EAST TENNESSEE STATE UNIVERSITY

Facilities Management

Policy Number: 700.34
Title: Lab Inspection Policy
Implementation Date: July 10th, 2017
Audited: February 28th, 2019
Revised: March 7th, 2019

Introduction

East Tennessee State University is committed to creating and maintaining a safe laboratory environment for faculty, students, staff and visitors. Each individual involved with laboratories has a role to play in creating and maintaining a strong culture of safety. To this end, the university has created a laboratory safety policy, the goal of which is to enhance laboratory safety in order to minimize the risk of death, injury, illness or property damage in the laboratory environment.

To accomplish this goal, the university will endeavor to provide the facilities, equipment, training and support necessary to maintain safe laboratories and will strive for regular improvements in its programs.

Scope

People who work in scientific laboratories are exposed to many potential hazards. Laboratories involve a greater variety of possible hazards than do most workplaces, and some of those hazards call for precautions not ordinarily encountered elsewhere. Therefore, this program informs and guides the laboratory worker in safe practices which will help to avoid injury while complying with all applicable regulations.

Definitions

Biohazard: Biological substances, such as blood or other potentially infectious material, that pose a threat to the health of living organisms, primarily that of humans.

Chemical Hygiene Plan: A written program which sets forth policy and procedures capable of protecting employees from the health hazards associated with their work place.

Chemical Fume Hood: The fume hood is often the primary control device for protecting laboratory workers when working with flammable and/or toxic chemicals.

Compressed gas: A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70 degrees F, or a gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130 degrees F regardless of the pressure at 70 degrees F, or a liquid have a vapor pressure exceeding 40 psi at 100 degrees F as determined by ASTM D-323-72.

Employee: An individual employed in a laboratory who may be exposed to hazardous chemicals in the course of their employment.

Environmental Protection Agency (EPA): An agency of the Federal Government of the U.S. which was created for the purpose of protecting human health and the environment by writing and enforcing regulations based on laws passes by Congress.

Hazardous Chemical: A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employee. This includes chemicals with are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic (blood-forming) systems, and agents which can damage the lungs, skin, eyes or mucous membranes.

Hazard Communication: OSHA's Hazard Communication Standard (HCS) is designed to ensure that information about chemical hazards and associated protective measures is disseminated.

Hazardous Waste: Hazardous waste is a waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment.

Laboratory: A facility or individual room where the "laboratory use" of hazardous chemicals occurs.

Occupational Safety and Health Administration (OSHA): The Occupational Safety and Health Administration, more commonly known by its acronym OSHA, is responsible for protecting worker health and safety in the United States.

Personal Protective Equipment (PPE): PPE refers to protective clothing, gloves, goggles, or other equipment designed to protect the wearer's body from injury or infection.

Purpose

This program will supplement other federal and state mandated policies already in place, i.e., ETSU Bloodborne Pathogen Policy, Hazard Communication Policy, etc. East Tennessee State University will keep exposures to hazardous chemicals in laboratories at the lowest practical levels and below the Permissible Exposure Limits (29 CFR 1910.1000, Subpart Z) established by the Occupational Safety and Health Administration (OSHA) and the Tennessee Occupational Safety and Health Administration (TOSHA). The control of laboratory exposures to hazardous chemicals will be accomplished by implementing the ETSU Chemical Hygiene Plan which provides work practices, procedures, and policies that provide a safe and healthy environment. The OSHA Laboratory Standard (29 CFR 1910.1450) was established to protect laboratory workers from harmful exposures to hazardous chemicals. All laboratories in which chemicals are used are covered by this Standard. One element of ETSU's compliance program is an annual inspection of all laboratories on the ETSU, VA and Kingsport campuses. The following program will help to identify and control chemical hazards as well as electrical, fire, and other general safety hazards.

