your supervisor to find out who the DSR is for your unit.

Emergency Situations ([P & P Section 1](#))

Examples of emergency situations include:

- Fire or explosion
- Severe weather (flooding, hurricane, etc.)
- Hazardous material (chemical, biological or radioactive) spills
- Serious injury or accident
- Multiple illnesses or injuries

 During normal work hours notify the OEHS directly. On weekends, evenings, and holidays contact Tulane Police* for your facility. Tulane Police will then notify the "on call" member of the OEHS staff. Report all emergency situations immediately!

*** NOTE:** *In this document, the term "Tulane Police" refers to Tulane University Police Department (TUPD), Tulane Department of Public Safety (TUPS), Health Sciences Center Police Department (TUHSCPD), and other authorized University law enforcement personnel.*

When an emergency threatens the entire New Orleans area, the University will activate the **Tulane Alert Line** to provide faculty, staff, students, and parents with up-to-date information including campus preparation, announcements about closing and reopening of university offices, and other relevant information. Tulane's Emergency Preparedness website also carries this information and may be accessed at:

TULANE ALERT LINE
504-862-8080 or 1-877-862-8080
<http://emergency.tulane.edu>


[Emergency Action Plans \(EAPs\)](#)

Emergency Action Plans (EAPs) have been developed to assist personnel in conducting safe and effective evacuation of the buildings. Building evacuation may be required for events such as a fire, bomb threat, hazardous material release or spill, flooding, or utility outage. Be sure to review the EAP for your work area. Contact your DSR or OEHS if you have any questions about it.

 Fire Emergency

1. Preplan your response to a fire emergency. Review the Emergency Action Plan for your building. Know where the nearest fire alarm pull station (if available), fire extinguisher, exit stairwells, and outside assembly area are located. Remember, elevators cannot be used in a fire emergency.
2. If you discover a fire, know and follow the acronym E.S.C.A.P.E.:

Evaluate	the situation.
Secure	the area by notifying and removing all occupants from the immediate danger area.
Close	door(s) to the room or area where the fire is located, after all occupants are out of the room.
Activate	the building fire alarm system. If there is no alarm system, begin evacuation of the building.
Phone	Tulane (or facility) Police* and state the <u>exact</u> location of the fire.
Extinguish	the fire with a portable fire extinguisher (if possible) and you are trained on how to do so.

- *  Phone numbers for Tulane Police or other emergency responders vary depending on the facility. Be sure to check your facility's fire emergency plan for important details.

TUHSC	988-5555 (x 55555 from downtown campus phone)
Uptown	865-5200 (x 5200 from uptown campus phone)
TNPRC	985-871-6411

3. When using a fire extinguisher, know and follow the acronym P.A.S.S.:

Pull	the pin on the handle.
Aim	nozzle at the base of the fire.
Squeeze	the handle of the fire extinguisher, and
Sweep	the fire extinguisher from side to side across the base of the fire.

Use correct type of fire extinguisher:

- **Class ABC Multipurpose** (dry chemical) extinguishers can be used on all general types of fires. These extinguishers are generally located in hallways.
- **Class BC carbon dioxide extinguishers** can be used **ONLY** on flammable or combustible liquid fires or energized electrical fires. These extinguishers are commonly found in laboratories, mechanical equipment rooms, etc.
- **Class D** extinguishers are used for fires associated with combustible metals such as sodium, potassium, lithium, aluminum, etc. These extinguishers may be found in some specialized laboratories.
- **Class K** extinguishers are used for vegetable oil or fat fires in commercial food service areas.

For further information on portable fire extinguishers, see the NFPA pamphlet "Fire Extinguishers at Work." These are distributed to new employees during orientation. Additional copies of the pamphlet can be obtained from the OEHS.

4. Before entering the fire room with an extinguisher, feel the closed door with the back of your hand. If the door is warm or hot to the touch or the room is full of smoke, proceed with area evacuation. *NEVER* let the fire come between you and the exit door. If the door is not warm, open it slowly, stay low, and extinguish the fire by applying the extinguishing agent toward the base of the fire.
5. Be familiar with the alarm system (if provided) in your building. (Some one and two story buildings do not have a fire alarm system.) If you hear the fire alarm:
 - Standby for evacuation orders if the building is equipped with a public address system. If there's no PA system or you don't hear the announcement, don't delay, evacuate the building immediately.
 - Use the nearest stairwell or ground floor exit door to exit the building. Do not take the elevators. Stay with other departmental personnel and account for all persons.
 - Once outside, proceed to designated assembly area (per the EAP) and stay at least 100 feet from the building. Do not interfere with fire department personnel and equipment.
 - Do not re-enter the building until an "All Clear" is issued by Tulane Police or Fire Department officials.

Hazardous Material Spill

Spills of hazardous materials (radioactive, infectious, toxic, flammable, corrosive, reactive, etc.) should be confined in a safe manner, if possible. Spill containment techniques include diking, covering the spill with absorbent material, ventilating the area, closing the door to the spill area, etc. In some cases, it may be necessary to unplug electrical equipment or turn off sources of ignition.

Alert others in the immediate area and evacuate the area if necessary. During normal working hours, notify the OEHS directly. After hours, notify Tulane Police; Tulane Police will then contact the on-call member of the OEHS staff for assistance with spill cleanup.

Report the following if known:

- location of the spill,
- chemical or product name,
- approximate quantity spilled, and
- other pertinent details (contact person's name, phone number, etc.)

