2025 Hazard Communication Checklist Change Summary

Question	Updates/Changes
Survey Question	Does the lab have any of the following chemicals? - Trichloroethylene (TCE) - Perchloroethylene (PCE) - Methylene Chloride, aka Dichloromethane (DCM)

2025 Hazard Communication Inspection Checklist

A. Administration

1. A written Hazard Communication Plan and Hazard Evaluation and Assessment Tool (HEAT) is complete and up to date annually.

Recommendations: Hazard Communication Plan (HCP) & the Hazard Evaluation and Assessment Tool (HEAT) should be completed and updated annually. Template version of the Hazard Communication Plan (HCP) can be located here: EHS Online

Reference: CFR 1910.1200 (e) and section 2, page 3 of The Ohio State University written Hazard Communication Plan

Risk Ranking 2

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2. Personnel know where their written hazard communication plan is located, have access to it, and know who their departmental hazard communication coordinator.

Recommendations: Your departmental written hazard communication plan can be kept in a common location and should list all work areas and buildings that fall under this plan. The hazard communication coordinator should be appointed by each department or college.

Reference: CFR 1910.1200 (e) (4) and section 9, page 7 of The Ohio State University written Hazard Communication Plan.

Risk Ranking 2

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3. The written hazard communication plan includes an updated hazardous chemical inventory. Each area will use EHS Assist to maintain their chemical inventory. A hard copy will be printed for each area.

Recommendations: As per the Definition of Hazardous Chemicals in the OSHA Hazard Communication Standard, all hazardous chemicals will be part of an area inventory and will be kept on EHS Assist. The inventory will be updated annually, and a printed copy will be kept in the work area. To comply with the Department of Homeland Security (DHS) reporting requirements, DHS chemicals of interest will be updated in EHS Assist within 30 days.

Reference: CFR 1910.1200 (e) (i), 6 CFR 27.210 and section 6, page 5 of The Ohio State University written Hazard Communication Plan.

Risk Ranking 3

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4. Personnel have completed hazard communication training and training has been documented.

Recommendations: Personnel may fulfill this requirement by taking the online training class located on the EHS web site www.ehs.osu.edu. Either the "Hazard Communication Standard for Laboratory Personnel" or "Lab Standard Training" program will fulfill this requirement. A certificate should be printed and kept in the work area. The online laboratory standard training will also meet the training requirement.

Reference: CFR1910.1200 (h) and section 6, page 5of The Ohio State University written Hazard Communication Plan.

Risk Ranking 5

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5. Safety Data Sheets (SDS), for all hazardous chemicals, are readily available to all employees.

Recommendations: All Safety Data Sheets (SDS) shipped with the chemicals must be kept in the work area. Other SDSs may be kept or accessed electronically (i.e., ChemWatch). Some departments may require hard copies of all safety data sheets. Check with your college or departmental safety officer.

Reference: CFR 1910.1200 (g) and section 8, page 6 of The Ohio State University written Hazard Communication Plan.

Risk Ranking 5

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6. Standard operating procedures are written and available to employees performing "non-routine" tasks for hazardous chemicals and procedures that pose potential physical hazards. These SOPs will be kept in the work area.

Recommendations: The SOP should describe the associated health and physical hazards, and the measures employees can take to protect themselves from these hazards. This will include safe work practices, emergency procedures, and the personal protective equipment needed. The employee will be trained prior to performing the task. Resources for creating a SOP can be found on our SOP page http://www.ehs.osu.edu/ResBioSafety/StandardOP.aspx

Reference: CFR 1910.1200 (e) (ii) and section 10, page 7 of The Ohio State University written Hazard Communication Plan. Ohio Fire Code 1301:7-7-27 (A) (3) (xii) 2701.3.3.1229.

Risk Ranking 4

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7. Personnel are enrolled in the Occupational Risk Assessment Tool (ORAT) and reviewed annually.

Recommendations: Personnel must complete a risk assessment using the Occupational Risk Assessment Tool (ORAT), so that medical evaluation, surveillance, and treatment, including immunizations are provided as appropriate for agents handled or potentially present in the laboratory. To

enroll, personnel need to complete an online questionnaire: http://go.osu.edu/riskassessment

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL1 A.3; BSL2 A.3, B.3: Section VII

Risk Ranking 3

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8. Acceptable responses to all items outlined during the previous year's inspection are documented in EHSA.

