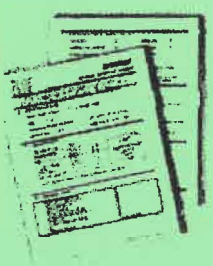
HAZARD COMMUNICATION

BROOME TIOGA BOCES



MSDS
Material Safety Data Sheet

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INTRODUCTION

BOCES School District and other public employers are required to comply with Federal Occupational Safety and Health Regulation 29 CFR 1910.1200: Hazard Communication as New York State adopted the Federal OSHA standards and incorporated them into NYS Public Employee's Safety and Health Act (PESHA). Anyone who works with chemicals or comes in contact with chemicals is required to receive training that explains Material Safety Data Sheets (MSDSs), labeling and other forms of warnings, and determining the hazards of chemicals. A listing of all chemicals and the Material Safety Data Sheets (MSDS) are maintained in the Director of Operations and Maintenance office, as well as job specific MSDS files, which are maintained in the different programs, departments, classrooms and divisions.

PURPOSE

This hazard communication program has been developed to provide guidelines for chemicals for all employees who work directly with chemicals or who work in areas where chemicals may be used by others for purposes such as cleaning, teaching, etc.

This training program has been implemented to protect BOCES employees from chemicals while they are working with the chemicals or after they have been used for a specific purpose, such as cleaning, in their area. Training will be substance specific for each area of workers and will cover the types of chemicals and the physical or health hazards that they present to the worker. The location of informational sources such as MSDSs or labels and the information these sources convey regarding the hazards of the chemical listed, what special precautions should be taken with those chemicals including personal protective equipment (PPE), and special work practices to minimize exposure are identified. Annual inspections are mandated to be conducted to maintain a current listing of MSDSs. Material Safety Data Sheets are readily available to all employees.

The Director of Operations and Maintenance is responsible for acquiring and updating MSDSs. Through the cooperation of the Purchasing Agent, who is responsible for requesting the MSDSs and the Receiving Agent who is responsible to verify that the MSDSs are received and distributed to the user. All MSDSs will be reviewed and whenever possible, the least hazardous substance will be procured.

DEFINITIONS

ACUTE short duration, single-contact with a chemical, usually reversible effect

CARCINOGEN
a chemical that causes malignant tumors. OSHA considers a chemical to be a carcinogen if It is (a) listed by the International Agency for Research on Cancer as a carcinogen or potential carcinogen or (b) is listed by the

DEFINITIONS

National Toxicology Program (NTP) as a carcinogen or (c) is regulated by OSHA as a carcinogen.

CHEMICAL	means any element, chemical compound, or mixture of elements and/or compounds
CHRONIC	repeated exposure to a chemical sometimes with delayed effects and usually irreversible
COMBUSTIBLE LIQUID	for these purposes, any liquid having a flashpoint at or above 100 degrees Fahrenheit but below 200 degrees Fahrenheit
COMPRESSED GAS	(a) a gas or mixture of gases that exceeds an absolute pressure of 40 psi at 70 F in a container (b) a gas or mixture of gases that exceeds an absolute pressure of 104 psi at 130 F (c) a liquid having a vapor pressure exceeding 40 psi at 100 F
CORROSIVE	a chemical that causes irreversible destruction of living tissue at the site of contact. Strong acids, bases, dehydrating agents, and oxidizing agents are corrosive. Chemicals having a pH less than 2.0 or greater than 12.5 are corrosive.
FLASHPOINT	the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite
HAZARDOUS CHEMICAL	any chemical which is a physical or health hazard
IRRITANT	a chemical which causes reversible inflammation at the site of contact.
LABEL	any written, printed, or graphic material affixed to a hazardous chemical container
MATERIAL SAFETY DATA SHEET (MSDS)	written or printed materials concerning a hazardous chemical which is prepared to contain the following information: identity used on the label; chemical and common names; if chemical is a mixture, the chemical and common names of the ingredients in the mixture; primary routes of entry; the permissible exposure limit and the threshold limit value; whether the chemical is listed in the National Toxicology Program, Annual Report on Carcinogens, or found to be potentially carcinogenic by the International Agency for Research on Cancer; safe handling procedures; personal protective equipment

	required; procedures for clean up and disposal of spills, leaks; maintenance of contaminated equipment; first aid procedures and emergency information contacts.
OXIDIZER	a chemical that initiates or promotes combustion in other materials which leads to fire from itself or through the release of oxygen or other gases
PERMISSIBLE EXPOSURE LIMIT (PEL)	is the OSHA defined limit at which an average worker can be exposed to the chemical without showing ill effects based on working 40 hours/ week, 8 hours/day.
PHYSICAL HAZARD	a chemical which is a combustible liquid, a compressed gas, an explosive, flammable, an organic peroxide, an oxidizer, a pyrophoric, unstable or water reactive
PYROPHORIC	a chemical that ignites spontaneously in air at a temperature of 130 F.
SENSITIZER	a chemical that causes mainly skin and respiratory reactions in a majority of exposed people or animals after the first exposure
SYNERGISTIC EFFECT	combining chemicals that may cause a greater or different effect than either of the original chemical's abilities. For example mixing toilet bowl cleaner and bleach can produce a poisonous gas.
TARGET ORGAN EFFECT	chemicals may attack only specific bodily organs such as hepatotoxins, which cause liver damage, or mutagens or teratogens, which target reproductive systems.
THRESHOLD LIMIT VALUES	a value set by the American Conference of Governmental Industrial Hygienists regarding the maximum permissible level at which an average worker (175 lb. male) can be exposed to the chemical without showing adverse effects after a 40-hour work week at 8 hours per day
UNSTABLE (REACTIVES)	chemicals that will react violently if they are subject to movement, pressure, or high temperature.
WATER REACTIVE	chemicals that react with water, steam, or other sources of moisture to produce a flammable, poisonous or corrosive gas.

