



Medical Waste, Hazardous Waste & Hazardous Materials Business Plan

Review and Updates

Presented by:

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Environmental Health Specialists III

July 23, 2019

Objectives

- Refresher on generator requirements for medical waste, medical waste treatment, and mixed waste
- Refresher on generator requirements for hazardous waste, reporting of common waste streams in CERS
- Hazardous materials business plan reporting guidelines and updates

Acronyms

Acronym/Initials	Meaning
EPIC+	Education, Process Improvements, Compliance for Environmental Risk Reduction <i>(formerly known as Environmental Protection Indicators for California)</i>
CUPA	Certified Unified Program Agency
CERS	California Environmental Reporting System
HMBP	Hazardous Materials Business Plan
EPA	Environmental Protection Agency
HSC	Health and Safety Code (California)
CCR	California Code of Regulations
CFR	Code of Federal Regulations
MWMA	Medical Waste Management Act (California)
DTSC	California Department of Toxic Substances Control
RCRA	Resource Conservation and Recovery Act

Medical Waste Outline

	Medical Waste Definitions
	- Large Quantity Generator vs. Small Quantity Generator
	Storage, Labeling, Containerization
	- Designated vs. interim accumulation area
	Medical Waste Treatment
	- Treatment permit application & process
	Mixed Waste
	- Hazardous waste mixed with medical waste

2017 Medical Waste Management Act

MEDICAL WASTE MANAGEMENT ACT

JANUARY 2017

**CALIFORNIA HEALTH AND SAFETY CODE
SECTIONS 117600 - 118360**

<https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/EMB/MedicalWaste/MedicalWasteManagementAct.pdf>

What is a medical waste?

117690 - Medical Waste

(a) “Medical waste” means any biohazardous, pathology, pharmaceutical, or trace chemotherapy waste not regulated by the federal Resource Conservation and Recovery Act of 1976 (Public Law 94-580), as amended; sharps and trace chemotherapy wastes generated in a health care setting in the diagnosis, treatment, immunization, or care of humans or animals; waste generated in autopsy or necropsy; waste generated during preparation of a body for final disposition such as cremation or interment; waste generated in research pertaining to the production or testing of microbiologicals; waste generated in research using human or animal pathogens; sharps and laboratory waste that poses a potential risk of infection to humans generated in the inoculation of animals in commercial farming operations; waste generated from the consolidation of home-generated sharps; and waste generated in the cleanup of trauma scenes. Biohazardous, pathology, pharmaceutical, sharps, and trace chemotherapy wastes that meet the conditions of this section are not subject to any of the hazardous waste requirements found in Chapter 6.5 (commencing with Section 25100) of Division 20.

*Be advised that your facility may have more stringent guidelines imposed by other accrediting organizations

Medical Waste

Non- RCRA Pharmaceutical

- Prescription or over the counter (human or animal)
- “Drug” 21 USCA 321 (g)(1)
 - Intended for the use in the diagnosis, cure, mitigation, treatment, or prevention of disease
- Does NOT include:
 - Pharmaceutical for reverse distributor

Pathology

- Human body parts (not teeth)
- Infectious tissues/specimens
 - Human or animal

Exclusions:

- Non-infectious food processing/biotechnology
- Bodily fluids w/o blood or highly infectious pathogen
- Medical solid waste
- Household generated
- Vet/Ag/livestock management on farm/ranch

