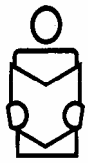
NEW YORK CITY DEPARTMENT OF EDUCATION

HAZARD COMMUNICATION PLAN



DIVISION OF HUMAN RESOURCES
OFFICE OF OCCUPATIONAL SAFETY AND HEALTH
Emerson A. Greenidge, MS, CSP, Director
Revised 9/06

HAZARD COMMUNICATION PLAN

In accordance with the New York State Department of Labor, Public Employees Safety and Health (PESH) Bureau and OSHA's Hazard Communication Standard 29 CFR 1910.1200

The following Hazard Communication Plan has been developed for:

Facility Name:
Address:
Principal Name:
Prepared by the **New York City Department of Education** **Office of Occupational Safety and Health** **65 Court Street, Room 706** **Brooklyn, New York 11201** **(718) 935-2319**

To Be Completed For Each Site and/or Program by the Site Safety Officer

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1.0 FORMAL POLICY STATEMENT

The New York City Department of Education is committed to providing a safe and healthful working environment for its employees and believes that they have a right to know the health and safety hazards associated with their work. Pursuant to this objective, the following Hazard Communication Plan is provided to reduce and/or eliminate occupational exposure to hazardous chemicals at schools and offices in conformity with OSHA's Hazard Communication Standard cited as Title 29 Code of Federal Regulations 1910.1200.

1.1 RATIONALE

Many accidents and injuries occur annually in educational facilities, resulting in chemical related injuries and illnesses, ranging from skin burns and eye irritation to pulmonary edema. These hazards warrant serious concerns for workers who have occupational exposure to hazardous chemicals within educational facilities. In recognition of these potential hazards, the New York State Department of Labor - Public Employees Safety and Health (PESH) Bureau mandates compliance with the Federal Occupational Safety and Health Administration's (OSHA's) Hazard Communication Standard (Appendix A). This regulation applies to any hazardous chemical that is known to be present in the workplace to which employees may be exposed under normal conditions of use or in an emergency. The regulation also contains training, administrative and engineering requirements that would minimize the likelihood of hazardous chemical exposure incidents. It also requires that appropriate procedures be followed in the event that an employee is exposed to a hazardous chemical. These requirements maximize the employee's options and ability to make sound decisions regarding occupational, medical, and other personal lifestyle choices.

1.2 EXECUTIVE SUMMARY

This standard requires an employer to explain or describe all chemical hazards that an employee could be exposed to in the workplace either during routine work or in the event of an accident. Employers who have employees with risk of exposure to hazardous chemicals must develop and implement a Hazard Communication Program. The Hazard Communication Program incorporates policies, procedures, and principles designed to develop employees' awareness of potentially hazardous chemicals in the workplace and train them in appropriate safe working practices. The Hazard Communication Program is intended to comprehensively address the issue of evaluating the potential hazards of chemicals and communicating information concerning hazards and appropriate protective measures to employees. The written plan is the core of the standard and affords flexibility in providing the type of worker protection appropriate for a specific workplace.

The plan specifies the training and information requirements of the standard. It also establishes appropriate work practices, standard operating procedures, methods of control, measures for appropriate maintenance and use of protective equipment and

special precautions for work with particularly hazardous substances.

The written Hazard Communication Plan is prepared and distributed by the Office of Occupational Safety and Health. It is reviewed and updated annually or whenever new tasks and procedures affect occupational exposure. Emerson Greenidge, Director and Carine Jean-Pierre, Research Scientist were responsible for the overall review, organization and production of the revised Plan. Contact phone number (718) 935-2319.

2.0 PROGRAM ADMINISTRATION

2.1 Responsibilities of the Office of Occupational Safety and Health

- **Written Hazard Communication Plan (HCP)** - Develop a written Hazard Communication Plan and review and update as necessary;

- **Training -** Ensure that Regional Health Directors and Site Safety Officers are adequately trained to effectively comply with the Hazard Communication Standard;

- **Training Materials -** Provide appropriate Hazard Communication/Right-To-Know training materials to school officials and Regional Health Director;

- **Training Records -** Maintain records of attendance for employees trained by the Office of Occupational Safety and Health (OOSH);

- **Audit -** Conduct safety audits to ensure that schools are in compliance with the state mandated regulations.

2.2 Responsibilities of the Regional Health Director

The **Regional Superintendent** is responsible for the administration of the Bloodborne Pathogens Program at the sites under his/her supervision. The **Regional Health Director** is designated the responsibility to coordinate safety and health programs for the Regional Superintendent. These responsibilities are as follows:

- **Hazard Communication Plan -** Ensure that the Hazard Communication Plan is completed by each school/site and a copy is easily accessible to all employees;

- **Information and Training -** Ensure that each **Site Safety Officer** receives initial training. In addition, ensure that all Site Safety Officers conduct initial training and annual training for their respective sites;

- **Recordkeeping -** Maintain accurate training records for three years;

- **Personal Protective Equipment -** Monitor each site to ensure that personal protective equipment and adequate engineering controls are provided;

- **Compliance Audit -** Ensure that each site complies with the provisions of the Hazard Communication/Right-To-Know Standard.

2.3 Responsibilities of the Principal

The **Principal** is responsible for the administration of the Hazard Communication/Right-To-Know program at the site. The Principal shall designate a

Site Safety Officer, who will be responsible for ensuring that the policies and procedures outlined herein are effectively carried out.

Table 1 - Designated Site Safety Officer

SITE SAFETY OFFICER		
Name	**Location**	**Telephone Number**

2.3.1 Responsibilities of the Site Safety Officer

- **Written Hazard Communication Plan -** Ensure that the Hazard Communication Plan is completed and a copy is easily accessible to employees, employee representatives, OOSH, and PESH compliance officers, upon request;

- **Information and Training -** Ensure that each member of the school's pedagogical staff and all other school employees with potential occupational exposure to chemicals in the school receive initial training and additional training when there is a potential for new exposures;

- **Compliance Inspections -** Ensure that the Hazard Communication Plan and training records are available to enforcement inspectors from the New York State Department of Labor Public Employees Safety and Health (PESH) Bureau and to Safety and Health personnel from OOSH;

- **Personal Protective Equipment -** Ensure that personal protective equipment and adequate engineering controls are provided and proper protocols outlined in the HCP are followed;

- **Compliance Audit -** Ensure that each site complies with the provisions of the regulation and that the Right-To-Know/Hazard Communication Standard Checklist is completed annually and submitted to OOSH via the Regional Office;

- **Chemical Inventory -** Compile and maintain a chemical inventory of hazardous chemicals and products used by the facility employees or those stored within the facility on an annual basis;

- **Material Safety Data Sheets -** Acquire, maintain and update material safety data sheets (MSDSs) of the products listed in the chemical inventory; acquire and maintain written materials for all hazardous substances for which no MSDS is available. These may be in the form of fact sheets, pamphlets, booklets, etc.;

- **Recordkeeping -** Maintain a roster of employees who handle or use substances included in OSHA's Subpart Z list of Hazardous Substances – 29 CFR 1910.1000 (See Appendix A-1); maintain records of employees who have been trained. These training records should include employee name, employee identification and/or social security number, job title, date of training and the name and title of the trainer;

- **Labeling -** Ensure that all chemicals used and/or stored at the facility are properly labeled;

- **Health and Safety Information File -** Compile and maintain a Health and Safety Information File at the site;

- **Technical Guidance -** Serve as the first point of contact for staff questions and requests regarding the Hazard Communication Standard;

- **SH 900 and SH 900.1 -** Ensure that the New York State Department of Labor's **Log of Work Related Injuries and Illnesses (SH 900) and Summary of Work Related Injuries and Illnesses (SH 900.1)** are completed and filed annually. In addition, ensure that the Summary of Work Related Injuries and Illnesses (SH 900.1) is posted annually;

- **Indoor Air Quality Complaints -** Forward indoor air quality complaints to the Office of Occupational Safety and Health.

2.4 Responsibilities of the Division of School Facilities (DSF)

- **Hazardous Chemical Removal -** Coordinate a hazardous chemical removal program to ensure that hazardous chemicals are identified and removed from site.

3.0 INFORMATION AND TRAINING

All Department of Education employees affected by this standard and who have the potential to be exposed to hazardous chemicals will receive Hazard Communication/Right-To-Know training. The Hazard Communication Standard defines a hazardous chemical as “any chemical, which is a physical or a health hazard.” (See “Definitions”)

Education and training should be considered the first line of defense in preventing exposure to hazardous chemicals in educational facilities. School employees shall be provided with information and training to ensure that they are apprised of the hazards of chemicals present in the workplace. Such information shall be provided at the time of an employee's initial assignment, annually and prior to assignments involving new exposure situations.

The Site Safety Officer, upon notification from the Principal, will advise outside contractors of any chemical hazards, which may be encountered in the normal course of their work on the premises. The Site Safety Officer, with the assistance of the Principal, will be responsible for obtaining information about hazardous chemicals that are being used or brought onto the site by an outside contractor.

3.1 Information

Training is a necessary and important part of the Hazard Communication Program.

A. TRAINING OBJECTIVES

Upon completion of the Hazard Communication/Right-To-Know Training Program, the employee will:

- Know who their Site Safety Officer is;
- Become aware of the Right-To-Know Law/Hazard Communication Standard and their requirements;
- Know what the Hazard Communication Plan is, what it contains and where it is located;
- Know the locations of the Chemical Inventory List and Material Safety Data Sheets (MSDS’s) for hazardous chemicals;
- Know about the toxicology of hazardous chemicals and their possible routes of exposure;
- Become knowledgeable of safe handling, storage and disposal of hazardous chemicals;

- Become aware of emergency procedures and clean-up protocol in the event of exposure to hazardous chemicals;
- Become familiar with the supporting documents (i.e., training records, SH 900, SH 900.1, etc.) required by the Hazard Communication Standard and this plan;

- Become familiar with the information posted on their school's Health and Safety bulletin board.

B. TRAINING TOPICS

a. Topics to be covered

1. Content of the Hazard Communication Standard

2. Location of the Hazard Communication Plan

3. Identification of Hazardous Chemicals
   a. Physical and chemical nature of chemicals
   b. Location of the chemical inventory list
   c. Location of MSDS
      i. Obtaining a copy
      ii. Location in workplace

4. Written procedures for handling hazardous chemicals
   a. Work practices
   b. Proper moving, storing, and use
   c. PEL (Permissible Exposure Levels) for specific chemicals used by the employee
   d. Visual appearance of chemicals used by the employee
   e. Environmental monitoring required
   f. Signs and symptoms of exposure
   g. Location of Target Organ Poster **(Appendix B)**
   h. Protective equipment used to prevent overexposure
   i. Conditions to avoid

5. Environmental protection
   a. Emergency procedures
   b. Spill containment (Think C.L.E.A.N. protocol)

6. Documentation of initial and annual training

3.2 Hazard Communication/Right-To-Know (HCP) Training Kit

On completion of initial training, each Site Safety Officer will be issued a training kit for use in annual training.

The training kit will contain the following:

- A Hazard Communication Plan, which includes a copy of the Hazard Communication Standard 29 CFR 1910.1200
- Hazard Communication/Right-To- Know course handouts
- Department of Labor's Right-To-Know (RTK) Poster and OOSH's RTK Poster
- SH 900, SH 900.1 and SH 900.2 Forms
- Chemical Inventory Form

The Site Safety Officer shall be responsible for the training kit that shall be kept at the following location:

Table 2 - Location of HCP Training Kit

LOCATION OF HCP TRAINING KIT			
Building	**Floor**	**Room**	**Responsible Person**

3.3 Training Records

The Site Administrator and the Office of Occupational Safety and Health are responsible for maintaining training records. Training records are to be kept on site for three years from the date of training and shall include the following information:

- Dates of training sessions.
- An outline describing material presented.
- The names and qualifications of persons conducting training.
- The names and job titles of all persons attending the training sessions.

See Appendix C for Employee Hazard Communication and Right-To-Know Training Attendance Sheet

Table 3 - Location of Hazard Communication and Right-To-Know Training Attendance Sheet

LOCATION OF HAZARD COMMUNICATION/RIGHT-TO-KNOW TRAINING SHEET		
Person Responsible	**Room Number**	**Telephone Number**

4.0 ADMINISTRATIVE CONTROLS

4.1 Standard Operating Procedures

Many chemicals are potentially hazardous and precautionary methods must be instituted to minimize exposure during handling. Employees are to assume that any mixture of hazardous chemicals is more toxic than their most toxic component. Employees should observe the following safety and health guidelines when work involves the use of hazardous chemicals:

a. Thoroughly read the instructions on the labels on the chemical's container prior to using the chemical. Follow the manufacturer's instructions when using chemicals in order to make sure that you use the chemicals properly.

b. Do not smell or taste chemicals.

c. Wear appropriate gloves when the potential for contact with toxic materials exists; inspect the gloves before each use; wash them before removal and replace them periodically.

d. Use only those chemicals for which proper and adequate ventilation is available.

e. Do not eat, drink, smoke, chew gum or apply cosmetics or lip balm in areas where hazardous chemicals are present. Wash hands before conducting these activities.

f. Wash areas of exposed skin thoroughly after using chemicals.

g. Avoid practical jokes or other behavior that might confuse, startle, or distract another worker.

h. Keep the work area clean and uncluttered. Clean up the work area on completion of an operation or at the end of each day.

i. Ensure that all persons in areas where chemicals are handled wear appropriate eye protection.

j. Seek information and advice about hazards from the Site Safety Officer and/or supervisor.

k. Be aware of unsafe conditions and see that they are corrected when detected. If these conditions are not corrected by the custodian, report them immediately to the Site Safety Officer or Supervisor.

All personnel, including maintenance, buildings, grounds, and others contemplating a non-routine task (e.g., construction, boiler repair, etc.) will consult with the Site Safety Officer. The Site Safety Officer will ensure that employees are informed of chemical hazards associated with the performance of these tasks and appropriate protective measures. This will be accomplished by a meeting of supervisors and the Site Safety Officer with the affected employees before such work begins.

5.0 CHEMICAL INVENTORY

The Site Safety Officer is responsible for maintaining a chemical inventory list of all hazardous chemicals at the site. An inventory of all hazardous chemicals at the site should be performed annually. Special consideration should be shown to those chemicals classified as hazardous by the Department of Transportation (DOT), the Environmental Protection Agency (EPA), or displaying a 2 or greater number in any section of the National Fire Protection Association (NFPA) diamond. These chemicals should be highlighted by an asterisk (*) in the margin of the chemical inventory list. DOT and EPA classifications are listed in Appendices D and E.

Chemicals should be listed alphabetically by location according to the most commonly used name (e.g., bleach). The NFPA hazard classification, if known, is listed along with the manufacturer's name and complete address. A comment is provided to further identify the chemical's exact location (e.g., under the sink, third shelf in the safety cabinet, etc.) A chemical inventory form and instructions are provided in Appendices F, F-1 and F-2.

Table 4 - Location of Chemical Inventory

LOCATION OF CHEMICAL INVENTORY			
Building	**Floor**	**Room**	**Responsible Person**

6.0 MATERIAL SAFETY DATA SHEETS

A Material Safety Data Sheet (MSDS) is a document that describes the chemical and physical characteristics of hazardous chemicals, provides information about safety and health hazards associated with its use, and list the means for controlling those hazards.

The Material Safety Data Sheet (MSDS) is the primary source of information about hazardous chemicals used on the job (See Appendix G for sample MSDSs).

Listed below are typical MSDS contents as they appear on the product label:

- Section 1: Manufacturer's Information - who, where and how to contact the manufacturer;
- Section 2: Hazardous Ingredients – names of the chemicals, PEL's, TLV's and percentages of each chemical in the product;
- Section 3: Physical and Chemical Characteristics of the Product – weight, odor, color, etc.;
- Section 4: Fire and Explosion Hazard Data – flammability and combustibility, LEL, UEL and flash point;
- Section 5: Reactivity Data;
- Section 6: Health Hazard Data – effects on health, including symptoms;
- Section 7: Precautions for Safe Handling and Use of the Product – spills, leaks and disposal;
- Section 8: Control Measures – ventilation, PPE and work practices.

Request letters are sent to manufacturers if MSDSs are missing (See sample letter in Appendix G-1). For chemicals and hazardous materials (e.g., vehicle exhaust) for which no MSDS is available, written materials will be procured from OOSH and will be maintained by the Site Safety Officer. Such materials will be kept with the MSDS collection and be similarly accessible to employees.

Table 5 - Location of Material Safety Data Sheets (MSDSs)

LOCATION OF MATERIAL SAFETY DATA SHEETS (MSDS)			
Building	**Floor**	**Room**	**Responsible Person**

7.0 CHEMICAL STORAGE

Flammable liquids must not exceed the regulated amounts stipulated by the NYC Fire Department. Other stocks, which should be kept to minimal practical levels, should be stored in appropriately protected areas of the Central Stock Room. Ventilated cabinets and specially monitored refrigerators should be used for chemical storage only. No food is permitted in these refrigerators.

Flammable liquids should be stored in flammable storage cabinets with self-closing doors and proper ventilation according to National Fire Protection Association standards. Safety cans with a spring-loaded spout should be used for transporting flammable liquids. Acids and alkalis must be stored on impervious trays and are to be kept below eye level, separated from one another and from flammables.

8.0 LABELING

1. All hazardous chemicals that are used in the facility or shipped elsewhere must be labeled. Labels affixed to chemicals received from chemical manufacturers, importers, or distributors should contain the following information:

    a. Name of product
    b. Identity of the hazardous chemical
    c. Appropriate hazard warnings
    d. Name and address of the manufacturer, importer or supplier

2. When a hazardous chemical is transferred from its original container to another portable container that is intended for **immediate use** by the employee who performs the transfer, the transfer container need not be labeled. To meet the labeling requirements of the Hazard Communication Standard for other in-house containers, refer to the label supplied by the manufacturer.

3. All labels for in-house containers should be approved by the **Site Safety Officer** prior to their use. The Site Safety Officer will check on a periodic basis to ensure that all containers in the facility are labeled and that the labels are up to date.

9.0 ENGINEERING CONTROLS

Portable fire extinguishers throughout the facility shall be inspected and tagged on an annual basis.

All chemical stockrooms/storerooms throughout the facility shall be kept clean and be well ventilated.

Ventilated storage cabinets for chemicals shall be provided, as needed, throughout the facility.

10.0 PERSONAL PROTECTIVE EQUIPMENT

Employees are required to wear gloves when the employee has the potential for direct skin contact with hazardous chemicals.