Buckeye

Buckeye International, Inc.
2700 Wagner Place
Maryland Heights, MO 63043
314/291-1900

N. F. P. A.	
4 = Extreme	
3 = High	
2 = Moderate	
1 = Slight	
0 = Insignificant	
HEALTH	1
FIRE	0
REACTIVITY	0

Material Safety Data Sheet

24 Hour Emergency Telephone Number: 1-800-228-5635 Extension: 076
Outside North America call: 612-851-8180, ext. 076

SECTION I - IDENTIFICATION

PRODUCT NAME	BUCKEYE® SANICARE® MINT QUAT	DATE PREPARED: July 1, 1999
CHEMICAL FAMILY	Cleaner Disinfectant, Water Based	CODE: 5077
PROPER D.O.T. SHIPPING NAME	Disinfectant, Liquid, NOIBN	
D.O.T. HAZARD CLASSIFICATION	None	

SECTION II - INGREDIENTS AND IDENTITY INFORMATION

% By WGT	MATERIAL	PEL	T.L.V.	C.A.S. NO.
3.85	Blend of Didecyl Dimethyl and n-Alkyl Dimethyl Benzyl Ammonium Chlorides	NE	NE	7173-51-5 68424-85-1
>91.15	Soft Water	NE	NE	7732-18-5
<4.0	Octyl Dimethyl Amine Oxide	NE	NE	2605-78-9
<1.0	Perfume, coloring and additives less than 1%	NA	NA	NA

ITEMS MARKED * ARE SARA TITLE III SEC 313 REPORTABLES. ALL INGREDIENTS ARE ON TSCA INVENTORY

SECTION III - PHYSICAL DATA

BOILING POINT °F	212°F	pH (CONC.)	7.6±0.2
SOLUBILITY IN WATER	Infinite	pH (USE DILUTION) 1:64	7.0±0.2
% VOLATILE BY WEIGHT	94.0	EVAPORATION RATE (Water=1)	1.0
SPECIFIC GRAVITY	1.00	PRODUCT FORM	Liquid
APPEARANCE AND ODOR	Mint, Clear Blue/Green Solution		

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT (Test Method)	Tag Closed Cup: None	FLAMMABLE LIMITS	
EXTINGUISHING MEDIA	NA	UPPER LIMIT: NA	LOWER LIMIT: NA
SPECIAL FIRE FIGHTING PROCEDURES	None		
UNUSUAL FIRE AND EXPLOSION HAZARDS	Products of combustion. Oxides of carbon and nitrogen.		

SECTION V - REACTIVITY DATA

STABILITY	Stable
CONDITIONS TO AVOID	None known.
INCOMPATIBILITY	Do not mix with chlorine bleach or anionic detergents.
HAZARDOUS DECOMPOSITION PRODUCTS	None known.
HAZARDOUS POLYMERIZATION	Will not occur.

Trade Name

Chemical Name

Permissible Exposure Level (PEL) or Threshold Limit Values (TLV)

for the components listed under Section II. This is the maximum level at which you can be exposed to the total product or mixture without showing ill effects in the average worker, based upon working 40 hours/week, 8 hours/day.

Solubility In Water

This tells you how easily the material dissolves in water. This can he important when you are trying to wash the product off your hands or out of your eyes.

Percent Volatile

This tells you how much of the mixture can evaporate.

Specific Gravity

This tells you whether the material will sink below water or float on top of it. Oil has an SG of less than one. Lead has an SG of more than one.

Evaporation Rate

This tells you how fast the product vaporizes compared to another solvent, usually acetone or heptane At less than 1.0, it means that the product evaporates slower than the standard solvent. At a value of greater than 1.0, it means that the product evaporates faster than the standard. The faster the product evaporates means the greater the potential inhalation exposure.

Flash Point

This tells you the temperature of the liquid when the vapor above it will ignite with a spark. The tests are defined as "open cup" or "closed cup." The closed cup flash point is lower because the lid contains the vapors. Materials should not be stored or worked with at temperatures above their flash points.

Incompatibility

This tells you how to store the product or what not to mix the product with. A common example is chlorine bleach and acidic toilet bowl cleaners which form a poisonous gas when mixed.

Hazardous Decomposition Products

By-products that are formed when the material breaks down or burns. For example TEFLON when burns releases poisonous hydrogen fluoride gas.

Hazardous Polymerization

Polymerization is when chemicals join together to form a network or web, as when epoxy glue sets up. Sometimes this reaction can happen quickly and give off considerable amounts of heat.

Flammable Limits

The upper and lower flammable limits are the percentage that in a mixture with air will burn. Below the Lower Explosive Limit (LEL) the mixture is too lean to burn. Above the Upper Explosive Limit (UEL) the mixture is too rich to burn.

Stability

This section defines the product's shelf life and it special storage precautions need to be taken to maintain the shelf life. Some products decompose easily and become "unstable." An unstable product may have other hazards associated with it such as exploding or just becoming useless.

Effects of Overexposure
Health Effects of trade secret ingredients cannot be exempted but manufacturer's may not include the suspected health effects. Look for information on routine or long term health effects that are listed hare.

Emergency First Aid

This tells you what to do immediately at the scene to mitigate the effects of overexposure.

Spill or Leak Procedures and Waste Disposal Requirements

This section tells you what materials you will need and how to clean up this product in case of a spill. It also has information on how to dispose of this product.

Personal Protective Equipment

The personal protective equipment is listed for use with a specific product to prevent exposure to the product via the routes of entry into the body. Specific types of gloves or respirators may be recommended - use the type that is listed. Not all PPE performs the same function. Also note it local exhaust rather than general ventilation is recommended.

CODE: 5077

SECTION VI - HEALTH HAZARD DATA

ROUTE(S) OF ENTRY: INHALATION? No SKIN? Yes INGESTION? No

HEALTH HAZARDS (Acute and Chronic)

Causes eye and skin irritation.

