CHAPTER 7

HAZARDOUS SUBSTANCES PROGRAM

REVISED MARCH 2018

TABLE OF CONTENTS

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 7

HAZARDOUS SUBSTANCES PROGRAM

1. PURPOSE. This chapter addresses the information commands shall make available to employees who may be exposed to hazardous substances used routinely in the command. This information includes identifying hazardous substances, ensuring applicable Material Safety Data Sheets (MSDS) are available, labeling of all hazardous substances routinely used and posting warning signs as necessary, training of employees, and documentation of that training.

2. AUTHORITY.

a. Written Hazardous Substances Program. Labor Code Section 6360 and California Code of Regulations, Title 8, General Industry Safety Order (GISO) 5194, require every employer to establish, implement, and maintain a written Hazardous Substances Program for hazardous substances which are known to be present in the workplace and to which employees may be exposed under normal conditions of use or in a reasonable, feasible emergency.

b. Request for Exposure Records. In accordance with GISO 3204, employees, their physicians, and/or collective bargaining unit representatives have the right to receive and copy:

(1) The employee's medical records and records of exposure to toxic substances or harmful physical agents.

(2) Records of exposure to hazardous substances or harmful physical agents of other employees with work conditions similar to the employee's.

(3) An MSDS or other information that exists for chemicals or substances used in the workplace or to which employees may be exposed.

c. Release of Exposure Records. Commanders shall not release any records referenced in items b.(1) or b.(2) above. Commanders shall contact Office of Employee Assistance and Safety, Occupational Safety Unit (OSU), when such requests are received. The OSU will coordinate the release of the requested information (this does not preclude an employee from obtaining copies of their own medical, injury, or exposure records).

d. Protection from Discharge. Employees are protected from discharge or other discrimination for exercising their right to receive information about hazardous substances in accordance with GISO 5194.

3. HAZARDOUS SUBSTANCES PROGRAM.

a. Identification of Hazardous Substances.

(1) Commands shall identify and post a list of the hazardous substances routinely used in the workplace. The command should use the format contained in the California Highway Patrol (CHP) 189, Hazardous Substances Inventory.

(2) Commanders shall provide employees with specific information about substances used in the workplace if those substances appear on the Department of Industrial Relations (DIR) Director's List of Hazardous Substances in GISO 339. The assumption should be made that all chemical substances are on the DIR Director's List. Commanders may contact OSU to determine if substances used in the commands are listed.

b. Material Safety Data Sheet.

(1) An MSDS is prepared by the manufacturer or importer of a chemical and describes the physical and chemical properties. It also contains information about physical and health hazards involved, precautions for safe handling and use, emergency and first aid procedures, and control measures (see Annex A for definitions for items on an MSDS and Annex B for a sample MSDS).

(2) Commanders shall provide employees, including newly-assigned personnel, with information from the MSDS about substances routinely used in the workplace to which they may be exposed. If appropriate, information on a class of like substances may be given, i.e., it is not necessary to review an individual MSDS for both "Brand X" and "Brand Y" hydrochloric acid. Information from the MSDS shall include:

(a) Health hazards.

(b) Proper precautions for handling to minimize exposure.

(c) Emergency procedures for spills, fire, disposal, and first aid.

(3) Commands shall inform employees if a new or revised MSDS indicates significantly increased risks.

(4) An MSDS should accompany all hazardous substances used by the Department. Each command shall maintain a binder which contains a CHP 189 and MSDS for all substances used by the command. Commands are encouraged to include an index and section tabs for ease of use. Annex C contains an example of a complete MSDS binder. An example of MSDS binder contents is also posted on the departmental intranet. Commands shall have a current and comprehensive CHP 189 posted on the command occupational safety board.

(a) If the hazardous substance is obtained from Supply Services Unit (SSU) and an MSDS is required by the Department of Transportation (DOT) to be attached to the Bill of Lading, SSU will ensure that it is attached. If DOT does not require that an MSDS be attached to the Bill of Lading but an MSDS is available for the substance, SSU will attach the MSDS to the packing slip.

(b) If the hazardous substance is obtained directly from the manufacturer or distributor and an MSDS is available, the command shall request that the MSDS accompany the order.

(c) If the hazardous substance is obtained from a manufacturer or distributor through Purchasing Services Unit (PSU) and an MSDS is available, PSU shall request that the MSDS accompany the order.

(d) If the hazardous substance is obtained from SSU and an MSDS does not accompany the order, commands are encouraged to utilize the internet to obtain the MSDS. This can be accomplished by:

1 Conducting a product name search, followed by “MSDS.” For example, to search for an MSDS for diesel fuel, enter “diesel MSDS.”

2 Conducting a “Google Search” of the manufacturer’s name and product name followed by “MSDS.” For example, to search for an MSDS for Trinitrotoluene manufactured by Owen Compliance Services, Inc., enter “Owen Compliance Services, Inc. Trinitrotoluene MSDS.”

3 Using the following internet link which is also posted on the departmental intranet: http://www.ehso.com/msds.php.

(5) Consumer products packaged for public use (standard containers of cleansers, bleaches, etc.) are excluded as are pesticides, hazardous wastes (regulated by Environmental Protection Agency), food, drugs, and cosmetics used by employees.

