



Chemical Hygiene Plan Template

Plan Preparer's Guide

This document is designed to assist Department, Laboratory, or Center staff plan for and develop their customized Chemical Hygiene Plan based on the *MIT Chemical Hygiene Plan Template* document. It contains information and guidance on certain aspects of the Chemical Hygiene Plan where prior planning may be needed. In addition, some information contained in this document previously was included in the Template text, but was moved out of the document to better serve the intended reader of the Plan: the laboratory worker.

1. TEXT REQUIRING CUSTOMIZATION

In the Template document, text that is highlighted in yellow, set-off in brackets and begins with "Note:" indicates areas in the Plan Template where the Chemical Hygiene Plan writer needs to add customized text. For example: **[Note: Insert Your Chemical Hygiene Officer's Name Here]**. The highlighted text should be deleted in your Department, Laboratory, or Center Chemical Hygiene Plan.

To facilitate its development, the *Table of Contents* section in the Template document is generated automatically using the **Insert, Tables, Table of Contents** function in Microsoft Word. Paragraphs formatted with the paragraph formats "CHP1", "CHP2", "CHP3" are currently included in the *Table of Contents*. If you add similarly formatted text, it will appear in your new *Table of Contents*. If you prefer to manually create a *Table of Contents*, simply select the existing one, and delete it. For more information on this feature, consult MS Word Help, under "Table of Contents".

2. ASSIGNING A CHEMICAL HYGIENE OFFICER

To best align the objectives of the Chemical Hygiene Plan with the new organizational structures of the EHS Management System, the EHS Office suggests that the role of the Chemical Hygiene Officer (CHO) be assigned to the DLC EHS Coordinator. It is the intention of this dual role assignment to enhance organizational efficiency and support improved integration of the objectives and tasks of the Plan into the daily routines of each laboratory. However, it is recognized that each DLC needs to assign the role of its Chemical Hygiene Officer in a manner that works best for them to establish a strong chemical safety program. If a DLC wishes to assign the role of Chemical Hygiene Officer to someone other than their EHS Coordinator, please discuss this intention with the EHS Office so they can provide guidance to ensure the most effective assignments.

To best clarify the specific responsibilities of the Chemical Hygiene Officer, distinct duties for both the Chemical Hygiene Officer and EHS Coordinator are defined separately in the Chemical Hygiene Plan Template in Part I. Section 2. If your DLC has assigned the roles of the Chemical Hygiene Officer to the EHS Coordinator, then that EHS Coordinator will assume all functions as outlined in Part I. Section 2.2 in the Template document for the Chemical Hygiene Officer. Your Department, Laboratory, or Center may reassign the specific assignments identified in the Template to different roles, but each listed responsibility must be assigned.

3. PROCESS FOR CHP PREPARATION, APPROVAL, REVIEW AND UPDATE

Plan Preparation

The Chemical Hygiene Officer will oversee the preparation of the Chemical Hygiene Plan for the Department, Laboratory, or Center (DLC). He or she is responsible for seeing that the Plan meets requirements set forth in 29 CFR 1910.1450. Additional assistance in creating the Chemical Hygiene Plan can be provided by the MIT Environment, Health and Safety (EHS) Office. The Template may be used in preparation of the Plan, or the CHO may write a separate plan. If the CHO writes a separate Plan, it must include all requirements of the OSHA standard referenced above, as well as all the requirements outlined in Parts I.-IV. of the Template. A Chemical Hygiene Plan content checklist has been developed by the EHS Office to assist in the preparation of a complete and compliant Plan. The checklist is available on the Chemical Hygiene Plan website at <http://ehs.mit.edu/site/content/chemical-hygiene-plan-frequently-asked-questions>

Initial Plan Approval

The Chemical Hygiene Officer, is responsible for ensuring that the Chemical Hygiene Plan is approved by EHS Office Industrial Hygiene Program (IHP). Once the CHO completes the initial Plan, they must submit the Plan to IHP for review. Plans can be submitted electronically to the EHS Office through the on-line form at <http://ehs.mit.edu/site/content/chemical-hygiene-program> or e-mailed directly to chp@mit.edu. An IHP representative will review the Plan against the requirements of the OSHA standard, the EHS Office, and the EHS Management System, and will provide comments when needed. The CHO must incorporate comments and resubmit the Plan for final approval. When a Plan meets all requirements, the IHP will provide a notice of approval to the CHO. The CHO must ensure the Plan is distributed or made available to all in the Department, Laboratory, or Center who are impacted by the Plan. One copy of the CHP will be provided electronically to the MIT EHS Office for reference use and to facilitate the annual update process.

Annual Plan Review and Update

On an annual basis, the IHP will notify the CHO when it is time to review and update the Plan. At this time, the IHP will also notify the CHO of any changes that must be incorporated into the Plan due to changes in EHS operations, the MIT EHS Management System, or changes in regulatory requirements.

The Chemical Hygiene Officer will review, update, and submit the Plan with any changes required, to the EHS Office by the deadline specified by the IHP. The CHO should make sure that the Plan reflects changes in Department, Laboratory, or Center operations, as well as the revisions requested by the IHP.