CARCINOGENICITY: NTP? No IARC MONOGRAPHS? No OSHA REGULATED? No

SIGNS AND SYMPTOMS OF OVEREXPOSURE

For Skin: Redness of skin or a warming sensation.
For Eyes: Redness or burning sensation.

MEDICAL CONDITIONS
GENERALLY AGGRAVATED BY EXPOSURE

None known.

EMERGENCY AND FIRST AID PROCEDURES

In case of contact, immediately flush eyes or skin with plenty of water. If irritation persists, seek medical attention. For Ingestion: Give two large glasses of water. Do not induce vomiting. Call physician. Never give anything by mouth to an unconscious person.

SECTION VII - SPILL OR LEAK PROCEDURES

SPILL RESPONSE

Pick up with mop, wet/dry vac or absorbent material. Rinse area with clear water and allow floor to dry before allowing traffic.

WASTE DISPOSAL
METHOD Flush to sanitary sewer, or send to sanitary landfill, following local, state and federal laws.

SECTION VIII - SPECIAL PROTECTION INFORMATION

EYE PROTECTION	When eye contact may occur, wear safety glasses or chemical splash goggles.	VENTILATION	Normal room ventilation.
SKIN PROTECTION	Rubber gloves or other impervious gloves.*	RESPIRATORY PROTECTION	None required.
OTHER PROTECTION	None required.	Follow good personal hygiene practices.	

*Needed for clean up of spill or for possible prolonged skin contact.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS IN HANDLING AND STORAGE	KEEP OUT OF REACH OF CHILDREN! Rinse container before discarding. Keep container closed when not in use. Store at room temperature.
OTHER PRECAUTIONS	This product is not regulated under CERCLA or RCRA. Not reportable under SARA Title III Section 311/312.

NA = Not Applicable
NE = Not Established

PREPARED BY: Mark Gindling, Director of Research

HOW TO READ AN MATERIAL SAFETY DATA SHEET

Section I - Material Identification

The MSDS must have the name, address, and telephone number of the chemical manufacturer, importer, employer or other responsible party preparing the MSDS who can give further information on the product hazards and emergency procedures. It must also give the date of preparation of the most recent version.

Section II - Hazardous Ingredients/Identity Information

Chemicals are often known by different names:

- A *trade* name, such as "Safety Clean", is the brand name the manufacturer gives the product. It does not tell you, however, what chemicals are in the product, or whether the product is a mixture of chemicals or a single chemical. The same chemical may be used in a variety of products with different trade names. The trade name usually appears on the label and in Section I of the MSDS.

- A *generic* name describes a family or group of chemicals. For example, there are several different "isocyanates", and thousands of different "chlorinated hydrocarbons". Sometimes an MSDS will try to get away with just listing the generic names. However, the law says that chemical names must also be listed.

- The *chemical* or *specific* name is the one that describes the specific chemical. An example is *methyl chloroform*, one of the thousands of "chlorinated hydrocarbons", or *toluene* diisocyanate, a member of the "isocyanate" family. **The chemical name is the easiest name to use when doing research on the health effects of chemicals and how to protect yourself.**

- The *CAS Number* is a number given by the Chemical Abstract Service to each chemical. While different chemicals may have the same name, they will all have their own CAS number, which can be used to look up information. The Chemical Abstract Service publishes a book that contains a list of all CAS Numbers and the chemicals they represent.

The MSDS must list the chemical name of all hazardous ingredients, which make up more than 1% of the mixture (or 0.1% for cancer-causing substances). **Listing only the trade name, only the CAS number or only the generic name is not acceptable.**

Trade Secrets

The manufacturer may be able to withhold ingredient information from the MSDS if any ingredients are trade secrets. Procedures for challenging a manufacturer's trade secret claim are determined by different state laws. Under most Right-to-Know laws, the manufacturer must provide the trade secret identities to health care professionals and/or workers if they have a need to know the information, or in a medical emergency. Consult your state law for more details. Remember that even if certain ingredients in the product are labeled as trade secrets, the MSDS must contain all of the other required information.

Exposure Limits

The MSDS must also list the OSHA Permissible Exposure Limit (PEL) for each hazardous ingredient. It must also list Threshold Limit Values (TLVs) recommended by the American Conference of Governmental Industrial Hygienists and may also list workplace exposure limits recommended by the National Institute for Occupational Safety and Health (NIOSH). These are important because ACGIH and NIOSH often recommend exposure limits that are more up-to-date and protective than OSHA's.

Section III - Physical/Chemical Characteristics

Physical and chemical characteristics include the chemical's appearance and odor, along with physical properties that indicate how easily a chemical will evaporate and release potentially harmful vapors into the air.

- **Boiling point: The boiling point of a substance is the** temperature at which the liquid boils or becomes a gas. The lower the boiling point, the quicker it evaporates and the easier it is to inhale. Chemicals with boiling points below 100°C (or 212°F) require special caution.
- **Vapor pressure:** A high vapor pressure indicates that a liquid will evaporate easily. Chemicals, which evaporate quickly, are called *volatile*. This means that air concentrations can build up quickly, even though the substance is in liquid form. Liquids with high vapor pressures may be especially hazardous if you are working with them in a confined space or an enclosed area.
- **Vapor density:** If the vapor density is less than one, it will tend to rise in air. If the vapor density is greater than one, it will fall in air and concentrate in the bottom of tanks or confined spaces.
- **Appearance and odor:** This information may help identify a substance that spills or leaks in your work area. However, many chemicals are hazardous at levels lower than they can be smelled. Also, many chemicals, such as hydrogen sulfide and ammonia, cause "olfactory fatigue", which means that workers rapidly lose their ability to smell the substance.
- **Specific gravity:** If the specific gravity is greater than one, the substance will sink in water; if less than one, it will float on top of water.
- **Evaporation rate:** This is the rate at which a substance evaporates compared to either *ether*, which evaporates quickly, or *butyl acetate*, which evaporates slowly. If the substance has an evaporation rate greater than one, it evaporates faster than the comparison substance.

