

# EAST TENNESSEE STATE UNIVERSITY LABORATORY/CLINIC

## SAFETY INSPECTION PROGRAM

**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.

**Purpose:** This program will supplement other federal and state mandated programs already in place, i.e., ETSU Bloodborne Pathogen Program, HAZCOM Program, 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:**

#### **Health & Safety Specialist:**

- Conduct an annual inspection (Appendix 1) of all ETSU and College of Medicine laboratories.
- Follow-up on deficiencies to verify corrective actions.
- Provide compliance assistance.

#### **Laboratory Personnel:**

- Perform periodic safety inspections verifying compliance with Appendix 1.
- Correct deficiencies reported on lab's annual inspection (Appendix 1).
- Comply with ETSU policies and programs to ensure compliance with applicable regulations.

## APPENDIX I

### LAB SAFETY INSPECTION

<b>I Working Areas</b>		<b>Y/N</b>
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?	
<b>II Means of Egress</b>		<b>Y/N</b>
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?	
<b>III Materials Handling and Storage</b>		<b>Y/N</b>
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: <a href="http://hq.msdsonline.com/etsu2385/Search/Default.aspx">http://hq.msdsonline.com/etsu2385/Search/Default.aspx</a>	
24	ETSU Chemical Hygiene Plan available?  Go to EH&S website: <a href="http://healthsafety.etsu.edu/docs/lab/Chemical_Hygiene_Plan.pdf">http://healthsafety.etsu.edu/docs/lab/Chemical_Hygiene_Plan.pdf</a>	
25	ETSU Hazardous Chemical Right To Know Program available?  Go to EH&S website: <a href="http://healthsafety.etsu.edu/docs/lab/HazCom.pdf">http://healthsafety.etsu.edu/docs/lab/HazCom.pdf</a>	
<b>IV Compressed Gases</b>		<b>Y/N</b>
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?	
<b>V Electrical</b>		<b>Y/N</b>
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?	
<b>VI General Safety Equipment</b>		<b>Y/N</b>
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 accessibly 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?	
20	Is the framing, gaskets, seals and fasteners of all chemical hood sashes in good working condition?	
<b>VII Personal Protection</b>		<b>Y/N</b>
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: <a href="http://www.ansellpro.com/download/Ansell_7thEditionChemicalResistanceGuide.pdf">http://www.ansellpro.com/download/Ansell_7thEditionChemicalResistanceGuide.pdf</a>	
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?	

<b>VIII Biohazards</b>		<b>Y/N</b>
1	ETSU Bloodborne Pathogen Exposure Control Plan available?  Go to EH&S website: <a href="http://healthsafety.etsu.edu/safety/biosafety">http://healthsafety.etsu.edu/safety/biosafety</a>	
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?	
<b>IX Training for ETSU Personnel</b>		<b>Y/N</b>
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: <a href="https://healthsafety.etsu.edu/training">https://healthsafety.etsu.edu/training</a>	
2	Annual Bloodborne Pathogen training completed by all applicable personnel?  Go to EH&S website: <a href="https://healthsafety.etsu.edu/training">https://healthsafety.etsu.edu/training</a>	
<b>X Clinical/Medical</b>		<b>Y/N</b>
1	Eyewash stations available, unobstructed and checked monthly?	
2	Sharps containers immediately available, marked with biohazard symbol and red?	
3	Fire extinguishers accessible, checked monthly and serviced annually?	
4	Gas cylinders secured properly?	
5	Hazardous chemicals in appropriate leak proof secondary containment?	
6	Hazardous chemicals below eye level when placed on open shelves?	
7	Minimum 18” clearance maintained below ceiling/sprinkler heads?	



