

Lab Safety Inspection Checklist

- [Chemical Storage](#)
- [Ignition Sources](#)
- [Chemical Waste](#)
- [Special and Biohazard Waste](#)
- [Emergency Equipment and Egress](#)
- [Emergency Preparedness](#)

Chemical Storage

1. Chemicals [segregated](#) by hazard class
 - flammables are away from oxidizers
 - acids and flammables are separated
 - bases and acids are separated
 - nitric is separated from other acids
(PP, part of Chapter 3, Section 4.E starts on p.72, pg. 104 Section 5.G.7 and NFPA 45, 7-2.3.4)
2. Chemical containers in good condition
 - unacceptable conditions include: rusty containers including cylinders, bulging containers, leaking containers, and broken caps
(OSHA 29 CFR 1910.1450, Appendix A, D, 2, (b))
3. Chemical containers properly labeled
 - primary original containers need to have label on and the label must be readable
 - lab people need to tape labels on if they are falling off or make a new label that includes chemical name, hazards, and manufacturer (if this information is known)
 - secondary containers that are used for storage e.g., squeeze bottles, need to be labeled with the contents
(OSHA 29 CFR 1910.1450, (h) (1) (i) and PP, p.71-72 and NFPA 45, 10-3.1)
4. Glass chemical containers are not stored on the floor
 - glass containers holding liquid chemicals (even water) or hazardous solid chemicals can not be stored on the floor unless they are positioned in such a way (pushed way under a table) that they can't get broken
5. Lab safe refrigerator used for cold flammable storage
 - there can be no flammables stored in a refrigerator, cooler, or cold room, that is not lab safe
(PP, p.95, Section 5.F, p. 113, Section 6.C.3 and NFPA 45, A-9-2.2.2 and [Lab Safety Manual Section E.1 \(c\)\(1\)](#))
6. Flammables storage cabinets used for flammable storage > 10 gallons
 - any amount of flammables over 10 gallons per lab has to be in a flammables storage cabinet
(PP, p.73 and NFPA 45, A-7-2.3)

7. Unstable chemicals are not past their expiration date
 - check for expiration dates of chemicals listed:
 - Dioxane
 - Ethers
 - Furans (e.g. tetrahydrofuran a.d.a. THF)
 - Picric Acid
 - Perchloric Acid
 - Sodium Amide
8. Acids stored in acid cabinet or secondary containment
 - acids must be stored in an acids cabinet *or* in a regular cabinet or shelf but in a plastic tub, with the cabinet labeled "acids"
 - nitric should be physically separated from other acids, e.g. in its own plastic tub, in a separate cabinet, or in a separate part of the acids cabinet (PP, p.53, p. 73, Section 4.E.2)
9. Gas cylinders properly secured
 - all cylinders should be secured snugly with a strap or chain that is above the middle of the cylinder (a single chain can be used to secure several cylinders as long as each cylinder is secured on at least three sides).
Exempt: lecture bottles
(PP, p.74, Section 4.E.4 and NFPA 55, 6-6 and NFPA 45, 8-2.5)
10. Gas cylinder safety caps in place
 - all cylinders without a regulator need to have a safety cap on. **Exempt:** lecture bottles
(PP, p.74, Section 4.E.4 and NFPA 55, 6-4)
11. Toxic and hazardous gas cylinders properly ventilated
 - cylinders — if on the [gas list](#) — need to be in a ventilated cabinet or enclosure that is sprinkled, if the cabinet or enclosure is present
 - small cylinders, e.g., lecture bottles — if on the list — can be stored in a fumehood or glovebox, but not more than 2 cylinders per hood
 - if a gas cylinder cabinet is not available and is needed, this is recorded on the Facility Inspection checklist
(NFPA 45, 8-2.4)
12. Fumehood sash at or below 18"
 - the sash must be pulled down approximately one foot so that the opening is no greater than 18"
[\(Chemical Fume Hood Testing Procedure\)](#)

Ignition Sources

13. Vacuum pumps and other ignition sources are segregated from flammables/combustibles
 - vacuum pumps and other significant sources of ignition, e.g., a Bunsen burner, can not be stored near flammable chemicals or combustible material like paper or cardboard
14. Electrical cords are in good condition

- all electrical cords (that can reasonably be checked) should be in good condition, i.e., the insulation should not be worn, split, or frayed; the plug should not be separated from the cord; and the cord should not be pinched in a door or in any other way