All personal protective equipment is to be removed immediately upon leaving the work area and laundered, if necessary.

Foot coverage must be complete. Open-toed shoes are not permitted.

When the use of a respirator is necessary to reduce exposure, the respirator shall only be selected and used in accordance with the requirements of OSHA's Respiratory Protection Standard - 29 CFR 1910.134. The Office of Occupational Safety and Health (OOSH) will be responsible for implementing regulations dealing with this Standard.

11.0 WASTE REMOVAL

To assure minimal harm to people, other organisms, and the environment, all disposals of hazardous chemicals must be done in accordance with Federal, State and local guidelines. Only those chemicals reasonably soluble in water are suitable for drain disposal. A compound is considered water soluble if it dissolves to the extent of at least 3%. These compounds are flushed with at least 100 volumes of excess water.

Indiscriminate disposal by pouring waste chemicals down the drain or adding them to mixed refuse for landfill is unacceptable. Chemical waste is removed from schools periodically. The school should store its hazardous waste in a secure area until picked up by a licensed contractor. After the Custodian has completed a work order for the removal of hazardous waste, he/she should contact the Division of School Facilities, Hazardous Waste Unit, 44-36 Vernon Blvd. 5th Floor, LIC, NY 11101, (718) 361-3801 regarding this request.

12.0 CHEMICAL SPILLS

Chemical spills are contained using the Think **C.L.E.A.N.** Program:

- **C**. Contain the spill
- **L**. Leave the area
- **E**. Emergency - eye wash, shower, medical care
- **A**. Access MSDS
- **N**. Notify a supervisor

In case of a large spill or emergency, the employee should follow the School's Safety Plan and the Site Safety Officer should notify the Office of Occupational Safety and Health.

13.0 CUSTODIAL SERVICE

The Custodian is a public employee and is therefore covered by the general Written Hazard Communication Plan. The Custodian is responsible for all recordkeeping requirements concerning his/her employees, which includes a written Hazard Communication Plan specific to his/her employees. This information will be placed and maintained in a **Custodial Health and Safety Information File**. This document will be kept in a central location and made available to employees upon request.

14.0 RECORDKEEPING

The Site Safety Officer will keep a complete personnel roster of employees who handle or use substances included in Federal OSHA's Subpart Z List of Hazardous Substances – 29 CFR 1910.1000. These records will be made available upon request to employees, their physicians or designated representatives, the PESH Bureau or OOSH and will be kept on file for 40 years.

The Site Safety Officer or another designated employee will also be responsible for maintaining the following records at the site: accident reports, monitoring records, and employee training attendance records.

Table 6 - Location of Accident Records

LOCATION OF ACCIDENT RECORDS			
Responsible Person	**Floor**	**Room**	**Building**

Table 7 - Location of Monitoring Records

LOCATION OF MONITORING RECORDS			
Responsible Person	**Floor**	**Room**	**Building**

All records should be kept, transferred, and made available in accordance with 29 CFR 1910.20.

SH 900, SH 900.1 and SH 900.2
As mandated by Part 801 of Title 12 of the Official Compilation of Codes, Rules and Regulations of the State of New York (12 NYCRR Part 801), each public employer must maintain a record of all recordable occupational injuries and illnesses. This record must be filed annually with the New York State Department of Labor. **Failure to do so may result in a violation**.

As of January 2002, occupational injuries and illnesses are maintained on three forms, SH 900, SH 900.1 and SH 900.2. These forms are maintained on the calendar year, from January 1st through December 31st. These forms should be maintained on file at the site for five (5) years after the recorded year. (See

Appendix H)

By February 1st of each year a copy of the SH 900 and SH 900.1, accompanied by copies of the Comprehensive Accident Reports for all recordable illnesses and injuries should be forwarded to your Regional Office. Subsequently, your Regional Office will forward this information to the Office of Occupational Safety and Health (OOSH) by February 15th of each year.

- **SH 900 - Log of Work Related Injuries and Illnesses**
  This form should be filled out and updated, as necessary. This form does not have to be posted.

- **SH 900.1 - Summary of Work Related Injuries and Illnesses**
  This form should be filled out using the information collected on the SH 900 form. A copy of the completed form for the injuries and illnesses that occurred at the site during the calendar year, January through December, should be posted from February 1st through April 30th of the following year.

- **SH 900.2 - Injury and Illness Report**
  This form contains information concerning employee health and must be maintained in a manner that protects the confidentiality of the employee to the extent possible while providing the necessary occupational safety and health information. **This form should not be posted**.

Table 8 - Location Work Related Injuries and Illnesses Record- SH 900, SH 900.1 & SH 900.2

LOCATION WORK RELATED INJURIES AND ILLNESSES RECORD- SH 900, SH 900.1 & SH 900.2			
Responsible Person	**Floor**	**Room**	**Building**

GLOSSARY

ACGIH - American Conference of Governmental Industrial Hygienists - a group of independent industrial hygienists that periodically review the effectiveness of OSHA's PELS.

ADMINISTRATIVE CONTROLS - Any measure that can be taken to eliminate the hazard, which could include: rotating jobs, worker education, enforcing rules and procedures.

ACUTE - Health effects which show up in a short length of time after exposure. An acute exposure runs a short course.

AHERA - Asbestos Hazard Emergency Response Act of 1986 – requires public school officials to report on and abate any conditions related to asbestos containing materials in their buildings.

CARCINOGEN - A substance or agent that is capable of causing cancer when people or animals are exposed to them.

CAUSTIC - A corrosive chemical with a high pH (basic and alkaline).

CHEMICAL AGENTS - A wide variety of materials, some of which have a high potential for body entry. Some are toxic and require special measures of control for safety and environmental protection.

CHRONIC - An adverse effect and/or symptoms that develops or recurs slowly over a long period of time. A chronic exposure is prolonged, persistent or repeated.

COMBUSTIBLE - A term generally used to describe any material, chemical or substance that can burn.

CONTAMINANT - Poison, toxic substance – anything that makes air or water dirty or unfit for human consumption.

DERMATITIS - Inflammation of the skin, such as redness, rash, dry or cracking skin, blisters swelling or pain. May result from exposure to toxic or abrasive substances.

DOT - Department of Transportation.

EPA - Environmental Protection Agency - the federal agency responsible for regulating environmental hazards.

EXPOSURE - When a worker takes in a toxic substance by breathing, eating, skin absorption or other means, he or she is exposed to that substance. Exposure is measured over time and in amount (dose).

EXTREMELY HAZARDOUS SUBSTANCE - Acute toxin with exposure level less than 2 ppm or 2 mg/m^3, carcinogens, reproductive toxins.

FLAMMABLE - Capable of being easily ignited.

FLASH POINT - The minimum temperature at which a liquid gives off vapor in sufficient concentration to ignite.

HAZARDOUS CHEMICALS - Any chemical which is a health or physical hazard.

HAZARDOUS MATERIAL - A substance or material which, if handled improperly, has the potential of causing harm to health, property or the environment.

HAZARDOUS WASTE - Waste material regulated by the Resource Conservation and Recovery Act as a substance that can cause harm to human health or the environment if handled improperly.

HEALTH HAZARD - Any type of job-related noise, dusts, gases, toxic chemicals, substances, or dangerous working condition which could cause an accident, injury, disease or death to workers.

INFECTIOUS AGENTS - Sources that cause infections either by inhalation, ingestion, or direct contact.

LC 50 - The concentration of a substance that causes death in 50% of the animal exposed by inhalation. A measure of acute toxicity.

LD 50 -The dose that causes death in 50% of exposed animals. A measure of acute toxicity.

LEL - Lower Explosive Limit – the concentration of a compound in air below which a flame will not propagate if the mixture is ignited.

MSDS - Material Safety Data Sheet – product specific sheet prepared by the product's manufacturer to provide information regarding its potential hazards and preventative procedures.

MUTAGEN - A substance capable of changing cells in such a way that future cell generations are affected. Mutagenic substances are suspect carcinogens.

OCCUPATIONAL ILLNESS - Any abnormal condition or disorder, other than one

resulting from an occupational injury, caused by exposure to environmental factors associated with employment.

OCCUPATIONAL INJURY - Any injury such as a cut, fracture, sprain or amputation that results from a work-related accident or from exposure involving a single incident in the workplace.

OSHA - Occupational Safety and Health Administration - the branch of the United States Department of Labor which is concerned with employee safety and health.

PEL - Permissible Exposure Limit - the numerical level of a chemical or substance above which a worker cannot legally be exposed. An exposure limit that is published and enforced by OSHA as a legal standard.

PESH - Public Employee Safety and Health - this agency operates out of the New York State Department of Labor and it enforces OSHA regulations for Public Employees.

pH - A measure of how acidic or alkalinic a substance is on a scale of 1 (very acidic) to 14 (very basic).

PHYSICAL AGENTS - Workplace sources recognized for their potential effects on the body. Heat exposure or excessive noise levels are examples.

PHYSICAL HAZARD - 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 or water reactive.

SENSITIZERS - Agents which cause an allergic reaction.

SITE SAFETY OFFICER - 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 Hazard Communication Program.

STERILITY - Changes in reproductive systems resulting in an inability to reproduce.

TERATOGENS - Substances that cause deformity to the fetus during pregnancy.

TLV - Threshold Limit Value - the amount of exposure to a contaminant allowable for an employee in an 8-hour workday or 40-hour workweek.

UEL - Upper Explosive Limit - the concentration of a compound in air above which a flame will not propagate if the mixture is ignited.

REFERENCES

1. US Department of Labor, Code of Federal Regulations 29 CFR Part 1910.1200 Hazard Communication Standard

2. US Department of Labor, Code of Federal Regulations 29 CFR Part 1910.1000 Air Contaminants Standard

3. State of New York Department of Labor, Public Employee Safety and Health Act

4. National Research Council. Prudent Practices of Disposal of Chemicals from Facilities, National Academy Press, 1983.
5. Kohn, J.P., et al., Fundamentals of Occupational Safety and Health. Government Institutes, 1996.

6. Plog, Barbara A., et al., Fundamentals of Industrial Hygiene, 4th Edition. National Safety Council, 1996.

7. Dinardi, Salvatore R., The Occupational Environment – Its Evaluation and Control. American Industrial Hygiene Association, 1997.

SECTION II – APPENDICES

APPENDIX A

HAZARD COMMUNICATION STANDARD
29 CFR 1910.1200

Regulations (Standards - 29 CFR)

Hazard Communication. - 1910.1200

Regulations (Standards - 29 CFR) - Table of Contents

• **Part Number:**	1910
• **Part Title:**	Occupational Safety and Health Standards
• **Subpart:**	Z
• **Subpart Title:**	Toxic and Hazardous Substances
• **Standard Number:**	1910.1200
• **Title:**	Hazard Communication.
• **Appendix:**	A , B , C , D , E

1910.1200(a)

"Purpose."

1910.1200(a)(1)

The purpose of this section 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.

..1910.1200(a)(2)

1910.1200(a)(2)

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 a 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. Under section 18 of the Act, no state or political subdivision of a state may adopt or enforce, through any court or agency, any requirement relating to the issue addressed by this Federal standard, except pursuant

to a Federally-approved state plan.

1910.1200(b)

"Scope and application."

1910.1200(b)(1)

This section 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 section 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 section is a general guide for such employers to help them determine their compliance obligations under the rule.)

1910.1200(b)(2)

This section 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.

1910.1200(b)(3)

This section applies to laboratories only as follows:

1910.1200(b)(3)(i)

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

..1910.1200(b)(3)(ii)

1910.1200(b)(3)(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 during each workshift to laboratory employees when they are in their work areas;

1910.1200(b)(3)(iii)

Employers shall ensure that laboratory employees are provided information and training in accordance with paragraph (h) of this section, except for the location and availability of the written hazard communication program under paragraph (h)(2)(iii) of this section; and,

1910.1200(b)(3)(iv)

Laboratory employers that ship hazardous chemicals are considered to be

either a chemical manufacturer or a distributor under this rule, and thus must ensure that any containers of hazardous chemicals leaving the laboratory are labeled in accordance with paragraph (f)(1) of this section, and that a material safety data sheet is provided to distributors and other employers in accordance with paragraphs (g)(6) and (g)(7) of this section.

1910.1200(b)(4)

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 section applies to these operations only as follows:

1910.1200(b)(4)(i)

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

..1910.1200(b)(4)(ii)

1910.1200(b)(4)(ii)

Employers shall maintain copies of any material safety data sheets that are received with incoming shipments of the sealed containers of hazardous chemicals, 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 safety 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,

1910.1200(b)(4)(iii)

Employers shall ensure that employees are provided with information and training in accordance with paragraph (h) of this section (except for the location and availability of the written hazard communication program under paragraph (h)(2)(iii) of this section), to the extent necessary to protect them in the event of a spill or leak of a hazardous chemical from a sealed container.

1910.1200(b)(5)

This section does not require labeling of the following chemicals:

1910.1200(b)(5)(i)

Any pesticide 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;

1910.1200(b)(5)(ii)

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;

..1910.1200(b)(5)(iii)

1910.1200(b)(5)(iii)

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 (e.g. 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;

1910.1200(b)(5)(iv)

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;

1910.1200(b)(5)(v)

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,

1910.1200(b)(5)(vi)

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.

..1910.1200(b)(6)

1910.1200(b)(6)

This section does not apply to:

1910.1200(b)(6)(i)

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;

1910.1200(b)(6)(ii)

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 action being conducted under CERCLA in accordance with the Environmental Protection Agency regulations.

1910.1200(b)(6)(iii)

Tobacco or tobacco products;

1910.1200(b)(6)(iv)

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);

1910.1200(b)(6)(v)

Articles (as that term is defined in paragraph (c) of this section);

1910.1200(b)(6)(vi)

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;

..1910.1200(b)(6)(vii)

1910.1200(b)(6)(vii)

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 (e.g., tablets or pills); drugs which are packaged by the chemical manufacturer for sale to consumers in a retail establishment (e.g., over-the-counter drugs); and drugs intended for personal consumption by employees while in the workplace (e.g., first aid supplies);

1910.1200(b)(6)(viii)

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

1910.1200(b)(6)(ix)

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;

1910.1200(b)(6)(x)

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

1910.1200(b)(6)(xi)

Ionizing and nonionizing radiation; and,

1910.1200(b)(6)(xii)

Biological hazards.

1910.1200(c)

"Definitions."

"Article" means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees.

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

"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 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.

"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, brand name or generic name used to identify a chemical other than by its chemical name.

"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 deg. C) 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 whom 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, U.S. 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 non-routine, isolated instances are not covered.

"Employer" means a person engaged in a business where chemicals are either used, distributed, or are produced for use or distribution, including a contractor or subcontractor.

"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 (e.g. accidental or possible) exposure. "Subjected" in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption.)

"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 projection 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 thirteen (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 twelve (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. F (37.8 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 Flash Point 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.

"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.

"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 which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes. Appendix A provides further definitions and explanations of the scope of health hazards covered by this section, and Appendix B 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 paragraph (g) of this section.

"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 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 deg. F (54.4 deg. C) or below.

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

"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.

"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 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.

..1910.1200(d)

1910.1200(d)

"Hazard determination."

1910.1200(d)(1)

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.

1910.1200(d)(2)

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.

1910.1200(d)(3)

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

1910.1200(d)(3)(i)

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

..1910.1200(d)(3)(ii)

1910.1200(d)(3)(ii)

"Threshold Limit Values for Chemical Substances and Physical Agents in

the Work Environment," American Conference of Governmental Industrial Hygienists (ACGIH) (latest 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.

1910.1200(d)(4)

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:

1910.1200(d)(4)(i)

National Toxicology Program (NTP), "Annual Report on Carcinogens" (latest edition);

1910.1200(d)(4)(ii)

International Agency for Research on Cancer (IARC) "Monographs" (latest editions); or

1910.1200(d)(4)(iii)

29 CFR part 1910, subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration.

Note: 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.

1910.1200(d)(5)

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

1910.1200(d)(5)(i)

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;

..1910.1200(d)(5)(ii)

1910.1200(d)(5)(ii)

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 paragraph (d)(4) of this section;

1910.1200(d)(5)(iii)

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,

1910.1200(d)(5)(iv)

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.

1910.1200(d)(6)

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 Assistant Secretary and the Director. The written description may be incorporated into the written hazard communication program required under paragraph (e) of this section.

..1910.1200(e)

1910.1200(e)

"Written hazard communication program."

1910.1200(e)(1)

Employers shall develop, implement, and maintain at each workplace, a written hazard communication program which at least describes how the criteria specified in paragraphs (f), (g), and (h) of this section 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:

1910.1200(e)(1)(i)

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,

1910.1200(e)(1)(ii)

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.

1910.1200(e)(2)

"Multi-employer workplaces." 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 this paragraph (e) include the following:

1910.1200(e)(2)(i)

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;

..1910.1200(e)(2)(ii)

1910.1200(e)(2)(ii)

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,

1910.1200(e)(2)(iii)

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

1910.1200(e)(3)

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

1910.1200(e)(4)

The employer shall make the written hazard communication program available, upon request, to employees, their designated representatives, the Assistant Secretary and the Director, in accordance with the requirements of 29 CFR 1910.1020 (e).

1910.1200(e)(5)

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

1910.1200(f)

"Labels and other forms of warning."

1910.1200(f)(1)

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:

..1910.1200(f)(1)(i)

1910.1200(f)(1)(i)

Identity of the hazardous chemical(s);

1910.1200(f)(1)(ii)

Appropriate hazard warnings; and

1910.1200(f)(1)(iii)

Name and address of the chemical manufacturer, importer, or other responsible party.

1910.1200(f)(2)

1910.1200(f)(2)(i)

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;

1910.1200(f)(2)(ii)

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; and,

1910.1200(f)(2)(iii)

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).

..1910.1200(f)(3)

1910.1200(f)(3)

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.

1910.1200(f)(4)

If the hazardous chemical is regulated by OSHA 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.

1910.1200(f)(5)

Except as provided in paragraphs (f)(6) and (f)(7) of this section, the employer shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged or marked with the following information:

1910.1200(f)(5)(i)

Identity of the hazardous chemical(s) contained therein; and,

1910.1200(f)(5)(ii)

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.

..1910.1200(f)(6)

1910.1200(f)(6)

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 paragraph (f)(5) of this section to be on a label. The written materials shall be readily accessible to the employees in their work area throughout each work shift.

1910.1200(f)(7)

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.

1910.1200(f)(8)

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.