Section IV - Fire and Explosion Hazard Data

This section should provide information on the fire hazards of a product and special precautions necessary to extinguish a fire.

- **Flash point:** This is the lowest temperature at which a liquid gives off enough vapor to form a mixture with air that can be ignited by a spark. Liquids with flash points below 100°F are considered *flammable*, and liquids with flash points between 100 and

200°F are considered to be *combustible*. Flammable and combustible liquids require special handling and storage precautions.

- **Extinguishing media:** This section should specify what kind of fire extinguisher to use. There are four classifications of fires: *Class A* for paper and wood, *Class B* for more flammable materials such as liquids or greases, *Class C* for electrical fires, and *Class D* for fires involving metals or metal alloys.
- **Special firefighting procedures and unusual fire and explosion hazards:** For example, some chemicals (such as corrosives) must not be extinguished with water in case of fire.

Section V - Reactivity Data

This section tells you about the product's compatibility with other chemicals, and special conditions to avoid. The stability of the product indicates whether the product can decompose and what conditions can do this. The incompatibility section tells you what chemicals can react with the product. This section is very important in determining what materials you should not store near this product. Hazardous decomposition products tells you what hazardous chemicals can be produced when the product is heated or burned. The hazardous polymerization section tells you whether the product can polymerize, and what conditions can cause this.

Section VI - Health Hazard Data

This section describes the health effects of the product, including signs and symptoms of exposure and medical conditions made worse by exposure. *Acute* (short-term) and *chronic* (long-term) effects of exposure must always be included. MSDSs often leave out chronic health information, such as whether a chemical causes cancer or birth defects. Routes of entry (inhalation, skin contact, swallowing) and emergency and first aid procedures must also be included. *Unfortunately, a lot of MSDSs in circulation do not contain complete and accurate health hazard information.*

This section must also contain information on target organs (liver, kidneys or central nervous system), signs or symptoms of exposure, medical conditions generally aggravated by exposure, and emergency First Aid procedures.

Section VII - Precautions for Safe Handling and Use (Spill or Leak Procedures)

This section contains information on proper equipment to use and what precautions to follow if a spill or leak occurs. It should also describe safe waste disposal methods and precautions to be taken in handling and storing.

Section VIII - Control Measures

This section should give you information about respirators, ventilation, and other personal protective equipment. The respirator recommendations should state what type of cartridge should be used. The ventilation section should tell you whether general mechanical ventilation (dilution ventilation) is sufficient, or if local exhaust ventilation is recommended, and if so, what type. This section should also list other recommended

personal protective equipment such as gloves, goggles, and protective clothing. In addition, all gloves do not protect against all chemicals. The correct type of glove should be specified.

REQUIREMENT FOR MATERIAL SAFETY DATA SHEETS

MSDSs that meet the requirements of the Hazard Communication Standard must be fully completed and received at the facility either prior to or at the time of receipt of the first shipment of any potentially hazardous chemical purchased from a vendor. It may be necessary to discontinue procurement from vendors failing to provide approved MSDSs in timely manner. For the location of MSDS files please see your MSDS Coordinator (PAGE 18) or contact the Director of Operations and Maintenance.

The Material Safety Data Sheets (MSDS) is used to relay information about the chemical from the manufacturer or distributor to the user. Information such as flammability, know hazards, personal protective equipment (PPE) and spill/clean-up requirements are found on the MSDS.

It is the responsibility of each employee to read the MSDS for each chemical before he of she uses the chemical(s). The employee must obey the cautions listed on the MSDS and utilize the personal protective equipment (PPE) required to handle the chemical safely.

REQUEST FOR MSDSs

Contact the MSDS Coordinator in your area to obtain a copy of an MSDS. If you would like an MSDS for a chemical used somewhere else in the facility, please see page 20. A sample of the "Right To Know" Employee Request Form is located here. This form is to be completed and submitted to the Director of Operations and Maintenance. The process helps locate the exact information that the employee needs. Contact your administrator to receive a copy of this form.

HAZARD EVALUATION

Material Safety Data Sheets are required to be supplied by the chemical manufacturer for all hazardous chemicals. Each chemical is evaluated for its potential to cause adverse health affects either acutely or chronically, and its potential for causing a physical hazard. Hazardous chemicals are listed in 29 CFR 1910 Subpart Z, Toxic and Hazardous Substances and Threshold Limit Values for Chemical Substances and Physical Agents In the Work Environment, ACGIH. Potentially or confirmed carcinogenic chemicals are listed In the National Toxicology Program's Annual Report on Carcinogens, the International Agency for Research on Cancer Monographs and 29 CFR 1910 Subpart Z, Toxic and Hazardous Substances listed by OSHA. A potential physical hazard may be:

- A compressed gas
- A combustible liquid
- An explosive
- A flammable
- An oxidizer
- A pyrophoric

- An organic peroxide
- An unstable chemical
- A water reactive chemical

HEALTH HAZARDS

The overall health hazard information on an MSDS comes from studying the toxic effects chemicals may have on animals and humans. It is important to remember that all materials can be toxic to a living organism depending on the concentration of the material taken into the body and the actual toxic mechanism of the chemical.

Routes of Entry

Inhalation. The principal route of entry into the body is inhalation. Not all materials that are bad for you actually have bad odors. Some chemicals have very little odor or have the ability to quickly fatigue your sense of smell so that you are no longer aware of the odor.

Skin absorption or Contact. Some materials can pass right through your eyes or skin to react with body tissue and be absorbed into the blood stream and other internal organs.

