

Instruction Guide for Completing the Safety Plan for the Use and Storage of High Risk Hazardous Chemicals

BACKGROUND

High Risk Hazardous Chemicals (HRHC) are those that require stringent controls for their containment because they are extremely hazardous to laboratory personnel or could cause toxic effects or disease if released to the environment. Due to a combination of hazardous properties, these chemicals must be considered an extreme health hazard when used under any conditions. In general, one accident with one of these chemicals is likely to result in death, cancer or serious illness to one or more people. Very few chemicals are currently classified as High Risk Hazardous Chemicals by the UTMB Chemical Safety Committee (CSC). They are as follows:

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| Abrin* | Phalloidin |
| Aconitine (amorphous/crystalline) | Ricin* |
| Aflatoxins | Sarin |
| Amanitin | Saxitoxin* |
| Batrachotoxin | Shiga-like ribosome inactivating proteins* |
| Bis (chloromethyl) ether, syn. Dichloromethyl ether | Shigatoxin* |
| Botulinum neurotoxin* | Soman* |
| Chloromethyl ether, methyl | Staphylococcal enterotoxins* |
| Clostridium perfringens epsilon toxin | Tabun |
| Conotoxins* | Taipoxin |
| Ciguatoxin | Tetrachlorodibenzodioxin |
| Diacetoxyscirpenol* | Tetanus toxin |
| Diisopropyl fluorophosphate | Tetrodotoxin* |
| Diphtheria toxin | Textilotoxin |
| Maitotoxin | VX |
| Microcystin | T-2 Toxin* |

*Select Agent – NOTE: In addition to the HRHCSP, these agents also require approval by the CDC Select Agent Program.

Other chemicals may be considered HRHCs by the CSC if they meet certain criteria (refer to Chapter 8, Chemical Safety in the UTMB Safety Manual).

SAFETY PLAN SUBMISSION

A High Risk Hazardous Chemical Safety Plan (HRHCSP) must be submitted to the CSC for review and approval prior to **ALL** use of the UTMB HRHC(s).

Following are detailed instructions for completing each section of the safety plan document. Environmental Health and Safety (EHS) will assist you in completing this HRHCSP (Call x21781).

CHANGES TO APPROVED SAFETY PLANS AND ANNUAL UPDATE

Approved HRHCSPs must be amended prior to any changes in quantities or procedures outlined in the original approved plan. **An annual update is required.** If no changes are made, documentation to this effect must be submitted and added to the plan.

TRAINING OF LAB PERSONNEL

The completed, approved HRHCSP is to be used as a training aid for laboratory personnel using the HRHC.

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The following instructions should be used as a guide to complete this form. Proper development of this High Risk Hazardous Chemical Safety Plan will ensure prompt review and evaluation by the Chemical Safety Committee. Failure to provide requested information may result in a delay in approval of the High Risk Hazardous Chemical Safety Plan. Please contact EHS at extension 21781 with questions and for support in the development of this High Risk Hazardous Chemical Safety Plan.

SAFETY PLAN COVER PAGE

Fill in the blanks on the cover page of the safety plan document. Check "Update" if you are updating any information (e.g., quantities used) in an approved safety plan. Check "Renewal" if you are submitting an approved safety plan for the required renewal review every three years.

Section I. PROJECT DESCRIPTION

1. List the High Risk Hazardous Chemical to be addressed in this High Risk Hazardous Chemical Safety Plan.
2. Provide a brief description of the project or use of the chemical, include purpose, objectives and methodology. Attach an additional sheet if necessary.
- 3-5. Self explanatory

Section II. CHEMICAL SPECIFIC INFORMATION

1. Check all that apply. This information can be found on the chemical material safety data sheet.
2. Provide information on how often the chemical will be used (daily, weekly).
3. Provide information on the quantity of the agent to be used at any one time (mg, ml, etc).
- 4-9. Self explanatory

Section III. SHIPPING/RECEIVING OF HIGH RISK HAZARDOUS CHEMICALS

- 1 - 2. Self explanatory

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Section IV. GENERAL LABORATORY INFORMATION

