

MEDICAL UNIVERSITY OF SOUTH CAROLINA (MUSC)

CHEMICAL HYGIENE PLAN

Revised: 9/2007

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FOREWORD

The requirements in this plan are derived in part from the Occupational Safety and Health Administration Standard (OSHA 1910.1450). This plan addresses the unique characteristics of the laboratory workplace and has tailored a plan for occupational exposures to hazardous chemicals in laboratories.

The Medical University of South Carolina "Chemical Hygiene Plan" seeks to ensure a desirable laboratory environment to protect employees, students and staff from health hazards in the laboratory.

GENERAL PRINCIPLES FOR WORK WITH LABORATORY CHEMICALS

It is prudent to minimize all chemical exposures. Because no laboratory chemicals are without hazards, general precautions for handling all laboratory chemicals should be adopted rather than specific guidelines for particular chemicals. A cardinal rule is that inhalation, ingestion, and absorption of chemicals should be avoided.

Every effort should be made to avoid underestimation of risk. Exposure should be minimized even for substances of no known significant hazard. Special precautions should be taken for work with substances, which present special hazards. All precautions prescribed in Material Safety Data Sheets should be followed in conjunction with established Medical University of South Carolina Policies and Procedures. One should assume that any mixture will be more toxic than its most toxic component and that all substances of unknown toxicity are toxic.

Adequate ventilation must be provided. The best way to prevent exposure to airborne substances is to prevent their escape into the working atmosphere by the use of hoods and other ventilation controls. Engineering solutions are preferred.

A Chemical Hygiene Program must be developed and implemented. A mandatory chemical hygiene program, which is designed to minimize exposures, is needed. It is a regular continuing effort, not merely a standby or short-term activity. Its recommendations must be followed in academic teaching laboratories as well as by full-time laboratory workers.

The permissible exposure limits (PEL's) of OSHA are not to be exceeded. If these chemical exposure levels which are listed in OSHA's Z-Table have not been established, contact Occupational Safety and Health to schedule air monitoring.

CHEMICAL HYGIENE RESPONSIBILITIES

The president of the Medical University, in his capacity as Chief Executive Officer, has the ultimate responsibility for chemical hygiene within the Medical University and, with other administrators, provides continuing support for institutional chemical hygiene.

Heads of departments and supervisors of other administrative units are responsible for chemical hygiene in their department or unit. It is their responsibility to appoint chemical hygiene officers for their department or unit.

Chemical hygiene officers are required to work with administrators and other employees to develop and implement appropriate chemical hygiene policies and practices, monitor procurement, use, and disposal of chemicals in the lab, ensure that appropriate audits are maintained, help project directors and primary investigators

develop precautions and adequate facilities, stay current with legal requirements concerning regulated substances and seek ways to improve the chemical hygiene program.

The laboratory supervisor has overall responsibility for chemical hygiene in the laboratory including responsibility to ensure that the workers know and follow chemical hygiene rules, that protective equipment is available and in good working order, and that appropriate training has been provided. Also, the laboratory supervisor must provide regular formal chemical hygiene and housekeeping inspections including routine inspection of emergency equipment, know the current legal requirements for regulated substances, determine the required levels of protective equipment and apparel, and ensure that facilities and training for use of any material being ordered are adequate.

The project director or director of a specific operation has primary responsibility for chemical hygiene procedures of that operation.

The laboratory worker is responsible for planning and conducting each operation in accordance with the institutional chemical hygiene habits.

THE LABORATORY FACILITY

The design of the laboratory facility should provide sufficient exits for each laboratory, an appropriate general ventilation system with air intakes and exhaust located so as to avoid intake of contaminated air, adequate well-ventilated stockrooms and storerooms, laboratory hoods and sinks, and other safety equipment including eyewash station and drench showers. Hazardous waste will be disposed of by making a Hazardous waste pick-up request through Occupational Safety and Health Programs Web Page. Follow the steps below:

1. Click on Web Browser.
2. Click on Administration in black tool bar.
3. Click on Risk Management/OSHA.
4. Click on Occupational Safety.
5. Click on Chemical Waste Pick up request.

Chemical hygiene related equipment, such as hoods, should undergo continuing appraisal and is modified if inadequate. Engineering and Facilities Management has established an ongoing preventive maintenance program for hoods in conjunction with Occupational Safety and Health's laboratory safety coordinator.