Exposure to chemicals can cause either acute or chronic health hazards. Acute reactions usually result from a single exposure of short duration to a chemical with the reaction usually being reversible. An example would be a rash from coming in contact with a harsh chemical. Chronic health reactions usually stem from repeated exposures over a period of time with the body's reaction to the chemical often not being able to be reversed Exposure symptoms can include; headache, nausea, dizziness, eyes, nose or throat irritation, and skin rashes or dermatitis.

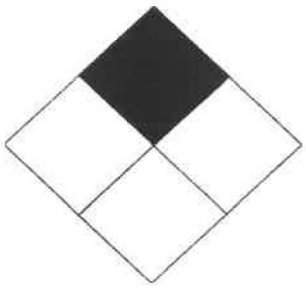
The effects from chemical contact or inhalation can be increased based on:

- The chemical or chemicals involved
- Contact frequency and duration
- Concentration of the chemical(s) in the solution or mixture

Chemicals do vary a great deal in their ability to enter the human body. The user should carefully review the MSDS to determine if the specific product being used can be a hazard. After reading the MSDS, speak with your supervisor regarding Personal Protective Equipment.

- Chemical Goggles
- Face shield
- Variety of glove products
- Apron
- Sleeves

National Fire Protection Association

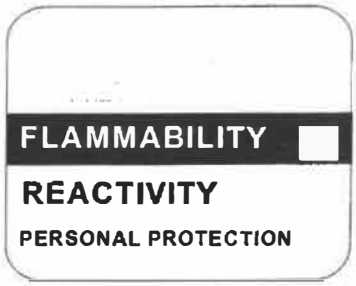


The National Fire Association (NFPA) has developed a color-coded number system called NFPA 704. The system uses a color-coded diamond with four quadrants in which numbers are used in the upper three quadrants to signal the degree of health hazard (blue), flammability hazard (red), and reactivity hazard (yellow). The bottom quadrant is used to indicate special hazards. The NFPA system is good for alerting personnel of the degree of hazard of the chemical and helpful in drawing attention to storage needs and the necessary emergency equipment needed. This system does not indicate chronic health hazards.

Hazard Rating	Health Hazard (blue)	Flammability Hazard (red)	Stability Hazard (yellow)
4 Severe Hazard	Substance considered highly toxic under OSHA's Hazard Communication Standard. Under emergency conditions, these substances can be lethal.	Substance considered a flammable liquid under OSHA's Hazard Communication Standard.	Substance that in itself is readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. This includes substances that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Substance considered explosive under OSHA's Hazard Communication Standard.
3 Serious Hazard	Substance considered highly toxic under OSHA's Hazard Communication Standard. Under emergency conditions, this substance can cause serious or permanent injury.	Substance considered a flammable liquid under OSHA's Hazard Communication Standard.	Substance that in itself is capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or must be heated under confinement before initiation. Substance considered explosive under OSHA's Hazard Communication Standard.
2 Moderate Hazard	Substance considered toxic under OSHA's Hazard Communication Standard. Under emergency conditions, this substance can cause temporary incapacitation or residual injury.	Substance considered a combustible liquid under OSHA's Hazard Communication Standard.	Substance normally undergoes a violent chemical change at elevated temperatures and pressures. Substance considered explosive under OSHA's Hazard Communication Standard.
1 Slight Hazard	Substance not considered toxic under OSHA's Hazard Communication Standard. Under emergency conditions, this substance can cause significant irritation.	Substance considered a combustible liquid under OSHA's Hazard Communication Standard.	Normally stable material but become unstable at elevated temperatures and pressures. Substance considered explosive under OSHA's Hazard Communication Standard.
0 Minimal Hazard	Substance not considered toxic under OSHA's Hazard Communication Standard. Under emergency conditions, this substance would offer no hazard beyond that of ordinary combustible material.	Substance is not considered combustible or flammable under OSHA's Hazard Communication Standard. Substance that will not burn.	Normally stable material that does not react with water. Substance not considered explosive under OSHA's Hazard Communication Standard.

Hazardous Materials Information System

The Hazardous Materials Information System (HMIS) is a color and number system. The system uses a color-coded square with four rows in which numbers are used to signal the degree of health hazard, flammability hazard, and reactivity hazard. A letter in the bottom row is used to indicate the personal protective equipment that should be used with the chemical. Refer to the HMIS Personal Protection Index. An asterisk (*) indicates chronic health hazards are associated with the chemical.



Hazard Rating	Health Hazard (blue)	Flammability Hazard (red)	Reactivity Hazard (yellow)
4 Severe Hazard	Substance considered highly toxic under OSHA's Hazard Communication Standard.	Substance considered a flammable liquid under OSHA's Hazard Communication Standard.	Substance that in itself is readily capable of detonation or explosive decomposition or explosive decomposition or explosive reaction at normal temperatures and pressures. This includes substances that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Substance considered explosive under OSHA's Hazard Communication Standard.
3 Serious Hazard	Substance considered highly toxic under OSHA's Hazard Communication Standard. Substances can be severely irritating or corrosive to skin. Substances can be corrosive and cause irreversible destruction to eyes.	Substance considered a flammable liquid under OSHA's Hazard Communication Standard.	Substance that in itself is capable of detonation or explosive reaction, but that require a strong initiating source or must be heated under confinement before initiation. Substance considered explosive under OSHA's Hazard Communication Standard.
2 Moderate Hazard	Substance considered toxic under OSHA's Hazard Communication Standard. Substances moderately irritating and considered to be a primary skin irritant or sensitizer. Substances moderately to severely irritating to the eyes. May be reversible.	Substance considered a combustible liquid under OSHA's Hazard Communication Standard.	Substance normally undergoes a violent chemical change at elevated temperatures and pressures. Substance considered explosive under OSHA's Hazard Communication Standard.
1 Slight Hazard	Substance not considered toxic under OSHA's Hazard Communication Standard. Substances slightly or mildly irritating to the skin. Slightly or mildly irritating to the eyes and reversible within 7 days.	Substance considered a combustible liquid under OSHA's Hazard Communication Standard.	Normally stable material but becomes unstable at elevated temperatures and pressures. Substance considered explosive under OSHA's Hazard Communication Standard.
0 Minimal Hazard	Substance not considered toxic under OSHA's Hazard Communication Standard. Essentially non-irritating to the skin and eyes.	Substance will not burn. Substance not considered flammable or combustible under OSHA's Hazard Communication Standard.	Normally stable materials that do not react with water. Substance not considered explosive under OSHA's Hazard Communication Standard.