Follow procedures recommended on the Material Safety Data Sheet (MSDS) and the recommendations of the OEHS.

Hurricane Preparedness

When a hurricane threatens the New Orleans area, the University's senior administrators will assess the storm and determine the level of campus preparation. The group will continue to track the storm and post updates on both the Tulane Alert Line and the Tulane Emergency website: <http://emergency.tulane.edu>

Each department should prepare a plan for safeguarding University property. The plan should include, as a minimum, procedures for safeguarding all critical equipment, research materials, and important documents. Contact information for all departmental personnel should be updated periodically and reviewed at the start of each hurricane season. Further guidance is available at the Office of Emergency Response website: <http://oep.tulane.edu>

NOTE: Tulane Buildings are NOT official hurricane shelters designated by the Federal Emergency Management Agency, Red Cross, or the City of New Orleans. Campus buildings will be secured and locked. All students, faculty, and staff must leave campus when instructed to do so. The University cannot ensure the personal safety of students, faculty, and staff who do not leave campus.

Access to Employee Exposure and Medical Records

The OSHA standard for Access to Employee Exposure and Medical Records ([29 CFR 1910.1020](#)) gives all employees the right to access relevant exposure and medical records. In this case, “exposure” refers to industrial hygiene monitoring records for toxic substances or harmful physical agents in the workplace. Industrial hygiene monitoring (exposure) records and some medical records (such as those pertaining to animal handlers) are maintained by the OEHS; these records can be made available upon request.

Animal Research ([P & P Section 20](#))

[Animal Handler Health Surveillance Program](#)

All personnel who handle animals in teaching or research must participate in the Animal Handler Health Surveillance Program. Participation involves completion of a [Risk Assessment and History Form \(RAHF\)](#) prior to work with animals. A tetanus immunization is highly recommended for all individuals with animal contact. Other immunizations and screening as well as medical evaluation may be needed in some cases.

Animal Handling Practices

1. Be aware of the potential health and safety hazards associated with working with animals. See [Health & Safety in Animal Research](#) information on the OEHS website. Use appropriate engineering controls, work practices and personal protective equipment to reduce or eliminate hazards. Potential hazards may include:
 - Physical hazards: animal bites/scratches/kicks, high noise, sharps, wet flooring
 - Biological hazards: microorganisms, animal dander, parasites
 - Chemical hazards: anesthetics, cleaning agents, carcinogens, flammables, toxics, corrosives, irritants
 - Radioactive materials
2. Wash your hands after handling animals and before leaving work area. Always use soap and water.
3. All laboratory animals must be transported only on freight elevators; passenger elevators must not be used for this purpose.
4. Animals must be caged or restrained and, if possible, properly draped when transported throughout buildings.


5. Research animals must be kept in the vivarium except when they are actively involved in a research experiment; overnight stays in lab areas are not allowed except as approved by the Director of the Department of Comparative Medicine (DCM) and the Institutional Animal Care and Use Committee (IACUC).
6. Perform animal manipulations in a well-ventilated area, preferably a chemical fume hood or biological safety cabinet.
7. Contact the Department of Comparative Medicine for information on disposal of animal carcasses. Radioactive animal carcasses require special labeling, packaging, and disposal procedures which must be handled through the OEHS.

Asbestos [\(P & P Section 21\)](#)

Asbestos is a naturally-occurring mineral which can release fibers when crushed or damaged. The fibers have the potential to cause adverse health effects when inhaled or ingested. Asbestos has been banned in many products but it may still be found in building materials such as ceiling tiles, floor tiles and mastic, fireproofing, sheetrock joint compound, and pipe insulation. Bulk samples of suspect materials can be collected by an OEHS representative and analyzed to determine the asbestos content.

An inventory of known and suspect asbestos-containing building materials is kept in Tulane's Asbestos Management Plan. The Asbestos Management Plan is maintained by the OEHS and copies are located at the OEHS main office, Physical Plant - Uptown Campus, and at the Primate Center.

Individuals (including outside contractors) who perform renovation/construction work which could disturb known or suspect asbestos-containing building materials should be made aware of the possibility of asbestos being present before beginning work.

 Asbestos warning signage and labels may occasionally be seen in University buildings and on building materials. If you see asbestos warning signage or labels, heed the warnings and do not disturb the material; contact the OEHS for further information.

Bloodborne Pathogens/Blood Exposure ([P & P Section 40](#))

The OSHA Bloodborne Pathogens Standard ([29 CFR 1910.1030](#)) requires employers to develop an Exposure Control Plan (ECP) to eliminate or minimize exposure to blood or other potentially infectious material. [Tulane's ECP](#) can be found on the OEHS website. As part of the ECP, the hepatitis B vaccine series is offered free of charge to all employees with occupational exposure to blood or body fluids.



All employees with potential occupational exposure to bloodborne pathogens or other potentially infectious material are required to receive interactive training during new employee orientation. Required [annual training](#) is available on-line at the OEHS website or can be provided by the OEHS in a classroom setting.



