

Hazardous Waste

The Basics

A resource for businesses in Orange County

**Orange County Health Care Agency
Environmental Health Division**



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This publication is advisory only and does not give specific legal advice. It is intended to assist businesses with hazardous waste-related issues. Compliance with applicable statutes is the responsibility of each individual business.

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Foreword



ENVIRONMENTAL HEALTH

The purpose of this manual is to provide the reader with a quick and simple reference regarding hazardous waste. It covers basic concepts that businesses generating, storing or disposing of hazardous waste need to know.

Hazardous waste must be handled, stored, transported, treated, and disposed according to mandated laws and regulations. State laws are found in the California Health & Safety Code (referred to as "H&SC" in this guide), Chapter 6.5, while state regulations are found in the California Code of Regulations (referred to as "CCR" in this guide), Title 22. Since laws and regulations are constantly changing, we urge you to review their actual text when you need detailed information. Information on how to obtain your own copy of the law and regulations, and locations of local law libraries, are provided in Appendix A.

The Environmental Health Division is committed to protecting public health and the environment. We implement the hazardous waste program to ensure that all hazardous wastes are properly managed and disposed.

Specific questions regarding hazardous waste and your responsibilities can be answered by the Hazardous Waste Specialist that inspects your business. To reach your specialist, call us at (714) 433-6000. We're here to help!

Chapter 1: Hazardous Waste



Introduction

Hazardous waste can be generated in many ways. Hazardous waste includes: used oil, spent solvents, cleaning compounds, discarded paints, silver fix, byproducts of chemical processes, and discarded chemical formulations. If your business generates a waste, it is your responsibility to determine if the waste is hazardous.

(22 CCR §66260.200)

Hazardous Waste

What is a Hazardous Waste?

A **Hazardous Waste** exhibits one or more of the following properties:

It can ignite, be corrosive, explode, or prove toxic to living organisms. Many wastes are listed by name in Federal law or State regulation and some must be tested to determine if the waste is hazardous.

(22 CCR §66261.3)

What is a Listed Waste?

A **Listed Waste** is specified in State or Federal laws or regulations. Listed wastes fall into two categories:

Federally listed wastes are those listed in Federal law (Resource Control and Recovery Act [RCRA]) or Federal regulations (Code of Federal Regulations [40 CFR Ch.1, Subpart D]). They are also referred to as RCRA wastes. These wastes are considered hazardous throughout the United States.



A waste mixture is a combination of two or more wastes, any of which is a listed hazardous waste or exhibits characteristics of a hazardous waste. The mixture itself may or may not be a hazardous waste.

California wastes are those described in California Law (H&SC, Chapter 6.5) or California Code of Regulations (22 CCR). They are also referred to as **non-RCRA wastes** and are considered hazardous in California.

(22 CCR §66261.30,
66261.100, 66261.101)

What is a Hazardous Waste Mixture?

What if I have a *waste mixture* that contains a listed hazardous waste?

A waste mixture is a combination of two or more wastes, any of which is a listed hazardous waste or exhibits characteristics of a hazardous waste. The mixture itself may or may not be a hazardous waste.

Here's the bottom line:

- If the waste mixture contains a RCRA listed waste, it is always a hazardous waste.
- If the mixture contains only a non-RCRA listed waste, it is assumed to be hazardous waste unless laboratory analysis proves it to be nonhazardous. Such a waste must be analyzed by a **State Certified Laboratory** to determine whether it contains a listed waste, and to identify its applicable hazardous characteristics: ignitability, corrosivity, reactivity, or toxicity.

(22 CCR §§66261.3, 66261.30,
66261.100, 66261.101)

Hazardous Waste Generator

Am I a Hazardous Waste Generator?

To find out if you are a **hazardous waste generator**, you must know your business' processes and the wastes you generate. A quick reference guide for many common wastes generated in selected industries is provided in Table 1 (p. 10). The information in Table 1, however, is not all-inclusive. To determine if you are a hazardous waste generator, you would:

Check to see if it is a listed waste. Listed wastes are considered hazardous wastes.

Excluded Recyclable Materials

Even if it appears that you generate hazardous wastes, you may be exempt from classification as a hazardous waste generator if you can manage those wastes as **excluded recyclable materials** (see H&SC §25143.2). Some examples of recyclable materials are: a waste that can be reused onsite as a material; a waste that is sent to another facility or to the original manufacturer to be reused as an ingredient in an industrial process. Interpretation of the laws and regulations regarding excluded recyclable materials (22 CCR §66261.4 and H&SC §25143.2) is difficult; you may wish to contact your specialist for assistance.

Examine your business' processes, and waste streams to determine if you generate anything that might be considered hazardous waste. Study Table 1 to learn whether you generate wastes which are typically hazardous. The Hazardous Waste Specialist that inspects your business can help make initial determinations. A laboratory analysis of your wastes may be required.

If the waste is neither an **excluded recyclable material** nor a listed waste, determine if it exhibits any hazardous waste characteristics (Ignitability, Corrosivity, Reactivity, or Toxicity—see page 11 for more information). The waste must generally be analyzed by a State Certified Laboratory. If the laboratory results indicate the waste exhibits hazardous characteristics, the waste is hazardous and you are a hazardous waste generator.

(22 CCR §66262.11)

Is it possible to avoid the cost of a laboratory analysis?

Yes! By applying knowledge of the hazardous characteristics and composition of your processes and wastes, you might be able to determine if a waste is nonhazardous and avoid laboratory analysis. Examples of wastes for which you can employ a self determination are catalyzed fiberglass resins and reacted urethane compounds.



Typical Waste Streams Produced By Hazardous Waste Generators

Table 1

Pesticide Application Services

- Waste Containers
- Excess Pesticide(s)
- Solvents
- Oils
- Pesticides (outdated)

Laboratories

- Acids/Bases
- Solvents
- Waste Lab Samples that Tested Hazardous

Retail Markets

- Silver Fix
- Pesticides
- Waste Paint

Machine Shop

- Sludges With Heavy Metals &/or Oils
- Solvents
- Water Soluble Coolant
- Waste Oil

Chemical Manufacturers

- Waste Chemicals
- Cyanide Wastes
- Solvents

Furniture / Wood Manufacturing and Refinishing

- Solvents
- Paint Wastes
- Used Paint Filters
- Wood Preserving Agents

Schools

- Vehicle Maintenance Wastes
- Lab Wastes
- Silver Fix

Laundries and Dry Cleaners

- Perchloroethylene Waste
- Waste Filters/Media
- Stoddard Solvent

Printing and Allied Industries

- Ink Sludges
- Solvents
- Silver Fix

Building Cleaning and Maintenance

- Waste Cleaners
- Solvents

Automotive Paint Shop

- Waste Thinner
- Waste Paint Sludge
- Used Paint Filters

Vehicle Maintenance

- Solvents
- Waste Oils
- Used Oil Filters
- Waste Ethylene Glycol/Antifreeze

Metal Anodizing and Printed Circuit Boards

- Waste Containers
- Cyanide Wastes
- Heavy Metal Wastes
- Spent Plating Wastes
- Silver Fix

The Four Hazardous Waste Characteristics

Four characteristics are used to determine whether a waste is hazardous: ignitability, corrosivity, reactivity or toxicity. Each characteristic requires the use of different criteria for analysis.

(22 CCR Chapter 11, Article 3)

Ignitability

(22 CCR §66261.21)

Wastes which will easily catch fire exhibit the hazardous waste characteristic of ignitability. A waste which ...

- Has a flash point less than 140° F,
- Is readily ignitable, or
- Is an oxidizer (as defined in 49 CFR),

is a hazardous waste. Examples of wastes that might be ignitable are: solvent wastes, metal or mineral dusts (e.g., aluminum, magnesium, or phosphorus). Note: Flash point is determined by the Pensky-Martens Closed Cup Tester or by the Setaflash Closed Cup Tester.

Corrosivity

(22 CCR §66261.22)

Liquid wastes or solid wastes when mixed with water, which have a pH less than or equal to 2, or greater than or equal to 12.5 (pH ≤ 2 or pH ≥ 12.5) exhibit the hazardous waste characteristic of corrosivity. Corrosives are acids (low pH) or bases (high pH). If a liquid waste corrodes steel at a rate greater than 0.25 inches per year, the waste is corrosive and is thus hazardous. Examples of corrosive wastes are: caustic hot tank liquid wastes and metal finishing process tank wastes.

Reactivity

(22 CCR §66261.23)

A waste which is unstable and/or produces toxic gases when mixed with water exhibits the hazardous characteristic of reactivity. These are wastes which exhibit the following properties:

- Are normally unstable and readily undergo violent change without detonating;
- React violently with water;
- Generate toxic gases when mixed with water;
- Are cyanide or sulfur bearing wastes which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases;
- Are capable of detonation or explosion if heated or placed under confinement;
- Are readily capable of detonation, explosive decomposition, or reaction at standard temperature and pressure;
- Are forbidden explosives (49 CFR §173.51), Class A explosives (49 CFR §173.51), or Class B explosives (49 CFR §173.88).

Examples of reactive wastes are: picric acid, sodium metal, and cyanide

Hazardous Waste Characteristics

Toxicity

(22 CCR §66261.24)



A waste which exhibits the characteristic of toxicity has a potential, when eaten, inhaled, or touched, to harm humans or the environment. As you will see, toxicity testing can be quite complicated. We will discuss this procedure in detail because it is so often used (and so often confused!). Basically, toxicity tests look for one or all of the following:

- Whether the waste can build up in an organism's body until it reaches a concentration that causes a disease or a disorder (Bioaccumulation Testing).
- Whether the waste can drain through a landfill and potentially contaminate groundwater (Landfill Testing).
- Whether a concentration of the waste will kill one-half of the laboratory animals exposed to it (Exposure Testing). Laboratory animals are used in lieu of testing the substance directly on humans. These results are then extrapolated to human exposures.

Exposure Testing

Acute **LD-50** and Acute **LC-50** Characteristics

The terms **Lethal Dose (LD)** and **Lethal Concentration (LC)** (22 CCR §66261.24)

(**LC**) refer to the concentrations of a substance that kills a proportion of a group of laboratory animals. Toxicologists generally refer to the concentrations that kill one-half (50%) of the test subjects; these concentrations are called **Acute Lethal Dose 50** (stated as **LD-50**) and **Lethal Concentration 50 (LC-50)**. A low LD-50 or LC-50 value means that less of the substance is needed to kill test subjects, and thus the more toxic it is. A higher LD-50 or LC-50 means that more of a substance is needed to kill test subjects, and thus the less toxic it is. So a substance with an LD-50 of 8 mg/kg would be more toxic than a substance with an LD-50 of 22 mg/kg.

The four types of LD-50 and LC-50 are oral, dermal, inhalation, and aquatic bioassay. Toxicity data are found in several reference books (e.g.: The Merck Index and the NIOSH Registry of Toxic Effects of Chemical Substances and Hazardous Chemical Data Book).

Extremely Hazardous Wastes

Wastes with very low LD-50's fall into a special class of hazardous wastes called **Extremely Hazardous Wastes**. Arsenic, cyanide, and beryllium are all examples of extremely hazardous wastes.