In regard to usage of facilities, the work conducted and its scale must be appropriate to the facilities available and especially to the quality of ventilation.

General laboratory ventilation provides a source of air for breathing and for input to local ventilation devices; it should not be relied on for protection from toxic substances released into the laboratory. Laboratory air must be continually replaced during the workday to prevent increase of air concentrations of toxic substances. The airflow should be from non-laboratory areas and out to the exterior of the building. A laboratory hood with 2.5 feet of hood space is required for every 2 workers if they spend most of their time working with chemicals. Each hood should have a continuous monitoring device to allow convenient confirmation of adequate hood performance before use. If this is not possible, work with substances of unknown toxicity should be avoided or other types of ventilation should be provided. Other local ventilation devices, such as ventilated storage cabinets, canopy hoods and snorkels, should be provided as needed. Each canopy hood and snorkel should have a separate exhaust duct. Exhaust air from special ventilation areas, such as glove boxes and isolation rooms, should be passed through scrubbers or other treatment before release into the regular exhaust system. Cold rooms and warm rooms should have provisions for rapid escape and for escape in the event of electrical failure.

Modifications of the ventilation system should be made only if testing indicates that worker protection from airborne toxic substances will continue to be adequate. This verification must be obtained from Engineering and Facilities Management before any modifications are made.

A performance standard of 4 - 12 room air changes per hour is normally adequate general ventilation if local exhaust systems, such as hoods, are used as the primary method of control. General airflow should not be turbulent and should be relatively uniform throughout the laboratory with no high velocity or static areas. Airflow into the hood should not be turbulent. All new hoods installed throughout the Medical University are designed to operate with a face velocity of 100 feet per minute. Hoods that fail to meet this face velocity should not be used until approval is obtained from the Division of Occupational Safety and Health. Biological class II cabinets should be certified annually in accordance with the National Sanitation Foundation Standard (H9) NSF 1992. Principal Investigators/Departments are responsible for cost of certification.

Quality and quantity of ventilation is evaluated on installation, monitored annually, and reevaluated whenever a change in local ventilation devices is made.

SPECIAL CONSIDERATIONS

In the area of chemical procurement, distribution, and storage, many aspects must be considered. Before a substance is received, information on proper handling, storage, and disposal should be known to those who will be involved. No container should be accepted without an adequate identifying label. In the storeroom, toxic substances should be segregated in a well identified area with local exhaust ventilation. Chemicals, which are highly toxic, or other chemicals whose containers have been opened, should be in a secondary container and labeled. Stored chemicals should be examined periodically (at least annually) for replacement, deterioration, and container integrity. Storerooms and stockrooms should not be used as preparation or repackaging areas. These areas should be open during normal working hours and should be controlled by one person.

When chemicals are hand-carried, the container should be placed in an outside container or bucket. Extreme care should be exercised when chemicals are transported on carts. Freight-only elevators should be used if possible.

Amounts of chemicals stored in the laboratory should be limited to as little as practicable. Storage on bench tops and in hoods is inadvisable. Exposure to heat and direct sunlight should be avoided. Periodic inventories should be conducted to comply with the Hazard Communication Standard. Unneeded items should be disposed of as hazardous waste or returned to the storeroom or stockroom.

Regular instrumental environmental monitoring of airborne concentrations is not usually justified or practical in laboratories, but may be appropriate when testing, redesigning hood or ventilation system components, or when a highly toxic substance is stored or used as frequently as three times a week.

Housekeeping, maintenance and inspection are important aspects of chemical hygiene. Floors should be cleaned regularly. Formal housekeeping and chemical hygiene inspections should be conducted at least quarterly for units, which have frequent personnel changes, and semiannually for others. Informal inspections should be continual. Eye wash fountains and safety showers should be inspected at intervals of not more than quarterly by maintenance personnel. Eye wash fountains should be flushed weekly by lab occupants and documented.

Respirators should be inspected periodically by the laboratory supervisor, and by the employee before use. Other safety equipment should be inspected every three to six months. Procedures should be established to prevent restarting of out-of-service equipment (lockout/tagout procedure). Finally, stairways and hallways should not be used as storage areas. Access to exits, emergency equipment and utility controls should never be blocked.