Trauma Scene

Sharps

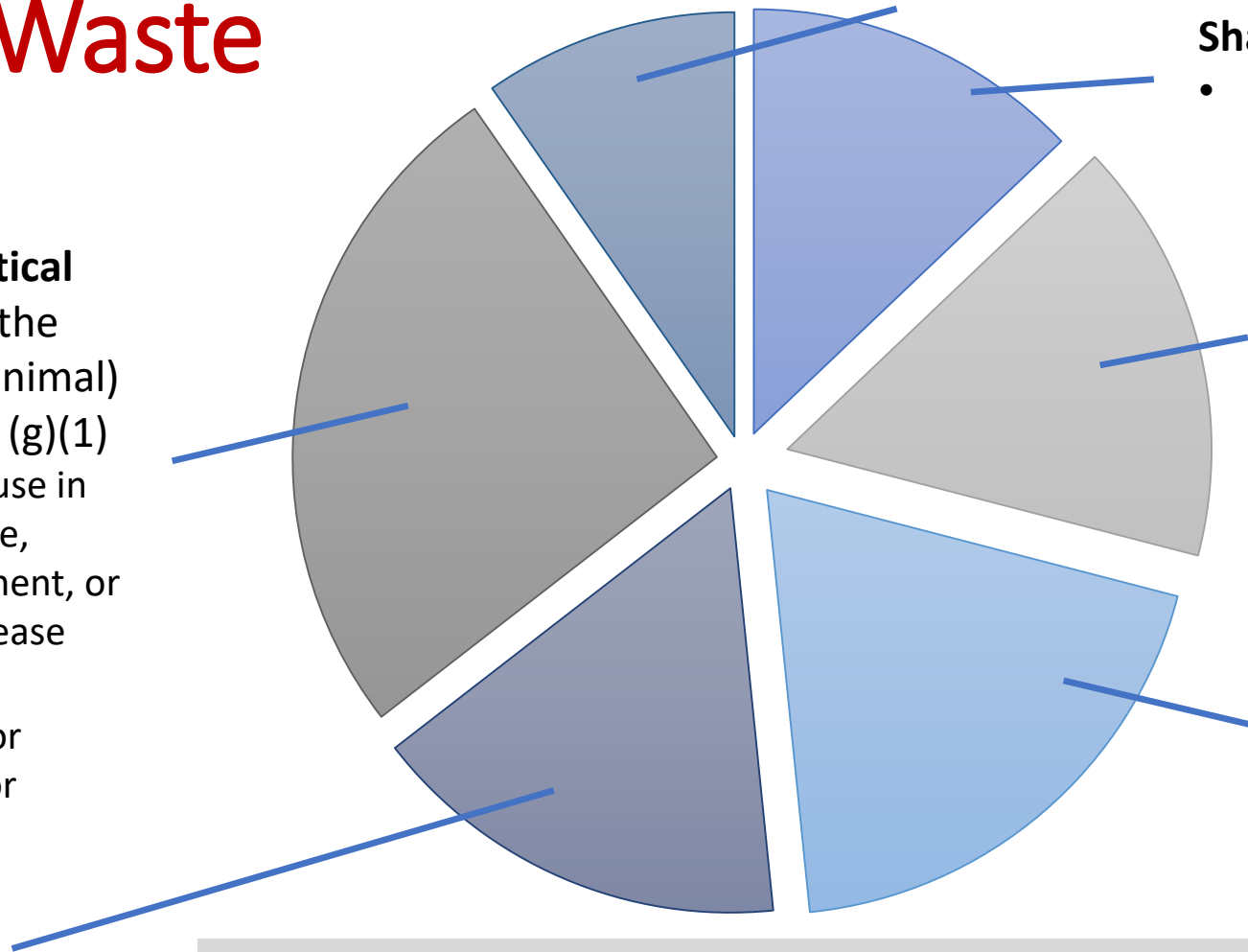
- Acute rigid corners, edges or protuberances capable of cutting or piercing

Trace Chemo

- Contaminated with chemo agents less than 3% by weight

Bio-hazardous

- Regulated medical waste, clinical waste, or biomedical waste derived from treatment of human/animal that is suspected to be infected with highly communicable or infectious agents
- Waste with recognizable fluid blood/blood products







If your facility is managing non-medical waste in red bags, you are required to be in compliance with the MWMA requirements

Medical Waste Generator Standards

117760 - Small Quantity Generator

“Small quantity generator” means a medical waste generator, other than a trauma scene waste management practitioner, that generates less than 200 pounds per month of medical waste.

117680 - Large Quantity Generator

“Large quantity generator” means a medical waste generator, other than a trauma scene waste management practitioner, that generates 200 or more pounds of medical waste in any month of a 12-month period.