(6) Upon request, OSU will provide the MSDS to commands or advise if none is needed. The command should use the request format contained in the CHP 188, Request for Material Safety Data Sheet(s).

c. Labeling of Hazardous Substances and Posting of Warning Signs.

(1) Labels on containers must identify the hazardous substance(s), provide hazard warning statements, and show the name and address of the manufacturer. If hazardous substances are transferred from original containers to portable or stationary containers, the secondary containers must be labeled as stated above. Although an MSDS is not required for substances packaged for general consumption, many of these products do constitute a hazard. Therefore, labels must be read and directions followed.

(2) Warning signs shall be posted accordingly.

d. Employee Training. Commanders shall ensure that employees receive information and appropriate training on the hazardous substances in the work environment, that they are familiar with the labeling and posting requirements, and that they have reviewed the appropriate MSDS. Training shall be documented in accordance with the command's Injury and Illness Prevention Program.

ANNEX A

MATERIAL SAFETY DATA SHEET DEFINITIONS

Introduction

The Material Safety Data Sheet (MSDS) is a detailed information bulletin prepared by the manufacturer or importer of a chemical that describes the physical and health hazards, physical and chemical properties, routes of exposure, precautions for safe handling and use, emergency and first-aid procedures, and control measures. Information on an MSDS aids in the selection of safe products and helps prepare employers and employees to respond effectively to daily exposure situations as well as to emergency situations.

The MSDSs are a comprehensive source of information for all types of employers. There may be information on the MSDS that is not useful to you or not important to the safety and health in your particular operation. Concentrate on the information that is applicable to your situation. Generally, hazard information and protective measures should be the focus of concern.

Occupational Safety and Health Administration (OSHA) Requirements

Employers must maintain a complete and accurate MSDS for each hazardous chemical that is used in the facility. If there are multiple suppliers of the same chemical, there is no need to retain multiple MSDSs for that chemical.

Sections of an MSDS and Their Significance

The OSHA specifies the information to be included on an MSDS, but does not prescribe the precise format for an MSDS. A non-mandatory MSDS form (see blank OSHA Form 174 at the end of this section) that meets the Hazard Communication Standard requirements has been issued and can be used as is or expanded as needed. The MSDS must be in English and must include at least the following information.

Section I. Chemical Identity

- The chemical and common name(s) must be provided for single chemical substances.

- An identity on the MSDS must be cross-referenced to the identity found on the label.

Section II. Hazardous Ingredients

- For a hazardous chemical mixture that has been tested as a whole to determine its hazards, the chemical and common names of the ingredients that are associated with the hazards and the common name of the mixture must be listed.

- If the chemical is a mixture that has not been tested as a whole, the chemical and common names of all ingredients determined to be health hazards and comprising 1 percent or greater of the composition must be listed.

- Chemical and common names of carcinogens must be listed if they are present in the mixture at levels of 0.1 percent or greater.

- All components of a mixture that have been determined to present a physical hazard must be listed.

- Chemical and common names of all ingredients determined to be health hazards and comprising less than 1 percent (0.1 percent for carcinogens) of the mixture must also be listed if they can still exceed an established Permissible Exposure Limit (PEL) of Threshold Limit Value (TLV) or present a health risk to exposed employees in these concentrations.

Section III. Physical and Chemical Characteristics

- The physical and chemical characteristics of the hazardous substance must be listed. These include items such as boiling and freezing points, density, vapor pressure, specific gravity, solubility, volatility, and the product's general

ANNEX A

MATERIAL SAFETY DATA SHEET DEFINITION *(continued)*

appearance and odor. These characteristics provide important information for designing safe and healthful work practices

Section IV. Fire and Explosion Hazard Data

- The compound's potential for fire and explosion must be described. Also, the fire hazards of the chemical and the conditions under which it could ignite or explode must be identified. Recommended extinguishing agents and fire-fighting methods must be described.

Section V. Reactivity Data

- This section presents information about other chemicals and substances with which the chemical is incompatible, or with which it reacts. Information on any hazardous decomposition products, such as carbon monoxide, must be included.

Section VI. Health Hazards

- The acute and chronic health hazards of the chemical, together with signs and symptoms of exposure, must be listed. In addition, any medical conditions that are aggravated by exposure to the compound must be included. The specific types of chemical health hazards defined in the standard include carcinogens, corrosives, toxins, irritants, sensitizers, mutagens, teratogens, and effects on target organs, (i.e., liver, kidney, nervous system, blood, lungs, mucous membranes, reproductive system, skin, eyes).

- The route of entry section describes the primary pathway by which the chemical enters the body. There are three principal routes of entry: inhalation, skin, and ingestion.

This section of the MSDS supplies the OSHA PEL, the American Congress of Governmental Industrial Hygienists TLV, and other exposure levels used or recommended by the chemical manufacturer.

- If the compound is listed as a carcinogen (cancer-causing agent) by OSHA, the National Toxicology Program (NTP), or the International Agency for Research on Cancer (IARC), this information must be indicated on the MSDS.

Section VII. Precautions for Safe Handling and Use

- The Hazard Communication Standard requires the preparer to describe the precautions for safe handling and use. These include recommended industrial hygiene practices, precautions to be taken during repair and maintenance of equipment, and procedures for cleaning up spills and leaks. Some manufacturers also use this section to include useful information not specifically required by the standard, such as Environmental Protection Agency waste disposal methods and state and local requirements.