A medical program has been established to comply with OSHA regulations. Anyone whose work involves regular and frequent handling of toxicologically significant quantities of a chemical should consult with Employee Health Services on an individual basis to determine if a regular schedule of medical surveillance is required. Individuals requiring first aid should report to Employee Health Services. EMS should be summoned by calling 911 in those cases where individuals are incapable of transporting themselves.

Each laboratory should provide personal protective apparel compatible with the substances being handled, and should also have an easily accessible drench-type safety shower, an eyewash station, a fire extinguisher and a telephone for immediate emergency use.

Accident records, which comply with current regulations, are in written form and are retained by Employee Health Services. Medical records are similarly maintained and retained.

Prominent signs and labels should be posted listing emergency telephone numbers of emergency personnel, supervisors and laboratory workers. Labels giving the chemical name and appropriate hazard warnings are required on chemical containers. Waste receptacles should be appropriately marked and appropriate hazard signs posted. Location signs should be posted for shower and eyewash units, and areas where food and beverage storage is prohibited should contain warning signs to that effect.

Provisions exist to ensure response to spills and other accidents. Spills will be dealt with by the Occupational Safety and Health emergency response team. Actions for emergency response in incidents, which result in fire, are dealt within the Medical University Fire Plan. Emergencies which result in the release of hazardous waste to the water, soil or atmosphere are the subject of the Medical University Hazardous Waste Contingency Plan. The spill control policy addresses containment, cleanup and reporting.

The aim of the training and information program is to assure that all individuals at risk are adequately informed about work in the laboratory, including its risks and appropriate response when, and if, an accident

occurs. Every worker should know the location and proper use of available protective apparel and equipment. Occupational Safety and Health personnel are trained in emergency response to laboratory emergencies. All training and education programs should be regular, continuing activities, not annual presentations. Literature and consulting advice concerning chemical hygiene is available through Occupational Safety and Health.

Our waste disposal program is designed to assure that minimal harm will occur to people, other organisms, and the environment from the disposal of waste laboratory chemicals. Persons wishing to dispose of hazardous waste should email or call Occupational Safety and Health, who will in turn collect, segregate, store, consolidate, and arrange for transportation to burial or incineration sites, in compliance with South Carolina Department of Health and Environmental Control, Environmental Protection Agency and Department of Transportation regulations. Before an investigator's employment in a laboratory ends, chemicals for which that person was responsible should be identified, discarded as hazardous waste or returned to storage. Waste should not be allowed to accumulate in laboratories but should be removed at regular intervals. Disposal by pouring waste chemicals down the drain or adding them to mixed refuse for landfill burial is unlawful and totally unacceptable to the Medical University Administration. Hoods should not be used as a disposal method for the evaporation of volatile chemicals.

Perchloric acid forms explosive peroxides in standard fume hoods/ducts and should not be used in hoods unless it is an approved Perchloric acid hood.

BASIC RULES AND PROCEDURES

Laboratory workers must know and follow the rules and procedures listed here below when working with chemicals:

1. In the event of a chemical spill do not attempt to clean it up yourself.
 - A. If there is an eye or body contamination with hazardous chemicals, promptly flush for fifteen minutes under eye wash fountain/emergency shower.
2. If chemicals are ingested, encourage the victim to drink large amounts of water.
3. When skin contact with chemicals results, promptly flush the affected area with water and remove any contaminated clothing. After washing, seek medical attention.