Any Tulane personnel who have direct contact with blood or other potentially infectious material must:

- **Cleanse:** Wash affected area with soap and water or flush mucous membranes with water. At TNPRC, wash/flush for at least 15 minutes because of the possibility of B virus exposure.
- **Notify:** Report incident to supervisor as soon as possible.
- **Complete reports:** Complete a [First Report of Occupational Injury/Illness](#) form and the [Information Provided to the Evaluating Healthcare Provider](#) form. Both forms should be brought to the evaluating healthcare provider when reporting for a bloodborne pathogens injury.
- **Get prompt medical evaluation:** All bloodborne pathogens exposure incidents require immediate attention since the effectiveness of prophylaxis depends upon timely treatment. All employees are instructed to seek medical attention as directed for other work-related injuries/illnesses (see [Injury/Illness](#)). Tulane physicians/residents on rounds at an affiliated hospital or institution who have a bloodborne pathogens exposure are advised to report to the employee health department or emergency department of the healthcare facility where the injury occurred for their initial bloodborne exposure evaluation. These departments should have access to source blood lab results necessary for evaluating post-exposure prophylaxis. If known, the individual source should be identified and documented. Be sure to inform the healthcare provider that you are employed by Tulane and it is a work-related injury. After consulting with the healthcare facility's employee health department, fax a copy of the First Report of Occupational Injury/Illness to OEHS (504-988-2196).
- If a bloodborne injury occurs at the TNPRC, the employee should report to the Occupational Health Nurse for medical evaluation.

Compressed Gas Cylinders ([P & P Section 30](#))

1. Compressed gas cylinders must be properly secured in an upright position *at all times* by means of an appropriate stand, chain, or strap. (This includes empty cylinders.)

Exception: Three (3) foot and smaller cylinders may be stored or transported in the horizontal position if properly secured.
2. The protective valve cap should remain in place until the cylinder is secured and the regulator is ready to be attached.
3. The contents of cylinders should be properly identified with decals, stencils, tags, or other markings. Color coding is not standardized and should not be relied upon.
4. Empty cylinders should be clearly marked and separated from full cylinders. The valve should be closed and the valve protection cap must be in place on empty units.
5. Cylinders must be transferred in an upright position with a cylinder cart or hand truck, be properly secured with a chain or strap, and have the protective valve cap in place. Do not roll or drag cylinders. Avoid dropping cylinders or allowing them to strike one another.
6. Do not use oxygen fittings, valves, or regulators for other types of gases. Always use the proper valve connections.
7. A NO SMOKING sign should be placed on all doors or gates which access oxygen or flammable gas storage areas.
8. Cylinders containing flammable gases such as hydrogen and acetylene must be stored separately from oxidizers by either a 20 foot distance or by a non-combustible 5 foot high barrier. The only exception to this is an oxy-acetylene welding cart.
9. Do not store cylinders near sources of radiant heat or near combustible or highly flammable substances such as oil or gasoline.
10. Return empty cylinders promptly to avoid continued payment of monthly cylinder rental (demurrage) charges.
11. Purchase specialty gases in refillable cylinders and/or ones that are returnable to the manufacturer. Avoid purchasing non-returnable lecture sized gas cylinders.

Electrical Safety ([P & P Section 31](#))

1. Use of extension cords or 3-way plugs is a fire code violation.

Exceptions:

- Grounded, heavy gauge extension cords may be used only as a temporary supply of electrical power for portable equipment; i.e. maintenance power tools, audio-visual equipment, housekeeping appliances, etc.
 - Multiple outlet strips that are properly protected with a circuit breaker or fuse may be used for computer configurations.
2. Equipment with grounded (3-prong) power cords or double-insulated appliances should be purchased and used wherever possible. Improper use of adapters or "cheaters" for grounded plugs is a fire code violation and such devices may be confiscated. Properly installed adapters may be used in areas which do not have grounded receptacles. Contact the OEHS or Facilities Services for more information.
 3. Always keep combustible materials away from sources of heat such as light bulbs, ovens, coffee pots and other electrical appliances.
 4. Flexible power cords cannot be run through closed doors or into concealed spaces.
 5. Report and label defective electrical equipment such as frayed wires, broken plugs, or exposed wiring. Have damaged equipment taken out of service and arrange to have it repaired or discarded.

Ergonomics ([P & P Section 11](#))

Ergonomics is the application of human anatomical, physiological and psychological information to the design of objects, systems and the environment. The OEHS will conduct ergonomic evaluations upon request by departmental supervisors or as deemed necessary by the OEHS.

Safe Lifting/Materials Handling

1. Estimate the size and weight of a load; consider your physical ability to handle the load and get help if needed. Whenever possible, use proper equipment to assist with materials handling, such as a hand trucks, luggage carts with rollers, etc. Use the right tool for the job!
2. Position your feet close to the object to be lifted, about 8-12 inches apart for good balance.
3. Bend your knees and get a good handhold. Keep your neck in line with the plane of your back.

4. Lift the material smoothly into carrying position. Keep the load close to your body. Don't turn or twist your back.
5. While carrying the load, stack it in such a manner as to permit a clear field of vision. Make sure the path of travel is clear.
6. While lifting, avoid twisting motions or awkward positions. Don't over-extend or stretch to reach overhead objects.
7. To set the load down, bend your knees and lower the load using leg and back muscles.




Computer Workstations

1. Use good sitting posture to maintain spinal curvature and aid circulation.
2. Organize your work area. Keep frequently used items within easy reach.
3. Take periodic "task breaks" away from the computer. Heavy computer users should take a 10 minute task break every hour; light to moderate computer users should take a 15 minute break every two hours. Task breaks include activities such as filing, making copies, etc.
4. Rest your eye muscles by taking a few minutes every hour to focus on objects at least 20 feet away.
5. Position the keyboard/mouse, display monitor, and document holder (if applicable) so that the user's body is in a neutral posture.
6. Additional information on computer ergonomics can be found in the computer manufacturer's literature, at the [OSHA](#) website and at the [OEHS website](#).