The IHP will review the Plan and provide the CHO comments, when needed. When comments are received, the CHO must incorporate them, and resubmit the plan. Once the IHP considers the Plan complete, they will provide a letter of approval to the CHO.

Upon receipt of the letter of approval, the Plan is considered final for the year. The Chemical Hygiene Officer will see that the Chemical Hygiene Plan and updates are distributed to or made available to those who are affected by it. Annually, one copy of the Chemical Hygiene Plan and all updates will be provided electronically to the MIT EHS Office.

4. LAB-SPECIFIC CHEMICAL HYGIENE TRAINING

Chemical hygiene training requirements are detailed in the EHS-MS training system, which can be accessed at <http://ehs.mit.edu/site/training>. The following four components are required if a laboratory personnel indicated in the Training Needs Assessment within the training system that they use potentially hazardous chemicals in a laboratory or are a Principal Investigator or Supervisor for those who use potentially hazardous chemicals in a laboratory: *General Chemical Hygiene Training*, *Read the Chemical Hygiene Plan*, *Lab-Specific Chemical Hygiene Training*, and *Managing Hazardous Waste*. Additional guidance on providing laboratory-specific training is outlined below.

Lab-specific chemical hygiene training is provided by the Principal Investigator or his or her designee on lab-specific chemical hazards. Required before beginning work with potentially hazardous chemicals in a laboratory and annually thereafter (usually within a lab group meeting). The topics covered will depend, in part, on the nature of the lab and research being done. However, some suggested topics are as follows:

- a. Information about physical and health hazards of chemicals used in the lab. Many lab groups use too many chemicals to discuss each one individually, so a grouping of chemicals by hazard type may be used.
- b. Lab-specific rules for the use of fume hoods.
- c. Information about location, use, and maintenance of personal protective equipment, including designation of who is responsible for assuring that a stock of this equipment is maintained.
- d. Information about location of emergency response equipment, such as, eyewash stations, safety showers, spill supplies, fire extinguishers, etc.
- e. Procedures established for labeling materials.
- f. Information on lab procedures for storing materials.
- g. Information on lab-specific waste management practices.
- h. Requirement that all personnel will be asked to sign a roster indicating their attendance at lab-specific training.

Training Records

The PI or designee must keep a copy of the outline of the topics covered in Lab-Specific Chemical Hygiene Training. The roster or lists of researchers who have completed the lab-specific training and read the Chemical Hygiene Plan, must be submitted to the EHS Coordinator. These training records are then entered into the EHS-MS Central Training Records Database. When an employee or student leaves the Institute, their training records are moved into an archive training database. Training records are kept for at least 3 years after an employee or student leaves the Institute.

5. INFORMATION REQUIREMENTS

Information that must be provided or made available to laboratory personnel includes:

- a. A copy of the OSHA Laboratory Standard and its Appendices. A web link to this information is provided in Appendix I-A of the CHP Template document. Paper copies could be made available to laboratory personnel, if you wish.
- b. The location and availability of the Chemical Hygiene Plan.
- c. The Permissible Exposure Limits (PELs) for OSHA-regulated substances and the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) for hazardous substances not given OSHA PELs. These lists are provided via a web link in Appendix II-A and II-B of the CHP Template document.
- d. Signs and symptoms associated with exposure to hazardous substances used in the laboratory. General information is integrated into Part II. Sections 2. and 3. of the CHP Template document.

- e. The location and availability of known reference materials on hazards, safe handling, storage and disposal of hazardous chemicals found in the laboratory. This information is provided in the next section, Part I. Section 4.1 of the CHP Template document.

The location of these and all reference material for your laboratories should be included in your CHP if more specificity is required than what is included in the CHP Template document.

6. DEPARTMENT, LABORATORY, OR CENTER-BASED PRIOR APPROVALS

It is recommended that Departments, Laboratories, and Centers (DLCs) institute a program for requiring prior approvals before work with certain hazardous materials can commence. The process should require researchers to obtain prior approval from the DLC Head/Director or EHS Committee for work with any specifically listed chemical. This list of restricted chemicals should be developed by each DLC and may be unique to that DLC. A recommended list is provided below.

Recommended Restricted Chemicals Requiring Prior Approval

- Dimethylmercury
- Hydrogen cyanide
- Nickel carbonyl
- Chlorine
- Phosgene
- Sodium arsenate
- Toxic Metal Hydrides (e.g. Arsine, Diborane, Germane, Hydrogen Selenide, Phosphine)
- Fluorine
- Hydrogen fluoride (anhydrous)
- Arsenic trioxide
- Nitrous oxide
- Potassium cyanide
- Unregulated biological toxins

Researchers intending to work with any of the restricted chemicals must prepare a plan to ensure for safe use including the development of standard operating procedures. The SOP template included in Part III should be used in developing the SOPs. Subsequently, these SOPs must be available in the laboratory, and it is recommended that they be included in Part III. of this Chemical Hygiene Plan.

If your Department, Laboratory, or Center chooses to implement a prior-approval program, the details of the program should be included in the Chemical Hygiene Plan in Part IV. Section 2.1.