4. Develop and encourage safe work habits to avoid unnecessary exposure.
5. Do not smell or taste chemicals.
6. Inspect gloves and glove boxes before use. Have glove boxes certified on an annual basis, or more frequently if required.
7. Do not allow release of toxic substances in rooms which have recirculated atmospheres.
8. Chemical Spill Procedure
 - A. Evacuate the room.
 - B. Close the door behind you.
 - C. Go to the nearest phone and call Occupational Safety and Health (OSHP) at 2-3604.
 - D. Seek medical attention if there has been a body contamination or inhalation exposure.
9. Use only those chemicals for which the quality of the available ventilation is appropriate.
10. Do not eat, smoke, drink or apply cosmetics in areas where laboratory chemicals are used or stored.
11. Do not store, handle or consume food or beverages in chemical or biological storage areas.
12. Do not use laboratory glassware or utensils for eating or drinking.
13. Handle glassware with care.
14. Do not use damaged glassware. Dispose of it.
15. Use equipment only for its designed purpose.
16. Wash areas of exposed skin well before leaving the laboratory.
17. Never engage in horseplay, practical jokes or other behavior, which might confuse, startle or distract another worker.
18. Do not use mouth suction for pipetting or for starting a siphon.
19. Do not wear sandals, perforated shoes or sneakers in the laboratory. Shoes worn in laboratories must be fluid resistant and fully enclose the foot with no exposed areas, i.e., Crocs with holes in the top or canvas style shoes are not appropriate in laboratories.
20. Confine long hair and loose clothing.
21. Keep the work area clean and uncluttered. Chemicals and equipment should be properly labeled and stored.

22. Clean up the work area on completion of an operation or at the end of the day.
23. Assure that appropriate eye protection is worn by all persons, including visitors, where chemicals are stored or handled.
24. Wear appropriate gloves; inspect before use. Wash hands upon removal of gloves and replace them periodically.
25. Use respirators when required, inspecting them before use. Comply with the Medical University Respiratory Protection Program.
26. Use protective clothing as appropriate.
27. Do not wear contact lenses in the laboratory.
28. Remove laboratory coats immediately upon significant contamination.
29. Seek information and advice about hazards.
30. Plan appropriate protective procedures and plan positioning of equipment before beginning a new operation.
31. With unattended operations, leave lights on, place an appropriate sign on the door, provide for containment of toxic substances in the event of failure of a utility service such as cooling water and leave emergency telephone numbers of investigators performing the work.
32. Use the chemical fume hood for operations, which might result in the release of toxic chemical vapors or dust.
33. Confirm adequate hood performance before use. Keep the hood closed except when adjustments within the hood are being made.
34. Be alert to unsafe conditions and see that they are corrected when detected.
35. Dispose of waste in appropriately labeled receptacles.
36. Avoid working alone. Do not work alone if procedures are hazardous.
37. Chemical containers must be labeled giving the full chemical noun name; abbreviations are not to be used. The label must also indicate the appropriate hazard warnings.

38. Flammable liquids limited to 10 gallons of Class I and Class II, may be stored outside of safety cans or flammable storage cabinets.
39. Laboratory personnel should be aware of any frayed cords. If frayed cords are found call Maintenance at 2-4119 for replacement.
40. Laboratory personnel should be aware that all machines should have guards attached to them that protect the workers from moving parts.
41. Acids and flammables should be separated and stored in separate chemical cabinets. Acids should be stored near the floor in case of accidental spills.
42. Gas cylinders should be secured at all times in the laboratory.
43. No eating, drinking or smoking is allowed in the laboratory.
44. Flammables that are to be refrigerated must be stored in an explosion-proof refrigerator.
45. Date all peroxidable stock. These chemicals may cause either reaction or toxicity upon long-term storage to include Ethyl Ether, Picric Acid and Perchloric Acid. Peroxidable stocks should be managed and evaluated. Please label, date received and date opened. Thirty (30) days after opening call Occupational Safety and Health (2-3604) for pickup and disposal.
46. Stored materials must be no closer than 18" to the ceiling. This permits sprinklers to function properly and fire fighters to direct streams of water in the most effective manner.
47. In accordance with EPA regulations, a hazardous waste label must be placed on a container, which contains hazardous waste. A hazardous waste label must state that the chemical is a hazardous waste, the name of the chemical, quantity, the percentage of the chemical if it is a mixture, the building, room number, department, researcher, phone number.
48. Each laboratory should maintain a current chemical inventory list of chemicals used in the lab, per OSHA's Hazard Communication Standard.

When working with allergens, such as drazomethand, isocyanates or bichromates, suitable gloves should be worn to prevent hand contact with allergens or substances of unknown allergenic activity. When working with embryotoxins such as ethylene oxide, nitrous oxide, lead compounds or formamide, women of childbearing age

should handle these substances only in a hood, the satisfactory performance of which has been confirmed. Additionally, appropriate protective clothing including gloves should be worn to prevent skin contact. Each use of either allergens or embryotoxins should be reviewed with the research supervisor while continuing uses should be reviewed annually or whenever a procedural change is made. These substances, properly labeled, should be stored in an adequately ventilated area in an unbreakable secondary container. Supervisors and Occupational Safety and Health must be notified of all exposure due to spills. The exposed employees are to report to Employee Health Services for medical attention.