Laboratory Ergonomics


Laboratory researchers are at risk for repetitive motion injuries during routine lab procedures such as pipetting, working at microscopes, operating a microtome, using cell counters, and various micro-manipulation activities. Standing and working in awkward positions in lab hoods can also present ergonomic problems. Further information on [laboratory ergonomics](#) is provided on the OEHS website.

Fire Safety (also see [Fire Emergency](#) section of this Safety Guide) ([P & P Section 26](#))


1.  Keep all exit corridors, stairwells and hallways clear of obstructions and/or debris. Any item left in a corridor, stairwell, hallway, or foyer for more than 48 hours will be removed at the owner's expense. See corridor storage [policy](#).
2.  Where sprinkler protection is provided, always maintain at least 18 inch clearance below automatic sprinkler heads. Do not store materials or place equipment directly under sprinkler heads and never hang items from sprinkler heads.
3.  Portable electric space heaters can only be used in some areas and under certain conditions. Portable gas space heaters are strictly forbidden. See space heater [policy](#) for additional information.
4. Turn off heat producing equipment such as automatic coffee pots when not in use, especially at the end of the workday. An automatic timer may be used for this purpose.
5. Trash receptacles should be metal or FM/UL approved plastic. All trash receptacles in hallways and exit corridors must be covered or equipped with a self-extinguishing lid assembly. All trash containers of 20 gallons or greater capacity must be provided with covers.
Exception: Oily waste containers must be FM/UL approved (metal construction with self-closing lid).
6. A [holiday decorations policy](#) has been established by the OEHS. The policy is posted on the OEHS website and is distributed to all departments as a reminder every November.
7. A [Hot Work](#) permit must be issued prior to commencement of any hot work including welding, cutting, or soldering. (See [P & P Section 24](#))
8. Lit candles are strictly prohibited in all University locations.

Flammable and Combustible Liquids ([P & P Section 30](#))

Handling and Disposal

1.  Flammable and combustible liquid waste should never be discarded into regular trash or into the drain. Contact the OEHS for proper waste disposal instructions.
2. All containers of flammable and combustible liquids should be capped except when actively pouring.
3. Work with flammable liquids should be performed in a well ventilated area, preferably under a chemical fume hood and away from heat and ignition sources.

Storage

1.  Never store flammable liquids in an ordinary refrigerator; an explosion could result. Only refrigerators/freezers specifically designed for flammable liquid storage may be used to store flammable liquids.
2. Containers for flammable liquids outside of an approved storage area must not exceed a capacity of a one gallon glass bottle or a two (2) gallon safety can.
3. A maximum volume of 10 gallons of flammable liquids may be stored in a single area outside of an approved storage cabinet. If 2 gallon approved safety cans are used in lieu of bottles, up to 25 gallons can be stored in a single area outside of an approved storage cabinet.

Ethyl ether

1. Ether is an extremely volatile liquid which requires special considerations in handling and usage; it deteriorates with age and may become explosive. In order to avoid the accumulation of "old" ether, it should only be purchased in quantities which will be readily used.
2. Cans of ether should be dated when opened. After 6 months, unused ether should be inspected to ensure that no explosive peroxides have formed. (Peroxide test kits are commercially available.) Never discard waste ether into the drain.
3. Opened containers of ether should be stored in an FM/UL approved flammable liquid storage cabinet or a specially designed flammable liquids storage refrigerator.
4. As with other flammable liquids, work with ether should be conducted in a chemical fume hood, away from heat and sources of ignition.

General Safety ([P & P Section 10](#))

1. If an inspector from an outside agency with jurisdiction or responsibilities for environmental health and safety (fire department, health department, insurance company, OSHA, Louisiana Department of Environmental Quality, etc.) contacts you or shows up in your area, please notify the OEHS immediately. An OEHS representative must accompany all representatives from these types of outside agencies.
2. Report any unsafe conditions/faulty equipment to your supervisor.
3. Store heavy items on lower and middle shelves.
4. Don't leave file drawers and cabinets pulled out when not in use. Only pull out one drawer at a time, otherwise the cabinet may become top heavy and fall.
5. Always use a ladder or step stool to reach high objects. Never stand on a chair or table.
6. Keep floors and walking surfaces clean and free of trip hazards such as electrical cords, phone lines, torn carpeting, broken tiles, etc.

Hazard Communication ([P & P Section 12](#))

Chemicals can pose a wide range of health hazards (such as irritation, sensitization, and carcinogenicity) and physical hazards (such as flammability, corrosion, and reactivity). The OSHA Hazard Communication Standard ([29 CFR 1910.1200](#)) is designed to ensure that information about chemical hazards and associated protective measures is disseminated to affected employees.

Chemical manufacturers and importers are required to evaluate the hazards of the chemicals they produce or import, and to provide safety information on labels of shipped containers as well as more detailed chemical safety information called Material Safety Data Sheets (MSDSs).

All employers with hazardous chemicals in their workplaces must prepare and implement a written hazard communication program, and must ensure that all containers are properly labeled, employees are provided access to MSDSs, and an effective training program is conducted for all potentially exposed employees.

Tulane's written [Hazard Communication Program](#) can be found on-line in the EHS Policies and Procedures Manual. Information about the program is presented to employees during orientation, upon initial job assignment, and as needed if a new hazard is introduced to the work area. The OEHS also provides [on-line Hazard Communication training](#). Supervisors are responsible for transmitting specific information relating to the chemicals used in their department to the people under their supervision. Such in-service sessions should stress the hazards and protective measures associated with the particular chemicals.