Responsibilities

The Office of Environmental Health & Safety will be responsible for:

- Scheduling and conducting of all ETSU main campus and College of Medicine laboratory inspections.
- Guidance to departments of applicable local, state, and federal regulations
- Providing guidance on personal protective equipment (PPE); e.g. nitrile gloves, coveralls, goggles, etc.
- Ensuring chemical fume hoods are within compliance and inspected annually.
- Updating laboratory signage as needed.
- Providing guidance on how to correct any laboratory violations.
- Provide a final report regarding the annual lab safety inspection to the OSHA coordinator and department chair.
- Follow-up on deficiencies to verify corrective actions.
- Provide compliance assistance.

Laboratory Personnel will be responsible for:

- Performing periodic safety inspections verifying compliance with attached Lab Safety Inspection Form (Appendix I).
- Correct deficiencies reported on the annual inspection laboratory report.
- Comply with ETSU policies and programs to ensure compliance with applicable regulations.

Procedures

To ensure laboratory compliance:

1. EH&S will send a memorandum to department chairs and deans, including the Laboratory Safety Inspection Checklist, notifying them of the need to conduct annual laboratory inspections.
2. EH&S will contact the OSHA coordinator of the applicable department to schedule the laboratory inspections.
3. EH&S will inspect the department's Chemical Hygiene Plan (CHP) as well as each individual laboratory CHP. The ETSU CHP is available on the EHS website and can be used as a template.
4. EH&S will inspect the laboratory using the attached Laboratory Safety Inspection Checklist, but may reference any applicable code or regulatory requirement.
5. Safety training is necessary and can or will be investigated during the inspection. Training for applicable departments are available on the EH&S website at https://www.etsu.edu/facilities/healthsafety/.
6. Lab personnel must wear personal protective equipment (PPE) when working with chemicals. To ensure the use of the correct PPE, please review the appropriate Safety Data Sheets, which can be found at https://www.etsu.edu/facilities/healthsafety/.
7. EH&S will ensure that all hazardous waste is properly labeled and capped.
8. If hazardous waste needs to be picked up, a hazardous waste form needs to be filled out. The form can be found at https://www.etsu.edu/facilities/healthsafety/.
9. Disposing of biological materials and infected PPE must be disposed of in a Biohazard box and not placed in the regular trash. Little to no liquid waste should be placed into the biohazard waste stream.
10. Disposal of broken glass must be placed in the proper box to ensure the construction cannot be penetrated. Please follow the guidelines established in the Laboratory Broken Glass Policy that can be found at https://www.etsu.edu/facilities/healthsafety/.
11. All radiological material needs to be secured when not in use. The Radiation Safety Officer (RSO) can be contacted at 439-6056.
12. If radiological waste needs to be picked up, a radioactive materials waste pickup form must be generated and can be found at https://www.etsu.edu/facilities/healthsafety/.
13. EH&S will ensure that all chemical fume hoods are annually inspected and working properly.
14. Compressed gases can pose a safety hazard if not properly handled and secured.
15. Laboratory signs outside of all laboratories will be inspected and need to be updated when the Principle Investigator (PI) or other emergency contacts change.
16. Maintenance issues found during the inspection will be documented and placed in the ETSU Work Order System.

17. Upon completion of the laboratory inspection, EH&S will issue a report of the findings to the Department Chair and the OSHA coordinator.

Contact Persons

Associate Vice President
Executive Director of Facilities Management
Director of Environmental Health & Safety
Environmental Compliance Manager
Health and Safety Specialist

Approved by: _____
William Brady Rasnick, Jr., Associate Vice President, Facilities Management

Date approved: _____

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APPENDIX I

LAB SAFETY INSPECTION FORM

	I Working Areas	Y/ N
1	Adequate lighting in the work area?	
2	Laboratory work areas reasonably clean and tidy?	
3	Ladders and step-stools in good condition and used in the manner for which they were designed?	
4	Two and four-wheeled carts and hand trucks in good condition?	
5	List of emergency numbers are clearly displayed?	
6	No foods, beverages, tobacco, or cosmetics in laboratory?	
7	Eating, drinking, use of tobacco, and use of cosmetics prohibited in the laboratory?	
8	No chipped or broken glassware in use?	
	II Means of Egress	
1	All non-exit doors and passages which could be mistaken for an exit marked as such?	
2	All exits clearly designated?	
3	All exits unobstructed?	
4	All exit signs illuminated? (They must be illuminated by general room lighting or internal lighting.)	
5	All fire doors unobstructed and free of locks and devices that could prevent free egress?	
6	Designated fire doors closed and operable?	
7	All fire doors side hinged and swing in the direction of the escape?	
8	Floors free from litter and obstructions?	
9	Floors clean and dry?	