***It is the facility’s responsibility to determine generator status. Medical waste disposal documents and medical waste management plan are reviewed by the inspector for verification.**

Storage, Labeling, Containerization

Biohazardous **red bags** must be:

- Certified RED biohazard bags that are ASTM D1922 & ASTM D1709 compliant [MWMA 117630]
- Tied to prevent leakage or expulsion of contents [MWMA 118280]
- Contained in a rigid, leak-proof container in good repair. Tight fitting cover on container once placed for storage, handling, or transport [MWMA 118280]
- Labeled with a generator label on the outside of the bag *at the point of generation* [SDCC 68.1205]

Sharps containers must be:

- Rigid, puncture-resistant, leak-resistant [MWMA 117750]
- Resistant to opening after being sealed [MWMA 118285]
- Labeled with a generator label *at the point of generation* [SDCC 68.1205]
- Shall not be lined with a plastic bag or inner liner [MWMA 117750]

Storage, Labeling, Containerization

Pharmaceutical (non-RCRA) waste must be:

- “HIGH HEAT” or “INCINERATION ONLY” on lid and sides [MWMA 118275(6)]
- Managed within 90 days of container “ready for disposal” or at least once a year [MWMA 118280(f)]
- Labeled with a generator label *at the point of generation* [SDCC 68.1205]

Trace Chemotherapy waste must be:

- Required to have “Biohazardous Waste” or international biohazard symbol and word “BIOHAZARD” & either: “Chemotherapy Waste” or “CHEMO” on lid and sides [MWMA 118275 (a)(4)]
- If managed under biohazardous red bag containerization standards - *the color of the bag shall be red or can be further segregated into yellow colored bags* [MWMA 117630]
- Labeled with a generator label at the point of generation [SDCC 68.1205]

Pathology waste must be:

- May be placed in a red biohazardous bag with biohazard symbol or further segregated in white biohazardous bag labeled “PATH” or “Pathology Waste” [MWMA 118275(a)(5)]
- Must be treated by incineration or other approved method by department [MWMA 118222]
- Labeled with a generator label *at the point of generation* [SDCC 68.1205]

Storage Time Limits

WASTE STORAGE TIME LIMITS					
Amount of medical waste stored at room temperature unless otherwise specified	BIOHAZARDOUS WASTE	SHARPS WASTE READY FOR DISPOSAL	NON-RCRA PHARMACEUTICAL WASTE READY FOR DISPOSAL	PATHOLOGY WASTE	TRACE CHEMOTHERAPY WASTE
<20 lbs/month	30 days	30 days	-	30 days	Manage as sharps or biohazardous waste according to the type of container used for storage and the type of waste.
≥20 lbs/month	7 days	30 days	-	7 days	
≥200 lbs/month	7 days	30 days	-	7 days	
Stored below 0° C (32°F)	90 days	90 days	-	90 days	
Any amount of Non-RCRA pharmaceutical waste	-	-	90 days when ready for disposal, or at least once per year	-	-

[https://www.sandiegocounty.gov/content/dam/sdc/deh/hmd/pdf/hm-9214%20\(11-16\).pdf](https://www.sandiegocounty.gov/content/dam/sdc/deh/hmd/pdf/hm-9214%20(11-16).pdf)

Interim Waste Storage Area



OR

**“CAUTION-BIOHAZARDOUS WASTE STORAGE AREA-
UNAUTHORIZED PERSONS KEEP OUT”**

and

**“CUIDADO-ZONA DE RESIDUOS-BIOLOGICOS
PELIGROSOS-PROHIBIDA LA ENTRADA A PERSONAS
NO AUTORIZADAS”**

118307 - Interim Storage Area

Medical waste that is stored in an area prior to transfer to the designated accumulation area, as defined in Section 118310, shall be stored in an area that is either locked or under direct supervision or surveillance. Intermediate storage areas shall be marked with the international biohazard symbol or the signage described in Section 118310. These warning signs shall be readily legible from a distance of five feet. This section does not apply to the rooms in which medical waste is generated.