Section VIII. Control Measures

- The Hazard Communications Standard requires the preparer of the MSDS to list any generally applicable control measures. These include engineering controls, safe handling procedures, and personal protective equipment. Information is often included on the use of goggles, gloves, body suits, respirators, and face shields.

ANNEX B

MATERIAL SAFETY DATA SHEET SAMPLE

Material Safety Data Sheet
May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910 1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY *(as Used on Label and List)*

Note: Blank spaces are not permitted. If any item is not applicable or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's name	Emergency Telephone Number
Address *(Number, Street, City, State and ZIP Code)*	Telephone Number for Information
	Date Prepared
	Signature of Preparer *(optional)*

Section II—Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity, Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)

SAMPLE

Section III—Physical/Chemical Characteristics

Boiling Point		Specific Gravity (H_20 = 1)	
Vapor Pressure (mm Hg)		Melting Point	
Vapor Density (AIR = 1)		Evaporation Rate (Butyl Acetate = 1)	

Solubility in Water

Appearance and Odor

Section IV—Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL

Extinguishing Media

Special Fire Fighting Procedures

Unusual Fire and Explosion Hazards

(Reproduce locally) OSHA 174 Sept. 1985

ANNEX B

MATERIAL SAFETY DATA SHEET SAMPLE *(continued)*

Section V—Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable		

Incompatibility *(Materials to Avoid)*

Hazardous Decomposition or Byproducts

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur		

Section VI—Health Hazard Data

Route(s) of Entry	Inhalation?	Skin?	Ingestion?

Health Hazards *(Acute and Chronic)*

Carcinogenicity	NTP?	IARC Monographs?	OSHA Regulated?

Signs and Symptoms of Exposure

Medical Conditions Generally Aggravated by Exposure

Emergency and First Aid Procedures

SAMPLE

Section VII—Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spilled

Waste Disposal Method

Precautions to Be Taken in Handling and Storing

Other Precautions

Section VII—Control Measures

Respiratory Protection *(Specify Type)*

Ventilation	Local Exhaust	Special
	Mechanical *(General)*	Other

Protective Gloves	Eye Protection

Other Protective Clothing or Equipment

Work/Hygienic Practices

ANNEX C

MATERIAL SAFETY DATA SHEET BINDER SAMPLE

MATERIAL SAFETY DATA SHEET BINDER

TABLE OF CONTENTS

ANNEX C

MATERIAL SAFETY DATA SHEET BINDER SAMPLE *(continued)*

1 - INTRODUCTION

HOW TO USE THIS BINDER

This Material Safety Data Sheet (MSDS) Binder provides a convenient place to obtain information regarding Hazardous Material products regularly stored at the Traffic Management Center. The binder is currently kept in the sergeant's office and all employees can access it whenever a question or an emergency arises.

The MSDS Binder includes a product group indexing system for storing MSDSs for easy access. The MSDSs are first grouped alphabetically on the CHP 189 – Hazardous Substances Inventory. The MSDSs are then grouped by product class (i.e., Janitorial Supplies).

An MSDS Glossary of technical terms is also included which defines many of the terms often found on MSDSs. The terms are explained in simple language and will make MSDSs easier to read and more useful.

WHAT ARE MATERIAL SAFETY DATA SHEETS?

The MSDS is a detailed information bulletin prepared by the manufacturer or importer of a chemical that describes the physical and health hazards, physical and chemical properties, routes of exposure, precautions for safe handling and use, emergency and first-aid procedures, and control measures.

Consumer products packaged for public use (standard containers of cleansers, bleaches, etc.) are excluded as are pesticides, hazardous wastes (regulated by Environmental Protection Agency), food, drugs, and cosmetics used by employees.

2 – MATERIAL SAFETY DATA SHEET INFORMATION

The MSDSs are a comprehensive source of information for all types of employers. There may be information on the MSDS that is not useful to you or not important to the safety and health at the Traffic Management Center. Concentrate on the information that is applicable to your situation. Generally, hazard information and protective measures should be the focus of concern.

Information on an MSDS aids in the selection of safe products and helps prepare employers and employees to respond effectively to daily exposure situations as well as to emergency situations.

OSHA REQUIREMENTS

Employers must maintain a complete and accurate MSDS for each hazardous chemical that is used in the facility. If there are multiple suppliers of the same chemical, there is no need to retain multiple MSDSs for that chemical.

The "Right to Know" laws require that each Area office of the California Highway Patrol have a complete and current inventory of hazardous materials. After reviewing the contents of the MSDS Manual annually, some employees are surprised to find that the Traffic Management Center has hundreds of hazardous materials in our operation.

Remember that the hazardous property may appear only when the product is being used (like welding rods) or only when a product is mixed with other materials or under conditions of fire or extreme heat. The hazardous properties of some materials change when they are mixed with other materials.

ANNEX C

MATERIAL SAFETY DATA SHEET BINDER SAMPLE *(continued)*

3 – MSDS FILING SYSTEM

INTRODUCTION

To assist employees with identification of hazardous materials at the workplace, it is required that all labels on containers must identify the hazardous substance(s), provide hazard warning statements, and show the name and address of the manufacturer.