When working with chemicals of moderate, chronic or high acute toxicity, such as diisoprophylflourophosphate, hydrofluoric acid or hydrogen cyanide, the aim should be to minimize exposure to the substance by using all reasonable precautions. The substances should be stored only in areas of restricted access marked with special warning signs. Always use a hood previously evaluated with a face velocity of at least 100 feet per minute. When the procedure may result in the generation of aerosols or vapors containing the substance, released vapors should be trapped to prevent their discharge from the hood exhaust. Always avoid skin contact by the use of gloves, long-sleeved apparel and wearing additional protective apparel as appropriate. Hands and arms should be washed immediately after working with these materials. Records must be maintained recording the amounts of these materials on hand, amounts used and the names of workers involved in the procedure. It is imperative that laboratory workers be prepared for accidents and spills. At least two people should be present at all times if a compound in use is highly toxic or of unknown toxicity. Breakable containers should be stored in chemically resistant trays and related apparatus should be mounted above chemically resistant trays. If trays are unavailable, work and storage surfaces should be covered with absorbent, plastic-backed paper. If a major spill occurs outside the hood, the area should be evacuated and Occupational Safety and Health notified so that the emergency response team, wearing suitable protective apparel and equipment, may conduct the cleanup.

When working with chemicals of high chronic toxicity, such as dimethylmercury, nickel carbonyl, benzo-a-pyrene, nitrosodiethylamine and other human carcinogens or substances with high carcinogenic potency in animals, the same procedures used for chemicals of moderate, chronic or high acute toxicity should be followed. Additionally, all transfers and work with these substances should be conducted in a controlled area, such as a

restricted access hood, a glove box or a portion of the laboratory designed for use of highly toxic substances and where all people with access are aware of the substances being used and the necessary precautions to be taken. Plans for use and disposal of these materials should be prepared and approved by the laboratory supervisor. Vacuum pumps should be protected against contamination by scrubbers or high efficiency particulate air (HEPA) filters and vented into hoods. Vacuum pumps or other contaminated equipment, including glassware, should be decontaminated in the hood before removing them from the controlled area. The controlled area should be decontaminated before normal work is resumed there. On leaving a controlled area, remove any protective apparel by placing it in an appropriate labeled container and thoroughly wash hands, forearms, face, and neck. A wet mop or vacuum cleaner equipped with a HEPA filter should be used for housekeeping instead of dry sweeping if the toxic substance is a dry powder. Laboratory workers using toxicologically significant quantities of such a substance as frequently as three times a week should consult Employee Health Services concerning the desirability of regular medical surveillance. It is mandatory that accurate records of amounts of these substances stored, used, the date of use and the names of users be maintained. The controlled area must be conspicuously marked with warning and restricted access signs and all containers of these substances are appropriately labeled with identity and hazard warnings. In the event of spills, Occupational Safety and Health should be notified so that the emergency response team may conduct the cleanup. Containers of these chemicals should be stored only in ventilated, limited access areas in appropriately labeled, unbreakable and chemically resistant secondary containers. When using glove boxes, a negative pressure glove box requires a ventilation rate of at least 0.5 inches of water. A positive pressure glove box should be checked thoroughly for leaks before use. In either case, the exit gases should be trapped, filtered through a HEPA filter, and then released into the hood.

When animal work involving the use of chemicals of high chronic toxicity is performed, special facilities with restricted access are preferable, especially when large-scale studies are performed. When possible, toxic substances should be administered by injection or gavage instead of in the diet. If administration is in the diet, a caging system under negative pressure or under laminar airflow directed toward HEPA filters should be used. Devise procedures, which minimize formation and disposal of contaminated aerosols, including those from food, urine and feces. Use HEPA-filtered vacuum equipment for cleaning moistened contaminated bedding before

removal from the cage. Mix diets in closed containers in a hood. When working in the animal room, wear plastic or rubber gloves, fully buttoned laboratory coat or jumpsuit, and if needed, because of incomplete suppression of aerosols, other apparel and equipment such as shoe coverings, head coverings, eye covering, and respirator. Dispose of contaminated animal tissues and excreta as biological infectious waste in accordance with established Medical University procedures.