Designated Medical Waste Accumulation Area



**“CAUTION-BIOHAZARDOUS WASTE STORAGE AREA-
UNAUTHORIZED PERSONS KEEP OUT”
and
“CUIDADO-ZONA DE RESIDUOS-BIOLOGICOS PELIGROSOS-
PROHIBIDA LA ENTRADA A PERSONAS NO AUTORIZADAS”**

***visible from 25 feet away**



Violations – Can you spot them?



Violations – Can you spot them?



Medical Waste Treatment

Treatment Methods [MWMA 118215]

- Incineration
- Steam Sterilization
- Other *approved* technology/method





Medical Waste Treatment

Medical Waste Treatment Requirements

- Autoclave processing logs
- Recording or Indicating Thermometer, Annual Calibration
- Written Operating Procedures
- Monthly spore tests
- Heat Sensitive Tape
- Medical Waste Management Plan
- Annual Employee Training Records
- Permits are for 5 years unless changes/updates occurred

Treatment permits are authorized by the CUPA and are specific to the permitted autoclave(s)

 **County of San Diego**
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(858) 505-6880 FAX (858) 505-6848
<http://www.sdcdeh.org>



Medical Waste Management Plan

Facility Information	
Business Name	Unified Program Facility Permit #
Type of Business	Date
Street Address	City/ZIP

Person Responsible for implementing the Medical Waste Management Plan (MWMP)	
Name	
Title	Phone

Types of medical wastes (MW) generated	
<input type="checkbox"/> MW Sharps - e.g., needles, blades, scalpels, or broken glass or syringes contaminated with biohazardous waste. (human or animal) Estimated monthly amount <input type="text"/> lbs	<input type="checkbox"/> Blood or blood products - liquid blood or blood products, or other regulated body fluids, or articles contaminated with liquid blood or body fluids. Estimated monthly amount <input type="text"/> lbs
<input type="checkbox"/> Laboratory wastes - infectious specimens or microbiological cultures, stocks of infectious agents, live and attenuated vaccines, biologicals, and culture media. Estimated monthly amount <input type="text"/> lbs	<input type="checkbox"/> Pathology waste - human or animal tissues suspected to be infectious to humans Estimated monthly amount <input type="text"/> lbs
<input type="checkbox"/> Liquid or semi-liquid biohazardous laboratory waste - treated on site by chemical disinfection* and discharged to sewer. Estimated monthly amount <input type="text"/> lbs	<input type="checkbox"/> Isolation waste - waste contaminated with excretion, exudates or secretions from humans or animals who are isolated due to highly communicable diseases. Estimated monthly amount <input type="text"/> lbs
<input type="checkbox"/> Trace chemotherapeutic waste Estimated monthly amount <input type="text"/> lbs	<input type="checkbox"/> Contaminated animals w/Highly communicable animal carcasses, body parts, tissues or fluids suspected to be contaminated by agents which are contagious. Estimated monthly amount <input type="text"/> lbs
<input type="checkbox"/> California-regulated pharmaceutical waste	<input type="checkbox"/> Other (specify): <input type="text"/>

MWMA 118215

Mixed Waste

Medical Solid Waste & Medical Waste
= **MEDICAL WASTE**

Medical Waste & Hazardous Waste
= **HAZARDOUS WASTE**

Hazardous Waste & Radioactive Waste
= **RADIOACTIVE WASTE**



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 _____ PHONE _____
ADDRESS _____ STATE _____ ZIP _____
CITY _____
EPA IDENTIFICATION NO. / MANIFEST TRACKING NO. _____
SDA / WASTE NO. _____ ACCUMULATION START DATE _____
CONTENTS, COMPOSITION: _____
PHYSICAL STATE: ☐ SOLID ☐ LIQUID ☐ GASEOUS ☐ OTHER _____
HAZARDOUS PROPERTIES: ☐ FLAMMABLE ☐ TOXIC ☐ CORROSIVE ☐ REACTIVE ☐ OTHER _____
DO NOT PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX
HANDLE WITH CARE!



Hazardous Waste Outline

RCRA HAZARDOUS WASTE IDENTIFICATION:

☐ What is a hazardous waste?

☐ What is a RCRA hazardous waste?

BONUS #1: How to get information directly from the regulations.