Recommendations: All corrective action plans have been received for deficiencies found during the previous year's inspection. Corrective action plans should be submitted using the EHS Assist (EHSA) system within 15 calendar days. The EHSA system is necessary for documenting and providing a means of communicating to the status of pending action items. Items considered to be a significant risk are required to be reviewed by the designated inspector. Once all action items have been completed the P.I. will receive an email indicating the inspection is considered closed.

Reference: OSU Chemical Hygiene Plan

Risk Ranking 3

B. Hazardous Chemical Use

1. Chemicals are secured against unauthorized access. Access to laboratory is limited or restricted at the discretion of the Principal Investigator when experiments are in progress.

Recommendations: Unoccupied labs containing hazardous materials shall be secured (locked) at all times. This includes labs beyond hallway access doors controlled by key cards / touch pads / pin number access. Alternately, locked storage cabinets for all hazardous materials in the lab are acceptable. If storage equipment (storage cabinet, refrigerator, etc.) is in common areas or hallways, lock them when unattended.

Reference: Ohio Fire Code 1301:7-7-27, section 2703.9.2; Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL1 A.1; BSL2 A.1

Risk Ranking 3

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2. Hazardous chemical containers and labels are in good condition.

Recommendations: Chemical containers cannot be damaged and must have a secure cap. Labels cannot be defaced and must be legible and secured to the container.

Reference: CFR 1910.1450 (h) (1) and CFR 1910.1200 (f) (g)

Risk Ranking 3

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3. Chemical waste is identified, labeled, segregated, stored, and disposed of properly.

- Chemical waste is capped/closed (Caps or paraffin) at all times.
- Chemical waste containers are no more than 2/3 full.
- SOP's address proper handling of waste materials.
- Waste labels shall include the contents, percentage of constituents and list all applicable hazards.
- The date of when the waste container becomes full should be included on the label/container.

Recommendations: Chemical waste shall be handled in accordance to EPA regulations and disposed of through Environmental, Health and Safety (EHS). Laboratory processes generating waste shall be identified and an evaluation of those identified materials made as to whether recycling, reuse or disposal is appropriate. A list of waste generated within the lab should be maintained and the management methods for each waste stream listed. This information can be incorporated into lab SOPs. Contact 292-1284 for additional details.

Reference: OSU Chemical Hygiene Plan, Resource Conservation and Recovery Act, Chapters 3734 and 3745 Ohio Administrative Code

Risk Ranking 3

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4. Evidence of safe handling of sharps. No evidence of needles being recapped prior to disposal in appropriate sharps disposal container.

Recommendations: Policies must be followed for the safe handling of sharps. Whenever possible, lab supervisors shall adopt improved engineering devices and work practice controls to reduce the risk of sharps injuries, including, needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand prior to disposal. Used disposable needles and syringes must immediately be placed in a puncture resistant sharps disposal container. Use of needles and syringes shall be limited to only when necessary. Non-disposable sharps must be placed in a hard walled container for transport to processing area for decontamination. Broken glass should not be handled directly, and glass Pasteur pipettes must be placed in an appropriate sharps container prior to disposal.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL1 A.12 a-d; BSL2 A.12 a-d and Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards, Updated Edition (2011). Page 58 and 111.

Risk Ranking 2

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5. All chemicals are stored safely and segregated.

Recommendations: The Ohio Fire Codes require that incompatible materials be segregated/separated by hazard class. Examples include, Oxidizers, Flammables, Corrosives, Water Reactive chemicals. Secondary containment is also recommended for chemical storage.

Reference: Ohio Fire Code 1301:7-7-27 Section 2703.9.8 and CFR 1910.1450

Risk Ranking 3

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6. All gas cylinders and dewers must be secured and removed from the means of egress.

Recommendations: Compressed gas cylinders shall be secured at all times. Use cylinder clamps or chains attached to stationary objects. Cylinder stands are also acceptable. Compressed gas cylinders not in use must be capped. Cylinders must be moved to a secure area and away from the means of egress, i.e., corridors.

Reference: CFR 1910.1450 and Ohio Fire Codes, OFC 5303.5.1

Risk Ranking 3

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7. Primary and secondary chemical containers are properly labeled with chemical name, associated hazards, target organs, route of entry, company name, address, and phone number, and required PPE. Secondary containers cannot be used in another facility.

Recommendations: Labels are not required for portable containers if they are intended only for the immediate use by the employee who performs the transfer.

