

BIOSAFETY - Summary of Hazardous Waste Management

Compiled by Teresa Wong for Temporary Advisory Commission on Bioprospecting

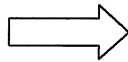
Hazardous Waste

Waste with properties what make it dangerous or potentially harmful to human health or the environment.

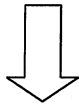
- Can be liquids, solids, contained gases or sludge
- Can be by products of manufacturing processes or simply discarded commercial products

Regulatory Agencies

EPA (U.S. Environmental Protection Agency)



RCRA (Resource Conservation & Recovery Act)
(passed Oct 1976)



Mission:

1. To protect human health and the environment
2. To reduce waste while conserving energy and natural resources
3. To reduce or eliminate the generation of hazardous waste
4. Ensure wastes are managed in an environmentally sound manner

Region 9 – Hawaii, Nevada, Arizona, California

Hawaii received approval from EPA for its solid waste program in June 94 and administered by:
Hawaii Dept of Health
Solid and Hazardous Waste Branch 808-586-4226

Additional resources:

Hawaii Dept. of Business, Economic Development and Tourism
Clean Hawaii Center 808-587-3810

Process

1. Identification - Identify and define hazardous waste (see EPA brochure – What Makes a Waste Hazardous?)
2. Keeping track of Hazardous Waste - EPA ID #
3. Permitting System - TSD (Treatment, Storage and Disposal Facilities), Transportation
4. Enforcement of RCRA

The mission of the U.S. Environmental Protection Agency (EPA) is to protect human health and safeguard the environment. One way EPA helps fulfill its mission is by regulating the management and disposal of hazardous wastes under the Resource Conservation and Recovery Act (RCRA). RCRA has the following three general goals: To protect human health and the environment • To reduce waste while conserving energy and natural resources • To reduce or eliminate the generation of hazardous waste.

Hazardous wastes are generated and managed in a variety of different settings, possibly even in your own community. In order to meet the goals of RCRA and to safeguard human health and the environment in all settings, EPA has established a “cradle-to-grave” waste management system, where hazardous wastes are regulated by EPA from the point they are first created (“cradle”) until they reach final disposal (“grave”). This fact sheet will help you understand what requirements must be met under RCRA in order to manage hazardous waste in a safe and protective manner.

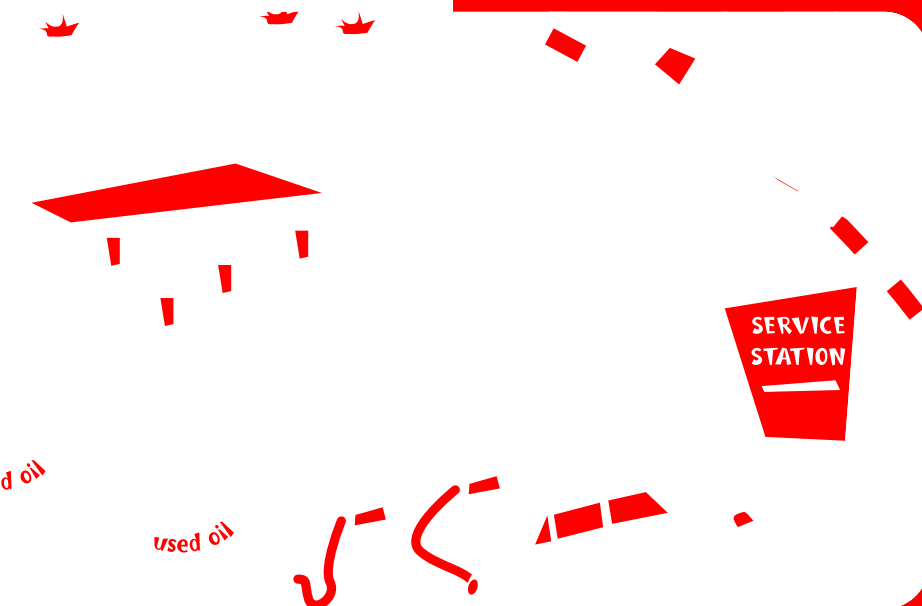
The three parties involved in the cradle-to-grave lifecycle of a hazardous waste are: generators; transporters; and treatment, storage, or disposal facilities (TSDFs).