BONUS #2: How to conduct a hazardous waste determination.

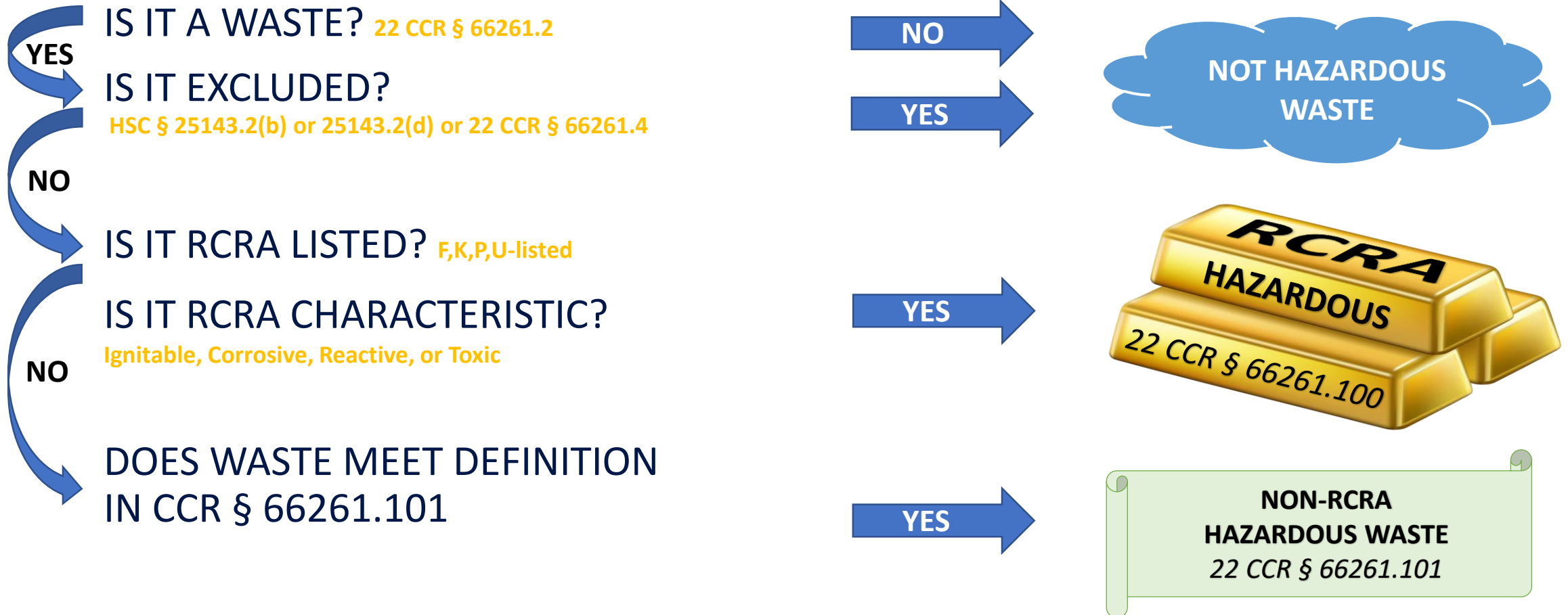
MAJOR RCRA LQG REQUIREMENTS:

☐ What are the container requirements for LQG's?

☐ What are tank requirements for LQG's & RCRA LQG's

IS IT A HAZARDOUS WASTE?

THE GOLDEN HAZARDOUS WASTE QUESTIONS



IS IT A HAZARDOUS WASTE?

THE GOLDEN HAZARDOUS WASTE QUESTIONS

§66261.2(a) "Waste" means any *discarded* material of any form (liquid, semi-solid, solid or gaseous) that is not excluded by §66261.4(a) or (e) or H&SC §25143.2(b) or (d).

HSC§25143.2(b): Except as otherwise provided in (...), recyclable material that is managed in accordance with Section 25143.9 and is or will be recycled by any of the following methods shall be excluded from classification as a waste:

(1) Used or reused as an ingredient in an industrial process to make a product if the material is not being reclaimed.