The OEHS maintains an inventory of chemicals used at Tulane. Supervisors are required to submit an update of their chemical inventories annually. Electronic access or hard copies of MSDSs must be available in the individual work areas where the chemicals are used. In addition, a hard copy library of MSDSs is kept in the OEHS main office. [MSDSs](#) can be made available to employees upon request to the OEHS and are also provided on-line at the OEHS website. In the event of an after-hours emergency, MSDSs can be obtained by contacting Tulane Police who will notify the OEHS on-call person.

Labels on original containers should not be removed or defaced as long as the chemical remains in that container. When transferring a chemical to another container, the new container label must include the chemical name, as well as any specific hazard or toxic warnings. Sample labels for transfer containers may be obtained through the OEHS.

Questions related to the Hazard Communication program should be directed to your supervisor or the OEHS.

Hazardous Materials Disposal ([P & P Section 29](#))

Waste Minimization

Improperly managed hazardous waste can affect our environment by contaminating waterways, aquifers, air, and other natural resources. A waste minimization program helps reduce these problems and also helps reduce the cost of commercial waste disposal.

There are several methods to effectively and economically reduce or eliminate the amount of waste generated. One or more of the following methods are used at Tulane in its management of hazardous materials:

- Materials management purchasing control (purchase only quantities that are needed and will be readily used)
- Work practices, e.g., prompt spill cleanup, keeping containers closed and secured, etc.
- Substituting with less toxic materials
- Segregating waste
- Recycling or reclaiming
- Employee training
- Minimization of experiments (if possible)

Hazardous (Chemical) Waste Disposal

1. A one page summary of [Chemical Waste Handling Procedures](#) is available on the OEHS website.
2. Unwanted chemicals (including flammable and combustible liquids, explosives, toxics, corrosives, and reactives, etc.) should never be discarded into the plumbing system or into trash receptacles. Specific information on waste labeling, packaging, and disposal procedures can be obtained through the OEHS. A [Hazardous Waste Pickup Request Form](#) is available on-line at the OEHS website.

3. Waste chemical containers should always be properly labeled with the words HAZARDOUS WASTE, the identity of the waste, and the hazards associated with it. Do not use abbreviations, foreign languages or chemical formulas on chemical container labels.
4. Many unwanted or expired pharmaceuticals require special waste disposal techniques. Contact the OEHS for further information. Do not dispose of waste pharmaceuticals in the sanitary sewer or with regular waste unless approved by the OEHS.

Sharps Disposal

1. Sharps should be safely secured when not in use. Never leave them unprotected at the open bench or work areas.
2. All used razor blades, scalpels, needles, and broken glass must be placed in rigid puncture-resistant containers for disposal; uncontaminated broken glass should be placed in a separate container.
3. When sharps containers are two-thirds ($\frac{2}{3}$) full, they should be sealed and disposed of according to campus policy. (Contact the OEHS for specific disposal information.) Do not place containers in the hallways for pickup.
4. Broken or used glass/pipettes which are contaminated with blood, body fluids or infectious materials must be placed in a broken glass container marked with a biohazard label. Also see information below on [Infectious Waste Disposal](#).
5. Labels on empty unbroken glass containers should be defaced and the bottles placed next to the regular waste receptacle clearly visible to custodial personnel for disposal. Do not mix glass with radioactive/infectious waste. (See [Empty Container Disposal](#) below.)

Infectious (Medical) Waste Disposal

Infectious or medical wastes must be properly decontaminated and/or disposed of by one of the following methods:

- Autoclave
- Chemical disinfection
- Irradiation
- Incineration
- Chemical digestion
- Commercial disposal

All sharps (needles, syringes, pipettes, etc.) that are contaminated with potentially infectious material must be handled properly before final disposal. Contact the OEHS or your facility manager/custodial service department for disposal procedures for infectious or medical waste.

Radioactive Waste Disposal

Radioactive materials and animal carcasses are generally stored for decay and disposed of via incineration or by a commercial disposal company. Disposal of radioactive substances requires special labeling, packaging, and disposal techniques; further information is available from the OEHS.

Empty Container Disposal

Containers that have less than 1% volume/weight of a hazardous material are considered empty by federal, state, and local laws. These containers should have their label defaced/removed and should then be placed in a regular solid waste disposal container.


Hazard Reporting Process ([P & P Section 2](#))

If a serious or imminent safety hazard is found, the OEHS should be contacted immediately. Other hazards or unsafe conditions should first be reported to your supervisor and/or Departmental Safety Representative and handled through the administrative channels. If hazardous conditions are not corrected in a timely manner or to your satisfaction, you may contact the OEHS directly. *All calls to the OEHS will be kept confidential upon request.*

Injury/Illness ([P & P Section 4](#)) (Also see [Bloodborne Pathogens](#) section)

Employees

Employees who suffer any work-related injury/illness (even if it is minor and medical care/treatment is not provided) must report the incident to their supervisor immediately and complete a [First Report of Occupational Injury/Illness](#) form. (The form is provided on the OEHS home page.) Supervisors are responsible for signing the form and assisting with the incident investigation. If the injury is serious, call Tulane Police immediately. Tulane Police will call 911 if deemed necessary.

 Phone numbers for Tulane Police or other emergency responders vary depending on the facility. Check your facility's emergency plan for important details.