1910.1200(f)(9)

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.

1910.1200(f)(10)

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.

..1910.1200(f)(11)

1910.1200(f)(11)

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.

1910.1200(g)

"Material safety data sheets."

1910.1200(g)(1)

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.

1910.1200(g)(2)

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:

1910.1200(g)(2)(i)

The identity used on the label, and, except as provided for in paragraph (i) of this section on trade secrets:

1910.1200(g)(2)(i)(A)

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

1910.1200(g)(2)(i)(B)

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,

1910.1200(g)(2)(i)(C)

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

..1910.1200(g)(2)(i)(C)(1)

1910.1200(g)(2)(i)(C)(1)

The chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise 1% or greater of the composition, except that chemicals identified as carcinogens under paragraph (d) of this section shall be listed if the concentrations are 0.1% or greater; and,

1910.1200(g)(2)(i)(C)(2)

The chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise less than 1% (0.1% 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,

1910.1200(g)(2)(i)(C)(3)

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

1910.1200(g)(2)(ii)

Physical and chemical characteristics of the hazardous chemical (such as vapor pressure, flash point);

1910.1200(g)(2)(iii)

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

1910.1200(g)(2)(iv)

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;

1910.1200(g)(2)(v)

The primary route(s) of entry;

..1910.1200(g)(2)(vi)

1910.1200(g)(2)(vi)

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;

1910.1200(g)(2)(vii)

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;

1910.1200(g)(2)(viii)

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;

1910.1200(g)(2)(ix)

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;

1910.1200(g)(2)(x)

Emergency and first aid procedures;

1910.1200(g)(2)(xi)

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

..1910.1200(g)(2)(xii)

1910.1200(g)(2)(xii)

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.

1910.1200(g)(3)

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.

1910.1200(g)(4)

Where complex mixtures have similar hazards and contents (i.e. 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.

1910.1200(g)(5)

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.

..1910.1200(g)(6)

1910.1200(g)(6)

1910.1200(g)(6)(i)

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;

1910.1200(g)(6)(ii)

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;

1910.1200(g)(6)(iii)

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; and,

1910.1200(g)(6)(iv)

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

1910.1200(g)(7)

1910.1200(g)(7)(i)

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;

1910.1200(g)(7)(ii)

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;

..1910.1200(g)(7)(iii)

1910.1200(g)(7)(iii)

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 a sign or otherwise inform them that a material safety data sheet is available;

1910.1200(g)(7)(iv)

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 material safety data sheet is available;

1910.1200(g)(7)(v)

If an employer without a commercial account purchases a hazardous chemical from a retail distributor not required to have material safety data sheets on file (i.e., 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;

1910.1200(g)(7)(vi)

Wholesale distributors shall also provide material safety data sheets to employers or other distributors upon request; and,

1910.1200(g)(7)(vii)

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.

..1910.1200(g)(8)

1910.1200(g)(8)

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.)

1910.1200(g)(9)

Where employees must travel between workplaces during a workshift, i.e., 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.

1910.1200(g)(10)

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 hazardous 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).

1910.1200(g)(11)

Material safety data sheets shall also be made readily available, upon request, to designated representatives and to the Assistant Secretary, 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.

..1910.1200(h)

1910.1200(h)

"Employee information and training."

1910.1200(h)(1)

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. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and material safety data sheets.

1910.1200(h)(2)

"Information." Employees shall be informed of:

1910.1200(h)(2)(i)

The requirements of this section;

1910.1200(h)(2)(ii)

Any operations in their work area where hazardous chemicals are present; and,

1910.1200(h)(2)(iii)

The location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals, and material safety data sheets required by this section.

1910.1200(h)(3)

"Training." Employee training shall include at least:

1910.1200(h)(3)(i)

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.);

1910.1200(h)(3)(ii)

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

..1910.1200(h)(3)(iii)

1910.1200(h)(3)(iii)

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; and,

1910.1200(h)(3)(iv)

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.

1910.1200(i)

"Trade secrets."

1910.1200(i)(1)

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:

1910.1200(i)(1)(i)

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

1910.1200(i)(1)(ii)

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

1910.1200(i)(1)(iii)

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

1910.1200(i)(1)(iv)

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

..1910.1200(i)(2)

1910.1200(i)(2)

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 paragraphs (i)(3) and (4) of this section, as soon as circumstances permit.

1910.1200(i)(3)

In non-emergency situations, a chemical manufacturer, importer, or employer shall, upon request, disclose a specific chemical identity, otherwise permitted to be withheld under paragraph (i)(1) of this section, to a health professional (i.e. 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:

1910.1200(i)(3)(i)

The request is in writing;

1910.1200(i)(3)(ii)

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

1910.1200(i)(3)(ii)(A)

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

1910.1200(i)(3)(ii)(B)

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

1910.1200(i)(3)(ii)(C)

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

1910.1200(i)(3)(ii)(D)

To provide medical treatment to exposed employees;

..1910.1200(i)(3)(ii)(E)

1910.1200(i)(3)(ii)(E)

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

1910.1200(i)(3)(ii)(F)

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

1910.1200(i)(3)(ii)(G)

To conduct studies to determine the health effects of exposure.

1910.1200(i)(3)(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 to the health professional, employee, or designated representative, would not satisfy the purposes described in paragraph (i)(3)(ii) of this section:

1910.1200(i)(3)(iii)(A)

The properties and effects of the chemical;

1910.1200(i)(3)(iii)(B)

Measures for controlling workers' exposure to the chemical;

1910.1200(i)(3)(iii)(C)

Methods of monitoring and analyzing worker exposure to the chemical; and,

1910.1200(i)(3)(iii)(D)

Methods of diagnosing and treating harmful exposures to the chemical;

1910.1200(i)(3)(iv)

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

..1910.1200(i)(3)(v)

1910.1200(i)(3)(v)

The health professional, and the employer or contractor of the services of the health professional (i.e. 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 OSHA, as provided in paragraph (i)(6) of this section, except as authorized by the terms of the agreement or by the chemical manufacturer, importer, or employer.

1910.1200(i)(4)

The confidentiality agreement authorized by paragraph (i)(3)(iv) of this section:

1910.1200(i)(4)(i)

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

1910.1200(i)(4)(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,

1910.1200(i)(4)(iii)

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

1910.1200(i)(5)

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

1910.1200(i)(6)

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.

..1910.1200(i)(7)

1910.1200(i)(7)

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

1910.1200(i)(7)(i)

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

1910.1200(i)(7)(ii)

Be in writing;

1910.1200(i)(7)(iii)

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

1910.1200(i)(7)(iv)

State the specific reasons why the request is being denied; and,

1910.1200(i)(7)(v)

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

1910.1200(i)(8)

The health professional, employee, or designated representative whose request for information is denied under paragraph (i)(3) of this section may refer the request and the written denial of the request to OSHA for consideration.

1910.1200(i)(9)

When a health professional, employee, or designated representative refers the denial to OSHA under paragraph (i)(8) of this section, OSHA shall consider the evidence to determine if:

..1910.1200(i)(9)(i)

1910.1200(i)(9)(i)

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

1910.1200(i)(9)(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,

1910.1200(i)(9)(iii)

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

1910.1200(i)(10)

1910.1200(i)(10)(i)

If OSHA determines that the specific chemical identity requested under paragraph (i)(3) 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 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 OSHA.

..1910.1200(i)(10)(ii)

1910.1200(i)(10)(ii)

If a chemical manufacturer, importer, or 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 services are provided without an undue risk of harm to the chemical manufacturer, importer, or employer.

1910.1200(i)(11)

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 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 camera" or issue appropriate orders to protect the confidentiality of such matters.

1910.1200(i)(12)

Notwithstanding the existence of a trade secret claim, a chemical manufacturer, importer, or employer shall, upon request, disclose to the Assistant Secretary any information which this section 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 Assistant Secretary so that suitable determinations of trade secret status can be made and the necessary protections can be implemented.

1910.1200(i)(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.

..1910.1200(j)

1910.1200(j)

"Effective dates." Chemical manufacturers, importers, distributors, and employers shall be in compliance with all provisions of this section by March 11, 1994.

Note: The effective date of the clarification that the exemption of wood and wood products from the Hazard Communication standard in paragraph (b)(6)(iv) only applies to wood and wood products including lumber which will not be processed, where the manufacturer or importer can establish that the only hazard they pose to employees is the potential for flammability or combustibility, and that the exemption does not apply to 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 has been stayed from March 11, 1994 to August 11, 1994.

[59 FR 17479, April 13, 1994; 59 FR 65947, Dec. 22, 1994; 61 FR 5507, Feb. 13, 1996]

Health Hazard Definitions (Mandatory) - 1910.1200 App A

Regulations (Standards - 29 CFR) - Table of Contents

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** Z
- **Subpart Title:** Toxic and Hazardous Substances
- **Standard Number:** 1910.1200 App A
- **Title:** Health Hazard Definitions (Mandatory)

Although safety hazards related to the physical characteristics of a chemical can be objectively defined in terms of testing requirements (e.g. 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 non-measurable, 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 exposures, 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 (Z129.1-1988) - 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 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 HCS.

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 (NTP) (latest edition); 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 U.S. Department of Transportation in appendix A to 49 CFR part 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 2 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 & Symptoms: Jaundice; liver enlargement
Chemicals: Carbon tetrachloride; nitrosamines

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

c. Neurotoxins: Chemicals which produce their primary toxic effects on the nervous system
Signs & 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 & Symptoms: Cyanosis; loss of consciousness
Chemicals: Carbon monoxide; cyanides

e. Agents which damage the lung: Chemicals which irritate or damage pulmonary tissue
Signs & 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 & Symptoms: Birth defects; sterility
Chemicals: Lead; DBCP

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

h. Eye hazards: Chemicals which affect the eye or visual capacity
Signs & Symptoms: Conjunctivitis; corneal damage
Chemicals: Organic solvents; acids

Hazard determination (Mandatory) - 1910.1200 App B

Regulations (Standards - 29 CFR) - Table of Contents

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** Z
- **Subpart Title:** Toxic and Hazardous Substances
- **Standard Number:** 1910.1200 App B
- **Title:** 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 paragraph (d)(4) of this section and Appendix A of this section, 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 the rule.

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 HCS 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.

Information sources (Advisory) - 1910.1200 App C

Regulations (Standards - 29 CFR) - Table of Contents

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** Z
- **Subpart Title:** Toxic and Hazardous Substances
- **Standard Number:** 1910.1200 App C
- **Title:** Information sources (Advisory)

Editorial Note: The Federal Register of March 7, 1996, removed 1910.1200 Appendix C.

[61 FR 9227, March 7, 1996]

Definition of "Trade Secret" (Mandatory) - 1910.1200 App D

Regulations (Standards - 29 CFR) - Table of Contents

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** Z
- **Subpart Title:** Toxic and Hazardous Substances
- **Standard Number:** 1910.1200 App D
- **Title:** Definition of "Trade Secret" (Mandatory)

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

b. "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 him 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 s759 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 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 his secret. Matters which are completely disclosed by the goods which one markets cannot be his 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 know it. He may, without losing his protection, communicate it to employees involved in its use. He 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 his business; (2) the extent to which it is known by employees and others involved in his business; (3) the extent of measures taken by him to guard the secrecy of the information; (4) the value of the information to him and his competitors; (5) the amount of effort or money expended by him in developing the information; (6) the ease or 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 unlicensed 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 his past use. If, on the other hand, the secret consists of mechanical improvements that a good mechanic can make without resort 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.

Guidelines for Employer Compliance (Advisory) - 1910.1200 App E

Regulations (Standards - 29 CFR) - Table of Contents

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** Z
- **Subpart Title:** Toxic and Hazardous Substances
- **Standard Number:** 1910.1200 App E
- **Title:** 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's 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 don't produce or import chemicals need only focus on those parts of the rule 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's required under the rule. 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 Rule."

OSHA has provided a simple summary of the HCS in a pamphlet entitled "Chemical Hazard Communication," OSHA Publication Number 3084. Some employers prefer to begin to become familiar with the rule's requirements by reading this pamphlet. A copy may be obtained from your local OSHA

Area Office, or by contacting the OSHA Publications Office at (202) 523-9667.

The standard is long, and some parts of it are technical, but the basic concepts are simple. In fact, the requirements reflect what many employers have been doing for years. You may find that you are already largely in compliance with many of the provisions, and will simply have to modify your existing programs somewhat. If you are operating in an OSHA-approved State Plan State, you must comply with the State's requirements, which may be different than those of the Federal rule. Many of the State Plan States had hazard communication or "right-to-know" laws prior to promulgation of the Federal rule. Employers in State Plan States should contact their State OSHA offices for more information regarding applicable requirements.

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 rule.

One difference between this rule and many others adopted by OSHA is that this one is performance-oriented. That means that you have the flexibility to adapt the rule 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 rule that deal specifically with the hazard communication program are found in this section in paragraphs (e), written hazard communication program; (f), labels and other forms of warning; (g), material safety data sheets; and (h), employee information and training. The requirements of these paragraphs should be the focus of your attention. Concentrate on becoming familiar with them, using paragraphs (b), scope and application, and (c), 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 (e.g., a warehouse). The limited provisions for these workplaces can be found in paragraph (b) of this section, 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 written hazard communication programs 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's not hazardous, it's not covered. If there is no potential for exposure (e.g., 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.

Paragraph (b) of this section, scope and application, includes exemptions for various chemicals or workplace situations. After compiling the complete list of chemicals, you should review paragraph (b) of this section 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 don't 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 rule. See paragraph (e) of this section for the specific requirements regarding written hazard communication programs. 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 paragraph (b) of this section, 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 OSHA inspects your workplace for compliance with the HCS, the OSHA 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 paragraph (f) of this section 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 (1,1,1,-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 rule. 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 (paragraph (f)(7) of this section). In terms of labeling systems, you can simply choose to use the labels provided by your suppliers on the containers. These 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 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 paragraph (g) of this section. There is no specified format for the MSDS under the rule, although there are specific information requirements. OSHA has developed a non-mandatory 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 which 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 your local OSHA Area Office for assistance in obtaining the MSDS.

The role of MSDSs under the rule 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 employer 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 workshifts. 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 (e.g., 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, paragraph (g)(9) of this section, 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 (e.g., 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. "Exposure" or "exposed" under the rule means that "an employee is

subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.) and includes potential (e.g., accidental or possible) exposure." See paragraph (h) of this section 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 (e.g., 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 comprehension 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 paragraph (h) of this section); 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. OSHA 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. OSHA compliance officers will be talking to employees to determine if they have received training, if they know they are exposed to hazardous chemicals, and if they know where to obtain substance-specific information on labels and MSDSs.

The rule does not require employers to maintain records of employee training, but many employers choose to do so. This may help you monitor your own program to ensure that all employees are appropriately trained. 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 MSDSs), 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 specific 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 non-routine tasks outlined?

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

On multi-employer worksites, 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:

Obtained a copy of the rule. _____
Read and understood the requirements. _____
Assigned responsibility for tasks. _____
Prepared an inventory of chemicals. _____
Ensured containers are labeled. _____
Obtained MSDS 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 HCS, you should contact your local OSHA Area Office for assistance. In addition, each OSHA Regional Office has a Hazard Communication Coordinator who can answer your questions. Free consultation services are also available to assist employers, and information regarding these services can be obtained through the Area and Regional offices as well.

The telephone number for the OSHA office closest to you should be listed in your local telephone directory. If you are not able to obtain this

information, you may contact OSHA's Office of Information and Consumer Affairs at (202) 219-8151 for further assistance in identifying the appropriate contacts.

[52 FR 31877, Aug. 24, 1987; 52 FR 46080, Dec. 4, 1987; 53 FR 15035, Apr. 27, 1988; 54 FR 6888, Feb. 15, 1989; 54 FR 24334, June 7, 1989; 59 FR 6170, Feb. 9, 1994; 59 FR 17479, April 13, 1994; 59 FR 65947, Dec. 22, 1994; 61 FR 5507, Feb. 13, 1996; 61 FR 9227, March 7, 1996]

APPENDIX A-1

SUBPART Z LIST OF HAZARDOUS SUBSTANCES: TABLE Z-1, TABLE Z-2 AND TABLE Z-3

- Part Number: 1910
- Part Title: Occupational Safety and Health Standards
- Subpart: Z
- Subpart Title: Toxic and Hazardous Substances
- Standard Number: 1910.1000 TABLE Z-1
- Title: TABLE Z-1 Limits for Air Contaminants.

TABLE Z-1 LIMITS FOR AIR CONTAMINANTS

NOTE: Because of the length of the table, explanatory Footnotes applicable to all substances are given below as well as at the end of the table. Footnotes specific only to a limited number of substances are also shown within the table.

Footnote(1) The PELs are 8-hour TWAs unless otherwise noted; a © designation denotes a ceiling limit. They are to be determined from breathing-zone air samples.

Footnote(a) Parts of vapor or gas per million parts of contaminated air by volume at 25 degrees C and 760 torr.

Footnote(b) Milligrams of substance per cubic meter of air. When entry is in this column only, the value is exact; when listed with a ppm entry, it is approximate.

Footnote© The CAS number is for information only. Enforcement is based on the substance name. For an entry covering more than one metal compound measured as the metal, the CAS number for the metal is given - not CAS numbers for the individual compounds.

Footnote(d) The final benzene standard in 1910.1028 applies to all occupational exposures to benzene except in some circumstances the distribution and sale of fuels, sealed containers and pipelines, coke production, oil and gas drilling and production, natural gas processing, and the percentage exclusion for liquid mixtures; for the excepted subsegments, the benzene limits in Table Z-2 apply. See 1910.1028 for specific circumstances.

Footnote(e) This 8-hour TWA applies to respirable dust as measured by a vertical elutriator cotton dust sampler or equivalent instrument. The time-weighted average applies to the cotton waste processing operations of waste recycling (sorting, blending, cleaning

and willowing) and garnetting. See also 1910.1043 for cotton dust limits applicable to other sectors.

Footnote(f) All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.

Footnote(2) See Table Z-2.

Footnote(3) See Table Z-3

Footnote(4) Varies with compound.