LABELING OF HAZARDOUS SUBSTANCES

If hazardous substances are transferred from original containers to portable or stationary containers, the secondary containers must be labeled as stated above. Although an MSDS is not required for substances packaged for general consumption, many of these products do constitute a hazard. Therefore, labels must be read and directions followed.

WHAT METHOD IS USED TO ORGANIZE THE MSDSs?

The majority of the material in this binder will be MSDSs received from the manufacturer, distributor or jobber whenever the Traffic Management Center has purchased a new product that is considered a hazardous material.

For the purpose of organizing the MSDS binder, the MSDSs are divided into ten common Product Group categories. The Product Group categories are the most common kinds of hazardous materials used at the Traffic Management Center.

The MSDSs for each hazardous material are kept in the sergeant's office at the Traffic Management Center. If an MSDS is not available for a particular material, contact the Occupational Safety Coordinator.

All hazardous material containers, including

secondary containers, those missing the manufacturer's supplied label or stationary process containers will be labeled. The Traffic Management Center Occupational Safety Committee members will monitor and update the Traffic Management Center labeling procedures at least quarterly and ensure that a completed label is attached to all hazardous material containers.

4 – SAFETY RULES AND PROCEDURES

The Occupational Safety Committee members are responsible for maintaining two bulletin boards at the Area office. The Occupational Safety bulletin board, located in the hallway, displays general workplace information and an MSDS inventory log of hazardous substances used at the Area. The second bulletin board is located in the briefing room. This bulletin board is updated quarterly and contains information regarding information and/or potential hazards specifically for the Traffic Management Center.

WHERE IS THE MSDS INVENTORY LOG KEPT?

Safe practice and procedural rules are contained in the Traffic Management Center's Injury Illness Prevention Plan (IIPP). If retraining or re-instruction is required, the Traffic Management Center's Occupational Safety Committee members are committed to disseminating this information as soon as practical.

INJURY ILLNESS PREVENTION PLAN

All employees are required to review the Traffic Management Center's IIPP annually. The IIPP is located in the sergeant's office. The Area's Occupational Safety Coordinator is responsible for updating this plan and associated procedures as conditions, materials, and facilities change.

5 - SAFETY RULES AND PROCEDURES (Continued)

EMERGENCY CONTINGENCY PLAN

In the event of an emergency, employees are required to immediately notify their supervisor. Supervisors, or other trained personnel, shall ensure that appropriate first aid is provided. Supervisors, if necessary, shall arrange for prompt treatment from an authorized physician or medical facility.

The Occupational Safety bulletin board located in the hallway contains a posted list of emergency services for the Traffic Management Center (e13708).

REQUEST FOR EXPOSURE RECORDS?

In accordance with General Industry Safety Order 3204, employees, their physicians, and/or collective bargaining unit representatives have the right to receive and copy:

- The employee's medical records and records of exposure to toxic substances or harmful physical agents.
- Records of exposure to hazardous substances or harmful physical agents of other employees with work conditions similar to the employee's.
- The physical agents are defined on the back of the OSHA 300 log.
- MSDS or other information that exists for chemicals or substances used in the workplace or to which employees may be exposed.

ANNEX C

MATERIAL SAFETY DATA SHEET BINDER SAMPLE *(continued)*

GLOSSARY OF COMMON MSDS TERMS

This Glossary lists the most important terms used on Material Safety Data Sheets. If you do not understand a word or its meaning, ask your manager or supervisor for help.

Absorption:
The movement of a hazardous chemical through the skin into the blood stream.

Acid:
An inorganic or organic compound that 1) is usually corrosive to human tissue and must be handled with care; 2) has a pH of less than 7.0; 3) neutralizes bases (alkalis) to form salts; 4) dissociates in water yielding hydrogen or hydronium ions; 5) may react with metals to yield hydrogen; and 6) turns litmus paper red.

Alkali:
An inorganic or organic chemical that 1) is usually corrosive to human tissue and must be handled with care; 2) has a pH of more than 7.0; 3) neutralizes acids to form salts; 4) dissociates with water yielding hydroxide ions; 5) turns litmus paper blue, and 6) may also be called a base or caustic.

Boiling Point:
The temperature at which a liquid becomes a gas.

Catalyst:
A chemical which changes the rate of the reaction among other chemicals.

Ceiling or ©:
The concentration that should not be exceeded during any part of working exposure.

Chronic:
Symptoms of adverse effects which develop over a long period of time or which recur frequently.

Combustible:
A material whose flash point is at or above 100 degrees Fahrenheit.

ANNEX C

MATERIAL SAFETY DATA SHEET BINDER SAMPLE *(continued)*

GLOSSARY OF COMMON MSDS TERMS **(Continued)**

Corrosive:
A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact, or which causes a severe corrosion rate in steel or aluminum.

Decomposition Products:
Products released when a material is exposed to aging, heating, burning, air, or is allowed to react with another material.

Evaporation Rate:
The time it takes a given amount of a material to completely dry up compared to ether (which evaporates very quickly) or to butyl acetate (which evaporates very slowly).

Explosive:
A material that produces a sudden, almost instantaneous release of pressure, gas, and heat when subjected to abrupt shock, high temperature, or an ignition source.

Flammable:
A material whose flash point is below 100 degrees Fahrenheit.

Flammable (Explosive) Limits (LEL and UEL):
Upper and lower limits in which materials will burn in air.

Flash Point:
The temperature at which a flammable liquid produces enough vapor to burn.