Reference: Section 4.0 of The Ohio State University Hazard Communication Plan (HCP).

Risk Ranking 2

C. Facilities & Engineering Controls

1. Engineering controls (i.e., fume hoods, localized ventilation, local alarms, etc.) are available and are appropriate for the hazards found in the work area.

Recommendations: Engineering controls should be used to prevent and mitigate hazards whenever feasible. The type of controls installed should be appropriate for the work area application or process. Hazards can change with time, so it is important that engineering control systems be continually reviewed and updated, if necessary.

Reference: Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards, Updated Edition (2011). Page 14; Fundamentals of Industrial Hygiene, 4th Edition (1996). Page 29-30

Risk Ranking 5

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2. Engineering controls within the work area are appropriately maintained and functioning properly.

Recommendations: Overall maintenance of ventilation, including fume hoods, should be performed annually. Whenever a change in local ventilation device is made or repairs to fume hoods are necessary, the ventilation devices should be re-evaluated for proper function. Gas specific sensors or alarms should be tested, calibrated, and replaced per the manufacturer's recommendations. Documentation of maintenance of engineering controls should be kept within the lab and made available upon request (i.e. fume hood test sticker, alarm calibration reports, etc.).

Reference: Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards, Updated Edition (2011); Fundamentals of Industrial Hygiene, 4th Edition (1996).

Risk Ranking 5

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3. Fume hoods are used correctly.

Recommendations: When operators are away from fume hoods the sash should be closed. Sash operation should be unhindered by cords, tubing, or equipment. Fume hood baffles and slots shall be unobstructed (no more than 25% obstructed). When operators are using a hood, the sash should be positioned to shield operator.

Reference: NFPA 45 8.8.3 Fire Protection for Laboratories Using Chemicals, ANSI/AIHA Z9.5 Laboratory Ventilation, OSU Chemical Hygiene Plan.

Risk Ranking 5

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4. If applicable, house vacuum lines are protected from contamination. If glass traps are used, they are in appropriate secondary containment.

Recommendations: Vacuum lines must be protected from contamination. If working with biohazards, in-line filters and liquid disinfectant traps are required must be replaced as needed. Glass shall be placed in plastic or metal, secondary containment, large enough to contain the liquid in the trap, if it were to break.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL2 D.8; Appendix A, Figure 11; Adopted Ohio Public Employment Risk Reduction Program Standard 29 CFR 1910.1030 (OSHA Bloodborne Pathogens Standard); Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards, Updated Edition (2011). Page 174

Risk Ranking 3

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5. Eyewash and safety shower is available, unobstructed and can be reached within 10 seconds from workstations and eyewash stations need to be checked and documented on a weekly basis.

Recommendations: Safety showers and eyewashes shall be within 10 seconds of travel for immediate emergency use. Safety showers should be checked periodically by facilities to ensure proper working condition. Contact Service2Facilities if your safety shower has not been annually tested.

Reference: 29CFR 1910.1450 and OSU Chemical Hygiene Plan: ANSI Z358.1-2014; Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL1 D.2; BSL2 D.3

Risk Ranking 4

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6. Fire equipment/doors are obstructed, blocked or inoperable.

Recommendations: Access to exits, emergency equipment and utility controls shall never be blocked. **(Fire extinguishers)** The Ohio Fire Code and National Fire Protection Associations (NFPA) require that fire extinguishers shall not be blocked so that they can be accessed quickly. Therefore, nothing shall be either blocking or under your fire extinguishers. If your fire extinguishers must be relocated or needs an annual check contact the Service2Facilities.

Reference: OSU Chemical Hygiene Plan; NFPA 99; Ohio Fire Code

Risk Ranking 4

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7. Electrical connections are appropriate.

Recommendations: Electrical outlets shall not be overloaded. Extension cords shall not be used as permanent wiring. Surge protectors shall not be used with high amperage devices. Remove any outdated electrical equipment or damaged electrical cords from service. Install additional circuits or outlets if necessary. For additional information review the on-line Electrical Safety training available at http://www.ehs.osu.edu/.

Reference: NFPA 70 National Electric Code.

Risk Ranking 3

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8. Lab has appropriate lighting, and ceiling and floor tiles are in good condition.

Recommendations: The laboratory must have adequate lighting. Floor and ceiling tiles should be in good condition (no cracks, peeling, water stains, etc.).

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL1 D.7; BSL2 D.7; Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards, Updated Edition (2011). Page 27.