TABLE Z-1. - LIMITS FOR AIR CONTAMINANTS

Substance	CAS No. ©	ppm (a)(1)	mg/m(3) (b)(1)	Skin designation
Acetaldehyde	75-07-0	200	360	
Acetic acid	64-19-7	10	25	
Acetic anhydride	108-24-7	5	20	
Acetone	67-64-1	1000	2400	
Acetonitrile	75-05-8	40	70	
2-Acetylaminofluorene; see 1910.1014	53-96-3			
Acetylene dichloride; see 1,2-Dichloroethylene.				
Acetylene tetrabromide.	79-27-6	1	14	
Acrolein	107-02-8	0.1	0.25	
Acrylamide	79-06-1	.....	0.3	X
Acrylonitrile; see 1910.1045	107-13-1			
Aldrin	309-00-2	.....	0.25	X
Allyl alcohol	107-18-6	2	5	X
Allyl chloride	107-05-1	1	3	
Allyl glycidyl ether (AGE)	106-92-3	©10	©45	
Allyl propyl disulfide.	2179-59-1	2	12	
alpha-Alumina	1344-28-1			
Total dust		.....	15	
Respirable fraction		.....	5	

Aluminum Metal (as Al).	7429-90-5			
Total dust		.....	15	
Respirable fraction		.....	5	
4-Aminodiphenyl; see 1910.1011	92-67-1			
2-Aminoethanol; see Ethanolamine				
2-Aminopyridine	504-29-0	0.5	2	
Ammonia	7664-41-7	50	35	
Ammonium sulfamate	7773-06-0			
Total dust		.....	15	
Respirable fraction		.....	5	
n-Amyl acetate	628-63-7	100	525	
sec-Amyl acetate	626-38-0	125	650	
Aniline and homologs	62-53-3	5	19	X
Anisidine (o-,p-isomers)	29191-52-4	.....	0.5	X
Antimony and compounds (as Sb)	7440-36-0	.....	0.5	
ANTU (alpha Naphthylthiourea)	86-88-4	.....	0.3	
Arsenic, inorganic compounds (as As); see 1910.1018	7440-38-2			
Arsenic, organic compounds (as As)	7440-38-2	.....	0.5	
Arsine	7784-42-1	0.05	0.2	
Asbestos; see 1910.1001	(4)			
Azinphos-methyl	86-50-0	.....	0.2	X
Barium, soluble compounds (as Ba)	7440-39-3	.....	0.5	
Barium sulfate	7727-43-7			
Total dust		.....	15	
Respirable fraction		.....	5	
Benomyl	17804-35-2			
Total dust		.....	15	
Respirable fraction		.....	5	
Benzene; See 1910.1028. See Table Z-2 for the limits applicable in the operations or sectors excluded in 1910.1028(d)	71-43-2			
Benzidine; See 1910.1010	92-87-5			

p-Benzoquinone; see Quinone.				
Benzo(a)pyrene; see Coal tar pitch volatiles				
Benzoyl peroxide	94-36-0	.....	5	
Benzyl chloride	100-44-7	1	5	
Beryllium and beryllium compounds (as Be)	7440-41-7		(2)	
Biphenyl; see Diphenyl.				
Bismuth telluride, Undoped	1304-82-1			
Total dust		.....	15	
Respirable fraction		.....	5	
Boron oxide	1303-86-2			
Total dust		.....	15	
Boron trifluoride	7637-07-2	©1	©3	
Bromine	7726-95-6	0.1	0.7	
Bromoform	75-25-2	0.5	5	X
Butadiene (1,3-Butadiene); See 29 CFR 1910.1051; 29 CFR 1910.19(1)	106-99-0	1 ppm/5 ppm STEL		
Butanethiol; see Butyl mercaptan.				
2-Butanone (Methyl ethyl ketone)	78-93-3	200	590	
2-Butoxyethanol	111-76-2	50	240	X
n-Butyl-acetate	123-86-4	150	710	
sec-Butyl acetate	105-46-4	200	950	
tert-Butyl-acetate	540-88-5	200	950	
n-Butyl alcohol	71-36-3	100	300	
sec-Butyl alcohol	78-92-2	150	450	
tert-Butyl alcohol	75-65-0	100	300	
Butylamine	109-73-9	©5	©15	X
tert-Butyl chromate (as CrO(3))	1189-85-1	.....	©0.1	X
n-Butyl glycidyl ether (BGE)	2426-08-6	50	270	
Butyl mercaptan	109-79-5	10	35	
p-tert-Butyltoluene	98-51-1	10	60	
Cadmium (as Cd); see 1910.1027	7440-43-9			
Calcium Carbonate	1317-65-3			
Total dust		.....	15	
Respirable fraction		.....	5	

Calcium hydroxide.....	1305-62-0			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Calcium oxide.....	1305-78-8	.....	5	
Calcium silicate.....	1344-95-2			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Calcium sulfate.....	7778-18-9			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Camphor, synthetic.....	76-22-2	.....	2	
Carbaryl (Sevin).....	63-25-2	.....	5	
Carbon black.....	1333-86-4	.....	3.5	
Carbon dioxide.....	124-38-9	5000	9000	
Carbon disulfide.....	75-15-0		(2)	
Carbon monoxide.....	630-08-0	50	55	
Carbon tetrachloride...	56-23-5		(2)	
Cellulose.....	9004-34-6			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Chlordane.....	57-74-9	.....	0.5	X
Chlorinated camphene...	8001-35-2	.....	0.5	X
Chlorinated diphenyl oxide.....	55720-99-5	.....	0.5	
Chlorine.....	7782-50-5	©1	©3	
Chlorine dioxide.....	10049-04-4	0.1	0.3	
Chlorine trifluoride...	7790-91-2	©0.1	©0.4	
Chloroacetaldehyde.....	107-20-0	©1	©3	
a-Chloroacetophenone (Phenacyl chloride)..	532-27-4	0.05	0.3	
Chlorobenzene.....	108-90-7	75	350	
o-Chlorobenzylidene malononitrile.....	2698-41-1	0.05	0.4	
Chlorobromomethane.....	74-97-5	200	1050	
2-Chloro-1,3-butadiene; See beta-Chloroprene.				
Chlorodiphenyl (42% Chlorine)(PCB)..	53469-21-9	.....	1	X
Chlorodiphenyl (54% Chlorine)(PCB)..	11097-69-1	.....	0.5	X
1-Chloro-2, 3-epoxypropane; See Epichlorohydrin.				
2-Chloroethanol; See Ethylene chlorohydrin				
Chloroethylene; See Vinyl chloride.				

Chloroform (Trichloromethane)...	67-66-3	©50	©240	
bis(Chloromethyl) ether; see 1910.1008.	542-88-1			
Chloromethyl methyl ether; see 1910.1006.	107-30-2			
1-Chloro-1-nitropropane	600-25-9	20	100	
Chloropicrin.....	76-06-2	0.1	0.7	
beta-Chloroprene.....	126-99-8	25	90	X
2-Chloro-6 (trichloromethyl) pyridine.....	1929-82-4			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Chromic acid and chromates (as CrO(3))	(4)		(2)	
Chromium (II) compounds (as Cr).....	7440-47-3	.....	0.5	
Chromium (III) compounds (as Cr)....	7440-47-3	.....	0.5	
Chromium metal and insol. salts (as Cr).	7440-47-3	.....	1	
Chrysene; see Coal tar pitch volatiles.....				
Clopidol.....	2971-90-6			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Coal dust (less than 5% SiO(2)), respirable fraction..			(3)	
Coal dust (greater than or equal to 5% SiO(2)), respirable fraction.....			(3)	
Coal tar pitch volatiles (benzene soluble fraction), anthracene, BaP, phenanthrene, acridine, chrysene, pyrene.....	65966-93-2	.....	0.2	
Cobalt metal, dust, and fume (as Co).....	7440-48-4	.....	0.1	
Coke oven emissions; see 1910.1029.....				
Copper.....	7440-50-8			
Fume (as Cu).....		.....	0.1	

Dusts and mists (as Cu).....		.....	1	
Cotton dust (e), see 1910.1043.....		.....	1	
Crag herbicide (Sesone)	136-78-7			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Cresol, all isomers....	1319-77-3	5	22	X
Crotonaldehyde.....	123-73-9	2	6	
	4170-30-3			
Cumene.....	98-82-8	50	245	X
Cyanides (as CN).....	(4)	.....	5	X
Cyclohexane.....	110-82-7	300	1050	
Cyclohexanol.....	108-93-0	50	200	
Cyclohexanone.....	108-94-1	50	200	
Cyclohexene.....	110-83-8	300	1015	
Cyclopentadiene.....	542-92-7	75	200	
2,4-D (Dichlorophen- oxyacetic acid).....	94-75-7	.....	10	
Decaborane.....	17702-41-9	0.05	0.3	X
Demeton (Systox).....	8065-48-3	.....	0.1	X
Diacetone alcohol (4-Hydroxy-4-methyl- 2-pentanone).....	123-42-2	50	240	
1,2-Diaminoethane; see Ethylenediamine..				
Diazomethane.....	334-88-3	0.2	0.4	
Diborane.....	19287-45-7	0.1	0.1	
1,2-Dibromo-3- chloropropane (DBCP); see 1910.1044.....	96-12-8			
1,2-Dibromoethane; see Ethylene dibromide...				
Dibutyl phosphate.....	107-66-4	1	5	
Dibutyl phthalate.....	84-74-2	.....	5	
o-Dichlorobenzene.....	95-50-1	©50	©300	
p-Dichlorobenzene.....	106-46-7	75	450	
3,3’-Dichlorobenzidine; see 1910.1007.....	91-94-1			
Dichlorodifluoromethane	75-71-8	1000	4950	
1,3-Dichloro-5, 5-dimethyl hydantoin.	118-52-5	.....	0.2	
Dichlorodiphenyltri- chloroethane (DDT)...	50-29-3	.....	1	X
1,1-Dichloroethane.....	75-34-3	100	400	
1,2-Dichloroethane; see Ethylene dichloride..				

1,2-Dichloroethylene...	540-59-0	200	790	
Dichloroethyl ether....	111-44-4	©15	©90	X
Dichloromethane; see Methylene chloride...				
Dichloromonofluoro-methane.....	75-43-4	1000	4200	
1,1-Dichloro-1-nitroethane.....	594-72-9	©10	©60	
1,2-Dichloropropane; see Propylene dichloride.				
Dichlorotetrafluoro-ethane.....	76-14-2	1000	7000	
Dichlorvos (DDVP).....	62-73-7	.....	1	X
Dicyclopentadienyl iron	102-54-5			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Dieldrin.....	60-57-1	.....	0.25	X
Diethylamine.....	109-89-7	25	75	
2-Diethylaminoethanol..	100-37-8	10	50	X
Diethyl ether; see Ethyl ether.....				
Difluorodibromomethane.	75-61-6	100	860	
Diglycidyl ether (DGE).	2238-07-5	©0.5	©2.8	
Dihydroxybenzene; see Hydroquinone.....				
Diisobutyl ketone.....	108-83-8	50	290	
Diisopropylamine.....	108-18-9	5	20	X
4-Dimethylaminoazo-benzene; see 1910.1015.....	60-11-7			
Dimethoxymethane; see Methylal.....				
Dimethyl acetamide.....	127-19-5	10	35	X
Dimethylamine.....	124-40-3	10	18	
Dimethylaminobenzene; see Xylidine.....				
Dimethylaniline (N,N-Dimethylaniline)	121-69-7	5	25	X
Dimethylbenzene; see Xylene.....				
Dimethyl-1,2-dibromo-2,2-dichloroethyl phosphate.....	300-76-5	.....	3	
Dimethylformamide.....	68-12-2	10	30	X
2,6-Dimethyl-4-heptanone; see				

Diisobutyl ketone....				
1,1-Dimethylhydrazine..	57-14-7	0.5	1	X
Dimethylphthalate.....	131-11-3	.....	5	
Dimethyl sulfate.....	77-78-1	1	5	X
Dinitrobenzene				
(all isomers).....			1	X
(ortho).....	528-29-0			
(meta).....	99-65-0			
(para).....	100-25-4			
Dinitro-o-cresol.....	534-52-1	.....	0.2	X
Dinitrotoluene.....	25321-14-6	.....	1.5	X
Dioxane				
(Diethylene dioxide).	123-91-1	100	360	X
Diphenyl (Biphenyl)....	92-52-4	0.2	1	
Diphenylmethane				
diisocyanate; see				
Methylene bisphenyl				
isocyanate.....				
Dipropylene glycol				
methyl ether.....	34590-94-8	100	600	X
Di-sec octyl phthalate				
(Di-(2-ethylhexyl)				
phthalate).....	117-81-7	.....	5	
Emery.....	12415-34-8			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Endrin.....	72-20-8	.....	0.1	X
Epichlorohydrin.....	106-89-8	5	19	X
EPN.....	2104-64-5	.....	0.5	X
1,2-Epoxypropane; see				
Propylene oxide.....				
2,3-Epoxy-1-propanol;				
see Glycidol.....				
Ethanethiol; see				
Ethyl mercaptan.....				
Ethanolamine.....	141-43-5	3	6	
2-Ethoxyethanol				
(Cellosolve).....	110-80-5	200	740	X
2-Ethoxyethyl acetate				
(Cellosolve acetate).	111-15-9	100	540	X
Ethyl acetate.....	141-78-6	400	1400	
Ethyl acrylate.....	140-88-5	25	100	X
Ethyl alcohol (Ethanol)	64-17-5	1000	1900	
Ethylamine.....	75-04-7	10	18	
Ethyl amyl ketone				
(5-Methyl-3-				
heptanone).....	541-85-5	25	130	

Ethyl benzene	100-41-4	100	435	
Ethyl bromide	74-96-4	200	890	
Ethyl butyl ketone (3-Heptanone)	106-35-4	50	230	
Ethyl chloride	75-00-3	1000	2600	
Ethyl ether	60-29-7	400	1200	
Ethyl formate	109-94-4	100	300	
Ethyl mercaptan	75-08-1	©10	©25	
Ethyl silicate	78-10-4	100	850	
Ethylene chlorohydrin	107-07-3	5	16	X
Ethylenediamine	107-15-3	10	25	
Ethylene dibromide	106-93-4		(2)	
Ethylene dichloride (1,2-Dichloroethane)	107-06-2		(2)	
Ethylene glycol dinitrate	628-96-6	©0.2	©1	X
Ethylene glycol methyl acetate; see Methyl cellosolve acetate				
Ethyleneimine; see 1910.1012	151-56-4			
Ethylene oxide; see 1910.1047	75-21-8			
Ethylidene chloride; see 1,1-Dichlorethane				
N-Ethylmorpholine	100-74-3	20	94	X
Ferbam	14484-64-1			
Total dust		.....	15	
Ferrovanadium dust	12604-58-9	.....	1	
Fluorides (as F)	(4)	.....	2.5	
Fluorine	7782-41-4	0.1	0.2	
Fluorotrichloromethane (Trichloro-fluoromethane)	75-69-4	1000	5600	
Formaldehyde; see 1910.1048	50-00-0			
Formic acid	64-18-6	5	9	
Furfural	98-01-1	5	20	X
Furfuryl alcohol	98-00-0	50	200	
Grain dust (oat, wheat barley)	.....	.....	10	
Glycerin (mist)	56-81-5			
Total dust		.....	15	
Respirable fraction		.....	5	
Glycidol	556-52-5	50	150	
Glycol monoethyl ether; see 2-Ethoxyethanol				

Graphite, natural respirable dust	7782-42-5		(3)	
Graphite, synthetic				
Total dust		.....	15	
Respirable Fraction		.....	5	
Guthion; see Azinphos methyl				
Gypsum	13397-24-5			
Total dust		.....	15	
Respirable fraction		.....	5	
Hafnium	7440-58-6	.....	0.5	
Heptachlor	76-44-8	.....	0.5	X
Heptane (n-Heptane)	142-82-5	500	2000	
Hexachloroethane	67-72-1	1	10	X
Hexachloronaphthalene	1335-87-1	.....	0.2	X
n-Hexane	110-54-3	500	1800	
2-Hexanone (Methyl n-butyl ketone)	591-78-6	100	410	
Hexone (Methyl isobutyl ketone)	108-10-1	100	410	
sec-Hexyl acetate	108-84-9	50	300	
Hydrazine	302-01-2	1	1.3	X
Hydrogen bromide	10035-10-6	3	10	
Hydrogen chloride	7647-01-0	©5	©7	
Hydrogen cyanide	74-90-8	10	11	X
Hydrogen fluoride (as F)	7664-39-3		(2)	
Hydrogen peroxide	7722-84-1	1	1.4	
Hydrogen selenide (as Se)	7783-07-5	0.05	0.2	
Hydrogen sulfide	7783-06-4		(2)	
Hydroquinone	123-31-9	.....	2	
Iodine	7553-56-2	©0.1	©1	
Iron oxide fume	1309-37-1	.....	10	
Isomyl acetate	123-92-2	100	525	
Isomyl alcohol (primary and secondary)	123-51-3	100	360	
Isobutyl acetate	110-19-0	150	700	
Isobutyl alcohol	78-83-1	100	300	
Isophorone	78-59-1	25	140	
Isopropyl acetate	108-21-4	250	950	
Isopropyl alcohol	67-63-0	400	980	
Isopropylamine	75-31-0	5	12	
Isopropyl ether	108-20-3	500	2100	
Isopropyl glycidyl ether (IGE)	4016-14-2	50	240	

Kaolin.....	1332-58-7			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Ketene.....	463-51-4	0.5	0.9	
Lead inorganic (as Pb);				
see 1910.1025.....	7439-92-1			
Limestone.....	1317-65-3			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Lindane.....	58-89-9	.....	0.5	X
Lithium hydride.....	7580-67-8	.....	0.025	
L.P.G. (Liquified				
petroleum gas).....	68476-85-7	1000	1800	
Magnesite.....	546-93-0			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Magnesium oxide fume...	1309-48-4			
Total Particulate....		.....	15	
Malathion.....	121-75-5			
Total dust.....		.....	15	X
Maleic anhydride.....	108-31-6	0.25	1	
Manganese compounds				
(as Mn).....	7439-96-5	.....	©5	
Manganese fume (as Mn).	7439-96-5	.....	©5	
Marble.....	1317-65-3			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Mercury (aryl and				
inorganic)(as Hg)....	7439-97-6		(2)	
Mercury (organo) alkyl				
compounds (as Hg)....	7439-97-6		(2)	
Mercury (vapor) (as Hg)	7439-97-6		(2)	
Mesityl oxide.....	141-79-7	25	100	
Methanethiol;				
see Methyl mercaptan.				
Methoxychlor.....	72-43-5			
Total dust.....		.....	15	
2-Methoxyethanol;				
(Methyl cellosolve)..	109-86-4	25	80	X
2-Methoxyethyl acetate				
(Methyl cellosolve				
acetate).....	110-49-6	25	120	X
Methyl acetate.....	79-20-9	200	610	
Methyl acetylene				
(Propyne).....	74-99-7	1000	1650	
Methyl acetylene				
propadiene mixture				