Incompatibility:
Indicates materials you should not mix or store with other materials to avoid an undesirable reaction.

Ingestion:
Taking by mouth, or swallowing.

Inhalation:
Breathing vapor, fumes, or dust from a material.

GLOSSARY OF COMMON MSDS TERMS **(Continued)**

Inhibitor:
A chemical which, when added to another, reduces the cances of a reaction.

Oxidizing Agent:
A material that gives off oxygen in a chemical reaction.

Parts Per Million (PPM):
The amount of hazardous material in the air or another substance. For example Parts Per Million or PPM describes the parts of one material in one million parts of another.

Permissible Exposure Limit (PEL):
Maximum concentration of a chemical in the air to which repeated exposure will not result in permanent damage or injury.

Polymerization:
One type of reactivity. A reaction which may result in an intense release of heat or energy.

Reactivity:
The ability of a material to undergo a reaction which releases energy or heat.

Short Term Exposure Limit (STEL):
Refers to recommended limits for short term exposure, even where exposure over an eight hour period is within limits.

Solubility:
The tendency of a material to resist undesirable chemical changes during storage or transport.

Solvent:
A material that can dissolve other materials to form an uniform single-phase mixture. Water is the most common solvent.

Threshold Limit Value (TLV):
Recommended exposure limits over an eight hour work period in which there is no adverse health effect.

ANNEX C

MATERIAL SAFETY DATA SHEET BINDER SAMPLE *(continued)*

GLOSSARY OF COMMON MSDS TERMS **(Continued)**

Vapor Density:
The weight of a vapor compared with an equal volume of air. If less than one, the vapor will rise in air. If greater than one, it will tend to sink in air.

Vaporization:
The change of a substance from a liquid to a gas.

Vapor Pressure:
A high vapor pressure indicates a liquid will evaporate easily.

Volatile Percent:
The percentage of a liquid or solid that evaporates at room temperature. The higher the percentage, the faster the material evaporates. Fast evaporation means greater danger.

ANNEX C

MATERIAL SAFETY DATA SHEET BINDER SAMPLE *(continued)*

MATERIAL SAFETY DATA SHEET DEFINITIONS

Excerpts from U.S. Department of Labor, Hazard Communication Standard A Compliance Kit

Introduction

The Material Safety Data Sheet (MSDS) is a detailed information bulletin prepared by the manufacturer or importer of a chemical that describes the physical and health hazards, physical and chemical properties, routes of exposure, precautions for safe handling and use, emergency and first-aid procedures, and control measures. Information on an MSDS aids in the selection of safe products and helps prepare employers and employees to respond effectively to daily exposure situations as well as to emergency situations.

The MSDSs are a comprehensive source of information for all types of employers. There may be information on the MSDS that is not useful to you or not important to the safety and health in your particular operation. Concentrate on the information that is applicable to your situation. Generally, hazard information and protective measures should be the focus of concern.

Occupational Safety and Health Administration (OSHA) Requirements

Employers must maintain a complete and accurate MSDS for each hazardous chemical that is used in the facility. If there are multiple suppliers of the same chemical, there is no need to retain multiple MSDSs for that chemical.

Sections of an MSDS and Their Significance

The OSHA specifies the information to be included on an MSDS, but does not prescribe the precise format for an MSDS. A non-mandatory MSDS form (see blank OSHA Form 174 at the end of this section) that meets the Hazard Communication Standard requirements has been issued and can be used as is or expanded as needed. The MSDS must be in English and must include at least the following information.

Section I. Chemical Identity

- The chemical and common name(s) must be provided for single chemical substances.

- An identity on the MSDS must be cross-referenced to the identity found on the label.

Section II. Hazardous Ingredients

- For a hazardous chemical mixture that has been tested as a whole to determine its hazards, the chemical and common names of the ingredients that are associated with the hazards and the common name of the mixture must be listed.

- If the chemical is a mixture that has not been tested as a whole, the chemical and common names of all ingredients determined to be health hazards and comprising 1 percent or greater of the composition must be listed.

- Chemical and common names of carcinogens must be listed if they are present in the mixture at levels of 0.1 percent or greater.

- All components of a mixture that have been determined to present a physical hazard must be listed.

- Chemical and common names of all ingredients determined to be health hazards and comprising less than 1 percent (0.1 percent for carcinogens) of the mixture must also be listed if they can still exceed an established Permissible Exposure Limit (PEL) of Threshold Limit Value (TLV) or present a health risk to exposed employees in these concentrations.

Section III. Physical and Chemical Characteristics

- The physical and chemical characteristics of the hazardous substance must be listed. These include items such as boiling and freezing points, density, vapor pressure, specific gravity, solubility, volatility, and the product's general

ANNEX C

MATERIAL SAFETY DATA SHEET BINDER SAMPLE *(continued)*

MATERIAL SAFETY DATA SHEET DEFINITIONS

Excerpts from U.S. Department of Labor, Hazard Communication Standard A Compliance Kit

appearance and odor. These characteristics provide important information for designing safe and healthful work practices

Section IV. Fire and Explosion Hazard Data

- The compound's potential for fire and explosion must be described. Also, the fire hazards of the chemical and the conditions under which it could ignite or explode must be identified. Recommended extinguishing agents and fire-fighting methods must be described.