Risk Ranking 1

D. Housekeeping

1. First aid supplies are available, adequate, and not expired.

Recommendations: First aid kits shall be available and maintained for treatment of minor injuries or for short-term emergency treatment before getting medical assistance. Kits must conform to University's First Aid Policy or be approved by a physician licensed in Occupational Medicine.

Reference: OSU Chemical Hygiene Plan First Aid Policy and Appendix D

Risk Ranking 2

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2. No-smoking, vaping and no eating in lab policies are enforced.

Recommendations: Eating, drinking, gum chewing and cosmetic application (i.e., hand cream) is not permitted in laboratories. Food shall not be eaten in places where chemicals are being used or stored. Employee break or lunchrooms shall be identified within the department or located outside of the laboratory or work area.

Reference: Section 5.3, OSU Chemical Hygiene Plan; Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL1 A.10; BSL2 A.10

Risk Ranking 4

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3. Chemical spill supplies are available.

Recommendations: In the event of a chemical spill, supplies shall be available to control a spill of 1 gallon or less. Spill supplies needed are based on chemical hazards present in your work area. For additional information review the Chemical Spill Cleanup training found on the EHS training page www.ehs.osu.edu or contact EHS at 292-1284.

Reference: 29CFR 1910.1450 and OSU Chemical Hygiene Plan: Ohio Fire Code 1301:7-7-27 (A)(3)

Risk Ranking 3

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4. Laboratories are clean and well maintained. Work areas are appropriately cleaned /decontaminated after each use.

Recommendations: Spills are to be cleaned up immediately from work areas and floors. Any spills or accumulations of chemicals on work surfaces shall be removed daily, using techniques that minimize residual surface contamination. In a laboratory environment, benchtops must be impervious to water and resistant to chemicals.

Reference: CFR 1910.1450 and Ohio Fire Code.

Risk Ranking 2

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5. Sink, soap & paper towels must be available for hand washing. Persons must wash hands after handling hazardous materials, removing PPE, and before leaving the work area.

Recommendations: Spills are to be cleaned up immediately from work areas and floors. Any spills or accumulations of chemicals on work surfaces shall be removed daily, using techniques that minimize residual surface contamination. In a laboratory environment, benchtops must be impervious to water and resistant to chemicals.

Reference: CFR 1910.1450 and Ohio Fire Code.

Risk Ranking 2

E. Personal Protective Equipment and Life Safety Equipment

1. Appropriate Personal Protective Equipment (PPE) is provided to employees, maintained, and utilized when hazards are present. PPE (i.e., lab coats & gloves) must be removed before leaving the laboratory or work area.

Recommendations: The OSHA PPE Standard requires a hazard assessment be completed whenever PPE is necessary. Employees who are required to wear PPE are responsible for storing, maintaining and proper use. The appropriate PPE must be worn when warranted by laboratory conditions or hazards. PPE such as lab coats & gloves must be removed before leaving the laboratory or work area. When transporting hazardous materials outside the laboratory or work area personnel must utilize secondary containment. For assistance conducting a hazard assessment contact ehs@osu.edu.

Reference: OSHA Personal Protective Equipment Standard; OSU Chemical Hygiene Plan

Risk Ranking 4

F. Machinery, Equipment & Signage

1. Lab has current EHS universal room sign posted with PI name, after hours contact information and applicable hazard information.

Recommendations: The lab must have a room sign posted containing the Principal Investigator name(s), emergency contact information, laboratory hazard information, required PPE and any special entry or exit instructions. Universal room signs are provided by EHS, free of charge using EHS Online: https://ehs.osu.edu/secure/apps/

Reference: 29CFR 1910.1450 and OSU Chemical Hygiene Plan

Risk Ranking 1

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2. Emergency phone numbers and contacts are posted in the lab.

Recommendations: Post emergency phone numbers and contact information at phones.

Reference: OSU Chemical Hygiene Plan and Building Emergency Action Plan, Appendix F, page 37

Risk Ranking 1

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3. Lab Hazard Signs, including emergency evacuation routes are posted.

Recommendations: Lab Hazard Signs are required by various codes and standards. Signs are provided by numerous departments or upon request from Environmental Health & Safety. Visit EHS Online to order signage as needed.