(MAPP).....		1000	1800	
Methyl acrylate.....	96-33-3	10	35	X
Methylal (Dimethoxy-methane)..	109-87-5	1000	3100	
Methyl alcohol.....	67-56-1	200	260	
Methylamine.....	74-89-5	10	12	
Methyl amyl alcohol; see Methyl Isobutyl carbinol.....				
Methyl n-amyl ketone...	110-43-0	100	465	
Methyl bromide.....	74-83-9	©20	©80	X
Methyl butyl ketone; see 2-Hexanone.....				
Methyl cellosolve; see 2-Methoxyethanol.				
Methyl cellosolve acetate; see 2-Methoxyethyl acetate.....				
Methyl chloride.....	74-87-3		(2)	
Methyl chloroform (1,1,1-Trichloro-ethane).....	71-55-6	350	1900	
Methylcyclohexane.....	108-87-2	500	2000	
Methylcyclohexanol.....	25639-42-3	100	470	
o-Methylcyclohexanone..	583-60-8	100	460	X
Methylene chloride.....	75-09-2		(2)	
Methyl ethyl ketone (MEK); see 2-Butanone				
Methyl formate.....	107-31-3	100	250	
Methyl hydrazine (Monomethyl hydrazine).....	60-34-4	©0.2	©0.35	X
Methyl iodide.....	74-88-4	5	28	X
Methyl isoamyl ketone..	110-12-3	100	475	
Methyl isobutyl carbinol.....	108-11-2	25	100	X
Methyl isobutyl ketone; see Hexone.....				
Methyl isocyanate.....	624-83-9	0.02	0.05	X
Methyl mercaptan.....	74-93-1	©10	©20	
Methyl methacrylate....	80-62-6	100	410	
Methyl propyl ketone; see 2-Pentanone.....				
alpha-Methyl styrene...	98-83-9	©100	©480	
Methylene bisphenyl isocyanate (MDI).....	101-68-8	©0.02	©0.2	

Mica; see Silicates....				
Molybdenum (as Mo).....	7439-98-7			
Soluble compounds....		.....	5	
Insoluble Compounds				
Total dust.....		.....	15	
Monomethyl aniline.....	100-61-8	2	9	X
Monomethyl hydrazine;				
see Methyl hydrazine.				
Morpholine.....	110-91-8	20	70	X
Naphtha (Coal tar).....	8030-30-6	100	400	
Naphthalene.....	91-20-3	10	50	
alpha-Naphthylamine;				
see 1910.1004.....	134-32-7			
beta-Naphthylamine;				
see 1910.1009.....	91-59-8			
Nickel carbonyl (as Ni)	13463-39-3	0.001	0.007	
Nickel, metal and				
insoluble compounds				
(as Ni).....	7440-02-0	.....	1	
Nickel, soluble				
compounds (as Ni)....	7440-02-0	.....	1	
Nicotine.....	54-11-5	.....	0.5	X
Nitric acid.....	7697-37-2	2	5	
Nitric oxide.....	10102-43-9	25	30	
p-Nitroaniline.....	100-01-6	1	6	X
Nitrobenzene.....	98-95-3	1	5	X
p-Nitrochlorobenzene...	100-00-5	.....	1	X
4-Nitrodiphenyl;				
see 1910.1003.....	92-93-3			
Nitroethane.....	79-24-3	100	310	
Nitrogen dioxide.....	10102-44-0	©5	©9	
Nitrogen trifluoride...	7783-54-2	10	29	
Nitroglycerin.....	55-63-0	©0.2	©2	X
Nitromethane.....	75-52-5	100	250	
1-Nitropropane.....	108-03-2	25	90	
2-Nitropropane.....	79-46-9	25	90	
N-Nitrosodimethylamine;				
see 1910.1016				
Nitrotoluene				
(all isomers).....		5	30	X
o-isomer.....	88-72-2			
m-isomer.....	99-08-1			
p-isomer.....	99-99-0			
Nitrotrichloromethane;				
see Chloropicrin.....				
Octachloronaphthalene..	2234-13-1	.....	0.1	X
Octane.....	111-65-9	500	2350	

Oil mist, mineral	8012-95-1	.....	5	
Osmium tetroxide (as Os)	20816-12-0	.....	0.002	
Oxalic acid	144-62-7	.....	1	
Oxygen difluoride	7783-41-7	0.05	0.1	
Ozone	10028-15-6	0.1	0.2	
Paraquat, respirable dust	4685-14-7 1910-42-5 2074-50-2	.....	0.5	X
Parathion	56-38-2	.....	0.1	X
Particulates not otherwise regulated (PNOR)(f)				
Total dust		.....	15	
Respirable fraction		.....	5	
PCB; see Chlorodiphenyl (42% and 54% chlorine)				
Pentaborane	19624-22-7	0.005	0.01	
Pentachloronaphthalene	1321-64-8	.....	0.5	X
Pentachlorophenol	87-86-5	.....	0.5	X
Pentaerythritol	115-77-5			
Total dust		.....	15	
Respirable fraction		.....	5	
Pentane	109-66-0	1000	2950	
2-Pentanone (Methyl propyl ketone)	107-87-9	200	700	
Perchloroethylene (Tetrachloroethylene)	127-18-4		(2)	
Perchloromethyl mercaptan	594-42-3	0.1	0.8	
Perchloryl fluoride	7616-94-6	3	13.5	
Petroleum distillates (Naphtha)(Rubber Solvent)		500	2000	
Phenol	108-95-2	5	19	X
p-Phenylene diamine	106-50-3	.....	0.1	X
Phenyl ether, vapor	101-84-8	1	7	
Phenyl ether-biphenyl mixture, vapor		1	7	
Phenylethylene; see Styrene				
Phenyl glycidyl ether (PGE)	122-60-1	10	60	
Phenylhydrazine	100-63-0	5	22	X
Phosdrin (Mevinphos)	7786-34-7	.....	0.1	X

Phosgene (Carbonyl chloride)	75-44-5	0.1	0.4	
Phosphine	7803-51-2	0.3	0.4	
Phosphoric acid	7664-38-2	.....	1	
Phosphorus (yellow)	7723-14-0	.....	0.1	
Phosphorus pentachloride	10026-13-8	.....	1	
Phosphorus pentasulfide	1314-80-3	.....	1	
Phosphorus trichloride	7719-12-2	0.5	3	
Phthalic anhydride	85-44-9	2	12	
Picloram	1918-02-1			
Total dust		.....	15	
Respirable fraction		.....	5	
Picric acid	88-89-1	.....	0.1	X
Pindone (2-Pivalyl-1, 3-indandione)	83-26-1	.....	0.1	
Plaster of paris	26499-65-0			
Total dust		.....	15	
Respirable fraction		.....	5	
Platinum (as Pt)	7440-06-4			
Metal		.....	.....	
Soluble Salts		.....	0.002	
Portland cement	65997-15-1			
Total dust		.....	15	
Respirable fraction		.....	5	
Propane	74-98-6	1000	1800	
beta-Propriolactone; see 1910.1013	57-57-8			
n-Propyl acetate	109-60-4	200	840	
n-Propyl alcohol	71-23-8	200	500	
n-Propyl nitrate	627-13-4	25	110	
Propylene dichloride	78-87-5	75	350	
Propylene imine	75-55-8	2	5	X
Propylene oxide	75-56-9	100	240	
Propyne; see Methyl acetylene				
Pyrethrum	8003-34-7	.....	5	
Pyridine	110-86-1	5	15	
Quinone	106-51-4	0.1	0.4	
RDX: see Cyclonite				
Rhodium (as Rh), metal fume and insoluble compounds	7440-16-6	.....	0.1	
Rhodium (as Rh), soluble compounds	7440-16-6	.....	0.001	
Ronnel	299-84-3	.....	15	
Rotenone	83-79-4	.....	5	

Rouge.....			
Total dust.....		.....	15
Respirable fraction..		.....	5
Selenium compounds (as Se).....	7782-49-2	.....	0.2
Selenium hexafluoride (as Se).....	7783-79-1	0.05	0.4
Silica, amorphous, precipitated and gel.	112926-00-8		(3)
Silica, amorphous, diatomaceous earth, containing less than 1% crystalline silica	61790-53-2		(3)
Silica, crystalline cristobalite, respirable dust.....	14464-46-1		(3)
Silica, crystalline quartz, respirable dust.....	14808-60-7		(3)
Silica, crystalline tripoli (as quartz), respirable dust.....	1317-95-9		(3)
Silica, crystalline tridymite, respirable dust.....	15468-32-3		(3)
Silica, fused, respirable dust.....	60676-86-0		(3)
Silicates (less than 1% crystalline silica)			
Mica (respirable dust).....	12001-26-2		(3)
Soapstone, total dust	.....		(3)
Soapstone, respirable dust.....	.....		(3)
Talc (containing asbestos): use asbestos limit: see 29 CFR 1910.1001.....			(3)
Talc (containing no asbestos), respirable dust.....	14807-96-6		(3)
Tremolite, asbestiform; see 1910.1001.....			
Silicon.....	7440-21-3		
Total dust.....		.....	15
Respirable fraction..		.....	5

Silicon carbide.....	409-21-2			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Silver, metal and soluble compounds (as Ag).....	7440-22-4	.....	0.01	
Soapstone; see Silicates.....				
Sodium fluoroacetate...	62-74-8	.....	0.05	X
Sodium hydroxide.....	1310-73-2	.....	2	
Starch.....	9005-25-8			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Stibine.....	7803-52-3	0.1	0.5	
Stoddard solvent.....	8052-41-3	500	2900	
Strychnine.....	57-24-9	.....	0.15	
Styrene.....	100-42-5		(2)	
Sucrose.....	57-50-1			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Sulfur dioxide.....	7446-09-5	5	13	
Sulfur hexafluoride....	2551-62-4	1000	6000	
Sulfuric acid.....	7664-93-9	.....	1	
Sulfur monochloride....	10025-67-9	1	6	
Sulfur pentafluoride...	5714-22-7	0.025	0.25	
Sulfuryl fluoride.....	2699-79-8	5	20	
Systox; see Demeton...				
2,4,5-T (2,4,5-trichlorophenoxyacetic acid).....	93-76-5	.....	10	
Talc; see Silicates...				
Tantalum, metal and oxide dust.....	7440-25-7	.....	5	
TEDP (Sulfotep).....	3689-24-5	.....	0.2	X
Tellurium and compounds (as Te)....	13494-80-9	.....	0.1	
Tellurium hexafluoride (as Te).....	7783-80-4	0.02	0.2	
Temephos.....	3383-96-8			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
TEPP (Tetraethyl pyrophosphaate).....	107-49-3	.....	0.05	X
Terphenylis.....	26140-60-3	©1	©9	
1,1,1,2-Tetrachloro-2, 2-difluoroethane.....	76-11-9	500	4170	
1,1,2,2-Tetrachloro-1,				

2-difluoroethane.....	76-12-0	500	4170	
1,1,2,2-Tetrachloro- ethane.....	79-34-5	5	35	X
Tetrachoroethylene; see Perchloroethylene				
Tetrachloromethane; see Carbon tetrachloride.				
Tetrachloronaphthalene.	1335-88-2	.....	2	X
Tetraethyl lead (as Pb)	78-00-2	.....	0.075	X
Tetrahydrofuran.....	109-99-9	200	590	
Tetramethyl lead, (as Pb).....	75-74-1	.....	0.075	X
Tetramethyl succinonitrile.....	3333-52-6	0.5	3	X
Tetranitromethane.....	509-14-8	1	8	
Tetryl (2,4,6-Trinitro- phenylmethyl- nitramine).....	479-45-8	.....	1.5	X
Thallium, soluble compounds (as Tl)....	7440-28-0	.....	0.1	X
4,4’-Thiobis(6-tert, Butyl-m-cresol).....	96-69-5			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Thiram.....	137-26-8	.....	5	
Tin, inorganic compounds (except oxides) (as Sn).....	7440-31-5	.....	2	
Tin, organic compounds (as Sn).....	7440-31-5	.....	0.1	
Titanium dioxide.....	13463-67-7			
Total dust.....		.....	15	
Toluene.....	108-88-3		(2)	
Toluene-2, 4-diisocyanate (TDI).	584-84-9	©0.02	©0.14	
o-Toluidine.....	95-53-4	5	22	X
Toxaphene; see Chlorinated camphene.				
Tremolite; see Silicates.....				
Tributyl phosphate.....	126-73-8	.....	5	
1,1,1-Trichloroethane; see Methyl chloroform				
1,1,2-Trichloroethane..	79-00-5	10	45	X
Trichloroethylene.....	79-01-6		(2)	
Trichloromethane; see Chloroform				

Trichloronaphthalene...	1321-65-9	.....	5	X
1,2,3-Trichloropropane.	96-18-4	50	300	
1,1,2-Trichloro-1,2,				
2-trifluoroethane....	76-13-1	1000	7600	
Triethylamine.....	121-44-8	25	100	
Trifluorobromomethane..	75-63-8	1000	6100	
2,4,6-Trinitrophenol;				
see Picric acid.....				
2,4,6-Trinitrophenyl-				
methyl nitramine;				
see Tetryl.....				
2,4,6-Trinitrotoluene				
(TNT).....	118-96-7	.....	1.5	X
Triorthocresyl				
phosphate.....	78-30-8	.....	0.1	
Triphenyl phosphate....	115-86-6	.....	3	
Turpentine.....	8006-64-2	100	560	
Uranium (as U).....	7440-61-1			
Soluble compounds....		.....	0.05	
Insoluble compounds..		.....	0.25	
Vanadium.....	1314-62-1			
Respirable dust				
(as V(2)O(5)).....		.....	©0.5	
Fume (as V(2)O(5))...		.....	©0.1	
Vegetable oil mist.....				
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Vinyl benzene;				
see Styrene.....				
Vinyl chloride;				
see 1910.1017.....	75-01-4			
Vinyl cyanide;				
see Acrylonitrile				
Vinyl toluene.....	25013-15-4	100	480	
Warfarin.....	81-81-2	.....	0.1	
Xylenes				
(o-, m-, p-isomers)..	1330-20-7	100	435	
Xylidine.....	1300-73-8	5	25	X
Yttrium.....	7440-65-5	.....	1	
Zinc chloride fume.....	7646-85-7	.....	1	
Zinc oxide fume.....	1314-13-2	.....	5	
Zinc oxide.....	1314-13-2			
Total dust.....		.....	15	
Respirable fraction..		.....	5	
Zinc stearate.....	557-05-1			
Total dust.....		.....	15	
Respirable fraction..		.....	5	

Zirconium compounds (as Zr).....	7440-67-7	.....	5	

Footnote(1) The PELs are 8-hour TWAs unless otherwise noted; a © designation denotes a ceiling limit. They are to be determined from breathing-zone air samples.

Footnote(a) Parts of vapor or gas per million parts of contaminated air by volume at 25 degrees C and 760 torr.

Footnote(b) Milligrams of substance per cubic meter of air. When entry is in this column only, the value is exact; when listed with a ppm entry, it is approximate.

Footnote© The CAS number is for information only. Enforcement is based on the substance name. For an entry covering more than one metal compound measured as the metal, the CAS number for the metal is given - not CAS numbers for the individual compounds.

Footnote(d) The final benzene standard in 1910.1028 applies to all occupational exposures to benzene except in some circumstances the distribution and sale of fuels, sealed containers and pipelines, coke production, oil and gas drilling and production, natural gas processing, and the percentage exclusion for liquid mixtures; for the excepted subsegments, the benzene limits in Table Z-2 apply. See 1910.1028 for specific circumstances.

Footnote(e) This 8-hour TWA applies to respirable dust as measured by a vertical elutriator cotton dust sampler or equivalent instrument. The time-weighted average applies to the cotton waste processing operations of waste recycling (sorting, blending, cleaning and willowing) and garnetting. See also 1910.1043 for cotton dust limits applicable to other sectors.

Footnote(f) All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.

Footnote(2) See Table Z-2.

Footnote(3) See Table Z-3

Footnote(4) Varies with compound.

TABLE Z-2 - 1910.1000 TABLE Z-2

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** Z
- **Subpart Title:** Toxic and Hazardous Substances
- **Standard Number:** 1910.1000 TABLE Z-2
- **Title:** TABLE Z-2

TABLE Z-2

Substance	8-hour time weighted average	Acceptable ceiling concentration	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	
			Concentration	Maximum duration
Benzene(a) (Z37.40-1969).....	10 ppm.....	25 ppm.....	50 ppm...	10 minutes.
Beryllium and beryllium compounds (Z37.29-1970).....	2 ug/m(3)..	5 ug/m(3)..	25 ug/m(3)	30 minutes.
Cadmium fume(b) (Z37.5-1970).....	0.1 mg/m(3)	0.3 mg/m(3)	.....	
Cadmium dust(b) (Z37.5-1970).....	0.2 mg/m(3)	0.6 mg/m(3)		
Carbon disulfide (Z37.3-1968).....	20 ppm....	30 ppm.....	100 ppm..	30 minutes.
Carbon tetrachloride (Z37.17-1967).....	10 ppm.....	25 ppm.....	200 ppm..	5 min. in any 4 hrs.
Chromic acid and chromates (Z37-7-1971).....	.....	1 mg/10 m(3)		
Ethylene dibromide (Z37.31-1970).....	20 ppm.....	30 ppm.....	50 ppm...	5 minutes.
Ethylene dichloride (Z37.21-1969).....	50 ppm.....	100 ppm....	200 ppm..	5 min. in any 3 hrs.

Fluoride as dust (Z37.28-1969).....	2.5 mg/m(3)	.....	.....	
Formaldehyde: see 1910.1048.....	.....	.....	.....	
Hydrogen fluoride (Z37.28-1969).....	3 ppm.....	.....	.....	
Hydrogen sulfide (Z37.2-1966).....	.....	20 ppm.....	50 ppm...	10 mins. once only if no other meas. exp. occurs.
Mercury (Z37.8-1971).....	.....	1 mg/10m(3)	.....	
Methylene chloride 5(Z37.18-1969).....	.....	.....	.....	
Methylene Chloride: see 1910.1052.....				
Organo (alkyl) mercury (Z37.30-1969).....	0.01mg/m(3)	0.04 mg/m(3)	.....	
Styrene (Z37.15-1969).....	100 ppm....	200 ppm....	600 ppm..	5 mins. in any 3 hrs.
Tetrachloroethylene (Z37.22-1967).....	100 ppm....	200 ppm....	300 ppm..	5 mins. in any 3 hrs.
Toluene (Z37.12-1967).....	200 ppm....	300 ppm....	500 ppm..	10 minutes
Trichloroethylene (Z37.19-1967).....	100 ppm....	200 ppm....	300 ppm..	5 mins. in any 2 hrs.