Section V. Reactivity Data

- This section presents information about other chemicals and substances with which the chemical is incompatible, or with which it reacts. Information on any hazardous decomposition products, such as carbon monoxide, must be included.

Section VI. Health Hazards

- The acute and chronic health hazards of the chemical, together with signs and symptoms of exposure, must be listed. In addition, any medical conditions that are aggravated by exposure to the compound must be included. The specific types of chemical health hazards defined in the standard include carcinogens, corrosives, toxins, irritants, sensitizers, mutagens, teratogens, and effects on target organs, (i.e., liver, kidney, nervous system, blood, lungs, mucous membranes, reproductive system, skin, eyes).

- The route of entry section describes the primary pathway by which the chemical enters the body. There are three principal routes of entry: inhalation, skin, and ingestion.

- This section of the MSDS supplies the OSHA PEL, the American Congress of Governmental Industrial Hygienists TLV, and other exposure levels used or recommended by the chemical manufacturer.

- If the compound is listed as a carcinogen (cancer-causing agent) by OSHA, the National Toxicology Program (NTP), or the International Agency for Research on Cancer (IARC), this information must be indicated on the MSDS.

Section VII. Precautions for Safe Handling and Use

- The Hazard Communication Standard requires the preparer to describe the precautions for safe handling and use. These include recommended industrial hygiene practices, precautions to be taken during repair and maintenance of equipment, and procedures for cleaning up spills and leaks. Some manufacturers also use this section to include useful information not specifically required by the standard, such as Environmental Protection Agency waste disposal methods and state and local requirements.

Section VIII. Control Measures

- The Hazard Communications Standard requires the preparer of the MSDS to list any generally applicable control measures. These include engineering controls, safe handling procedures, and personal protective equipment. Information is often included on the use of goggles, gloves, body suits, respirators, and face shields.

ANNEX C

MATERIAL SAFETY DATA SHEET BINDER SAMPLE *(continued)*

Inventory List of Chemicals

Acids / Alkaline:

1. **Aero Clean ..... (Champion Chemical Corp.)**
2. **Battery, "C & D" ..... (General Brand)**
3. **Bio T – Hand Cleaner ..... (Hand Cleaner with Pumice)**
4. **Bowl Block Toilet ..... (Big D Para Block #900)**
5. **Bowl Buster ..... (Prison Industry Authority)**
6. **Bowl Cleaner ..... (Oxford Chemicals, Inc.)**
7. **CCC – 128 ..... (Champion Chemical Corp.)**
8. **Drano Liquid ..... (Drackett Company)**
9. **Eveready Battery, Alkaline ..... (Energizer Industrial)**
10. **Eveready Battery, "Misc. Battery sizes A, AA, etc." ..... (Energizer Industrial)**
11. **Jump Start, All Purpose Cleaner ..... (Brandbridge Co.)**
12. **Kleen-Quat, Anatomic Soap ..... (Unit Chemical Corp.)**
13. **Mildew Stain Remover ..... (Zep – Mildew Stain Remover)**
14. **Nik – Drug Test Equipment ..... (#12 MSDS Nik – Drug Test Equipment)**
15. **Purple Thunder, Heavy Duty Cleaner ..... (Champion Chemical Co.)**
16. **Safe Cleaner (Acid) ..... (Champion Chemical Co.)**
17. **Tile Grout, Powder ..... (Bondex International, Inc.)**
18. **Tough Job, Detergent ..... (Prison Industry Authority)**

Explosive Substance:

1. **Blast It ..... (Champion Chemical Co.)**
2. **Cartridges, Small Arms Round ..... (Remington Arms)**
3. **Centerfire Ammunition – 9MM ..... (Olin – Handgun Ammo.)**
4. **Centerfire Rifle Loaded Round ..... (Olin – Rifle Ammo.)**
5. **Fusee / Flares ..... (Orion Marine Signal Products)**
6. **Lead Shot – Shot Gun Projectile ..... (Remington Arms)**
7. **Shotshell Loaded Round ..... (Olin – Shotgun Round)**
8. **Small Arms Ammunition – 357 Cal. ..... (Remington Arms)**
9. **Small Arms Ammunition – 40 Cal. ..... (Remington Arms)**
10. **8 Gauge Industrial, Shotshell – Ammunition ..... (Olin – Shotgun Round)**

Fuels:

1. **Brake Fluid ..... (Chem-way, Inc.)**
2. **Cal Gas Corporation, Propane ..... (Propane)**
3. **Chevron Gasoline ..... (Unleaded Gasoline)**
4. **RFG / Carb Gasoline ..... (Ultramar, Inc., Unleaded Gasoline)**

ANNEX C

MATERIAL SAFETY DATA SHEET BINDER SAMPLE *(continued)*

Janitorial Supplies:

1. **Acrylic Floor Finish ..... (Ball Industries)**
2. **Acrylic Floor Sealer ..... (Ball Industries)**
3. **All Pro, Bleach ..... (Household Bleach)**
4. **Ammonia ..... (Various Product Brands)**
5. **Bahama Breeze, Deodorant ..... (Ball Industries)**
6. **Clear Plastic Acrylic Cleaner ..... (W.W. Grainger)**
7. **Clorox, Bleach ..... (Clorox Professional Products Co.)**
8. **Comet Liquid ..... (Comet – Procter & Gamble)**
9. **Crystal Clear, Disinfectant ..... (Champion Chemical)**
10. **Detergent, General Purpose ..... (ZEP MFG Co.)**
11. **Dust N Shine, Furniture Wax ..... (Wilen Manufacturing)**
12. **Dust – Off Plus, Dust Remover ..... (Falcon)**
13. **End Bac II, Disinfectant Deodorant Spray ..... (S.C. Johnson)**
14. **Fast Flush, Toilet Cleaner ..... (McKay Chemical)**
15. **Finish, Floor, Non-buff ..... (Ball Industries)**
16. **Freedom Speed Stripper, Compound Liquid ..... (S.C. Johnson)**
17. **Gojo, Natural Orange Hand Cleaner ..... (GOJO Industries)**
18. **Grout – Portland Cement, Polyblend ..... (Custom Building Products)**
19. **In-Sight, Fragrance Disinfectant Aerosol ..... (State Chemical MFG.)**
20. **Lava Bar Soap ..... (Proctor & Gamble)**
21. **Lemon Up Aerosol, Furniture Polish ..... (Ball Industries)**
22. **Lemon 64, Disinfectant Cleaner ..... (Ball Industries)**
23. **Luron Pink Powder, Hand Soap ..... (The Dial Corp.)**
24. **Luster Sheen, Floor Wax ..... (Ball Industries)**
25. **Luster Sheen, Stainless Steel Cleaner ..... (W.W. Grainger, Inc.)**
26. **Neutral Floor Cleaner ..... (Ball Industries)**
27. **Pine 64, Disinfectant Cleaner ..... (Ball Industries)**
28. **Pine-O-Quat, Disinfectant ..... (Unit Chemical Corp.)**
29. **Plastic Cleaner, Cleaner ..... (Loctite Corp.)**
30. **Plastic Cleaner, Permatex, Liquid *No MSDS* ..... (Permatex Company, Inc.)**
31. **Pledge Aerosol – Lemon, Furniture Wax ..... (S.C. Johnson)**
32. **Savvy Soap, Hand Cleaner *No MSDS* ..... (White Gloves, Inc.)**
33. **Spyglass, Glass Cleaner ..... (Ball Industries)**
34. **SP – 3 Cleaner, Compound Cleaning ..... (Oxford Chemical)**
35. **Stay-N-Strip, Floor Wax Striper ..... (Dymon, Inc.)**
36. **Windex, Glass Cleaner ..... (S.C. Johnson)**
37. **Versatile, Chloride ..... (Champion Chemical Co.)**
38. **3M Brand, Carpet Cleaner, Spot & Upholstery Cleaner ..... (3M Brand)**

ANNEX C

MATERIAL SAFETY DATA SHEET BINDER SAMPLE *(continued)*

Lubricants:

1. **Air Tool Oil** ..... **(Sta-Lube, Inc.)**
2. **BioAct, Radiator Fluid** ..... **(Petroferm, Inc.)**
3. **Break–Free Clip Aerosol** ..... **(Weapon Cleaner, Lubricant)**
4. **Break-Free Liquid** ..... **(Weapon Cleaner, Lubricant)**
5. **Chevron, 400 Motor Oil Sae 30** ..... **(Chevron, Inc.)**
6. **Performance Dot Brake Fluid** ***No MSDS*** ..... **(Ford Motor Co.)**
7. **Transmission Fluid, Automatic** ..... **(Motorcraft, Ford Motor Co.)**
8. **WD-40, Lubricant** ..... **(WD-40 Company)**
9. **Pennzoil Mercon V. Auto. Transmission Fluid** ***No MSDS*** ..... **(Pennzoil Oil Co.)**
10. **Power Lube, Aerosol** ..... **(CRC Industries, Inc.)**
11. **Power Steering Fluid** ..... **(Chev., Ford, CRC Industries)**
12. **76 Firebird LD Motor Oil 10W-30** ***No MSDS*** ..... **(76 Lubricant Co.)**

Paints / Coatings:

1. **Battery Coat, Aerosol Battery Terminal Protector** ..... **(Zep MFG. Company)**
2. **Black Developer** ..... **(Copy Machine, Xerox Corp.)**
3. **Black Dry Ink / Toner Cartridge** ..... **(Copy Machine, Xerox Corp.)**
4. **Black Toner** ..... **(Copy Machine, Xerox Corp.)**
5. **Britex EZ-Wax, Liquid** ***No MSDS*** ..... **(Brogdex Co.)**
6. **Contact Cement** ..... **(Dap, Inc.)**
7. **Corrosive Resistant Primer, Paint Product** ..... **(Sinclair Paint Co.)**
8. **Exterior Gloss Enamel, Paint** ..... **(Sinclair Paint Co.)**
9. **Finish 2001 Paste, Car Wax** ..... **(Turtle Wax, Inc.)**
10. **Fluorescent Glo Aerosol Spray Paint** ..... **(Aervoe – Pacific Company, Inc.)**
11. **Fuser Oil** ..... **(Copy Machine, Xerox Corp.)**
12. **Gloss Plate, Base Coat Reflection** ..... **(Bay City Fuel)**
13. **Gloss Black Paint, Aerosol** ..... **(Standard Product – Rust-Oleum Corp.)**
14. **Marking Paint Spray Paint** ..... **(Aervoe-Pacific Company)**
15. **Paint, Exterior Gloss Enamel Paint** ..... **(Sinclair Paint Co.)**
16. **Paint, Interior Semi-Gloss Enamel** ..... **(Sinclair Paint Co.)**
17. **Paint, Quick Dry Enamel** ..... **(Sinclair Paint Co.)**
18. **Paint, Semi-Gloss Enamel** ..... **(Sinclair Paint Co.)**
19. **Turtle Wax Super Hard Shell Liquid** ..... **(Turtle Wax, Inc.)**
20. **Weldwood Acrylic Latex Contact Cement** ..... **(Dap, Inc.)**