Chemical Waste

15. Less than 55 gallons of chemical waste in area
 - less than 55 gallons total for each lab, liquids and solids are both included (RCRA)
16. Chemical waste containers properly labeled
 - labeled to indicate that the material is waste and **all** the contents have to be indicated
 - using the waste tag to identify it as waste without writing the word "waste" is fine
 - the original contents label **must** be defaced or removed
 - the word "hazardous" can not be written on the label
 - a list on a clipboard can be used for indicating the contents as long as it is near the waste container and it's very clear which list goes with which container (the container itself still needs to be labeled as "waste") (OSHA 29 CFR 1910.1450 Appendix A, E, 1 (p) and PP, p.84, Section, 5.C.6 and RCRA)
17. Chemical waste containers closed
 - always kept closed if not being added to
 - no funnels allowed (unless they are actively pouring waste in) (PP, p.84, Section, 5.C.6 and RCRA)

Special and Biohazard Waste

18. Sharps containers properly used
 - sharps containers should not be more than $\frac{3}{4}$ full
 - sharps containers should not have bottles, beakers, etc. in them unless that glassware is **infectious**
 - sharps cannot be discarded anywhere other than sharps containers (TDH & TNRCC, 25 TAC and 30 TAC; OSHA 29 CFR 1910.1030 (d) (4) (iii) (A) (2) (iii))
19. Records kept for autoclaved waste
 - a log should be kept for autoclaved bio waste (recommend standard EHS log if it is not being used)
 - the log should include: date of treatment, amount of waste treated, method/conditions of treatment, name (printed) and initials of person(s) performing treatment (TDH & TNRCC, 25 TAC and 30 TAC)
20. Biohazard waste disposed of properly
 - minimum autoclave parameters are 121° C, 15 psi, and 30 minutes

- unpreserved animals must be double bagged and kept frozen until pick-up
- preserved animals must be separated from the preservative and be double bagged and kept frozen until pick-up
- bulk blood should be given to EHS for disposal
- blood contaminated non-sharp items are either autoclaved or placed into biohazard bags and given to EHS for disposal
- solid "microbiological waste" is autoclaved or chemically disinfected, labeled with an EHS "treated" label, secured in a black trash bag, and placed in the regular trash
- liquid "microbiological waste" is either autoclaved or treated with a chemical disinfectant then drain disposed
- minimum autoclave parameters are 121 degrees C, 15 psi, and 30 minutes (TDH & TNRCC, 25 TAC and 30 TAC; OSHA 29 CFR 1910.1030 (d) (4) (iii) (C))

Emergency Equipment and Egress

21. Exits and aisles clear of obstruction
 - walkways should not be cluttered — need at least 3 feet of clearance in aisles
 - up to two exits in each lab need to be free from obstructions and be usable (OSHA 29 CFR 1910.1450 Appendix A, D, 4 (d) and PP, p.83, Section 5.C.3 and NFPA 45, 3-5)
22. Emergency equipment clear of obstruction
 - emergency equipment, e.g., showers, eyewashes, spill supplies, and fire extinguishers need to be unobstructed
23. Chemical spill supplies available
 - one chemical spill kit is needed per lab group (if contiguous)
 - if work with infectious agents is conducted, then biological spill supplies are needed
(OSHA 29 CFR 1910.1450 Appendix A, E, 1 (a) and PP, p.88, Section 5.C.11.5, p.133 Section 6.F.2.1)

Emergency Preparedness

24. Eyewash has been tested within the past month
 - lab personnel must activate the eyewash and let the water run for at least 3 minutes to flush out impurities, e.g., rust and bacteria
 - report problems with the operation of the eyewash, such as low water pressure or no water at all, to the lab's Zone Maintenance Shop (call 471-7221 for your Zone Maintenance Shop phone number)
 - record the test date and initials of the person testing the eyewash on an eyewash testing tag or a logbook located near the eyewash (call EHS, 471-3511, for eyewash testing tags)
([EHS Eyewash Testing Procedures](#))

25. Lab personnel have attended HazCom training
 - all required lab personnel must have attended General Hazard Communication training (OH 101) either in lecture or online format (OSHA 29 CFR 1910.1450, (h) (1) (ii) and PP. p.31 and [Laboratory Training Guide](#))
26. Lab personnel know how to get MSDS
 - lab personnel need to know how to get MSDS; either paper copies in the lab, EHS office, or [online](#)
 - regardless of the system used, MSDS must be available at all times (OSHA 29 CFR 1910.1450, (h) (1) (ii) and PP. p.31)
27. Lab personnel have protective clothing available
 - the clothing must be available and the lab staff must have the ability to obtain additional clothing as needed
28. Lab personnel wear/use proper protective equipment (gloves, glasses, etc.) while in lab
 - if working with chemicals, at a minimum, lab staff need to be wearing eye protection, gloves, and a buttoned long lab coat if shorts are worn
 - open toed shoes, e.g., sandals, are not allowed, if working with chemicals (OSHA 29 CFR 1910.1450 Appendix A, D, 6, (a) and E, 1, (i) and (k) and PP, p.82-84, Section 5.C.2, p.131-133, Section 6.F.1 and OSHA 29 CFR 1910.132(a))