Footnote(a) This standard applies to the industry segments exempt from the 1 ppm 8-hour TWA and 5 ppm STEL of the benzene standard at 1910.1028.

Footnote(b) This standard applies to any operations or sectors for which the Cadmium standard, 1910.1027, is stayed or otherwise not in effect.

TABLE Z-3 Mineral Dusts - 1910.1000 TABLE Z-3

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** Z
- **Subpart Title:** Toxic and Hazardous Substances
- **Standard Number:** 1910.1000 TABLE Z-3
- **Title:** TABL Z-3 Mineral Dusts

TABLE Z–3 MINERAL DUSTS

Substance	mppcf[a]	mg/m³
Silica:		
Crystalline		
Quartz (Respirable)	250[b] / %SiO_2+5	10 mg/m³[c] / % SiO_2 + 2
Quartz (Total Dust)		30 mg/m³ / % SiO_2 + 2
Cristobalite: Use ½ the value calculated from the count or mass formulae for quartz		
Tridymite: Use ½ the value calculated from the formulae for quartz		
Amorphous, including natural diatomaceous earth	20	80 mg/m³ / %SiO_2
Silicates (less than 1% crystalline silica):		
Mica	20	
Soapstone	20	
Talc (not containing asbestos)	20[c]	
Talc (containing asbestos) Use asbestos limit.		
Tremolite, asbestiform (see 29 CFR 1910.1001).		
Portland cement	50	
Graphite (Natural)	15	
Coal Dust:		
Respirable fraction less than 5% SiO_2		2.4 mg/m³[e]
Respirable fraction greater than 5% SiO_2		10 mg/m³[e] / %SiO_2+2
Inert or Nuisance Dust:[d]		
Respirable fraction	15	5 mg/m³
Total dust	50	15 mg/m³

Note—Conversion factors - mppcf X 35.3 = million particles per cubic meter = particles per c.c.

[a] Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques.

[b] The percentage of crystalline silica in the formula is the amount determined from airborne samples, except in those instances in which other methods have been shown to be applicable.

[c] Containing less than 1% quartz; if 1% quartz or more, use quartz limit.

[d] All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by this limit, which is the same as the Particulates Not Otherwise Regulated (PNOR) limit in Table Z–1.

[e] Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics:

Aerodynamic diameter (unit density sphere)	Percent passing selector
2	90
2.5	75
3.5	50
5.0	25
10	0

The measurements under this note refer to the use of an AEC (now NRC) instrument. The respirable fraction of coal dust is determined with an MRE; the figure corresponding to that of 2.4 mg/m³ in the table for coal dust is 4.5 mg/m³.

SECTION III - FORMS

APPENDIX B

TARGET ORGAN POSTER

Target Organ Poster

A list of target organ effects shall be posted in a central location for access by all employees as follows:

CATEGORY	TARGET ORGAN EFFECTS/ SIGNS & SYMPTOMS	EXAMPLES OF CHEMICALS
Hepatotoxins	Results in liver damage; Jaundice, liver enlargement	carbon tetrachloride, nitrosamines
Nephrotoxins	Results in kidney damage; Edema, proteinuria	halogenated hydrocarbons
Neurotoxins	Affects the nervous system; Sleepiness, decrease in motor function, behavioral changes	mercury, carbon disulfide
Hematopoietic agent	Decreases hemoglobin function and affects formation of blood cells; Cyanosis, unconsciousness	carbon monoxide, cyanides, arsenic, aniline, nitrobenzene
Pulmonary agent	Irritate or damage the lungs; Cough, shortness of breath, tightness in the chest	asbestos, silica
Reproductive toxin	Affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis); Birth defects, sterility	lead
Cutaneous (skin) hazard	Affect the dermal layer of the body; Rash, irritation, defatting of the skin	chlorinated compounds, ketones
Eye hazard	Affect the eye or vision; Conjunctivitis, corneal damage	organic solvents, acids
Carcinogens	Facilitate cancer formation; No early warning signs in most cases	benzene, vinyl chloride

APPENDIX C

HAZARD COMMUNICATION AND RIGHT-TO-KNOW TRAINING ATTENDANCE SHEET

HAZARD COMMUNICATION AND RIGHT-TO-KNOW TRAINING ATTENDANCE SHEET

MUST BE KEPT AT THE SITE AND ON FILE FOR 3 YEARS

Trainer's Name:		**Affiliation/Title**			
Training Location:		**Site Address:**			
Target Group:		**Date:**		**Time:**	
Training Package Attached To Training Attendance Sheet:			**Yes**		**No**

Please Print All Information

EMPLOYEE NAME	EMPLOYEE TITLE	SOC. SEC. #	WORK LOCATION	REGION	DISTRICT	SIGNATURE
Sample: John/Jane Doe	Health Aide	123 /45/ 6789	PS 123 Q	5	19	
1.		/ /				
2.		/ /				
3.		/ /				
4.		/ /				
5.		/ /				
6.		/ /				
7.		/ /				
8.		/ /				
9.		/ /				
10		/ /				
11.		/ /				

EMPLOYEE NAME	EMPLOYEE TITLE	SOC. SEC. #	WORK LOCATION	REGION	DISTRICT	SIGNATURE
Sample: John/Jane Doe	Health Aide	123 /45/ 6789	PS 123 Q	5	19	
12.		/ /				
13.		/ /				
14.		/ /				
15.		/ /				
16.		/ /				
17.		/ /				
18.		/ /				
19.		/ /				
20.		/ /				
21.		/ /				
22.		/ /				
23.		/ /				
24.		/ /				
25.		/ /				
26.		/ /				

EMPLOYEE NAME	EMPLOYEE TITLE	SOC. SEC. #	WORK LOCATION	REGION	DISTRICT	SIGNATURE
Sample: John/Jane Doe	Health Aide	123 /45/ 6789	PS 123 Q	5	19	
27.		/ /				
28.		/ /				
29.		/ /				
30.		/ /				
31.		/ /				
32.		/ /				
33.		/ /				
34.		/ /				
35.		/ /				
36.		/ /				
37.		/ /				
38.		/ /				
39.		/ /				
40.		/ /				
41.		/ /				

EMPLOYEE NAME	EMPLOYEE TITLE	SOC. SEC. #	WORK LOCATION	REGION	DISTRICT	SIGNATURE
Sample: John/Jane Doe	Health Aide	123 /45/ 6789	PS 123 Q	5	19	
42.		/ /				
43.		/ /				
44.		/ /				
45.		/ /				
46.		/ /				
47.		/ /				
48.		/ /				
49.		/ /				
50.		/ /				
51.		/ /				
52.		/ /				
53.		/ /				
54.		/ /				
55.		/ /				
56.		/ /				

EMPLOYEE NAME	EMPLOYEE TITLE	SOC. SEC. #	WORK LOCATION	REGION	DISTRICT	SIGNATURE
Sample: John/Jane Doe	Health Aide	123 /45/ 6789	PS 123 Q	5	19	
57.		/ /				
58.		/ /				
59.		/ /				
60.		/ /				
61.		/ /				
62.		/ /				
63.		/ /				
64.		/ /				
65.		/ /				
66.		/ /				
67.		/ /				
68.		/ /				
69.		/ /				
70.		/ /				
71		/ /				

EMPLOYEE NAME	EMPLOYEE TITLE	SOC. SEC. #	WORK LOCATION	REGION	DISTRICT	SIGNATURE
Sample: John/Jane Doe	Health Aide	123 /45/ 6789	PS 123 Q	5	19	
72.		/ /				
73.		/ /				
74.		/ /				
75.		/ /				
76.		/ /				
77.		/ /				
78.		/ /				
79.		/ /				
80.		/ /				
81.		/ /				
82.		/ /				
83.		/ /				
84.		/ /				
85.		/ /				
86.		/ /				

EMPLOYEE NAME	EMPLOYEE TITLE	SOC. SEC. #	WORK LOCATION	REGION	DISTRICT	SIGNATURE
Sample: John/Jane Doe	Health Aide	123 /45/ 6789	PS 123 Q	5	19	
87.		/ /				
88.		/ /				
89.		/ /				
90.		/ /				
91		/ /				
92		/ /				
93.		/ /				
94		/ /				
95.		/ /				
96.		/ /				
97.		/ /				
98.		/ /				
99.		/ /				
100.		/ /				

APPENDIX D

DOT HAZARD CLASSIFICATION LIST

DOT HAZARD CLASSIFICATION LIST

Hazard Classifications	**Example**
Explosive A and B	Dynamite
Explosive C	Fireworks
Blasting Agents	Plastic Explosives
Radioactive materials	Co-60 or I-130
Flammable liquids	Alcohol
Non-flammable compressed gas	Nitrogen
Flammable gases	Oxygen
Combustible liquids	Xylene
Flammable solids	Paraffin Wax
Oxidizer	Nitric acid
Corrosive material	Hydrochloric acid
Irritating material	Lachrymatory
Poison A	Heptachlor
Poison B	Phenol
Organic peroxide	Bexoyl peroxide
*ORM-A	Formaldehyde
ORM-B	Mercury
ORM-C	Asbestos
ORM-D	Bleach
ORM-E	Ferric sulfate
Etiological agents	Microorganisms (E-coli)

*ORM = Other Regulated Material

APPENDIX E

EPA HAZARD CLASSIFICATION LIST

EPA HAZARD CLASSIFICATION LIST

1. IGNITABLE WASTE

Flash point < 140^0F
Flammable solids (10)
Oxidizers (11)
Flammable gases (8)
Some combustible liquids (9)
Flammable liquids (5)
Pyrophoric liquids (6)

2. CORROSIVES

Any liquid of ph $\leq$ 2 or $\geq$ 12.5 (12)

3. REACTIVE

Explosives A, B or C (1, 2 or 3)
Water reactive
Cyanide or sulfide
Organic peroxides (16)
Poison B (15)

4. EXTRACTION PROCEDURE (EP) TOXIC

8 Metals:

Arsenic	Silver
Cadmium	Lead
Chromium	Beryllium
Mercury	Thallium

4 Pesticides:

Lindane	Toxaphene
Endrin	Methoxychlor

2 Herbicides:

2, 4-D	2,4,5-T

Poison A and some poison B (14 and 15)
Irritating material (13)
Radioactive material (4)
ORM-A-B-C (17, 18 and 19)
ORM-E (21)

NOTE: Numerals in parentheses indicate chemical categories on the DOT list.

APPENDIX F

HOW TO COMPLETE THE CHEMICAL INVENTORY FORM

NEW YORK CITY DEPARTMENT OF EDUCATION
CHEMICAL INVENTORY

How To Complete The Chemical Inventory

Please be aware that for purposes of this inventory, the term **chemical** refers to any liquid, gas or solid used in the school or facility (e.g., floor stripper; rubber cement; or duplicating fluid), as well as items used in science, vocational or trade shops.

A. **Each Room** in your facility must be surveyed. This includes annexes, basements and storage closets. Use a **new** form for **each** room.

B. List **all** chemical substances found in the room. Do **not** list articles such as furniture, machinery, or equipment. If you are not sure whether a substance should be included, list it. If there are too many chemicals in the room to fit on one sheet, use additional sheets and number each successive sheet.

C. If there are no chemicals in a room, prepare a form for that room and write "No Chemicals".

D. Please make sure that the heading on the form is carefully filled out. Put your name and telephone number on the form, so that if we have a question about an entry we can contact you.

E. Enter “N/A” in spaces where information is **not available**. Do not leave any space blank.

F. Please **print** all information **clearly**.

Item 1 - Product Name
Enter the name as it is listed on the product label (e.g., "Red Devil Paint" or "Phenol").

Item 2 - Manufacturer's Name, Address and Telephone Number
This information is found on the label; if there is a telephone number, please list this also.

Item 3 - Exact Storage Location
By law, storage location must be precise. State exactly where in the room the product is stored. "under copy machine; third closet from the window."

Item 4 - Warnings on Label
State the immediate health hazard listed on the label e.g., "eye irritation, flammable, skin burns." if there are no warnings on the label, write "No Warnings Indicated."

Item 5 - Other Identifying Information
Use this column to describe the product. List the ingredients as they appear on the label. List as many ingredients as you can. If the container has no label, use this space to describe the item e.g., "floor cleaner; white powder in can; liquid in brown bottle."

If the label has a Chemical Abstracts Service (CAS) number please writes this number in the space provided. If one does not exist, write "N/A" in the space provided.

Item 6 - Physical State
Each chemical will be either a pure chemical e.g., "acetone; nitric acid" or a product mixture e.g., "Titan's Floor Stripper; Speedball Textile Ink." use codes listed on the inventory sheet.

Item 7 - Quantity
Note the number of containers (e.g., 50 bottles, 13 cans, 6 boxes).

Item 8 - Container type
Use code listed at the bottom of the inventory sheet.

Item 9 - Units of Measure
Use code listed on the bottom of the inventory sheet to describe the size or volume of the container (e.g., 6 oz, 1 g). If units of measure are metric, use the metric measure, it is not necessary to convert.

Item 10 - # Employees Exposed
Enter the number of employees who handle the substance or who may be routinely exposed to the substance.

Item 11 - Frequency of Use
Use the code listed at the bottom of the inventory sheet.

Item 12 - MSDS
A Material Safety Data Sheet (MSDS) is supplied by the manufacturer of the chemical substance. Check this box if a MSDS is on file in your school. If you **do not know** whether your school has a MSDS for a particular product, enter "**N/A**" in this box.

APPENDIX F-1

SAFETY PRECAUTIONS FOR CONDUCTING THE CHEMICAL INVENTORY

SAFETY PRECAUTIONS FOR CONDUCTING THE CHEMICAL INVENTORY

Chemical inventories are generally routine and without hazard. However, for your own protection, please follow these few simple guidelines:

1. To ensure your personal safety, always let someone know where you will be when conducting the inventory. This is especially important in very large or isolated areas.

2. To the extent possible, try to avoid touching and/or moving bottles and containers during the inventory.

3. If you have access to gloves, put them on before handling chemical containers.

4. Do **not** shake, drop, open or sniff containers or bottles.

5. Do **not** discard old chemicals. Arrangements for proper disposal of chemicals will be made at a later time.

6. Contact your supervisor if:

    i. You find unlabeled containers with solid or crystallized residues on the exterior of the container. Do **not** touch them. Simply make a note of the container, its label and location and give this information to your supervisor.

    ii. You accidentally cause a spill or find evidence of spilled chemicals or come across containers that are ready to break open. **Stop** the inventory in that area and let your supervisor know immediately.

APPENDIX F-2

SAMPLE CHEMICAL INVENTORY FORM

SAMPLE

CHEMICAL INVENTORY

PRINT OR TYPE ALL INFORMATION

School/Division: P.S 118 /Region 5			Name: Jane Smith		Physical State	Quantity	Container Type	Units of Measure	# of Employees Routinely Exposed	Frequency of Use	MSDS on File?
Address: 123-45 Court Street, Brooklyn 11245			Title: Teacher								
Department: Industrial Arts		Room: 126	Work Phone: (718) 123-4567	Date: 11/30/00							
1 Product Trade Name	**2 Manufacturer's Name & Address**	**3 Exact Storage Location**	**4 Warnings on Label**	**5 Other Identifying Information**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Beacon Ammonia	Q-Pac Corporation 2145 Ave. C, Newark NJ 07104	Second shelf in large metal cabinet	Irritation to eyes, skin and mucous membranes	CAS # 1336-21-6	P L	2	N	1 G	2	S	√
Cosco Powder	Cosco Enterprises No Address Tel. (718) 383-4488	Under sink	Irritation of open cuts	White powder in box CAS # N/A	S M	1	K	16 oz	5	N	N/A
N/A	N/A	Top shelf in large metal cabinet	N/A	Clear liquid in glass bottle CAS # N/A	L	1	M	8 fl	2	N	N/A
Fleet Latex Paint	Long Island Paint 1 Continental Hill Glencove, NY 11542	On floor in storage closet	Harmful if swallowed	Titanium Dioxide CAS #	L M	3	F	1 G	5	S	N/A
N/A	Ricon Company Ltd. 136 Nakamagome, Ota-ku Toyko, Japan	Cabinet under copy machine	High vapor concentration – irritating to eyes and respiratory tract	Carbon black, Acrylic resin, Naphtha CAS # N/A	L M	4	N	16 oz	8	O	√
Acetylene	Airweld Industries No Address	Chained to south wall	Flammable vapors may cause dizziness	CAS # 74-86-2	G P	1	L	C	10	O	N/A

Physical State – Item 6	Container Type – Item 8			Units of Measure – Item 9	Frequency of Use – Item 11
S – Solid or Powder	A – Above ground tank	F – Can	M – Glass bottles or Jugs	C – Cubic feet for gas	S – Sometimes
L – Liquid	B – Below ground tank	I – Fiber drum	N – Plastic bottles or Jugs	lb – Pounds for solids	O – Often
G – Gas	C – Tank inside building	J – Bag	O – Tote Bin	oz – Ounces for solids	N - Never
P – Pure	D – Steel drum	K – Box	R - Other	G – Gallons for liquid	
M - Mixture	E – Plastic or non-metallic drum	L – Cylinder		fl – Fluid ounces for liquid	

CHEMICAL INVENTORY

PRINT OR TYPE ALL INFORMATION

Page _____ of _____

School/Division		Name of person completing form			Physical State	Quantity	Container Type	Units of Measure	# of Employees Routinely Exposed	Frequency of Use	MSDS on File?
Address		Title									
Department		Room	Work Phone	Date							
1 Product Trade Name	**2** Manufacturer's Name & Address	**3** Exact Storage Location	**4** Warnings on Label	**5** Other Identifying Information	**6**	**7**	**8**	**9**	**10**	**11**	**12**
				CAS #							
				CAS #							
				CAS #							
				CAS #							
				CAS #							
				CAS #							