Pesticides:

1. **Ant / Roach Killer 14 oz.** ..... **(Raid, S.C. Johnson)**
2. **Bug Barrie, Personal Insect Repellent** ***No MSDS*** ..... **(ARI)**
3. **Commercial Insect Killer** ***No MSDS*** ..... **(Raid, S.C. Johnson)**
4. **Crawling Insect Killer** ..... **(Champion, Chase Products Company)**
5. **Flying Insect Killer** ..... **(Raid, S.C. Johnson)**
6. **Lights Out Insecticide** ..... **(W.W. Grainger, Inc.)**
7. **Spider Spray Insecticide** ..... **(Raid, S.C. Johnson)**

ANNEX C

MATERIAL SAFETY DATA SHEET BINDER SAMPLE *(continued)*

Reactive:

1. **Capsaicinoids, Pepper Spray** ..... **(First Defense Technology)**
2. **Oleoresin Capsicum, Pepper Spray** ..... **(First Defense Technology)**
3. **"CS," Tear Gas** ..... **(Def-Tec Corporation)**

Solvents:

1. **Adhesive Remover** ..... **(Jasco, Inc.)**
2. **Bio T Brake Cleaner** ..... **(BioChem Systems)**
3. **Bio T Ultraclean, Indust. Cleaner/Degreaser** ***No MSDS*** ..... **(Bio Chem Systems)**
4. **Brake Cleaner, Gunk Aerosol** ..... **(Radiator Specialty Company)**
5. **Brakleen Aerosol, Solvent** ..... **(CRC Industries)**
6. **Break-Free Dip Tank, Solvent Cleaner** ..... **(Break-Free, Inc.)**
7. **Carb and Brake Cleaner, 32152** ..... **(CMC Industries, Inc.)**
8. **Carb and Brake Cleaner, 61401** ..... **(CMC Industries, Inc.)**
9. **Carb-Medic Carburetor, Choke, Cleaner, Aerosol** ..... **(Radiator Specialty Co.)**
10. **Cleaning Compound, Detergent** ..... **(Zep MFG Co.)**
11. **Clean-R-Carb, Aerosol** ..... **(CRC Industries)**
12. **Engine Brite Engine Cleaner, Degreaser** ..... **(Radiator Specialty Co.)**
13. **Freedom Speed Stripper, Compound Cleaning Liquid** ..... **(S.C. Johnson Wax)**
14. **Master De-Icer, Solvent** ..... **(Master Chemical Corp.)**
15. **Misty Gelled Engine Degreaser** ..... **(AMREP, Inc.)**
16. **Paint Thinner** ..... **(Kleen-Strip)**
17. **Safety-Kleen Premium Solvent - #6608** ..... **(Safety-Kleen)**
18. **Safety-Kleen Premium Solvent - #6614** ..... **(Safety-Kleen)**
19. **Safety-Kleen Premium Solvent - #105** ..... **(Safety-Kleen)**
20. **Silicone Lubricant, Solvent Sprayon** ..... **(CRC Industries)**
21. **Strip-It-Clean, Paint, Varnish, Decal Remover (Aerosol)** ***No MSDS*** ..... **(The Supply Station, Inc.)**
22. **3-Way Spray, Aerosol, Degreaser** ***No MSDS*** ..... **(Luster Co.)**

Miscellaneous:

1. **ABC Dry Chemical, Fire Extinguisher** ..... **(Amerex Corporation)**
2. **Antifreeze & Coolant** ..... **(Old World Industries, Inc.)**
3. **Antiseptic Spray Affirmed Medical** ..... **(Creative Products, Inc.)**
4. **Bug Barrier, Insect Repellent** ..... **(ARI)**
5. **Elmers Glue, All Purpose** ..... **(Elmers Products, Inc.)**
6. **Foray Dry Chemical Extinguisher Agent, Fire Extinguisher** ..... **(Ansul Fire Protection)**
7. **Glue Stick, White** ..... **(3M MFG)**
8. **Simulator Solution** ..... **(U.S. Alcohol Testing of America, Inc.)**
9. **Swift First Aid, Burn Antiseptic Spray** ..... **(ARI)**
10. **Pam, Aerosol** ***No MSDS*** ..... **(International Home Foods)**
11. **Plant Pleaser, Correction Fluid** ..... **(Evans International)**
12. **Polaroid – Spectra Film, Camera** ..... **(Polaroid Corporation)**
13. **Regina White Wine Vinegar No MSDS** ..... **(Nabisco, Inc.)**
14. **Vionex, Antiseptic Hand-wash, No Rinse Gel** ..... **(Viro Research Int. Co.)**
15. **Windshield Washer** ..... **(Blue Coral, McKay Company**