Generators

A generator is any business or individual who initiates the production of a hazardous waste or who first causes the waste to become subject to RCRA regulations (e.g., by importing hazardous waste

from a foreign country into the United States, or by cleaning up a site contaminated with a hazardous waste). A wide variety of facilities, common in most communities, can be hazardous waste generators. For example, small businesses such as dry cleaners and gas stations, or large-scale operations such as chemical manufacturing plants, might produce hazardous waste as a result of normal business operations. RCRA’s generator regulations are based on EPA’s understanding that these businesses are not heavily involved in hazardous waste management. EPA requires generators to comply with various “good housekeeping” rules that ensure the waste is properly identified and managed but do not overly burden the generators’ business practices.

RCRA regulations also recognize that not all businesses produce the same quantities of hazardous waste. Since managing





Hazardous Waste Generator Classification

LQGs:

- $\geq 1,000$ kg (2200 lbs.) hazardous waste
- > 1 kg (2.2 lbs.) acute hazardous waste
- > 100 kg (220 lbs.) spill cleanup material containing acute hazardous waste

SQGs:

- Between 100 and 1,000 kg hazardous waste

CESQGs:

- ≤ 100 kg hazardous waste
- ≤ 1 kg acute hazardous waste
- ≤ 100 kg spill cleanup material containing acute hazardous waste

Main Hazardous Waste Transporter Requirements

- Obtaining an EPA identification number.
- Ensuring that a manifest accompanies offsite shipments of hazardous waste.
- Managing hazardous waste spills.



TSDF Compliance

Categories

- Permitting
- General facility standards
- Specific unit standards
- Financial assurance
- Closure
- Ground-water monitoring

How Can You Find out More About Hazardous Waste Generators and Handlers in Your Community?

Contact your state hazardous waste agency or the hazardous waste division of your EPA Regional Office.

Research facilities in your area by the name of the facility, identification number, or zip code under the RCRIS database. This database can be accessed on the Internet at the following address:

<www.epa.gov/erenviro/html/rcris/rcris_query_java.html>.

Would You Like More Information?

RCRA, Superfund, and EPCRA Hotline

Call 800 424-9346 or 703 412-9810 in the Washington, DC area. For the hearing impaired, the number is TDD 800 553-7672.

You also can access information via the hotline's Internet site at: <www.epa.gov/epaoswer/hotline>.

Additional Documents

These additional documents can help you learn more about the requirements for hazardous waste handlers. These documents are free and can be ordered from the RCRA Hotline. Reference the EPA document number (EPA530...) when ordering.

Understanding the Hazardous Waste Rules: A Handbook for Small Businesses—1996 Update, EPA530-K-95-001

Hazardous Waste Requirements for Large Quantity Generators, EPA530-F-96-032

RCRA Orientation Manual; 1998 Edition, EPA530-R-98-004

Contact Your State

Although EPA's federal regulations set the national standard for compliance, individual states often have regulations that are more stringent than the federal regulations. You should contact your state about its specific regulations. State environmental contacts are available from the RCRA Hotline.



The mission of the U.S. Environmental Protection Agency (EPA) is to protect human health and safeguard the environment. One way EPA helps fulfill its mission is by regulating the management and disposal of hazardous wastes under the Resource Conservation and Recovery Act (RCRA). RCRA has the following three general goals: To protect human health and the environment • To reduce waste while conserving energy and natural resources • To reduce or eliminate the generation of hazardous waste.

In its mission to protect human health and the environment, RCRA regulates the management of hazardous waste using a “cradle-to-grave” approach. In other words, a hazardous waste is regulated from the moment it is created to the time of its final disposal. RCRA affects everyone who handles a hazardous waste throughout this life cycle, including hazardous waste generators, transporters, and the facilities that treat, store, or dispose of hazardous waste. Under this system, thousands of individuals and facilities, from your local dry cleaner to hazardous waste incinerators, are regulated by RCRA.