1. Attach diagram(s) showing: building name, room number, and laboratory detail (refrigerator, cabinet, chemical fume hood, biological safety cabinet, bench top, balance, secured areas) for each storage ***and*** each use location; location/type of spill kits; location of emergency equipment (eyewash, safety shower, fire extinguisher); and, location of personal protective equipment (PPE). Attach as Appendix A.
2. Attach work process flow diagrams showing: the work process steps used and the safety precautions taken during each step of the experiment, Attach as Appendix B
3. Self explanatory
4. Records are required for receipt, how /where the agent is used, and method/date of disposal. All of the agent must be accounted for. A log in/out book, accident/spill records, and monitoring results will be kept. State the method for keeping records, including the record location and person responsible for maintaining the records. Attach as Appendix C.
5. Attach SOP's as Appendix D including: measures to prevent unauthorized laboratory entry/use, including warning signs and labels; the steps taken to maintain a clean work area, which includes procedures for decontaminating non-disposable labware, bench tops, and analytical instruments; safety and health precautions followed, PPE to be used, precautionary techniques.
6. If a chemical tracer/label is required, describe the tracer/label to be applied, the procedure and frequency for monitoring, instrumentation to be used, the detection limits, and the frequency and method for calibration of measurement instruments. Attach as Appendix E.
7. Example: Diluting the stock solution requires ten minutes. The procedure is conducted once a week inside a certified laboratory hood in room 101.
8. Provide information on personnel with access to the locked storage areas. Access should be limited. Please provide information on additional sheet of paper, if needed.
9. Self-explanatory.

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Section V. SAFETY TRAINING

The Texas Hazard Communication Act requires that all employees be given training about the specific chemical hazards they work with. The Principal Investigator is responsible for the content and effectiveness of this training. Employees should illustrate ongoing competence in the areas of training. Failure to show a familiarity with this material should result in prompt "refresher" training in the deficient areas.

The High Risk Hazardous Chemical Safety Plan (HRHCSP) will serve as a safety training outline and a ready written reference for actions to be taken in the event of an accident or release involving this agent. A copy of this HRHCSP shall be given to and discussed with each employee involved in the study.

1. Train all personnel working with the HRHC on the HRHCSP as well as the HRHC Material Safety Data Sheet (MSDS). This training must occur prior to any work with the HRHC. At a minimum, any time changes are made to the HRHCSP or new information becomes available on the HRHC, personnel must be retrained. Attach documentation of chemical specific training as Appendix F.
2. Attach a copy of the MSDS as Appendix G
- 3-4. Self explanatory. If a respirator is used, it will require a consultation from EHS to ensure personnel have met respirator use requirements.
5. Check all that apply.
6. If yes, indicate location and type of spill kits available in Appendix A.

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Section VI. EMERGENCY AND DISASTER PREPAREDNESS

- 1-2. Self explanatory.
3. For example, if the refrigerated storage were to fail.
4. The P.I. can contact EHS at ext. 21781 to arrange for short term storage.
5. Self explanatory.

Section VII. PERSONNEL

Provide a listing of personnel involved with this project. Include name, work location, extension, home telephone number, education and work experience. **Describe the specific duties and extent of involvement of each person.** Attach as Appendix H. A current **Curriculum Vitae** or resume *containing this information* may be attached.

Section VIII. EXPERIMENTAL ANIMAL USE – Appendix I

If animals are used, attach a description which includes IACUC #, the labels placed on cages indicating hazards, hazards associated with animal waste, bedding, and carcasses and proper precautions taken during handling. Use EHS provided Appendix I.

NOTE: **Investigators are reminded that when planning experiments with animals which includes hazardous agents, please contact ARC staff at extension 21275 two weeks prior to use of the agents to coordinate animal housing and husbandry concerns.**

Section IX. HAZARDOUS MATERIALS DISPOSAL – Appendix J

1-3. Explain how the material will be collected and neutralized, or where it is stored until chemical pickup. Consider solid waste (pipettes, needles, paper towels) and liquid waste (solutions, biological material).

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Section X. MEDICAL CONSULTATION / EXAMINATION

1. Attach training documentation as Appendix K.
2. Information from the MSDS may be used; however, procedures that may produce exposure must also be described.