Bioaccumulation Testing

Wastes that contain toxic substances in excess of specified concentrations which accumulate in the body or the environment are considered hazardous wastes. Many of these substances are heavy metals such as arsenic, chromium, lead, mercury, and nickel. Wastes that often contain heavy metals are paint booth filters, metal grinding dust, and spent photographic fixer. Two different concentrations, as determined by toxicologists, are used: the **Total Threshold Limit Concentration (TTLC)** and the **Soluble Threshold Limit Concentration (STLC)**.

California Toxicity Analysis: TTLC & STLC

- The TTLC is the maximum concentration allowed for a waste in **solid or powdered form** to be considered possibly non-hazardous. If the concentration of a waste is greater than the allowed TTLC value for that waste, the waste is toxic (and is thus hazardous waste). TTLC values are often much higher than STLC values.
- The STLC is the maximum concentration allowed for a waste in **liquid form** to be considered possibly non-hazardous. If the concentration of a waste is greater than the allowed STLC value for that waste, the waste is toxic (and is thus hazardous waste). STLC values are often much lower than TTLC values.
- When a waste is analyzed and the concentration of a substance is found to lie between the accepted TTLC and STLC values for that substance, further analysis may be required.

Waste Determinations

Waste determinations can often be challenging and sometimes time consuming. You can contact your Specialist, who is a valuable resource in waste determinations, at (714) 433-6000.

(22 CCR §66273.1)

Here are the steps involved:

- 1** Perform a test to determine the TTLC value of the waste. The test is sometimes called the “**TTLC**,” “**Total Metals**” or “**Nitric Acid Test**.” Note that for grinding wastes from metal solids, a Sieve Test may be required first. (The Sieve Test determines the particle size of uncontaminated metal powders and dusts.)
- 2** If the tested concentration is equal to or greater than the accepted TTLC value for that substance, the waste is considered hazardous waste. If the tested concentration is less than ($<$) the TTLC value, but is greater than ($>$) the STLC value, then proceed to Step 3. If the tested concentration is less than both the TTLC and the STLC values, the waste is considered nonhazardous and no further analysis is necessary.

- If $>$ TTLC, then it's hazardous*
 - If $<$ TTLC, but $>$ STLC, then proceed to Step 3*
 - If $<$ TTLC and STLC, then it's nonhazardous*
- 3** Multiply the accepted STLC value by a factor of 10. If the tested concentration (from the TTLC test) is less than 10 times the STLC, the waste is assumed to be nonhazardous.
- 4** If the tested concentration is more than 10 times the STLC, the waste is likely to be hazardous. At this point, you can agree to handle the waste as hazardous or you can subject the waste to further testing.
- 5** If you opt for more testing, the test to perform is the **Waste Extraction Test (WET)**. The test is sometimes also called the “**STLC**,” “**Soluble Metals**” or “**Citric Acid Test**.”
- 6** If the tested concentration for the WET test is equal to or greater than the accepted STLC value for that substance, it is considered hazardous waste. If the observed value is less than the accepted STLC value, it is considered nonhazardous. Toxicologists have analyzed these contaminants to determine their potential to produce adverse health effects in humans and the environment.

Acceptable levels of these contaminants, expressed in terms of their TTLC and STLC concentrations, are listed in Appendix B along with examples of their use.

Landfill Testing

Toxicity Characteristic Leaching Procedure

The **Toxicity Characteristic Leaching Procedure (TCLP)** is a Federal procedure performed on wastes intended for landfill disposal. The TCLP determines if certain metals and organics are present in the waste. This is somewhat similar to the test performed to determine TTLC and STLC values. In California, the TCLP procedure is not as commonly used as the WET test and is usually performed after the WET test. Examples of wastes that would require the TCLP procedure are sludges which contain organics or solvents and sludges from vapor degreasers.

TCLP (22 CCR §66261.24)

Universal Waste

The intent of the new ruling is to protect our environment from less hazardous waste streams that have the potential to contaminate natural resources.

Universal Waste

In 2000, the Department of Toxic Substances Control (DTSC) adopted new regulations called the Universal Waste Rule, which govern the storage and disposal of "Universal Waste." The intent of the new ruling is to protect our environment from less hazardous waste streams that have the potential to contaminate natural resources.

The regulations provided a number of exemptions to the law which allowed Conditionally Exempt Small Quantity Generators (CESQG) and the general public to continue disposal of Universal Wastes through regular waste disposal methods. As of February 9, 2006 all Universal Wastes, including those generated by CESQG and the general public, must be disposed of according to the new Universal Waste Rule.

What is Universal Waste?

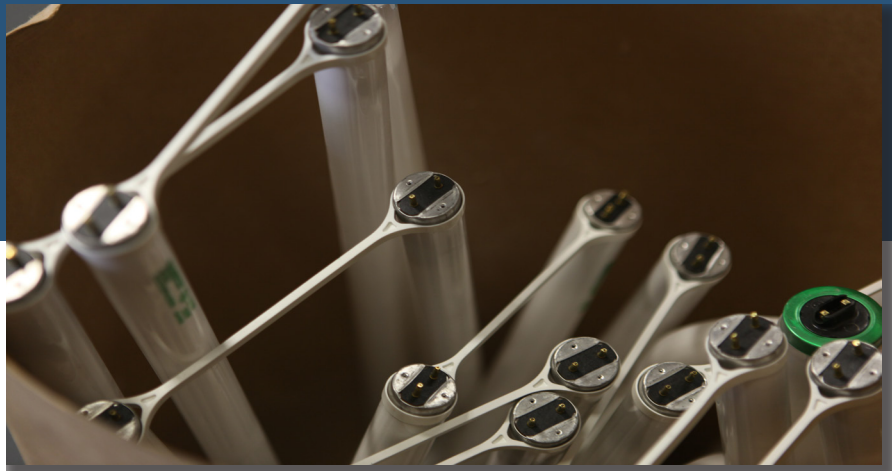
For a waste to be classified as a Universal Waste it must first be defined as a hazardous waste, for example, mercury thermometers are considered hazardous and are classified as Universal Wastes. Industry benefits from the new ruling as storage and disposal requirements for Universal Wastes are more relaxed than those for hazardous wastes.



TOXIC

Common Universal Wastes include, but are not limited to:

(22 CCR §66273.2–66273.9)



Fluorescent tubes, bulbs and other mercury containing lamps—Fluorescent light tubes and bulbs, high intensity discharge (HID), metal halide, sodium, and neon bulbs. These lights contain mercury vapor that may be released to the environment when they are broken.

Thermostats—There is mercury inside the sealed glass “tilt switch” of the old style thermostats (does not include newer electronic types).

Consumer Electronic Devices (such as televisions and computer monitors, computers, printers, VCRs, cell phones, telephones, radios, and microwave ovens)—These devices often contain heavy metals like lead, cadmium, copper, and chromium.

Common batteries—AA, AAA, C cell, D cell, and button batteries (does not include automotive batteries). These contain corrosive chemicals as well as heavy metals like cadmium.

Electrical switches and relays—Mercury switches can be found in some chest freezers, pre-1972 washing machines, sump pumps, electric space heaters, clothes irons, silent light switches, automobile hood and trunk lights, and ABS brakes.

Mercury thermometers—Mercury thermometers typically contain about a half gram of mercury. Many health clinics, pharmacies, and doctor’s offices have thermometer exchange programs that will give you a new mercury-free fever thermometer in exchange for your old one.

Non-empty aerosol cans that contain hazardous materials—Many products in aerosol cans are toxic or may contain flammable materials such as butane, pesticides or paint propellants. Aerosol cans which are labeled with the words TOXIC or FLAMMABLE may not be placed in the trash unless completely empty. The term “empty” means the propellant has been discharged to the maximum extent feasible under normal use.

How do I manage Universal Waste?

Under the new ruling, many Universal Wastes must be recycled. DTSC has published the following table which indicates the Universal Wastes that must be recycled. If you choose not to follow the recycling requirement then you must dispose of the material as hazardous wastes and will then be subject to more stringent hazardous waste storage, transporting and disposal requirements.

(22 CCR §66273.13)



Common Universal Waste



Steps to Manage Universal Waste

Universal Wastes must be managed using the following rules:

- Universal Wastes may only be transported to one of three destinations:
 1. A hazardous waste recycling facility;
 2. A consolidation location if the business has multiple sites and wishes to store all of their Universal Waste in one location;
 3. A hazardous waste land disposal facility for those Universal Wastes where there is no recycling requirement.
- Universal Wastes may not be disposed of to the regular trash;
- A hazardous waste identification number is not required;
- You may not store Universal Wastes for more than 12 months;
- All Universal Wastes must be labeled to identify the material as Universal Wastes;
- Any leaks or breakages of equipment containing Universal Wastes e.g., leaking batteries or broken fluorescent bulbs must be repackaged, labeled and managed as Universal Waste.
- Train employees in the management of Universal Waste such as handling, packaging, storage, labeling and emergency response.

<i>UNIVERSAL WASTE</i>	<i>RECYCLING REQUIRED</i>	<i>HAZARD</i>
Novelty Items with Mercury	No	Mercury
Lamps with Mercury	Yes	Mercury
Vehicle Light Switches with Mercury	Yes	Mercury
Non-Automotive Mercury Switches	Yes	Mercury
Mercury Thermostats	No	Mercury
Mercury Thermometers	Yes	Mercury
Dental Amalgam	Yes	Mercury
Rubber Flooring	No	Mercury
Pressure or Vacuum Gauges	Yes	Mercury
Dilators and Weighted Tubing	No	Mercury
Gas Flow Regulators	Yes	Mercury
Couterweights and Dampers	Yes	Mercury
Cathode Ray Tubes	Yes	Mercury
Consumer Electronic Devices	Yes	Lead and other metal
Waste Batteries	No	Toxic & Corrosive
Aerosol Cans	No	Reactive, Toxic, and Ignitable

Other Types of Hazardous Waste

- Utilize appropriate shipping papers such as a Bill of Lading. A Hazardous Waste Manifest is not required for shipping of Universal Wastes.
- Keep all Universal Waste shipping receipts for a minimum of three years.
- Non empty aerosol cans may be treated/processed on site without obtaining a treatment permit. Processing constitutes the “puncturing, draining or crushing of aerosol cans”. Notification (form) must be submitted no later than the date on which the handler first initiates this activity. Requirements on the processing notification (form) include business/facility information, description of waste aerosol can processing activities and the description of the characteristics & management of any hazardous treatment residuals. Contact CUPA to obtain a notification form.

(22 CCR §66261.7)

Empty Containers

(22 CCR §66261.7)

A container is “empty” only if the contents are no longer pourable or if the contents have been scraped out as much as reasonably possible. If a container that contained a hazardous substance is not empty, the container must be disposed as a hazardous waste. If the container is empty, the handling varies with the volume of the container.

Five Gallons or less:

Empty containers, or inner liners removed from containers, of five gallons or less that once contained a hazardous substance, are not regulated if all the contents have been poured out, or scraped out. Empty containers of five gallons or less may be discarded to the municipal trash.

Greater than Five Gallons:

Empty containers, or inner liners removed from containers, of greater than five gallons in size that once contained a hazardous substance, must be sent out on a bill of lading to a drum recycler or reconditioner for scrap value or sent back to the manufacturer for refilling within one year of being emptied. Containers greater than 5 gallons in size cannot be put into the municipal trash or municipal landfill.

Used Oil Filters and Fuel Filters

(22 CCR §66266.130)

Used motor oil and fuel filters are considered hazardous waste. Provisions have been made in the regulations to handle these filters as nonhazardous, as long as the filters are drained of all free flowing liquid and are sent out for scrap metal recovery. Refer to “Drained Oil and Fuel Filters in Chapter 2” for further information.