Due to the scope and number of people affected by RCRA, EPA faces an enormous task in ensuring compliance with the regulations. RCRA does include a number of provisions, however, that make its implementation more effective, including:

- Keeping track of who is handling waste and how it’s being handled.

- Issuing permits to facilities that treat, store, or dispose of hazardous waste to dictate how these facilities will operate.
- Enlisting the aid of states to help run RCRA.
- Penalizing those who are not in compliance with RCRA.
- Requiring cleanup of hazardous waste releases to the environment.

Keeping Track of Hazardous Waste

In order to ensure that waste is handled properly from its generation to its disposal, RCRA requires waste to be tracked and monitored in various ways.

Identification Numbers

EPA assigns an identification number to any person or company that handles hazardous waste, including generators; transporters; and treatment, storage,



Such severe penalties, however, might not always be the most appropriate response to an unintentional or minor violation. EPA has a number of more efficient, less expensive ways of encouraging a facility to maintain compliance. EPA offers incentives, for example, in the form of reduced violation penalties to those facilities that perform self-audits, voluntarily report violations, and promptly take actions to rectify their problems and reestablish compliance.

Cleaning Up Releases

Despite the safeguards of RCRA's regulations, releases of hazardous waste to the environment from TSDFs

might still occur from either accidents, spills, or contamination persisting from past mismanagement of waste. Under RCRA, owners and operators of hazardous waste facilities must clean up the contamination caused by their activities. This is commonly known as corrective action. EPA may require corrective action for any releases of hazardous waste or constituents at permitted or interim status TSDFs. In addition, RCRA allows EPA to require cleanup of any waste management facility, including generator sites, if the Agency deems the release an imminent and substantial threat to human health and the environment.

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Understanding the Hazardous Waste Rules: A Handbook for Small Businesses—1996 Update, (EPA530-K-95-001).

The Hazardous Waste Facility Permitting Process, (EPA530-F-96-007).

RCRA: Reducing Risk From Waste, (EPA530-K-97-004).

RCRA Orientation Manual: 1998 Edition, (EPA530-R-98-004).

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As a first step in fulfilling the goals of RCRA, EPA developed objective criteria to define and identify hazardous waste for regulation. According to EPA, a waste is hazardous if it can be harmful to human health and the environment when handled improperly. Hazardous wastes come in many forms and can be generated in a variety of industrial and nonindustrial settings. Specifically, a waste is considered hazardous under RCRA if it meets either of the following criteria: (1) it is specifically listed (identified) as a hazardous waste or (2) it exhibits one or more characteristics of a hazardous waste.

Determining whether or not a waste qualifies as hazardous is important because only hazardous wastes that meet the criteria above are subject to RCRA regulations. EPA requires wastes identified as hazardous to be handled—stored, treated, and disposed of—according to the stipulations of the RCRA hazardous waste program.

What Are the Different Kinds of Hazardous Waste?