If the injury is not serious or life-threatening but still requires medical attention, the employee should proceed to the nearest clinic/hospital or to their personal physician for evaluation and treatment. A copy of the *First Report of Occupational Injury/Illness* should be taken to the medical care facility. Registration personnel should be informed that the visit is work-related and is covered by Workers' Compensation. Personal health insurance should NOT be used for treatment of work-related injuries.

NOTE: A copy of the completed [First Report of Occupational Injury/Illness](#) must be submitted to OEHS (hand deliver to room 1156, Tidewater Building or fax to 504-988-2196) within 24-48 hours of the incident. The original must be also sent to OEHS. The claim cannot be processed unless the form is filled out completely (both pages) and is on file in the [OEHS Worker's Compensation](#) Office. Delays in reporting could jeopardize Worker's Compensation benefits.

Visitors

Immediately notify Tulane Police of any injury or illness involving visitors.

Students

In case of medical emergency, on-campus students should call Tulane Police; off-campus students should call 911. Students who suffer an injury or become ill should report to the Student Health Center (SHC) for evaluation and treatment. If the injury or illness is related to on-campus activities or an unsafe condition in a University building or on Tulane property that may require follow-up by OEHS, SHC personnel should have the student complete a [Student Report of On-Campus Environmental Injury or Disease](#) form which can be found on the OEHS website.

If the injury occurs during classroom activities, the course instructor should be notified immediately and a [Student Report of On-Campus Environmental Injury or Disease](#) form should be completed by the course instructor. A copy of the report should be forwarded to the OEHS immediately regardless of whether or not the student reports to the SHC.

Laboratory Safety ([P & P Section 30](#))

OSHA Lab Standard

The OSHA Lab Standard ([29 CFR 1910.1450](#)) requires each employer to develop a comprehensive Chemical Hygiene Plan in order to implement safe laboratory practices and to minimize exposure to hazardous and toxic chemicals. An OEHS employee has been designated as Tulane's Chemical Hygiene Officer. Tulane's [Chemical Hygiene Plan](#) can be found on the OEHS website. Laboratory supervisors play an important role in implementing Tulane's Chemical Hygiene Plan. Some of their duties include:

- Developing and implementing standard operating procedures (SOPs) for their laboratories
- Informing employees about the OSHA Lab Standard and Tulane's Chemical Hygiene Plan and ensuring that laboratory personnel comply with the Chemical Hygiene Plan
- Providing safety training on lab SOPs to employees and documenting the training
- Determining and providing appropriate personal protective equipment and clothing
- Performing formal (documented) inspections of their area and reporting unsafe conditions
- Notifying the OEHS if exposure monitoring or medical consultations due to chemical exposure are needed
- Obtaining approval from the OEHS prior to work with certain high risk substances (select agents, carcinogens, explosives, reproductive toxins, acutely toxic substances, etc.)

General Lab Safety Practices

1. Never pipette by mouth.
2. Do not eat, drink, chew gum or tobacco, apply cosmetics, or handle contact lenses in the lab area. Exposure to infectious organisms, radioactive materials, and toxic chemicals can occur in this manner.
3. Do not place food or drinks in refrigerators which are used for chemical, radiological, or biological materials storage.
4. Locate the nearest safety shower, eyewash station, and fire extinguisher. Know how to operate them and make sure all emergency equipment is readily accessible. Labs are required to check eyewash units weekly and verify proper operation. Inspection tags are available from the OEHS.
5. A BIOHAZARD symbol sticker should be placed on refrigerators, freezers, or other containers which contain blood, serum, tissue, or infectious agents.

6. Use extra caution when working with gas valves and Bunsen burners; never leave a Bunsen burner ON and unattended. Periodically check the hose connections and ensure the tubing is not cracked or deteriorated. Butyl rubber tubing is recommended for use with Bunsen burners. NOTE: Bunsen burners should NOT be used in biological safety cabinets.
7. Check with your supervisor or the OEHS regarding the need for personal protective equipment and clothing. Use personal protective equipment when necessary.
8. Dress appropriately when working with hazardous materials. Sandals, open-toed shoes, and shorts should not be worn in lab areas.
9. Store acids and corrosive chemicals on lower and middle shelves. Do NOT store materials directly on the floor.
10. Always wash hands after handling hazardous materials and before leaving the lab area.



All laboratories are required to post warning signage at the main entry door. The sign includes emergency contact information, hazard categories and any special precautions. Be sure your lab has a sign and the information is current. [Lab door label signs](#) can be requested online from the OEHS website.

Formaldehyde (P & P Section 28)

The OSHA Formaldehyde Standard ([29 CFR 1910.1048](#)) addresses items such as exposure monitoring, respiratory protection, posting of regulated areas, protective equipment and clothing, medical surveillance, labeling requirements, engineering and work practice exposure controls, and annual employee training. If you are or will be using formalin, paraformaldehyde or other formaldehyde-containing products, contact the OEHS or your supervisor for more information.



Lab/Studio Closeouts & Equipment Transfer

The OEHS must be notified well in advance (at least 30 days) when a lab/studio (or other area containing chemicals and/or potentially contaminated equipment) will be vacated. Work areas must be left in a clean and safe condition when they are vacated or if the area will be renovated. All unwanted chemical, biological, and radiological materials must be disposed of properly and surfaces must be thoroughly cleaned.

Equipment must be decontaminated and hazardous components (such as mercury, asbestos, Freon, etc.) may require removal before it is moved, serviced, or discarded. Upon receipt of written verification from the responsible department, the OEHS will issue a tag or sticker to indicate that a piece of equipment (refrigerator, oven, etc.) is safe for transfer. If equipment cannot be effectively decontaminated, it must be labeled with appropriate warning information so proper handling precautions can be taken. The OEHS will work with Departmental Safety Representatives (DSRs) and unit personnel to develop a close-out plan.