Physical State – Item 6	Container Type – Item 8			Units of Measure – Item 9	Frequency of Use – Item 11
S – Solid or Powder	A – Above ground tank	F – Can	M – Glass bottles or Jugs	C – Cubic feet for gas	S – Sometimes
L – Liquid	B – Below ground tank	I – Fiber drum	N – Plastic bottles or Jugs	lb – Pounds for solids	O – Often
G – Gas	C – Tank inside building	J – Bag	O – Tote Bin	oz – Ounces for solids	N - Never
P – Pure	D – Steel drum	K – Box	R - Other	G – Gallons for liquid	
M - Mixture	E – Plastic or non-metallic drum	L – Cylinder		fl – Fluid ounces for liquid	

APPENDIX G

SAMPLE MATERIAL SAFETY DATA SHEETS

MATERIAL SAFETY DATA SHEETS (MSDS)
Section 1 - Product and Company Identification
SODIUM BICARBONATE,BAKING SODA,SODIUM ACID CARBONATE (SUPP)

Product Identification: SODIUM BICARBONATE,BAKING SODA,SODIUM ACID CARBONATE (SUPP)
Date of MSDS: 01/28/1991 **Technical Review Date:** 01/17/1997
FSC: 6550 **NIIN: LIIN:** 00F042470
Submitter: F BT
Status Code: C
MFN: 02
Article: N
Kit Part: Y

Manufacturer's Information

Manufacturer's Name: OMEGA ENGINEERING INC
Post Office Box: 4047
Manufacturer's Address1: 1 OMEGA DR
Manufacturer's Address2: STAMFORD, CT 06907-0047
Manufacturer's Country: US
General Information Telephone: 203-359-1660/813-979-0626
Emergency Telephone: 203-359-1660/800-255-3924
Emergency Telephone: 203-359-1660/800-255-3924
MSDS Preparer's Name: N/P
Proprietary: N
Reviewed: Y
Published: Y
CAGE: 29907
Special Project Code: N

Preparer Information

Preparer's Name: OMEGA ENGINEERING INC.
Post Office Box: 4047
Preparer's Address1: ONE OMEGA DRIVE
Preparer's Address2: STAMFORD, CT 06907-0047
Preparer's CAGE: 29907
Assigned Individual: N

Contractor Information

Contractor's Name: OMEGA ENGINEERING INC.
Post Office Box: 4047
Contractor's Address1: ONE OMEGA DRIVE
Contractor's Address2: STAMFORD, CT 06907-0047
Contractor's Telephone: 203-359-1660
Contractor's CAGE: 29907

Section 2 - Compositon/Information on Ingredients
SODIUM BICARBONATE,BAKING SODA,SODIUM ACID CARBONATE (SUPP)

Ingredient Name: SODIUM BICARBONATE
Ingredient CAS Number: 144-55-8 **Ingredient CAS Code:** M
RTECS Number: VZ0950000 **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Environmental Weight:
Other REC Limits: N/K
OSHA PEL: N/K **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: N/K **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical: N

Section 3 - Hazards Identification, Including Emergency Overview
SODIUM BICARBONATE,BAKING SODA,SODIUM ACID CARBONATE (SUPP)

Health Hazards Acute & Chronic: INHALATION: MAY CAUSE NOSE & THROAT IRRITATION. EYES: MAY CAUSE IRRITATION. SKIN/SKIN ABSORPTION: MAY CAUSE IRRITATION. INGESTION: HARMFUL TO STOMACH IN LARGE DOSES.

Signs & Symptoms of Overexposure:
IRRITATION.

Medical Conditions Aggravated by Exposure:
N/K

LD50 LC50 Mixture: N/P
Route of Entry Indicators:
Inhalation: YES
Skin: YES
Ingestion: YES
Carcinogenicity Indicators

NTP: NO
IARC: NO

OSHA: NO
Carcinogenicity Explanation: NONE

Section 4 - First Aid Measures
SODIUM BICARBONATE, BAKING SODA, SODIUM ACID CARBONATE (SUPP)

First Aid:
EYES: FLUSH W/PLENTY OF WATER FOR 15 MINS. SKIN: WASH W/SOAP & WATER. INHALATION: REMOVE TO FRESH AIR. OBTAIN MEDICAL ATTENTION IN ALL CASES.

Section 5 - Fire Fighting Measures
SODIUM BICARBONATE,BAKING SODA,SODIUM ACID CARBONATE (SUPP)

Fire Fighting Procedures:
NONE
Unusual Fire or Explosion Hazard:
GIVES OFF CO2 AT 122F & SODIUM CARBONATE, ANHYDROUS AT 212F.
Extinguishing Media: WATER.
Flash Point: Flash Point Text: NON-FLAMMABLE
Autoignition Temperature:
Autoignition Temperature Text: N/A
Lower Limit(s): N/K
Upper Limit(s): N/K

Section 6 - Accidental Release Measures
SODIUM BICARBONATE, BAKING SODA, SODIUM ACID CARBONATE (SUPP)

Spill Release Procedures:
SWEEP UP & CONTAINERIZE FOR DISPOSAL. FLUSH AREA W/WATER & NEUTRALIZE. PREPARED BUFFEER SOLUTION: NEUTRALIZE & WASH AREA W/COLD WATER.

Section 7 - Handling and Storage
SODIUM BICARBONATE, BAKING SODA, SODIUM ACID CARBONATE (SUPP)

Handling and Storage Precautions:

Other Precautions:

Section 8 - Exposure Controls & Personal Protection
SODIUM BICARBONATE,BAKING SODA,SODIUM ACID CARBONATE (SUPP)

Respiratory Protection:

N/K
Ventilation:
N/K
Protective Gloves:
N/K
Eye Protection: N/K
Other Protective Equipment: N/K
Work Hygienic Practices: WASH THOROUGHLY AFTER HANDLING.
Supplemental Health & Safety Information: TRADE NAME CONT'D: CARBONATE HYDROGEN. SOLUBILITY IN WATER: SOLUBLE IN 10 PARTS WATER AT 77F.

Section 9 - Physical & Chemical Properties
SODIUM BICARBONATE, BAKING SODA, SODIUM ACID CARBONATE (SUPP)

HCC:
NRC/State License Number:
Net Property Weight for Ammo:
Boiling Point: Boiling Point Text: N/K
Melting/Freezing Point: Melting/Freezing Text: 518F
Decomposition Point: Decomposition Text: N/K
Vapor Pressure: N/K **Vapor Density:** N/K
Percent Volatile Organic Content:
Specific Gravity: 2.16
Volatile Organic Content Pounds per Gallon:
pH: N/K
Volatile Organic Content Grams per Liter:
Viscosity: N/P
Evaporation Weight and Reference: N/K
Solubility in Water: (SEE SUPP)
Appearance and Odor: WHITE CRYSTALLINE/GRANULAR POWDER W/NO ODOR.
Percent Volatiles by Volume: N/K
Corrosion Rate: N/K

Section 10 - Stability & Reactivity Data
SODIUM BICARBONATE,BAKING SODA,SODIUM ACID CARBONATE (SUPP)

Stability Indicator: YES
Materials to Avoid:
ACIDS, AMMONIUM PHOSPHATE MONOBASIC.
Stability Condition to Avoid:
N/K
Hazardous Decomposition Products:
CO, CO2 & SODIUM CARBONATE, ANHYDROUS.
Hazardous Polymerization Indicator: NO
Conditions to Avoid Polymerization:
NONE

Section 11 - Toxicological Information
SODIUM BICARBONATE, BAKING SODA, SODIUM ACID CARBONATE (SUPP)

Toxicological Information:
N/P

Section 12 - Ecological Information
SODIUM BICARBONATE, BAKING SODA, SODIUM ACID CARBONATE (SUPP)

Ecological Information:
N/P

Section 13 - Disposal Considerations
SODIUM BICARBONATE, BAKING SODA, SODIUM ACID CARBONATE (SUPP)

Waste Disposal Methods:
DISPOSE OF THROUGH APPROVED WASTE SITE/WASTE TREATMENT PLANT IAW/FEDERAL, STATE & LOCAL REGULATIONS.

Section 14 - MSDS Transport Information
SODIUM BICARBONATE, BAKING SODA, SODIUM ACID CARBONATE (SUPP)

Transport Information:
N/P

Section 15 - Regulatory Information
SODIUM BICARBONATE, BAKING SODA, SODIUM ACID CARBONATE (SUPP)

SARA Title III Information:
N/P
Federal Regulatory Information:
N/P
State Regulatory Information:
N/P

Section 16 - Other Information
SODIUM BICARBONATE, BAKING SODA, SODIUM ACID CARBONATE (SUPP)

Other Information:
N/P

HAZCOM Label Information

Product Identification: SODIUM BICARBONATE,BAKING SODA,SODIUM ACID CARBONATE (SUPP)
CAGE: 29907
Assigned Individual: N
Company Name: OMEGA ENGINEERING INC.
Company PO Box: 4047

Company Street Address1: ONE OMEGA DRIVE
Company Street Address2: STAMFORD, CT 06907-0047 US
Health Emergency Telephone: 203-359-1660/800-255-3924
Label Required Indicator: Y
Date Label Reviewed: 10/12/1999
Status Code: A
Manufacturer's Label Number:
Date of Label:
Year Procured: N/K
Organization Code: G
Chronic Hazard Indicator: N/P
Eye Protection Indicator: N/P
Skin Protection Indicator: N/P
Respiratory Protection Indicator: N/P
Signal Word: N/P
Health Hazard:
Contact Hazard:
Fire Hazard:
Reactivity Hazard:

APPENDIX G-1

SAMPLE LETTER REQUESTING A MSDS

On School Letterhead

Date

Manufacturer's Name

Address

The Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and Article 28 of the New York State Law requires that we obtain Material Safety Data Sheets (MSDSs) for hazardous substances used in our facility, and to make these MSDSs available to employees who may be potentially exposed to these substances.

As such, we request a copy of the MSDSs and other related safety and health documentation for the following product(s):

Your prompt attention to this matter is appreciated. Please forward materials by mail to the address noted above or via fax to **[YOUR NAME]** at **[FAX NUMBER].** If, however, there are questions, or the need for further information, please contact **[YOUR NAME]** at the address above or via phone at **[PHONE NUMBER].**

Sincerely,

Site Safety Officer

APPENDIX H

COMPLETING THE SH 900, SH 900.1 and SH 900.2

--FORMS--

SH 900- LOG OF WORK RELATED INJURIES AND ILLNESS

SH 900.1-SUMMARY OF WORK-RELATED INJURIES AND ILLNESSES

SH 900.2-INJURY AND ILLNESS INCIDENT REPORT

PESH Recording and Reporting Occupational Injuries and Illnesses

Each employer subject to the recordkeeping requirements of Rule PART 801 (12NYCRR Part 801) must maintain a record of recordable occupational injuries and illnesses. Recordkeeping provides information to employers and employees on injuries and illnesses and related hazards in the workplace. The SH 900 is one of three forms used to maintain such records for the calendar year. The SH 900- ***Log of Work Related Injuries and Illness*** should be maintained along with its counterparts, the SH 900.1-***Summary of Work-Related Injuries and Illnesses*** and SH 900.2-***Injury and Illness Incident Repor***t. Each form, though similar, records specific data. The utilization of separate forms, allows the safeguarding of privacy.

THE SH-900-- Log of Work Related Injuries and Illnesses

When is a case considered to be work related?

- A case is considered work-related if an event or exposure in the work environment either caused or contributed to the resulting condition.
- A case is considered work-related if an event or exposure in the work environment significantly aggravated a pre-existing injury or illness.
- Work-relatedness is presumed for injuries and illnesses resulting from events or exposures occurring in the work environment.

What is an injury?

An injury or illness is an abnormal condition or disorder. An Injury can be any wound or damage to the body resulting from an event in the workplace. It can also include damage to muscle, joints, and connective tissue when resulting from slip, trip, and fall.

What is an illness?

An illness can be musculoskeletal disorders, skin diseases or disorders, respiratory conditions, poisoning, noise-induced hearing loss, and all other occupational illnesses.

Employers must record each fatality, injury or illness that:

- Is work-related, and
- Is a new case, and
- Meets one or more of the general recording criteria

General Recording Criteria

An injury or illness is recordable if it results in one or more of the following:

- Death
- Days away from work
- Restricted work activity
- Transfer to another job
- Medical treatment beyond first aid
- Loss of consciousness
- Significant injury or illness diagnosed by a Physician or a Licensed Health Care Professional (PLHCP)

Medical treatment does not include:

- Visits to a PLHCP solely for observation or counseling
- Diagnostic procedures
- First aid

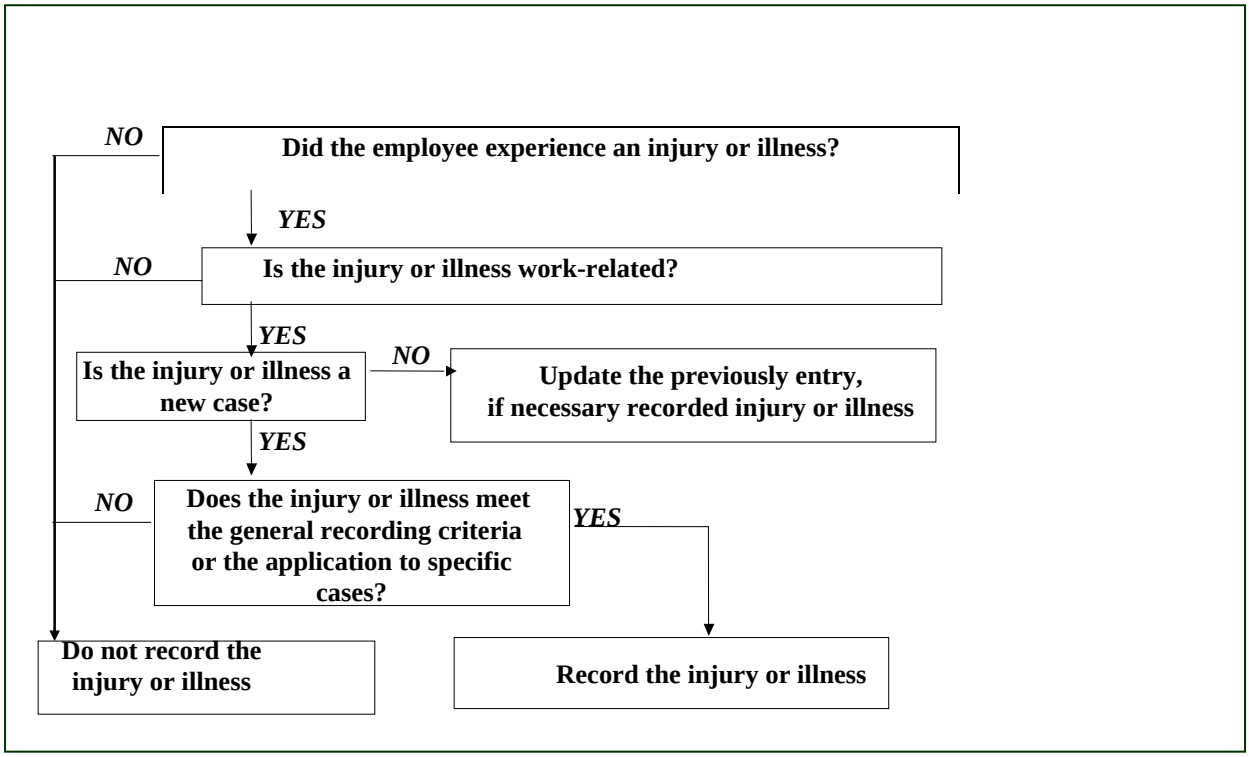
Other significant diagnosed work-related injury or illness must be recorded even if NO death, days away from work, restricted work, job transfer, loss of consciousness, or medical treatment beyond first aid in cases, such as:

- Cancer
- Chronic irreversible disease
- Fractured or cracked bone
- Punctured eardrum
- Bloodborne pathogens or tuberculosis cases

All work-related Bloodborne pathogens or tuberculosis cases must be recorded:

- Cuts from sharp objects that are contaminated with another person's blood or other potentially infectious material (includes human bodily fluids, tissues and organs; other materials infected with HIV or HBV such as laboratory cultures.)
- Splashes or other exposures to blood or other potentially infectious material if it results in diagnosis of a bloodborne disease or meets the general recording criteria.
- A case where an employee is exposed at work to someone with a known case of active tuberculosis, and subsequently develops a TB infection.

Recording Criteria Decision Tree



SH 900--Instructions for Recording and Reporting Public Employees' Occupational Injuries and Illnesses

Column A.-Case no.

The case number is a number assigned by the officer responsible for maintaining the record. Should this be a privacy case, a special denotation must be made so that the privacy case number may be cross-referenced to the respective case.

Column B.-Employee's name

Enter affected employee's name. If an employee chooses not to reveal their identity in regards to the specifics of their injury/illness, this should be designated on the SH 900.2. Should an employee fail to make such a designation, the employee's name should be entered on the SH 900.

In the event that this case is a privacy case, the name of the employee **should not** be entered. Rather "Privacy Case" or "PC" should be entered in the box. A separate log/ list of all privacy cases, the case numbers and the employee's name should be kept in a confidential file.

Column C.-Job title

Self-explanatory

Column D.-Date of injury or onset of illness *(month/day)*

For occupational injuries, enter the date the work related accident occurred which resulted in injury. For occupational illnesses, enter the date of initial diagnosis of illness, or, if absence from work occurred before diagnosis, enter the first day of the absence attributable to the illness subsequently diagnosed or recognized.

Column E.-Where the event occurred

Enter specific location of where in the facility the injury took place. (e.g., Room 312, lunchroom, etc.)

Column F.-Describe the injury or illness, parts of body affected, and object/substance that directly injured or made person ill

Describe the injury or illness, parts of body affected, and object/substance that caused injury/illness. (e.g. Second degree burns on right hand from Bunsen burner)

Column G. –Death

Place a check only in the box. Place the checkmark in box representative of the most severe consequence of the illness/injury. (Ex: An employee was away from work for 3 days due to the injury. The employee died on day 4 due to the injury/illness—death is the most severe consequence. The checkmark should be placed in Column G.) Note: Do not enter numbers here.

Column H.-Days away from work

Record if the case involves one or more days away from work. Check the box for day's away cases and count the number of days. Do not include the day of injury/illness.

Columns I - J.-Remained at work *(Job transfer or restriction/ other recordable cases)*

Describe the incident in which an employee is injured at work in column F, but remains at work. Place check in the appropriate box.

Restricted work activity occurs when an employee cannot perform one or more routine functions of his or her job; or an employee cannot work a full workday; or a physician or licensed health care professional (PLHCP) recommends either of the above.