8	Appropriate hazard warnings and signage displayed (refrigerators, freezers, centrifuges, eyewashes, infectious waste containers, sharps containers, storage areas, emergency contact signage, chemical containers, etc)?	
9	Refrigerators and freezers labeled "No Food or Drink Allowed" or "Food and Drink Only"?	
10	Biohazard waste marked with biohazard symbol and lined with red liner?	
11	Clean and dirty areas clearly labeled. No patient samples or dirty instruments may be within clean areas.	
12	Clinical Safety Plan available?	
13	Bloodborne Pathogen Exposure Control Plan available, current and reviewed within the last year? Training completed by all applicable personnel?	
14	Tuberculosis Exposure Control Plan available?	
15	Crash carts locked and checked weekly (contain medications, pediatric supplies)?	
16	Good housekeeping practices observed in all areas?	
17	Medication cabinet and/or room locked?	
18	Protective clothing worn by staff? Lab coats, gowns and/or scrubs recommended while working in clinical setting. Open toed foot wear, skirts and shorts are not allowed.	
19	Eye protection worn/available as needed? Shields and goggles available as needed?	
20	Low protein, non-powdered latex gloves available to staff? Approved alternative to latex gloves available?	
21	Respiratory protection available to staff if needed?	
22	Hand washing soap, paper towels, alcohol foam and/or approved hand sanitizer available?	
23	No expired supplies and medications? Should be checked on regular basis.	
24	Proper separation of infectious and regular waste observed?	

25	Soiled linens stored in covered hamper or closed linen bag?	
26	Any mercury containing devices available? Should be replaced if found.	
27	Autoclaves tested daily (if in use) using a biological indicator and documented? Verifies that all conditions necessary for sterilization have been met.	
28	EPA approved disinfectant used in clinic?	
29	Is radiation present? If so, are all radiation requirements being met (training, recordkeeping, badges, signage, etc)?	
30	Floors/aisles free of all trip hazards and well maintained?	
31	Stairwells, exit doors, and emergency egresses accessible as well as free of obstructions?	
32	Patient shielding devices available (lead aprons, gloves)? Are they properly hung to prevent cracking?	
33	Have employees been trained in Standard Precautions/Universal Precautions?	
34	Employees refrain from eating, drinking, smoking, applying cosmetics and lip balm in work areas?	
35	Have employees received fire extinguisher training; know how to respond to a fire drill and where to assemble outside the building?	
36	Personnel have been provided training on Hazardous Chemical Right to Know Program and the clinics Chemical Hygiene Plan?	
<b>XI Sharps/Needlestick Safety &amp; Prevention</b>		<b>Y/N</b>
1	Are safety syringes/needles being used for skin injection?	
2	Are all unnecessary needles eliminated from use?	
3	Are automatically retracting finger/heel stick lancets used?	
4	Sharps containers are readily accessible to all work areas.	
5	Sharps containers are closable, puncture resistant, properly labeled, color coded and leak proof.	

6	Are safety IV catheters being used?	
7	Are needleless or recessed needle IV systems being used?	
8	Are scalpel blades with safety features used?	
9	Are safety devices evaluated annually?	
<b>XII Hepatitis B Vaccine</b>		<b>Y/N</b>
1	Each employee receives information about the efficiency, safety and method of administration of HB vaccine.	
2	HB vaccine is made available to all employees who have occupational exposure to blood or OPIM within 10 working days of assignment.	
3	Vaccine is offered at no cost to the employee.	
4	Employees must sign an OSHA approved Declaration Form if they choose not to be vaccinated.	
5	Employees understand they may request vaccination later, if declined originally.	
<b>XIII Post Exposure Evaluation</b>		<b>Y/N</b>
1	Procedures are in place and available to all employees who have had an exposure incident.	
2	Laboratory tests for follow up are performed at an accredited lab.	
3	Treatment and post-exposure follow up are provided at no cost to the employee.	
4	Post-exposure procedures include a confidential medical evaluation.	
5	Post-exposure documentation includes the circumstances and method(s) of exposure.	
6	Appropriate consent is obtained from source individuals prior to testing.	
7	Appropriate consent is obtained from the employee prior to HIV screening.	
8	Exposure incidents are evaluated to try to prevent future exposures.	