Local Ventilation Systems

1. Chemical fume hoods and biological safety cabinets are designed to contain and exhaust harmful or offensive materials. Different types include:
 - Chemical fume hoods
 - Perchloric acid hoods (equipped with water wash down systems)
 - Radiological fume hoods
 - Biological safety cabinets (BSCs) - free standing or ducted units with HEPA filtration
 - Laminar flow work stations - free standing units with HEPA filtered laminar airflow
2. All purchases of the local ventilation systems listed above require OEHS review and approval for the unit. The unit location and ventilation needs must also be reviewed with OEHS.
3. Fume hoods and BSCs should not be considered ventilated storage cabinets. Items placed in the unit can reduce efficiency by creating turbulence or blocking airflow. Keep only those items necessary for the experimental procedure in the enclosure.
4. Keep the sash closed when the fume hood is not in use. When using the fume hood, keep the sash at least half closed to ensure proper ventilation and to provide eye and face protection.
5. Perform all work inside the fume hood or BSC (at least 6 inches from the front edge) to allow proper contaminant capture.
6. At Tulane, all fume hoods have a direct reading instrument that indicates air flow velocity; some are equipped with an alarm that activates if the airflow drops below certain set points. Warning devices which are installed must not be removed or tampered with. If the alarm sounds or there are problems with the hood, contact Facilities Services or the OEHS.
7. Chemical fume hoods should have an average face velocity of 80-100 feet per minute (fpm). Radiological fume hoods should operate at about 125 fpm face velocity. The OEHS periodically tests fume hoods and places inspection stickers on the hood to indicate average air flow at a specific sash location.
8. Biological safety cabinets (BSCs) and laminar flow work stations must be certified after initial installation, whenever they are moved, and on an annual basis. The OEHS will conduct or arrange for certification. A certification/inspection sticker is placed on each unit to show its certification status. See [BSC Fact Sheet](#) on OEHS website.
9. Perchloric acid must be used only in specially designed and designated hoods equipped with special water wash down systems. The interior of the hoods must be cleaned frequently along with the ductwork. There is always a danger of explosion when using perchloric acid; be sure that all personnel are properly trained.

Laser Safety

LASER is an acronym for Light Amplification by Stimulated Emission of Radiation. The word radiation in this sense refers to energy transfer; lasers are a form of non-ionizing radiation which is not included in the University's Radiation Safety Program. Laser generating equipment can present various health and safety hazards including burns to eyes and skin. A laser classification scheme has been developed to describe the capability of a laser or laser system to produce injury to personnel. Various control measures (facility design, work practices, training, personal protective equipment) are required depending on the type of laser.

The OEHS reviews purchase orders for laser generating equipment, receives notification of any plans to install lasers, conducts environmental surveys of work areas, and can provide training information on the safe use of lasers. Further details on the laser safety program are provided in the [Laser Safety Manual](#) or from the OEHS Laser Safety Officer.



All Class IIIb and IV lasers/laser systems must be registered with the OEHS Laser Safety Officer. See [Laser Safety Program](#) information on the OEHS website.

Personal Protective Equipment (PPE) ([P & P Section 14](#))

Personal protective equipment (PPE) includes items such as hard hats, respirators, hearing protection, goggles, face shields, and protective clothing. OSHA requires employers to conduct a [hazard assessment](#) of the workplace to determine what PPE is necessary to prevent contact with or exposure to chemicals, mechanical hazards, electrical hazards, etc.

The OEHS has developed a “Personal Protective Equipment-Hazard Assessment Certification Program” (PPE-HACP) to assist departments and administrative units with OSHA compliance. University departments/administrative units are responsible for implementation of the PPE-HACP. The program addresses hazard assessment, employee training, and use of appropriate PPE related to safeguarding employees from potential injuries.

The appropriate PPE shall be provided and used by affected employees to protect them from identified hazards. PPE must fit properly and must be maintained in a sanitary and reliable condition. The OEHS can provide appropriate audio/visual and printed material for use in training and assistance with selection of PPE.

Purchasing ([P & P Section 31](#))

The University has adopted certain policies and procedures regarding the acquisition of materials which could be hazardous to the health and safety of employees and students. Examples of some items that must be reviewed and approved by the OEHS prior to purchase include:

- Chemical fume hoods, biological safety cabinets, laminar flow work stations
- Hazardous materials (DEA Class I chemicals, select agents or toxins, carcinogens, ATF explosives, SARA extremely hazardous substances)
- Respirators (except N-95)
- Radioactive materials
- Radiation producing equipment (except microwave ovens)
- Class IIIb and IV lasers/laser systems
- Flammable liquids in containers larger than 5 gallon size
- Flammable liquid storage cabinets; flammable liquid safety cans greater than 2 gallon size
- Trash cans for use in hallways/exit corridors, bathrooms, assembly areas, dormitories.
- Portable electric space heaters

Some equipment (for example, biological safety cabinets) must be certified by the OEHS after installation to ensure proper operation. Class IIIb and IV lasers/laser systems must be registered with the OEHS Laser Safety Officer.

Purchase of radioactive materials requires a University license prior to ordering. License applications may be obtained by contacting the OEHS Radiation Safety Officer

The purchase of gas cylinders and lecture bottles should be made only when an agreement is made with the manufacturer or distributor to return the cylinders to them when finished.