Reference: Ohio Fire Codes; Ohio Department of Health; Occupational Safety and Health Administration; Environmental Protection Agency

Risk Ranking 1

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4. Designated areas are established for carcinogens, reproductive toxins, and highly toxic chemicals. Other hazardous chemicals are used in a safe manner and location.

Recommendations: Designated areas (signs) must be posted when working with select carcinogens, reproductive toxins or substances that have a high degree of acute toxicity. A designated area may be the entire laboratory, an area of a laboratory or a device such as a laboratory hood.

Reference: 29CFR 1910.1450(e)(3)(viii) and OSU Chemical Hygiene Plan

Risk Ranking 2

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5. Machinery and equipment are properly guarded.

Recommendations: Machine guards shall be provided and in use for mechanical equipment posing a potential hazard to those operating the equipment.

Reference: CFR 1910.219

Risk Ranking 4

G. General Biosafety

1. A risk assessment has been performed by the PI addressing the following six areas at least annually, when there has been changes to existing work in the lab or when new work or tasks have been implemented in the lab:

Recommendations:

a. Identification of the hazards inherent to the organisms being used in the lab such as infectiousness, severity of disease and availability of effective treatments.
b. Identification of the hazards associated with the procedures such as pipetting, centrifugation, aerosol generation and working with animals.
c. Determination of appropriate Biosafety level and selection of additional precautions as indicated by the risk assessment (an example would be a procedure for exposing animals to experimentally generated infectious aerosols).
d. Before implementation of work, review the risk assessment with EHS, and if required, the IBC.
e. Evaluate proficiencies of staff safety practices and review their training dates. Inspect laboratory equipment and safety equipment for functionality and verify current certification dates.
f. Re-evaluate this risk assessment regularly, at least annually or any time changes are made to laboratory procedures, verify strategies are working or if changes are necessary.
There is no need to generate a written risk assessment. Instead, be able to demonstrate to your EHS representative during your lab inspection that you have completed your risk assessment by addressing each of the points listed above. Your lab SOPs, training and equipment calibration records are examples of documentation that can be used to show that the laboratory risks have been assessed.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section II: Biological Risk Assessment

Risk Ranking 4

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2. PI has currently approved IBC protocols for all biohazard work. Personnel are aware of and can access approved protocols (IBC, IRB, IACUC) & SOPs describing procedures using biohazards and necessary precautions.

Recommendations: PI must make sure that all personnel are aware of and can access approved protocols (IBC, IRB, IACUC) & SOPs describing procedures using biohazards and necessary precautions. All biohazard work and recombinant DNA work must be submitted to the Institutional Biosafety Committee for review using the online eProtocol system available at eprotocol.osu.edu.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL2 A.4a-b; OSU Institutional Biosafety Manual

Risk Ranking 4

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3. Lab personnel are aware of how to access the OSU Institutional Biosafety Manual and NIH Guidelines.

Recommendations: Lab personnel must be aware of how to access (hard copy or electronic version) the OSU Institutional Biosafety Manual and the NIH Guidelines (mandatory if working with recombinant DNA).

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL1 A.5; BSL2 A.5; NIH Guidelines for Research Involving Recombinant DNA Molecules (April 2019)

Risk Ranking 1

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4. If BSC(s) is available for use in the laboratory, it has been tested and certified within the last 12 months by a qualified field certifier.

Recommendations: Biosafety cabinets must be certified annually by a qualified field certifier. Upon completion of certification, email a copy of the certification report to your EHS safety representative. Biosafety cabinets must be deconned prior to repair/relocation and must be recertified after repair/relocation before use.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Appendix A, Section VII

Risk Ranking 4

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5. BSCs are installed so that air fluctuations do not interfere with proper operations.

Recommendations: Biosafety cabinets must be installed so that fluctuations of the room air supply and exhaust do not interfere with proper operations. BSCs shall be located away from doors, heavily traveled areas of the laboratory, windows that can be opened and other possible airflow disruptions.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL2 D.10, Appendix A

Risk Ranking 3

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6. Continuous flame producing devices are not used in the BSC.

Recommendations: Continuous flame producing devices shall not be used in BSCs. Flaming of items inside the BSC is unnecessary if good microbial technique is utilized. If a flame must be used, then one with a pilot light (e.g., Touch-o-Matic) should be chosen. Continuous flame models can produce turbulence, disrupting the BSC's airflow and the heat produced can damage the HEPA filter.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Appendix A, Part 5

Risk Ranking 3

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7. Biosafety cabinets are used correctly.