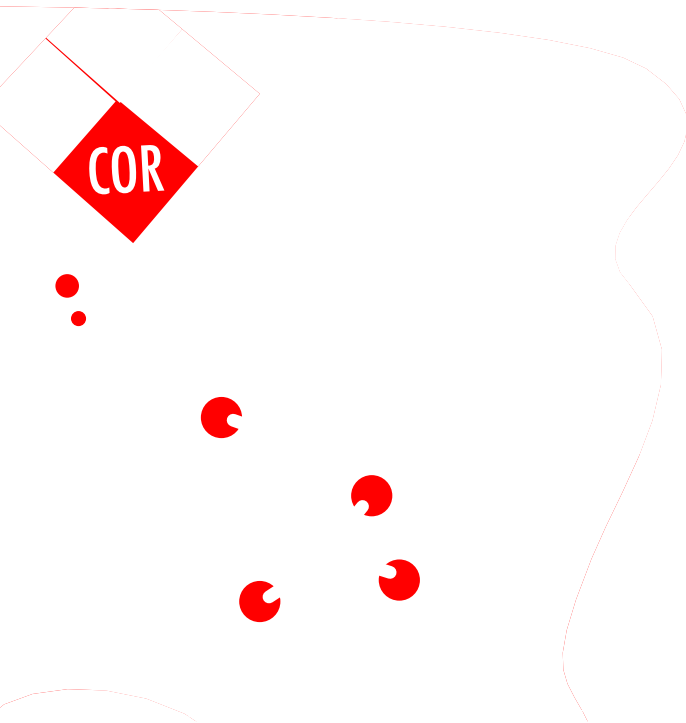
Listed Wastes

EPA has specifically identified and listed certain wastes that are known to be haz-

ardous. To determine a waste to be listed, EPA observes different industrial practices at numerous facilities, noting the common chemicals used, and assessing which wastes pose the greatest risk to human health and the environment. Listed wastes are always hazardous regardless of their chemical composition—no testing is required to identify them. Listed wastes are divided into four categories, according to their origin:

- *F list*—Wastes from generic industrial processes. For example, certain used solvents used for cleaning or degreasing.
- *K list*—Wastes from specific industry sectors. For example, certain petroleum refining wastes.





Hazardous Waste Generated by Various Activities

Source	Generation Activity	Types of Waste
Educational Activities (Schools, Vocational Programs)	Laboratories, art classes	Solvent waste, paint waste, toxic waste, used/unused chemicals
Dry Cleaning	Commercial drycleaning process	Solvent waste
Construction	Paint preparation, contracting activities, vehicle and equipment maintenance	Ignitable wastes, toxic wastes, solvent wastes, used oil
Vehicle Maintenance	Rust removal, paint removal, spray booth/spray gun waste, paint preparation	Solvents, paint wastes, toxic wastes, ignitable wastes
Lawn Maintenance Services	Pesticide application, cleanup	Used/unused pesticides, solvent wastes, contaminated soils

**Other Wastes Excluded
from Hazardous Waste
Regulations:**

- Domestic sewage.
- Certain industrial wastewater discharges regulated under the Clean Water Act.
- Radioactive wastes regulated solely under the Atomic Energy Act.
- Recycled used oil and certain used oil filters.
- Certain agricultural wastes.
- Processed scrap metal.

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Does Your Business Produce Hazardous Waste? Many Small Businesses Do, (EPA530-SW-90-027).

Identifying Your Waste: The Starting Point, (EPA530-F-97-029).

Understanding the Hazardous Waste Rules: A Handbook for Small Businesses—1996 Update, (EPA530-K-95-001).

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**SERVICE
STATION**





<http://www.epa.gov/region09/waste/partners/hiprogram.html>

Last updated on Friday, February 16th, 2007.

Region 9: Waste Programs

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Hawaii Waste Programs

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Hazardous Waste

[Hawaii Department of Health](#) [EXIT Disclaimer](#)

Solid and Hazardous Waste Branch

(808) 586-4226

Municipal Solid Waste

Hawaii received approval from EPA for its solid waste program in June of 1994. The [Hawaii Department of Health](#) [EXIT Disclaimer](#) administers the program.

Hawaii State Agencies

[EXIT Disclaimer](#)

The [Hawaii Department of Health](#) manages Hawaii's solid waste stream.

Hawaii has established a recycling goal of 50 percent by the year 2000.

Hawaii Solid Waste Grants

In 1997, Hawaii provided \$3.1 million for waste reduction initiatives.

Hawaii Solid Waste Contacts

Jennifer Tosaki (JTosaki@eha.health.state.hi.us)

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Fax: (808) 587-3820

Additional Resource

Earth's 911 Hotline [EXIT Disclaimer](#) enables you to type in your zip code to find information about a variety of environmental subjects, including local reuse, recycling, and household hazardous waste disposal center information.