Other Types of Hazardous Waste

PCBs are regulated as a hazardous waste. The majority of all light ballasts manufactured before 1979 contain PCBs.

Other Filters

(22 CCR §§66266.80 & 66266.81)

Used filters, such as solvent bath filters, radiator coolant recycler filters, and plating bath filters, are considered hazardous waste, unless laboratory testing proves them to be non-hazardous. The filters cannot be commingled, stored, or disposed with used oil filters.

Lead Acid Batteries (Auto Batteries)

(22 CCR, §§67426.1 through 67429.1)

Auto batteries contain acid, lead, and other heavy metals. Used auto batteries do not have to be handled as hazardous waste if the following conditions are met:

- The batteries are intact (no cracked batteries or missing caps).
- The batteries are recycled.
- No electrolytes or acids are removed from the batteries.
- Batteries are stored to prevent the release of acid or lead to the environment.
- One ton or more cannot be stored more than 180 days.
- Less than one ton cannot be stored any longer than one year.
- Receipts (manifests or bills of lading) must be kept for three years.

Used Shop Rags

Rags and towels can be used to clean up small spills, but do not use them as your routine method for hazardous waste disposal. Rags and towels that are laundered for reuse are not regulated unless they are intentionally used as “the” method of hazardous waste disposal.

Fluorescent Light Ballasts Manufactured Prior to 1979

Waste fluorescent light ballasts may contain PCBs (Polychlorinated biphenyls). PCBs are regulated as a hazardous waste. The majority of all light ballasts manufactured before 1979 contain PCBs. After January 1, 1979, ballasts could not be manufactured with PCBs, and must be labeled, “No PCBs.” A “No PCBs” ballast can be identified by one or more of the following methods:

“No PCBs” printed on a label,

Date code stamp indicating manufacture after 1979 appears on the ballast, or

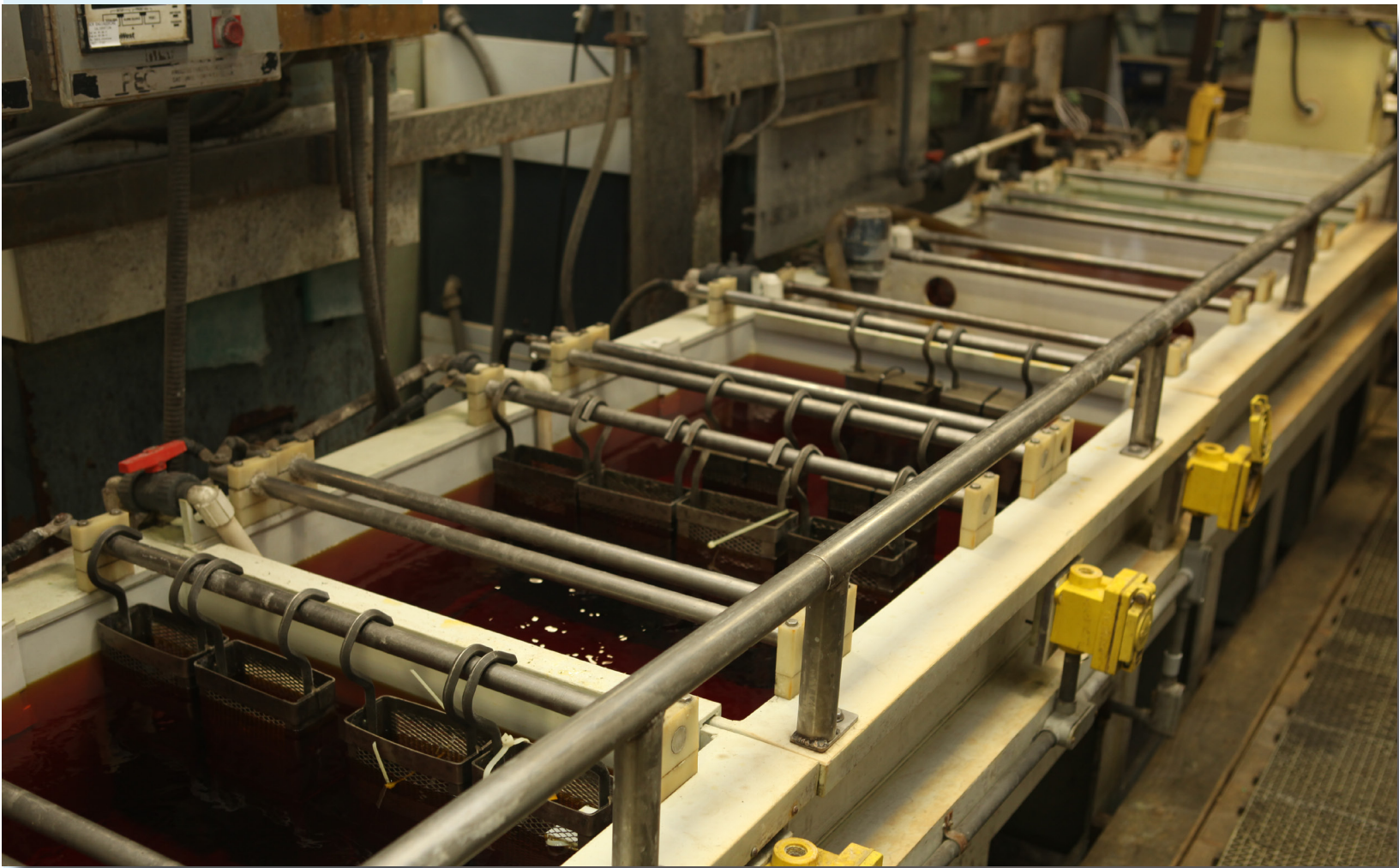
The ballast manufacturer identifies the ballast by model number.

All ballasts which cannot be readily identified as not containing PCBs must be managed as if the ballast contained PCBs. Disposal of PCBs must be in accordance with Hazardous Waste Regulations.

Chapter 2: On-Site Storage and Handling of Hazardous Waste

Introduction

After a waste is identified as hazardous, it must be stored, labeled and disposed according to provisions of the California Code of Regulations (CCR), Title 22.



Storage Tanks and Containers

Storage Containers and Tanks

Hazardous waste must be stored in non-leaking containers made of materials compatible with the waste. Types of storage containers include:

Containers/Drums

- Maintained in good condition with tight fitting lids
- Made or lined with materials which are compatible with the hazardous waste stored inside (e.g., acids and caustics stored in plastic drums; oils, flammables or combustibles stored in steel drums)
- Kept closed when not in use
- Properly labeled
- Handled or stored in a manner to prevent rupture or leakage
- Inspected at least weekly

Underground Storage Tanks (USTs)

- Maintained according to State laws and regulations and enforced by the Orange County Health Care Agency and local fire departments. *The cities of Anaheim, Fullerton, Orange and Santa Ana regulate underground storage tanks within their jurisdictions.* The Orange County Health Care Agency, Environmental Health Division regulates USTs in all other regions of the County

Aboveground Storage Tanks (ASTs)

- Maintained in accordance with State laws and regulations enforced by local fire jurisdictions, and in compliance with the above referenced container/drum requirements. Beginning January 1, 2008, all above ground storage tanks containing petroleum products in excess of 1320 gallons will be regulated by Orange County Health Care Agency.

(CCR, §66265.192)



Hazardous Waste Tank Systems

- Certain Hazardous Waste Tank Systems may require assessment by a professional engineer. Please contact your Specialist for more information.

(CCR, §66265.170 et. al.)

Storage Area

- Hazardous waste must be stored in a secured location to prevent unauthorized access, preferably under a roofed area with an impermeable floor.
- Good housekeeping is an essential practice for the proper storage of hazardous waste.
- Adequate aisle space must be maintained to allow for emergency equipment.
- Containers of incompatible waste must be separated by means of a dike, berm, wall, or similar device.
- Storage of ignitable or reactive wastes must be at least 50 feet from the property line.
- Storage must comply with all applicable fire codes and storm water requirements.

(H&SC §25280 through 25299.7, and CCR, Title 23, Division 3, Chapter 16)

Storage Tanks and Containers

HAZARDOUS WASTE

STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

GENERATOR INFORMATION:

NAME _____
ADDRESS _____ PHONE _____
CITY _____ STATE _____ ZIP _____
EPA ID _____ MANIFEST _____
NO. _____ TRACKING NO. _____
EPA WASTE _____ CA WASTE _____ ACCUMULATION
NO. _____ NO. _____ START DATE _____
CONTENTS, COMPOSITION: _____

PHYSICAL STATE:

☐ SOLID ☐ LIQUID

HAZARDOUS PROPERTIES:

☐ CORROSIVE ☐ REACTIVE ☐ OTHER _____
☐ FLAMMABLE ☐ TOXIC

DOT PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

HANDLE WITH CARE!

b. For hazardous waste stored in **stationary containers greater than 110 gallons**, the words “Hazardous Waste” and the accumulation date are to be clearly marked on the container.

c. Containers used to transport hazardous waste must include labels with the words “Hazardous Waste,” plus the following statement and additional information below.

- “State and Federal law prohibits improper disposal. If found, contact the nearest police or public safety authority, the U.S. Environmental Protection Agency, or the California Department of Toxic Substances Control.”
- Name and address of the generator
- Manifest document number

Requirements for labeling on-premises may be met by permanently affixing the information onto the container by stenciling, painting, or by using an adhesive label. Stenciling or painting is preferred for reusable containers, while adhesive labels (self-made or obtained from commercial vendors) are preferred for containers that will be transported off-site.

Labeling

Hazardous waste must be properly labeled. The type of label is dependent upon the container size and/or the contents of the container.

Hazardous Waste

- a. Each hazardous waste container that is **portable or less than 110 gallons** and used for storage on the premises (not for transportation) must be properly labeled with:
- The words “Hazardous Waste”
 - Contents of the container (e.g., waste oil, perchloroethylene, radiator coolant)
 - Name and address of the generator
 - Hazardous properties of the waste (e.g., flammable, toxic, reactive, corrosive)
 - Physical state (e.g., liquid, solid, gas)
 - Initial starting date for waste accumulation

(22 CCR, §66262.34)

Recyclable Material

- **Excluded recyclable material** (as defined by the Health and Safety Code, §25143.2) must be handled, stored and labeled on the premises in the same manner as hazardous waste with the exception that the words “Hazardous Waste” on the label is replaced with the words “**Excluded Recyclable Material.**” This material may be subject to the ninety (90) day storage requirements.

(H&SC §25143.9)

Storage Tanks and Containers

(22 CCR, §66266.130)

Drained Used Oil and Fuel Filters

Containers of drained used oil and fuel filters which are **recycled offsite** at a scrap metal recycler must be labeled with the words “**Drained Used Oil and Fuel Filters**” and the **initial date of accumulation**.

(H&SC §25250.22)

- They must also be stored in containers designed to prevent the ignition of gasoline.
- Storage of less than one ton of used oil and fuel filters is limited to one year.
- Storage of one ton or more of used oil and fuel filters is limited to 180 days.
- Storage beyond these limits requires a hazardous waste facility permit issued by the California Environmental Protection Agency, Department of Toxic Substances Control.