Recommendations: Biosafety cabinets are designed for a single operator. Never work with two or more people at a time in **any** BSC, regardless of manufacturer, model, or size. Multiple users will cause air disruptions and potentially destroy the containment capabilities of the BSC, possibly creating personnel, product, or environmental protection issues. Do not block air grilles in the BSC. Materials placed on or in front of air grilles cause disruption to the airflow, resulting in turbulence, possible cross-contamination and/or breach of containment. BSCs shall not be overcrowded with equipment or used for storage. Load only the materials necessary for the experiment into the BSC. Surface decontaminate and remove materials from the BSC when work session is completed.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Appendix A, Part 5
Institutional Biosafety Manual

Risk Ranking 3

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8. Lab supervisor ensures that personnel receive appropriate training and maintain written documentation of all training. All personnel and visitors with access to BSL1 areas shall take general biosafety training.

Recommendations: Lab supervisor must provide lab personnel with adequate training regarding their duties, the necessary precautions to prevent exposures and exposure evaluation procedures. Personnel should receive updates annually, as well as when procedural or policy changes occur. All lab personnel, including females of childbearing age, shall be provided with information regarding immune competence and conditions that may predispose them to infection.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL1 A.2

Risk Ranking 5

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9. A biohazard sign is posted at the entrance to the lab and must include the biosafety level, contact numbers and procedures for entering/exiting the lab.

Recommendations: A universal biohazard sign must be posted at the entrance of the laboratory when infectious agents are present. Posted information must include lab's biosafety level, PI's name, after hours telephone number of PI or other emergency contact(s), and any special procedures required for entering and exiting the laboratory. Universal room sign available from EHS is posted and contains all required information.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL2 A.9

Risk Ranking 1

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10. Doors have locks and PI limits access to lab.

Recommendations: Limit/restrict access to the laboratory, per discretion of the PI while research is in progress. individuals who meet specific entry requirements are allowed to enter the laboratory. Unat laboratories are secured. It is recommended that doors are closed during experiments.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL2 A.1, B.1, D.1; OSU Institutional Biosafety Manual.

Risk Ranking 2

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11. Only plants and animals used in research are in the lab.

Recommendations: Only plants and animals associated with the research project are permitted in the laboratory.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL1 A.17, BSL2 A.17

Risk Ranking 1

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12. PPE (lab coats, gloves, etc.) is worn when working with hazardous materials. Eye protection, appropriate for the anticipated hazard, shall be worn in the lab. Long hair is restrained so that it cannot contact hands, specimens, containers, or equipment. PPE is removed before leaving the lab and is properly discarded/laundered. Laboratories have a sink for handwashing.

Recommendations: Protective clothing (PPE) must be worn while working with hazardous materials. Glove selection shall be based on an appropriate risk assessment. Eye protection, appropriate for the anticipated hazard, shall be worn in the lab. Personnel must remove PPE before leaving the laboratory. PPE must be discarded properly after use or is laundered by the institution. PPE shall not be taken home by personnel. If sent offsite for laundering, it is properly bagged, and the laundry facility is notified of potential contaminants. To avoid cross contamination, laboratory coats should be properly stored in a designated space without stacking.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL1 A.6, A.7a-d, A.8, A,9, C.2, C.3, D.2; BSL2 A.6, A.7a-d, A.8, A,9, C.1, C.2, D.2

Risk Ranking 4

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13. Chairs are covered with non-porous material in areas where biological work is conducted

Recommendations: Chairs used in laboratory work must be covered with a non-porous material that can be easily cleaned and decontaminated with an appropriate disinfectant.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL 2 D.4.b

Risk Ranking 2

Biosafety Level 2 Inspection

☐ **Chemical inspection only, no BSL2 work**

H.	Documents

1. Written procedures for decontamination, biohazard spill cleanup and potential biohazard exposure, are posted in the laboratory. Necessary spill cleanup supplies are available in the laboratory.

Recommendations: Written procedures for decontamination, spill cleanup and potential biohazard exposures are posted in the laboratory. All necessary supplies for cleaning up a biohazard spill must be available in the laboratory.

Reference: Ohio EPA Guidance Document for Large Generators of Infectious Waste (11/98)

Risk Ranking 3

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2. Lab supervisor ensures that personnel receive appropriate training and maintain written documentation of all training. All personnel with access to BSL2 areas shall take BSL2 training.