10	Floors free from protrusions and large holes?	
11	Drainage provided for continuously wet floors?	
12	Mats and carpeting in good condition?	
13	Aisles and passageways well lit?	
14	Aisles and passageways kept clear to provide safe movement of materials handling equipment or employees?	
15	No loose or protruding shelving or edging that could cause a safety problem?	
16	Covers or guard rails provided for open pits, vats, etc.?	
17	Guard rails provided for platforms greater than 4 feet above the adjacent floor?	
	III Materials Handling and Storage	
1	Area free of the accumulation of materials that could cause tripping, fires, explosions, or pest harboring?	
2	Sprinklers clear of stored materials (18 inch clearance)?	
3	NFPA 704 labeling appears on doors and cabinets?	
4	Materials stored to prevent sliding, falling, or collapse?	
5	Storage shelving secure, in good condition, and not over-loaded or crowded?	
6	Storage shelving provided with a lip on forward edge?	
7	Hazardous chemicals not stored on floor?	
8	Sufficient waste containers provided?	
9	A closable metal container provided for oily rags (if necessary)?	
10	Reagents used at the bench properly labeled to prevent accidental use of the wrong reagent or wash bottle?	
11	Containers labeled with the identity of contents and general hazard(s) of contents?	
12	Containers properly capped or sealed?	
13	Proper containers for broken glassware (glass not in regular trash container)?	

14	Flammable liquids in quantities greater than one liter stored in safety cans designed for flammable liquid storage?	
15	Flammable and combustible liquids stored in containers labeled as such?	
16	Flammable and combustible liquids stored in approved cabinets marked "Flammable"?	
17	Cabinets properly ventilated?	
18	If flammable liquids are used in large volumes, is the mechanical ventilation adequate to remove vapors before they reach hazardous concentrations?	
19	Stored combustibles and flammables separated from any heat source by at least 20 feet?	
20	Areas where flammables are used or stored designated "NO SMOKING - NO OPEN FLAMES"?	
21	Metal drums used for storage and dispensing of flammable liquids properly grounded?	
22	Materials stored only with other compatible materials? (e.g., solvents, acids, bases, reactives, oxidizers, and toxins stored separately)	
23	MSDS binder available and complete? Go to EH&S website: http://hq.msdsonline.com/etsu2385/Search/Default.aspx	
24	ETSU Chemical Hygiene Plan available? Go to EH&S website: https://www.etsu.edu/facilities/healthsafety/documents/policy-700.11.pdf	
25	ETSU Hazardous Chemical Right To Know Program available? Go to EH&S website: https://www.etsu.edu/facilities/healthsafety/documents/policy-700.13-hazard-communication-ghs.pdf.	
	IV Compressed Gases	
1	Each compressed gas cylinder marked with the identity of its contents?	
2	Compressed gas cylinders inspected visually for safe operating condition?	
3	Gas cylinders secured so they will not tip over or fall?	

4	Valve caps in place on all gas cylinders that are not in use?	
5	All gas lines leading from compressed gas supplies labeled as to identity of gas?	
6	Gas cylinder storage areas properly ventilated?	
7	Areas where flammable compressed gases are stored posted "NO SMOKING - NO OPEN FLAMES"?	
8	Oxygen cylinders not stored in the same vicinity of greasy or oily rags?	
	V Electrical	
1	All electrical equipment properly grounded? (Double insulated tools are exempt.)	
2	All electrical equipment U.L. listed and/or F.M. approved?	
3	Breaker boxes that may need maintenance while live have a minimum of 30" width clearance in front of them?	
4	All circuit breakers and fused circuits labeled to indicate whether they are in the open (off) or closed (on) position?	
5	All electrically live parts guarded? Electrical boxes and panels covered with face-plates to prevent exposure to live wires?	
6	Tool, appliance, instrument, and extension cords in good repair?	
7	Has permanent wiring been installed to alleviate the use of extension cords?	
8	Electrical cords or other lines not suspended unsupported across rooms or passageways?	
9	Cords not routed over metal objects?	
10	Cords not run through holes in walls or ceilings or through doorways or windows?	
11	Cords not placed under carpet, rugs, or heavy objects?	
12	Cords not placed in pathways or other areas where repeated abuse can cause deterioration of insulation?	
13	Octopus (multi-outlet) plugs not used? Approved multiple outlets with circuit breakers used instead?	