When drained oil and fuel filters are not recycled offsite, they must be stored and disposed as hazardous waste, or if a waste determination (see Chapter 1) finds the filters to be non-hazardous, the storage and disposal requirements for hazardous waste do not apply.

How Long May I Store Hazardous Waste?

Storage Times

The storage time length is based upon the quantity of hazardous waste stored and the rate that the waste is generated. Satellite storage accumulation (see below) may also be used in conjunction with the other options.

(22 CCR §66262.34)

Conditionally Exempt Small Quantity Generators (CESQG):

A business generates **less than or equal to 100 kg** (220 pounds or approximately 27 gallons) of hazardous waste per month. The hazardous waste must be transported offsite within one hundred and eighty (180) calendar days once 100 kg of hazardous waste have accumulated.
or

- If the waste must be transported over a distance of 200 miles or more, the generator may store the waste for up to 270 days.

Small Quantity Generators (SQG):

A business generates **more than 100 kg** but **less than 1,000 kg** (between 220 and 2,200 pounds, or 27 and 275 gallons) of hazardous wastes per month.

- Hazardous waste may be stored onsite for up to 180 days.

or

- If the waste must be transported over a distance of 200 miles or more, the generator may store the waste for up to 270 days.

The preceding storage times apply only if the following conditions are met:

- The quantity of hazardous waste accumulated onsite never exceeds 6,000 kg,
- The generator has complied with all of the contingency plan requirements (refer to Chapter 5 of this guide),
- The generator does not store extremely hazardous or acutely hazardous waste in an amount greater than 1 kg (2.2 pounds) for more than 90 days.

If you generate more than 100 kg (more than 220 lbs, more than 27 gals), but less than 1,000 kg (less than 2,200 lbs, less than 275 gals), then dispose within 180 days after you reach that amount.

Extremely Hazardous Waste

Large Quantity Generators (LQG):

A business generates **more than 1,000 kg** (2,200 pounds or approximately 275 gallons) of hazardous wastes per month.

Hazardous waste cannot be stored for more than ninety (90) days.

If you generate more than 1,000 kg (more than 2,200 lbs, more than 274 gals) per month, all hazardous waste must be disposed within 90 days.

If you generate 100 kg per month or less (220 lbs or less, 27 gals or less), then dispose of ALL hazardous waste within 180 days after you reach that amount.

Satellite accumulation:

Satellite accumulation allows storage of small amounts of hazardous waste for up to one year. More than one satellite accumulation site may be used and this rule applies to any business regardless of the quantity of waste generated on the premises as long as the following conditions are met:

- Waste is stored at the initial point of generation and under control of the operator of the process generating the waste.
- A maximum of 55 gallons of hazardous waste or one quart of extremely hazardous waste is accumulated at any one satellite location.
- Containers or drums are properly labeled.
- Within three (3) days after reaching the maximum storage quantity, a new accumulation date (date that limit was reached) must be marked on the container and the waste removed offsite within the specified time limit (SQG or LQG).

Note: If your business generates **extremely hazardous waste** as defined in CCR, Title 22, §66261.107, contact Environmental Health at (714) 433-6000 for specific information regarding its proper storage, handling and disposal.

Satellite accumulation allows hazardous waste to be stored near the process that generated it.

Satellite waste accumulation may not exceed one year from the initial date of accumulation.

HAZARDOUS WASTE FEDERAL LAW PROHIBITS IMPROPER DISPOSAL IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY ALFRED UNIVERSITY ENVIRONMENTAL HEALTH & SAFETY OFFICE 1 SAXON DRIVE ALFRED, NY 14802 807-871-2190 EPA #	
SATellite ACCUMULATION DATA	
BLDG.	RM.
START DATE	FILL DATE
INIT.	
CHEMICAL NAME	
WASTE CHARACTERISTIC: <input type="checkbox"/> BY KNOWLEDGE <input type="checkbox"/> TEST <input type="checkbox"/> poison/toxic <input type="checkbox"/> flamm. solvent <input type="checkbox"/> oxidizer <input type="checkbox"/> halogen solvent <input type="checkbox"/> flamm. solid <input type="checkbox"/> corrosive acid <input type="checkbox"/> corrosive base <input type="checkbox"/> corrosive solid <input type="checkbox"/> irritant	

HAZARDOUS WASTE FEDERAL LAW PROHIBITS IMPROPER DISPOSAL IF FOUND, CONTACT THE NEAREST POLICE, PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY ALFRED UNIVERSITY ENVIRONMENTAL HEALTH & SAFETY OFFICE 1 SAXON DRIVE ALFRED, NY 14802 807-871-2190 EPA #	
SATellite ACCUMULATION DATA	
BLDG.	RM.
INIT.	DATE: START
FULL	
CONTENTS: CHEMICAL NAME/VOLUME OR WEIGHT	
WASTE CHARACTERISTICS: <input type="checkbox"/> TEST <input type="checkbox"/> KNOWLEDGE <input type="checkbox"/> poison/toxic <input type="checkbox"/> flammable solvent <input type="checkbox"/> oxidizer <input type="checkbox"/> halogen solvent <input type="checkbox"/> flammable solid <input type="checkbox"/> corrosive acid <input type="checkbox"/> corrosive base <input type="checkbox"/> corrosive solid <input type="checkbox"/> irritant	
This section to be filled out at Central Accumulation area CENTRAL ACCUMULATION DATA	
Receipt Date	Initialed by

Chapter 3: Hazardous Waste Transportation, Disposal, & Record Keeping



Introduction

If your business generates hazardous waste, you must comply with certain transportation, disposal and, record-keeping requirements. Hazardous wastes may be transported offsite by one of these five methods: consolidated manifest, bill of lading, self hauling, consolidation, or full manifest. This chapter explains the different transportation methods and record-keeping requirements for businesses that generate hazardous waste.

Almost all businesses that generate hazardous waste in California that are not required to have a U.S. EPA ID Number must have a California ID Number.

What is an EPA ID Number?

Businesses that generate hazardous waste must obtain an EPA identification number in order to ship a hazardous waste offsite for treatment or disposal. A business needs to determine, based on type and quantity of waste, whether a Federal or California EPA ID number is needed.

(22 CCR §66262.12)

Do I need a U.S. EPA ID# or California ID #?

If a business generates more than 1 kilogram of RCRA acutely hazardous waste per month or more than 100 kilograms (27 gallons) of other RCRA waste per month, then facility must obtain a U.S. EPA ID Number. There are exemptions to businesses that generate less than 100 kilograms of RCRA waste that meet certain requirements, from having to obtain a federal ID number. These businesses are called “conditionally exempt small quantity generators” or CESQGs. For more information and to obtain a U.S. EPA ID Number application form call (415) 495-8895 or visit their website at www.epa.gov/region09.

If a business generates RCRA hazardous waste in amounts below the federal EPA ID Number requirements or generates non-RCRA hazardous wastes (California only), facility is required to obtain a California ID Number. Almost all businesses that generate hazardous waste in California that are not required to have a U.S. EPA ID Number must have a California ID Number. To obtain an California identification number, contact the Department of Toxic Substances Control (DTSC), at (800) 618-6942 or visit their website at www.dtsc.ca.gov.

Hazardous Waste Registration

EPA ID numbers are site specific. DTSC or the EPA must be notified if a business generating hazardous waste moves or has a change of ownership.

Consolidated Manifest

If your business generates hazardous waste that qualifies as a consolidated (formerly known as “modified” or “milk run”) waste, you are not required to use a full hazardous waste manifest. For consolidated wastes only, the transporter provides you with a receipt or shipping paper as documentation for waste disposal. The transporter will, at the end of the day, or when the truck becomes full, attach all the shipping papers to the main manifest that will be sent to the proper destinations.

(22 CCR §66263.42
and HSC 25160.2)

Please print or type

Form Approved: OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law
3. Generator's Name and Mailing Address				A. State Manifest Document Number	
4. Generator's Phone ()				B. State Generator's ID	
5. Transporter 1 Company Name		6. US EPA ID Number		C. State Transporter's ID	
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone	
9. Designated Facility Name and Site Address		10. US EPA ID Number		E. State Transporter's ID	
				F. Transporter's Phone	
				G. State Facility's ID	
				H. Facility's Phone	
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a.					
b.					
c.					
d.					
J. Additional Descriptions for Materials Listed Above		K. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.					
Printed/Typed Name		Signature		Month Day Year	
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		Month Day Year	
Printed/Typed Name		Signature		Month Day Year	
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Month Day Year	
Printed/Typed Name		Signature		Month Day Year	
19. Discrepancy Indication Space					
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.					
Printed/Typed Name		Signature		Month Day Year	

EPA Form 8700 - 22 (Rev. 9-88) Previous editions are obsolete.

Hauling Waste

Identifying different types of Hazardous Waste, and procedures on how to dispose of them.

Listed below are wastes that can be hauled using the consolidated manifest procedure:

- Automotive parts cleaning solvents
- Spent photographic solutions
- Waste automotive antifreeze
- Sludge containing sodium hydroxide and heavy metals (hot tank sludge)
- Dry cleaning solvent waste including perchloroethylene
- Asbestos
- Inks from the printing industry
- Chemicals and lab packs collected from school districts

The receipt or shipping paper must contain the following information:

- The generator's name, address and EPA identification number
- The name, signature and telephone number of the generator's contact person
- The transporter's name, address and EPA identification number
- The proper shipping name of the waste
- The quantity of waste taken
- The date the waste was taken by the transporter
- The name, address and EPA identification number of the receiving facility
- The transporter's manifest document number
- In the case of school chemical collections, the drum number and contents

Generators of wastes eligible for the consolidated manifest procedure are still required to obtain identification numbers.



Other Types Waste Hauling

Used Oil

Used oil may also be transported using a similar receipt as required for consolidated manifest wastes. The receipt must contain the following information:

- The generator's name and address.
- The signature and telephone number of the generator's contact person.
- The transporter's name, address and EPA identification number.
- The driver's signature.
- The proper shipping name of the waste.
- The quantity of waste taken.
- The date the waste was taken by the transporter.
- The name and address of the receiving facility.
- The transporter's manifest document number.

(H&SC §25250-25250.28)

Bill of Lading

A bill of lading is a standard shipping paper used to transport recyclable materials. A bill of lading includes such information as the date, name of the transporter, name and quantity of material shipped, and the destination of the material. Recyclable materials may be shipped using a bill of lading instead of a uniform hazardous waste manifest (see below). Common items shipped on a bill of lading are: used oil and fuel filters, batteries, and Universal Wastes.

Self-Hauling

Businesses may transport up to five (5) gallons or fifty (50) pounds of a hazardous waste directly to a Treatment, Storage or Disposal Facility (TSDF) if the container is properly sealed, labeled and taken directly to a TSDF for disposal. Approval from the TSDF is recommended prior to hauling the waste.

If your business generates small amounts of **waste oil** you may transport used oil yourself without a manifest if:

- Each container's contents do not exceed 5 gallons.
- The total load does not exceed 20 gallons.
- The person who transports the used oil generated the used oil.
- The used oil is taken to a facility which agrees to and can accept used oil.

(H&SC §25163[c])



Tracking Hazardous Waste

Consolidation

(H&SC §25163.3)

If you own one or more remote locations, you may consolidate waste at a central site. The waste is deemed to have been generated at the consolidation site. RCRA and non-RCRA, waste may be consolidated. See Appendix D for specific requirements.