Recommendations: Lab supervisor must provide lab personnel with adequate training regarding their duties, the necessary precautions to prevent exposures and exposure evaluation procedures. Personnel should receive updates annually, as well as when procedural or policy changes occur. All lab personnel, including females of childbearing age, shall be provided with information regarding immune competence and conditions that may predispose them to infection.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL2 A.2 B.2

Risk Ranking 5

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3. Personnel are aware that incidents, which result in exposure to infectious materials/rDNA are reported to PI, IBO and Occupational Health and Wellness.

Recommendations: Make laboratory personnel aware that spills and accidents, which result in overt exposures to biohazardous materials, must immediately be reported to the Principal Investigator, the Institutional Biosafety Officer and Occupational Health and Wellness. Personnel must also complete an OSU Accident Report. Biohazard Incident Report

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL2 B.7

Risk Ranking 3

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4. If applicable, personnel have completed Bloodborne Pathogen Training within the last year.

Recommendations: Document that personnel working with human blood or other potential bloodborne pathogens (including human cell lines, tissues and animal materials intentionally infected with human pathogens) receive bloodborne pathogen training on an annual basis.

Reference: Adopted Ohio Public Employment Risk Reduction Program Standard 29 CFR 1910.1030 (OSHA Bloodborne Pathogens Standard); Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Appendix H

Risk Ranking 4

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5. If applicable, an Exposure Control Plan is available and is updated /reviewed by laboratory staff annually.

Recommendations: If personnel are working with bloodborne pathogens, download the University Exposure Control Plan (ECP) that specifies the practices and procedures which will be implemented to eliminate or reduce employee exposure to blood and other potentially infectious materials. The ECP can be found at http://www.ehs.osu.edu/manuals.aspx Complete Appendix A to be specific to your laboratory. All personnel must review, sign and date the ECP (including the completed Appendix A) annually.

Reference: Adopted Ohio Public Employment Risk Reduction Program Standard 29 CFR 1910.1030 (OSHA Bloodborne Pathogens Standard); Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Appendix H

Risk Ranking 2

I. Procedures

1. Procedures involving infectious materials that may generate an aerosol are conducted in a BSC or other approved containment device (or centrifuge safety cups are opened in BSC).

Recommendations: Biosafety cabinets and/or other appropriate containment/protective devices must be used to c aerosol producing activities (e.g., opening containers with non-ambient pressures, intranasal inoculation of animals, pipetting, shaking or harvesting of infected tissues), aerosol producing equipment (centrifuges/safety cups, blenders, shakers) and when using high concentrations or volumes of organisms.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL2 B.4a

Risk Ranking 4

2. IBC approved disinfectant & appropriate decontamination procedures are followed. Disinfectant bottles are labeled and dated. 70% Ethanol in conjunction with UV light is NOT an acceptable method of decontamination.

Recommendations: Personnel are using the disinfectant and decontamination procedures approved in the relevant IBC protocol. Label and date disinfectant bottles when preparing solutions. If UV lights are used in BSCs, they must be turned off prior to anyone working in the room. UV light exposure can cause significant damage to the human eye.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL2 A.4a, A.14, Appendix B; America Biological Safety Association (ABSA), Position Paper on the Use of Ultraviolet Lights in Biological Safety Cabinets

Risk Ranking 2

3. All lab wastes are appropriately containerized and labeled. Contaminated waste/liquid/sharps are disposed of in accordance with OEPA regulations/OSU policies.

Recommendations: Laboratory waste must be labeled, appropriately covered, and contained. Bio box lids must be closed when not in use. Infectious/biohazardous waste must be handled, packaged, and disposed of in accordance with Ohio Environmental Protection Agency Infectious Waste Regulations and OSU policies. Provide appropriate materials (e.g., biohazard bags, biohazard boxes, sharps disposal containers) and ensure that personnel are adequately trained on proper disposal of infectious wastes. Serological pipettes should be bundled prior to disposal in a biohazardous box. Glass pipettes should package in rigid puncture proof container prior to disposal in a biohazardous box. Liquid infectious waste must be collected in plastic, leak-proof containers, labeled as biohazard waste and disposed of in a biohazard burn box. Liquid waste from vacuum traps, if generated while working with infectious material, which includes human cell lines, is considered infectious waste per the OEPA. **OSU does NOT maintain a permit with OEPA to treat liquid biohazard waste with bleach and dispose of in the sanitary sewer.**

Reference: Ohio EPA Guidance Document for Large Generators of Infectious Waste (11/98)

Risk Ranking 2

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4. Contaminated or infectious materials are safely transported outside of the laboratory.