SAFETY RECOMMENDATIONS

Many major categories of safety hazards have implications for chemical hygiene. These include, but are not limited to, corrosive agents, electrically-powered laboratory apparatus, fires and explosions, low temperatures, and pressurized and vacuum operations. The general duty clause of the OSHA Act states that "Each employer shall furnish to each of his employees employment, and a place of employment, which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees." The president of the University, head of departments, chemical hygiene officers, laboratory supervisors, and laboratory workers must, necessarily, be ever mindful of this charge.

MATERIAL SAFETY DATA SHEETS

In addition to the material safety data sheets available in the work areas, departments may view material safety data sheets by accessing the Medical University's main frame computer. By clicking on Netscape, click on Administration, click on Risk Management/OSHA, click on Material Safety Data Sheets. Additionally, Occupational Safety and Health maintains a file of material safety data sheets and will provide copies on request. Emergency copies are available twenty-four hours a day by calling the Engineering and Facilities Management Service Call Desk (2-4119) and requesting a printout. The printout can then be picked up at the Energy Management/Service Call Desk in 2nd floor Rutledge Tower. Any questions concerning interpretation of information contained on a material safety data sheet should be directed to the Division of Occupational Safety and Health at 908 Harborview Towers (2-3604).

MATERIAL SAFETY DATA SHEETS (MSDS's)

1. Bear common and chemical names in English as referenced on the label.

2. Are required for hazardous ingredients of chemical mixtures if an ingredient comprises more than 1% of total or .1% of total if ingredient is a carcinogen. (However, one MSDS for similar mixtures with essentially the same hazards and contents is permissible.);
3. Describe physical and chemical properties with applicable permission exposure levels and threshold limit values.
4. Describe physical and known acute and chronic health effects, including signs and symptoms of exposure and medical conditions aggravated by the chemical;
5. List physical hazards such as potential for fire or explosion.
6. Describe generally accepted precautions and control measures and first aid procedures.
7. Bear date of preparation and of any updates.
8. Bear name, address, and phone number of manufacturer, and
9. Must be available to employees, their designated representatives, OSHA, and NIOSH.

29 CFR 1910.132

PERSONAL PROTECTIVE EQUIPMENT (PPE) STANDARD

A HAZARD ASSESSMENT

The following tasks in _____ have been identified as hazardous and require the use of personal protective equipment.

1. TASK: Handling, processing or testing blood, body fluids, tissue or other potentially infectious materials.

- PPE:
- a. Impervious laboratory coat
 - b. Gloves
 - c. Full face protection*

***NOTE:** Tasks that require full-face protection are listed in the Bloodborne Pathogen Policy section of the Departmental Safety Manual beginning on page 3.

2. TASK: Repairing or performing maintenance on any laboratory instrumentation that comes in contact with potentially infectious material.

- PPE:
- a. Impervious laboratory coat
 - d. Gloves
 - e. Full face protection*

***NOTE:** Tasks that require full-face protection are listed in the Bloodborne Pathogen Policy section of the Departmental Safety Manual beginning on page 3.

3. TASK: Performing venipuncture or vascular access procedures.

- PPE:
- a. Impervious laboratory coat
 - b. Gloves

4. TASK: Performing venipuncture, vascular access procedures or autopsies on known TB patients. Working in the AFB laboratory handling centrifuged specimens, wet smears and cultures.

- PPE:
- a. Impervious laboratory coat
 - b. Gloves
 - c. TB mask

5. TASK: Working with hazardous chemicals.

- PPE:
- a. impervious laboratory coat
 - b. Nitrile gloves
 - c. Eye protection

6. TASK: Performing frozen sections.
- PPE:
- a. Nitrile gloves
 - b. Cut-resistant gloves (worn under the Nitrile gloves)
 - c. Disposable laboratory coat
7. TASK: Decontamination of the cryostat.
- PPE:
- a. Nitrile gloves
 - b. Cut-resistant gloves (worn under the Nitrile gloves)
 - c. Disposable laboratory coat
 - d. Full face protection

B TRAINING

I have received instruction in the following elements of the Personal Protective Equipment Standard:

- 1. When PPE is necessary.
- 2. What PPE is necessary.
- 3. How to properly put on, take off, adjust and wear PPE.
- 4. Limitations of PPE.
- 5. The proper care, maintenance, useful life and disposal of the PPE.

