THE UNIVERSITY OF TEXAS AT TYLER

Hazard Communication Program

2020

Table of Contents

The University of Texas at Tyler
HAZARD COMMUNICATION PROGRAM

INTRODUCTION

The Texas Hazard Communication Act (THCA), and Chapter 502 of the Texas Health and Safety Code (THSC), requires public employers to provide information to employees regarding hazardous chemicals they may be exposed to in the workplace. The Public Employer Community Right-to-Know Act, Chapter 506 of the THSC, and Texas Administrative Code (TAC), Title 25 Chapter 295, requires public employers to make information regarding hazardous chemicals accessible to, the local Emergency Planning Committee (LEPC), local fire departments, and the general public through annual reporting to the Texas Commission on Environmental Quality (TCEQ).

The University of Texas at Tyler (UTT) Hazard Communication (HazCom) Program is administered through the Department of Environmental Health & Safety (EH&S) with responsibility for compliance delegated to every department and workplace supervisor. This HazCom Program applies to all UT Tyler employees.

Implementation of the UTT HazCom Program, will comply with the THCA by providing training, appropriate personal protective equipment (PPE), and information regarding hazardous chemicals in the workplace.

The objective of this program is to incorporate safe work practices designed to minimize potential employee exposure to hazardous chemicals and resulting injuries or illnesses. The means to achieving this goal is the development and implementation of a systematic program directing the safe use, handling, transfer, storage, and disposal of hazardous chemicals by UT Tyler employees and contractors.

The format of this program is first to cite (in italics) specific sections of the law. Following this is an explanation of the University's policies and procedures. Only those sections that are pertinent to this program are included.

APPLICABILITY

This chapter of the Texas Hazard Communication Act applies only to employers who are not required to comply with 29 CFR 1910.1200 (OSHA Hazard Communication Act). As a public institution, The University of Texas at Tyler is not covered by the Occupational Safety and Health Act of 1970 (OSHA) unless a contractual agreement for compliance with OSHA is included in federal grant funding applications.

This chapter, except Section 502.009 ("Employee Education Program"), does not apply to a hazardous chemical in a sealed and labeled package that is received and subsequently sold or transferred in that package if:

- the seal and label remain intact while the chemical is in the workplace; and

- the chemical does not remain in the workplace longer than five working days.

EXEMPTIONS

This chapter does not apply to:

- Hazardous waste regulated under the Federal Resource Conservation and Recovery Act;

- a chemical in a laboratory under the direct supervision or guidance of a technically qualified individual if:

    - labels on incoming containers are not removed or defaced;

    - the employer complies with section 502.006 (“SDS”) and 502.009 (“Employee Education Program”) with respect to laboratory employees; and

    - the laboratory is not used primarily to produce hazardous chemicals in bulk for commercial purposes;

- tobacco or tobacco products;

- wood or wood products;

- articles that do not release or otherwise result in exposure to a hazardous chemical under normal conditions of use;

- food, drugs, cosmetics, or alcoholic beverages in a retail food sale establishment that are packaged for sale to consumers;

- food, drugs, or cosmetics intended for personal consumption by an employee while in the workplace;

- any consumer product or hazardous substance if the product is used in the workplace in the same manner as normal consumer use and if the use results in a duration and frequency of exposure that is not greater than exposures experienced by consumers;

- any drug, as defined in the Federal Food, Drug, and Cosmetic Act; and

- radioactive waste.

DEFINITIONS

For the purposes of this program, the following definitions apply:

- **Article** means a manufactured item that; a) is formed to a specific shape or design during manufacture, b) has end-use functions dependent in whole or in part on its shape or design during end use, and c) does not release, or otherwise result in exposure to, a hazardous chemical under normal conditions of use.

- **Chemical** means any substance, or mixture of substances.

- **Chemical Manufacturer** means an employer with a workplace where chemical(s) are produced for use or distribution.

- **Chemical Name** means the scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) of the Chemical Abstracts Service (CAS) rules of nomenclature or a name that clearly identifies the chemical for the purpose of conducting a hazard classification.

- **Classification** means to identify the relevant data regarding the hazards of a chemical; review those data to ascertain the hazards associated with the chemical; and decide whether the chemical will be classified as hazardous according to the definition of hazardous chemical in this section. In addition, classification for health and physical hazards includes the determination of the degree of hazard, where appropriate, by comparing the data with the criteria for health and physical hazards.

- **Common Name** means a designation of identification, such as a code name, code number, trade name, brand name, or generic name, used to identify a chemical other than by its chemical name.

- **Container** means any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical or multiple smaller containers of an identical hazardous chemical. The term does not apply to pipes or piping systems, or engines, fuel tanks, or other operating systems in a vehicle.

- **Designated Representative** means the individual or organization to whom an employee gives written authorization to exercise the employee's rights.

- **Distributor** means a business other than a chemical manufacturer or importer, which supplies hazardous chemicals to other distributors or to employers.

- **Dust** means solid particles of a substance or mixture suspended in a gas (usually air).

- **Employee** means a person who may be or may have been exposed to hazardous chemicals in the person's workplace under normal operating conditions or foreseeable emergencies, and includes a person working for this state, a person working for a political subdivision of this state, or a member of a volunteer emergency service organization. Workers such as office workers or accountants who encounter hazardous chemicals only in non-routine, isolated instances are not considered employees for purposes of this chapter of the Act.

- **Employer** means a person engaged in private business who is regulated by the Federal Occupational Safety and Health Act or the state or a political subdivision of the state, including a state, county, or municipal agency, a public school, a college or university, a river authority or publicly owned utility, a volunteer emergency service organization, and other similar employers.

- **Expose or Exposure** means that an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (*e.g.* accidental or possible) exposure. "Subjected" in terms of health hazards includes any route of entry (*e.g.* inhalation, ingestion, skin contact or absorption.)

- **Extremely Hazardous Substance** means any substance as defined in Emergency Planning and Community Right-to-Know Act (EPCRA), Section 302, or listed by the United Sates Environmental Protection Agency in 40 CFR Part 355.

- **Hazard Category** means the division of criteria within each hazard class, e.g., oral acute toxicity and flammable liquids include four hazard categories. These categories compare hazard severity within a hazard class and should not be taken as a comparison of hazard categories more generally.

- **Hazard Class** means the nature of the physical or health hazards, e.g., flammable solid, carcinogen, oral acute toxicity.

- **Hazard Statement** means a statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.

- **Hazardous Chemical** means an element, compound, or mixture of elements or compounds that is a physical hazard or health hazard as defined by the OSHA standard in 29 CFR Section 1910.1200(c), or a hazardous substance as classified under the OSHA standard in 29 CFR Section 1910.1200(d)(3), or by OSHA's written interpretations. A hazard determination may be made by employers who choose not to rely on the evaluations made by their suppliers if there are relevant qualitative or quantitative differences. A hazard determination shall involve the best professional judgment.

- **Hazcom** Hazard Communication

- **Health Hazard** means a chemical which is classified as posing one of the following hazardous effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); or aspiration hazard.

- **Identity** means a chemical or common name, or alphabetical or numerical identification, that is indicated on the SDS for the chemical. The identity used must permit cross-references to be made among the workplace chemical list, the label, and the SDS.

- **Label** an appropriate group of written, printed or graphic information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging.

- **Label Elements** means the specified pictogram, hazard statement, signal word and precautionary statement for each hazard class and category.

- **Laboratory** means any research, analytical, or clinical facility equipped for experimentation, observation, teaching or practice in a science or for testing and analysis.

- **Mist** means liquid droplets of a substance or mixture suspended in a gas (usually air).

- **OSHA Standard** means the Hazard Communication Standard issued by the Occupational Safety and Health Administration and codified as 29 CFR Section 1910.1200.

- **Personal Protective Equipment (PPE)** includes clothing or devices intended to prevent exposure to hazardous chemicals (e.g., respirator, gloves, and goggles).

- **Physical Hazard** means a chemical that is classified as posing one of the following hazardous effects: explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid or gas); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; or in contact with water emits flammable gas.

- **Pictogram** means a composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical. Eight pictograms are designated under this standard for application to a hazard category.

- **Precautionary Statement** means a phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling.

- **Primary Container** means the container in which the chemical arrives from the manufacturer or supplier.

- **Product Identifier** means the name or number used for a hazardous chemical on a label or in the SDS. It provides a unique means by which the user can identify the chemical. The product identifier used shall permit cross-references to be made among the list of hazardous chemicals required in the written hazard communication program, the label and the SDS.

- **Safety Data Sheet (SDS)** is a written or printed document that outlines information and procedures for handling and working with a hazardous chemical. SDS documents contain physical and chemical property information, potential hazard information, emergency procedures, and manufacturer contact information.

- **Signal Word** means a word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used in this section are "danger" and "warning." "Danger" is used for the more severe hazards, while "warning" is used for the less severe.

- **Temporary Workplace** means a stationary workplace that is staffed less than 20 hours a week. A temporary workplace may be considered to be a work area of the headquarters workplace from which employees are routinely dispatched. Temporary workplaces may include pumping stations, emergency response sites, and similar workplaces.

- **Texas Tier Two Report** is the report submitted annually to the Texas Commission on Environmental Quality (TCEQ) that reports quantities of hazardous chemicals to TCEQ, the Local Emergency Planning Committee (LEPC), and local fire department.

- **TCEQ** Texas Commission on Environmental Quality

- **THCA** Texas Hazard Communication Act

- **THSC** Texas Health and Safety Code

- **Vapor** means the gaseous form of a substance or mixture released from its liquid or solid state.

- **Work Area** is a room, a defined space, or structure within a workplace where hazardous chemicals are present, produced, or used and where employees are present.

- **Workplace** is an establishment, job site, or project at one geographical location containing one or more work areas, with or without buildings, that is staffed 20 or more hours a week.

- **Workplace Chemical List (WCL)** is a list of hazardous chemicals in a designated workplace and is developed in accordance with THCA 502.005.

- **Workplace Reporting Threshold** is when the quantity (at any time) of a hazardous chemical exceeds 55 gallons/500 pounds or the Threshold Planning Quantity (TPQ) in pounds, or 500 pounds, whichever is less, for those chemicals on the Extremely Hazardous Substance (EHS) list.

- **Workplace Supervisor** is the lab supervisor, work area supervisor, or other department supervisor in a designated workplace containing hazardous chemicals.

REQUIREMENTS
PART I: WORKPLACE CHEMICAL LIST

Sec. 502.005. (THCA)

(a) For the purpose of worker right-to-know, an employer shall compile and maintain a workplace chemical list that contains the following information for each hazardous chemical normally present in the workplace or temporary workplace in excess of 55 gallons or 500 pounds or in excess of an amount that the executive commissioner determines by rule for certain highly toxic or dangerous hazardous chemicals:

(1) the identity used on the SDS and container label; and

(2) the work area in which the hazardous chemical is normally present.

(b) The employer shall update the workplace chemical list as necessary but at least by December 31 of each year. Each workplace chemical list shall be dated and signed by the person responsible for compiling the information.

(c) The workplace chemical list may be prepared for the workplace as a whole or for each work area or temporary workplace and must be readily available to employees and their representatives. All employees shall be made aware of the workplace chemical list before working with or in a work area containing hazardous chemicals.

(d) An employer shall maintain a workplace chemical list for at least 30 years. The employer shall send complete records to the department if the employer ceases to operate.

CHEMICAL INVENTORY PROCEDURES

Each University workplace or temporary workplace shall develop and maintain a list of all of the hazardous chemicals or chemical products present in their respective work area(s), regardless of quantity. Departments shall use the ***Hazardous Chemicals Inventory Form*** (Appendix H) to document and maintain the inventory.

The inventory will be provided to EH&S on an annual basis or upon request, to facilitate maintaining the University Workplace Chemical List (WCL). Departments should update their inventory when chemicals are added or removed and complete an annual inventory before December 31st of each year. Each department shall provide their annual inventory to EH&S not later than January 15th of each year to update the WCL.

Employees will be made aware of the WCL in the initial Hazard Communication training. Departments shall maintain a current copy of the WCL and make readily accessible to employees and their representatives. Additionally, copies of all WCLs will be available from EH&S. The WCLs will be compiled by EH&S to be kept on file for 30 years.

REQUIREMENTS
PART II: SAFETY DATA SHEETS

Sec 502.006. (THCA)

(a) A chemical manufacturer or distributor shall provide appropriate safety data sheets to employers who acquire hazardous chemicals in this state with each initial shipment and with the first shipment after an SDS is updated. The SDSs must conform to the most current requirements of the OSHA standard.

(b) An employer shall maintain a legible copy of a current SDS for each hazardous chemical purchased. If the employer does not have a current SDS for a hazardous chemical when the chemical is received at the workplace, the employer shall request an SDS in writing from the manufacturer or distributor in a timely manner or shall otherwise obtain a current SDS. The manufacturer or distributor shall respond with an appropriate SDS in a timely manner.

(c) Safety data sheets shall be readily available, on request, for review by employees or designated representatives at each workplace.

(d) A copy of an SDS maintained by an employer under this section shall be provided to the department on request.

SDS PROCEDURES

All departments are required to provide their employees access to SDSs on hazardous chemicals or chemical products in the workplace. Each department is responsible for the following.

- Maintain a file of current SDSs for all hazardous chemicals purchased. The file may be electronic or printed and will be readily available, on request, for review by employees at their workplace.

- Submit a request within 30 days to any manufacturer who fails to supply a current SDS with a hazardous chemical that was purchased. A copy of the request form must be kept until a copy of the SDS becomes available.

  Note: Although the distributor and manufacturer are the primary source for the SDS, departments can access the *UT Tyler MSDS Database* to obtain an SDS on the EH&S website at www.uttyler.edu/safety/programs.

Departments should maintain SDSs in an organized manner within the work area for those hazardous chemicals being used. They should also utilize SDSs within each work area to conduct site-specific training for employees using the ***How to Read and Interpret a Safety Data Sheet*** (Appendix G).

REQUIREMENTS
PART III: LABELS

Sec 502.007. (THCA)

(a) A label on an existing container of a hazardous chemical may not be removed or defaced unless it is illegible, inaccurate, or does not conform to the OSHA standard or other applicable labeling requirement. Primary containers must be relabeled with at least the identity appearing on the SDS, the pertinent physical and health hazards, including the organs that would be affected, and the manufacturer's name and address. Except as provided by Subsection (b), secondary containers must be relabeled with at least the identity appearing on the SDS and appropriate hazard warnings.

(b) An employee may not be required to work with a hazardous chemical from an unlabeled container except for a portable container intended for the immediate use of the employee who performs the transfer.

LABEL PROCEDURES

Employees shall not work with any chemical in a container that is not properly labeled. Supervisors are responsible for ensuring labels on primary containers are not removed or defaced unless they are illegible, inaccurate, or do not conform to the OSHA Hazard Communication Standard or other labeling requirement. If a primary container label is removed or missing, the container must be relabeled as prescribed above. OSHA has adopted the Globally Harmonized System (GHS) of Classification and Labelling of Chemicals and as stated above, the THCA has incorporated the OSHA labeling requirements. See Appendix F for more information on the GHS labeling requirements.

- A primary container is the one in which the hazardous chemical is received from the manufacturer or distributor and must be labeled as prescribed above.

- A secondary container is one into which the hazardous chemical is transferred after receipt from the supplier and must be labeled as prescribed in paragraph (a) above.

Supervisors shall ensure that labels are legible, in English, and prominently displayed on the container. The label may include information in another language as appropriate.

Signs, placards, process sheets, or batch tickets may be used for stationary process containers as long as it conveys the required label information. Labels for small containers, such as test tubes or vials, may be attached to the rack or container in which they are held.

Complete labels are not required on portable containers intended for the immediate use by the employee who performs the transfer. However, the contents should be readily identifiable. Unused portions will be returned to the primary container or the container labeled as a secondary container at the end of the work shift.

REQUIREMENTS
PART IV: EMPLOYEE EDUCATION PROGRAM

Sec 502.009. (THCA)

(a) An employer shall provide an education and training program for employees who use or handle hazardous chemicals.

(b) An employer shall develop, implement, and maintain at the workplace a written hazard communication program for the workplace that describes how the criteria specified in this chapter will be met.

(c) An education and training program must include, as appropriate:

(1) information on interpreting labels and SDSs and the relationship between those two methods of hazard communication;

(2) the location by work area, acute and chronic effects, and safe handling of hazardous chemicals known to be present in the employees' work area and to which the employees may be exposed;

(3) the proper use of protective equipment and first aid treatment to be used with respect to the hazardous chemicals to which the employees may be exposed; and

(4) general safety instructions on the handling, cleanup procedures, and disposal of hazardous chemicals.

(d) Training may be conducted by categories of chemicals. An employer must advise employees that information is available on the specific hazards of individual chemicals through the SDSs. Protective equipment and first aid treatment may be by categories of hazardous chemicals.

(e) An employer shall provide additional instruction to an employee when the potential for exposure to hazardous chemicals in the employee's work area increases significantly or when the employer receives new and significant information concerning the hazards of a chemical in the employee's work area. The addition of new chemicals alone does not necessarily require additional training.

(f) An employer shall provide training to a new or newly assigned employee before the employee works with or in a work area containing a hazardous chemical.

(g) An employer shall keep the written hazard communication program and a record of each training session given to employees, including the date, a roster of the employees who attended, the subjects covered in the training session, and the names of the instructors.

Those records shall be maintained for at least five years by the employer. The department shall have access to those records and may interview employees during inspections.

(h) Emergency service organizations shall provide, to their members or employees who may encounter hazardous chemicals during an emergency, information on recognizing, evaluating, and controlling exposure to the chemicals.

(i) As part of an outreach program created in accordance with Section 502.008, the department shall develop an education and training assistance program to assist employers who are unable to develop the programs because of size or other practical considerations. The program shall be made available to those employers on request.

EMPLOYEE EDUCATION AND TRAINING PROGRAM

Education and training are essential components of the UT Tyler HazCom Program and are necessary to comply with the THCA requirements. The program is comprised of *General* and *Site-Specific* training which are implemented as described below.

Hazard Communication Training (General)
All employees, both full and part time, who work with or may be exposed to hazardous chemicals shall complete the ***General*** Hazard Communication training. This training, "Hazard Communication – Your Right to Know" consisting of Hazard Communication standards and Worker Right-to-Know laws, is developed by EH&S and administered by Human Resources upon employment and every two years thereafter.

Hazard Communication Training (Site-Specific)
In addition to *General* training, employees must receive ***Site-Specific*** Hazard Communication training. This training shall be administered by the employee's department and will include information regarding hazardous chemicals that are specific to the employee's work area. This training must also include the elements outlined in paragraph (c) and (d) above and be completed before the employee works with or in an area containing hazardous chemicals.

Supervisors are also required to provide ***Supplemental*** training to employees when: 1) the potential for exposure to hazardous chemicals in the workplace increases significantly; 2) the employer receives new or significant information concerning the hazards of a chemical in the workplace; or 3) a new hazardous chemical is introduced into the workplace.

Training Records
Documentation of the General Hazard Communication training will be maintained in the Blackboard system. Supervisors will use the ***Site-Specific Hazard Communication Training Form*** (Appendix D) to document *General* and *Supplemental* workplace training as appropriate and the forms will be maintained by the department. All training records shall be maintained for at least five years.

Non-Routine Tasks
Before any non-routine task is performed, employees must contact their department supervisor for special precautions to follow. The department is responsible for informing EH&S and other faculty and/or staff who could be exposed to chemical hazards as a result of the non-routine task being performed.

In the event such tasks are required, the department will provide EH&S and employees the following information about specific chemical hazards expected to be encountered:

- Specific chemical name(s) and hazard(s);

- Personal protective equipment required and safety measures to be taken; and

- Measures that have been taken to lessen the hazards including ventilation, respirators, presence of other employee(s), cordoning off hazardous areas, and emergency response procedures.

See Appendix E for a ***Hazard Analysis Worksheet for Non-Routine Tasks*** which may be of assistance in this process.

REQUIREMENTS
PART V: REPORTING FATALITIES AND INJURIES

Sec 502.012. (THCA)

(a) Within 48 hours after the occurrence of an employee accident that directly or indirectly involves chemical exposure or that involves asphyxiation, and that is fatal to one or more employees or results in the hospitalization of five or more employees, the employer of any of the employees so injured or killed shall report the accident either orally or in writing to the department.

(b) The report to the department shall relate the circumstances of the accident, the number of fatalities, and the extent of any injuries. If it is necessary to complete the investigation of an incident, the department may require additional reports in writing as necessary.

REPORTING PROCEDURES

Departmental Reporting

Departments that have the potential for employee exposure are required to develop and implement reporting procedures. All departmental supervisory personnel are responsible for immediately reporting any employee accident that directly or indirectly involves chemical exposure to EH&S within 24 hours of the occurrence.

EH&S Reporting

EH&S will immediately investigate and document the accident upon receiving notification of an exposure event. EH&S will report the accident (orally or in writing), to the Texas Department of Health, Toxic Substances Control Division, Hazard Communication Branch at 1-800-452-2791 within 48 hours, each employee accident that directly or indirectly involves chemical exposure or that involves asphyxiation, and that is fatal to one or more employees or results in the hospitalization of five or more employees, (this is to include the circumstances of the accident, the number of fatalities, and the extent of any injuries).

REQUIREMENTS
PART VI: EMPLOYEE NOTICE; RIGHTS OF EMPLOYEES

Sec 502.017. (THCA)

(a) An employer shall post and maintain adequate notice, at locations where notices are normally posted, informing employees of their rights under this chapter. If the department does not prepare the notice under Section 502.008, the employer shall prepare the notice.

(b) Employees who may be exposed to hazardous chemicals shall be informed of the exposure and shall have access to the workplace chemical list and MSDSs for the hazardous chemicals. Employees, on request, shall be provided a copy of a specific MSDS with any trade secret information deleted. In addition, employees shall receive training concerning the hazards of the chemicals and measures they can take to protect themselves from those hazards. Employees shall be provided with appropriate personal protective equipment. These rights are guaranteed.

(c) An employer may not discharge, cause to be discharged, otherwise discipline, or in any manner discriminate against an employee because the employee has:

(1) filed a complaint;

(2) assisted an inspector of the department who may make or is making an inspection under Section 502.011;

(3) instituted or caused to be instituted any proceeding under or related to this chapter;

(4) testified or is about to testify in a proceeding under this chapter; or

(5) exercised any rights afforded under this chapter on behalf of the employee or on behalf of others.

(d) Pay, position, seniority, or other benefits may not be lost as the result of the exercise of any right provided by this chapter.

(e) A waiver by an employee of the benefits or requirements of this chapter is void. An employer's request or requirement that an employee waive any rights under this chapter as a condition of employment is a violation of this chapter.

NOTICE TO EMPLOYEES

An official ***Texas Department of State Health Services "Notice to Employees"*** (Appendix A) will be clearly posted in all UT Tyler facilities at the location(s) within each workplace where notices are normally posted.

RIGHTS OF EMPLOYEES

Employees have guaranteed rights regarding potential exposure to hazardous chemicals in the workplace. The following actions shall be accomplished if an employee has been potentially exposed to hazardous chemicals.

- The department must inform the employee of the potential exposure;
- The department must provide access to the WCL and SDSs/MSDSs for the hazardous chemicals in the employee's workplace; and
- Upon request, employees shall be provided a copy of a specific SDS/MSDS with any trade secret information deleted.

Departments shall provide employee training concerning the hazards of the chemicals and the measures they can take to protect themselves from those hazards.

Departments shall provide employees appropriate PPE and training on how to properly maintain and utilize the equipment.

The University shall not discipline, harass, or discriminate against an employee for filing complaints, assisting inspectors, or participating in proceedings related to the Texas Hazard Communication Act, or exercising rights under the Act.

Employees cannot waive their rights under the Act. A request or requirement for such a waiver, by any representative of the University, violates the Act.

UNIVERSITY PROGRAM REQUIREMENTS

The UT Tyler HazCom Program applies to all departments and there are specific responsibilities and requirements necessary to implementing the program.

Environmental Health and Safety administers the HazCom program and has the following responsibilities and requirements.

1. Provide current ***Notice to Employees*** flyer.

2. Assist departments with the implementation of and compliance with the program.

3. Monitor and enforce program standards to include investigating, documenting, and reporting non-compliance.

4. Report each employee accident that directly or indirectly involves chemical exposure in accordance with THCA 502.012.

5. Coordinate training requirements.

6. Maintain liaison with the TCEQ.

7. Submit annual Texas Tier Two report (if required) and fee to the TCEQ by March 1st of each year.

8. Provide a copy of the Texas Tier Two report to the LEPC and local fire department.

9. Provide the names and telephone numbers of emergency contacts, the WCL, and the SDS/MSDS for hazardous chemicals to the local fire department, upon request.

10. Compile, maintain, and make available the Workplace Chemical List (WCL).

11. Maintain the WCL for 30 years.

Departments will implement the program and have the following responsibilities and requirements.

1. Post and maintain the official ***Notice to Employees*** flyer (Appendix A) at locations in the workplace where notices are normally posted.

2. Complete the ***Workplace Implementation Plan*** (Appendix C) and maintain a copy for department records and forward a copy to EH&S.

3. Ensure an annual chemical inventory in all work areas is completed no later than December 31st of each calendar year and provide a copy to EH&S by January 15th.

4. Ensure SDSs/MSDSs for all hazardous chemicals are available in the workplace.

5. Provide current names and telephone numbers of emergency contacts to EH&S.

6. Inform employees of any non-routine chemical exposure.

7. Report all chemical incidents involving an injury of an employee to the Human Resources Department (as per the First Report of Injury Accident Reporting Procedures); and to EH&S at 903-566-7011 within 24-hours of the injury. **If it is an emergency Call 911 and seek medical attention immediately**.

8. Enforce contractor procedures for using hazardous chemicals or materials on University property to include coordinating the ***Contractor Hazardous Chemicals Memorandum*** (Appendix B).

9. Provide employees with appropriate PPE, ensure the equipment fits properly, and that training is accomplished on how to properly use and maintain the equipment.

10. Identify all employees who are required to receive Hazard Communication training and ensure it is provided as prescribed in Part IV, Employee Education Program.

11. Ensure all Hazard Communication training is document and maintain records for a minimum of five (5) years.

Supervisors will ensure program compliance and have the following responsibilities and requirements.

1. Identify hazardous chemicals being used, stored, or handled in the workplace.

2. Ensure chemical containers are properly labeled in accordance with Appendix F.

3. Conduct chemical inventory audits and maintain the WCL and inform employees of the location and procedures to access the WCL.

4. Maintain SDSs/MSDSs for all hazardous chemicals, ensure employees know the procedures to access them, and use Appendix G, ***How to Read and Interpret Safety Data Sheets*** to ensure they understand how to use the data.

5. Conduct training as prescribed in Part IV above and document using the ***Site-Specific Hazard Communication Training Form*** (Appendix D).

6. Conduct and document supplemental training when the potential for exposure to hazardous chemicals in the workplace increases significantly; when the employer receives new and significant information concerning the hazards of a chemical in the workplace; or a new hazardous chemical is introduced into the workplace.

7. Provide information and training on the safe use of chemicals and ensure employees have proper PPE before working with or in an area containing hazardous chemicals.

8. Prior to performing any “non-routine” task that could involve exposure to hazardous chemicals, review all the potential hazards of the task with the employee(s) using the ***Hazard Analysis Worksheet for Nonroutine Tasks*** (Appendix E) and prescribe appropriate work practices and protective controls.

9. Report any chemical incident involving injury to an employee (as per First Report of Injury Accident Reporting Procedures) to Department Head and EH&S.

Employees will comply with the following program requirements.

1. Complete required training and comply with program standards.

2. Use engineering controls, work practices, and PPE when working with hazardous chemicals and comply with the workplace procedures.

3. Immediately report any accident involving hazardous chemicals or materials to a supervisor and EH&S.

Contractors will comply with federal and state Hazard Communication standards and the UTT HazCom Program when using hazardous chemicals or materials during work or projects on UT Tyler property. Numerous companies contract with the University for construction, repairs, maintenance, and other services and departments are required to coordinate these activities to ensure compliance with the UTT HazCom Program.

The UT Tyler Department Sponsor or Project Coordinator is responsible for ensuring contractor compliance with the following UT Tyler HazCom program requirements.

1. Notify Facilities Management and EH&S before the contractor performs any on-site work with hazardous chemicals.

2. Provide the contractor a ***Hazardous Chemicals Memorandum*** (Appendix B) with the appropriate information on the bottom of the memo.

3. Obtain an SDS/MSDS for each hazardous chemical the contractor intends to bring on-site.

4. Coordinate approval to use the hazardous chemical(s) with EH&S.

5. Provide a copy of the completed Hazardous Chemicals Memorandum and copies of all the SDSs/MSDSs to Facilities Management and EH&S.

6. Ensure individuals in the affected workplace are provided information on the hazards of the chemicals or materials, measures that they can take to protect themselves from those hazards, and how to access the SDSs/MSDSs.

7. Provide EH&S and any affected University workplace pertinent information, including SDSs/MSDSs for the chemicals involved upon request.

APPENDIX A

NOTICE TO EMPLOYEES

The Texas Hazard Communication Act, codified as Chapter 502 of the Texas Health and Safety Code, requires public employers to provide employees with specific information on the hazards of chemicals to which employees may be exposed in the workplace. As required by law, your employer must provide you with certain information and training. A brief summary of the law follows.

HAZARDOUS CHEMICALS

Hazardous chemicals are any products or materials that present any physical or health hazards when used, unless they are exempted under the law. Some examples of more commonly used hazardous chemicals are fuels, cleaning products, solvents, many types of oils, compressed gases, many types of paints, pesticides, herbicides, refrigerants, laboratory chemicals, cement, welding rods, etc.

WORKPLACE CHEMICAL LIST

Employers must develop a list of hazardous chemicals used or stored in the workplace in excess of 55 gallons or 500 pounds. This list shall be updated by the employer as necessary, but at least annually, and be made readily available for employees and their representatives on request.

EMPLOYEE EDUCATION PROGRAM

Employers shall provide training to newly assigned employees before the employees work in a work area containing a hazardous chemical. Covered employees shall receive training from the employer on the hazards of the chemicals and on the measures they can take to protect themselves from those hazards. This training shall be repeated as needed, but at least whenever new hazards are introduced into the workplace or new information is received on the chemicals which are already present.

SAFETY DATA SHEETS

Employees who may be exposed to hazardous chemicals shall be informed of the exposure by the employer and shall have ready access to the most current Safety Data Sheets (SDSs) or Material Safety Data Sheets (MSDSs) if an SDS is not available yet, which detail physical and health hazards and other pertinent information on those chemicals.

LABELS

Employees shall not be required to work with hazardous chemicals from unlabeled containers except portable containers for immediate use, the contents of which are known to the user.

EMPLOYEE RIGHTS

Employees have rights to:

- access copies of SDSs (or an MSDS if an SDS is not available yet)
- information on their chemical exposures
- receive training on chemical hazards
- receive appropriate protective equipment
- file complaints, assist inspectors, or testify against their employer

Employees may not be discharged or discriminated against in any manner for the exercise of any rights provided by this Act. A waiver of employee rights is void; an employer's request for such a waiver is a violation of the Act. Employees may file complaints with the Texas Department of State Health Services at the telephone numbers provided below.

EMPLOYERS MAY BE SUBJECT TO ADMINISTRATIVE PENALTIES AND CIVIL OR CRIMINAL FINES RANGING FROM $50 TO $100,000 FOR EACH VIOLATION OF THIS ACT

Further information may be obtained from:

Texas Department of State Health Services
Division for Regulatory Services
Policy, Standards, & Quality Assurance Unit
Environmental Hazards Group
PO Box 149347, MC 1987
Austin, TX 78714-9347

(800) 452-2791 (toll-free in Texas)
(512) 834-6787
Fax: (512) 834-6726
TXHazComHelp@dshs.texas.gov

TEXAS Department of State Health Services

Worker Right-To-Know Program
Publication # E23-14173
Revised 03/2014

APPENDIX B

MEMORANDUM

DATE:

TO: All Contractors

FROM: Director of Environmental Health and Safety

SUBJECT: Hazardous Chemicals on University Property

To comply with federal and state Hazard Communication standards, the University of Texas at Tyler has implemented a written Hazard Communication program to inform its employees of potential exposure to chemical hazards and developed a list of all hazardous chemicals used in this workplace.

Please be advised that you are **required to submit a Safety Data Sheet (SDS) for each hazardous chemical you intend to bring onto University property**. The SDS must be submitted to the University Department Sponsor or Project Coordinator and the chemical approved for use **before** it is brought onto University property.

In addition, copies of our written program and SDSs applicable for areas in which you may be working are available to you and your employees upon request.

Should you have any questions, please call 903-566-7011.

Sincerely,

Paula J. Tate

University Department Sponsor/Project Coordinator

_____
Name

_____
Title

_____
Department

_____
Telephone Number

APPENDIX C

HAZARD COMMUNICATION PROGRAM
Workplace Implementation Plan

1. Department Name: _____

2. Location(s) where the "NOTICE TO EMPLOYEES" is permanently posted:

   _____

3. Position responsible for conducting and maintaining the annual chemical inventory:

   _____

4. Location where the Workplace Chemical List is filed and how it is accessed:

   _____

5. Position responsible for ensuring chemical containers are properly labeled:

   _____

6. Location where the SDSs/MSDSs are maintained and how they are accessed:

   _____

7. Position responsible for ensuring hazardous chemicals are properly used, stored, and handled:

   _____

8. Position responsible for ensuring employees are utilizing proper PPE and engineering controls:

   _____

9. Position responsible for ensuring compliance with training requirements:

   _____

10. Location of employee Training Records:

    _____

Department Head: _____ Date: _____

Department Head's Signature: _____

APPENDIX D

Site-Specific Hazard Communication Training Form

TRAINING TYPE ☐ INITIAL ☐ SUPPLEMENTAL

UT Tyler Hazard Communication Program and General Chemical Safety	Supervisor's Notes:
☐ Review Hazard Communication Program.	→ Review workplace Hazard Communication program procedures.
☐ Discuss "no eating or drinking" where chemicals are stored or used.	→ Ensure employees understand the risks and the designated location to eat and drink that is free of hazardous chemicals.
☐ Discuss chemical storage requirements and compatibility standards.	→ Review workplace practices and procedures used to ensure chemicals are properly stored. Review chemical compatibilities.
Inventory, Safety Data Sheets (SDS), and Labeling	
☐ Identification workplace chemical list (WCL), and identify the location of the chemicals the employee may use or be exposed to, prior to use.	→ Ensure employee knows; how to acquire the workplace WCL and the locations where hazardous chemicals are stored or used.
☐ Identify location of SDSs. Familiarize employees on how to read and use the information contained in the SDS.	→ Have employee obtain an SDS for a hazardous chemical they use or provide one for a chemical that will be used.
☐ Review a workplace SDS: ☐ Identification ☐ Hazard(s) Identification ☐ Composition/Information on Ingredients ☐ First-Aid Measures ☐ Fire-Fighting Measures ☐ Accidental Release Measures ☐ Handling and Storage ☐ Exposure Controls/Personal Protection ☐ Physical and Chemical Properties ☐ Stability and Reactivity ☐ Toxicology Information ☐ Ecological Information (Non-mandatory) ☐ Disposal Considerations (Non-mandatory) ☐ Transport Information (Non-mandatory) ☐ Regulatory Information (Non-mandatory) ☐ Other Information	→ Ensure employee can locate and understands the information on a selected SDS: ○ Why is it hazardous? Is it Toxic? Flammable? Corrosive? Other? ▪ How do they determine the hazard? ○ How would they know if they were exposed to the chemical? ▪ How does the chemical enter the body? Inhalation? Ingestion? Absorption? ▪ What are the symptoms of overexposure to the chemical? Unique odor? Dizziness? Skin irritation/redness? Other? ○ What engineered controls are required, if any? Vapor/fume hood? Glove box? ○ What (PPE) is required? ○ What should the employee do if a hazardous chemical is spilled?
Discuss GHS pictograms and warning symbols. ☐ Familiarize the employee with reading and using information on container labels. Discuss the importance of labels and ensuring chemicals transferred to secondary containers are properly labeled: ☐ Complete and legible ☐ Contains chemical name and ingredients ☐ Identifies hazards (HMIS or NFPA Ratings)	→ Ensure employee can read and understand a chemical warning label, and can properly label a secondary container of a chemical. → Show employees labels that are to be used for secondary containers → Fill out a sample secondary label for a hazardous chemical using the SDS.

Hazards of Chemicals, Detection/Presence of Chemicals, and Personal Protective Equipment (PPE)	
☐ Identify the hazards of chemicals that an employee may encounter in the workplace and discuss the categories (flammables, corrosives, toxics/poisons, reactives, etc.)	→ Discuss the hazard categories and the safety considerations for each category.
☐ Review procedures to use or introduce new or non-routine chemicals into the work area.	→ Discuss that employees are required to get authorization before using or introducing chemicals into the workplace.
☐ Discuss methods and observations for detecting the presence of chemicals and/or bodily responses to the presence of chemicals as noted in the SDS.	→ How does the chemical enter the body? Inhalation? Skin absorption? What are the effects? Dizziness? Skin/eyes irritation?
☐ Discuss exposure controls and measures. ☐ Discuss PPE requirements.	→ How is exposure to a chemical controlled? ○ What measures are used for a particular chemical? Vapor/fume hoods? Spray booths? ○ What procedures are in place to minimize exposure? Designated working areas? → What PPE is utilized to minimize exposure?
☐ Explain exposure monitoring/records. ☐ Discuss methods for safe handling and use of chemicals: ☐ Engineering Controls (fume hoods, spray booths) ☐ Safe working practices, precautions, and training ☐ PPE is available and employees are trained in the proper use (gloves, eye protection, aprons, etc.)	→ Does use of the chemical require exposure monitoring to ensure the employee is not overexposed over a period of time (chronic exposure)? What records will be kept? → Discuss control measures and/or engineering controls in the workplace. → What are the PPE requirements for a particular chemical or workplace? → Discuss how to properly utilize PPE and where it may be obtained.
Hazardous Waste Disposal	
☐ Discuss waste accumulation and disposal procedures.	→ Identify employees that will be trained in hazardous waste disposal procedures.
Emergency Procedures	
☐ Discuss the locations and proper use of eyewash stations/emergency showers and first aid treatment. ☐ Review spill procedures. ☐ Review Emergency Action Plan (EAP).	→ Where are the first aid kit, fire extinguisher, and emergency shower/eyewash located? → Identify employees that will be trained in chemical spill/release procedures. → Review EAP for spills/releases, fires, other incidents in areas where chemicals are used.

Name of Employee (Printed):	Signature:	Date:
Name of Trainer (Printed):	Signature:	Date:

APPENDIX E

HAZARD COMMUNICATION PROGRAM
Hazard Analysis Worksheet for Non-routine Tasks

This Hazard Analysis is to be used for performing non-routine tasks. The analysis is a simple guide to determine safety measures required for non-routine tasks performed by faculty and staff. This is meant as a guide only and may not cover all risks associated with non-routine tasks. If further assistance is needed in the hazard analysis of a particular project, please contact the UT Tyler Environmental Health & Safety office at 903-566-7011.

1. Chemicals associated with this project:

CHEMICALS	HAZARDS
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

2. Personal protective equipment required:

EQUIPMENT	TRAINING REQUIRED	
Gloves	Y ____	N ____
Safety Glasses	Y ____	N ____
Goggles	Y ____	N ____
Face Shield	Y ____	N ____
Mask	Y ____	N ____
Respirator	Y ____	N ____
Other	Y ____	N ____

3. Protective measures required at work site:

MEASURES		
Hazard/warning signs required	Y ____	N ____
Lockout/Tagout	Y ____	N ____
Ventilation	Y ____	N ____
Cordon off area	Y ____	N ____
Safety watch	Y ____	N ____
Emergency response procedures	Y ____	N ____

APPENDIX F

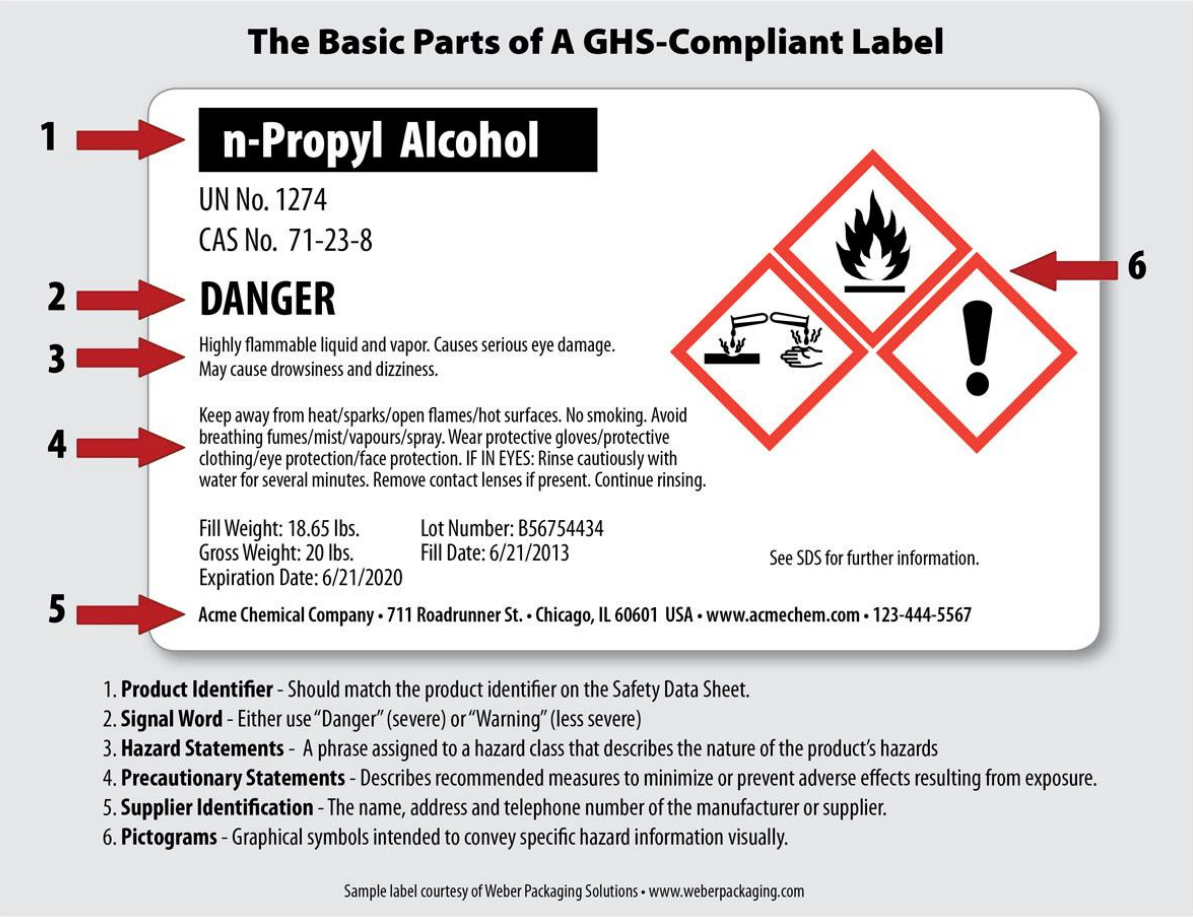
HAZARD COMMUNICATION PROGRAM
GHS Classification and Labeling of Chemicals

OSHA has adopted the Globally Harmonized System (GHS) of Classification and Labelling of Chemicals. This provides workers with better information on the safe handling and use of hazardous chemicals, thereby allowing them to avoid injuries and illnesses related to exposures to hazardous chemicals.

As of December 1, 2015, OSHA requires all chemical manufacturers and distributors not to ship containers unless they comply with the GHS labeling specifications.

GHS labels for hazardous chemicals must contain:

1. Product Identifier
2. Signal Word
3. Hazard Statement(s)
4. Pictogram(s)
5. Precautionary Statement(s)
6. Name, Address, and Telephone Number of Manufacturer or Distributor



GHS Pictograms and Hazards

Chemical manufacturers are required to provide a label that includes the GHS pictogram and hazard statement for each hazard class and category. Precautionary statements must also be provided. GHS uses nine pictograms but OSHA does not enforce the use of the environmental pictogram. The standard GHS pictograms and hazard statements are depicted below.

Health Hazard 	**Flame** 	**Exclamation Mark** 
• Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	• Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	• Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non Mandatory)
Gas Cylinder 	**Corrosion** 	**Exploding Bomb** 
• Gases under Pressure	• Skin Corrosion/ burns • Eye Damage • Corrosive to Metals	• Explosives • Self-Reactives • Organic Peroxides
Flame over Circle 	**Environment *(Non Mandatory)** 	**Skull and Crossbones** 
• Oxidizers	• Aquatic Toxicity	• Acute Toxicity (fatal or toxic)

As of June 1, 2016, employers are required to replace manufacturer labels on chemical containers that do not meet OSHA specifications with a workplace label.

Workplace Labels

Employers have the option to create their own workplace labels commonly referred to as secondary, internal, or in-house labels. The workplace labels can either provide *all of the required information that is on the label from the chemical manufacturer* or *the product identifier and words, pictures, symbols, or a combination thereof*, which in combination with other information immediately available to employees, provide specific information regarding the hazards of the chemicals. Secondary containers must be relabeled with at least the identity appearing on the MSDS/SDS and the appropriate hazard warnings.

APPENDIX G

HAZARD COMMUNICATION PROGRAM
How to Read and Interpret Safety Data Sheets

A Safety Data Sheet (SDS) or Material Safety Data Sheet (MSDS) can be obtained by conducting a search in the ***UT Tyler MSDS Database*** which is hosted on the EH&S website at www.uttyler.edu/safety/programs. It is important to select the SDS/MSDS by the Manufacturer's name to ensure the correct document is referenced for the chemical being used.

Sections 1 through 8 contain general information about the chemical, identification, hazards, composition, safe handling practices, and emergency control measures (i.e., firefighting). Sections 9 through 11 and 16 contain other technical and scientific information, such as physical and chemical properties, stability and reactivity information, toxicological information, exposure control information, and other information. The SDS must also state that no applicable information was found when the preparer does not find relevant information for any required element. The first 11 sections are mandatory and are explained below.

Section 1, Identification
This section identifies the chemical on the SDS as well as the recommended uses. It also provides essential contact information of the supplier. The required information consists of:

- Product identifier used on the label and any other common names or synonyms by which the substance is known.
- Name, address, phone number of the manufacturer, importer, or other responsible party, and emergency phone number.
- Recommended use of the chemical (e.g., a brief description of what it actually does, such as flame retardant) and any restrictions on use (including recommendations given by the supplier)

Section 2, Hazard(s) Identification
This section identifies the hazards of the chemical presented on the SDS and the appropriate warning information associated with those hazards. The required information consists of:

- The hazard classification of the chemical (e.g., flammable liquid, category).
- Signal word.
- Hazard statement(s).
- Pictograms (the pictograms or hazard symbols may be presented as graphical reproductions of the symbols in black and white or be a description of the name of the symbol (e.g., skull and crossbones, flame).
- Precautionary statement(s).
- Description of any hazards not otherwise classified.

- For a mixture that contains an ingredient(s) with unknown toxicity, a statement describing how much (percentage) of the mixture consists of ingredient(s) with unknown acute toxicity. Please note that this is a total percentage of the mixture and not tied to the individual ingredient(s).

Section 3, Composition/Information on Ingredients
This section identifies the ingredient(s) contained in the product indicated on the SDS, including impurities and stabilizing additives. This section includes information on substances, mixtures, and all chemicals where a trade secret is claimed. The required information consists of:

Substances

- Chemical name.
- Common name and synonyms.
- Chemical Abstracts Service (CAS) number and other unique identifiers.
- Impurities and stabilizing additives, which are themselves classified and which contribute to the classification of the chemical.

Mixtures
Same information required for substances to include.

- The chemical name and concentration (i.e., exact percentage) of all ingredients which are classified as health hazards and are:
    - Present above their cut-off/concentration limits or
    - Present a health risk below the cut-off/concentration limits.
- The concentration (exact percentages) of each ingredient must be specified except concentration ranges may be used in the following situations:
    - A trade secret claim is made,
    - There is batch-to-batch variation, or
    - The SDS is used for a group of substantially similar mixtures.

Chemicals where a trade secret is claimed
A statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

Section 4, First-Aid Measures
This section describes the initial care that should be given by untrained responders to an individual who has been exposed to the chemical. The required information consists of:

- Necessary first-aid instructions by relevant routes of exposure (inhalation, skin and eye contact, and ingestion).
- Description of the most important symptoms or effects, and any symptoms that are acute or delayed.
- Recommendations for immediate medical care and special treatment needed, when necessary.

Section 5, Fire-Fighting Measures
This section provides recommendations for fighting a fire caused by the chemical. The required information consists of:

- Recommendations of suitable extinguishing equipment, and information about extinguishing equipment that is not appropriate for a particular situation.
- Advice on specific hazards that develop from the chemical during the fire, such as any hazardous combustion products created when the chemical burns.
- Recommendations on special protective equipment or precautions for firefighters.

Section 6, Accidental Release Measures
This section provides recommendations on the appropriate response to spills, leaks, or releases, including containment and cleanup practices to prevent or minimize exposure to people, properties, or the environment. It may also include recommendations distinguishing between responses for large and small spills where the spill volume has a significant impact on the hazard. The required information may consist of recommendations for:

- Use of personal precautions (such as removal of ignition sources or providing sufficient ventilation) and protective equipment to prevent the contamination of skin, eyes, and clothing.
- Emergency procedures, including instructions for evacuations, consulting experts when needed, and appropriate protective clothing.
- Methods and materials used for containment (e.g., covering the drains and capping procedures).
- Cleanup procedures (e.g., appropriate techniques for neutralization, decontamination, cleaning or vacuuming; adsorbent materials; and/or equipment required for containment/clean up)

Section 7, Handling and Storage
This section provides guidance on the safe handling practices and conditions for safe storage of chemicals. The required information consists of:

- Precautions for safe handling, including recommendations for handling incompatible chemicals, minimizing the release of the chemical into the environment, and providing advice on general hygiene practices (e.g., eating, drinking, and smoking in work areas is prohibited).
- Recommendations on the conditions for safe storage, including any incompatibilities. Provide advice on specific storage requirements (e.g., ventilation requirements)

Section 8, Exposure Controls/Personal Protection
This section indicates the exposure limits, engineering controls, and personal protective measures that can be used to minimize worker exposure. The required information consists of the following:

- OSHA Permissible Exposure Limits (PELs), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.
- Appropriate engineering controls (e.g., use local exhaust ventilation, or use only in an enclosed system).
- Recommendations for personal protective measures to prevent illness or injury from exposure to chemicals, such as personal protective equipment (PPE) (e.g., appropriate types of eye, face, skin or respiratory protection needed based on hazards and potential exposure).
- Any special requirements for PPE, protective clothing or respirators (e.g., type of glove material, such as PVC or nitrile rubber gloves; and breakthrough time of the glove material).

Section 9, Physical and Chemical Properties
This section identifies physical and chemical properties associated with the substance or mixture. The minimum required information consists of:

- Appearance (physical state, color, etc.);
- Upper/lower flammability or explosive limits;
- Odor;
- Vapor pressure;
- Odor threshold;
- Vapor density;
- pH;
- Relative density;
- Melting point/freezing point;
- Solubility(ies);
- Initial boiling point and boiling range;
- Flash point;
- Evaporation rate;
- Flammability (solid, gas);
- Partition coefficient: n-octanol/water;
- Auto-ignition temperature;
- Decomposition temperature; and
- Viscosity.

The SDS may not contain every item on the above list because information may not be relevant or is not available. When this occurs, a notation to that effect must be made for that chemical property.

Manufacturers may also add other relevant properties, such as the dust deflagration index (Kst) for combustible dust, used to evaluate a dust's explosive potential.

Section 10, Stability and Reactivity
This section describes the reactivity hazards of the chemical and the chemical stability information. This section is broken into three parts: reactivity, chemical stability, and other. The required information consists of:

Reactivity
Description of the specific test data for the chemical(s). This data can be for a class or family of the chemical if such data adequately represent the anticipated hazard of the chemical(s), where available.

Chemical stability

- Indication of whether the chemical is stable or unstable under normal ambient temperature and conditions while in storage and being handled.
- Description of any stabilizers that may be needed to maintain chemical stability.
- Indication of any safety issues that may arise should the product change in physical appearance.

Other

- Indication of the possibility of hazardous reactions, including a statement whether the chemical will react or polymerize, which could release excess pressure or heat, or create other hazardous conditions. Also, a description of the conditions under which hazardous reactions may occur.
- List of all conditions that should be avoided (e.g., static discharge, shock, vibrations, or environmental conditions that may lead to hazardous conditions).
- List of all classes of incompatible materials (e.g., classes of chemicals or specific substances) with which the chemical could react to produce a hazardous situation.
- List of any known or anticipated hazardous decomposition products that could be produced because of use, storage, or heating. (Hazardous combustion products should also be included in Section 5 (Fire-Fighting Measures) of the SDS.)

Section 11, Toxicological Information
This section identifies toxicological and health effects information or indicates that such data are not available. The required information consists of:

- Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact). The SDS should indicate if the information is unknown.
- Description of the delayed, immediate, or chronic effects from short- and long-term exposure.
- The numerical measures of toxicity (e.g., acute toxicity estimates such as the LD50 (median lethal dose)) - the estimated amount [of a substance] expected to kill 50% of test animals in a single dose.

- Description of the symptoms. This description includes the symptoms associated with exposure to the chemical including symptoms from the lowest to the most severe exposure.
- Indication of whether the chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions) or found to be a potential carcinogen by OSHA.

Section 12, Ecological Information (non-mandatory)
This section provides information to evaluate the environmental impact of the chemical(s) if it were released to the environment. The information may include:

- Data from toxicity tests performed on aquatic and/or terrestrial organisms, where available (e.g., acute or chronic aquatic toxicity data for fish, algae, crustaceans, and other plants; toxicity data on birds, bees, plants).
- Whether there is a potential for the chemical to persist and degrade in the environment either through biodegradation or other processes, such as oxidation or hydrolysis.
- Results of tests of bioaccumulation potential, making reference to the octanol-water partition coefficient (Kow) and the bioconcentration factor (BCF), where available.
- The potential for a substance to move from the soil to the groundwater (indicate results from adsorption studies or leaching studies).
- Other adverse effects (e.g., environmental fate, ozone layer depletion potential, photochemical ozone creation potential, endocrine disrupting potential, and/or global warming potential).

Section 13, Disposal Considerations (non-mandatory)
This section provides guidance on proper disposal practices, recycling or reclamation of the chemical(s) or its container, and safe handling practices. To minimize exposure, this section should also refer the reader to Section 8 (Exposure Controls/Personal Protection) of the SDS. The information may include:

- Description of appropriate disposal containers to use.
- Recommendations of appropriate disposal methods to employ.
- Description of the physical and chemical properties that may affect disposal activities.
- Language discouraging sewage disposal.
- Any special precautions for landfills or incineration activities.

Section 14, Transport Information (non-mandatory)
This section provides guidance on classification information for shipping and transporting of hazardous chemical(s) by road, air, rail, or sea. The information may include:

- UN number (i.e., four-figure identification number of the substance).
- UN proper shipping name.
- Transport hazard class(s).

- Packing group number, if applicable, based on the degree of hazard.
- Environmental hazards (e.g., identify if it is a marine pollutant according to the International Maritime Dangerous Goods Code (IMDG Code)).
- Guidance on transport in bulk (according to Annex II of MARPOL 73/78 and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code)).
- Any special precautions which an employee should be aware of or needs to comply with, in connection with transport or conveyance either within or outside their premises (indicate when information is not available).

Section 15, Regulatory Information (non-mandatory)
This section identifies the safety, health, and environmental regulations specific for the product that is not indicated anywhere else on the SDS. The information may include any national and/or regional regulatory information of the chemical or mixtures (including any OSHA, Department of Transportation, Environmental Protection Agency, or Consumer Product Safety Commission regulations)

Section 16, Other Information
This section indicates when the SDS was prepared or when the last known revision was made. The SDS may also state where the changes have been made to the previous version. You may wish to contact the supplier for an explanation of the changes. Other useful information also may be included here.

APPENDIX H

Hazardous Chemicals Inventory Form

Department:
Contact Person:
Phone Number:
Emergency Phone Number:

Date of Inventory:

Manufacturer	**Chemical Name** List all Components in Mixtures	**CAS Number**	**Amount & Unit** Unit Type L, Kg, Gal, etc.	**Hazard** List all	**Building**	**Room**
Sigma-Aldrich	1-Butanol	71-36-3	1 L	3, 14, 19, & 20 (avoid Oxidizers)	RBS	3015

HAZARD COMMUNICATION PROGRAM
Hazardous Chemicals Inventory Procedures

Departments that work with, handle, or store hazardous chemicals are required to conduct an annual inventory of these chemicals before December 31st of each year. The inventory will be conducted using the *Hazardous Chemicals Inventory Form* above. The columns should be completed as described below.

1. Manufacturer – SDS Section 1, Company Name

2. Chemical Name – SDS Section 3, List ALL Components in Mixtures

3. CAS Number – SDS Section 3

4. Amount & Unit – The size of the container, not the amount of content

5. Hazard – SDS Section 2, List ALL Hazards / Section 10, List Incompatible Materials

6. Building – Self-explanatory

7. Room – Self-explanatory

Cross-reference the identified Hazard Statements in Section 2 of the SDS with the Chemical Hazard Codes and the Chemical Hazard Definitions below to complete column 5 on the Hazardous Chemicals Inventory Form.

Chemical Hazard Codes			
1	Explosive	14	Acute Toxicity
2	Emit Flammable Gas w/ Water Contact	15	Aspiration Hazard
3	Flammable Liquid (FP <100 F)	16	Carcinogenicity, Mutagenicity, Reproductive Toxicity
4	Flammable Solid	17	Specific Target Organ Toxicity
5	Flammable Gas	18	Skin Corrosion or Burn
6	Flammable Aerosol	19	Serious Eye Damage
7	Gas Under Pressure	20	Respiratory, Skin, or Eye Irritation
8	Organic Peroxide	21	Respiratory or Skin Sensitization
9	Self-Reactive	22	Asphyxiant
10	Self-Heating	23	Combustible Dust
11	Pyrophoric (Liquid or Solid)	24	Cryogenic Material
12	Oxidizer (Liquid, Solid, or Gas)	25	Radioactive Material
13	Corrosive to Metal	26	Other

HAZARD COMMUNICATION PROGRAM
Chemical Hazard Definitions

Health Hazards

For additional information on these chemical hazards, see Appendix A, to §1910.1200 – Health Hazard Criteria.

1. **Acute Toxicity** refers to those adverse effects occurring following oral or dermal administration of a single dose of a substance, or multiple doses given within 24 hours, or an inhalation exposure of 4 hours.

2. **Aspiration Hazard** means the entry of a liquid or solid chemical directly through the oral or nasal cavity, or indirectly from vomiting, into the trachea and lower respiratory system.

3. **Serious Eye Damage** is the production of tissue damage in the eye, or serious physical decay of vision, following application of a test substance to the anterior surface of the eye, which is not fully reversible within 21 days of application.

4. **Skin Corrosion** is the production of irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis, following the application of a test substance for up to 4 hours. Corrosive reactions are typified by ulcers, bleeding, bloody scabs, and, by the end of observation at 14 days, by discoloration due to blanching of the skin, complete areas of alopecia, and scars.

5. **Eye Irritation** is the production of changes in the eye following the application of test substance to the anterior surface of the eye, which are fully reversible within 21 days of application.

6. **Skin Irritation** is the production of reversible damage to the skin following the application of a test substance for up to 4 hours.

7. **Skin Sensitizer** means a chemical that will lead to an allergic response following skin contact.

8. **Respiratory Sensitizer** means a chemical that will lead to hypersensitivity of the airways following inhalation of the chemical.

9. **Carcinogen** means a substance or a mixture of substances which induce cancer or increase its incidence.

10. **Mutagenicity** is defined as a as a permanent change in the amount or structure of the genetic material in a cell.

11. **Reproductive Toxicity** includes adverse effects on sexual function and fertility in adult males and females, as well as adverse effects on development of the offspring.

12. **Specific Target Organ Toxicity** may result in impaired function, both reversible and irreversible, immediate and/or delayed to specific organs after a single or repeated exposure to a chemical substance.

Physical Hazards

For additional information on these chemical hazards, see Appendix B, to §1910.1200 – Physical Hazard Criteria.

1. **Explosive** is a solid or liquid chemical that which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic chemicals are included even when they do not evolve gases.

2. **Chemicals which in Contact with Water Emit Flammable Gases** are solid or liquid chemicals which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.

3. **Gases under Pressure** are gases which are contained in a receptacle at a pressure of 200 kPa (29 psi) (gauge) or more, or which are liquefied or liquefied and refrigerated. They comprise compressed gases, liquefied gases, dissolved gases and refrigerated liquefied gases.

4. **Flammable Aerosol** means any non-refillable receptacle containing a gas compressed, liquefied or dissolved under pressure, and fitted with a release device allowing the contents to be ejected as particles in suspension in a gas, or as a foam, paste, powder, liquid or gas.

5. **Flammable Gas** means a gas having a flammable range with air at 20°C (68°F) and a standard pressure of 101.3 kPa (14.7 psi)

6. **Flammable Liquid** means a liquid having a flashpoint (the lowest temperature at which the liquid gives off enough vapor to be ignited at the surface of the liquid) of not more than 93°C (199.4°F).

7. **Flammable Solid** means a solid which is a readily combustible solid, or which may cause or contribute to fire through friction.

8. **Self-Reactive** is a thermally unstable liquid or solid chemical liable to undergo a strongly exothermic decomposition even without participation of oxygen (air). This definition excludes chemicals classified under this section as explosives, organic peroxides, oxidizing liquids or oxidizing solids.

9. **Pyrophoric Liquid** means a liquid which, even in small quantities, is liable to ignite within five minutes after coming into contact with air.

10. **Pyrophoric Solid** means a solid which, even in small quantities, is liable to ignite within five minutes after coming into contact with air.

11. **Self-Heating Chemical** is a solid or liquid chemical, other than a pyrophoric solid or liquid, which by reaction with air and without energy supply, is liable to self-heat.

12. **Oxidizing Gas** means any gas which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does.

13. **Oxidizing Liquid** means a liquid which, while in itself not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material.

14. **Oxidizing Solid** means a solid which, while in itself not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material.

15. **Organic Peroxide** means a liquid or solid organic chemical which contains the bivalent -0-0- structure and as such is considered a derivative of hydrogen peroxide, where one or both of the hydrogen atoms have been replaced by organic radicals. The term organic peroxide includes organic peroxide mixtures containing at least one organic peroxide. Organic peroxides are thermally unstable chemicals, which may undergo exothermic self-accelerating decomposition. In addition, they may have one or more of the following properties: (a) be liable to explosive decomposition; (b) burn rapidly; (c) be sensitive to impact or friction; and (d) react dangerously with other substances.

16. **Corrosive to Metals** means a chemical which by chemical action will materially damage, or even destroy, metals

Other Hazards Materials

There are other hazardous materials present in laboratory settings.

1. **Asphyxiant** is a substance that deprives body tissue of oxygen.

2. **Combustible Dust** is any finely divided material, when which suspended in air, in the right concentration and under certain conditions, can become explosible.

3. **Cryogenic Material** is any liquid that has a normal boiling point below 65.6°C (150°F) at atmospheric pressure.

4. **Radioactive Material** means any liquid, solid, or gas containing substances which emit ionizing radiation.