Recommendations: Contaminated and/or infectious materials must be placed in durable, leak-proof containers that are closed prior to removal from the laboratory.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL2 A.15-a-b

Risk Ranking 2

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5. If experiments are assigned different biosafety levels, lab areas must be clearly designated.

Recommendations: When experiments are being conducted at different biosafety levels within the same laboratory, lab areas must be clearly designated as to where BSL1 and/or BSL2 work is being conducted.

Reference: NIH Guidelines for Research Involving Recombinant DNA Molecules (April 2019)

Risk Ranking 1

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6. Infectious agents are secured

Recommendations: The PI is aware that certain biohazardous materials and toxins may be of interest to persons or groups interested in terrorist or other illegal activities. Those agents that might pose a threat to humans, animals, agriculture, or the livestock industry must be kept in a secure place within the laboratory. Prior to shipping materials, the PI is responsible for assuring that the recipient is a recognized researcher from a well-known and reputable institution.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section VI

Risk Ranking 3

J. Equipment

1. Centrifuge has aerosol proof safety cups or rotors.

Recommendations: When centrifuging infectious materials use aerosol proof safety cups or rotors, to prevent leakage during spinning. Safety cups and rotors shall then be opened in a BSC. **Note:** If established human cell lines are the ONLY biohazard being centrifuged, the use of a low-speed centrifuge or open buckets is acceptable, however safety cups/rotors are still recommended. If any other biohazard agent (RG2) will be centrifuged, aerosol proof safety cups or rotors are REQUIRED.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL2 A.13, B.4a-c

Risk Ranking 3

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2. Lab equipment is decontaminated before repair, maintenance, or removal from the lab.

Recommendations: Lab equipment is routinely decontaminated, as well as after spills, splashes, or other potential contamination. Equipment must be decontaminated prior to repair, routine maintenance, or removal from the lab.

Reference: Biosafety in Microbiological and Biomedical Laboratories, 6th Edition. Section IV: BSL2 B.5

Risk Ranking 2

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3. Equipment for use or storage of biohazards is labeled with a biohazard symbol.

Recommendations: Label equipment where human pathogens are used or stored with the universal biohazard symbol.

Reference: Adopted Ohio Public Employment Risk Reduction Program Standard 29 CFR 1910.1030 (OSHA Bloodborne Pathogens Standard)

Risk Ranking 2

Survey Questions

1. Do you have any of the following select toxins in the lab? **Y/N?**

Abrin	Saxitoxin
Botulinum neurotoxins	Staphylococcal enterotoxins (Subtypes A, B, C, D or E)
Short, paralytic alpha conotoxins	T-2 toxin
Diacetoxyscirpenol (DAS)	Tetrodotoxin
Ricin	

2. Does the lab have a hazardous gas alarm? **Y/N?**

- If yes, what is being monitored.
- Is the alarm monitored by Public Safety or other OSU departments? (Who is notified upon alarm)
- What are the alarm limits?
- Is the sensor in a regular calibration schedule?

3. Do you have Class 3b or 4 lasers? **Y/N?**

- If yes, are they registered with Environmental Health and Safety?

4. Do you have any non-medical x-ray units? **Y/N?**

5. Does the lab have any Hoists, Lifts or Cranes? **Y/N?**

6. Do you use nanoparticles in your research? **Y/N?**

- Have you completed the Nanoparticle Registry form?
- Do you have a nanoparticle SOP for your lab?

7. Do you use naturally occurring radioactive materials (e.g., uranyl acetate, thorium compounds)? **Y/N?**

- Do you segregate the waste generated?

8. Do you (or anyone in your laboratory) currently use DEA controlled substances as part of your research? **Y/N?**

9. Do you have any of the following chemicals in the lab? **Y/N?**

- Trichloroethylene (TCE)
- Perchloroethylene (PCE)
- Methylene Chloride, aka Dichloromethane (DCM)

10. Does the lab participate in the Green Buckeye Program? **Y/N?**

11. Does the lab have a lab manager? **Y/N?**

12. Are you currently receiving the EHS Newsletter via email? **Y/N?**

13. Are you conducting research outside of your laboratory? **Y/N?**

14. Are you currently approved for satellite housing? **Y/N?**
Where?(Building/Room)