CHEMICAL INVENTORY

The Director of Operations and Maintenance, in conjunction with the Health and Safety Hygienist, will maintain a list of all hazardous chemicals used in BOCES, based on the information supplied by the MSDS Coordinators in the divisions. During the year, those responsible for the chemicals and/or inventory should treat the inventory as a living document. The chemical inventory should be updated upon receipt of the product to the facility. Please add new chemicals/products as purchased to the form, with the quantity and location, or update the QUANTITY, also put a line through chemicals/products that have been used up or disposed of. Annually each MSDS Coordinator should send your updated chemical inventory to the Director of Operations and Maintenance.

ACQUIRING CHEMICALS

Most chemicals enter the facility through a procurement procedure; the MSDS (Material Safety Data Sheet) accompanies the product. BOCES is required to have an MSDS for all chemicals on its campuses

In addition, B T BOCES must adhere to NYS Education Law 409-I (Green Cleaning Act for Schools) regarding the purchase of environmentally-preferred (Green) cleaning and maintenance products.

At times, staff purchase chemicals/products on a petty cash basis at local stores, this creates a problem in regards to acquiring the MSDS. Therefore staff must have administrative approval for the purchase. In addition before the product can be purchased using petty cash, reimbursement etc an MSDS must be acquired and forwarded to the Health and Safety Hygienist, so that the product may be researched against the current NYS approved list of green cleaning and maintenance products as per the legislation. The Health and Safety Hygienist will notify you whether the product can be legally purchased and used.

PLEASE NOTE: Due to labeling and record keeping requirements of OSHA and PESHA, BOCES employees are requested to NOT bring any chemicals from home into our buildings (i.e. plant fertilizer, cleansers, etc.).

LABELS

All chemical containers must be properly labeled. BOCES employees are responsible to correct improperly labeled containers in their work environment. The corresponding MSDS should be referred to, to verify the following label information. The labels should list:

- **Chemical identity**
- **Appropriate hazard warnings**
- **Name and address of the manufacturer or other party responsible for emergencies**

Exceptions: In house portable containers of chemicals are not required to be labeled if they are transferred from labeled containers and if they are intended for immediate use by the employee who makes the transfer or if they are within the employee's custody for the duration of his/her shift.

Contact the Health and Safety Hygienist at 786-8592, with any problems or concerns with product labeling.

TRAINING

In order to safeguard employee safety from hazardous chemicals, BOCES provides employee training on the safe use of hazardous chemicals in each specific work area. The training will emphasize these elements:

- A summary of the Hazard Communication Standard and this written program;
- Hazardous chemical properties including visual appearance, odor, and methods that can be used to detect the presence or release of hazardous chemicals;
- Physical and health hazards associated with potential exposure to workplace chemicals;
- Procedures to protect against hazards, e.g., personal protective equipment, work practices, and emergency procedures;
- Hazardous chemical spill and leak procedures; and,
- Where MSDSs are located, how to understand their content, and how employees may obtain and use appropriate hazard information.

HYGIENE

After working with simple markers or complicated cleansers, always wash your hands thoroughly before eating, drinking, smoking, inserting contacts, applying makeup or lotion and before putting on latex/vinyl gloves.

CHEMICAL DISPOSAL

All hazardous chemical wastes must be disposed of in accordance with the US EPA, NYS Department of Environmental Conservation, and the Broome County Hazardous Waste Facility. Disposals are handled through the Health and Safety Hygienist in conjunction with Operations and Maintenance. Please contact O & M at x3375 or the Health and Safety Hygienist at 786-8592. You will be asked to provide the Product Name, Manufacturer, any obvious Product/Order Number, approximate Quantity (for example; lbs, gr, Qt, L, ml etc) within each container, and any available MSDSs in your file. In the mean time, do not sit wastes in or near trash containers or on back docks.

CONTRACTOR EMPLOYEES

Whenever work is done by outside contractors, Material Safety Data Sheets will be supplied to the Director of Operations and Maintenance for the products that the contractor's staff will be using in advance of the products being used. These MSDSs will be available in the Operations and Maintenance Office for viewing by all employees.

The Director of Operations and Maintenance will advise outside contractors of any chemical hazards, which may be encountered in the normal course of their work on the BOCES premises.

NONROUTINE TASKS

Maintenance or other supervisors contemplating a non-routine task, such as boiler repair, etc., will consult with the Director of Operations and Maintenance and ensure that all employees are informed of the chemical hazards associated with the task and the necessary protective measures and personal protective equipment required. This will be accomplished by a meeting of the supervisors, and the affected employees before such work is started.

CONTACT INFORMATION

For further information on the BOCES Hazard Communication Program and Material Safety Data Sheets, please contact the Director of Operations and Maintenance at 763-3375 or the Health and Safety Hygienist at 786-8592.

DIRECTIONS for COORDINATING MSDSs

Coordinators in buildings and departments should file the MSDSs in their respective area to make them more accessible to staff. (Coordinator list is located on page 18)

All managers are asked to maintain a chemical inventory of their area. Examples of what should be included in the inventory are as follows; all cleansers, paints, glues, glazes, thinners, removers, all copier toners, developers, Wite Out, rubber cement, specific chemicals used in maintenance/custodial/career services etc. etc. etc. A BLANK Chemical Inventory sample is located on page 21.

To start your coordination you should acquire your previous chemical inventory(s) for your area(s) or building. If you do not have a copy, contact Operations and Maintenance, and one will be provided for you.

However, if a chemical inventory was never done, an inventory will need to take place now. When done provide a copy to O & M mail drop #9.

With complete up to date inventory in hand, refer to this inventory and collect all the MSDSs for the chemicals listed. You may set up an alphabetical file by Product Name.

MSDSs can be acquired in 3 different ways, as shown below.

#1-If chemicals/products were ordered thru the P.O. system, a copy of the MSDS would have been sent to the originator of the P.O. The MSDSs for the chemicals/products listed should be collected from those in your department/building that ordered the chemicals, and filed.

#2-If an MSDS was not provided with the product, you may access MSDSonline to search, download and print the MSDS. If you do not know how to access MSDSonline please contact the Health and Safety Hygienist at 786-8592.

#3-Please refer to page 14 "*Acquiring Chemicals*" regarding purchasing products at local stores and the procedure for acquiring the MSDS in those cases.

If all the above strategies fail to work for you- BEFORE USE, you can acquire an MSDS by writing or calling the manufacturer and request the MSDS. Many manufacturers have MSDSs available on the Internet. It is a government requirement that the manufacturer provide an MSDS to you. You can find the critical information such as product name, manufacturer, manufacturer's address, phone number, and part number on the label of the product. Also, you may contact O & M, and they will try to provide the MSDS. However, you will need to provide the full information for O & M to refer to; product name, manufacturer, address and phone number found on the label.

Please NOTE: it is a government requirement that we update the chemical inventory annually- it would be a good idea for you to keep your inventory as a "living document"- by crossing off the products you no longer have, and by adding new products as they are purchased.

If you have questions regarding the coordination of MSDSs feel free to contact the Health and Safety Hygienist at 786-8592 or the Operations and Maintenance department at x3375.

APPENDIX A

The master MSDS file is located at the Director of Operations and Maintenance Office. However individual classrooms, programs, departments and divisions should file their own MSDSs. Below, please find a list of individuals that are responsible for filing MSDSs and chemical/product inventories for their areas.

MSDS COORDINATORS

AREA	INDIVIDUAL RESPONSIBLE
Career & Technical High School	
Art	Christine Cosgrove
Business Elective Rm. 131	Suzanne Messina
Earth Science Rm.225	Eve Anderson
English 231	Alan Miller
Living Environment Rm. 227	Kathy Stephenson
Math- 228	Bianca Chapin
New Visions	JCLC: Penelope Harper Lourdes Hosp.: Kate Newberry Lourdes Main St.: Trish Weiss Huron Campus: Liz Barvinchak
PE/Health 127	Beth Van Osten
Social Studies- Global 229	Jackie Thompson
US History- 230	Jeremiah Soloman
Career and Technical Education	
Animal Science	Isaac Stickler & Crystal Aukema
Auto Body	Fred Maliwacki & Chad Zajdel
Auto Mechanics I	Evan Thorson
Auto Mechanics II	Courtney Benjamin
Building Trades Careers	Dan Coleman
CAD	John Caminiti
Culinary Arts	Maureen Ellis
Carpentry	Tim Matthews
Computer Careers	Jeremy Stevens
Cosmetology II	Angel Mead
Cosmetology I	Charlotte Hurbis, Cheryl Wallace
Criminal Justice	Donald Entwistle
Early Childhood	Peg Acciai
Electrical	Robert Weiss
General Automotive Services	Doug Jenks
Guidance Office	Nancy Mihok
Health Careers I & II	Darlean Carpenter
Heavy Equipment	Wayne VanWie
Masonry	Lenny Verrastro
Motorsports Fabrication	Ron Bailey
Outdoor Power Equipment	Doug Jenks
Retail Skills	Chris Sandy
Student Services Office	Diane Caminiti
Video Production	Rod Wankel

Welding	John Shear
Adult Ed- Health Careers	Darlean Carpenter
PALS	
Health Office, Work Transitions	Gail Wood
Art	Dave Diesel
Floral Arts	Tom Mastroe
OT/PT/Itinerant Teachers	Denise Bennett
Oak Tree	Haoxian Wang
Day Care	Michelle Norton
THE CENTER	
Center Tech Repair/Warehouse	Steve Smith
The Center Support	Sharon Weeks
NOC	Mary Norton/Steve Smith
Data Application Center	Jacquie Gorman
ISC: Administration, Business Office Human Resources, Communications & Development	Irene Earl
Document Services Center	Lorie Rowe
Food Services	Tom Nunn
Operations & Maintenance/Receiving	Joe Kushner
Central Business Office	Lisa Cicciarelli
Columbus Learning Center	Cheryl Burns & Penny Melody
Endicott Learning Center	Chris Lomonaco
Johnson City Learning Center	Sue Tiffany
Tioga Learning Center	Linda Griffin
Vestal Learning Center	Kathi Cederborg

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BOCES
"Right TO Know"
Employee Information Request Form

This form is provided to assist employees in requesting information from BOCES concerning the health and safety hazards of toxic substances found in the workplace. PLEASE FILL IN ALL THE INFORMATION YOU CAN

Please Print:

1. Name_____ 3. Work Location_____

2. Job Title_____ 4. Phone Number_____

5. Supervisor_____

Describe briefly the toxic substance you are exposed to:

1. Trade Name_____

2. Chemical Name or Ingredients (If Known)_____

3. Manufacturer (Name and Address, If Known)

_____

_____

4. Does substance have a label? Yes____ No____
If Yes, attach a label or a copy of information on label.

5. Physical form of substance: Gas___ Liquid___ Solid___ Dust___

Other _____

6. Any other information which will identify the substance (the circumstances of exposure, other characteristics of the substance, etc.).