Hazardous Waste Manifest Information

Adapted from www.dtsc.ca.gov

A hazardous waste manifest must accompany most hazardous waste that is shipped off site. In 2005, U.S. EPA published regulations that significantly change the manifest form and procedures. They mandate national use of a new Uniform Hazardous Waste Manifest that goes into effect on September 5, 2006.

Manifests are the key element in “cradle-to-grave” tracking of hazardous waste. It is part of a system of forms, reports, data bases, and procedures designed to track hazardous waste from the time it leaves the generator facility where it was produced, until it reaches the off-site waste management facility that will transfer, treat, store, or dispose of the hazardous waste. The system allows the generator to verify that its waste has been properly delivered, and that no waste has been lost or unaccounted for in transit. The manifest is also critical documentation used to identify responsible parties at cleanup sites and monitor registered transporters.

The key component of this system is the Uniform Hazardous Waste Manifest, the form prepared by all generators who transport, or offer for transport, hazardous waste for off-site treatment, recycling, storage, or disposal. Currently, the manifest is a paper document containing multiple copies of a single form. When completed, it contains information on the type and quantity of the waste being transported, instructions for handling the waste, and signature lines for all parties involved in the disposal process.

Use of the manifest is required by the U.S. Department of Transportation, U.S. EPA, and DTSC. Each entity that handles the waste signs the manifest and retains a copy. This ensures critical accountability in the transportation and disposal processes. Once the waste reaches its destination, the receiving facility returns a signed copy of the manifest to the generator, confirming that the waste has been received by the designated facility. In California, generators and receiving facilities submit manifest copies to DTSC which enters the data and images into the Hazardous Waste Tracking System. Generators must submit an exception report to DTSC if they do not receive that TSDf signed copy in 35 days.

EPA ID numbers are needed by all parties on the manifest.

Supplemental instructions on manifesting in California is available at www.dtsc.ca.gov/IDmanifest.

Manifests are the key element in “cradle-to-grave” tracking of hazardous waste.

Tracking Hazardous Waste Procedure

Generator sends manifest copy to DTSC within 30 days of the shipment date:

DTSC Generator Manifests
Department of Toxic Substances Control
P.O. Box 400
Sacramento, CA 95812-0400

TSDf sends copy to DTSC with 30 days of the receipt date:

DTSC
Facility Manifests
P.O. Box 3000
Sacramento, CA 95812

Buying Manifest Forms

On and after September 5, 2006: New forms will be sold by private printers registered by U.S. EPA. As those printers are registered, they will be listed in the Manifest Registry. Old manifests printed by California or other states cannot be used on or after this date.

Manifest Submission to DTSC

The Uniform Manifest contains six copies. All copies must be legible. The generator must always send a copy to DTSC if the waste is generated in California, handled by a permitted facility in California or is imported or exported from California. The uniform manifest will no longer have a designated copy specified for generators to submit to DTSC; therefore, generators must make a legible copy of the manifest to submit to DTSC.



Tracking Hazardous Waste

All manifests, shipping papers and or receipts, analyses and determinations must be available for review for a minimum of three years.

Registered Hazardous Waste Transporter

It is the responsibility of the generator to ensure that the hazardous waste is hauled by a state registered transporter. Transporter verification questions may be answered by logging onto DTSC's website at www.dtsc.ca.gov/database and follow the link for "Hazardous Waste Transporters."

Record-Keeping Requirements

All manifests, shipping papers and or receipts, analyses and determinations must be available for review for a minimum of three years. Businesses that generate and ship RCRA hazardous waste >1,000 kg in any one month off site to a TSD within the United States are required to summarize all manifesting activity. The summary is referred to as the biennial report, EPA Form 8700-13A/B 5-80. Businesses that generate RCRA hazardous waste are required to submit the biennial report by March 1 of every even-numbered year.



Chapter 4: Source Reduction



Introduction

The State of California considers source reduction of wastes as the preferred method of managing hazardous wastes. In order to reduce wastes at the source, a business must look at the processes that create the wastes and implement actions that will either cause a net reduction in the amount of hazardous waste generated or result in the generation of a waste that is less hazardous. The term hazardous waste minimization includes source reduction and recycling.

Waste Minimization

SB 14

What Is Waste Minimization?

The reduction of hazardous waste that is generated before treatment, storage, or disposal of the waste. This includes both source reduction and recycling actions. Recycling can be either the use, reuse or reclamation of a hazardous waste. Reclamation of a waste can be done onsite or offsite. If a waste is reclaimed onsite by some form of treatment process and then reused onsite, no treatment permit is required.

Waste minimization does not include:

- Concentrating or evaporating the waste to reduce its volume,
- Diluting the waste to reduce its hazardous properties,
- Shifting hazardous wastes from one environmental medium to another, or
- Treatment.

What Are the Incentives for Businesses to Reduce Their Wastes?

1. Reduction in the liability associated with the handling, storage, and disposal of hazardous wastes (cradle to grave liability).
2. Reduction in hazardous waste disposal costs and hazardous material costs.
3. Reduction in employee exposures to hazardous materials and wastes.
4. Reduction in regulatory requirements.

Are There Any Regulatory Requirements for Reducing Wastes?

Yes!

The State of California passed the Hazardous Waste Source Reduction and Management Act in 1989 (SB-14). The goals of SB14 are to:

1. Reduce the generation of hazardous waste at its source;
2. Reduce the release to the environment of chemicals that have adverse and serious health and environmental effects; and
3. Document hazardous waste management information and make that information available.

This Act requires businesses who routinely generate 12,000 kilograms of hazardous waste or more than 12 kilograms of extremely hazardous waste in a year to prepare the following three documents:

1. Source reduction review and plan.
2. Hazardous waste management performance report.
3. Summary Progress Report.

The Summary Progress Report must be submitted to DTSC on September 1, 2007 and then every four years thereafter. Automotive fluids, PCBs and lead acid batteries are some of the types of wastes that are exempt from the determination of a business's quantity of routinely generated wastes. A full list of exempt wastes may be found in 22 CCR, §67100.2(c). This program is administered by Cal-EPA, Department of Toxic Substances Control.

Waste Minimization

How Do I Get Started?

If a business is required to submit a source reduction plan, there are documents and fact sheets available to help businesses in reviewing the waste generating processes and preparing the necessary plans. Additional information or assistance can be found on the DTSC's website at www.dtsc.ca.gov/pollutionprevention and follow the "SB 14 Hazardous Waste Source Reduction" link.



Industry-Specific Waste Minimization Opportunities

Automotive Repair Industry

- Avoid spills, use funnels when pouring waste in storage containers
- Use drip trays when working on vehicles
- Substitute hazardous materials with less hazardous materials or non hazardous materials where possible
- Practice inventory control of materials
- Use mechanical brushes instead of rags when using solvent to clean parts
- Close solvent tanks when not in use

Source Reduction

Dry Cleaning Industry

- Inspect equipment for leaks
- Improve operating practices to reduce solvent loss
- Launder textiles that do not require dry cleaning
- Substitute presently used solvents with less hazardous or non-hazardous solvents
- Recover and recycle waste solvent
- Replace transfer machines with dry-to-dry machines



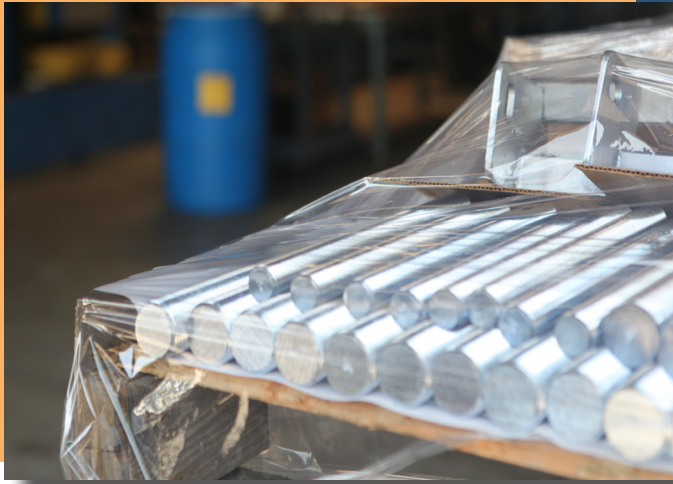
Photo Processing Industry

- Counter-current rinsing to reduce water consumption
- Use iron-complexed bleaches to replace ferricyanide bleaches
- Recover silver from exhausted fixes
- Recover and reuse various chemical processes

Paint Formulation Industry

- Practice good housekeeping to avoid generating unnecessary wastes
- Substitute water-based for solvent-based formulations whenever possible
- Substitute non-hazardous pigments to eliminate lead and chromium
- Use non-mercury bactericides
- Use stainless steel screens for filtering
- Use pigments in slurry form (reduces waste bags and packages)
- Reuse cleanup solvent





Source Reduction

Metal Finishing Industry

- Segregate waste streams to avoid contaminating non-hazardous material
- Replace cyanide baths with non-cyanide process baths
- Use water-based cleaners instead of solvents for cleaning operations
- Use air knives or spray rinses above process tanks to rinse excess solutions off of work pieces into the process tank
- Use dedicated drag-out tanks after process baths to capture drag-out
- Install rails above process tanks to hang workpiece racks for drainage prior to rinsing
- Install multiple rinse tanks including counterflow rinse tanks

Printing Industry

- Switch from chemical processing to water processing of lithographic plates
- Recycle waste inks and cleanup solutions
- Install automatic ink-levelers to maintain optimum inking conditions
- Use alternative cleaning solvents
- Use less hazardous inks, such as soy-based
- Use alternative fountain solutions



Chapter 5: Emergency Procedures



Introduction

Planning and preparing for different types of emergencies that can occur at a business site, such as a fire, an earthquake or a hazardous waste incident, is mandated by law. According to State hazardous waste laws and regulations, businesses must be maintained and operated to minimize the possibility of a release of hazardous waste to the air, soil, or surface water to prevent a threat to human health or the environment.

Emergency Planning Requirements

Contingency Plan Requirements for LQG and Extremely Hazardous Waste

Are There Requirements for Emergency Planning?

Yes, all hazardous waste generators are required to prepare a contingency plan. There are two levels of reporting which are dependent on the total amount of hazardous waste generated. Businesses generating 1,000 kg (2,200 pounds or 2,700 gallons) or more hazardous waste per month must complete a full contingency plan. Businesses generating less than 1,000 kg per month may opt to follow the RCRA oriented contingency plan requirements for Small Quantity Generators.

Contingency Plan

A contingency plan is a written plan that has emergency procedures designed to minimize hazards to human health and the environment. The contingency plan will help all emergency responder teams handle any emergency involving stored hazardous waste. All hazardous waste generators are responsible to plan for emergencies at their business and are required to have a contingency plan.

(22 CCR §§66265.50-66265.56)

The contingency plan should be written in layman's terms and must include the following:

1. Business name, address, telephone and fax (if available).
2. A description of actions, which may include procedures such as berming, absorbing, etc., that the employees must take to minimize hazards in response to emergencies, such as fire, explosion, or any release of hazardous waste.

3. List of communication equipment—employees handling hazardous waste must have access to either an alarm system,
4. The name, address, and telephone numbers (work and home) of an employee qualified to act as an emergency coordinator. The emergency coordinator must have a communication system or be in voice contact with another employee. Employees working alone must have access to a telephone or a two-way radio to call for assistance.
5. The names, addresses, and telephone numbers (work and home) of alternate emergency coordinators.
6. A list of emergency equipment and where it is located (i.e., fire extinguisher, alarms, spill control equipment, etc.)