	VI General Safety Equipment	
1	Fire extinguishers located where flammable or combustible liquids are used?	
2	A fire extinguisher located between 10 feet and 25 feet of a door opening to rooms used for storage?	
3	Other extinguishers ready and accessible?	
4	Extinguishers mounted so that the top is not more than 5 feet above the floor, and not more than 3 feet if it weighs more than 40 lbs?	
5	Extinguishers suitable for the class of fire anticipated in each area?	
6	Extinguishers inspected and labeled as inspected on a yearly basis?	
7	Employees instructed in the proper use of fire extinguishers on an annual basis?	
8	Fire alarm boxes readily accessible and within normal path distance of 200 feet.	
9	Fire alarm system tested on an annual basis?	
10	Eyewash and safety showers installed within 25 feet of laboratory work areas where corrosive chemicals are used?	
11	Safety showers and eyewash fountains easily accessible?	
12	Employees familiar with operation of safety showers and eyewash fountains?	
13	Safety showers and eyewash fountains tested and documented on inspection log?	
14	First aid kits available, in good condition, in date, and plainly marked?	
15	Explosion-proof refrigerators not used for storage of food?	
16	Fume hoods in proper operating condition?	
17	Function of fume hoods periodically checked and results recorded and posted?	

18	Equipment properly placed in fume hoods? (i.e., nothing within 6 inches of sash and all instruments elevated a minimum of 2 inches from hood floor.)	
19	Fume hoods not used for storage?	
	VII Personal Protection	
1	Eye protection provided and used by all personnel when in the laboratory area?	
2	Eye protection provided for all guests that enter the laboratory?	
3	Proper laboratory clothing provided and used by all personnel when in the laboratory area?	
4	Laboratory clothing clean and in good repair?	
5	Gloves provided and used when needed?	
6	Proper gloves provided for each different solvent type? Go to website: http://www.ansellpro.com/download/Ansell_7thEditionChemicalResistanceGuide.pdf	
7	Employees who are required to wear steel/composite toe shoes comply?	
8	Area provided outside the laboratory for eating and drinking; lab coats and protective clothing prohibited in this area?	
9	Change rooms provided for each sex where it is necessary to change clothes?	
10	Change rooms provided with separate storage facilities for street clothes and protective clothing?	
11	Personal hygiene facilities provided and kept in sanitary condition?	
	VIII Biohazards	
1	ETSU Bloodborne Pathogen Exposure Control Plan available? Go to EH&S website: https://www.etsu.edu/facilities/documents/policy-700.2.pdf	

2	Staff with potential exposure to infectious material “Bloodborne Pathogen” trained?	
3	Appropriate labels on containers, refrigerators and freezers?	
4	Proper sharps containers used?	
5	Proper housekeeping procedures used (e.g. use mechanical devices to clean up broken glass)?	
6	Properly wear all PPE required by the degree of potential exposure?	
	IX Training	
1	Departmental representative has been provided training on ETSU’s “Hazardous Chemical Right To Know Program” and “Chemical Hygiene Plan” and is training all lab personnel within the department? Go to EH&S website: https://etsu.nexustrainer.com/	
2	Annual Bloodborne Pathogen training completed by all applicable personnel? Go to EH&S website: https://etsu.nexustrainer.com/training	
	X Other	
1	Noise levels checked and protection provided when needed?	

COMMENTS: