APPENDIX
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PUBLIC EMPLOYER'S GUIDE AND MODEL WRITTEN PROGRAM FOR THE HAZARD COMMUNICATION STANDARD

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About The Guide

The *Public Employer's Guide and Model Written Program for the Hazard Communication Standard* was developed by the New Jersey Department of Health and Senior Services, Public Employees Occupational Safety and Health (PEOSH) Program, Education and Training Project. This Guide is designed to help employers and employees understand the requirements of the PEOSH Hazard Communication Standard (HCS), N.J.A.C. 12:100-7. An overview of the major components of the PEOSH HCS and explanations of how components of the New Jersey Worker and Community Right to Know Act interact with the PEOSH HCS are provided. Included at the end of this document is a copy of the PEOSH HCS, an HCS compliance checklist, and a sample letter for requesting material safety data sheets to further assist employers with the requirements of the Standard.

A *sample written hazard communication program* is provided to illustrate how to develop a written program. The format and content of the sample written program must be modified to reflect the actual activity and policies of each individual workplace in order to make it an effective management tool for protecting the health and safety of employees. Every workplace that uses hazardous substances must have a written program and is required to implement an effective hazard communication program.

This guide and additional occupational safety and health bulletins and model programs may be accessed through the New Jersey Department of Health and Senior Services and New Jersey Department of Labor's Web sites identified on the "*Resources for Additional Information*" list found on page 21 of the guide.

July 2004

Introduction

The federal Occupational Safety and Health Administration (OSHA) estimates that there are approximately 32 million workers who are exposed to or have the potential for being exposed to one or more chemical hazards in the workplace. The number of exposed or potentially exposed individuals, the rate at which chemicals are being introduced yearly, plus the over 600,000 chemicals that already exist support the need for workers to be informed about the chemical hazards they may encounter in the workplace (OSHA Fact Sheet 93-26).

To protect the health and safety of workers, the federal Hazard Communication Standard, Title 29 of the Code of Federal Regulations (CFR), Part 1910.1200, was adopted by OSHA in 1983. The Hazard Communication Standard requires private employers to inform their employees of the hazards and identities of workplace chemicals to which they may be exposed. Public sector workers were not covered by the Hazard Communication Standard; however, New Jersey had adopted a law the same year which provided similar occupational health and safety protection for public sector workers, the New Jersey Worker and Community Right to Know (RTK) Act.

To increase the ability of New Jersey to protect its public sector workforce, on January 11, 2001, OSHA approved New Jersey as a State-Plan state for public employees only. In accordance with the OSHA-approved PEOSH State Plan, New Jersey must provide an occupational safety and health program that is or will be as effective as the federal program. Through the Public Employees Occupational Safety and Health Act, New Jersey adopted the Hazard Communication Standard with amendments, N.J.A.C. 12:100-7, to bring New Jersey's regulatory requirements and standards in line with OSHA requirements. The PEOSH Hazard Communication Standard (HCS), and a summary of the amendments to the federal Standard which resulted in the creation of the PEOSH HCS, are included in Appendix A and Appendix B, respectively.

The PEOSH HCS overlaps with the New Jersey Worker and the Community Right to Know Act (RTK Act) administered by the Department of Health and Senior Services Right to Know Program in the area of education and training of public employees. In order to prevent confusion and public employers from being subjected to two sets of rules regarding education and training, certain provisions of RTK education and training have been added to the PEOSH HCS and education and training is being removed from the RTK rules. **Since public employers have been complying with the Worker and Community Right to Know Act since 1984, most public employers will have already complied with many of the requirements of the PEOSH HCS.**

The PEOSH HCS requires employers that "use" (handle, package, transfer or react to) hazardous chemicals to establish a written hazard communication program and communicate the hazard information to workers through labels and other forms of warnings, Material Safety Data Sheets, Hazardous Substance Fact Sheets, and worker information and training programs. This Guide has been developed to assist public employers in complying with the PEOSH HCS and making the transition from RTK training to PEOSH HCS-required training.

PEOSH Hazard Communication Standard Requirements

The PEOSH HCS is based on the concept that employees have both the right and the need to know about the hazards they are exposed to while working and the identities of the chemicals that pose the hazard. It puts in place a system whereby the hazards of all chemicals are evaluated. The hazard information and protective measures required to use these chemicals safely are then communicated to employers and their exposed or potentially exposed employees who may use the chemicals. The responsibility for communicating chemical hazards may be grouped as follows:

- Producers (manufacturers) and importers of chemicals have the responsibility for determining the hazards of each chemical and providing the hazard information to the users of the products containing the hazardous chemical;
- Employers who use hazardous chemicals are responsible for obtaining and maintaining hazard information on the products they use, and ensuring that their employees who work with the hazardous products are aware of the hazards.

Employers that do not produce or import but only use hazardous chemicals can focus on those parts of the Standard that require the establishment of a workplace hazard communication program and the communication of the hazard information to their workers. The PEOSH HCS is performance-based; therefore, employers are allowed flexibility in adapting their existing health and safety documents or procedures to meet the requirements of the Standard for their workplace. This Guide will indicate, where appropriate, when existing requirements of the RTK Act can be used to fulfill similar requirements of the PEOSH HCS.

The compliance strategy regarding the PEOSH Hazard Communication Standard outlined in this document serves as a general guide for employers. It is the employer's responsibility to review the PEOSH HCS in Appendix A to become completely familiar with its requirements.

Scope and Application

The PEOSH HCS applies to all public employers, regardless of size, whose employees may be exposed or have the potential for exposure to hazardous chemicals under normal conditions of use or in a foreseeable emergency in the workplace.

Employers with Limited PEOSH HCS Coverage

1. **Chemicals in sealed containers** – Employees who handle hazardous chemicals in sealed containers which are not opened under normal conditions of use, such as in warehouses and transportation facilities, are exempt from the full requirement of the Standard but are still required to:
   - Ensure that labels are not defaced or removed from incoming containers;
   - Obtain and maintain Material Safety Data Sheets (MSDSs) and make them readily accessible to employees in their work areas during each workshift; and
   - Provide information and training for employees, except for the location and availability of the written hazard communication program, so they know how to protect themselves in the event of a chemical spill or leak from a sealed container.
2. **Laboratories** – Employers are required to perform only the following under the PEOSH HCS:
   - Ensure that labels are not defaced or removed from incoming containers;
   - Obtain and maintain Material Safety Data Sheets (MSDSs) and make them readily accessible to employees in their work areas during each workshift; and
   - Provide information and training for laboratory employees in accordance with the PEOSH HCS, except for the location and availability of the written hazard communication program.

The PEOSH Occupational Exposure to Hazardous Chemicals in Laboratories Standard, 29 CFR 1910.1450, applies to employers who are engaged in the laboratory use of hazardous chemicals. Laboratory use of hazardous chemicals means handling or use of such chemicals in which all of the following conditions are met: chemical manipulations are carried out on a "laboratory scale;" multiple chemical procedures or chemicals are used; the procedures involved are not part of a production process; and protective laboratory practices and equipment are available and in common use. See details in Appendix H. This Standard requires employers to provide employees with information and training to apprise them of the hazards of chemicals present in their work area. For laboratories covered under the Laboratory Standard, the requirements of the PEOSH HCS are superseded. In this case the more specific Standard, 29 CFR 1910.1450, applies. However, these laboratories are still required to comply with the provisions of the RTK Act.

Laboratory employers that ship hazardous chemicals are considered to be either chemical manufacturers or distributors. They must, therefore, ensure that any containers of hazardous substances leaving the laboratory are labeled as required by the PEOSH HCS, and that an MSDS is provided to distributors and other employers in accordance with N.J.A.C. 12:100-7.7(f) and (g).

How to Comply with the PEOSH Hazard Communication Standard

❚ Read the Standard, N.J.A.C. 12:100-7

Make sure you understand what is required of you by the Standard. Public employers should focus specifically on the following sections of N.J.A.C. 12:100-7:

(7.5) written hazard communication program
(7.6) labels and other forms of warnings
(7.7) material safety data sheets, and
(7.8) information and training

Additionally, you should read Appendix E of the PEOSH HCS which provides guidelines for employer compliance as well as the bulletin "PEOSH Adopts the Hazard Communication Standard" developed by the PEOSH Program. This bulletin explains the general requirements of the Standard and highlights the amendments to the PEOSH Hazard Communication Standard that incorporate certain provisions of the New Jersey Worker and Community Right to Know Act.

❚ Identify Responsible Staff

Identify staff who will be responsible for the initial set up of the hazard communication program and the day-to-day activities necessary to comply with the PEOSH HCS.

❚ Develop and Implement a Written Hazard Communication Program

The PEOSH Hazard Communication Standard requires public employers, in workplaces where employees are exposed or have the potential for exposure to hazardous chemicals under normal conditions of use or in a foreseeable emergency in the workplace, to have a written hazard communication program describing how the requirements in the Standard will be put in place in that facility. The written program must be made available upon request to employees, their designated representatives, the Commissioner of Labor and/or the Commissioner of Health and Senior Services and the Director, in a reasonable time, but no later than 15 days from the time of the request in accordance with the Access to Employee Exposure and Medical Records Standard, 29 CFR 1910.1020(e). The only exceptions to the written plan requirements are laboratories and workplaces where employees handle chemicals in sealed containers only, e.g., warehouses. Refer to Section 7.2 of the Standard for the specific requirements for these two types of workplaces.

The written hazard communication program must contain a list of hazardous chemicals and must detail how the employer will comply with the requirements for labeling and other forms of warning, obtaining and maintaining MSDSs, and providing information and training to employees. The written program does not have to be lengthy or complicated, but it must explain completely how the PEOSH HCS is being put into practice at your specific workplace. The written program must include, at a minimum:

A. The person responsible for developing, evaluating the effectiveness of, and updating the written program;

B. The person responsible for each aspect of the hazard communication program (labeling, MSDSs, training). Names or titles must be indicated in the written program;

C. A description of the system(s) used for container labeling and any warning methods used in the event of a chemical release or overexposure to a hazardous chemical that is in use in the workplace;

D. The person responsible for obtaining and maintaining MSDSs, if different from the individual taking care of the written program, and the procedures employees use to gain access to the MSDSs. If the MSDSs are electronically available, the backup method for accessing MSDSs must be described;

E. An explanation of the procedures used to train new employees at the time of their initial assignment and when a new hazard is introduced in the workplace, as well as the procedure for refresher training every 2 years;

F. The means used to inform employees of the location of the written program and how and when the written program will be made available to employees;

G. A description of the methods used for communicating hazards to others, such as subcontractors, and what protective measures are necessary for the subcontractor's employees. Details about how employees will be protected from hazardous substances brought into the workplace by the subcontractor must also be described;

H. The methods the employer will use to inform employees of the hazards of non-routine tasks; and

I. A description of how the employer will provide employers at multi-employer workplaces with on-site access to MSDSs and an explanation of the labeling system used at the site, and precautionary measures that are needed during normal operations and in foreseeable emergencies.

A sample written hazard communication program has been included in this Guide to aid you in developing your program. **If you choose to use this sample program as a guide, be sure to adapt it to reflect the hazards, protective measures, and policies and procedures specific to your workplace.** For additional guidance on how to develop a written hazard communication program, refer to Appendix E, Guidelines for Employer Compliance (Advisory), found at the end of the Standard, N.J.A.C. 12:100-7. A copy of the Standard is located in Appendix A of this document.

❙ Identify Hazardous Chemicals

It is the responsibility of the manufacturer/producer or importer of chemicals to identify whether a chemical is hazardous. **As a user of chemicals** you rely on the evaluation received from the manufacturer or importer through labels on containers and Material Safety Data Sheets (MSDSs). In general, if the chemical or product has been shown to cause an acute or chronic health effect, or pose a physical hazard such as flammability or corrosivity, it is considered to be hazardous.

> Public employers can also use the Right to Know Hazardous Substance List to assist in identifying whether a chemical is hazardous. Under the hazard communication program, if there is a question regarding the hazard of a particular chemical, it is best to include that chemical on the list.

❙ Make a List of the Hazardous Chemicals in Your Workplace

The PEOSH HCS requires a list of hazardous chemicals in the workplace to be prepared and become a part of the written hazard communication program. **All hazardous chemicals present in your workplace should be placed on a list using the identity of the hazardous chemical that appears on the appropriate MSDS and label.** The list may be compiled for the entire workplace as a whole or by individual work areas, and should contain all known hazardous chemicals in the facility. Develop the list by identifying hazardous chemicals in containers and, if applicable, in pipes and work operations such as the fumes produced from welding. The list can also serve as an inventory of every hazardous product for which an MSDS and Hazardous Substance Fact Sheet (HSFS) must be maintained. A worksheet for developing a list of hazardous chemicals can be found in Appendix C. Although the location and availability of MSDSs and HSFSs are not required on the list, it can help track receipt of MSDSs and HSFSs and identify the work area in which the MSDS should be located. It can also serve as an alternative to keeping MSDSs for 30 years. Under the Access to Employee Exposure and Medical Records Standard, 29 CFR 1910.1020, MSDSs are specifically identified as exposure records and are therefore required to be kept at least 30 years except as indicated in 29 CFR 1910.1020(d)(1)(ii)(B)-see Appendix G.

Many public employers already have a list of hazardous chemicals on hand, their Right to Know (RTK) Survey. Since the PEOSH HCS is performance-based, you are allowed to use your complete inventory RTK Survey as the required list. If public employers want to use their RTK Survey, they must make certain that the survey contains **all** of the hazardous chemicals in the workplace, not just those listed on the RTK Hazardous Substance List. If you have chemicals that are covered by the PEOSH HCS but are not required to be reported on the RTK Survey, you can list them on the worksheet in Appendix C and attach it to the RTK Survey, or include them on the RTK Survey.

Before finalizing your list, review your worksheet to see if any chemical may be exempt from being placed on the finalized list. If it is not hazardous, it is not covered. If there is no potential for exposure, the chemical cannot be released, it is not covered. Review N.J.A.C. 12:100-7.2(f) to determine exemption of chemicals. Once you have developed your list of hazardous chemicals or are using a RTK Survey that lists all products containing hazardous chemicals used in the workplace, **develop procedures to keep your list current.** Remember to add hazardous chemicals in new products to the list as they are introduced in the workplace. If you are using the RTK Survey as the list, attach a supplemental page listing the new hazardous chemicals until your next RTK Survey is due, at which time the new chemicals can become part of your RTK Survey. The following is a list of some potentially hazardous chemicals and products typically present in a workplace:

Acetone	Etching Agents	Paints
Acids	Fiberglass	Pesticides
Adhesives	Flammables	Process Chemicals
Aerosols	Foaming Resins	Sealers
Antifreeze	Fuels	Shellacs
Asbestos	Fungicides	Solders
Battery fluids	Gasoline	Solvents
Benzene	Glues	Strippers
Catalysts	Greases	Surfactants
Caustics	Inks	Thinners
Cleaning Agents	Insecticides	Varnishes
Coal Tar Pitch	Herbicides	Water Treatment Chemicals
Coatings	Janitorial Supplies	Wood Preservatives
Degreasing Agents	Kerosene	Xylene
Detergents	Lacquers	
Diesel Fuel	Lubricants	
Disinfectants	Lye	

- Obtain Material Safety Data Sheets (MSDSs) and Hazardous Substance Fact Sheets (HSFSs)

Employers must have an MSDS and HSFS (written for individual chemicals) for each hazardous product or chemical they use. Distributors are responsible for ensuring their customers are provided a copy of the MSDS. While employers will have copies of the MSDSs in their RTK Central File, **they must make sure that copies of the MSDSs for hazardous chemicals are readily accessible to employees while they are in their respective work areas in order to meet the requirements of the PEOSH HCS.**

1. If you do not have an MSDS for a hazardous substance in your workplace, request a copy from the manufacturer or distributor as soon as possible. A sample letter requesting an MSDS is included in Appendix D. MSDSs are required to be included in the initial shipment to you of materials containing hazardous chemicals and with the first shipment after an MSDS is updated, or must precede the shipment (e.g., with invoices).

2. Review each MSDS received to be sure it is complete, clearly written, and the most up to date copy. The MSDS should contain no blank spaces; where information is not available a notation to that affect must be indicated on the MSDS. The identity of the chemical or product used on the label is required to be on MSDS.
3. If the MSDS is incomplete or the copy is unclear, contact the manufacturer for the missing information or to request another copy.
4. If you do not have an HSFS for a hazardous substance in your workplace, request a copy from the RTK Program or download a copy from the program's website. The mailing and website addresses are listed on the Resources for Additional Information page.
5. Make sure the MSDSs and HSFSs are available to employees, designated representatives, and the Commissioners of the New Jersey Departments of Labor or Health and Senior Services, or their designees.
6. If MSDSs and HSFSs are available to employees electronically, make sure that the employees have been instructed on how to access the MSDSs and HSFSs, and have a backup system in place in case of system failure.

The RTK law requires public employers to have MSDSs and HSFSs in their RTK Central File, so employers may have the MSDSs and HSFs already on hand. However, you will need to make certain the MSDSs are readily accessible during each work shift when the employee is in their work area as required by the PEOSH HCS. If the RTK Central File provides the required accessibility for employees, it meets the PEOSH HCS requirement.

❙ Make Sure All Containers Are Labeled

The PEOSH HCS-required label must contain the identity of the product and appropriate hazard warnings. The **identity** is any term that appears on both the label and MSDS linking these two sources of information. It may be a common or trade name such as "Desk and Office Cleaner." A **hazard warning** is any statement, picture, or symbol used to convey the hazardous effects of the material. The label must be legible and prominently displayed. There are no specific requirements for the size, color, or wording of the label. A sample PEOSH HCS label is shown below:

Sample PEOSH HCS Label

Product Identity	Desk and Office Cleaner
Hazard Warning	Caution: Avoid eye contact; may be irritating to the eyes. Contents under pressure; store in cool, dry place.
Manufacturer	XYZ Office Supply Company 222 Middle Lane Westberry, AB 11111 (000) 121-3456

The manufacturer, importer or distributor is responsible for labeling containers. Public employers are responsible for the following:

1. Ensure that all containers in the workplace are labeled, tagged, or marked with the identity of the product, hazard warnings, and the manufacturer's name and address, and that upon entering the workplace the label is not defaced or removed from the product. A detailed discussion of PEOSH HCS labeling requirements is found in N.J.A.C. 12:100-7.6;
2. If the container is not labeled or the label is damaged, obtain a label from the manufacturer, importer or other responsible party, or request the label information and prepare a label using the information obtained from these sources;

3. Ensure that any packaged material that is required to be marked, labeled or placarded by the U.S. Department of Transportation's Hazardous Materials Regulations (49 CFR Parts 171 through 180), retains the marking, label or placard until the packaging is removed or the container is sufficiently cleaned of residue or purged of vapors to remove any potential hazard;
4. Instruct employees to label portable containers into which they have poured hazardous substances. If the portable container is for the individual's immediate use during his/her shift, then the container does not need to have a PEOSH HCS label, however, some identification as to what is in the container is advisable.

Public employers are required to ensure that products containing hazardous chemicals are labeled according to both the PEOSH HCS and the RTK Act. Many manufacturers have already labeled their products according to both the PEOSH HCS and RTK Act, so product labels should be checked for compliance before attempting to re-label. The **PEOSH HCS label** contains at a minimum the identity of the product or chemical, appropriate hazard warnings, and the name and address of the manufacturer or importer. Containers received should already bear the required PEOSH HCS label. The **RTK label** must include the top five ingredients of the product, whether hazardous or not, and any other hazardous chemicals in the product that are not included in the top five ingredients, plus the Chemical Abstracts Service number of the ingredients listed on the label. Contact the RTK Program for additional information about labeling requirements.

❚ Train Employees

All employees who are exposed or have the potential for exposure to hazardous chemicals while working must be provided with information and training about those hazards. "Exposed employee" means an employee who comes into contact with a hazardous chemical through any route of entry such as inhalation, ingestion, skin absorption, etc., during the course of his or her routine work or in emergency situations. This training must be provided upon assignment to work with the hazardous material, when new hazards are introduced into the workplace for which the employee has not already been trained, and every two years thereafter if the worker continues to be exposed to hazardous chemicals.

> The time frame for providing initial training under the PEOSH HCS is unlike the initial training requirement under the RTK law in that the employee must be trained **before** working with the hazardous chemical. Employers do not have a 30-day time frame in which to conduct the initial training.

PEOSH HCS training must be provided by a technically qualified person, on paid time, and in a manner consistent with the educational level, literacy, and language of the employee being trained. Training records must be maintained for the duration of the employee's employment. The information contained on the sample Sign-In sheet in Appendix F, the qualifications of the trainer, and summary information regarding the training program must be kept as documentation of the PEOSH HCS training.

The following are recommendations for training in order to ensure consistency and promote effectiveness:

A. Designate a person or persons to be responsible for the initial and refresher training, and any special training that may be needed.

B. Incorporate visual as well as auditory elements in the training and use hands-on activities where appropriate. **Videotapes may be used to supplement your training, but their use alone is not acceptable as PEOSH HCS training.**

C. Make sure you include all of the required components of training listed in N.J.A.C. 12:100-7.8:
1. An explanation of the PEOSH Hazard Communication Standard and the facility's written program;
2. The person responsible for maintaining the written program;
3. A description of the operations where hazardous chemicals are present;
4. The location of the written program and availability of other health and safety information (MSDSs, RTK Survey, HSFSs, and RTK Hazardous Substance List);
5. Information on how to use the list of hazardous chemicals (or RTK Survey) and how to obtain, read and use MSDSs, labels and HSFSs;

6. Methods to identify and recognize hazardous chemicals in the work area (labels, MSDSs, and HSFSs);
7. A discussion of the physical and health hazards of the hazardous chemicals;
8. Control measures and specific procedures used to prevent exposure;
9. Methods and observations used to detect the presence or release of a hazardous chemical in the work area;
10. Standard operating procedures regarding the use, storage, and emergency clean-up of the hazardous chemicals;
11. An explanation of the applicable provisions of the RTK Act (RTK Survey, HSFS, RTK labeling, RTK poster, RTK Central File, and RTK Hazardous Substance List); and
12. Hand out a copy of the RTK brochure.

D. If there are only a few chemicals in the workplace, you may want to discuss each one individually using MSDSs and HSFSs for that portion of the information and training program where the actual chemical hazards are discussed. Where there are large numbers of chemicals used, or where chemicals change frequently, training by hazard groups such as flammables, corrosives, poisons, etc., may be more appropriate.

E. Keep accurate training records. Retain the required documentation of each training session. Accurate recordkeeping will help the trainer identify topics and materials for refresher training.

Public employers may already be providing a significant portion of the required PEOSH HCS training in their RTK education and training program. You will have to modify your RTK training program outline and curriculum to incorporate those components identified in section 7.8 of the PEOSH HCS that are not a part of your current training program. **Specifically you will need to include, a description of the written hazard communication program and its location, an explanation of the PEOSH Hazard Communication Standard, labeling requirements,** and any other component of PEOSH HCS-required training not included in your RTK training program. **The PEOSH HCS training will substitute for RTK training. You do not have to provide a separate RTK training program.**

❚ TRADE SECRETS

The PEOSH HCS allows chemical manufacturers, importers, or employers to withhold the specific chemical identity of a hazardous chemical from an MSDS if certain conditions are met:

1. The trade secret claim can be supported;
2. The MSDS contains information on the properties and effects of the hazardous chemical;
3. The MSDS indicates that the specific chemical identity is being withheld as a trade secret; and
4. The specific chemical identity is made available to health professionals, employees, and designated representatives under certain specific situations.

In general, a request for the disclosure of a trade secret must be in writing and a statement to maintain the confidentiality of the disclosed information must be included in the request. Review the PEOSH HCS for more specific details regarding the trade secret provision. Appendix D of the Standard provides more information about trade secrets.

WHCP

Written

Hazard

Communication

Program

_____
(Name of Employer)

Written Hazard Communication Program

Policy and Administration

This notice is to inform you that our agency complies with the Public Employees Occupational Safety and Health Program Hazard Communication Standard (PEOSH HCS), N.J.A.C. 12:100-7, which New Jersey adopted with amendments, on May 3, 2004. We provide information about the hazardous chemicals in our workplace, their associated hazards, and the methods for controlling these hazards. We have put in place the following required elements of the Standard:

(1) A list of hazardous chemicals;
(2) Material Safety Data Sheets (MSDSs) and Hazardous Substance Fact Sheets (HSFSs) for hazardous chemicals;
(3) Labeled containers; and
(4) A training program for employees who work with or have a potential for exposure to hazardous chemicals.

This written program applies to all work operations in our facility where employees are exposed or may be exposed to hazardous chemicals or conditions under normal working operations or during foreseeable emergency situations.

_____*(name)*_____, located in room _____, is the program coordinator who has overall responsibility for the written program and responsibility for the annual review and update of the written program. _____*(name)*_____ also makes available the written program to employees upon their request within three days of the request.

As required under the PEOSH HCS, employees will be informed of the contents of this program, the location and availability of health and safety information about hazardous chemicals, the hazardous properties of chemicals with which they work, safe handling procedures for the hazardous chemicals, and measures they should take to protect themselves from the hazardous chemicals. This information will be provided during employee training sessions and/or safety meetings. Employees will also be informed of the hazards of non-routine tasks such as _____.

List of Hazardous Chemicals

The list of the hazardous chemicals in this facility is prepared by _____*(name)*_____. The list is continually updated and is included at the back of this program. Although not required by the PEOSH HCS, a separate list is available for each work area.

Note to Employer: If you are using your RTK Survey as the list it must be stated in the written program, and the process for updating the RTK Survey when new hazardous chemicals are brought into the workplace must be explained.

Material Safety Data Sheets (MSDS) and Hazardous Substance Fact Sheets (HSFS)

MSDSs and HSFSs provide health and safety information on the specific hazardous products or chemicals employees use. In compliance with the PEOSH HCS, the MSDSs are made readily accessible during each work shift to employees when they are in their work area. ____*(name)*____ , _____ (person's title), obtains MSDSs on all products containing hazardous chemicals and HSFSs on all hazardous chemicals, places copies of the MSDSs in a binder in each work area of this facility, and maintains a master file of all the MSDSs and HSFSs in his/her office. If additional information is needed about a hazardous chemical or product, if an MSDS is missing, or if an MSDS has not been supplied with the initial shipment, ____*(name)*____ will contact the manufacturer or supplier. The people listed below will ensure that the MSDSs kept in each work area are updated as needed and the MSDS binder is kept intact, and that HSFSs are updated as needed. As a policy of this facility, an MSDS and HSFS hard copy will be provided to the requesting employee immediately upon request, or within 3 working days of the request if the MSDS or HSFS is not immediately available.

Name	*Work Area*
_____	_____
_____	_____
_____	_____
_____	_____

Any new procedures or products that are planned to be used in this workplace must be approved by ____*(name)*____ before use to make sure that MSDSs and HSFSs are obtained before use.

Note to Employer: If MSDSs and HSFSs are being made available electronically, you must include details on how the MSDSs and HSFSs can be accessed by employees, the location of the electronic system, who will provide training on the system, and when the training will be held. The location of the backup MSDS and HSFS file must also be indicated.

Labels and Warning Systems

____*(name)*____ ensures that each container of hazardous chemicals in this workplace is properly labeled as required by the PEOSH HCS, and updates the labels as necessary if they should become illegible, fall off the container, or are obscured in any manner. Containers not bearing a PEOSH HCS label are not accepted by our facility.

- Stationary containers in an area with similar contents and hazards have signs posted on or above them to convey the hazard information.
- Employees transferring hazardous materials from a labeled container to a portable container intended only for their immediate use during the work shift, do not have to label the portable container. If the portable container is stored beyond the employee's shift, or will be used by other workers, the employee labels the portable container with the PEOSH HCS information from the properly labeled larger container.

Note to Employer: If you have an additional labeling system in use such as National Fire Protection Association (NFPA) labels, this system should be explained in this section. If you should ship containers, an explanation of who will label the containers to be shipped and how the label will be affixed to the container should be discussed. Pipes or piping systems do not have to be labeled with PEOSH HCS labels, but the hazards of the materials contained in the pipes must be discussed during the PEOSH HCS training sessions.

Hazardous Non-Routine Tasks

Periodically, our employees are required to perform hazardous non-routine tasks such as:

_____

_____

When employees are required to perform the above hazardous non-routine tasks, a special training session is conducted to inform them about the hazardous chemicals to which they might be exposed and the proper precautions to take to reduce or avoid exposure. This special session is conducted by ____*(name)*____ prior to employees beginning the task. Employees who perform these non-routine tasks are notified about the training by their supervisor, and are required to attend the training.

Employee Training

Every employee who works with or has the potential for exposure to hazardous chemicals under normal conditions of use or in foreseeable emergencies will receive initial and refresher training under the PEOSH Hazard Communication Standard on the safe use of those hazardous chemicals. ____*(name)*____ , in room _____, is responsible for providing the training. A training program that uses both audiovisual materials and classroom instruction has been prepared for this purpose.

Note to Employer: An explanation of the training methodology used at your worksite must be specified in this area. OSHA has developed a sample hazard communication training program that may assistance you with the development of your training program. OSHA's website is listed on the "Resources for Additional Information" page.

- The trainer meets the definition of a technically qualified person.
- Whenever a new hazard is introduced into the work area, an **additional training session** is provided for workers in a scheduled safety meeting conducted by ____*(name)*____ prior to beginning work with the new hazardous material. Supervisors notify employees about the safety meetings.
- **Refresher training,** an abbreviated version of initial training, is conducted every two years. Area supervisors notify employees when the training session is scheduled, and a notice is placed on the bulletin board inside the break room.
- **Attendance is mandatory at all training sessions** for those workers identified as exposed or having the potential for exposure to hazardous chemicals under normal conditions of use or in foreseeable emergencies.
- Training is provided at no cost to the employee and is provided during working hours. The training is appropriate in content and vocabulary to the educational level, literacy and language of the employees.
- The documentation of training required by PEOSH HCS is maintained in ____*(location)*____.

As a policy of this facility, foremen and supervisors receive supplemental training from selected manufacturers' representatives when specialty equipment is purchased and when non-routine hazards arise due to a new operation. They then can answer employee questions and provide daily monitoring of safe work practices.

The **initial training session** includes the following discussion items:

1. An explanation of the PEOSH Hazard Communication Standard and this written program;
2. Chemical and physical properties of the hazardous materials (e.g., flash point, reactivity) and methods used in this workplace to detect the presence or release of hazardous chemicals (including the chemicals in piping systems);
3. Physical hazards of chemicals such as the potential for fire and explosion;
4. Health hazards (both acute and chronic) associated with exposure to hazardous chemicals, signs and symptoms of exposure, and any medical condition that may be aggravated by exposure to the chemical, using MSDSs and HSFSs;

5. Methods to protect against exposure to the hazard such as engineering and administrative controls, proper work practices, use of personnel protective equipment (PPE), and procedures for emergency response to spills and leaks;
6. Standard operating procedures to assure protection when cleaning hazardous chemical spills and leaks;
7. The location of and responsible person for maintaining MSDSs, HSFSs, RTK Survey, RTK Hazardous Substance List (HSL), and other hazardous material information;
8. An explanation of the applicable provisions of the Worker and Community Right To Know Act;
9. How to read and interpret the information on PEOSH HCS and RTK labels, HSFSs and MSDSs, and how employees may obtain additional hazard information using the RTK Survey and RTK HSL;
10. A copy of the RTK brochure is handed out during training.

Note to Employer: If electronic MSDS and HSFS systems are used, include in the training an explanation of how employees can access the system and what to do if a backup MSDS and HSFS system is required. The hazards of the chemicals reviewed, using MSDSs and HSFSs, should reflect the actual hazardous chemicals used at your workplace.

The initial and refresher training programs for employees are reviewed annually by the trainer, who will notify area supervisors of the training needs of their employees. As part of the assessment of the training program, input from employees regarding the training they have received and suggestions for improving the training are obtained through training evaluation forms. In addition, suggestions may be placed in the employees' suggestion-box.

Employee **refresher training** is an abbreviated version of the initial training, and includes a discussion of the following information:

1. An explanation of any changes in the written program, PEOSH HCS, or RTK Act.
2. Changes in products used or work processes that may cause exposure to hazardous chemicals.
3. A review of health hazards, chemical and physical properties of the hazardous chemicals, and control methods of any routinely used hazardous materials and any new hazardous materials to which the employees may be exposed. The MSDSs and HSFSs will be used to review information on the hazardous chemicals.
4. A review of the facility's health and safety policy and procedure manual.
5. A copy of the RTK brochure is distributed.

Contractor Employees

____*(name)*____ advises outside contractors in person of any chemical hazards that may be encountered in the normal course of their work on the site, the labeling systems in use, protective measures to be taken, the location and availability of MSDSs, HSFSs, and other health hazard information, and the safe handling procedures to be used for these materials.

It is our policy that each outside contractor who brings hazardous chemicals on the site will provide ____*(name)*____ with copies of appropriate MSDSs for the hazardous chemicals, information on any special labels used, and precautionary measures to be taken while working with or around their hazardous chemicals or products.

All employees, or their designated representative, can obtain additional information on this written program, the PEOSH HCS, applicable MSDSs and HSFSs, and other chemical information from ____*(name)*____ in room _____.

_____ _____

(Signature of Owner/Manager Representative) Title

_____

Date

Resources for Additional Information

New Jersey Department of Health and Senior Services
Public Employees Occupational Safety and Health Program
PO Box 360
Trenton, NJ 08625-0360
(609) 984-1863
http://www.nj.gov/health/eoh/peoshweb

New Jersey Department of Labor and Workforce Development
Division of Public Safety and
Occupational Safety and Health
PO Box 386
Trenton, NJ 08625-0386
(609) 633-2587
http://www.nj.gov/labor/lsse/lspeosh.html

U.S. Department of Labor
Occupational Safety and Health Administration (OSHA)
http://www.osha.gov

For information about the Right to Know law, contact:

New Jersey Department of Health and Senior Services
Right to Know Program
PO Box 368
Trenton, NJ 08625-0368
(609) 984-2202
http://www.nj.gov/health/eoh/rtkweb

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APPENDIX X.A

Appendix A

PEOSH Hazard Communication Standard N.J.A.C. 12:100-7

DIVISION OF PUBLIC SAFETY AND OCCUPATIONAL SAFETY AND HEALTH

Safety and Health Standards for Public Employees

Adoption of Standards; General Standards; Standard for Hazard Communication; Standards for Firefighters; Standards and Publications Referred to in this Chapter

Adopted New Rules: N.J.A.C. 12:100-3A and 7

Adopted Amendments: N.J.A.C. 12:100-4.2, 10.1 through 10.7, 10.9, 10.10, 10.13, 10.16, 17.1 and 17.3

Proposed: January 5, 2004 at 36 N.J.R. 150(a).

Adopted: April 8, 2004 by Albert G. Kroll, Commissioner, Department of Labor.

Filed: April 8, 2004 as R.2004 d. 183, **with substantive changes** not requiring additional public notice and comment (see N.J.A.C. 1:30-6.3).

Authority: N.J.S.A. 34:6A-25 et seq.

Effective Date: May 3, 2004.

Expiration Date: August 26, 2004.

Summary of Hearing Officer's Recommendations and Agency Response:

A public hearing on the proposed amendments was held on January 29, 2004 at the Department of Labor, John Fitch Plaza, Trenton, New Jersey. Frederick S. Cohen, Regulatory Officer, was available to preside at the hearing and to receive testimony. In the course thereof, one public comment was received from Rick Engler of the New Jersey Work Environment Council. The Hearing Officer made no recommendations. The hearing record may be reviewed by contacting Frederick S. Cohen, Regulatory Officer, Office of Regulatory Services, New Jersey Department of Labor, P0 Box 110—13th Floor, Trenton, New Jersey 08625-0110.

Summary of Public Comments and Agency Responses:

COMMENT: The New Jersey Work Environment Council (WEC) is an alliance of 69 labor, community and environmental organizations working together for safe, secure jobs, and a healthy, sustainable environment. The following are WEC's comments as presented by Rick Engler, WEC Director, and Eileen Senn, WEC Industrial Hygiene Consultant, on the proposed adoption of Public Employees Occupational Safety and Health (PEOSH) Standard N.J.A.C. 12:100-7, Standard for Hazard Communication.

(1) WEC supports the proposed standard. The basic goal of a Hazard Communication Program is to be sure employers and employees know about chemical hazards and how to protect themselves; this should help reduce the incidence of chemical source illness and injuries. The proposed standard is necessary to bring New Jersey's State Plan regulatory requirements into compliance with those mandated by the U.S. Department of Labor, Occupational Safety and Health Administration.

(2) WEC encourages PEOSH to allow employers to use the existing Right-to-Know Act (RTK) Survey to meet Hazard Communication requirements for listing hazardous chemicals. Employers can be instructed to simply list additional ingredients on the form that are not on the Workplace Hazardous Substance List.

(3) WEC supports PEOSH plans to provide written guidance for employers on how to comply with Hazard Communication as well as to provide a Model Written Hazard Communication Program.

(4) WEC asks for assurance that Hazard Communication inspections by the PEOSH Program will meet or exceed the quality and quantity the RTK Program was performing to enforce RTK requirements in the public sector. WEC urges PEOSH to include a compliance check for the requirements of Hazard Communication during every inspection that PEOSH undertakes, whether health or safety, complaint or programmed. Violations of the Hazard Communication Standard are the most common violations found during Federal OSHA inspections in the private sector. Widespread non-compliance in the public sector can be anticipated and needs to be effectively addressed.

RESPONSE: The Division will conduct its Hazard Communication inspections according to the letter of the law and in a fashion that is both thorough and complete.

Federal Standards Statement

Federal standards affected by these standards are contained in 29 CFR § 1910, Occupational Safety and Health Standards. New Jersey's Safety and Health Standards for Public Employees are being amended to bring them into compliance with the Federal standards as required by New Jersey's Developmental Plan under its initial approval as a State Plan for Public Employees Only by the United States Department of Labor, Occupational Safety and Health Administration.

SUBCHAPTER 3A. ADOPTION OF STANDARDS

12: l00-3A.1 Adoption of standards in compliance with applicable Federal standards

The Commissioner shall provide for the adoption of all applicable occupational health and safety standards, amendments or changes adopted or recognized by the Secretary under the authority of the Occupational Safety and Health Act of 1970. Whenever the United States Secretary of Labor adopts a standard pursuant to the provisions of the Occupational Safety and Health Act of 1970 (29 U.S.C. §§651 et seq.), the Commissioner shall publish that Federal standard within six months of Federal adoption in the New Jersey Register in accordance with the provisions of N.J.S.A. 52:14B-5 and, notwithstanding the provisions of N.J.S.A. 52:l4B-4, that Federal standard shall be deemed to be duly adopted as a State rule upon its publication by the Commissioner.

12: l00-3A.2 Adoption of standards more stringent than Federal standards

(a) The Commissioner shall not adopt any standard within the scope of the State Uniform Construction Code adopted pursuant to N.J.S.A. 52:27D-l 19 et seq., or the Uniform Fire Safety Code adopted pursuant to N.J.S.A. 52:27D-192 et seq., unless the standard is one adopted pursuant to N.J.A.C. 12:100-4. If the Commissioner of Community Affairs determines that a building or structural safety standard adopted by the Commissioner pursuant to N.J.A.C. 12:100-4 is more stringent than the applicable standards found in the State Uniform Construction Code or the Uniform Fire Safety Code, he or she shall adopt a rule incorporating the more stringent standard. If the Commissioner of Community Affairs determines that there is a difference between a provision of any new or existing standard adopted pursuant to N.J.A.C. 12:100-4 and a provision of the Uniform Construction Code or the Uniform Fire Safety Code, and he or she determines that the provision of the applicable code is as effective as the provision of the standard, he or she shall prepare and submit to the Commissioner an application for submission to the Secretary of Labor seeking the approval of that provision of the Uniform Construction Code or the Uniform Fire Safety Code as being as effective as the provision of the standard and the approval of the incorporation of the code provision into the State Plan.

(b) Where no Federal standards are applicable or where standards more stringent than the Federal standards are deemed advisable, the Commissioner shall, in consultation with the Commissioner of Health and Senior Services and the Commissioner of Community Affairs, and with the advice of the Public Employees' Occupational Safety and Health Advisory Board, provide for the development of State standards as may be necessary.

12: l00-3A.3 Adoption of emergency temporary standards

The Commissioner shall provide for the adoption of all emergency temporary standards, amendments or changes adopted or recognized by the United States Secretary of Labor under the authority of the Occupational Safety and Health Act of 1970 (29 U.S.C. §§ 651 et seq.). The Commissioner shall publish that Federal standard within 30 days of Federal adoption in the New Jersey Register in accordance with the provisions of N.J.S.A. 52:l4B-5 and, notwithstanding the provisions of N.J.S.A. 52:14B-4, that Federal standard shall be deemed to be duly adopted as a State regulation upon its publication by the Commissioner.

SUBCHAPTER 4. GENERAL STANDARDS

12:100-4.2 Adoption by reference

(a) The standards contained in 29 CFR Part 1910, General Industry Standards, with amendments published in the Federal Register through April 23, 1998 and any subsequent amendments thereto, with certain exemptions noted in (b) below, are adopted upon publication in the New Jersey Register and are incorporated herein by reference as occupational safety and health standards for the protection of public employees engaged in general operations and shall include:

1.-l9. (No change.)
20. Subpart Z—Toxic and Hazardous Substances.

(b) (No change.)

SUBCHAPTER 7. STANDARD FOR HAZARD COMMUNICATION

12:100-7.1 Purpose

(a) The purpose of this subchapter is to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to employers and employees. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, material safety data sheets and employee training.

1. This occupational safety and health standard is intended to address comprehensively the issue of evaluating the potential hazards of chemicals, and communicating information concerning hazards and appropriate protective measures to employees, and to preempt any legal requirements of a state, or political subdivision of this State, pertaining to this subject. Evaluating the potential hazards of chemicals, and communicating information concerning hazards and appropriate protective measures to employees, may include, for example, but is not limited to, provisions for: developing and maintaining a written hazard communication program for the workplace, including lists of hazardous chemicals present; labeling of containers of chemicals in the workplace, as well as of containers of chemicals being shipped to other workplaces; preparation and distribution of material safety data sheets to employees and downstream employers, and development and implementation of employee training programs regarding hazards of chemicals and protective measures.

12:100-7.2 Scope and application

(a) This subchapter requires chemical manufacturers or importers to assess the hazards of chemicals which they produce or import, and all employers to provide information to their employees about the hazardous chemicals to which they are exposed, by means of a hazard communication program, labels and other forms of warning, material safety data sheets, and information and training. In addition, this subchapter requires distributors to transmit the required information to employers. Employers who do not produce or import chemicals need only focus on those parts of this rule that deal with establishing a workplace program and communicating information to their workers. Appendix E of this subchapter, incorporated herein by reference, is a general guide for such employers to help them determine their compliance obligations under these rules.

(b) This subchapter applies to any chemical which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.

(c) This subchapter applies to laboratories only as follows:

1. Employers shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced;

2. Employers shall maintain any material safety data sheets that are received with incoming shipments of hazardous chemicals, and ensure that they are readily accessible during each work shift to laboratory employees when they are in their work areas;

3. Employees shall ensure that laboratory employees are provided information and training in accordance with N.J.A.C. 12:100-7.8, except for the location and availability of the written hazard communication program under N.J.A.C. 12: l00-7.8(b)3; and

4. Laboratory employers that ship hazardous chemicals are considered to be either a chemical manufacturer or a distributor under this rule. Thus, they must ensure that any containers of hazardous chemicals leaving the laboratory are labeled in accordance with N.J.A.C. 12:100-7.6(a), and that a material safety data sheet is provided to distributors and other employers in accordance with N.J.A.C. 12:100-7.7(f) and (g).

(d) In work operations where employees only handle chemicals in sealed containers, which are not opened under normal conditions of use (such as are found in marine cargo handling, warehousing, or retail sales), this subchapter applies to these operations only as follows:

1. Employers shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced;

2. Employers shall maintain copies of any material safety data sheets that are received with incoming shipments of the sealed containers of hazardous chemicals or shall obtain a material safety data sheet as soon as possible for sealed containers of hazardous chemicals received without a material safety data sheet if an employee requests the material data sheet and shall ensure that the material safety data sheets are readily accessible during each work shift to employees when they are in their work area(s); and

3. Employers shall ensure that employees are provided with information and training in accordance with N.J.A.C. 12:100-7.8 (except for the location and availability of the written hazard communication program under N.J.A.C. 12:l00-7.8(b)3), to the extent necessary to protect them in the event of a spill or leak of a hazardous chemical from a sealed container.

(e) This subchapter does not require labeling of the following chemicals:

1. Any pesticides as such term is defined in the Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. §§ 136 et seq., when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency;

2. Any chemical substance or mixture as such terms are defined in the Toxic Substances Control Act, 15 U.S.C. §§ 2601 et seq., when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency;

3. Any food, food additive, color additive, drug, cosmetic, or medical or veterinary device or product, including materials intended for use as ingredients in such products (for example, flavors and fragrances), as such terms are defined in the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. §§ 301 et seq., or the Virus-Serum-Toxin Act of 1913, 21 U.S.C. §§ 151 et seq., and regulations issued under those Acts, when they are subject to the labeling requirements under those Acts by either the Food and Drug Administration or the Department of Agriculture;

4. Any distilled spirits (beverage alcohols), wine, or malt beverage intended for nonindustrial use, as such terms are defined in the Federal Alcohol Administration Act, 27 U.S.C. §§ 201 et seq., and regulations issued under that Act, when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Bureau of Alcohol, Tobacco, and Firearms;

5. Any consumer product or hazardous substance as those terms are defined in the Consumer Product Safety Act, 15 U.S.C. §§ 2051 et seq., and Federal Hazardous Substances Act, 15 U.S.C. §§ 1261 et seq., respectively, when subject to a consumer product safety standard or labeling requirement of those Acts, or regulations issued under those Acts by the Consumer Product Safety Commission; and

6. Agricultural or vegetable seed treated with pesticides and labeled in accordance with the Federal Seed Act, 7 U.S.C. §§ 1551 et seq., and the labeling regulations issued under that Act by the Department of Agriculture.

(f) This subchapter does not apply to:

1. Any hazardous waste as such term is defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. §§ 6901 et seq., when subject to regulations issued under that Act by the Environmental Protection Agency;

2. Any hazardous substance as such term is defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. §§ 9601 et seq., when the hazardous substance is the focus of remedial or removal actions being conducted under CERCLA in accordance with the Environmental Protection Agency regulations;

3. Tobacco or tobacco products;

4. Wood or wood products, including lumber which will not be processed, where the chemical manufacturer or importer can establish that the only hazard they pose to employees is the potential for flammability or combustibility. Wood or wood products, which have been treated with a hazardous chemical

covered by this standard, and wood which may be subsequently sawed or cut, generating dust, are not exempted;

5. Articles, as the term is defined in N.J.A.C. 12:100-7.3;

6. Food or alcoholic beverages which are sold, used, or prepared in a retail establishment such as a grocery store, restaurant, or drinking place, and foods intended for personal consumption by employees while in the workplace;

7. Any drug, as that term is defined in the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. §§ 301 et seq., when it is in solid, final form for direct administration to the patient (for example, tablets or pills); drugs which are packaged by the chemical manufacturer for sale to consumers in a retail establishment (for example, over-the-counter drugs); and drugs intended for personal consumption by employees while in the workplace (for example, first aid supplies);

8. Cosmetics, which are packaged for sale to consumers in a retail establishment, and cosmetics intended for personal consumption by employees while in the workplace;

9. Any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act, 15 U.S.C. §§ 2051 et seq., and Federal Hazardous Substances Act, 15 U.S.C. §§ 1261 et seq., respectively, where the employer can show that it is used in the workplace for the purpose intended by the chemical manufacturer or importer of the product, and the use results in a duration and frequency of exposure which is not greater than the range of exposures that could reasonably be experienced by consumers when used for the purpose intended;

10. Nuisance particulates where the chemical manufacturer or importer can establish that they do not pose any physical or health hazard covered under this section;

11. Ionizing and non-ionizing radiation; and

12. Biological hazards.

12:100-7.3 Definitions

The following words and terms, as used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise:

"Article" means a manufactured item other than a fluid or particle:

1. Which is formed to a specific shape or design during manufacture;

2. Which has end use function(s) dependent in whole or in part upon its shape or design during end use; and

3. Which under normal conditions of use does not release more than very small quantities, for example, minute or trace amounts of a hazardous chemical (as determined under N.J.A.C. 12:100-7.4), and does not pose a physical hazard or health risk to employees.

"Chemical" means any element, chemical compound or mixture of elements and/or compounds.

"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) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name which will clearly identify the chemical for the purpose of conducting a hazard evaluation.

"Combustible liquid" means any liquid having a flashpoint at or above 100 degrees Fahrenheit (37.8 degrees Celsius), but below 200 degrees Fahrenheit (93.3 degrees Celsius), except any mixture having components with flashpoints of 200 degrees Fahrenheit (93.3 degrees Celsius), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

"Commercial account" means an arrangement whereby a retail distributor sells hazardous chemicals to an employer, generally in large quantities over time and/or at costs that are below the regular retail price.

"Common name" means any designation or identification such as code name, code number, trade name and brand name or generic name used to identify a chemical other than by its chemical name.

"Compressed gas" means:

1. A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70 degrees Fahrenheit (21.1 degrees Celsius);

2. A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130 degrees Fahrenheit (54.4 degrees Celsius) regardless of the pressure at 70 degrees Fahrenheit (21.1 degrees Celsius); or

3. A liquid having a vapor pressure exceeding 40 psi at 100 degrees Fahrenheit (37.8 degrees Celsius) as determined by ASTM D-323-72.

"Container" means any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of this section, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

"Designated representative" means any individual or organization to which an employee gives written authorization to exercise such employee's rights under this section. A recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.

"Director" means the Director, National Institute for Occupational Safety and Health, United States Department of Health and Human Services, or designee.

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

"Employee" means a worker who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies. Workers such as office workers or bank tellers who encounter hazardous chemicals only in nonroutine, isolated instances are not covered.

"Explosive" means a chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

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

"Flammable" means a chemical that falls into one of the following categories:

1. "Aerosol, flammable" means an aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening;

2. "Gas, flammable" means a gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13 percent by volume or less; or a gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12 percent by volume, regardless of the lower limit;

3. "Liquid, flammable" means any liquid having a flashpoint below 100 degrees Fahrenheit (37.8 degrees Celsius), except any mixture having components with flashpoints of 100 degrees Fahrenheit (37.8 degrees Celsius) or higher, the total of which make up 99 percent or more of the total volume of the mixture;

4. "Solid, flammable" means a solid, other than a blasting agent or explosive as defined in 29 CFR 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and, when ignited, burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

"Flashpoint" means the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested as follows:

1. Tagliabue Closed Tester (see American National Standard Method of Test for Flash Point by Tag Closed Tester, Zl1.24-1979 (ASTM D 56-79)) for liquids with a viscosity of less than 45 Saybolt Universal Seconds (SUS) at 100 degrees Fahrenheit (37.8 degrees Celsius), that do not contain suspended solids and do not have a tendency to form a surface film under test;

2. Pensky-Martens Closed Tester (see American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Zl1.7-1979 (ASTM D 93-79)) for liquids with a viscosity equal to or greater than 45 SUS at 100 degrees Fahrenheit (37.8 degrees Celsius), or that contain suspended solids, or that have a tendency to form a surface film under test; or

3. Setaflash Closed Tester (see American National Standard Method of Test for Flash Point by Setaflash Closed Tester (ASTM D 3278-78)).

Organic peroxides, which undergo auto-accelerating thermal decomposition, are excluded from any of the flashpoint determination methods specified above.

"Foreseeable emergency" means any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment, which could result in an uncontrolled release of a hazardous chemical into the workplace.

"Hazardous chemical" means any chemical which is a physical hazard or a health hazard.

"Hazardous Substance Fact Sheet" means a written document prepared by the New Jersey Department of Health and Senior Services for each hazardous substance on the Right to Know Hazardous Substance List except for generic categories, and transmitted by the Department to public employers, county health departments, county clerks, designated county lead agencies and the public pursuant to the provisions of the Worker and Community Right to Know Act, N.J.S.A. 34:5A-1 et seq.

"Hazard warning" means any words, pictures, symbols, or combination thereof, appearing on a label or other appropriate form of warning which convey the specific physical and health hazard(s), including target organ effects, of the chemical(s) in the container(s). (See the definitions for "physical hazard" and "health hazard" to determine the hazards which must be covered.)

"Health hazard" means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals, which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents that act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes. Appendix A of this subchapter, incorporated herein by reference, provides further definitions and explanations of the scope of health hazards covered by this subchapter, and Appendix B of this subchapter, incorporated herein by reference, describes the criteria to be used to determine whether or not a chemical is to be considered hazardous for purposes of this standard.

"Identity" means any chemical or common name, which is indicated on the material safety data sheet (MSDS) for the chemical. The identity used shall permit cross-references to be made among the required list of hazardous chemicals, the label and the MSDS.

"Immediate use" means that the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

"Importer" means the first business with employees within the Customs Territory of the United States, which receives hazardous chemicals produced in other countries for the purpose of supplying them to distributors or employers within the United States.

"Label" means any written, printed, or graphic material displayed on or affixed to containers of hazardous chemicals.

"Material safety data sheet (MSDS)" means written or printed material concerning a hazardous chemical, which is prepared in accordance with N.J.A.C. 12:100-7.7.

"Mixture" means any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

"Organic peroxide" means an organic compound that contains the bivalent -O-O-structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

"Oxidizer" means a chemical other than a blasting agent or explosive as defined in 29 CFR 1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

"Physical hazard" means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

"Produce" means to manufacture, process, formulate, blend, extract, generate, emit, or repackage.

"Pyrophoric" means a chemical that will ignite spontaneously in air at a temperature of 130 degrees Fahrenheit (54.4 degrees Celsius) or below.

"Responsible party" means someone who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

"Right to Know Hazardous Substance List" includes the workplace hazardous substance list and the environmental hazardous substance list.

"Right to Know Survey" includes the workplace survey and environmental survey.

"Specific chemical identity" means the chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance.

"Technically qualified person" means:

1. For training purposes, a person who is a registered nurse, a certified safety professional, or a certified industrial hygienist, or has a bachelor's degree or higher in industrial hygiene, environmental science, health education, chemistry, or a related field, and understands the health risks associated with exposure to hazardous substances;

2. For training purposes, a person who has completed at least 30 hours of hazardous materials training offered by the New Jersey State Safety Council, the New Jersey Department of Health and Senior Services, an accredited public or private educational institution, labor union, trade association, private organization or government agency, and understands the health risks associated with exposure to hazardous substances, and has at least one year of experience handling hazardous substances or working with hazardous substances. The 30-hour requirement may be met by the combination of one or more hazardous materials training courses; or

3. For purposes of teaching the recruit firefighting training course established by the New Jersey Department of Community Affairs, a person who has fulfilled the requirements of Firefighter Instructor Level I as certified by the Department of Community Affairs.

"Trade secret" means any confidential formula, pattern, process, device, information or compilation of information that is used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it. Appendix D of this subchapter, incorporated herein by reference, sets out the criteria to be used in evaluating trade secrets.

"Unstable (reactive)" means a chemical, which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

"Use" means to package, handle, react, emit, extract, generate as a byproduct, or transfer.

"Water-reactive" means a chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

"Work area" means a room or defined space in a workplace where hazardous chemicals are produced or used, and where employees are present.

"Workplace" means an establishment, job site, or project, at one geographical location containing one or more work areas.

"Workplace Hazardous Substance List" means the list of hazardous substance developed by the New Jersey Department of Health and Senior Services pursuant to N.J.S.A. 34:5A-5. The Workplace Hazardous Substance List is incorporated into the Right to Know Hazardous Substance List.

"Workplace survey" means a written document, prepared by the New Jersey Department of Health and Senior Services and completed by a public employer pursuant to the Worker and Community Right to Know Act, on which the employer shall report each hazardous substance on the Right to Know Hazardous Substance List present at its facility. The workplace survey is incorporated into the Right to Know Survey.

12:100-7.4 Hazard determination

(a) Chemical manufacturers and importers shall evaluate chemicals produced in their workplaces or imported by them to determine if they are hazardous. Employers are not required to evaluate chemicals unless they choose not to rely on the evaluation performed by the chemical manufacturer or importer for the chemical to satisfy this requirement.

(b) Chemical manufacturers, importers or employers evaluating chemicals shall identify and consider the available scientific evidence concerning such hazards. For health hazards, evidence which is statistically significant and which is based on at least one positive study conducted in accordance with established scientific principles is considered to be sufficient to establish a hazardous effect if the results of the study meet the definitions of health hazards in this section. Appendix A shall be consulted for the scope of health hazards covered, and Appendix B shall be consulted for the criteria to be followed with respect to the completeness of the evaluation, and the data to be reported.

(c) The chemical manufacturer, importer or employer evaluating chemicals shall treat the following sources as establishing that the chemicals listed in them are hazardous:

1. 29 CFR § 1910, subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA); or

2. "Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment," American Conference of Governmental Industrial Hygienists (ACGIH) (2003 Edition). The chemical

manufacturer, importer, or employer is still responsible for evaluating the hazards associated with the chemicals in these source lists in accordance with the requirements of this standard.

(d) Chemical manufacturers, importers and employers evaluating chemicals shall treat the following sources as establishing that a chemical is a carcinogen or potential carcinogen for hazard communication purposes: National Toxicology Program (NTP), "Annual Report on Carcinogens" (10th Edition); International Agency for Research on Cancer (IARC) "Monographs"; or 29 CFR § 1910, subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration.

1. The "Registry of Toxic Effects of Chemical Substances" published by the National Institute for Occupational Safety and Health indicates whether a chemical has been found by NTP or IARC to be a potential carcinogen.

(e) The chemical manufacturer, importer or employer shall determine the hazards of mixtures of chemicals as follows:

1. If a mixture has been tested as a whole to determine its hazards, the results of such testing shall be used to determine whether the mixture is hazardous;

2. If a mixture has not been tested as a whole to determine whether the mixture is a health hazard, the mixture shall be assumed to present the same health hazards as do the components which comprise one percent (by weight or volume) or greater of the mixture, except that the mixture shall be assumed to present a carcinogenic hazard if it contains a component in concentrations of 0.1 percent or greater which is considered to be a carcinogen under N.J.A.C. 12:100-7.4(d);

3. If a mixture has not been tested as a whole to determine whether the mixture is a physical hazard, the chemical manufacturer, importer, or employer may use whatever scientifically valid data is available to evaluate the physical hazard potential of the mixture; and

4. If the chemical manufacturer, importer, or employer has evidence to indicate that a component present in the mixture in concentrations of less than one percent (or in the case of carcinogens, less than 0.1 percent) could be released in concentrations which would exceed an established OSHA permissible exposure limit or ACGIH Threshold Limit Value, or could present a health risk to employees in those concentrations, the mixture shall be assumed to present the same hazard.

(f) Chemical manufacturers, importers, or employers evaluating chemicals shall describe in writing the procedures they use to determine the hazards of the chemical they evaluate. The written procedures are to be made available, upon request, to employees, their designated representatives, the Commissioner of Labor and/or Commissioner of Health and Senior Services and the Director. The written description may be incorporated into the written hazard communication program required under N.J.A.C. 12:100-7.5.

12:100-7.5 Written hazard communication program

(a) Employers shall develop, implement, and maintain at each workplace, a written hazard communication program which at least describes how the criteria specified in N.J.A.C. 12:100-7.6, 7.7 and 7.8 for labels and other forms of warning, material safety data sheets, and employee information and training will be met, and which also includes the following:

1. A list of the hazardous chemicals known to be present using an identity that is referenced on the appropriate material safety data sheet (the list may be compiled for the workplace as a whole or for individual work areas); and

2. The methods the employer will use to inform employees of the hazards of non-routine tasks (for example, the cleaning of reactor vessels), and the hazards associated with chemicals contained in unlabeled pipes in their work areas.

(b) Employers who produce, use, or store hazardous chemicals at a workplace in such a way that the employees of other employer(s) may be exposed (for example, employees of a construction contractor working on-site) shall additionally ensure that the hazard communication programs developed and implemented under N.J.A.C. 12:100-7.5 include the following:

1. The methods the employer will use to provide the other employer(s) on-site access to material safety data sheets for each hazardous chemical the other employer(s)' employees may be exposed to while working;

2. The methods the employer will use to inform the other employer(s) of any precautionary measures that need to be taken to protect employees during the workplace's normal operating conditions and in foreseeable emergencies; and

3. The methods the employer will use to inform the other employer(s) of the labeling system used in the workplace.

(c) The employer may rely on an existing hazard communication program to comply with these requirements, provided that it meets the criteria established in this section.

(d) The employer shall make the written hazard communication program available, upon request, to employees, their designated representatives, the Commission of Labor and/or the Commissioner of Health and Senior Services and the Director, in accordance with the requirements of 29 CFR § 1910.1020(e).

(e) Where employees must travel between workplaces during a work shift, that is, their work is carried out at more than one geographical location, the written hazard communication program may be kept at the primary workplace facility.

12:100-7.6 Labels and other forms of warning

(a) The chemical manufacturer, importer, or distributor shall ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged or marked with the following information:

1. The identity of the hazardous chemical(s);

2. Appropriate hazard warnings; and

3. The name and address of the chemical manufacturer, importer, or other responsible party.

(b) For solid metal (such as a steel beam or a metal casting), solid wood, or plastic items that are not exempted as articles due to their downstream use, or shipments of whole grain, the required label may be transmitted to the customer at the time of the initial shipment, and need not be included with subsequent shipments to the same employer unless the information on the label changes.

1. The label may be transmitted with the initial shipment itself, or with the material safety data sheet that is to be provided prior to, or at the time of, the first shipment.

2. This exception to requiring labels on every container of hazardous chemicals is only for the solid material itself, and does not apply to hazardous chemicals used in conjunction with, or known to be present with, the material and to which employees handling the items in transit may be exposed (for example, cutting fluids or pesticides in grains).

(c) Chemical manufacturers, importers, or distributors shall ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged, or marked in accordance with this section in a manner which does not conflict with the requirements of the Hazardous Materials Transportation Act, 49 U.S.C. §§ 1801 et seq., and regulations issued under that Act by the Department of Transportation.

(d) If the hazardous chemical is regulated by U.S. Occupational Safety and Health Administration in a substance-specific health standard, the chemical manufacturer, importer, distributor or employer shall ensure that the labels or other forms of warning used are in accordance with the requirements of that standard.

(e) Except as provided in N.J.A.C. 12:100-7.6(f) and 7.8(g), the employer shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged or marked with the following information:

1. The identity of the hazardous chemical(s) contained therein; and

2. Appropriate hazard warnings, or alternatively, words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

(f) The employer may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys the information required by N.J.A.C. l2:100-7.6(e) to be on a label. The written materials shall be readily accessible to the employees in their work area throughout each work shift.

(g) The employer is not required to label portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer. For purposes of this section, drugs which are dispensed by a pharmacy to a health care provider for direct administration to a patient are exempted from labeling.

(h) The employer shall not remove or deface existing labels on incoming containers of hazardous chemicals, unless the container is immediately marked with the required information.

(i) The employer shall ensure that labels or other forms of warning are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift. Employers having employees who speak other languages may add the information in their language to the material presented, as long as the information is presented in English as well.

(j) The chemical manufacturer, importer, distributor or employer need not affix new labels to comply with this section if existing labels already convey the required information.

(k) Chemical manufacturers, importers, distributors, or employers who become newly aware of any significant information regarding the hazards of a chemical shall revise the labels for the chemical within three months of becoming aware of the new information. Labels on containers of hazardous chemicals shipped after that time shall contain the new information. If the chemical is not currently produced or imported, the chemical manufacturer, importers, distributor, or employer shall add the information to the label before the chemical is shipped or introduced into the workplace again.

12:100-7.7 Material safety data sheets

(a) Chemical manufacturers and importers shall obtain or develop a material safety data sheet for each hazardous chemical they produce or import. Employers shall have a material safety data sheet in the workplace for each hazardous chemical, which they use.

(b) Each material safety data sheet shall be in English (although the employer may maintain copies in other languages as well), and shall contain at least the following information:

1. The identity used on the label, and, except as provided for in N.J.A.C. 12:100-7.9 concerning trade secrets:

i. If the hazardous chemical is a single substance, its chemical and common name(s);

ii. If the hazardous chemical is a mixture which has been tested as a whole to determine its hazards, the chemical and common name(s) of the ingredients which contribute to these known hazards, and the common name(s) of the mixture itself; or

iii. If the hazardous chemical is a mixture which has not been tested as a whole:

(1) The chemical and common name(s) of all ingredients, which have been determined to be health hazards, and which comprise one percent or greater of the composition, except that chemicals identified as carcinogens under N.J.A.C. 12:100-7.4 shall be listed if the concentrations are 0.1 percent or greater;

(2) The chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise less than one percent (0.1 percent for carcinogens) of the mixture, if there is evidence that the ingredient(s) could be released from the mixture in concentrations which would exceed an established OSHA permissible exposure limit or ACGIH Threshold Limit Value, or could present a health risk to employees; and

(3) The chemical and common name(s) of all ingredients which have been determined to present a physical hazard when present in the mixture;

2. The physical and chemical characteristics of the hazardous chemical (such as vapor pressure, flash point);

3. The physical hazards of the hazardous chemical, including the potential for fire, explosion, and reactivity;

4. The health hazards of the hazardous chemical, including signs and symptoms of exposure, and any medical conditions which are generally recognized as being aggravated by exposure to the chemical;

5. The primary route(s) of entry;

6. The OSHA permissible exposure limit, ACGIH Threshold Limit Value, and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the material safety data sheet, where available;

7. Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Annual 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 by OSHA;

8. Any generally applicable precautions for safe handling and use, which are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, including appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, and procedures for clean-up of spills and leaks;

9. Any generally applicable control measures, which are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, such as appropriate engineering controls, work practices, or personal protective equipment;

10. Emergency and first aid procedures;

11. The date of preparation of the material safety data sheet or the last change to it; and

12. The name, address and telephone number of the chemical manufacturer, importer, employer or other responsible party preparing or distributing the material safety data sheet, who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

(c) If no relevant information is found for any given category on the material safety data sheet, the chemical manufacturer, importer or employer preparing the material safety data sheet shall mark it to indicate that no applicable information was found.

(d) Where complex mixtures have similar hazards and contents (that is, the chemical ingredients are essentially the same, but the specific composition varies from mixture to mixture), the chemical manufacturer, importer or employer may prepare one material safety data sheet to apply to all of these similar mixtures.

(e) The chemical manufacturer, importer or employer preparing the material safety data sheet shall ensure that the information recorded accurately reflects the scientific evidence used in making the hazard determination. If the chemical manufacturer, importer or employer preparing the material safety data sheet becomes newly aware of any significant information regarding the hazards of a chemical, or ways to protect against the hazards, this new information shall be added to the material safety data sheet within three months. If the chemical is not currently being produced or imported the chemical manufacturer or importer shall add the information to the material safety data sheet before the chemical is introduced into the workplace again.

(f) Chemical manufacturers or importers shall ensure that distributors and employers are provided an appropriate material safety data sheet with their initial shipment, and with the first shipment after a material safety data sheet is updated.

1. The chemical manufacturer or importer shall either provide material safety data sheets with the shipped containers or send them to the distributor or employer prior to or at the time of the shipment.

2. If the material safety data sheet is not provided with a shipment that has been labeled as a hazardous chemical, the distributor or employer shall obtain one from the chemical manufacturer or importer as soon as possible.

3. The chemical manufacturer or importer shall also provide distributors or employers with a material safety data sheet upon request.

(g) Distributors shall ensure that material safety data sheets, and updated information, are provided to other distributors and employers with their initial shipment and with the first shipment after a material safety data sheet is updated.

1. The distributor shall either provide material safety data sheets with the shipped containers, or send them to the other distributor or employer prior to or at the time of the shipment.

2. Retail distributors selling hazardous chemicals to employers having a commercial account shall provide a material safety data sheet to such employers upon request, and shall post sign or otherwise inform them that a material safety data sheet is available.

3. Wholesale distributors selling hazardous chemicals to employers over the counter may also provide material safety data sheets upon the request of the employer at the time of the over-the-counter purchase, and shall post a sign or otherwise inform such employers that a safety data sheet is available.

4. If an employer without a commercial account purchases a hazardous chemical from a retail distributor not required to have safety data sheets on file (that is, the retail distributor does not have commercial accounts and does not use the materials), the retail distributor shall provide the employer, upon request, with the name, address, and telephone number of the chemical manufacturer, importer, or distributor from which a material safety data sheet can be obtained.

5. Wholesale distributors shall also provide material safety data sheets to employers or other distributors upon request.

6. Chemical manufacturers, importers, and distributors need not provide material safety data sheets to retail distributors that have informed them that the retail distributor does not sell the product to commercial accounts or open the sealed container to use it in their own workplaces.

(h) The employer shall maintain in the workplace copies of the required material safety data sheets for each hazardous chemical, and shall ensure that they are readily accessible during each work shift to employees when they are in their work area(s). (Electronic access, microfiche, and other alternatives to maintaining paper copies of the material safety data sheets are permitted as long as no barriers to immediate employee access in each workplace are created by such options.)

(i) Where employees must travel between workplaces during a work shift, that is, their work is carried out at more than one geographical location, the material safety data sheets may be kept at the primary workplace facility. In this situation, the employer shall ensure that employees can immediately obtain the required information in an emergency.

(j) Material safety data sheets may be kept in any form, including operating procedures, and may be designed to cover groups of hazardous chemicals in a work area where it may be more appropriate to address the hazards of a process rather than individual hazard chemicals. However, the employer shall ensure that in all cases the required information is provided for each hazardous chemical, and is readily accessible during each work shift to employees when they are in their work area(s).

(k) Material safety data sheets shall also be made readily available, upon request, to designated representatives and to the Director, in accordance with the requirements of 29 CFR § 1910.1020(e). The Director shall also be given access to material safety data sheets in the same manner.

12:100-7.8 Employee information and training

(a) Employers shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area. Refresher training, which shall be an abbreviated version of initial training, shall be conducted every two years. Employers shall ensure that all employees participate in a training program that must be provided at no cost to the employee and during working hours. Information and training may be designed to cover categories of hazards (for example, flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels, hazardous substance fact sheets, and material safety data sheets.

(b) Employees shall be informed of:

1. The requirements of this section;

2. Any operations in their work area where hazardous chemicals are present;

3. The location and availability of the written hazard communication program, including the list(s) of hazardous chemicals required by the hazard communication program, hazardous substance fact sheets, the Right to Know Survey, the Right to Know Hazardous Substance List, and material safety data sheets required by this section; and

4. The applicable provisions of the Worker and Community Right to Know Act, N.J.S.A. 34:5A-l et seq.

(c) Employee training shall include at least:

1. Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);

2. The physical and health hazards of the chemicals in the work area;

3. The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used;

4. The details of the hazard communication program developed by the employer, including an explanation of the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information;

5. Information about the applicable provisions of the Worker and Community Right to Know Act, N.J.S.A. 34:5A-1 et seq., which shall include an explanation of the Right to Know Survey, labeling, hazardous substance fact sheets, the Right to Know Hazardous Substance List, and the Right to Know poster, and how employees can obtain these documents and use appropriate hazard information from these sources; and

6. A copy of the Right to Know brochure. When refresher training is given, the Right to Know brochure shall be distributed to all employees.

(d) An employer shall use a technically qualified person to conduct its training session.

(e) Training records shall include the following information:

1. The dates of the training sessions;

2. The contents or a summary of the training sessions;

3. The names and qualifications of persons conducting the training; and

4. The names and job titles of all persons attending the training sessions.

(f) Training records shall be maintained for the duration of the employee's employment.

(g) Training records shall be available as follows:

1. The employer shall ensure that all training records required to be maintained by this standard shall be made available upon request to the Commissioner of Labor or the Commissioner of Health and Senior Services for examination and copying.

2. Employee training records required by this standard shall be provided upon request for examination and copying to employees, to employee representatives, to the Commissioner of Labor, and to the Commissioner of Health and Senior Services.

(h) Material appropriate in content and vocabulary to educational level, literacy, and language of employees shall be used.

12:100-7.9 Trade secrets

(a) The chemical manufacturer, importer, or employer may withhold the specific chemical identity, including the chemical name and other specific identification of a hazardous chemical, from the material safety data sheet, provided that:

1. The claim that the information withheld is a trade secret can be supported;

2. Information contained in the material safety data sheet concerning the properties and effects of the hazardous chemical is disclosed;

3. The material safety data sheet indicates that the specific chemical identity is being withheld as a trade secret; and

4. The specific chemical identity is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of this section.

(b) Where a treating physician or nurse determines that a medical emergency exists and the specific chemical identity of a hazardous chemical is necessary for emergency or first-aid treatment, the chemical manufacturer, importer, or employer shall immediately disclose the specific chemical identity of a trade secret chemical to that treating physician or nurse, regardless of the existence of a written statement of need or a confidentiality agreement. The chemical manufacturer, importer, or employer may require a written statement of need and confidentiality agreement, in accordance with the provisions of (c) and (d) below, as soon as circumstances permit.

(c) In non-emergency situations, a chemical manufacturer, importer, or employer shall, upon request, disclose a specific chemical identity, otherwise permitted to be withheld under (a) above, to a health professional (that is, physician, industrial hygienist, toxicologist, epidemiologist, or occupational health nurse) providing medical or other occupational health services to exposed employee(s), and to employees or designated representatives, if:

1. The request is in writing;

2. The request describes with reasonable detail one or more of the following occupational health needs for the information:

i. To assess the hazards of the chemicals to which employees will be exposed;

ii. To conduct or assess sampling of the workplace atmosphere to determine employee exposure levels;

iii. To conduct pre-assignment or periodic medical surveillance of exposed employees;

iv. To provide medical treatment to exposed employees;

v. To select or assess appropriate personal protective equipment for exposed employees;

vi. To design or assess engineering controls or other protective measures for exposed employees; and

vii. To conduct studies to determine the health effects of exposure.

3. The request explains in detail why the disclosure of the specific chemical identity is essential and that, in lieu thereof, the disclosure of the following information to the health professional, employee, or designated representative, would not satisfy the purposes described in (c)2 above:

i. The properties and effects of the chemical;
ii. Measures for controlling workers' exposure to the chemical;
iii. Methods of monitoring and analyzing worker exposure to the chemical; and
iv. Methods of diagnosing and treating harmful exposures to the chemical;

4. The request includes a description of the procedures to be used to maintain the confidentiality of the disclosed information; and

5. The health professional, and the employer or contractor of the services of the health professional (that is, downstream employer, labor organization, or individual employee), employee, or designated representative, agree in a written confidentiality agreement that the health professional, employee, or designated representative, will not use the trade secret information for any purpose other than the health need(s) asserted and agree not to release the information under any circumstances other than to the U.S. Occupational Safety and Health Administration, as provided in (f) below, except as authorized by the terms of the agreement or by the chemical manufacturer, importer, or employer.

(d) The confidentiality agreement authorized by (c)4 above:

1. May restrict the use of the information to the health purposes indicated in the written statement of need;

2. May provide for appropriate legal remedies in the event of a breach of the agreement, including stipulation of a reasonable pre-estimate of likely damages; and

3. May not include requirements for the posting of a penalty bond.

(e) Nothing in this subchapter is meant to preclude the parties from pursuing non-contractual remedies to the extent permitted by law.

(f) If the health professional, employee, or designated representative receiving the trade secret information decides that there is a need to disclose it to OSHA, the chemical manufacturer, importer, or employer who provided the information shall be informed by the health professional, employee, or designated representative prior to, or at the same time as, such disclosure.

(g) If the chemical manufacturer, importer, or employer denies a written request for disclosure of a specific chemical identity, the denial must:

1. Be provided to the health professional, employee, or designated representative, within 30 days of the request;

2. Be in writing;

3. Include evidence to support the claim that the specific chemical identity is a trade secret;

4. State the specific reasons why the request is being denied; and

5. Explain in detail how alternative information may satisfy the specific medical or occupational health need without revealing the specific chemical identity.

(h) The health professional, employee, or designated representative whose request for information is denied under (c) above may refer the request and the written denial of the request to the Commissioner of Labor and/or Commissioner of Health and Senior Services for consideration.

(i) When a health professional, employee, or designated representative refers the denial to the Commissioner of Labor and/or the Commissioner of Health and Senior Services under (h) above, New Jersey Public Employees Occupational Safety and Health shall consider the evidence to determine if:

1. The chemical manufacturer, importer, or employer has supported the claim that the specific chemical identity is a trade secret;

2. The health professional, employee, or designated representative has supported the claim that there is a medical or occupational health need for the information; and

3. The health professional, employee or designated representative has demonstrated adequate means to protect the confidentiality.

(j) If the Commissioner of Labor and/or the Commissioner of Health and Senior Services determines that the specific chemical identity requested under (c) above is not a "bona fide" trade secret, or that it is a trade secret, but the requesting health professional, employee, or designated representative has a legitimate medical or occupational health need for the information, has executed a written confidentiality agreement, and has shown adequate means to protect the confidentiality of the information, the chemical manufacturer, importer, or employer will be subject to citation by the Commissioner of Labor.

(k) If a chemical manufacturer, importer, or employer demonstrates to the Commissioner of Labor and/or the Commissioner of Health and Senior Services that the execution of a confidentiality agreement would not provide sufficient protection against the potential harm from the unauthorized disclosure of a trade secret specific chemical identity, the Commissioner of Labor and/or the Commissioner of Health and Senior Services may issue such orders or impose such additional limitations or conditions upon the disclosure of the requested chemical information as may be appropriate to assure that the occupational health services are provided without an undue risk of harm to the chemical manufacturer, importer, or employer.

(1) If a citation for a failure to release specific chemical identity information is contested by the chemical manufacturer, importer, or employer, the matter will be adjudicated before the Occupational Safety and Health Review Commission in accordance with the Act's enforcement scheme and the applicable Commission rules of the procedure. In accordance with the Commission rules, when a chemical manufacturer, importer, or employer continues to withhold the information during the contest, the Administrative Law Judge may review the citation and supporting documentation "in ca or issue appropriate orders to protect the confidentiality of such matters.

(m) Notwithstanding the existence of a trade secret claim, a chemical manufacturer, importer, or employer shall, upon request, disclose to the Commissioner of Labor and/or the Commissioner of Health and Senior Services any information which this subchapter requires the chemical manufacturer, importer, or employer to make available. Where there is a trade secret claim, such claim shall be made no later than at the time the information is provided to the Commissioner of Labor and/or the Commissioner of Health and Senior Services so that suitable determinations of trade secret status can be made and the necessary protections can be implemented.

(n) Nothing in this section shall be construed as requiring the disclosure under any circumstances of process or percentage of mixture information, which is a trade secret.

APPENDIX X.A.A
Health Hazard Definitions (Mandatory)

Although safety hazards related to the physical characteristics of a chemical can be objectively defined in terms of testing requirements (for example, flammability), health hazard definitions are less precise and more subjective. Health hazards may cause measurable changes in the body—such as decreased pulmonary function. These changes are generally indicated by the occurrence of signs and symptoms in the exposed employees such as shortness of breath, a nonmeasurable, subjective feeling. Employees exposed to such hazards must be apprised of both the change in body function and the signs and symptoms that may occur to signal that change.

The determination of occupational health hazards is complicated by the fact that many of the effects or signs and symptoms occur commonly in non-occupationally-exposed populations, so that effects of exposure are difficult to separate from normally occurring illnesses. Occasionally, a substance causes an effect that is rarely seen in the population at large, such as angiosarcomas caused by vinyl chloride exposure, thus making it easier to ascertain that the occupational exposure was the primary causative factor. More often, however, the effects are common, such as lung cancer. The situation is further complicated by the fact that most chemicals have not been adequately tested to determine their health hazard potential, and data do not exist to substantiate these effects.

There have been many attempts to categorize effects and to define them in various ways. Generally, the terms "acute" and "chronic" are used to delineate between effects on the basis of severity or duration. "Acute" effects usually occur rapidly as a result of short-term exposure, and are of short duration. "Chronic" effects generally occur as a result of long-term exposure, and are of long duration.

The acute effects referred to most frequently are those defined by the American National Standards Institute (ANSI) standard for Precautionary Labeling of Hazardous Industrial Chemicals (Z129.l-l988)–irritation, corrosivity, sensitization and lethal dose. Although these are important health effects, they do not adequately cover the considerable range of acute effects, which may occur as a result of occupational exposure, such as, for example, narcosis.

Similarly, the term chronic effect is often used to cover only carcinogenicity, teratogenicity, and mutagenicity. These effects are obviously a concern in the workplace, but again, do not adequately cover the area of chronic effects, excluding, for example, blood dyscrasias (such as anemia), chronic bronchitis and liver atrophy.

The goal of defining precisely, in measurable terms, every possible health effect that may occur in the workplace as a result of chemical exposures cannot realistically be accomplished. This does not negate the need for

employees to be informed of such effects and protected from them. Appendix X.A.B, which is also mandatory, outlines the principles and procedures of hazard assessment.

For purposes of this section, any chemicals, which meet any of the following definitions, as determined by the criteria set forth in Appendix B are health hazards. However, this is not intended to be an exclusive categorization scheme. If there are available scientific data that involve other animal species or test methods, they must also be evaluated to determine the applicability of the Hazard Communication Standard.

1. Carcinogen: A chemical is considered to be a carcinogen if:

(a) It has been evaluated by the International Agency for Research on Cancer (IARC), and found to be a carcinogen or potential carcinogen; or

(b) It is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program; or

(c) It is regulated by OSHA as a carcinogen.

2. Corrosive: A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. For example, a chemical is considered to be corrosive if, when tested on the intact skin of albino rabbits by the method described by the United States Department of Transportation in Appendix A to 49 CFR 173, it destroys or changes irreversibly the structure of the tissue at the site of contact following an exposure period of four hours. This term shall not refer to action on inanimate surfaces.

3. Highly toxic: A chemical falling within any of the following categories:

(a) A chemical that has a median lethal dose (LD(50)) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(b) A chemical that has a median lethal dose (LD(50)) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

(c) A chemical that has a median lethal concentration (LC(50)) in air of 200 parts per million by volume or less of gas or vapor, or two milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

4. Irritant: A chemical, which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. A chemical is a skin irritant if, when tested on the intact skin of albino rabbits by the methods of 16 CFR 1500.41 for four hours exposure or by other appropriate techniques, it results in an empirical score of five or more. A chemical is an eye irritant if so determined under the procedure listed in 16 CFR 1500.42 or other appropriate techniques.

5. Sensitizer: A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

6. Toxic: A chemical falling within any of the following categories:

(a) A chemical that has a median lethal dose (LD(50)) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(b) A chemical that has a median lethal dose (LD(50)) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

(c) A chemical that has a median lethal concentration (LC(50)) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

7. Target Organ Effects: The following is a target organ categorization of effects, which may occur, including examples of signs and symptoms and chemicals, which have been found to cause such effects. These examples are presented to illustrate the range and diversity of effects and hazards found in the workplace, and the broad scope employers must consider in this area, but are not intended to be all-inclusive.

(a) Hepatotoxins: Chemicals which produce liver damage.

Signs and Symptoms: Jaundice; liver enlargement.

Chemicals: Carbon tetrachloride; nitrosamines.

(b) Nephrotoxins: Chemicals which produce kidney damage.
Signs and Symptoms: Edema; proteinuria.
Chemicals: Halogenated hydrocarbons; uranium.

(c) Neurotoxins: Chemicals which produce their primary toxic effects on the nervous system.
Signs and Symptoms: Narcosis; behavioral changes; decrease in motor functions.
Chemicals: Mercury; carbon disulfide.

(d) Agents, which act on the blood or hemato-poietic system:
Decrease hemoglobin function; deprive the body tissues of oxygen.
Signs and Symptoms: Cyanosis; loss of consciousness.
Chemicals: Carbon monoxide; cyanides.

(e) Agents which damage the lung: Chemicals which irritate or damage pulmonary tissue.
Signs and Symptoms: Cough; tightness in chest; shortness of breath.
Chemicals: Silica; asbestos.

(f) Reproductive toxins: Chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).
Signs and Symptoms: Birth defects; sterility.
Chemicals: Lead; DBCP.

(g) Cutaneous hazards: Chemicals which affect the dermal layer of the body.
Signs and Symptoms: Defatting of the skin; rashes; irritation.
Chemicals: Ketones; chlorinated compounds.

(h) Eye hazards: Chemicals which affect the eye or visual capacity.

Signs and Symptoms: Conjunctivitis; corneal damage.
Chemicals: Organic solvents; acids.

APPENDIX X.A.B
Hazard Determination (Mandatory)

The quality of a hazard communication program is largely dependent upon the adequacy and accuracy of the hazard determination. The hazard determination requirement of this standard is performance-oriented. Chemical manufacturers, importers, and employers evaluating chemicals are not required to follow any specific methods for determining hazards, but they must be able to demonstrate that they have adequately ascertained the hazards of the chemicals produced or imported in accordance with the criteria set forth in this Appendix.

Hazard evaluation is a process, which relies heavily on the professional judgment of the evaluator, particularly in the area of chronic hazards. The performance-orientation of the hazard determination does not diminish the duty of the chemical manufacturer, importer or employer to conduct a thorough evaluation, examining all relevant data and producing a scientifically defensible evaluation. For purposes of this standard, the following criteria shall be used in making hazard determinations that meet the requirements of this standard.

1. Carcinogenicity: As described in N.J.A.C. 12:100-7.4(d) and subchapter Appendix A, a determination by the National Toxicology Program, the International Agency for Research on Cancer, or OSHA that a chemical is a carcinogen or potential carcinogen will be considered conclusive evidence for purposes of this section. In addition, however, all available scientific data on carcinogenicity must be evaluated in accordance with the provisions of this Appendix and the requirements of this subchapter.

2. Human data: Where available, epidemiological studies and case reports of adverse health effects shall be considered in the evaluation.

3. Animal data: Human evidence of health effects in exposed populations is generally not available for the majority of chemicals produced or used in the workplace. Therefore, the available results of toxicological testing in animal populations shall be used to predict the health effects that may be experienced by exposed workers. In particular, the definitions of certain acute hazards refer to specific animal testing results (see Appendix A).

4. Adequacy and reporting of data: The results of any studies which are designed and conducted according to established scientific principles, and which report statistically significant conclusions regarding the health effects of a chemical, shall be a sufficient basis for a hazard determination and reported on any material safety data sheet. In vitro studies alone generally do not form the basis for a

definitive finding of hazard under the Hazard Communication Standard since they have a positive or negative result rather than a statistically significant finding.

The chemical manufacturer, importer, or employer may also report the results of other scientifically valid studies, which tend to refute the findings of hazard.

APPENDIX X.A.C
(RESERVED)

APPENDIX X.A.D
Definition of Trade Secret (Mandatory)

The following is a reprint of the "Restatement of Torts," Section 757, comment b (1939):

Definition of trade secret. A trade secret may consist of any formula, pattern, device or compilation of information which is used in one's business, and which gives the individual an opportunity to obtain an advantage over competitors who do not know or use it. It may be a formula for a chemical compound, a process of manufacturing, treating or preserving materials, a pattern for a machine or other device, or a list of customers. It differs from other secret information in a business (see § 759 of the Restatement of Torts which is not included in this Appendix) in that it is not simply information as to single or ephemeral events in the conduct of the business, as, for example, the amount or other terms of a secret bid for a contract or the salary of certain employees, or the security investments made or contemplated, or the date fixed for the announcement of a new policy or for bringing out a new model or the like. A trade secret is a process or device for continuous use in the operations of the business. Generally it relates to the production of goods, as, for example, a machine or formula for the production of an article. It may, however, relate to the sale of goods or to other operations in the business, such as a code for determining discounts, rebates or other concessions in a price list or a catalogue, or a list of specialized customers, or a method of bookkeeping or other office management.

Secrecy. The subject matter of a trade secret must be secret. Matters of public knowledge or of general knowledge in an industry cannot be appropriated by one as one's own secret. Neither can matters which are completely disclosed by the goods which one markets be imputed as one's own secret. Substantially, a trade secret is known only in the particular business in which it is used. It is not requisite that only the proprietor of the business knows it. The individual may, without losing his protection, communicate it to employees involved in its use. The individual may likewise communicate it to others pledged to secrecy. Others may also know of it independently, as, for example, when they have discovered the process or formula by independent invention and are keeping it secret. Nevertheless, a substantial element of secrecy must exist, so that, except by the use of improper means, there would be difficulty in acquiring the information. An exact definition of a trade secret is not possible. Some factors to be considered in determining whether given information is one's trade secret are: (1) The extent to which the information is known outside of the individual's business; (2) the extent to which it is known by employees and others involved in the individual's business; (3) the extent of measures taken by the individual to guard the secrecy of the information; (4) the value of the information to the individual and the individual's competitors; (5) the amount of effort or money expended by the individual in developing the information; and (6) the ease of difficulty with which the information could be properly acquired or duplicated by others.

Novelty and prior art. A trade secret may be a device or process, which is patentable; but it need not be that. It may be a device or process, which is clearly anticipated in the prior art or one, which is merely a mechanical improvement that a good mechanic; can make. Novelty and invention are not requisite for a trade secret as they are for patentability. These requirements are essential to patentability because a patent protects against licensed use of the patented device or process even by one who discovers it properly through independent research. The patent monopoly is a reward to the inventor. But such is not the case with a trade secret. Its protection is not based on a policy of rewarding or otherwise encouraging the development of secret processes or devices. The protection is merely against breach of faith and reprehensible means of learning another's secret. For this limited protection it is not appropriate to require also the kind of novelty and invention, which is a requisite of patentability. The nature of the secret is, however, an important factor in determining the kind of relief that is appropriate against one who is subject to liability under the rule stated in this section. Thus, if the secret consists of a device or process which is a novel invention, one who acquires the secret wrongfully is ordinarily enjoined from further use of it and is required to account for the profits derived from the individual's past use. If, on the other hand, the secret consists of mechanical improvements that a good mechanic can make without resorting to

the secret, the wrongdoer's liability may be limited to damages, and an injunction against future use of the improvements made with the aid of the secret may be inappropriate.

APPENDIX X.A.E
Guidelines for Employer Compliance (Advisory)

The Hazard Communication Standard (HCS) is based on a simple concept—that employees have both a need and a right to know the hazards and identities of the chemicals they are exposed to when working. They also need to know what protective measures are available to prevent adverse effects from occurring. The HCS is designed to provide employees with the information they need.

Knowledge acquired under the HCS will help employers provide safer workplaces for their employees. When employers have information about the chemicals being used, they can take steps to reduce exposures, substitute less hazardous materials, and establish proper work practices. These efforts will help prevent the occurrence of work-related illnesses and injuries caused by chemicals.

The HCS addresses the issues of evaluating and communicating hazards to workers. Evaluation of chemical hazards involves a number of technical concepts, and is a process that requires the professional judgment of experienced experts. That is why the HCS is designed so that employers who simply use chemicals, rather than produce or import them, are not required to evaluate the hazards of those chemicals. Hazard determination is the responsibility of the producers and importers of the materials. Producers and importers of chemicals are then required to provide the hazard information to employers that purchase their products.

Employers that do not produce or import chemicals need only focus on those parts of the subchapter that deal with establishing a workplace program and communicating information to their workers. This Appendix is a general guide for such employers to help them determine what is required under the subchapter. It does not supplant or substitute for the regulatory provisions, but rather provides a simplified outline of the steps an average employer would follow to meet those requirements.

1. Becoming Familiar With The Subchapter.

The HCS requires information to be prepared and transmitted regarding all hazardous chemicals. The HCS covers both physical hazards (such as flammability), and health hazards (such as irritation, lung damage, and cancer). Most chemicals used in the workplace have some hazard potential, and thus will be covered by the subchapter.

One difference between this subchapter and many others adopted by OSHA is that this one is performance-oriented. That means that you have the flexibility to adapt the subchapter to the needs of your workplace, rather than having to follow specific, rigid requirements. It also means that you have to exercise more judgment to implement an appropriate and effective program.

The standard's design is simple. Chemical manufacturers and importers must evaluate the hazards of the chemicals they produce or import. Using that information, they must then prepare labels for containers, and more detailed technical bulletins called Material Safety Data Sheets (MSDS).

Chemical manufacturers, importers, and distributors of hazardous chemicals are all required to provide the appropriate labels and material safety data sheets to the employers to which they ship the chemicals. The information is to be provided automatically. Every container of hazardous chemicals you receive must be labeled, tagged, or marked with the required information. Your suppliers must also send you a properly completed material safety data sheet (MSDS) at the time of the first shipment of the chemical, and with the next shipment after the MSDS is updated with new and significant information about the hazards.

You can rely on the information received from your suppliers. You have no independent duty to analyze the chemical or evaluate the hazards of it.

Employers that "use" hazardous chemicals must have a program to ensure the information is provided to exposed employees. "Use" means to package, handle, react, or transfer. This is an intentionally broad scope, and includes any situation where a chemical is present in such a way that employees may be exposed under normal conditions of use or in a foreseeable emergency.

The requirements of the subchapter that deal specifically with the hazard communication program are found in N.J.A.C. 12:100-7.5, Written hazard communication program; 7.6, Labels and other forms of warning; 7.7, Material safety data sheets; and 7.8, Employee information and training. The requirements of these sections should be the focus of your attention. Concentrate on becoming familiar with them, using N.J.A.C. 12:100-7.2, Scope and application, and 7.3, Definitions, as references when needed to help explain the provisions.

There are two types of work operations where the coverage of the rule is limited. These are laboratories and operations where chemicals are only handled in sealed containers (for example, a warehouse). The limited provisions for these workplaces can be found in N.J.A.C. 12:100-7.2, Scope and application. Basically, employers having these types of work operations need only keep labels on containers as they are received; maintain material safety data sheets that are received, and give employees access to them; and provide information and training for employees. Employers do not have to have a written hazard communication program and lists of chemicals for these types of operations.

The limited coverage of laboratories and sealed container operations addresses the obligation of an employer to the workers in the operations involved, and does not affect the employer's duties as a distributor of chemicals. For example, a distributor may have warehouse operations where employees would be protected under the limited sealed container provisions. In this situation, requirements for obtaining and maintaining MSDSs are limited to providing access to those received with containers while the substance is in the workplace, and requesting MSDSs when employees request access for those not received with the containers. However, as a distributor of hazardous chemicals, that employer will still have responsibilities for providing MSDSs to downstream customers at the time of the first shipment and when the MSDS is updated. Therefore, although they may not be required for the employees in the work operation, the distributor may, nevertheless, have to have MSDSs to satisfy other requirements of the rule.

2. Identify Responsible Staff.

Hazard communication is going to be a continuing program in your facility. Compliance with the HCS is not a "one shot deal." In order to have a successful program, it will be necessary to assign responsibility for both the initial and ongoing activities that have to be undertaken to comply with the rule. In some cases, these activities may already be part of current job assignments. For example, site supervisors are frequently responsible for on-the-job training sessions. Early identification of the responsible employees, and involvement of them in the development of your plan of action, will result in a more effective program design. Evaluation of the effectiveness of your program will also be enhanced by involvement of affected employees.

For any safety and health program, success depends on commitment at every level of the organization. This is particularly true for hazard communication, where success requires a change in behavior. This will only occur if employers understand the program, and are committed to its success, and if employees are motivated by the people presenting the information to them.

3. Identify Hazardous Chemicals in the Workplace.

The standard requires a list of hazardous chemicals in the workplace as part of the written hazard communication program. The list will eventually serve as an inventory of everything for which an MSDS must be maintained. At this point, however, preparing the list will help you complete the rest of the program since it will give you some idea of the scope of the program required for compliance in your facility.

The best way to prepare a comprehensive list is to survey the workplace. Purchasing records may also help, and certainly employers should establish procedures to ensure that in the future purchasing procedures result in MSDSs being received before a material is used in the workplace.

The broadest possible perspective should be taken when doing the survey. Sometimes people think of "chemicals" as being only liquids in containers. The HCS covers chemicals in all physical forms—liquids, solids, gases, vapors, fumes, and mists—whether they are "contained" or not. The hazardous nature of the chemical and the potential for exposure are the factors which determine whether a chemical is covered. If it is not hazardous, it is not covered. If there is no potential for exposure (for example, the chemical is inextricably bound and cannot be released), the rule does not cover the chemical.

Look around. Identify chemicals in containers, including pipes, but also think about chemicals generated in the work operations. For example, welding fumes, dusts, and exhaust fumes are all sources of chemical exposures. Read labels provided by suppliers for hazard information. Make a list of all chemicals in the workplace that are potentially hazardous. For your own information and planning, you may also want to note on the list the location(s) of the products within the workplace, and an indication of the hazards as found on the label. This will help you as you prepare the rest of your program.

N.J.A.C. 12:100-7.2, Scope and application, includes exemptions for various chemicals or workplace situations. After compiling the complete list of chemicals, you should review N.J.A.C. 12:100-7.2 to determine if any of the items can be eliminated from the list because they are exempted materials. For example, food, drugs, and cosmetics brought into the workplace for employee consumption are exempt. So rubbing alcohol in the first aid kit would not be covered.

Once you have compiled as complete a list as possible of the potentially hazardous chemicals in the workplace, the next step is to determine if you have received material safety data sheets for all of them. Check your files against the inventory you have just compiled. If any are missing, contact your supplier and request one. It is a good idea to document these requests, either by copy of a letter or a note regarding telephone conversations. If you have MSDSs for chemicals that are not on your list, figure out why. Maybe you do not use the chemical anymore. Or maybe you missed it in your survey. Some suppliers do provide MSDSs for products that are not hazardous. These do not have to be maintained by you.

You should not allow employees to use any chemicals for which you have not received an MSDS. The MSDS provides information you need to ensure proper protective measures are implemented prior to exposure.

4. Preparing and Implementing a Hazard Communication Program.

All workplaces where employees are exposed to hazardous chemicals must have a written plan, which describes how the standard will be implemented in that facility. Preparation of a plan is not just a paper exercise—all of the elements must be implemented in the workplace in order to be in compliance with the subchapter. See N.J.A.C. 12:100-7.5 for the specific requirements regarding a written hazard communication program. The only work operations which do not have to comply with the written plan requirements are laboratories and work operations where employees only handle chemicals in sealed containers. See N.J.A.C. 12:100-7.2, Scope and application, for the specific requirements for these two types of workplaces.

The plan does not have to be lengthy or complicated. It is intended to be a blueprint for implementation of your program—an assurance that all aspects of the requirements have been addressed.

Many trade associations and other professional groups have provided sample programs and other assistance materials to affected employers. These have been very helpful to many employers since they tend to be tailored to the particular industry involved. You may wish to investigate whether your industry trade groups have developed such materials.

Although such general guidance may be helpful, you must remember that the written program has to reflect what you are doing in your workplace. Therefore, if you use a generic program, it must be adapted to address the facility it covers. For example, the written plan must list the chemicals present at the site, indicate who is to be responsible for the various aspects of the program in your facility, and indicate where written materials will be made available to employees.

If the Department of Labor and/or the Department of Health and Senior Services inspects your workplace for compliance with the HCS, the compliance officer will ask to see your written plan at the outset of the inspection. In general, the following items will be considered in evaluating your program.

The written program must describe how the requirements for labels and other forms of warning, material safety data sheets, and employee information and training, are going to be met in your facility. The following discussion provides the type of information compliance officers will be looking for to decide whether these elements of the hazard communication program have been properly addressed:

A. Labels and Other Forms of Warning.

In-plant containers of hazardous chemicals must be labeled, tagged, or marked with the identity of the material and appropriate hazard warnings. Chemical manufacturers, importers, and distributors are required to ensure that every container of hazardous chemicals they ship is appropriately labeled with such information and with the name and address of the producer or other responsible party. Employers purchasing chemicals can rely on the labels provided by their suppliers. If the material is subsequently transferred by the employer from a labeled container to another container, the employer will have to label that container unless it is subject to the portable container exemption. See N.J.A.C. 12:100-7.6 for specific labeling requirements.

The primary information to be obtained from an OSHA-required label is an identity for the material, and appropriate hazard warnings. The identity is any term, which appears on the label, the MSDS, and the list of chemicals, and thus links these three sources of information. The identity used by the supplier may be a common or trade name (“Black Magic Formula”), or a chemical name (1,l,l,-trichloroethane). The hazard warning is a brief statement of the hazardous effects of the chemical (“flammable, causes lung damage”). Labels frequently contain other information, such as precautionary measures (“do not use near open flame”), but this information is provided voluntarily and is not required by the subchapter. Labels must be legible, and prominently displayed. There are no specific requirements for size or color, or any specified text.

With these requirements in mind, the compliance officer will be looking for the following types of information to ensure that labeling will be properly implemented in your facility:

1. Designation of person(s) responsible for ensuring labeling of in-plant containers;

2. Designation of person(s) responsible for ensuring labeling of any shipped containers;
3. Description of labeling system(s) used;
4. Description of written alternatives to labeling of in-plant containers (if used); and
5. Procedures to review and update label information when necessary.

Employers that are purchasing and using hazardous chemicals—rather than producing or distributing them—will primarily be concerned with ensuring that every purchased container is labeled. If materials are transferred into other containers, the employer must ensure that these are labeled as well, unless they fall under the portable container exemption (N.J.A.C 12:100-7.6). In terms of labeling systems, you can simply choose to use the labels provided by your suppliers on the containers. The will generally be verbal text labels, and do not usually include numerical rating systems or symbols that require special training. The most important thing to remember is that this is a continuing duty—all in-plant containers of hazardous chemicals must always be labeled. Therefore, it is important to designate someone to be responsible for ensuring that the labels are maintained as required on the containers in your facility, and that newly purchased materials are checked for labels prior to use.

B. Material Safety Data Sheets.

Chemical manufacturers and importers are required to obtain or develop a material safety data sheet (MSDS) for each hazardous chemical they produce or import. Distributors are responsible for ensuring that their customers are provided a copy of these MSDSs. Employers must have an MSDS for each hazardous chemical, which they use. Employers may rely on the information received from their suppliers. The specific requirements for material safety data sheets are in N.J.A.C. 12:100-7.7. There is no specified format for the MSDS under the rule, although there are specific information requirements. OSHA has developed a nonmandatory format, OSHA Form 174, which may be used by chemical manufacturers and importers to comply with the rule. The MSDS must be in English. You are entitled to receive from your supplier a data sheet that includes all of the information required under the rule. If you do not receive one automatically, you should request one. If you receive one that is obviously inadequate, with, for example, blank spaces that are not completed, you should request an appropriately completed one. If your request for a data sheet or for a corrected data sheet does not produce the information needed, you should contact the Department of Labor and/or the Department of Health and Senior Services for assistance in obtaining the MSDS.

The role of MSDSs under the subchapter is to provide detailed information on each hazardous chemical, including its potential hazardous effects, its physical and chemical characteristics, and recommendations for appropriate protective measures. This information should be useful to you as the en responsible for designing protective programs, as well as to the workers. If you are not familiar with material safety data sheets and with chemical terminology, you may need to learn to use them yourself. A glossary of MSDS terms may be helpful in this regard. Generally speaking, most employers using hazardous chemicals will primarily be concerned with MSDS information regarding hazardous effects and recommended protective measures. Focus on the sections of the MSDS that are applicable to your situation.

MSDSs must be readily accessible to employees when they are in their work areas during their work shifts. This may be accomplished in many different ways. You must decide what is appropriate for your particular workplace. Some employers keep the MSDSs in a binder in a central location (for example, in the pick-up truck on a construction site). Others, particularly in workplaces with large numbers of chemicals, computerize the information and provide access through terminals. As long as employees can get the information when they need it, any approach may be used. The employees must have access to the MSDSs themselves—simply having a system where the information can be read to them over the phone is only permitted under the mobile worksite provision, N.J.A.C. 12:100-7.7(i), when employees must travel between workplaces during the shift. In this situation, they have access to the MSDSs prior to leaving the primary worksite, and when they return, so the telephone system is simply an emergency arrangement.

In order to ensure that you have a current MSDS for each chemical in the plant as required, and that employee access is provided, the compliance officers will be looking for the following types of information in your written program:

1. Designation of person(s) responsible for obtaining and maintaining the MSDSs;
2. How such sheets are to be maintained in the workplace (for example, in notebooks in the work area(s) or in a computer with terminal access), and how employees can obtain access to them when they are in their work area during the work shift;
3. Procedures to follow when the MSDS is not received at the time of the first shipment;

4. For producers, procedures to update the MSDS when new and significant health information is found; and

5. Description of alternatives to actual data sheets in the workplace, if used.

For employers using hazardous chemicals, the most important aspect of the written program in terms of MSDSs is to ensure that someone is responsible for obtaining and maintaining the MSDSs for every hazardous chemical in the workplace. The list of hazardous chemicals required to be maintained as part of the written program will serve as an inventory. As new chemicals are purchased, the list should be updated. Many companies have found it convenient to include on their purchase orders the name and address of the person designated in their company to receive MSDSs.

C. Employee Information and Training.

Each employee who may be "exposed" to hazardous chemicals when working must be provided information and trained prior to initial assignment to work with a hazardous chemical, and whenever the hazard changes. See N.J.A.C. 12:100-7.8 for specific requirements. Information and training may be done either by individual chemical, or by categories of hazards (such as flammability or carcinogenicity). If there are only a few chemicals in the workplace, then you may want to discuss each one individually. Where there are large numbers of chemicals, or the chemicals change frequently, you will probably want to train generally based on the hazard categories (for example, flammable liquids, corrosive materials, carcinogens). Employees will have access to the substance- specific information on the labels and MSDSs.

Information and training is a critical part of the hazard communication program. Information regarding hazards and protective measures are provided to workers through written labels and material safety data sheets. However, through effective information and training, workers will learn to read and understand such information, determine how it can be obtained and used in their own workplaces, and understand the risks of exposure to the chemicals in their workplaces as well as the ways to protect themselves. A properly conducted training program will ensure comprehensive and understanding. It is not sufficient to either just read material to the workers, or simply hand them material to read. You want to create a climate where workers feel free to ask questions. This will help you to ensure that the information is understood. You must always remember that the underlying purpose of the HCS is to reduce the incidence of chemical source illnesses and injuries. This will be accomplished by modifying behavior through the provision of hazard information and information about protective measures. If your program works, you and your workers will better understand the chemical hazards within the workplace. The procedures you establish regarding, for example, purchasing, storage, and handling of these chemicals will improve, and thereby reduce the risks posed to employees exposed to the chemical hazards involved. Furthermore, your workers' comprehension will also be increased, and proper work practices will be followed in your workplace.

If you are going to do the training yourself, you will have to understand the material and be prepared to motivate the workers to learn. This is not always an easy task, but the benefits are worth the effort. More information regarding appropriate training can be found in OSHA Publication No. 2254 which contains voluntary training guidelines prepared by OSHA's Training Institute. A copy of this document is available from OSHA's Publications Office at (202) 219-4667. In reviewing your written program with regard to information and training, the following items need to be considered:

1. Designation of person(s) responsible for conducting training;

2. Format of the program to be used (audiovisuals, classroom instruction, etc.);

3. Elements of the training program (should be consistent with the elements in N.J.A.C. 12:100-7.8); and

4. Procedure to train new employees at the time of their initial assignment to work with a hazardous chemical, and to train employees when a new hazard is introduced into the workplace.

The written program should provide enough details about the employer's plans in this area to assess whether or not a good faith effort is being made to train employees. The Department of Labor and/or the Department of Health and Senior Services does not expect that every worker will be able to recite all of the information about each chemical in the workplace. In general, the most important aspects of training under the HCS are to ensure that employees are aware that they are exposed to hazardous chemicals, that they know how to read and use labels and material safety data sheets, and that, as a consequence of learning this information, they are following the appropriate protective measures established by the employer. PEOSH compliance officers will be talking to employees to determine if they have received training, if they know they were exposed to hazardous chemicals, and if they know where to obtain substance-specific information on labels and MSDSs.

If you already have a training program, you may simply have to supplement it with whatever additional information is required under the HCS. For example, construction employers that are already in compliance with the construction training standard (29 CFR § 1926.21) will have little extra training to do.

An employer can provide employees information and training through whatever means are found appropriate and protective. Although there would always have to be some training on-site (such as informing employees of the location and availability of the written program and MSDS5), employee training may be satisfied in part by general training about the requirements of the HCS and about chemical hazards on the job which is provided by, for example, trade associations, unions, colleges, and professional schools. In addition, previous training, education and experience of a worker may relieve the employer of some of the burdens of informing and training that worker. Regardless of the method relied upon, however, the employer is always ultimately responsible for ensuring that employees are adequately trained. If the compliance officer finds that the training is deficient, the employer will be cited for the deficiency regardless of who actually provided the training on behalf of the employer.

D. Other Requirements

In addition to these items, compliance officers will also be asking the following questions in assessing the adequacy of the program:

Does a list of the hazardous chemicals exist in each work area or at a central location?

Are methods the employer will use to inform employees of the hazards of nonroutine tasks outlined?

Are employees informed of the hazards associated with chemicals contained in unlabeled pipes in their work areas?

On multi-employer work sites, has the employer provided other employers with information about labeling systems and precautionary measures where the other employers have employees exposed to the initial employer's chemicals?

Is the written program made available to employees and their designated representatives?

If your program adequately addresses the means of communicating information to employees in your workplace, and provides answers to the basic questions outlined above, it will be found to be in compliance with the rule.

5. Checklist for Compliance.

The following checklist will help to ensure you are in compliance with the rule:

Read and understood the requirements. _____

Assigned responsibility for tasks. _____

Prepared an inventory of chemicals. _____

Ensured containers are labeled. _____

Obtained MSDSs for each chemical. _____

Prepared written program. _____

Made MSDSs available to workers. _____

Conducted training of workers. _____

Established procedures to maintain current program. _____

Established procedures to evaluate effectiveness. _____

6. Further Assistance.

If you have a question regarding compliance with the Hazard Communication Standard, you should contact:

New Jersey Department of Health and Senior Services
Public Employees Occupational Safety and Health Program
P0 Box 360
Trenton, New Jersey 08625-0360
(609) 984-1863
Fax: (609) 984-2779
(*www.state.nj.us/health/eoh/peoshweb*)
e-mail: peosh@doh.state.nj.us

Or

New Jersey Department of Labor
Division of Public Safety and Occupational Safety and Health
P0 Box 386
Trenton, New Jersey 08625-0386
(609) 292-7036
(*www.state.nj.us/labor/lsse/lspeosh.html*)

Free consultation services are also available to assist employers, and information regarding these services can be obtained by contacting the programs listed above.

SUBCHAPTER 17. STANDARDS AND PUBLICATIONS REFERRED TO IN THIS CHAPTER

12:100-17.1 Documents referred to by reference

(a) The full title and edition of each of the standards or publications referred to in this chapter are as follows:

1. ACGHI, Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment (2003 Edition);

2-4 (No change.)

5. IARC, International Agency for Research on Cancer Monographs;

Recodify existing 5.-19. as 6-20. (No change in text.)

21. N.J.S.A. 34:6A-25 et seq., New Jersey Public Employees Occupational Safety and Health Act;

22. N.J.S.A. 34:13A- 1 et seq., Employer-Employee Relations Act; and

23. NTP, National Toxicology Program Annual Report on Carcinogens (10th Edition).

12:100-17.3 Availability of documents from issuing organization

Copies of the standards and publications referred to in this chapter may be obtained from the organizations listed below. The abbreviations preceding these standards and publications have the following meaning, and are the organizations issuing the standards and publications listed in N.J.A.C. 12:100-17.1:

ACGIH	American Conference of Governmental Industrial Hygienists 1330 Kemper Meadow Drive Cincinnati, OH 45240
ANSI	American National Standards Institute 25 West 43rd Street New York, New York 10036
CFR	Code of Federal Regulations Copies available from: Superintendent of Documents Government Printing Office Washington, DC 20402 or U.S. Government Printing Office Government Book Store Robert Morris Building 100 North 17th Street Philadelphia, PA Phone: (215) 636-1900
CGA	Compressed Gas Association Inc. 1235 Jefferson Davis Highway, Suite 509 Arlington, VA 22202

IARC	International Agency for Research on Cancer World Health Organization 150 Coms Albert Thomas 69372 Lyon CEDEXO8 France
NFPA	National Fire Protection Association Batterymarch Park Quincy, MA 02269
NIIOSH	National Institute of Occupational Safety and Health Division of Technical Services Cincinnati, Ohio 45226
NJAC	New Jersey Administrative Code Copies available from: Office of Public Employee Safety N.J. Department of Labor P0 Box 386 Trenton, NJ 08625-0386
NJSA	New Jersey Statutes Annotated Copies available from: Public Safety and Occupational Safety and Health New Jersey Department of Labor P0 Box 386 Trenton NJ 08625-0386
NTP	National Toxicology Program US Department of Health and Human Services National Institutes of Health Sciences Research Triangle Park, NC 27709

Appendix X.B
PEOSH Hazard Communication Standard
Summary of Amendments

Public employers are now required to comply with both the PEOSH Hazard Communication Standard (HCS) and the New Jersey Worker and Community Right to Know (RTK) Act. All of the requirements of the RTK Act, with the exception of the education and training requirements, continue to be in effect and are administered through the New Jersey Department of Health and Senior Services Right to Know Program.

Public employee training requirements will now be solely enforced by the PEOSH Program under the PEOSH HCS, N.J.A.C. 12:100-7, which was adopted by the New Jersey Department of Labor on May 3, 2004. Certain provisions of RTK education and training have been added to the federal Hazard Communication Standard to create the PEOSH HCS. These amendments are summarized below.

A. New definitions: N.J.A.C. 12:100-7.3
   - Hazardous Substance Fact Sheet (HSFS)
   - RTK Hazardous Substance List (RTK HSL)
   - RTK Survey
   - Technically Qualified Person
   - Workplace Hazardous Substance List
   - Workplace Survey

B. New requirements added: N.J.A.C. 12:100-7.8
   - Training records must be maintained and made available
   - A list of the items to be included in the training records
   - Refresher training must be provided every two years
   - A "technically qualified person" must be used to conduct training
   - Information about applicable provisions of the RTK Act including the RTK Survey, RTK labeling, HSFS, RTK HSL, RTK Central File, and RTK poster must be provided during employee training
   - Copies of the RTK brochure must be provided during training
   - Chemical specific information must be made available through HSFSs
   - Employees shall be informed of the location and availability of HSFSs, the RTK Survey, and the RTK HSL
   - Training must be provided at no cost to employees, during regular working hours, and in a manner appropriate in content and vocabulary to the educational level, literacy, and language of the employee being trained.

Appendix X.C
Worksheet for Hazardous Chemical List

Name of Employer: _____

Name of Facility: _____

Date Prepared: _____

Prepared By: _____

Location: _____

Hazardous Products and Chemicals	For New Product/Chemicals (Date Added to List)	(Optional) Check Yes if on File MSDS	HSFS
Product Name:			
Hazardous Chemical Ingredients:			
Product Name:			
Hazardous Chemical Ingredients:			
Product Name:			
Hazardous Chemical Ingredients:			

Note: Make Copies to List Additional Chemicals *and* for each location.

Appendix X.D
Sample Letter Requesting MSDSs

(Date)

(Name)
(Address)

Dear _____:

Please send me an up-to-date copy of your Material Safety Data Sheet (MSDS) for the product(s) listed below. The MSDS is needed for compliance with the New Jersey Public Employees Occupational Safety and Health Act Hazard Communication Standard, N.J.A.C. 12:100-7, which requires employers to obtain and maintain MSDSs for each hazardous product and chemical they use.

Product or Chemical Name and Identifying Information

(1) _____ (3) _____

(2) _____ (4) _____

If this product does not require an MSDS, please notify us in writing to that effect.

Please send the MSDS to:

(Name)
(Title)
(Company
(Address)

If you have any questions regarding this request, please contact (name and telephone number).

Sincerely,

Public Employer

Appendix X.E
Hazard Communication Standard Compliance Checklist

_____
(Year)

This checklist is not a requirement of the PEOSH Hazard Communication Standard. It is provided as a means of assisting employers in complying with the Standard. As each component of the Standard is completed, indicate the date it was completed and the initials of the person responsible for its completion. With some modifications, this checklist can also be used to review and update the written program.

	Initials	Date
1. Prepared a written hazard communication program.	_____	_____
2. Established a file for PEOSH HCS documentation.	_____	_____
3. Prepared a list of all hazardous chemicals at the facility.	_____	_____
4. Obtained MSDSs and HSFSs for each hazardous chemical used.	_____	_____
5. Put a system in place for labeling hazardous chemicals.	_____	_____
6. Reviewed MSDSs for completeness.	_____	_____
7. MSDSs accessible in each work area.	_____	_____
8. Assigned person to review and update the written program.	_____	_____
9. Developed and presented an initial training program for employees.	_____	_____
10. Developed and presented refresher training for employees.	_____	_____
11. Developed a system to notify employees of training.	_____	_____
12. Maintained documentation of employee training.	_____	_____
13. Trainer is technically qualified.	_____	_____
14. Put a system in place to notify subcontractors and their employees of hazards in the workplace.	_____	_____
15. Put a system in place to notify employees of subcontractor hazards.	_____	_____
16. Additional hazard warning system(s) in place. (If applicable.)	_____	_____
17. Updated the list of hazardous chemicals at the facility.	_____	_____

Appendix X.F
Documentation of Training

Name of Public Employer: _____

Type of Training: (Circle One) Initial Refresher

Trainer: _____

Location of Training _____

Date of Training: _____

Time of Training: _____

Employee Name	Job Title	Signature	Department
1.			
2.			
3.			
4.			
5.			
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19.			
20.			

Appendix X.G

OSHA: Occupational Safety and Health Administration
U.S. Department of Labor

Access to Employee Exposure and Medical Records. – 29 CFR Part 1910.1020

1910.1020(a)

"Purpose." The purpose of this section is to provide employees and their designated representatives a right of access to relevant exposure and medical records; and to provide representatives of the Assistant Secretary a right of access to these records in order to fulfill responsibilities under the Occupational Safety and Health Act. Access by employees, their representatives, and the Assistant Secretary is necessary to yield both direct and indirect improvements in the detection, treatment, and prevention of occupational disease. Each employer is responsible for assuring compliance with this section, but the activities involved in complying with the access to medical records provisions can be carried out, on behalf of the employer, by the physician or other health care personnel in charge of employee medical records. Except as expressly provided, nothing in this section is intended to affect existing legal and ethical obligations concerning the maintenance and confidentiality of employee medical information, the duty to disclose information to a patient/employee or any other aspect of the medical-care relationship, or affect existing legal obligations concerning the protection of trade secret information.

1910.1020(b)

"Scope and Application"

1910.1020(b)(1)
This section applies to each general industry, maritime, and construction employer who makes, maintains, contracts for, or has access to employee exposure or medical records, or analyses thereof, pertaining to employees exposed to toxic substances or harmful physical agents.

1910.1020(b)(2)
This section applies to all employee exposure and medical records, and analyses thereof, of such employees, whether or not the records are mandated by specific occupational safety and health standards.

1910.1020(b)(3)
This section applies to all employee exposure and medical records, and analyses thereof, made or maintained in any manner, including on an in-house or contractual (e.g., fee-for service) basis. Each employer shall assure that the preservation and access requirements of this section are complied with regardless of the manner in which records are made or maintained.

1910.1020(c)

"Definitions"

1910.1020(c)(1)
"Access" means the right and opportunity to examine and copy.

1910.1020(c)(2)
"Analysis using exposure or medical records" means any compilation of data or any statistical study based at least in part on information collected from individual employee exposure or medical records or information collected from health insurance claims records, provided that either the analysis has been reported to the employer or no further work is currently being done by the person responsible for preparing the analysis.

1910.1020(c)(3)

"Designated representative" means any individual or organization to whom an employee gives written authorization to exercise a right of access. For the purpose of access to employee exposure records and analyses using exposure or medical records, a recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.

1910.1020(c)(4)

"Employee" means a current employee, a former employee, or an employee being assigned or transferred to work where there will be exposure to toxic substances or harmful physical agents. In the case of a deceased or legally incapacitated employee, the employee's legal representatives may directly exercise all the employee's right under this section.

1910.1020(c)(5)

"Employee exposure record" means a record containing any of the following kinds of information:

1910.1020(c)(5)(i)

Environmental (workplace) monitoring or measuring of a toxic substance or harmful physical agent, including personal, area, grab, wipe, or other form of sampling, as well as related collection and analytical methodologies, calculations, and other background data relevant to interpretation of the results obtained;

1910.1020(c)(5)(ii)

Biological monitoring results which directly assess the absorption of a toxic substance or harmful physical agent by body systems (e.g., the level of a chemical in the blood, urine, breath, hair, fingernails, etc.) but not including results which assess the biological effect of a substance or agent or which assess an employee's use of alcohol or drugs;

1910.1020(c)(5)(iii)

Material safety data sheets indicating that the material may pose a hazard to human health; or

1910.1020(c)(5)(iv)

In the absence of the above, a chemical inventory or any other record which reveals where and when used and the identity (e.g., chemical, common, or trade name) of a toxic substance or harmful physical agent.

1910.1020(c)(6)

"Employee medical record" means a record concerning the health status of an employee which is made or maintained by a physician, nurse, or other health care personnel, or technician, including;

1910.1020(c)(6)(i)(A)

Medical and employment questionnaires or histories (including job description and occupational exposures),

1910.1020(c)(6)(i)(B)

The results of medical examinations (pre-employment, pre-assignment, periodic, or episodic) and laboratory tests (including chest and other X-ray examinations taken for the purpose of establishing a base-line or detecting occupational illnesses and all biological monitoring not defined as an "employee exposure record"),

1910.1020(c)(6)(i)(C)

Medical opinions, diagnoses, progress notes, and recommendations,

1910.1020(c)(6)(i)(D)

First aid records,

1910.1020(c)(6)(i)(E)

Descriptions of treatments and prescriptions, and

1910.1020(c)(6)(i)(F)
Employee medical complaints.

1910.1020(c)(6)(ii)
"Employee medical record" does not include medical information in the form of;

1910.1020(c)(6)(ii)(A)
Physical specimens (e.g., blood or urine samples) which are routinely discarded as a part of normal medical practice, or

1910.1020(c)(ii)(B)
Records concerning health insurance claims if maintained separately from the employer's medical program and its records, and not accessible to the employer by the employee name or other direct personal identifier (e.g., social security number, payroll number, etc.), or

1910.1020(c)(6)(ii)(C)
Records created solely in preparation for litigation which are privileged from discovery under the applicable rules of procedure or evidence; or

1910.1020(c)(6)(ii)(D)
Records concerning voluntary employee assistance programs (alcohol, drug abuse, or personal counseling programs) if maintained separately from the employer's medical program and its records.

1910.1020(c)(7)
"Employer" means a current employer, a former employer, or a successor employer.

1910.1020(c)(8)
"Exposure" or "exposed" means that an employee is subjected to a toxic substance or harmful physical agent in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes past exposure and potential (e.g., accidental or possible) exposure, but does not include situations where the employer can demonstrate that the toxic substance or harmful physical agent is not used, handled, stored, generated or present in the workplace in any manner different from typical non-occupational situations.

1910.1020(c)(9)
"Health Professional" means a physician, occupational health nurse, industrial hygienist, toxicologist, or epidemiologist, providing medical or other occupational health services to exposed employees.

1910.1020(c)(10)
"Record" means any item, collection, or grouping of information regardless of the form or process by which it is maintained (e.g., paper document, microfiche, microfilm, X-ray film, or automated data processing).

1910.1020(c)(11)
"Specific chemical identity" means a chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance.

1910.1020(c)(12)(i)
"Specific written consent" means a written authorization containing the following:

1910.1020(c)(12)(i)(A)
The name and signature of the employee authorizing the release of medical information.

1910.1020(c)(12)(i)(B)
The date of the written authorization,

1910.1020(c)(12)(i)(C)
The name of the individual or organization that is authorized to release the medical information,

1910.1020(c)(12)(i)(D)
The name of the designated representative (individual or organization) that is authorized to receive the released information,

1910.1020(c)(12)(i)(E)
A general description of the medical information that is authorized to be released,

1910.1020(c)(12)(i)(F)
A general description of the purpose for the release of the medical information, and

1910.1020(c)(12)(i)(G)
A date or condition upon which the written authorization will expire (if less than one year).

1910.1020(c)(12)(ii)
A written authorization does not operate to authorize the release of medical information not in existence on the date of written authorization, unless the release of future information is expressly authorized, and does not operate for more than one year from the date of written authorization.

1910.1020(c)(12)(iii)
A written authorization may be revoked in writing prospectively at any time.

1910.1020(c)(13)
"Toxic substance or harmful physical agent" means any chemical substance, biological agent (bacteria, virus, fungus, etc), or physical stress (noise, heat, cold, vibration, repetitive motion, ionizing and non-ionizing radiation, hypo – or hyperbaric pressure, etc.) which:

1910.1020(c)(13)(i)
Is listed in the latest printed edition of the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances (RTECS) which is incorporated by reference as specified in Sec. 1910.6; or

1910.1020(c)(13)(ii)
Has yielded positive evidence of an acute or chronic health hazard in testing conducted by, or known to, the employer; or

1910.1020(c)(13)(iii)
Is the subject of a material safety data sheet kept by or known to the employer indicating that the material may pose a hazard to human health.

1910.1020(c)(14)
"Trade secret" means any confidential formula, pattern, process, device, or information or compilation of information that is used in an employer's business and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it.

1910.1020(d)
"Preservation of records."

1910.1020(d)(1)
Unless a specific occupational safety and health standard provides a different period of time, each employer shall assure the preservation and retention of records as follows:

1910.1020(d)(1)(i)

"Employee medical records." The medical record for each employee shall be preserved and maintained for at least the duration of employment plus thirty (30) years, except that the following types of records need not be retained for any specific period:

1910.1020(d)(1)(i)(A)

Health insurance claims records maintained separately from the employer's medical program and its records.

1910.1020(d)(1)(i)(B)

First aid records (not including medical histories) of one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and the like which do not involve medical treatment, loss of consciousness, restriction of work or motion, or transfer to another job, if made on-site by a non-physician and if maintained separately from the employer's medical program and its records, and

1910.1020(d)(1)(i)(C)

The medical records of employees who have worked for less than (1) year for the employer need not be retained beyond the term of employment if they are provided to the employee upon the termination of employment.

1910.1020(d)(1)(ii)

"Employee exposure records." Each employee exposure record shall be preserved and maintained for at least thirty (30) years, except that:

1910.1020(d)(1)(ii)(A)

Background data to environmental (workplace) monitoring or measuring, such as laboratory reports and worksheets, need only be retained for one (1) year so long as the sampling results, the collection methodology (sampling plan), a description of the analytical and mathematical methods used, and a summary of other background data relevant to interpretation of the results obtained, are retained for at least thirty (30) years; and

1910.1020(d)(1)(ii)(B)

Material safety data sheets and paragraph (c)(5)(iv) records concerning the identity of a substance or agent need not be retained for any specified period as long as some record of the identity (chemical name if known) of the substance or agent, where it was used, and when it was used to retain for at least thirty (30) years (1); and

1910.1020(d)(1)(ii)(C)

Biological monitoring results designated as exposure records by specific occupational safety and health standards shall be preserved and maintained as required by the specific standard.

1910.1020(d)(1)(iii)

"Analyses using exposure or medical records." Each analysis using exposure or medical records shall be preserved and maintained for at least thirty (30) years.

1910.1020(d)(2)

Nothing in this section is intended to mandate the form, manner, or process by which an employer preserves a record so long as the information contained in the record is preserved and retrievable, except that chest X-ray films shall be preserved in their original state.

1910.1020(e)

"Access to records."

1910.1020(e)(1)

"General"

Footnote(1) Material safety data sheets must be kept for those chemicals currently in use that are affected by the Hazard Communication Standard in accordance with 29 CFR 1910.1200 (g).

1910.1020(e)(1)(i)
Whenever an employee or designated representative requests access to a record, the employer shall assure that access is provided in a reasonable time, place, and manner. If the employer cannot reasonably provide access to the record within fifteen (15) working days, the employer shall within fifteen (15) working days apprise the employee or designated representative requesting the record of the reason for the delay and the earliest date when the record can be made available.

1910.1020(e)(1)(ii)
The employer may require of the requester only such information as should be readily known to the requester and which may be necessary to locate or identify the records being requested (e.g. dates and locations where the employee worked during the time period in question).

1910.1020(e)(1)(iii)
Whenever an employee or designated representative requests a copy of a record, the employer shall assure that either:

1910.1020(e)(1)(iii)(A)
A copy of the record is provided without cost to the employee or representative,

1910.1020(e)(1)(iii)(B)
The necessary mechanical copying facilities (e.g., photocopying) are made available without cost to the employee or representative for copying the record, or

1910.1020(e)(1)(iii)(C)
The record is loaned to the employee or representative for a reasonable time to enable a copy to be made.

1910.1020(e)(1)(iv)
In the case of an original X-ray, the employer may restrict access to on-site examination or make other suitable arrangements for the temporary loan of the X-ray.

1910.1020(e)(1)(v)
Whenever a record has been previously provided without cost to an employee or designated representative, the employer may charge reasonable, non-discriminatory administrative costs (i.e., search and copying expenses but not including overhead expenses) for a request by the employee or designated representative for additional copies of the record, except that

1910.1020(e)(1)(v)(A)
An employer shall not charge for an initial request for a copy of new information that has been added to a record which was previously provided; and

1910.1020(e)(1)(v)(B)
An employer shall not charge for an initial request by a recognized or certified collective bargaining agent for a copy of an employee exposure record or an analysis using exposure or medical records.

1910.1020(e)(1)(vi)
Nothing in this section is intended to preclude employees and collective bargaining agents from collectively bargaining to obtain access to information in addition to that available under this section.

1910.1020(e)(2)
"Employee and designated representative access."

1910.1020(e)(2)(i)
"Employee exposure records."

1910.1020(e)(2)(i)(A)
Except as limited by paragraph (f) of this section, each employer shall, upon request, assure the access to each employee and designated representative to employee exposure records relevant to the employee. For the purpose of this section, an exposure record relevant to the employee consists of:

1910.1020(e)(2)(i)(A)(1)
A record which measures or monitors the amount of a toxic substance or harmful physical agent to which the employee is or has been exposed.

1910.1020(e)(2)(i)(A)(2)
In the absence of such directly relevant records, such records of other employees with past or present job duties or working conditions related to or similar to those of the employee to the extent necessary to reasonably indicate the amount and nature of the toxic substances or harmful physical agents to which the employee is or has been subjected, and

1910.1020(e)(2)(i)(A)(3)
Exposure records to the extent necessary to reasonably indicate the amount and nature of the toxic substance or harmful physical agents at workplaces or under working conditions to which the employee is being assigned or transferred.

1910.1020(e)(2)(i)(B)
Requests by designated representatives for unconsented access to employee exposure records shall be in writing and shall specify with reasonable particularity:

1910.1020(e)(2)(i)(B)(1)
The record requested to be disclosed; and

1910.1020(e)(2)(i)(B)(2)
The occupational health need for gaining access to these records.

1910.1020(e)(2)(ii)
"Employee medical records"

1910.1020(e)(2)(ii)(A)
Each employer shall, upon request, assure the access of each employee to employee medical records of which the employee is the subject, except as provided in paragraph (e)(2)(ii)(D) of this section.

1910.1020(e)(2)(ii)(B)
Each employer shall, upon request, assure the access of each designated representative to the employee medical records of any employee who has given the designated representative specific written consent. Appendix A to this section contains a sample form which may be used to establish specific written consent for access to employee medical records.

1910.1020(e)(2)(ii)(C)
Whenever access to employee medical records is requested, a physician representing the employer may recommend that the employee or designated representative:

1910.1020(e)(2)(ii)(C)(1)
Consult with the physician for the purposes of reviewing and discussing the records requested,

1910.1020(e)(2)(ii)(C)(2)
Accept a summary of material facts and opinions in lieu of the records requested, or

1910.1020(e)(2)(ii)(C)(3)
Accept release of the requested records only to a physician or other designated representative.

1910.1020(e)(2)(ii)(D)

Whenever an employee requests access to his or her employee medical records, and a physician representing the employer believes that direct employee access to information contained in the records regarding a specific diagnosis of a terminal illness or a psychiatric condition could be detrimental to the employee's health, the employer may inform the employee that access will only be provided to a designated representative of the employee having specific written consent, and deny the employee's request for direct access to this information only. Where a designated representative with specific written consent requests access to information so withheld, the employer shall assure the access of the designated representative to this information, even when it is known that the designated representative will give the information to the employee.

1910.1020(e)(2)(ii)(E)

A physician, nurse, or other responsible health care personnel maintaining employee medical records may delete from requested medical records the identity of a family member, personal friend, or fellow employee who has provided confidential information concerning an employee's health status.

1910.1020(e)(2)(iii)

Analyses using exposure or medical records.

1910.1020(e)(2)(iii)(A)

Each employer shall, upon request, assure the access of each employee and designated representative to each analysis using exposure or medical records concerning the employee's working conditions or workplace.

1910.1020(e)(2)(iii)(B)

Whenever access is requested to an analysis which reports the contents of employee medical records by either direct identifier (name, address, social security number, payroll number, etc.) or by information which could reasonably be used under the circumstances indirectly to identify specific employees (exact age, height, weight, race, sex, date of initial employment, job title, etc.), the employer shall assure that personal identifiers are removed before access is provided. If the employer can demonstrate that removal of personal identifiers from an analysis is not feasible, access to the personally identifiable portions of the analysis need not be provided.

1910.1020(e)(3)

"OSHA access."

1910.1020(e)(3)(i)

Each employer shall, upon request, and without derogation of any rights under the Constitution of the Occupational Safety and Health Act of 1970, 29 U.S.C. 651 "et seq.," that the employer chooses to exercise, assure the prompt access of representatives of the Assistant Secretary of Labor for Occupational Safety and Health to employee exposure and medical records and to analyses using exposure or medical records. Rules of agency practice and procedure governing OSHA access to employee medical records are contained in 29 CFR 1913.10.

1910.1020(e)(3)(ii)

Whenever OSHA seeks access to personally identifiable employee medical information by presenting to the employer a written access order pursuant to 29 CFR 1913.10(d), the employer shall prominently post a copy of the written access order and its accompanying cover letter for at least fifteen (15) working days.

1910.1020(f)

"Trade secrets"

1910.1020(f)(1)

Except as provided in paragraph (f)(2) of this section, nothing in this section precludes an employer from deleting from records requested by a health professional, employee, or designated representative any trade secret data which discloses manufacturing processes, or discloses the percentage of a chemical substance in mixture, as long as the health professional, employee, or designated representative is notified that information has been deleted. Whenever deletion of trade secret information substantially impairs evaluation of the place where or the time when exposure to a toxic substance or harmful physical agent occurred, the employer shall provide alternative information which is sufficient to permit the requesting party to identify where and when exposure occurred.

1910.1020(f)(2)
The employer may withhold the specific chemical identity, including the chemical name and other specific identification of a toxic substance from a disclosable record provided that:

1910.1020(f)(2)(i)
The claim that the information withheld is a trade secret can be supported;

1910.1020(f)(2)(ii)
All other available information on the properties and effects of the toxic substance is disclosed;

1910.1020(f)(2)(iii)
The employer informs the requesting party that the specific chemical identity is being withheld as a trade secret; and

1910.1020(f)(2)(iv)
The specific chemical identity is made available to health professionals, employees, and designated representatives in accordance with the specific applicable provision of this paragraph.

1910.1020(f)(3)
Where a treating physician or nurse determines that a medical emergency exists and the specific chemical identity of a toxic substance is necessary for emergency or first-aid treatment, the employer shall immediately disclose the specific chemical identity of a trade secret chemical to the treating physician or nurse, regardless of the existence of a written statement of need or a confidentiality agreement. The employer may require a written statement of need and confidentiality agreement, in accordance with the provisions of paragraphs (f)(4) and (f)(5), as soon as circumstances permit.

1910.1020(f)(4)
In non-emergency situations, an employer shall, upon request, disclose a specific chemical identity, otherwise permitted to be withheld under paragraph (f)(2) of this section, to a health professional, employee, or designated representative if:

1910.1020(f)(4)(i)
The request is in writing:

1910.1020(f)(4)(ii)
The request describes with reasonable detail one or more of the following occupational health needs for the information:

1910.1020(f)(4)(ii)(A)
To assess the hazards of the chemicals to which employees will be exposed;

1910.1020(f)(4)(ii)(B)
To conduct or assess sampling of the workplace atmosphere to determine employee exposure levels;

1910.1020(f)(4)(ii)(C)
To conduct pre-assignment or periodic medical surveillance of exposed employees;

1910.1020(f)(4)(ii)(D)
To provide medical treatment to exposed employees;

1910.1020(f)(4)(ii)(E)
To select or assess appropriate personal protective equipment for exposed employees;

1910.1020(f)(4)(ii)(F)
To design or assess engineering controls or other protective measure for exposed employees; and

1910.1020(f)(4)(ii)(G)
To conduct studies to determine the health effects of exposure.

1910.1020(f)(4)(iii)
The request explains in detail why the disclosure of the specific chemical identity is essential and that, in lieu thereof, the disclosure of the following information would not enable the health professional, employee or designated representative to provide the occupational health services described in paragraph (f)(4)(ii) of this section;

1910.1020(f)(4)(iii)(A)
The properties and effects of the chemical;

1910.1020(f)(4)(iii)(B)
Measures for controlling workers' exposure to the chemical;

1910.1020(f)(4)(iii)(C)
Methods of monitoring and analyzing worker exposure to the chemical; and

1910.1020(f)(4)(iii)(D)
Methods of diagnosing and treating harmful exposures to the chemicals;

1910.1020(f)(4)(iv)
The request includes a description of the procedures to be used to maintain the confidentiality of the disclosed information; and

1910.1020(f)(4)(v)
The health professional, employee, or designated representative and the employer or contractor of the services of the health professional or designated representative agree in a written confidentiality agreement that the health professional, employee or designated representative will not use the trade secret information for any purpose other than the health need(s) asserted and agree not to release the information under any circumstances other than to OSHA, as provided in paragraph (f)(9) of this section, except as authorized by the terms of the agreement or by the employer.

1910.1020(f)(5)
The confidentiality agreement authorized by paragraph (f)(4)(iv) of this section:

1910.1020(f)(5)(i)
May restrict the use of the information to the health purposes indicated in the written statement of need;

1910.1020(f)(5)(ii)
May provide for appropriate legal remedies in the event of a breach of the agreement, including stipulation of a reasonable pre-estimate of likely damages; and,

1910.1020(f)(5)(iii)
May not include requirements for the posting of a penalty bond.

1910.1020(f)(6)
Nothing in this section is meant to preclude the parties from pursuing non-contractual remedies to the extent permitted by law.

1910.1020(f)(7)
If the health professional, employee or designated representative receiving the trade secret information decides that there is a need to disclose it to OSHA, the employer who provided the information shall be informed by the health professional prior to, or at the same time as, such disclosure.

1910.1020(f)(8)
If the employer denies a written request for disclosure of a specific chemical identity, the denial must:

1910.1020(f)(8)(i)
Be provided to the health professional, employee or designated representative within thirty days of the request;

1910.1020(f)(8)(ii)
Be in writing;

1910.1020(f)(8)(iii)
Include evidence to support the claim that the specific chemical identity is a trade secret;

1910.1020(f)(8)(iv)
State the specific reasons why the request is being denied; and,

1910.1020(f)(8)(v)
Explain in detail how alternative information may satisfy the specific medical or occupational health need without revealing their specific chemical identity.

1910.1020(f)(9)
The health professional, employee, or designated representative whose request for information is denied under paragraph (f)(4) of this section may refer the request and the written denial of the request to OSHA for consideration.

1910.1020(f)(10)
When a health professional, employee, or designated representative refers a denial to OSHA under paragraph (f)(9) of this section, OSHA shall consider the evidence to determine if:

1910.1020(f)(10)(i)
The employer has to support the claim that the specific chemical identity is a trade secret;

1910.1020(f)(10)(ii)
The health professional, employee or designated representative has supported the claim that there is a medical or occupational health need for the information; and,

1910.1020(f)(10)(iii)
The health professional, employee or designated representative has demonstrated adequate means to protect the confidentiality.

1910.1020(f)(11)(i)
If OSHA determines that the specific chemical identity requested under paragraph (f)(4) of this section is not a "bona fide" trade secret, or that it is a trade secret but the requesting health professional, employee or designated representatives has a legitimate medical or occupational health need for the information, has executed a written confidentiality agreement, and has shown adequate means for complying with the terms of such agreement, the employer will be subject to citation by OSHA.

1910.1020(f)(11)(ii)
If an employer demonstrates to OSHA that the execution of a confidentiality agreement would not provide sufficient protection against the potential harm from the unauthorized disclosure of a trade secret specific chemical identity, the Assistant Secretary may issue such orders or impose such additional limitations or conditions upon the disclosure of the requested chemical information as may be appropriate to assure that the occupational health needs are met without an undue risk of harm to the employer.

1910.1020(f)12
Notwithstanding the existence of a trade secret claim, an employer shall, upon request, disclose to the Assistant Secretary any information which this section requires the employer to make available. Where there is a trade secret claim, such claim shall be made no later than at the time the information is provided to the Assistant Secretary so that suitable determinations of trade secret status can be made and the necessary protections can be implemented.

1910.1020(f)(13)
Nothing in this paragraph shall be construed as requiring the disclosure under any circumstances of process or percentage of mixture information which is a trade secret.

1910.1020(g)
"Employee information."

1910.1020(g)(1)
Upon an employee's first entering into employment, and at least annually thereafter, each employer shall inform current employees covered by this section of the following:

1910.1020(g)(1)(i)
The existence, location, and availability of any records covered by this section;

1910.1020(g)(1)(ii)
The person responsible for maintaining and providing access to records; and

1910.1020(g)(1)(iii)
Each employee's rights of access to these records.

1910.1020(g)(2)
Each employer shall keep a copy of this section and its appendices, and make copies readily available, upon request, to employees. The employer shall also distribute to current employees any information materials concerning this section which are made available to the employer by the Assistant Secretary of Labor for Occupational Safety and Health.

1910.1020(h)
"Transfer of records"

1910.1020(h)(1)
Whenever an employer is ceasing to do business, the employer shall transfer all records subject to this section to the successor employer. The successor employer shall receive and maintain these records.

1910.1020(h)(2)
Whenever an employer is ceasing to do business and there is no successor employer to receive and maintain the records subject to this standard, the employer shall notify affected current employees of their rights of access to records at least three (3) months prior to the cessation of the employer's business.

1910.1020(h)(3)
Whenever an employer either is ceasing to do business and there is no successor employer to receive and maintain the records, or intends to dispose of any records required to be preserved for at least thirty (30) years, the employer shall:

1910.1020(h)(3)(i)
Transfer the records to the Director of the National Institute for Occupational Safety and Health (NIOSH) if so required by a specific occupational safety and health standard; or

1910.1020(h)(3)(ii)

Notify the Director of NIOSH in writing of the impending disposal of records at least three (3) months prior to the disposal of the records.

1910.1020(h)(4)

Where an employer regularly disposes of records required to be preserved for at least thirty (30) years, the employer may, with at least (3) months notice, notify the Director of NIOSH on an annual basis of the records intended to be disposed of in the coming year.

1910.1020(i)

"Appendices." The information contained in appendices A and B to this section is not intended, by itself, to create any additional obligations not otherwise imposed by this section nor detract from any existing obligation.

[61 FR5507, Feb. 13, 1996; 61 FR 9227, March 7, 1996; 61 FR 31427, June 20, 1996]

29 CFR 1910.1020 App A

Sample authorization letter for the release of employee medical record information to a designated representative (non-mandatory).

I, _____ (full name of worker/patient) hereby authorize _____ (individual or organization holding the medical records) to release to _____ (individual or organization authorized to receive the medical information), the following medical information from my personal medical records:

_____

_____

(Describe generally the information desired to be released).

I give my permission for this medical information to be used for the following purpose:

_____

_____

but I do not give permission for any other use or re-disclosure of this information.

(Note: Several extra lines are provided below so that you can place additional restrictions on this authorization letter if you want to. You may, however, leave these lines blank. On the other hand, you may want to (1) specify a particular expiration date for this letter (if less than one year); (2) describe medical information to be created in the future that you intended to be covered by this authorization letter; or (3) describe portions of the medical information in your records which you do not intend to be released as a result of this letter.)

_____

_____

_____

_____

Full name of Employee or Legal Representative

_____

Signature of Employee or Legal Representative

_____

Date of Signature

[61 FR 31427, June 20, 1996]

Appendix X.H

OSHA: Occupational Safety and Health Administration
U.S. Department of Labor

Occupational Exposure to Hazardous Chemicals in Laboratories – 29 CFR Part 1910.1450

1910.1450(a)
Scope and application.

1910.1450(a)(1)
This section shall apply to all employers engaged in the laboratory use of hazardous chemicals as defined below.

1910.1450(a)(2)
Where this section applies, it shall supersede, for laboratories, the requirements of all other OSHA health standards in 29 CFR part 1910, subpart Z, except as follows:

1910.1450(a)(2)(i)
For any OSHA health standard, only the requirement to limit employee exposure to the specific permissible exposure limit shall apply for laboratories, unless that particular standard states otherwise or unless the conditions of paragraph (a)(2)(iii) of this section apply.

1910.1450(a)(2)(ii)
Prohibition of eye and skin contact where specified by any OSHA health standard shall be observed.

1910.1450(a)(2)(iii)
Where the action level (or in the absence of an action level, the permissible exposure limit) is routinely exceeded for an OSHA regulated substance with exposure monitoring and medical surveillance requirements paragraphs (d) and (g)(l)(ii) of this section shall apply.

1910.1450(a)(3)
This section shall not apply to:

..1910.1450(a)(3)(i)

1910.1450(a)(3)(i)
Uses of hazardous chemicals which do not meet the definition of laboratory use, and in such cases, the employer shall comply with the relevant standard in 29 CFR part 1910, subpart Z, even if such use occurs in a laboratory.

1910.1450(a)(3)(ii)
Laboratory uses of hazardous chemicals which provide no potential for employee exposure. Examples of such conditions might include:

1910.1450(a)(3)(ii)(A)
Procedures using chemically-impregnated test media such as Dip-and-Read tests where a reagent strip is dipped into the specimen to be tested and the results are interpreted by comparing the color reaction to a color chart supplied by the manufacturer of the test strip; and

1910.1450(a)(3)(ii)(B)
Commercially prepared kits such as those used in performing pregnancy tests in which all of the reagents needed to conduct the test are contained in the kit.

1910.1450(b)
Definitions—

Action level means a concentration designated in 29 CFR part 1910 for a specific substance, calculated as an eight (8)-hour time-weighted average, which initiates certain required activities such as exposure monitoring and medical surveillance.

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

Carcinogen (see select carcinogen)

Chemical Hygiene Officer means an employee who is designated by the employer, and who is qualified by training or experience, to provide technical guidance in the development and implementation of the provisions of the Chemical Hygiene Plan. This definition is not intended to place limitations on the position description or job classification that the designated individual shall hold within the employer's organizational structure.

Chemical Hygiene Plan means a written program developed and implemented by the employer which sets forth procedures, equipment, personal protective equipment and work practices that (i) are capable of protecting employees from the health hazards presented by hazardous chemicals used in that particular workplace and (ii) meets the requirements of paragraph (e) of this section.

Combustible liquid means any liquid having a flashpoint at or above 100 deg. F (37.8 deg. C), but below 200 deg. F (93.3 deg. C), except any mixture having components with flashpoints of 200 deg. F (93.3 deg. C), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

Compressed gas means:

(i) A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70 deg. F (21.1 deg. C); or
(ii) A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130 deg. F (54.4 deg. C) regardless of the pressure at 70 deg. F (21.1 deg. C); or
(iii) A liquid having a vapor pressure exceeding 40 psi at 100 deg. F (37.8 C) as determined by ASTM D-323-72.

Designated area means an area which may be used for work with "select carcinogens," reproductive toxins or substances which have a high degree of acute toxicity. A designated area may be the entire laboratory, an area of a laboratory or a device such as a laboratory hood.

Emergency means any occurrence such as, but not limited to, equipment failure, rupture of containers or failure of control equipment which results in an uncontrolled release of a hazardous chemical into the workplace.

Employee means an individual employed in a laboratory workplace who may be exposed to hazardous chemicals in the course of his or her assignments.

Explosive means a chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

Flammable means a chemical that falls into one of the following categories:

(i) ***Aerosol, flammable*** means an aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame protection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening;
(ii) ***Gas, flammable*** means:
  (A) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13 percent by volume or less; or
  (B) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12 percent by volume, regardless of the lower limit.
(iii) ***Liquid, flammable*** means any liquid having a flashpoint below 100 deg F (37.8 deg. C), except any mixture having components with flashpoints of 100 deg. C or higher, the total of which make up 99 percent or more of the total volume of the mixture.

(iv) ***Solid, flammable*** means a solid, other than a blasting agent or explosive as defined in § 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

Flashpoint means the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested as follows:

(i) Tagliabue Closed Tester (See American National Standard Method of Test for Flash Point by Tag Closed Tester, Z11.24 - 1979 (ASTM D 56-79)) - for liquids with a viscosity of less than 45 Saybolt Universal Seconds (SUS) at 100 deg. F (37.8 deg. C), that do not contain suspended solids and do not have a tendency to form a surface film under test; or

(ii) Pensky-Martens Closed Tester (See American National Standard Method of Test for Flashpoint by Pensky-Martens Closed Tester, Z11.7 - 1979 (ASTM D 93-79)) - for liquids with a viscosity equal to or greater than 45 SUS at 100 deg. F (37.8 deg. C), or that contain suspended solids, or that have a tendency to form a surface film under test; or

(iii) Setaflash Closed Tester (see American National Standard Method of test for Flash Point by Setaflash Closed Tester (ASTM D 3278-78)).

Organic peroxides, which undergo autoaccelerating thermal decomposition, are excluded from any of the flashpoint determination methods specified above.

Hazardous chemical means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic systems, and agents which damage the lungs, skin, eyes, or mucous membranes.

Appendices A and B of the Hazard Communication Standard (29 CFR 1910.1200) provide further guidance in defining the scope of health hazards and determining whether or not a chemical is to be considered hazardous for purposes of this standard.

Laboratory means a facility where the "laboratory use of hazardous chemicals" occurs. It is a workplace where relatively small quantities of hazardous chemicals are used on a non-production basis.

Laboratory scale means work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person. "Laboratory scale" excludes those workplaces whose function is to produce commercial quantities of materials.

Laboratory-type hood means a device located in a laboratory, enclosure on five sides with a movable sash or fixed partial enclosed on the remaining side; constructed and maintained to draw air from the laboratory and to prevent or minimize the escape of air contaminants into the laboratory; and allows chemical manipulations to be conducted in the enclosure without insertion of any portion of the employee's body other than hands and arms.

Walk-in hoods with adjustable sashes meet the above definition provided that the sashes are adjusted during use so that the airflow and the exhaust of air contaminants are not compromised and employees do not work inside the enclosure during the release of airborne hazardous chemicals.

Laboratory use of hazardous chemicals means handling or use of such chemicals in which all of the following conditions are met:

(i) Chemical manipulations are carried out on a "laboratory scale;"

(ii) Multiple chemical procedures or chemicals are used;

(iii) The procedures involved are not part of a production process, nor in any way simulate a production process; and

(iv) "Protective laboratory practices and equipment" are available and in common use to minimize the potential for employee exposure to hazardous chemicals.

Medical consultation means a consultation which takes place between an employee and a licensed physician for the purpose of determining what medical examinations or procedures, if any, are appropriate in cases where a significant exposure to a hazardous chemical may have taken place.

Organic peroxide means an organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

Oxidizer means a chemical other than a blasting agent or explosive as defined in § 1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

Physical hazard means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer pyrophoric, unstable (reactive) or water-reactive.

Protective laboratory practices and equipment means those laboratory procedures, practices and equipment accepted by laboratory health and safety experts as effective, or that the employer can show to be effective, in minimizing the potential for employee exposure to hazardous chemicals.

Reproductive toxins means chemicals which affect the reproductive chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).

Select carcinogen means any substance which meets one of the following criteria:

(i) It is regulated by OSHA as a carcinogen; or
(ii) It is listed under the category, "known to be carcinogens," in the Annual Report on Carcinogens published by the National Toxicology Program (NTP)(latest edition); or
(iii) It is listed under Group 1 ("carcinogenic to humans") by the International Agency for Research on Cancer Monographs (IARC) (latest editions); or
(iv) It is listed in either Group 2A or 2B by IARC or under the category, "reasonably anticipated to be carcinogens" by NTP, and causes statistically significant tumor incidence in experimental animals in accordance with any of the following: criteria:
  (A) After inhalation exposure of 6-7 hours per day, 5 days per week, for a significant portion of a lifetime to dosages of less than 10 mg/m(3);
  (B) After repeated skin application of less than 300 (mg/kg of body weight) per week; or
  (C) After oral dosages of less than 50 mg/kg of body weight per day

Unstable (reactive) means a chemical which is the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

Water-reactive means a chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

1910.1450(c)
Permissible exposure limits. For laboratory uses of OSHA regulated substances, the employer shall assure that laboratory employees' exposures to such substances do not exceed the permissible exposure limits specified in 29 CFR part 1910, subpart Z.

..1910.1450(d)

1910.1450(d)
Employee exposure determination –

1910.1450(d)(1)
Initial monitoring. The employer shall measure the employee's exposure to any substance regulated by a standard which requires monitoring if there is reason to believe that exposure levels for that substance routinely exceed the action level (or in the absence of an action level, the PEL).

1910.1450(d)(2)

Periodic monitoring. If the initial monitoring prescribed by paragraph (d)(1) of this section discloses employee exposure over the action level (or in the absence of an action level, the PEL), the employer shall immediately comply with the exposure monitoring provisions of the relevant standard.

1910.1450(d)(3)

Termination of monitoring. Monitoring may be terminated in accordance with the relevant standard.

1910.1450(d)(4)

Employee notification of monitoring results. The employer shall, within 15 working days after the receipt of any monitoring results, notify the employee of these results in writing either individually or by posting results in an appropriate location that is accessible to employees.

1910.1450(e)

Chemical hygiene plan—General. (Appendix A of this section is non-mandatory but provides guidance to assist employers in the development of the Chemical Hygiene Plan).

1910.1450 (e)(I)

Where hazardous chemicals as defined by this standard are used in the workplace, the employer shall develop and carry out the provisions of a written Chemical Hygiene Plan which is:

1910.1450 (e)(I)(i)

Capable of protecting employees from health hazards associated with hazardous chemicals in that laboratory and

1910.1450 (e)(I)(ii)

Capable of keeping exposures below the limits specified in paragraph (c) of this section.

1910.1450 (e)(2)

The Chemical Hygiene Plan shall be readily available to employees, employee representatives and, upon request, to the Assistant Secretary.

1910.1450 (e)(3)

The Chemical Hygiene Plan shall include each of the following elements and shall indicate specific measures that the employer will take to ensure laboratory employee protection;

1910.1450 (e)(3)(i)

Standard operating procedures relevant to safety and health considerations to be followed when laboratory work involves the use of hazardous chemicals;

1910.1450(e)(3)(ii)

Criteria that the employer will use to determine and implement control measures to reduce employee exposure to hazardous chemicals including engineering controls, the use of personal protective equipment and hygiene practices; particular attention shall be given to the selection of control measures for chemicals that are known to be extremely hazardous;

1910.1450(e)(3)(iii)

A requirement that fume hoods and other protective equipment are functioning properly and specific measures that shall be taken to ensure proper and adequate performance of such equipment;

...1910.450(e)(3)(iv)

1910.1450(e)(3)(iv)

Provisions for employee information and training as prescribed in paragraph (f) of this section;

1910.1450(e)(3)(v)
The circumstances under which a particular laboratory operation, procedure or activity shall require prior approval from the employer or the employer's designee before implementation;

1910.1450(e)(3)(vi)
Provisions for medical consultation and medical examinations in accordance with paragraph (g) of this section;

1910.1450(e)(3)(vii)
Designation of personnel responsible for implementation of the Chemical Hygiene Plan including the assignment of a Chemical Hygiene Officer, and, if appropriate, establishment of a Chemical Hygiene Committee; and

1910.1450(e)(3)(viii)
Provisions for additional employee protection for work with particularly hazardous substances. These include "select carcinogens," reproductive toxins and substances which have a high degree of acute toxicity. Specific consideration shall be given to the following provisions which shall be included where appropriate:

1910.1450(e)(3)(viii)(A)
Establishment of a designated area;

1910.1450(e)(3)(viii)(B)
Use of containment devices such as fume hoods or glove boxes;

1910.1450(e)(3)(viii)(C)
Procedures for safe removal of contaminated waste; and

1910.1450(e)(3)(viii)(D)
Decontamination procedures.

1910.1450(e)(4)
The employer shall review and evaluate the effectiveness of the Chemical Hygiene Plan at least annually and update it as necessary.

1910.1450(f)
Employee information and training.

1910.1450(f)(1)
The employer shall provide employees with information and training to ensure that they are apprised of the hazards of chemicals present in their work area.

1910.1450(f)(2)
Such information shall be provided at the time of an employee's initial assignment to a work area where hazardous chemicals are present and prior to assignments involving new exposure situations. The frequency of refresher information and training shall be determined by the employer.

1910.1450(f)(3)
Information. Employees shall be informed of:

1910.1450(f)(3)(i)
The contents of this standard and its appendices which shall be made available to employees;

1910.1450(f)(3)(ii)
the location and availability of the employer's Chemical Hygiene Plan;

..1910.1450(f)(3)(iii)

1910.1450(f)(3)(iii)
The permissible exposure limits for OSHA regulated substances or recommended exposure limits for other hazardous chemicals where there is no applicable OSHA standard;

1910.1450(f)(3)(iv)
Signs and symptoms associated with exposures to hazardous chemicals used in the laboratory; and

1910.1450(f)(3)(v)
The location and availability of known reference material on the hazards, safe handling, storage and disposal of hazardous chemicals found in the laboratory including, but not limited to, Material Safety Data Sheets received from the chemical supplier.

1910.1450(f)(4)
Training.

1910.1450(f)(4)(i)
Employee training shall include:

1910.1450(f)(4)(i)(A)
Methods and observations that may be used to detect the presence or release of a hazardous chemical (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);

1910.1450(f)(4)(i)(B)
The physical and health hazards of chemicals in the work area; and

1910.1450(f)(4)(i)(C)
The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used.

1910.1450(f)(4)(ii)
The employee shall be trained on the applicable details of the employer's written Chemical Hygiene Plan.

1910.1450(g)
Medical consultation and medical examinations.

1910.1450(g)(l)
The employer shall provide all employees who work with hazardous chemicals an opportunity to receive medical attention, including any follow-up examinations which the examining physician determines to be necessary, under the following circumstances:

1910.1450(g)(1)(i)
Whenever an employee develops signs or symptoms associated with a hazardous chemical to which the employee may have been exposed in the laboratory, the employee shall be provided an opportunity to receive an appropriate medical examination.

1910.1450(g)(1)(ii)
Where exposure monitoring reveals an exposure level routinely above the action level (or in the absence of an action level, the PEL) for an OSHA regulated substance for which there are exposure monitoring and medical surveillance requirements, medical surveillance shall be established for the affected employee as prescribed by the particular standard.

1910.1450(g)(1)(iii)
Whenever an event takes place in the work area such as a spill, leak, explosion or other occurrence resulting in the likelihood of a hazardous exposure, the affected employee shall be provided an opportunity for a medical consultation. Such consultation shall be for the purpose of determining the need for a medical examination.

...1910.1450(g)(2)

1910.1450(g)(2)
All medical examinations and consultations shall be performed by or under the direct supervision of a licensed physician and shall be provided without cost to the employee, without loss of pay and at a reasonable time and place.

1910.1450(g)(3)
Information provided to the physician. The employer shall provide the following information to the Physician:

1910.1450(g)(3)(i)
The identity of the hazardous chemical(s) to which the employee may have been exposed;

1910.1450(g)(3)(ii)
A description of the conditions under which the exposure occurred including quantitative exposure data, if available; and

1910.1450(g)(3)(iii)
A description of the signs and symptoms of exposure that the employee is experiencing, if any.

1910.1450(g)(4)
Physician's written opinion.

1910.1450(g)(4)(i)
For examination or consultation required under this standard, the employer shall obtain a written opinion from the examining physician which shall include the following:

1910.1450(g)(4)(i)(A)
Any recommendation for further medical follow-up;

1910.1450(g)(4)(i)(B)
The results of the medical examination and any associated tests;

1910.1450(g)(4)(i)(C)
Any medical condition which may be revealed in the course of the examination which may place the employee at increased risk as a result of exposure to a hazardous workplace; and

1910.1450(g)(4)(i)(D)
A statement that the employee has been informed by the physician of the results of the consultation or medical examination and any medical condition that may require further examination or treatment.

1910.1450(g)(4)(ii)
The written opinion shall not reveal specific findings of diagnoses unrelated to occupational exposure.

1910.1450(h)
Hazard identification.

1910.1450(h)(1)
With respect to labels and material safety data sheets:

1910.1450(h)(1)(i)

Employers shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced.

1910.1450(h)(1)(ii)

Employers shall maintain any material safety data sheets that are received with incoming shipments of hazardous chemicals, and ensure that they are readily accessible to laboratory employees.

1910.1450(h)(2)

The following provisions shall apply to chemical substances developed in the laboratory:

...1910.1450(h)(2)(i)

1910.1450(h)(2)(i)

If the composition of the chemical substance which is produced exclusively for the laboratory's use is known, the employer shall determine if it is a hazardous chemical as defined in paragraph (b) of this section. If the chemical is determined to be hazardous, the employer shall provide appropriate training as required under paragraph (f) of this section.

1910.1450(h)(2)(ii)

If the chemical produced is a byproduct whose composition is not known, the employer shall assume that the substance is hazardous and shall implement paragraph (e) of this section.

1910.1450(h)(2)(iii)

If the chemical substance is produced for another user outside of the laboratory, the employer shall comply with the Hazard Communication Standard (29 CFR 1910.1200) including the requirements for preparation of material safety data sheet and labeling.

1910.1450(i)

Use* of *respirators. Where the use of respirators is necessary to maintain exposure below permissible exposure limits, the employer shall provide, at no cost to the employee, the proper respiratory equipment. Respirators shall be selected and used in accordance with the requirements of 29 CFR 1910.134.

1910.1450(j)

Recordkeeping.

1910.1450(j)(1)

The employer shall establish and maintain for each employee an accurate record of any measurements taken to monitor employee exposures and any medical consultation and examinations including tests or written opinions required by this standard.

1910.1450(j)(2)

The employer shall assure that such records are kept, transferred, and made available in accordance with 219 CFR 1910.1020.

1910.1450(k)

Dates—

1910.1450(k)(1)

Effective date. This section shall become effective May 1, 1990.

1910.1450(k)(2)

Start-up dates.

1910.1450(k)(2)(i)
Employers shall have developed and implemented a written Chemical Hygiene Plan no later than January 31, 1991.

1910.1450(k)(2)(ii)
Paragraph (a)(2) of this section shall not take effect until the employer has developed and implemented a written Chemical Hygiene Plan.

1910.1450(l)
Appendices. The information contained in the appendices is not intended, by itself, to create any additional obligations not otherwise imposed or to detract from any existing obligation.

[55 FR 3327, Jan. 31, 1990; 55 FR, 7967, March, 6, 1990; 55 FR 12777, March 30, 1990; 61 FR 5507, Feb. 13, 1996]

Occupational Safety & Health Administration
200 Constitution Avenue, NW
Washington, DC 20210

U.S. Department of Labor
Occupational Safety & Health Administration

Regulations (Standards - 29 CFR)
National Research Council Recommendations Concerning Chemical Hygiene in Laboratories (Non-Mandatory) - 1910.1450 App A

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FOREWORD

As guidance for each employer's development of an appropriate laboratory Chemical Hygiene Plan, the following non-mandatory recommendations are provided. They were extracted from "Prudent Practices" for Handling Hazardous Chemicals in Laboratories" (referred to below as "Prudent Practices"), which was published in 1981 by the National Research Council and is available from the National Academy Press, 2101 Constitution Ave., NW, Washington DC 20418.

"Prudent Practices" is cited because of its wide distribution and acceptance and because of its preparation by members of the laboratory community through the sponsorship of the National Research Council. However, none of the recommendations given here will modify any requirements of the laboratory standard. This Appendix merely presents pertinent recommendations from "Prudent Practices", organized into a form convenient for quick reference during operation of a laboratory facility and during development and application of a Chemical Hygiene Plan. Users of this appendix should consult "Prudent Practices" for a more extended presentation and justification for each recommendation.

"Prudent Practices" deal with both safety and chemical hazards while the laboratory standard is concerned primarily with chemical hazards. Therefore, only those recommendations directed primarily toward control of toxic exposures are cited in this appendix, with the term "chemical hygiene" being substituted for the word "safety". However, since conditions producing or threatening physical injury often pose toxic risks as well, page references concerning major categories of safety hazards in the laboratory are given in section F.

The recommendations from "Prudent Practices" have been paraphrased, combined, or otherwise reorganized, and headings have been added. However, their sense has not been changed.

Corresponding Sections of the Standard and this Appendix

The following table is given for the convenience of those who are developing a Chemical Hygiene Plan which will satisfy the requirements of paragraph (e) of the standard. It indicates those sections of this appendix which are most pertinent to each of the sections of paragraph (e) and related paragraphs.

Paragraph and topic in laboratory standard	Relevant Appendix Selection
(e)(3)(i) Standard operating procedures for handling toxic chemicals	C, D, E
(e)(3)(ii) Criteria to be used for implementation of measures to reduce exposures.	D
(e)(3)(iii) Fume hood performance	C4b
(e)(3)(iv) Employee information and training (including emergency procedures)	D10, D9
(e)(3)(v) Requirements for prior approval of laboratory activities	E2b, E4b
(e)(3)(vi) Medical consultation and medical examinations.	D5, E4f
(e)(3)(vii) Chemical hygiene responsibilities	B
(e)(3)(viii) Special precautions for work with particularly hazardous substances	E2, E3, E4

In this appendix, those recommendations directed primarily at administrators and supervisors are given in sections A-D. Those recommendations of primary concern to employees who are actually handling laboratory chemicals are given in section E. (Reference to page numbers in "Prudent Practices" are given in parentheses.)

A. General Principles for Work with Laboratory Chemicals

In addition to the more detailed recommendations listed below in sections B-E, "Prudent Practices" expresses certain general principles, including the following:

1. It is prudent to minimize all chemical exposures. Because few laboratory chemicals are without hazards, general precautions for handling all laboratory chemicals should be adopted, rather than specific guidelines for particular chemicals (2,10). Skin contact with chemicals should be avoided as a cardinal rule (198).

2. Avoid underestimation of risk. Even for substances of no known significant hazard, exposure should be minimized; for work with substances which present special hazards, special precautions should be taken (10, 37, 38). One should assume that any mixture will be more toxic than its most toxic component (30, 103) and that all substances of unknown toxicity are toxic (3, 34).

3. Provide adequate ventilation. The best way to prevent exposure to airborne substances is to prevent their escape into the working atmosphere by use of hoods and other ventilation devices (32, 198).

4. Institute a chemical hygiene program. A mandatory chemical hygiene program designed to minimize exposures is needed; it should be a regular, continuing effort, not merely a standby or short-term activity (6,11). Its recommendations should be followed in academic teaching laboratories as well as by full-time laboratory workers (13).

5. Observe the PELs, TLVs. The Permissible Exposure Limits of OSHA and the Threshold Limit Values of the American Conference of Governmental Industrial Hygienists should not be exceeded (13).

B. Chemical Hygiene Responsibilities

Responsibility for chemical hygiene rests at all levels (6, 11, 21) including the:

1. Chief executive officer, who has ultimate responsibility for chemical hygiene within the institution and must, with other administrators, provide continuing support for institutional chemical hygiene (7, 11).

2. Supervisor of the department or other administrative unit, who is responsible for chemical hygiene in that unit (7).

3. Chemical hygiene officer(s), whose appointment is essential (7) and who must:

(a) Work with administrators and other employees to develop and implement appropriate chemical hygiene policies and practices (7);
(b) Monitor procurement, use, and disposal of chemicals used in the lab (8);
(c) See that appropriate audits are maintained (8);
(d) Help project directors develop precautions and adequate facilities (10);
(e) Know the current legal requirements concerning regulated substances (50); and
(f) Seek ways to improve the chemical hygiene program (8, 11).

4. Laboratory supervisor, who has overall responsibility for chemical hygiene in the laboratory (21) including responsibility to:

(a) Ensure that workers know and follow the chemical hygiene rules, that protective equipment is available and in working order, and that appropriate training has been provided (21, 22);
(b) Provide regular, formal chemical hygiene and housekeeping inspections including routine inspections of emergency equipment (21, 171);
(c) Know the current legal requirements concerning regulated substances (50, 231);
(d) Determine the required levels of protective apparel and equipment (156, 160, 162); and
(e) Ensure that facilities and training for use of any material being ordered are adequate (215).

5. Project director or director of other specific operation, who has primary responsibility for chemical hygiene procedures for that operation (7).

6. Laboratory worker, who is responsible for:

(a) Planning and conducting each operation in accordance with the institutional chemical hygiene procedures (7, 21, 22, 230); and
(b) Developing good personal chemical hygiene habits (22).

C. The Laboratory Facility

1. Design. The laboratory facility should have:

(a) An appropriate general ventilation system (see C4 below) with air intakes and exhausts located so as to avoid intake of contaminated air (194);
(b) Adequate, well-ventilated stockrooms/storerooms (218, 219).
(c) Laboratory hoods and sinks (12, 162);
(d) Other safety equipment including eyewash fountains and drench showers (162, 169); and

(e) Arrangements for waste disposal (12, 240).

2. Maintenance. Chemical-hygiene-related equipment (hoods, incinerator, etc.) should undergo continual appraisal and be modified if inadequate (11, 12).

3. Usage. The work conducted (10) and its scale (12) must be appropriate to the physical facilities available and, especially, to the quality of ventilation (13).

4. Ventilation - (a) General laboratory ventilation. This system should: Provide a source of air for breathing and for input to local ventilation devices (199); it should not be relied on for protection from toxic substances released into the laboratory (198); ensure that laboratory air is continually replaced, preventing increase of air concentrations of toxic substances during the working day (194); direct air flow into the laboratory from non-laboratory areas and out to the exterior of the building (194).

(b) Hoods. A laboratory hood with 2.5 linear feet of hood space per person should be provided for every 2 workers if they spend most of their time working with chemicals (199); each hood should have a continuous monitoring device to allow convenient confirmation of adequate hood performance before use (200, 209). If this is not possible, work with substances of unknown toxicity should be avoided (13) or other types of local ventilation devices should be provided (199). See pp. 201-206 for a discussion of hood design, construction, and evaluation.

(c) Other local ventilation devices. Ventilated storage cabinets, canopy hoods, snorkels, etc. should be provided as needed (199). Each canopy hood and snorkel should have a separate exhaust duct (207).

(d) Special ventilation areas. Exhaust air from glove boxes and isolation rooms should be passed through scrubbers or other treatment before release into the regular exhaust system (208). Cold rooms and warm rooms should have provisions for rapid escape and for escape in the event of electrical failure (209).

(e) Modifications. Any alteration of the ventilation system should be made only if thorough testing indicates that worker protection from airborne toxic substances will continue to be adequate (12, 193, 204).

(f) Performance. Rate: 4-12 room air changes/hour is normally adequate general ventilation if local exhaust systems such as hoods are used as the primary method of control (194).

(g) Quality. General air flow should not be turbulent and should be relatively uniform throughout the laboratory, with no high velocity or static areas (194, 195); airflow into and within the hood should not be excessively turbulent (200); hood face velocity should be adequate (typically 60-100 lfm) (200, 204).

(h) Evaluation. Quality and quantity of ventilation should be evaluated on installation (202), regularly monitored (at least every 3 months) (6, 12, 14, 195), and reevaluated whenever a change in local ventilation devices is made (12, 195, 207). See pp 195-198 for methods of evaluation and for calculation of estimated airborne contaminant concentrations.

D. Components of the Chemical Hygiene Plan

1. Basic Rules and Procedures (Recommendations for these are given in section E, below)

2. Chemical Procurement, Distribution, and Storage

(a) Procurement. Before a substance is received, information on proper handling, storage, and disposal should be known to those who will be involved (215, 216). No container should be accepted without an adequate identifying label (216). Preferably, all substances should be received in a central location (216).

(b) Stockrooms/storerooms. Toxic substances should be segregated in a well-identified area with local exhaust ventilation (221). Chemicals which are highly toxic (227) or other chemicals whose containers have been opened should be in unbreakable secondary containers (219). Stored chemicals should be examined periodically (at least annually) for replacement, deterioration, and container integrity (218-19).