HAZARDOUS MATERIALS UNIFIED PROGRAM		ID. #
Hazardous Waste Contingency Plan Date: _____		
SECTION I-A: BUSINESS IDENTIFICATION DATA		
BUSINESS NAME _____		
STREET ADDRESS _____	CITY _____	ZIP CODE _____
FACILITY NAME _____		TELEPHONE NUMBER _____
BUSINESS MAILING ADDRESS _____	CITY _____	ZIP CODE _____
If your business has a license or permit from any of the following agencies, please indicate the document number.		
1. Hazardous Materials Unregulated Storage # _____	3. Air Pollution Control District # _____	
2. Hazardous Waste Manifest # _____	4. Responding Fire Dept. & Permit # _____	
Please provide the following information as it pertains to your business and its location. You are not required to notify these companies in the event of an emergency. This information is provided for your reference and is useful emergency response personnel in responding to a hazardous materials emergency at your facility. List the name and phone number of the utility company.		
Electric Service _____	Telephone # _____	
Gas Service _____	Telephone # _____	
Sewer/Water District _____	Telephone # _____	
Water District _____	Telephone # _____	
SECTION I-B: OWNER CERTIFICATION OF DATA (Certify either 1 or 2)		
1. This is a <input type="checkbox"/> NEW Plan <input type="checkbox"/> UPDATED Existing Plan. I have personally examined the information it contains and am familiar with the operation of the plan. (If you check either of the above two options, continue to complete the remainder of the Emergency Response / Contingency Plan.)		
2. <input type="checkbox"/> This plan requires no change and is in full compliance with Santa Barbara County Hazardous Materials Unified Program and does not need any change. (If you check this section, please proceed directly to Form T, the Training Program.)		
I certify under penalty of law that the above information is true and accurate.		
SIGNATURE OF OWNER OR OPERATOR _____	DATE _____	
SIGNATURE PREPARED BY _____	DATE _____	
FORM 600000 (REVISED 4/2000)		

Employee Training

See Appendix D
for a copy of a
Contingency Plan
that you can use.

7. The current telephone number of the State Office of Emergency Services, (800) 852-7550 or (916) 845-8510.
8. The names, addresses, and phone numbers of the following should be included in the contingency plan:
 - Police Department
 - Fire Department
 - Local hospital
 - Contractors (consultants, haulers for hazardous waste removal/cleanup)
9. A detailed site plot plan
10. An evacuation plan
11. Records of employee training

Where should I keep copies of the contingency plan?

Copies of the contingency plan and any changes made to the plan should be kept at the site.

Business Plan

A business emergency response plan, also called a **Business Plan**, may be required by local fire departments when a business exceeds certain quantities of stored hazardous materials. In place of a contingency plan, we will accept an approved business plan if it is amended with any information missing from the list above.

Do I Need to Train My Employees?

Employees involved in the management of a hazardous waste must complete a training program.

(22 CCR §66265.16)

What type of training do I need to provide?

There are two types of training:

- Job-site training (with hands-on involvement)
- Classroom instruction

The type, quality and quantity of training depends on the needs of each business.

The person conducting training may be a professional training coordinator or an experienced staff person trained in onsite hazardous waste management procedures.



A training program should have the following:

Employee Training

Training should teach employees how to do their duties in a way that complies with proper handling of hazardous waste.

The training program should make sure that employees are able to handle emergencies. The following topics must be included:

- Communications or alarm systems
- Response procedures to fires and explosions
- Response to spills or leaks
- Procedures for shutdown of operations (equipment, electric meter box, gas valves, etc.)
- Procedures for using, inspecting, repairing and replacing emergency and monitoring equipment
- Procedures for use of automatic waste feed cut-off systems

Training must be completed within six months of the date of employment. **Untrained employees may not work unsupervised** with hazardous wastes until training is complete. An annual refresher training is also required.

Employees should be informed of the hazardous properties of the materials and wastes to which they are exposed. One method of informing them includes reading and understanding the Material Safety Data Sheets (MSDS) for all hazardous materials used.

What type of training records must I maintain?

Training records require a brief write-up of the following information:

1. The job title and a description for each position at the business related to handling hazardous waste, and the name of the employee filling the job.
2. A description of the type and amount of training that will be given to each person.
3. A record detailing who received the training and what training was received (written documentation of employee attendance is recommended).
4. Training records on current employees must be kept until closure of the business.
5. Training records of former employees must be kept for at least three years from the date the employee last worked at the site.



Hazardous Waste Planning

Contingency Plan Requirements for SQG

Contingency Plan Requirements for Small Quantity Generators

What is in a Contingency Plan?

There are four basic components of the SQG contingency plan; communication and emergency response equipment (spill control etc.), notification of your local hospitals and emergency responders, employee training, and designating an emergency coordinator. Simply put, the written contingency plan must identify what types of emergency equipment is onsite, and describe the actions facility personnel take in response to fires, explosions, or spills. The amount of detail within your plan depends on the type of hazardous waste you generate, and any special requirements that would apply as a result. Although your business may be categorized as SQG, this contingency plan is applicable only if the following conditions are met:

(40 CFR 262.34 (d)(e)(f), 22 CCR §§66262.34 (d)(2)



Equipment Requirements

- Hazardous waste storage never exceeds 6000 kg
- The drums and containers are properly managed, kept in good condition (no leaks), be compatible with the material stored within and must always be closed when in storage
- Storage areas are inspected at least weekly
- Incompatible wastes must be properly segregated
- Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or release of hazardous waste Communication and Spill Response

As required, the following equipment must be present:

- Internal communications or alarm equipment (telephone, voice)
- Telephone, two way radio
- Portable fire extinguishers, spill control equipment, and decontamination equipment
- Water in adequate volumes

Additionally:

- All equipment shall be maintained, and tested to ensure proper operation where hazardous waste is being poured, spread or mixed
- All personnel involved in the operation must have immediate access to an alarm or other emergency communication device

Simply put, the written contingency plan must identify what types of emergency equipment is onsite, and describe the actions facility personnel take in response to fires, explosions, or spills.

- Adequate aisle space shall be maintained for unobstructed movement of personnel, fire control equipment and spill control equipment

The following information must be posted next to the telephone:

- Name and telephone number of the emergency coordinator
- Location of the fire extinguishers and spill control material, and fire alarms if present
- Telephone number of the fire department, unless there is a direct alarm

Coordinating with Local Emergency Service Providers

As appropriate for the wastes handled at your facility, the following providers need to be provided a copy of your contingency plan:

- local fire departments
- local police departments
- state emergency response teams
- local hospitals

If your local authorities or emergency service providers decline to take a copy of your contingency plan, document the refusal in your operating plan.

Hazardous Waste Planning

Emergency Coordinator

An emergency coordinator is an employee who is designated to respond in the event an emergency arises. If summoned, this employee must have the ability to assist in coordinating with the emergency responders (facility layout, knowledge of what types of chemicals and wastes are stored, and their location within the facility). The designated emergency coordinator(s) must be on call after hours.



Hazardous Waste Planning

Reporting

In the event of a fire, explosion or release that could threaten human health outside the facility, or when the generator has knowledge that a spill has reached surface water, the generator must immediately notify the National Response Center (800) 424-8802. A report must include the following information:

- Name, address and EPA identification number of the generator
- Date, time and type of incident
- Quantity and type of hazardous waste involved
- Extent of injuries, if any
- Estimated quantity and disposition of recovered materials, if any

Training

All employees shall be thoroughly familiar with the proper waste handling and emergency procedures relevant to their responsibilities during normal facility operations and emergencies.

Chapter 6: Large Quantity Generator (LQG) Requirements



Introduction

A business that generates more than 1,000 kg of hazardous waste per month is considered a Large Quantity Generator. These businesses must adhere to the following regulations outlined in this chapter, which are based on the provisions of the CCR title 22.

Large Quantity Generators



Labeling

Each hazardous waste container or tank must be properly labeled.

ACCUMULATION

Businesses have a maximum of 90 days to accumulate all hazardous waste streams in the 90 day storage areas. Satellite accumulation storage containers are not affected by this requirement until they are transferred to 90 day storage areas as long as a facility continues to meet the requirement for satellite accumulation.

EMPTY CONTAINERS

Empty hazardous waste/material drums are labeled "Empty" and marked with date it was emptied and managed within one year.

Daily/Weekly Logs

Written logs of daily inspections of above ground portions of the hazardous waste tank system and weekly logs of hazardous waste container storage area inspections must be maintained at generating facility. Logs should be detailed and at a minimum include: dates, initials/signature of inspecting employee, comments, maintenance or repairs made, areas of inspection, verification of leaks, cracks corrosion, labeling and container requirements.

Contingency Plan

Business must have a formal written hazardous waste Contingency Plan or modified Business Plan.

Aisle Space

Businesses must maintain adequate aisle space to accommodate unobstructed movement of personnel, fire/spill control equipment in an emergency.

Professional Engineer Certification

Each hazardous waste storage tank and secondary containment system must be certified by a civil, structural, or geotechnical professional engineer. Engineer assessment report must include all required information per California Code of Regulations, Title 22, Section 66265.192. Engineer assessment reports expire every five years and must be updated/re-certified. An updated copy of the assessment must be retained at the generating facility

Biennial Reporting

Required for LQGs who ship any hazardous waste to a transfer, treatment, storage disposal facility within the United States. Biennial Reports are due by March 1 of each even-numbered year and covers generator activity for the previous year. A copy of the report must be sent to DTSC. Copies of reports must be retained at facility for three years along with a verification of submission (i.e. certified mail receipt) made available for review at the generating facility.. For more information call the Biennial Report Hotline at (916) 322-2880.

EPA ID Number

Businesses that generate hazardous waste must obtain an EPA identification number in order to ship a hazardous waste offsite for treatment or disposal. A business needs to determine, based on type and quantity of waste, whether a Federal or California EPA ID number is needed.

Large Quantity Generators

Training

Generators that generate 1000 kg or more per month of hazardous waste must provide classroom training to all employees. The training program requirements include:

- Completion of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the generator's compliance with the regulatory requirements.
 - Must be directed by a person trained in hazardous waste management procedures, and include instruction that teaches personnel hazardous waste management procedures (including contingency plan implementation) relevant to individual positions.
 - Designed for personnel to effectively respond to emergency procedures, emergency equipment and emergency systems.
 - Personnel must complete the training program within six months after employment or assignment to the facility annual thereafter. Personnel must not work in unsupervised positions until they have completed the training requirements.
 - Maintained these documents at the facility:
- (1) The job title for each position related to hazardous waste management, and the name of the employee filling each job.
 - (2) A written job description for each position, including education or other qualifications and duties of employees assigned to each position.

- (3) A written description of the type and amount of both introductory and continuing training that will be given to each person filling each position.
- (4) Attendance records with dates and signatures of each employee completing a training program.
- (5) Training records on current personnel must be kept until closure of the site. Training records on former employees must be kept for at least three years.

Documentation

Facility must retain signed copies of properly completed manifest (and exception reports, if applicable). Copies of manifests, test results, waste analyses, or other hazardous waste determination records if applicable, must be made available for review for up to three years.