_____

7. If you have specific questions, write them below.

Signature:_____

Date:_____

CHEMICAL/PRODUCT INVENTORY

Staff Name _____ Staff Name _____

Person "using" the products listed

Person "inventorying" but not using the products listed

Building _____ Room # _____ Location _____ Date _____

Technology/Class Subject/Office *Type* _____ Check here if there are NO products used ☐

PRODUCT NAME	ITEM # If available	MANU-FACTURER	ADDRESS *	PHONE # *	STORAGE LOCATION	QUANTITY**

* This info is only needed if you are unable to read and supply the Manufacturer Name

***When noting quantity, be specific. Instead of indicating the number of bottles/cartons, please indicate the approximate total number of ounces, milliliters, grams, gallons or pound etc, or list BOTH the number of bottles/cartons/blocks AND the number of ounces, milliliters etc of each container. When listing "location", be as specific as possible i.e. closet or under sink cabinet of room 102 as opposed to listing just room 102.*

NOTE: Examples of what should be included in the chemical inventory are as follows: ; all cleaners, detergents, paints, stains, glues, glazes, thinners, removers, deodorizers, lubricants, gasses, copier toners, developers, Wite Out, desk cleaner, white board cleaner, rubber cement. Also, any pressurized cans, plant fertilizers and of course, specific chemicals used in the kitchen, art, technology, science, nursing, custodial, maintenance, and any product that we have received a Material Safety Data Sheet (MSDS) for.

§1910.1200 Hazard Communication.

(a) *Purpose.* (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.

(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 the 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.

(b) *Scope and application.* (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.)

(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.

(3) This section applies to laboratories only as follows:

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

(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 work shift to laboratory employees when they are in their work areas;

(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,

(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.

(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:

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

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

(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.

(5) This section does not require labeling of the following chemicals:

(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,

(ii) Any chemical substance or mixture as such terms are defined in the Toxic Substances Control Act (15 U.S.C. 260 *et seq.*), when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency;

(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;

(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;

(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,

(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.

(6) This section does not apply to: (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;

(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 Environmental Protection Agency regulations.

(iii) Tobacco or tobacco products;

(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);

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

(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;

(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);

(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;

(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;

(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;

(xi) Ionizing and nonionizing radiation; and,

(xii) Biological hazards.

(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° F (37.8° C), but below 200° F (93.3° C), except any mixture having components with flashpoints of 200° F (93.3* 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 for 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 identity 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° F (21.1 ° C); or

(ii) A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130° F (54.4° C) regardless of the pressure at 70° F (21.1° C), or

(iii) A liquid having a vapor pressure exceeding 40 psi at 100° F (37.8° 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° F (37.8° C), except any mixture having components with flashpoints of 100° F (37.8 ° 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° F (37.8° 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° F (37.8°

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 containers). (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, repro-ductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hema-topoietic 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 -0-0-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° F (54.4° 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.

(d) *Hazard determination.* (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.

(2) Chemical manufacturers, importers or employers evaluating chemicals shall identity 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 con-sidered 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.

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

(i) 29 CFR Part 1910. Subpart 7, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA); or,

(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.

(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:

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

(ii) International Agency for Research on Cancer (IARC) *Monographs* (West editions); or

(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.

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

(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;

(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;

(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,

(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.

(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.

(e) *Written hazard communication program.* (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:

(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,

(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.

(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:

(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;

(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,

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

(3) The employer may rely on an existing hazard communi-cation program to comply with these requirements, provided that it meets the criteria established in this paragraph (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 1910.20(e).

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

(f) *Labels and other forms of warning.* (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:

(i) Identity of the hazardous chemical(s);

(ii) Appropriate hazard warnings; and

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

(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;

(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,

(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.)

(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.

(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.

(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:

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

(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.

(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.

(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.

(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.

(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.

(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.

(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.

(g) *Material safety data sheets.* (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.

(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:

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

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

(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,

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

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

(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 hazard to employees; and,

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

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

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

(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;

(v) The primary route(s) of entry,

(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;

(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;

(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;

(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;

(x) Emergency and first aid procedures;

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

(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.

(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.

(4) Where complex mixtures have similar hazards and contents (*e.g.*, 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.

(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.

(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;

(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;

(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,

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

(7)(1) 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;

(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;

(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;

(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;

(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 (e.g., the retail dis-tributor 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 tele-phone number of the chemical manufacturer, importer, or distributor from which a material safety data sheet can be obtained;

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

(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.

(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.)

(9) Where employees must travel between workplaces during a workshift, *e.g.*, 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.

(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 the 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).

(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 1910.20 (e). The Director shall also be given access to material safety data sheets in the same manner.

(h) *Employee Information and training.* (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.

(2) *Information.* Employees shall be informed of:

(i) The requirements of this section;

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

(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.

(3) *Training.* Employee training shall include at least:

(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.);

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

(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,

(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.

(i) Trade secrets. (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 shook provided that:

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

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

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

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

(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.

(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 (*e.g.*, 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:

(i) The request is in writing;

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

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

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

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

(D) To provide medical treatment to exposed employees;

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

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

(G) To conduct studies to determine the health effects of exposure.

(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:

(A) The properties and effects of the chemical;

(B) Measures for controlling workers' exposure to the chemical;

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

(D) Methods of diagnosing and treating harmful exposures to the chemical.

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

(v) The health professional, and the employer or contractor of the services of the health professional (*e.g.*, 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.

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

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

(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,

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

(5) Nothing in this standard is meant to preclude the parties from pursuing noncontractual remedies to the extent permitted by law.

(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.

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

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

(ii) Be in writing;

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

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

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

(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.

(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:

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

(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,

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

(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.

(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.

(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 or such matters.

(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.

(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.

(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.