Stockrooms/storerooms should not be used as preparation or repackaging areas, should be open during normal working hours, and should be controlled by one person (219).

(c) Distribution. When chemicals are hand carried, the container should be placed in an outside container or bucket. Freight-only elevators should be used if possible (223).

(d) Laboratory storage. Amounts permitted should be as small as practical. Storage on bench tops and in hoods is inadvisable. Exposure to heat or direct sunlight should be avoided. Periodic inventories should be conducted, with unneeded items being discarded or returned to the storeroom/stockroom (225-6, 229).

3. Environmental Monitoring

Regular instrumental monitoring of airborne concentrations is not usually justified or practical in laboratories but may be appropriate when testing or redesigning hoods or other ventilation devices (12) or when a highly toxic substance is stored or used regularly (e.g., 3 times/week) (13).

4. Housekeeping, Maintenance, and Inspections

(a) Cleaning. Floors should be cleaned regularly (24).

(b) Inspections. Formal housekeeping and chemical hygiene inspections should be held at least quarterly (6, 21) for units which have frequent personnel changes and semiannually for others; informal inspections should be continual (21).

(c) Maintenance. Eye wash fountains should be inspected at intervals of not less than 3 months (6). Respirators for routine use should be inspected periodically by the laboratory supervisor (169). Other safety equipment should be inspected regularly. (e.g., every 3-6 months) (6, 24, 171). Procedures to prevent restarting of out-of-service equipment should be established (25).

(d) Passageways. Stairways and hallways should not be used as storage areas (24). Access to exits, emergency equipment, and utility controls should never be blocked (24).

5. Medical Program

(a) Compliance with regulations. Regular medical surveillance should be established to the extent required by regulations (12).

(b) Routine surveillance. Anyone whose work involves regular and frequent handling of toxicologically significant quantities of a chemical should consult a qualified physician to determine on an individual basis whether a regular schedule of medical surveillance is desirable (11, 50).

(c) First aid. Personnel trained in first aid should be available during working hours and an emergency room with medical personnel should be nearby (173). See pp. 176-178 for description of some emergency first aid procedures.

6. Protective Apparel and Equipment

These should include for each laboratory:

(a) Protective apparel compatible with the required degree of protection for substances being handled (158-161);

(b) An easily accessible drench-type safety shower (162, 169);

(c) An eyewash fountain (162)

(d) A fire extinguisher (162-164);

(e) Respiratory protection (164-9), fire alarm and telephone for emergency use (162) should be available nearby; and

(f) Other items designated by the laboratory supervisor (156, 160).

7. Records

(a) Accident records should be written and retained (174).

(b) Chemical Hygiene Plan records should document that the facilities and precautions were compatible with current knowledge and regulations (7).

(c) Inventory and usage records for high-risk substances should be kept as specified in sections E3e below.

(d) Medical records should be retained by the institution in accordance with the requirements of state and federal regulations (12).

8. Signs and Labels

Prominent signs and labels of the following types should be posted:

(a) Emergency telephone numbers of emergency personnel/facilities, supervisors, and laboratory workers (28);

(b) Identity labels, showing contents of containers (including waste receptacles) and associated hazards (27, 48);

(c) Location signs for safety showers, eyewash stations, other safety and first aid equipment, exits (27) and areas where food and beverage consumption and storage are permitted (24); and

(d) Warnings at areas or equipment where special or unusual hazards exist (27).

9. Spills and Accidents

(a) A written emergency plan should be established and communicated to all personnel; it should include procedures for ventilation failure (200), evacuation, medical care, reporting, and drills (172).

(b) There should be an alarm system to alert people in all parts of the facility including isolation areas such as cold rooms (172).

(c) A spill control policy should be developed and should include consideration of prevention, containment, cleanup, and reporting (175).

(d) All accidents or near accidents should be carefully analyzed with the results distributed to all who might benefit (8, 28).

10. Information and Training Program

(a) Aim: To assure that all individuals at risk are adequately informed about the work in the laboratory, its risks, and what to do if an accident occurs (5, 15).

(b) Emergency and Personal Protection Training: Every laboratory worker should know the location and proper use of available protective apparel and equipment (154, 169).

Some of the full-time personnel of the laboratory should be trained in the proper use of emergency equipment and procedures (6).

Such training as well as first aid instruction should be available to (154) and encouraged for (176) everyone who might need it.

(c) Receiving and stockroom/storeroom personnel should know about hazards, handling equipment, protective apparel, and relevant regulations (217).

(d) Frequency of Training: The training and education program should be a regular, continuing activity—not simply an annual presentation (15).

(e) Literature/Consultation: Literature and consulting advice concerning chemical hygiene should be readily available to laboratory personnel, who should be encouraged to use these information resources (14).

11. Waste Disposal Program.

(a) Aim: To assure that minimal harm to people, other organisms, and the environment will result from the disposal of waste laboratory chemicals (5).

(b) Content (14, 232, 233, 240): The waste disposal program should specify how waste is to be collected, segregated, stored, and transported and include consideration of what materials can be incinerated. Transport from the institution must be in accordance with DOT regulations (244).

(c) Discarding Chemical Stocks: Unlabeled containers of chemicals and solutions should undergo prompt disposal; if partially used, they should not be opened (24, 27). Before a worker's employment in the laboratory ends, chemicals for which that person was responsible should be discarded or returned to storage (226).

(d) Frequency of Disposal: Waste should be removed from laboratories to a central waste storage area at least once per week and from the central waste storage area at regular intervals (14).

(e) Method of Disposal: Incineration in an environmentally acceptable manner is the most practical disposal method for combustible laboratory waste (14, 238, 241).

Indiscriminate disposal by pouring waste chemicals down the drain (14, 231, 242) or adding them to mixed refuse for landfill burial is unacceptable (14).

Hoods should not be used as a means of disposal for volatile chemicals (40, 200).

Disposal by recycling (233, 243) or chemical decontamination (40, 230) should be used when possible.

E. Basic Rules and Procedures for Working with Chemicals

The Chemical Hygiene Plan should require that laboratory workers know and follow its rules and procedures. In addition to the procedures of the sub programs mentioned above, these should include the rules listed below.

1. General Rules

The following should be used for essentially all laboratory work with chemicals:

(a) Accidents and spills - Eye Contact: Promptly flush eyes with water for a prolonged period (15 minutes) and seek medical attention (33, 172).

Ingestion: Encourage the victim to drink large amounts of water (178).

Skin Contact: Promptly flush the affected area with water (33, 172, 178) and remove any contaminated clothing (172, 178). If symptoms persist after washing, seek medical attention (33).

Clean-up. Promptly clean up spills, using appropriate protective apparel and equipment and proper disposal (24, 33). See pp. 233-237 for specific clean-up recommendations.

(b) Avoidance of "routine" exposure: Develop and encourage safe habits (23); avoid unnecessary exposure to chemicals by any route (23);

Do not smell or taste chemicals (32). Vent apparatus which may discharge toxic chemicals (vacuum pumps, distillation columns, etc.) into local exhaust devices (199).

Inspect gloves (157) and test glove boxes (208) before use.

Do not allow release of toxic substances in cold rooms and warm rooms, since these have contained recirculated atmospheres (209).

(c) Choice of chemicals: Use only those chemicals for which the quality of the available ventilation system is appropriate (13).

(d) Eating, smoking, etc.: Avoid eating, drinking, smoking, gum chewing, or application of cosmetics in areas where laboratory chemicals are present (22, 24, 32, 40); wash hands before conducting these activities (23, 24).

Avoid storage, handling, or consumption of food or beverages in storage areas, refrigerators, glassware or utensils which are also used for laboratory operations (23, 24, 226).

(e) Equipment and glassware: Handle and store laboratory glassware with care to avoid damage; do not use damaged glassware (25). Use extra care with Dewar flasks and other evacuated glass apparatus; shield or wrap them to contain chemicals and fragments should implosion occur (25). Use equipment only for its designed purpose (23, 26).

(f) Exiting: Wash areas of exposed skin well before leaving the laboratory (23).

(g) Horseplay: Avoid practical jokes or other behavior which might confuse, startle or distract another worker (23).

(h) Mouth suction: Do not use mouth suction for pipeting or starting a siphon (23, 32).

(i) Personal apparel: Confine long hair and loose clothing (23, 158). Wear shoes at all times in the laboratory but do not wear sandals, perforated shoes, or sneakers (158).

(j) Personal housekeeping: Keep the work area clean and uncluttered, with chemicals and equipment being properly labeled and stored; clean up the work area on completion of an operation or at the end of each day (24).

(k) Personal protection: Assure that appropriate eye protection (154-156) is worn by all persons, including visitors, where chemicals are stored or handled (22, 23, 33, 154).

Wear appropriate gloves when the potential for contact with toxic materials exists (157); inspect the gloves before each use, wash them before removal, and replace them periodically (157). (A table of resistance to chemicals of common glove materials is given on p. 159).

Use appropriate (164-168) respiratory equipment when air contaminant concentrations are not sufficiently restricted by engineering controls (164-5), inspecting the respirator before use (169).

Use any other protective and emergency apparel and equipment as appropriate (22, 157-162).

Avoid use of contact lenses in the laboratory unless necessary; if they are used, inform supervisor so special precautions can be taken (155).

Remove laboratory coats immediately on significant contamination (161).

(l) Planning: Seek information and advice about hazards (7), plan appropriate protective procedures, and plan positioning of equipment before beginning any new operation (22, 23).

(m) Unattended operations: Leave lights on, place an appropriate sign on the door, and provide for containment of toxic substances in the event of failure of a utility service (such as cooling water) to an unattended operation (27, 128).

(n) Use of hood: Use the hood for operations which might result in release of toxic chemical vapors or dust (198-9).

As a rule of thumb, use a hood or other local ventilation device when working with any appreciably volatile substance with a TLV of less than 50 ppm (13).

Confirm adequate hood performance before use; keep hood closed at all times except when adjustments within the hood are being made (200); keep materials stored in hoods to a minimum and do not allow them to block vents or air flow (200).

Leave the hood "on" when it is not in active use if toxic substances are stored in it or if it is uncertain whether adequate general laboratory ventilation will be maintained when it is "off" (200).

(o) Vigilance: Be alert to unsafe conditions and see that they are corrected when detected (22).

(p) Waste disposal: Assure that the plan for each laboratory operation includes plans and training for waste disposal (230).

Deposit chemical waste in appropriately labeled receptacles and follow all other waste disposal procedures of the Chemical Hygiene Plan (22, 24).

Do not discharge to the sewer concentrated acids or bases (231); highly toxic, malodorous, or lachrymatory substances (231); or any substances which might interfere with the biological activity of waste water treatment plants, create fire or explosion hazards, cause structural damage or obstruct flow (242).

(q) Working alone: Avoid working alone in a building; do not work alone in a laboratory if the procedures being conducted are hazardous (28).

2. Working with Allergens and Embryotoxins

(a) Allergens (examples: diazomethane, isocyanates, bichromates): Wear suitable gloves to prevent hand contact with allergens or substances of unknown allergenic activity (35).

(b) Embryotoxins (34-5) (examples: organomercurials, lead compounds, formamide): If you are a woman of childbearing age, handle these substances only in a hood whose satisfactory performance has been confirmed, using appropriate protective apparel (especially gloves) to prevent skin contact.

Review each use of these materials with the research supervisor and review continuing uses annually or whenever a procedural change is made.

Store these substances, properly labeled, in an adequately ventilated area in an unbreakable secondary container.

Notify supervisors of all incidents of exposure or spills; consult a qualified physician when appropriate.

3. Work with Chemicals of Moderate Chronic or High Acute Toxicity

Examples: diisopropylfluorophosphate (41), hydrofluoric acid (43), hydrogen cyanide (45).

Supplemental rules to be followed in addition to those mentioned above (Procedure B of "Prudent Practices", pp. 39-41):

(a) Aim: To minimize exposure to these toxic substances by any route using all reasonable precautions (39).

(b) Applicability: These precautions are appropriate for substances with moderate chronic or high acute toxicity used in significant quantities (39).

(c) Location: Use and store these substances only in areas of restricted access with special warning signs (40, 229).

Always use a hood (previously evaluated to confirm adequate performance with a face velocity of at least 60 linear feet per minute) (40) or other containment device for procedures which may result in the generation of aerosols or vapors containing the substance (39); trap released vapors to revent their discharge with the hood exhaust (40).

(d) Personal protection: Always avoid skin contact by use of gloves and long sleeves (and other protective apparel as appropriate) (39). Always wash hands and arms immediately after working with these materials (40).

(e) Records: Maintain records of the amounts of these materials on hand, amounts used, and the names of the workers involved (40, 229).

(f) Prevention of spills and accidents: Be prepared for accidents and spills (41). Assure that at least 2 people are present at all times if a compound in use is highly toxic or of unknown toxicity (39).

Store breakable containers of these substances in chemically resistant trays; also work and mount apparatus above such trays or cover work and storage surfaces with removable, absorbent, plastic backed paper (40).

If a major spill occurs outside the hood, evacuate the area; assure that cleanup personnel wear suitable protective apparel and equipment (41).

(g) Waste: Thoroughly decontaminate or incinerate contaminated clothing or shoes (41). If possible, chemically decontaminate by chemical conversion (40).

Store contaminated waste in closed, suitably labeled, impervious containers (for liquids, in glass or plastic bottles half-filled with vermiculite) (40).

4. Work with Chemicals of High Chronic Toxicity

(Examples: dimethylmercury and nickel carbonyl (48), benzo-a-pyrene (51), N-nitrosodiethylamine (54), other human carcinogens or substances with high carcinogenic potency in animals (38).)

Further supplemental rules to be followed, in addition to all these mentioned above, for work with substances of known high chronic toxicity (in quantities above a few milligrams to a few grams, depending on the substance) (47). (Procedure A of "Prudent Practices" pp. 47-50).

(a) Access: Conduct all transfers and work with these substances in a "controlled area": a restricted access hood, glove box, or portion of a lab, designated for use of highly toxic substances, for which all people with access are aware of the substances being used and necessary precautions (48).

(b) Approvals: Prepare a plan for use and disposal of these materials and obtain the approval of the laboratory supervisor (48).

(c) Non-contamination/Decontamination: Protect vacuum pumps against contamination by scrubbers or HEPA filters and vent them into the hood (49). Decontaminate vacuum pumps or other contaminated equipment, including glassware, in the hood before removing them from the controlled area (49, 50). Decontaminate the controlled area before normal work is resumed there (50).

(d) Exiting: On leaving a controlled area, remove any protective apparel (placing it in an appropriate, labeled container) and thoroughly wash hands, forearms, face, and neck (49).

(e) Housekeeping: Use a wet mop or a vacuum cleaner equipped with a HEPA filter instead of dry sweeping if the toxic substance was a dry powder (50).

(f) Medical surveillance: If using toxicologically significant quantities of such a substance on a regular basis (e.g., 3 times per week), consult a qualified physician concerning desirability of regular medical surveillance (50).

(g) Records: Keep accurate records of the amounts of these substances stored (229) and used, the dates of use, and names of users (48).

(h) Signs and labels: Assure that the controlled area is conspicuously marked with warning and restricted access signs (49) and that all containers of these substances are appropriately labeled with identity and warning labels (48).

(i) Spills: Assure that contingency plans, equipment, and materials to minimize exposures of people and property in case of accident are available (233-4).

(j) Storage: Store containers of these chemicals only in a ventilated, limited access (48, 227, 229) area in appropriately labeled, unbreakable, chemically resistant, secondary containers (48, 229).

(k) Glove boxes: For a negative pressure glove box, ventilation rate must be at least 2 volume changes/hour and pressure at least 0.5 inches of water (48). For a positive pressure glove box, thoroughly check for leaks before each use (49). In either case, trap the exit gases or filter them through a HEPA filter and then release them into the hood (49).

(l) Waste: Use chemical decontamination whenever possible; ensure that containers of contaminated waste (including washings from contaminated flasks) are transferred from the controlled area in a secondary container under the supervision of authorized personnel (49, 50, 233).

5. Animal Work with Chemicals of High Chronic Toxicity

(a) Access: For large scale studies, special facilities with restricted access are preferable (56).

(b) Administration of the toxic substance: When possible, administer the substance by injection or gavage instead of in the diet. If administration is in the diet, use a caging system under negative pressure or under laminar air flow directed toward HEPA filters (56).

(c) Aerosol suppression: Devise procedures which minimize formation and dispersal of contaminated aerosols, including those from food, urine, and feces (e.g., use HEPA filtered vacuum equipment for cleaning, moisten contaminated bedding before removal from the cage, mix diets in closed containers in a hood) (55, 56).

(d) Personal protection: When working in the animal room, wear plastic or rubber gloves, fully buttoned laboratory coat or jumpsuit and, if needed because of incomplete suppression of aerosols, other apparel and equipment (shoe and head coverings, respirator) (56).

(e) Waste disposal: Dispose of contaminated animal tissues and excreta by incineration if the available incinerator can convert the contaminant to non-toxic products (238); otherwise, package the waste appropriately for burial in an EPA-approved site (239).

F. Safety Recommendations

The above recommendations from "Prudent Practices" do not include those which are directed primarily toward prevention of physical injury rather than toxic exposure. However, failure of precautions against injury will often have the secondary effect of causing toxic exposures. Therefore, we list below page references for recommendations concerning some of the major categories of safety hazards which also have implications for chemical hygiene:

1. Corrosive agents: (35-6)

2. Electrically powered laboratory apparatus: (179-92)

3. Fires, explosions: (26, 57-74, 162-64, 174-5, 219-20, 226-7)

4. Low temperature procedures: (26, 88)
5. Pressurized and vacuum operations (including use of compressed gas cylinders): (27, 75-101)

G. Material Safety Data Sheets

Material safety data sheets are presented in "Prudent Practices" for the chemicals listed below. (Asterisks denote that comprehensive material safety data sheets are provided).

- Acetyl peroxide (105)
- Acrolein (106)
- Acrylonitrile

Ammonia (anhydrous)(91)

- Aniline (109)
- Benzene (110)
- Benzo[a]pyrene (112)
- Bis(chloromethyl) ether (113)

Boron trichloride (91)
Boron trifluoride (92)
Bromine (114)

- Tert-butyl hydroperoxide (148)
- Carbon disulfide (116)

Carbon monoxide (92)

- Carbon tetrachloride (118)

*Chlorine (119)
Chlorine trifluoride (94)

- Chloroform (121)

Chloromethane (93)

- Diethyl ether (122)

Diisopropyl fluorophosphate (41)

- Dimethylformamide (123)
- Dimethyl sulfate (125)
- Dioxane (126)
- Ethylene dibromide (128)
- Fluorine (95)
- Formaldehyde (130)
- Hydrazine and salts (132)

Hydrofluoric acid (43)
Hydrogen bromide (98)
Hydrogen chloride (98)

- Hydrogen cyanide (133)
- Hydrogen sulfide (135)

Mercury and compounds (52)

- Methanol (137)
- Morpholine (138)
- Nickel carbonyl (99)
- Nitrobenzene (139)

Nitrogen dioxide (100)
N-nitrosodiethylamine (54)

- Peracetic acid (141)
- Phenol (142)
- Phosgene (143)
- Pyridine (144)
- Sodium azide (145)
- Sodium cyanide (147)

Sulfur dioxide (101)

- Trichloroethylene (149)
- Vinyl chloride (150)

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U.S. Department of Labor Occupational Safety & Health Administration
Regulations (Standards - 29 CFR)
References (Non-Mandatory) - 1910.1450 App X.B

The following references are provided to assist the employer in the development of a Chemical Hygiene Plan. The materials listed below are offered as non-mandatory guidance. References listed here do not imply specific endorsement of a book, opinion, technique, policy or a specific solution for a safety or health problem. Other references not listed here may better meet the needs of a specific laboratory.

(a) Materials for the development of the Chemical Hygiene Plan:

1. American Chemical Society, Safety in Academic Chemistry Laboratories, 4th edition, 1985.

2. Fawcett, H.H. and W.S. Wood, Safety and Accident Prevention in Chemical Operations, 2nd edition, Wiley-Interscience, New York, 1982.

3. Flury, Patricia A., Environmental Health and Safety in the Hospital Laboratory, Charles C. Thomas Publisher, Springfield IL, 1978.

4. Green, Michael E. and Turk, Amos, Safety in Working with Chemicals, Macmillan Publishing Co., NY, 1978.

5. Kaufman, James A., Laboratory Safety Guidelines, Dow Chemical Co., Box 1713, Midland, MI 48640, 1977.

6. National Institutes of Health, NIH Guidelines for the Laboratory use of Chemical Carcinogens, NIH Pub. No. 81-2385, GPO, Washington, DC 20402, 1981.

7. National Research Council, Prudent Practices for Disposal of Chemicals from Laboratories, National Academy Press, Washington, DC, 1983.

8. National Research Council, Prudent Practices for Handling Hazardous Chemicals in Laboratories, National Academy Press, Washington, DC, 1981.

9. Renfrew, Malcolm, Ed., Safety in the Chemical Laboratory, Vol. IV, J. Chem. Ed., American Chemical Society, Easlon, PA, 1981.

10. Steere, Norman V., Ed., Safety in the Chemical Laboratory, J. Chem. Ed. American Chemical Society, Easlon, PA, 18042, Vol. I, 1967, Vol. II, 1971, Vol. III, 1974.

11. Steere, Norman V., Handbook of Laboratory Safety, the Chemical Rubber Company Cleveland, OH, 1971.

12. Young, Jay A., Ed., Improving Safety in the Chemical Laboratory, John Wiley & Sons, Inc. New York, 1987.

(b) Hazardous Substances Information:

1. American Conference of Governmental Industrial Hygienists, Threshold Limit Values for Chemical Substances and Physical Agents in the Workroom Environment with Intended Changes, 6500 Glenway Avenue, Bldg. D-7, Cincinnati, OH 45211-4438.

2. Annual Report on Carcinogens, National Toxicology Program U.S. Department of Health and Human Services, Public Health Service, U.S. Government Printing Office, Washington, DC, (latest edition).

3. Best Company, Best Safety Directory, Vols. I and II, Oldwick, N.J., 1981.

4. Bretherick, L., Handbook of Reactive Chemical Hazards, 2nd edition, Butterworths, London, 1979.

5. Bretherick, L., Hazards in the Chemical Laboratory, 3rd edition, Royal Society of Chemistry, London, 1986.

6. Code of Federal Regulations, 29 CFR part 1910 subpart Z. U.S. Govt. Printing Office, Washington, DC 20402 (latest edition).

7. IARC Monographs on the Evaluation of the Carcinogenic Risk of chemicals to Man, World Health Organization Publications Center, 49 Sheridan Avenue, Albany, New York 12210 (latest editions).

8. NIOSH/OSHA Pocket Guide to Chemical Hazards. NIOSH Pub. No. 85-114, U.S. Government Printing Office, Washington, DC, 1985 (or latest edition).

9. Occupational Health Guidelines, NIOSH/OSHA. NIOSH Pub. No. 81-123 U.S. Government Printing Office, Washington, DC, 1981.

10. Patty, F.A., Industrial Hygiene and Toxicology, John Wiley & Sons, Inc., New York, NY (Five Volumes).

11. Registry of Toxic Effects of Chemical Substances, U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Institute for Occupational Safety and Health, Revised Annually, for sale from Superintendent of documents US. Govt. Printing Office, Washington, DC 20402.

12. The Merck Index: An Encyclopedia of Chemicals and Drugs. Merck and Company Inc. Rahway, N.J., 1976 (or latest edition).

13. Sax, N.I. Dangerous Properties of Industrial Materials, 5th edition, Van Nostrand Reinhold, NY., 1979.

14. Sittig, Marshall, Handbook of Toxic and Hazardous Chemicals, Noyes Publications. Park Ridge, NJ, 1981.

(c) Information on Ventilation:

1. American Conference of Governmental Industrial Hygienists Industrial Ventilation (latest edition), 6500 Glenway Avenue, Bldg. D-7, Cincinnati, Ohio 45211-4438.

2. American National Standards Institute, Inc. American National Standards Fundamentals Governing the Design and Operation of Local Exhaust Systems ANSI Z 9.2-1979 American National Standards Institute, N.Y. 1979.

3. Imad, A.P. and Watson, C.L. Ventilation Index: An Easy Way to Decide about Hazardous Liquids, Professional Safety pp 15-18, April 1980.

4. National Fire Protection Association, Fire Protection for Laboratories Using Chemicals NFPA-45, 1982.

Safety Standard for Laboratories in Health Related Institutions, NFPA, 56c, 1980.
Fire Protection Guide on Hazardous Materials, 7th edition, 1978.
National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

5. Scientific Apparatus Makers Association (SAMA), Standard for Laboratory Fume Hoods, SAMA LF7-1980, 1101 16th Street, NW., Washington, DC 20036.

(d) Information on Availability of Referenced Material:

1. American National Standards Institute (ANSI), 1430 Broadway, New York, NY 10018.

2. American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA 19103.

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