In general, chemicals should only be purchased in quantities that will be readily used. Some chemicals form explosive peroxides and become unstable with time, and stockpiling chemicals can create storage hazards and increase potential for spills. Purchases of other chemicals, such as mercury and/or mercury compounds, must be limited due to the enormous cost of disposal for these materials.

Injuries can occur when untrained or unequipped personnel attempt to unpack and/or assemble heavy or bulky pieces of equipment or furniture. If possible, purchase the equipment preassembled or arrange for Facilities Services personnel to help unpack and assemble furniture or large/bulky equipment.

Radiation Safety [\(P & P Section 33\)](#)

Radiation safety at Tulane is the joint responsibility of the OEHS and the Radiation Safety Committee. University administration appointed the OEHS, through its Radiation Safety Manager, to provide the necessary administrative and technical services to ensure compliance with applicable regulations and provisions of the University's radioisotope license. Further details on the radiation safety program (including purchasing, handling practices, spill cleanup) are provided in the [Radiation Safety Manual](#) or from the OEHS Radiation Safety Manager. (NOTE: The Radiation Safety program only includes ionizing radiation; [laser safety](#) is covered in a separate program.)

Dosimeters/Exposure Monitoring


The OEHS provides a campus-wide monitoring program to ensure that employee exposures to ionizing radiation are within regulatory limits. Monitoring is performed with dosimeters or personal radiation monitors which are issued to employees as needed. Dosimeters are issued on a periodic basis and are submitted to an independent lab for analysis.



If you work with x-ray equipment or radioisotopes, you may need to be issued a personal radiation monitor. Contact the OEHS Radiation Safety Manager for details.

Respiratory Protection ([P & P Section 15](#))

Certain operations may warrant use of respiratory protection to protect against inhalation of airborne contaminants. Respirator selection can be complex and is based on a number of factors; the OEHS should be contacted to provide guidance on respirator selection and usage.

 In accordance with the OSHA Respiratory Protection Standard ([29 CFR 1910.134](#)), all personnel who are required to wear respirators must be medically evaluated, fit tested and trained prior to respirator use. The OEHS maintains records of training and fit-testing and must be contacted to perform these services.

NOTE: Respirators with tight-fitting facepieces cannot be used effectively if facial hair or other conditions interfere with the face-to-facepiece seal or valve function.

When exposure levels are below occupational exposure limits, respirators may be used on a voluntary basis to provide an additional level of comfort and protection. In these situations, respirator users are encouraged to contact the OEHS to ensure the proper respirator has been selected and is being used properly in accordance with OSHA requirements.

Shipping of Dangerous Goods/Hazardous Materials

Individuals wishing to ship dangerous goods/hazardous materials must meet current DOT (Department of Transportation) and IATA (International Air Transport Association) shipping regulations pertaining to container type, labeling, and bill of lading. Contact the shipping company or the OEHS for packaging and labeling requirements.

Smoking (from [Staff Handbook](#), Section VI, parts L & M; [Smoke Free Campus](#))

Smoking is permitted on campus in designated areas only; anyone smoking outside of these areas is in violation of the smoking policy.

Smoking is prohibited in all campus buildings and outdoor areas of the campus where non-smokers cannot avoid exposure to smoke. Furthermore, smoking is prohibited in all partially enclosed areas such as covered walkways, breezeways, and walkways between sections of buildings, parking garages, and bus stop shelters; areas immediately adjacent to building entrances; and exterior stairways and landings. Smoking is prohibited up to 25 feet outside any enclosed area where smoking is prohibited to ensure that secondhand smoke does not enter the area through entrances, windows, ventilation systems, or any other means. Smoking is prohibited in all Tulane University residential facilities, residence halls, and apartments and in Tulane University vehicles.

Individuals and employers who do not comply with the above-mentioned requirements may be fined up to \$500 by regulatory agencies. Payment for such fines is the responsibility of the employee or the department where the infraction occurred.

Tuberculosis

Tulane's tuberculosis (TB) policy focuses on at-risk employees. Skin testing is required for all University employees whose job involves potential exposure to TB. Routine screening is recommended for the following individuals:

- Persons working at the Tulane National Primate Research Center (TNPRC) who may come in contact with non-human primates or with potentially exposed or infected co-workers (Refer to TNPRC TB policy for specific details.)
- Animal care personnel who work with experimentally infected animals
- Personnel (healthcare and others) who work in patient-care areas, homeless shelters, or rehab programs
- Personnel who work in laboratories where the *M. tuberculosis* organism is isolated or present in infected tissues/body fluids
- Day care center personnel

At-risk individuals and their departments are responsible for arranging TB tests and accepting associated charges. Positive skin test results may result in work/activity restrictions, additional testing and medical treatment.

Possible occupational exposure to TB should be documented on a [First Report of Occupational Injury/Illness](#) form. The OEHS should be notified promptly so that a complete evaluation regarding the circumstances concerning the occupational exposure can be performed.

On-line [awareness training on tuberculosis](#) is available at the OEHS website.

All at-risk personnel must utilize personal protective equipment including N-95 respirators while in contact with suspect TB cases. Individuals using N-95 respirators must complete a medical questionnaire and be fit tested prior to use of respirators.

Conclusion

Studies have shown that most accidents result from human error rather than mechanical or equipment failure. Human judgment often errs, but knowledge and observance of the policies and procedures listed in this SAFETY GUIDE and those related to your particular work activity, plus the application of good common sense, will go far to control these judgment factors.