C. ATTESTATION STATEMENT

I have been trained and understand the OSHA Personal Protective Equipment Standard.
I also understand that I must not use defective or damaged PPE.

 Employee Signature

 Social Security Number

 Laboratory Section

 Date

MUSC OCCUPATIONAL SAFETY AND HEALTH PROGRAMS TRANSPORTATION OF LABORATORY EQUIPMENT

Purpose:

All laboratory equipment must be free of hazardous materials (i.e., biological, chemical, radiological) prior to transport to MUSC Surplus or other destinations. Appropriate removal of hazardous materials will protect both the movers and those receiving the items.

Laboratory equipment that needs an evaluation prior to transport includes, but is not limited to the following: refrigerators, freezers, centrifuges, incubators, chemical fume hoods, biological safety cabinets and other items potentially contaminated with hazardous materials.

Procedure:

It is the responsibility of the equipment owner to remove all known hazardous materials and to decontaminate the equipment with a 10% solution of bleach.

Once the equipment owner has deemed the item “safe” for transport, they must affix this signed document to the equipment. Occupational Safety and Health Programs must be notified at 2-3604 for signature and to verify decontamination has been completed. Not all items from the laboratory will need a hazard assessment, such as computers, chairs, bookshelves, etc. However, if the movers are concerned for any reason about an item which does not include this signed document, they may request one prior to transport.

**

Equipment Owner Declaration:

I have removed all known hazardous materials from this equipment. This includes surface decontamination (if applicable). To the best of my knowledge, this item is safe to transport and does not pose a hazardous materials risk to the movers or surplus personnel.

Print Name

Signature

Department

Phone

Date

Occupational Safety & Health Rep.

Exit Inspection for MUSC Laboratories

This inspection is to be carried out by the lab manager after the researcher has completed research and before the advisor signs the thesis or leave-of-absence form. In the case of Post Doctoral Associates, Visiting Scholars, and undergraduate researchers the inspection is to be completed at least one week before the end of their use of the laboratory facilities. It is the responsibility of researchers who use the laboratory facility and their faculty advisors to notify the lab manager when they will no longer be using the laboratory. If a fume hood is in the laboratory "A No Perchloric Acid Use Memo" should be written for file. Radiation Safety should be notified to wipe and clean the hood of radioisotopes if radioactive materials was used in the hood.

Work Spaces Assigned to the Researcher

Building: _____ Room: _____ Bench: _____

- Chemical in original containers returned to chemical storage or properly disposed.
- Chemicals in secondary containers disposed of in an approved manner or passed on to a peer who is willing to assume responsibility for the chemicals.

Peer Name: _____ Signature: _____

- All experimental apparatus must be disassembled and returned to storage or discarded. In certain instances a fellow researcher or a faculty advisor may assume responsibility for experimental apparatus. If this is the case the person assuming responsibility for the apparatus must sign the form.

Name: _____ Signature: _____

- All glassware and plastic ware: labels removed, washed, and returned to storage.
- Drawers and cabinet's neat, clean and organized.
- Bench top completely empty and wiped down.
- Personal belongings removed from laboratory.

Instruments and common areas used by the researcher

(Fume hoods, laminar flow hoods, constant temperature rooms, ovens, and instruments)

Room	Instrument or Common Area	Area Clean and Neat (check)	Reagents Disposed or Passed on to a peer (peer signs below)

Exit Signatures

The laboratory manager will tour the laboratory with the researcher and will note which areas of the lab were inspected and confirm that they met expectations by signing the form. A senior member of the research group or a peer who works in the laboratory must also sign the release form confirming that the areas of the laboratory used by the researcher are ready for use by others.

Exiting Researcher	Laboratory Manager	Research Group Member

Please sign below

Exiting Researcher: _____ Date: _____

Laboratory Manager: _____ Date: _____

Research Group Member: _____ Date: _____

Copy: Department Chairman