Source Reduction Reporting

SB 14 requires businesses to prepare the following three documents:

1. Source reduction review and plan.
2. Hazardous waste management performance report.
3. Summary Progress Report.

The Summary Progress Report must be submitted to DTSC on September 1, 2007 and every four years thereafter. Copies of the report and verification of submission (i.e. certified mail receipt) must be made available for review at the generating facility.

Chapter 7: Tips for Staying in Compliance



Introduction

Regulatory compliance is a major issue of concern today for most businesses involved with hazardous waste management. Several pointers are presented to keep businesses in compliance with hazardous waste laws. A list of the most common violations and answers to many commonly asked questions will also be addressed. Hopefully, these tips will make compliance easier.

Staying in Compliance



What to Expect During an Inspection

Orange County Health Care Agency inspectors conduct annual unannounced site inspections to observe daily hazardous waste operations. During the inspection, we conduct site tours similar to the self audit described in Chapter 7 of this manual. Hazardous waste records (i.e., manifests, receipts, contingency plan and training records) will be reviewed. Having all hazardous waste records organized and readily available will expedite the inspection process. A written report with any violations noted during the inspection will be reviewed with the onsite contact person and left onsite. Deadlines to correct any violations may be established and a reinspection to verify compliance may be conducted. We encourage you to ask questions. Asking questions helps clear up issues not thoroughly addressed during the inspection. We will try to answer all questions on issues related to the inspection.

Common Hazardous Waste Violations

1. Manifests, exception/biennial reports, and test results/work analysis not maintained for three years.
2. Each container and portable tank is not marked "Hazardous Waste" including: composition and physical state of waste, hazardous properties (i.e., flammable, toxic), generator's name and address.
3. Each container and portable tank is not marked with beginning accumulation date.
4. Generator does not store waste within approved accumulation times.
5. Generator has not obtained proper identification number.
6. Containers are not stored closed during transfer and storage.
7. Facility does not have a contingency plan to minimize fires, explosions, or releases of hazardous waste (or hazardous waste constituents) to air, soil, or water.
8. Hazardous waste determination not made for all wastes.
9. Manifests are not properly completed by generator or copy not sent to DTSC within 30 days.
10. Facility is not maintained and operated to minimize possibility of fire, explosion, or release of hazardous waste (or hazardous wastes constituents) to air, soil, and water.

Frequently Asked Questions



Why do I receive a hazardous waste fee when I do not have any hazardous waste?

Businesses with only waste oil or parts washing solvent frequently ask this question. Waste oil and parts washing solvents are considered hazardous wastes in California. Confusion arises when the same service company delivers new solvent and hauls away waste solvent. So why is the parts washing solvent regulated? The new parts washing solvent, a hazardous material, gets dirty with use and eventually becomes unusable. The dirty solvent is now a waste, a hazardous waste, which you must have properly hauled and disposed.

Do I have to label each hazardous waste container with all that information?

Yes. Each portable container that is 110 gallons or less must be labeled with all the required information on the container as outlined in Chapter 2. The container must be labeled as soon as waste is put into the container — not right before the waste is hauled. Special adhesive labels are not necessary, just the information.



Different agencies (i.e., Health Care Agency, Fire Department, Air Quality District, and Sanitation District) seem to duplicate each other's work. Couldn't one inspector represent all of the agencies and conduct one inspection?

Each agency is charged with the responsibility to enforce different laws, regulations, and local requirements. For example, the Health Care Agency enforces the California Health & Safety Code and the Fire Departments enforce the Uniform Fire Code. These statutes require different types of inspections. Sometimes, however, the **target** of the inspections overlap as when the Health Care Agency and the Fire Department both examine your hazardous waste. The Health Care Agency is looking for proper waste handling from a health risk perspective, while the Fire Department looks at hazardous waste from a fire hazard perspective.

The idea of coordinating these inspection programs is not new. In 1994, Governor Pete Wilson signed **Senate Bill 1082** into law which mandates a coordinated hazardous waste regulatory program. It created a **Unified Program** for the regulation of hazardous waste and materials, plus underground and aboveground storage tanks. The program is administered by agencies certified by the State to serve as Certified Unified Program Agencies (CUPA) for particular jurisdictions. In Orange County, the Health Care Agency, Environmental Health Division, was designated the CUPA. Our office can provide more details upon request by calling (714) 433-6000 or go to our website www.occupainfo.com.

Frequently Asked Questions

Labels don't stick to my oily drums, how can I label the container?

Adhesive labels stick best on clean containers. By avoiding spillage and maintaining a clean container, you may find it easier to keep the container labeled. If the labels still do not stay on the container, try using a paint pen or stencil to write the information on the container.

Didn't you just conduct an inspection last month?

Orange County Health Care Agency's inspections are conducted annually but more frequent inspections may be conducted to verify abatement of previously noted violations or in response to complaints received by the Orange County Health Care Agency.

What do the annual fees cover? How are the fees determined?

The annual fees cover the costs of our hazardous waste inspection program. Section 101325 of the California Health & Safety Code allows the County to establish fees to cover necessary and reasonable costs of their programs. The fee process receives input from local businesses.

Where can I find a list of hazardous waste haulers?

The most comprehensive list of hazardous waste haulers for your area is located in the Business-to-Business Telephone Directory under the heading "Industrial Waste Haulers." If you have questions regarding their certification you can view a list of registered haulers on the DTSC website at www.dtsc.ca.gov/database and follow the link for "Hazardous Waste Transporter."

What kind of paperwork do I need to keep onsite?

At a minimum the following paperwork or copies thereof must be kept onsite for this Agency's inspection:

- a. All hazardous waste disposal receipts and manifests for the past three years.
- b. The current contingency plan.
- c. All personnel training records of current employees must be kept until business closure. (Records of terminated employees must be kept for three years after the employee's termination date.)
- d. Waste analysis and or profiles. (Keep this paperwork onsite until the process changes or a new analysis is conducted.)
- e. This Agency's inspection reports for the past three years.
- f. All Material Safety Data Sheets (MSDS) for products used onsite.
- g. A copy of your EPA ID number.

I am closing my shop. What do I need to do?

Prior to closure, contact the Hazardous Waste Specialist who inspects your business for closure details. At a minimum, before the final walk-through inspection, all hazardous wastes must have been properly disposed with receipts available for review, and the site cleaned to a “move-in” status. A business must also contact DTSC/EPA to close out EPA ID# (800) 618-6942.

The owners or operators of a business that generated hazardous waste must close their place of business in a way to make sure that further maintenance is not necessary and that human health and the environment is protected. If your site remains contaminated with hazardous waste, a site plan, site assessment, post-closure care, etc., may be required.



Chapter 8: Self-Audit



Introduction

The self-audit is one of the best tools to use to stay in compliance. The self-audit enables you to know what wastes are on your site, where the wastes come from, how long they have been there and how the wastes will be disposed. Remember, ***you are responsible for your hazardous waste*** from its creation to its disposal at the offsite facility, “***cradle-to-grave.***” Take a walk through your business with your eyes and mind open, copy and use the following audit checklist as a guideline, and you should be well on your way to staying in compliance.

After conducting the self-audit, review any noted deficiencies. Meet with the people involved to correct the deficiencies and set deadlines for completion. Set up a procedure to verify all the corrections have been made and you should be well prepared for your annual hazardous waste inspection.

Listed beside each audit question is a number which represents the chapter number where the related information and appropriate code sections may be located. The “Yes/No?” column quickly shows how well your business did and the “Comments” column is for any notes you may make during your audit.

If you have questions about the audit, please call us at (714) 433-6000 and ask to speak to the Hazardous Waste Specialist that inspects your business.

Self Audit

Self-Audit Checklist

Directions: For every question, circle the appropriate answer and indicate any comments you may have. Use the information in this manual to correct any deficiencies. Note that this is not a regulatory document. It was developed for your confidential use and need not be shown to any regulatory agency. For added confidentiality, photocopy the checklist and perform your audit on the copy, which can then be filed separately from this manual.

How is my Hazardous Waste Produced?

1. Can any of my hazardous waste be used as a material onsite? (Chapter 1)
2. Can any of my processes use another material which would not create a hazardous waste? (Chapter 4)
3. Is there a way to produce less waste? For example, ask for parts to be shipped clean, reducing solvent usage. (Chapter 4)
4. Can any of my wastes be recycled offsite rather than landfilled? (Chapter 1)
5. Have I determined if my wastes are hazardous, i.e., toxic, reactive, ignitable or corrosive? (Chapter 1)

Hazardous Waste Storage Area

1. Are all containers in good condition? No leaks? (Chapter 2)
2. Is all waste stored in a compatible container? (Chapter 2)
3. Are all containers stored closed? Bungs, lids on? (Chapter 2)
4. Are the containers properly labeled with all required information? (Chapter 2)
5. Do all labels show what is actually in the container? (Chapter 2)
6. Are incompatible wastes separated? (Chapter 2)
7. Does the waste storage area have an impermeable floor? (Chapter 2)
8. Is the waste storage area covered? (Not required by this Agency) (Chapter 2)
9. Is there enough aisle space between all containers? (Chapter 2)

Disposal

1. Does my facility need an EPA ID number? (Chapter 3)
2. Does my facility have an EPA ID number? (Chapter 3)
3. Are any wastes stored beyond their storage time(s)? (Chapter 3)
4. Are all of my receipts and hazardous waste manifests: (Chapter 3)
 - a. Correctly completed?
 - b. Signed by the TSDF?
 - c. In a file available for review?
5. Has a copy of the manifest been sent to DTSC within 30 days of disposal? (Chapter 3)
6. Do I use a licensed hazardous waste hauler to dispose of my waste? (Chapter 3)
7. Is my waste taken to a permitted treatment/recycling facility? (Chapter 3)
8. Did my facility generate greater than 1,000 kg of hazardous waste in one month during the last calendar year? (Chapter 3)
 - a. If yes, did I submit a Biennial Report to DTSC?

Training

1. Have I provided hazardous substance training for my employees within six months of hiring? (Chapter 5)
2. Do employees know how to use safety and emergency equipment? (Chapter 5)
3. Are the employees familiar with the contingency plan? (Chapter 5)
4. Do the employees know who to contact in case of an emergency? (Chapter 5)
5. Do I have available a list of emergency contacts and phone numbers? (Chapter 5)
6. Are my training records onsite? (Chapter 5)
7. Are my training records complete? (Chapter 5)

Where to Obtain the Laws & Regulations

Copies of laws and regulations may be ordered from the sources listed below. In addition, some bookstores sell copies of the laws and regulations. Check your local telephone directory under book or booksellers.