Column K. -Away fro work

Enter the number of **calendar days** the employee was away from work due to the injury/illness. Calendar days include weekend days, holidays, and vacations days. This count begins the 1st day **after** the incident and ends at 180 days away and/or days restricted. Do not include the day of injury/illness. A medical opinion, if available, takes precedence and should be entered.

Column L.-On job transfer or restriction

Enter the number of **calendar days** the employee was at work but because of the injury/illness was transferred to another location/assignment or was on modified duty. Calendar days include weekend days, holidays, and vacations days. This count begins the 1st day **after** the incident and ends at 180 days away and/or days restricted. Do not include the day of injury/illness. Partial days or half days are counted as days of restricted work activity. A medical opinion, if available, should be entered. Partial days away from work (e.g., half days) are considered days of restricted work activity.

Column M.-Injury or illness

Only one box should be checked. If the incident resulted in an injury, check box #1. If the incident resulted in an illness, check the box that categorizes the illness (boxes #2-6).

Fatalities and Work-Related Hospitalizations

The death of an employee in the work environment, **regardless of cause**, must be reported within eight (8) hours of the occurrence. The in-patient hospitalization of two (2) or more employees due to a work-related incident must be reported within eight (8) hours of the hospitalizations. This report may be made orally by telephone to (718) 935-2319 or in person to the New York City Department of Education, Office of Occupational Safety and Health, **65 Court Street, Room 706, Brooklyn, NY 11201.**

Updating Injury and Illness Outcomes

According to the PESH recordkeeping rule, 12 NYCRR Part 801, this form must be retained for five (5) calendar years after the recording year. During the 5-year period the log must be retained, if there is a change in the extent and outcome of an injury or illness which affects the entries in columns G. – M., cross out the first entry with a single line and enter the updated information. This form **may and should be updated** as necessary.

COMPLETING THE SH 900.1 -- Summary of Work Related Injuries and Illnesses

The SH 900.1-- Summary of Work Related Injuries and Illnesses -- provides data that allows employers to calculate incidence rates.

According to the PESH recordkeeping rule, 12 NYCRR Part 801, this form must be maintained for five (5) calendar years after the recording year. This form **should not** be updated.

Posting Requirements

By regulation, a copy of this form must be completed annually and posted at each establishment in the place or places where notices to employees are customarily posted. The copy must be posted from **February 1 through April 30** of the year subsequent to the year the record is for. In the event that there were no injuries or illnesses during the recorded year, zeros must be entered in the appropriate boxes and the form must posted for the required timeframe.

Box 1. Enter establishment information. A separate form is required for each location.

Box 2. Enter employment information. This information may be obtained by performing the calculations on the reverse of the form.

To calculate the **Average No. of Employees** and the **Total Hours Work by all Employees** create a worksheet with 2 columns. Add column B, this is the total number of employees paid in all pay periods for the year. Enter on line A. Follow steps 2-3. (See table 1 and 2)

PART I

Steps to estimate Annual Average Number of Employees

STEP 1: Add the number of employees your establishment paid in every pay period for the year. (See table 1 and 2)

Include all employees: full-time, part-time, temporary, seasonal, salaried and hourly.

For Example:

Public School 123K pays its employees 24 times each year; therefore it has 24 pay periods per year. *(The pay period for a fulltime employee in a year may be 26 at your reporting site) If that is the case use 26 instead of 24 and follow the same steps.*

STEP 2: Divide the sum by the number of pay periods your establishment had per year. **Include** any pay periods when you had no employees.

Because PS 123K has 24 pay periods, it would divide its sum by 24. ***{2,370 divided by 24 = 98.75 ~99.00}***

STEP 3: Round the answer to the next highest whole number. Write the rounded number in the box marked Annual average number of employees.

Pay period	*Number of employees*
1	**100**
2	**100**
3	**100**
4	**100**
5	**100**
6	**100**
7	**90**
8	**100**
9	**100**
10	**100**
11	**100**
12	**100**
13	**100**
14	**100**
15	**100**
16	**85**
17	**100**
18	**100**
19	**100**
20	**90**
21	**100**
22	**100**
23	**105**
24	**100**
25	**100**
26	**100**
***Total**	**2,370(sum)**

Table 1*-26 pay period*

In this pay period	*PS 123K paid this many employees*
1	**100**
2	**100**
3	**100**
4	**100**
5	**100**
6	**90**
7	**100**
8	**100**
9	**100**
10	**100**
11	**100**
12	**100**
13	**100**
14	**100**
15	**85**
16	**100**
17	**100**
18	**100**
19	**90**
20	**100**
21	**100**
22	**105**
23	**100**
24	**100**
***Total**	**2,370(sum)**

Table 2*-24 pay periods*

PART II

Steps to estimate Total Hours Worked

Note: *Total Hours Worked* should exclude vacation, sick leave, holidays and other non-work time.

STEP 1: Find the number of full-time employees in your establishment for the year. (See sample sheet on page 4)
*Public School 123K had **90 full- time** employees during the year.*

STEP 2: Multiply this number by the number of hours worked for a full-time employee in a year. This is equal to the number of full-time hours worked:

Public School 123K's 90 full- time employees worked an average of about 1,200 hours each per year after excluding vacation, sick leave, holidays, and other non-work time*. (The hours worked for a full-time employee in a year may be different at your reporting site)* i.e., a full-time employee working about 35 hours a week per year would work about 1, 700 hours per year.

According to PESH a teacher usually works about 1,200 hours per year.

90 (full-time employees) times 1,200 (hours worked by a full- time employee in a year) equals 108,000 full-time hours.

STEP 3: Add the number of any overtime hours and the number of hours worked by other employees (part-time, temporary, and seasonal) to the amount in **Step 2.**

Public School 123K's full- time employees worked a total of 1,000 hours of overtime. In addition, 10 part-time employees worked a total of 2,000 hours during the year. Add these hours to those from **Step 2.**

Full-time hours from Step 2:		108,000
Overtime hours	+	1,000
Part-time hours	+	2,000
Total hours worked by all Employees during the year	**=**	**111,000**

Box 3–5. Enter the corresponding information from the SH-900.

Box 6. The highest-ranking supervisor of the establishment must certify that the entries are recorded with accuracy, and completed to the best of their knowledge.

COMPLETING THE SH 900.2 -- Injury and Illness Report

The SH 900.2-- **Injury and Illness Incident Report** -- includes specifics about how the injury or illness occurred. The recording officer and the injured employee or his/her designee should fill out this form.

This form contains information concerning employee health and must be maintained in a manner that protects the confidentiality of employees to the extent possible while providing the necessary occupational safety and health information. This form should be filled out **within seven (7) calendar days** after receipt of information that a recordable work-related injury of illness has occurred.

The ill/injured employee or their designee must choose a disclosure option on the bottom of the form. Should no choice be made, the affected employee's name **will appear** on the SH 900, provided the recordable incident is not a privacy case.

Privacy concern cases include:

- An injury or illness to an intimate body part or reproductive system
- An injury or illness resulting from sexual assault
- Mental illness

- HIV infection, hepatitis, tuberculosis
- Needle stick and sharps injuries that are contaminated with another person's blood or other potentially infectious material
- Employee voluntarily requests to keep name off for illness cases

According to the PESH recordkeeping rule, 12 NYCRR Part 801, this form must be maintained for five (5) calendar years after the year it records. This form **should not** be updated. This form **should not** be posted.

All three forms must be completed and mailed to the Office of Occupational Safety and Health, 65 Court Street, Room 706, Brooklyn, NY 11201 by February 1. PESH Officers review these forms annually and collect statistical data for the State Department of Labor.

State of New York
Department of Labor
Form SH-900

Log of Work-Related Injuries and Illnesses

Political Subdivision (Employer)____________________
Establishment Name____________________
Street Address____________________
City__________ State_____ Zip Code______

Calendar Year 20____
Page____of____

1. This form is required by the Commissioner of Labor's Rules and Regulations Part 801 (12 NYCRR Part 801) and must be kept in the establishment for five years. Failure to maintain this form can result in the issuance of a Notice of Violation and Order to Comply.

2. You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed healthcare professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria found in12 NYCRR 801.7-801.12 and . instructions

3. Use more than one line for a single case if necessary.

4. This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the the information is being used for occupational health purposes. Refer to the instructions (SH-901) for types of illnesses and injuries defined as "privacy concern cases".

Identify the person			Describe the case			Classify the case											
						Using these four categories, check ONLY the most serious result for each case:				*Enter the number of days the injured or ill worker was:*		*M. Check the "injury" column or choose one type of illness:*					
(A) Case no.	(B) Employee's name	(C) Job title	(D) Date of injury or onset of illness *(month/day)*	(E) Where the event occurred *(e.g., Loading dock north end)*	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill *(e.g., Second degree burns on right forearm from acetylene torch)*	*Death* (G)	*Days away* (H)	*Remained at work* Job transfer or restriction (I)	*Remained at work* Other record-able cases (J)	Away from work (K)	On Job transfer or restriction (L)	Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All Other Illnesses (6)
			/							days	days						
			/							days	days						
			/							days	days						
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					Page totals >>												

ADDITIONAL FORMS AND INFORMATION: If you require additional forms or information concerning the completion of this form, contact:
The Office of Occupational Safety and Health at (718) 935-2319
SH 900 (11-03)

STATE OF NEW YORK
DEPARTMENT OF LABOR

Divison of Safety and Health
Public Employee Safety and Health
State Office Campus
Building 12, Room 158
Albany, NY 12240

SUMMARY OF WORK-RELATED INJURIES AND ILLNESSES FORM SH-900.1

Calendar Year _____

All establishments covered by PART 801 **must** complete this summary annually, even if no occupational injuries or illnesses occurred during the year.

Employees, former employees, and their representatives have the right to review this form. They also have limited access to the Log (SH 900) or its equivalent. See 801.35 and instructions for further details on access provisions for these forms.

1. ESTABLISHMENT INFORMATION	2. EMPLOYMENT INFORMATION
ESTABLISHMENT NAME	If you don't have accurate figures, see the instructions on the back of this sheet.
STREET ADDRESS	AVERAGE NUMBER OF EMPLOYEES _____
CITY, STATE, ZIP CODE	
INDUSTRY DESCRIPTION (e.g.,village fire department)	TOTAL HOURS WORKED BY ALL EMPLOYEES LAST YEAR _____
NORTH AMERICAN INDUSTRIAL CLASSIFICATION SYSTEM (NAICS). _____ _____ _____ _____ _____ _____	

Enter the column totals from the Log of Occupational Injuries and Illnesses (SH 900) for each category (column labels under each line correspond to the columns on the Log). If a category has no cases, enter "0."

3. NUMBER OF CASES		4. NUMBER OF DAYS		5. INJURIES AND ILLNESS TYPES	
DEATHS	_____ (Col. G)	AWAY FROM WORK	_____ (Col. K)	INJURIES	_____ (Col.1)
DAYS AWAY FROM WORK	_____ (Col. H)	JOB TRANSFER OR RESTRICTION	_____ (Col. L)	SKIN DISORDERS	_____ (Col. 2)
JOB TRANSFER OR RESTRICTION	_____ (Col. I)			RESPIRATORY CONDITIONS	_____ (Col. 3)
OTHER RECORD-ABLE CASES	_____ (Col. J.)			POISONINGS	_____ (Col. 4)
				HEARING LOSS	_____ (Col. 5)
				ALL OTHER ILLNESSES	_____ (Col. 6)

6. CERTIFICATION

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

SIGNATURE _____ TITLE _____

PRINT NAME _____ DATE _____

CALCULATING EMPLOYMENT INFORMATION (Section 2)

If accurate figures regarding the average number of employees and the total hours worked by your employees are not available, please use the steps below to estimate these numbers.

Average Number of Employees

1. Add the total number of employees paid in all pay periods for the year. Include all full-time, part-time, temporary, seasonal, salaried, and hourly employees. _____ (a)

2. Count the number of pay periods for the year, including pay periods with no employees. _____ (b)

3. Divide the number of employees by the number of pay periods. _____ (a) / _____ (b) _____ (c)

4. Round the answer to the next whole number. Enter this number in the line for "Annual average number of employees" in Item 2 on the front. _____ (d)

Total Hours Worked By All Employees

1. Enter the number of full-time employees in your establishment for the year. _____ (e)

2. Enter the number of work hours for a full-time employee in a year. _____ (f)

3. Multiply (e) by (f) to find the number of full-time hours worked. **X** _____ (g)

4. Add number of overtime hours and number of hours worked by other employees (part-time, temporary, seasonal). **+** _____ (h)

5. Round the answer to the next highest whole number. Enter this number in the lines for "Total Hours Worked by All Employees Last Year" in Item 2 on the front. _____ (i)

NEW YORK STATE DEPARTMENT OF LABOR
INJURY AND ILLNESS INCIDENT REPORT
FORM SH 900.2

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes

This *Injury and Illness Incident Report* is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with the *Log of Work-Related Injuries and Illnesses* and the accompanying Summary, these forms help the employer and PESH develop a picture of the extent and severity of work related incidents.

Within 7 calendar days after you receive information that a recordable work related injury or illness has occurred, you must fill out this form or an equivalent. Some state worker's compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form.

According to 12 NYCRR Part 801, **PESII** record keeping rule, you must keep this form on file for 5 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy and use as many as you need.

Completed by: _____

Title: _____

Phone: (____)_____ Date: _____

Employee Information:

1) Full Name: _____

2) Street: _____

City: _____ State: ____ Zip ____

3) Date of Birth ___/___/____ 4) Date hired ____/____/____

5) ☐ Male ☐ Female

Physician/Health Care Professional Information: _____

6) Name of physician or other health care professional: _____

_____

7) If treatment was given away from the worksite, where was it given?

Facility: _____

Street: _____

City _____ State ____ Zip _____

8) Was employee treated in an emergency room?

☐ Yes ☐ No

9) Was employee hospitalized overnight?

☐ Yes ☐ No

Tell us about the case:

10) Case number from the log: _____

(Transfer the case number from the Log after you record the case.)

11) Date of injury **or** illness: ____/____/____

12) Time employee began work _____ AM / PM

13) Time of event _____ AM / PM

14) What was the employee doing just before the incident occurred? Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific. ***Examples:*** "climbing a ladder while carrying roofing materials", "spraying chlorine from hand sprayer."

15) What happened? Tell us how the injury occurred. ***Examples:*** "'when ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement."

16) What was the injury or illness? Tell us the part of the body that was affected and how it was affected, be more specific than "hurt", "pain", or "sore." ***Examples:*** "strained back"; "chemical burn, hand."

17) What object or substance directly harmed the employee? ***Examples:*** "concrete floor; "radial arm saw"; "chlorine."

18) If the employee died, when did death occur? Date of death ____/____/____

ILLNESS CASES ONLY **[ ] Check this box if the employee independently and voluntarily requests that his/her name not be entered on the log. If checked, treat as a privacy concern case.**

APPENDIX I

HAZARD COMMUNICATION STANDARD & RIGHT-TO-KNOW COMPLIANCE CHECKLIST

THE NEW YORK CITY DEPARTMENT OF EDUCATION

JOEL I. KLEIN, *Chancellor*

DIVISION OF HUMAN RESOURCES
OFFICE OF OCCUPATIONAL SAFETY & HEALTH (OOSH)
65 Court Street –Room 706
Brooklyn, New York 11201

HAZARD COMMUNICATION STANDARD AND RIGHT-TO-KNOW LAW COMPLIANCE CHECKLIST

SCHOOL NAME:		REGION:
SCHOOL ADDRESS:		
PHONE #:	FAX #:	DISTRICT:

PROGRAM ADMINISTRATION	**YES**	**NO**
• Is there a Site Safety Officer at this facility?	☐	☐
• Is there a written Hazard Communication Plan at the site?	☐	☐
• Is there a written Hazard Communication Plan completed?	☐	☐
• Is there a Safety and Health information file on site?	☐	☐

TRAINING	**YES**	**NO**
• Are employees trained on Haz-Com/RTK?	☐	☐
• When? _____/_____/_____		
• Do employees understand hazards associated with using chemicals?	☐	☐
• Is training documented (kept on file for 3 years)?	☐	☐

Are employees familiar with:	**YES**	**NO**
• Name and location of the Site Safety Officer	☐	☐
• OSHA's Hazard Communication Standard	☐	☐
• The NYCDOE's Hazard Communication/ Right–To-Know program	☐	☐
• The location of the Safety and Health information file	☐	☐
• The location of the Material Safety Data Sheet file	☐	☐
• Procedures to report chemical exposure—the Exposure Incident Report Form	☐	☐
• Procedures to claim reimbursement for related medical tests	☐	☐

PERSONAL PROTECTIVE EQUIPMENT	**YES**	**NO**
• Is PPE available and provided to employees?	☐	☐
• What types? _____		
• Where are they located? _____		

CHEMICALS	**YES**	**NO**

• Are chemicals properly labeled and stored?	☐	☐
• Is chemical inventory taken each year?	☐	☐
• Is chemical inventory available on site?	☐	☐
All chemicals have labels that are:	**YES**	**NO**
• complete	☐	☐
• legible	☐	☐
• identifies the chemical	☐	☐
• identifies the chemical, physical, and or health hazards	☐	☐
SH 900, SH 900.1, AND SH 900.2	**YES**	**NO**
• Are recordable occupational accidents and injuries recorded on the applicable forms at the site?	☐	☐
• Were certified copies of the SH 900 series of forms submitted to the Regional Health Director for forwarding?	☐	☐
RECORDKEEPING	**YES**	**NO**
• Are training records kept for 3 years?	☐	☐
• Are exposure incidents reported on incident report forms?	☐	☐
• Are copies of SH 900s/DOSH 900s on file on site for 5 years?	☐	☐
POSTINGS	**YES**	**NO**
• Is there a bulletin board allocated for health and safety information?	☐	☐
• Is the NYCDOE RTK/HazCom poster conspicuously displayed?	☐	☐
• Is the poster current and accurate?	☐	☐
• Is the Job Safety and Health poster conspicuously posted?	☐	☐

_____ _____
Site Safety Officer (Print) Principal's Signature

_____ _____
Site Safety Officer (Signature) Date

Note: For each **no** answer above, attach an explanation and forward Checklist to OOSH within a week after completion.

Please forward to:
New York City Department of Education
Office of Occupational Safety and Health (OOSH)
65 Court Street, Room 706
Phone: (718) 935-2319
Fax: (718) 935-4682
Emerson Greenidge, MS, CSP, Director
Rev.1/06

NOTES