The California Health and Safety Code, Division 20, Chapter 6.5 may be ordered from:

Office of State Publishing
344 North 7th Street
Sacramento, CA 95814
(916) 322-1032

Or can be found electronically at:

www.leginfo.ca.gov (follow the link for "California Law")

The California Code of Regulations, Title 22, Division 4.5, may be ordered from:

Barclays Law Publishers
425 Market Street, 4th Floor
San Francisco, CA 94105
Customer service and ordering information (800) 888-3600

Or can be found online via the California Office of Administrative Laws at:

www.oal.ca.gov (follow the link for "Cal. Code Regs")

Local Law Library Locations

The following local libraries have copies of the California Health and Safety Code, Division 20, Chapter 6.5, and the California Code of Regulations, Title 22, Division 4.5, available to review:

Orange County Law Library
515 North Flower Street
Santa Ana, CA 92703
(714) 834-3397

University of California, Irvine
Main Library
Government Information Reference Desk
Irvine, CA 92714
(714) 824-7234

California State University, Fullerton
Pollak Library, 3rd Floor
800 North State College Avenue
Fullerton, CA 92631
(714) 278-3449

Hazardous Waste Determination Using STLC & TTLC

A Classic Example

An auto body shop repairs vehicles and paints them in their paint booth. They have filters installed over the exhaust system to capture paint particulates. Paint that adheres to the filters dries but may be shaken loose, creating friable (powdery) paint dust. Since paint often contains heavy metals, used paint filters and paint dust may contain them as well. The body shop must determine whether the paint filters can be classified as hazardous waste. If determined to be hazardous waste, then the used filters must be handled, stored, transported, and disposed properly.

How do they proceed?

Their first step is to take a representative sample of a used paint filter to a State-certified analytical laboratory. The lab takes a sample and analyzes it according to the TTLC test to document the presence and concentration of heavy metals. To determine if the filter is a hazardous waste, the values measured by the lab would be compared to the STLC and TTLC values for the regulated heavy metals (see page C-3). Note that this procedure is explained in more detail in Chapter 1.

Let's suppose that the lab results revealed the following metals and concentrations (measured in milligrams per kilogram or mg/kg). Their STLC and TTLC values are also presented.

METAL	FILTER	STLC	TTLC
Cadmium	216	1.0	100
Copper	500	25	2,500
Zinc	210	250	5,000

Cadmium

The value of 216 mg/kg for Cadmium exceeds both the STLC and the TTLC. On this basis alone, ***the filter is a hazardous waste.***

Copper

The value of 500 mg/kg for Copper is below the TTLC, but above the STLC. Time for a little math! Multiply the STLC value for

Copper by 10; this yields 250 (25 times 10 = 250). If the filter's value for Copper is less than that number, then it can be assumed to be nonhazardous. If the filter's value for Copper is greater than that number, then it needs to be subjected to further testing.

If further testing is undertaken (that's the WET test—see Chapter 1) and the filter's concentration of Copper is found to be equal to or greater than the STLC, then the filter is hazardous. If it is less than the STLC, it means that it's nonhazardous. Let's suppose that the WET test revealed a Copper concentration of 50 mg/l. Since this value is greater than the STLC (50 is greater than 25), the filter is a hazardous waste.

A representative sample means a sample of a whole, which can be expected to exhibit the average properties of the whole.

Zinc

The value of 210 mg/kg for Zinc is below both the STLC and the TTLC. This compound does not exceed any regulatory levels and, therefore, does not add to the toxicity of the sample.

Conclusion

In our example, the paint booth filter was determined to be a hazardous waste because of its Cadmium and Copper concentrations. The used filters must be handled, stored, transported, and disposed properly.

For assistance with hazardous waste determination, call us at (714) 433-6000 and ask to speak with the Hazardous Waste Specialist that inspects your business.

Listings of STLC and TTLC values for regulated heavy metals

SUBSTANCE	STLC ^{oo} (mg/l)	TTLC ^o (mg/kg)
Antimony and/or antimony compounds	15	500
Arsenic and/or arsenic compounds	5	500
Asbestos (as percent)		1.0*
Barium and/or barium compounds (excluding barite)	100	10,000**
Beryllium and/or beryllium compounds	0.75	75
Cadmium and/or cadmium compounds	1.0	100
Chromium (VI) compounds	5	500
Chromium and/or chromium(III) compounds	5***	2,500
Cobalt and/or cobalt compounds	80	8,000
Copper and/or copper compounds	25	2,500
Fluoride salts	180	18,000
Lead and/or lead compounds	5	1,000
Mercury and/or mercury compounds	0.2	20
Molybdenum and/or molybdenum compounds	350	3,500
Nickel and/or nickel compounds	20	2,000
Selenium and/or selenium compounds	1.0	100
Silver and/or silver compounds	5	500
Thallium and/or thallium compounds	7.0	700
Vanadium and/or vanadium compounds	.24	2,400
Zinc and/or zinc compounds	250	5,000

*In the case of asbestos and elemental metals, the specified concentration limits apply only if the substances are in a friable, powdered or finely divided state. Asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

**Excluding barium sulfate.

***If the soluble chromium, as determined by the TCLP set forth in Appendix I of Chapter 18 of this division (22 CCR, §66261.24) is less than 5 mg/l, and the soluble chromium, as determined by the procedures set forth in Appendix II of Chapter 11 (CCR, §66261.24) equals or exceeds 560 mg/l and the waste is not otherwise identified as a RCRA hazardous waste pursuant to §66261.100, then the waste is a non-RCRA hazardous waste.

^oTTLC lab results that are greater than the TTLC concentrations listed above are hazardous waste (HW). TTLC lab results that fall between the TTLC and STLC concentrations and are at least 10 times greater than the STLC concentrations must have the STLC test run.

^{oo}STLC lab results that are greater than the STLC concentrations listed above are HW. TTLC or STLC lab results that are less than the STLC concentrations are not HW.

Consolidation

Hazardous waste may be consolidated by one of two methods.

Consolidation of excluded recyclable non- RCRA hazardous wastes

Recyclable non-RCRA hazardous wastes may be consolidated to another location. The excluded recyclable non-RCRA hazardous wastes must be within 90 days:

1. Recycled onsite in one of the onsite processes, or
2. Hauled by a registered hazardous waste transporter to a permitted recycling facility.

Additionally, the following requirements must be met:

1. The material is transferred by employees in company vehicles.
2. The material is taken directly to the consolidation location.
3. No stops of more than four hours are made between locations.
4. The material is managed in compliance with hazardous waste laws at all times.
5. All of the following information is kept in an operating log at the last company location operated:
 - a. The name and address of each location providing material to each shipment received.
 - b. The amount and type of material received from each location.
 - c. The destination and intended disposition of all material shipped offsite or received.
 - d. The date of each shipment received or sent offsite to be recycled.
6. Within 15 days of a request, the generator must provide documentation to show that the above listed requirements have been satisfied.



Consolidation of Hazardous Wastes

Hazardous wastes can be consolidated to a central site as long as:

1. The remote location generates less than 100 kg/month of hazardous wastes.
2. The generator uses a shipping paper to transport the waste to the central site.
3. The waste is disposed from the central site within 10 days of consolidation by a licensed hazardous waste transporter and is taken to a permitted treatment facility.

*All non-RCRA wastes may be consolidated under this provision. However, the wastes must leave the consolidation location within 10 days after initial accumulation.

Contingency Plan

Directions for Completing the Contingency Plan

1. Fill out your business name, address, telephone, and fax.
2. Describe what your employees will do in response to fires, explosions, or releases of hazardous wastes.
3. List communications equipment such as alarms, phones and radios.
4. Indicate your designated, qualified emergency coordinators.
5. Identify emergency equipment such as fire extinguishers, alarms, and spill control devices.
6. State Office of Emergency Services can be reached at (800) 852-7550 or (916) 845-8510.
7. List the name, address, and phone numbers of your local police department, fire department, hospitals, and hazardous waste contractors.
8. Attach the following documents:
 - a. A detailed plot plan indicating facility layout, types of wastes handled and area stored, location of employees and Hazardous Waste Emergency Procedures for spills.
 - b. An evacuation plan indicating entrances and evacuation routes and possible alternate routes.
 - c. Copies of training records for all employees handling hazardous waste. Minimum information required:
 - 1) Name of employee working at job.
 - 2) Description of training given to each person.
 - 3) Written documentation of employees attendance at training.
9. Keep records for three years after employee leaves.
10. Annual training required.
11. Trained by a person experienced in hazardous waste management procedures.

Glossary

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Bioaccumulative

Toxic Substance A toxic substance that concentrates in living organisms when absorbed by living organisms.

22 CCR Title 22 of the California Code of Regulations. State regulations that detail hazardous waste management.

40 CFR Title 40 of the Code of Federal Regulations. Federal regulations that detail hazardous waste management.

Cal/OSHA California Occupational Safety and Health Agency. State agency responsible for ensuring safe working environment.

CAL/EPA California Environmental Protection Agency. State Agency responsible for enforcing environmental protection laws.

Container. Any portable device used to contain material or waste.

Contingency Plan . . . A document that sets out an organized, planned and coordinated course of action to be followed in case of fire, explosion or release of hazardous waste or byproducts which could threaten human health or the environment.

Corrosive The ability to cause destruction of living tissue or steel surfaces by chemical action.

DOT. Department of Transportation. Federal agency responsible for ensuring transportation safety.

DTSC. Department of Toxic Substance Control. State agency responsible for regulating all hazardous waste.

Extremely

Hazardous Waste . . . Any hazardous waste which, if human exposure should occur, may likely cause death or serious illness.

Fine Powder Dry solid metal with a particle size smaller than 100 micrometers (0.004 inches) in diameter.

Generator Any person whose act or process produces a hazardous waste.

H&SC. California Health and Safety Code. Portion of State law that governs health and safety issues. In this manual, we are generally referring to Chapter 6.5 of the H&SC, which governs hazardous waste.

Hauler see Transporter.

Hazardous Waste . . . Any waste which is either Ignitable, Corrosive, Reactive, or Toxic.

Ignitable. Capable of being set afire either spontaneously or by interaction with another substance.

LC-50. Lethal Concentration. The 50% mortality level of a test organism when the exposure route is by inhalation or in water.

LD-50. Lethal Dose. The 50% mortality level of a test organism when the exposure route is by ingestion or skin absorption.

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Glossary

LDR	Land Disposal Restriction. Regulations which prohibit land disposal of certain hazardous waste.
Land Disposal	Placement in or on the land.
MSDS	Material Safety Data Sheet. A document which describes a material's chemical ingredients as required by Cal/OSHA's Hazard Communication Standard.
NON-RCRA Waste	California-regulated hazardous waste. Also called California-only waste. (Compare with RCRA Waste).
OCHCA	Orange County Health Care Agency. Environmental Health is a Division within this organization.
RCRA.	Resource Conservation Recovery Act. Federal law passed in 1976 which regulates the management and disposal of hazardous wastes throughout the United States. State laws, however, can impose stricter requirements.
Reactive.	Having properties of explosivity or of chemical reactivity which are a hazard to human health or the environment.
Reclaimed	A process that recovered usable product or regenerated the material.
Recyclable Material	A material which is not treated and can be used as a safe effective substitute for virgin materials.
Sieve Test	Determines the particle size of scrap metal. Only scrap metal with a particle size greater than 0.004 inches is recyclable.
STLC	Soluble Threshold Limit Concentration. An analytical test used to describe the soluble heavy metals content of a sample.
TCLP.	Toxicity Characteristic Leaching Procedure. An analytical test which determines if certain metals and organics are present in the waste.
TSDF.	Treatment Storage Disposal Facility. Permitted facility which either treats, stores or disposes hazardous waste.
TTLC	Total Threshold Leaching Concentration. Describes total heavy metals content.
Tank.	Any permanent immobile device used to contain material or waste.
Toxic Waste	A designated hazardous waste by the U.S. EPA Administrator.
Transporter	A person engaged in the offsite transportation of hazardous waste by highway, air, rail or water.
WET.	Waste Extraction Test. Testing procedure which measures the amount of California regulated bioaccumulative and persistent substances—heavy metals.



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