HAZARDOUS WASTE DEFINED

22 CCR 66260.10 DEFINITIONS

22 CCR § 66260.10 Definitions.

Hazardous waste: means a hazardous waste as defined in **section 66261.3** of this division.

Hazardous waste includes:

- Acutely hazardous waste
- Extremely hazardous waste
- non-RCRA hazardous waste
- RCRA hazardous waste
- Special waste
- Universal waste.

IS IT A RCRA HAZARDOUS WASTE?

CCR TITLE 22

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IS IT A RCRA HAZARDOUS WASTE?



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IS IT A RCRA HAZARDOUS WASTE?



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[§ 66261.100. RCRA Hazardous Waste.](#)

[§ 66261.101. Non-RCRA Hazardous Waste.](#)

[§ 66261.107. Applicability of Extremely Hazardous Waste Criteria.](#)

[§ 66261.110. Extremely Hazardous Waste Criteria.](#)

[§ 66261.111. Hazardous Waste of Concern Criteria.](#)

IS IT A RCRA HAZARDOUS WASTE?



AT THE SOURCE: THE CRITERIA FOR RCRA HAZWASTE

22 CCR § 66261.100

§ 66261.100. RCRA Hazardous Waste.

(a) A hazardous waste is a RCRA hazardous waste if it meets any of the following criteria:

- Characteristic → (1) it exhibits any of the characteristics of ignitability, corrosivity, reactivity, or toxicity identified in sections 66261.21, 66261.22(a)(1), 66261.22(a)(2), 66261.23, and 66261.24(a)(1);
- Listed → (2) it is listed as a hazardous waste in article 4 of this chapter and has not been excluded by the USEPA Administrator from 40 CFR Part 261, Subpart D pursuant to 40 CFR sections 260.20 and 260.22. Wastes excluded by the USEPA Administrator pursuant to 40 CFR sections 260.20 and 260.22 are listed in 40 CFR Part 261, Appendix IX;
- (3) it is identified as a hazardous waste pursuant to section 66261.3(a)(2)(B), section 66261.3(a)(2)(D), section 66261.3(a)(2)(E) or section 66261.3(c)(2).

(b) A hazardous waste is presumed to be a RCRA hazardous waste unless or until the generator determines that the waste is non-RCRA hazardous waste pursuant to section 66261.101.

IS IT A RCRA HAZARDOUS WASTE?



AT THE SOURCE: THE CRITERIA FOR RCRA HAZWASTE

22 CCR § 66261.100

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- Listed → (2) it is listed as a hazardous waste in article 4 of this chapter and has not been excluded by the USEPA Administrator from 40 CFR Part 261, Subpart D pursuant to 40 CFR sections 260.20 and 260.22. Wastes excluded by the USEPA Administrator pursuant to 40 CFR sections 260.20 and 260.22 are listed in 40 CFR Part 261, Appendix IX;
- (3) it is identified as a hazardous waste pursuant to section 66261.3(a)(2)(B), section 66261.3(a)(2)(D), section 66261.3(a)(2)(E) or section 66261.3(c)(2).

(b) A hazardous waste is presumed to be a RCRA hazardous waste unless or until the generator determines that the waste is non-RCRA hazardous waste pursuant to section 66261.101.

(B) it is listed in article 4 of this chapter and has not been excluded by the USEPA Administrator from 40 CFR Part 261 Subpart D pursuant to 40 CFR sections 260.20 and 260.22;

(D) it is listed in article 4.1 of this chapter;

IS IT A RCRA HAZARDOUS WASTE?



AT THE SOURCE: THE CRITERIA FOR RCRA HAZWASTE

22 CCR § 66261.100

§ 66261.100. RCRA Hazardous Waste.

(a) A hazardous waste is a RCRA hazardous waste if it meets any of the following criteria:

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- (3) it is identified as a hazardous waste pursuant to section 66261.3(a)(2)(B), section 66261.3(a)(2)(D), section 66261.3(a)(2)(E) or section 66261.3(c)(2).

(b) A hazardous waste is presumed to be a RCRA hazardous waste unless or until the generator determines that the waste is non-RCRA hazardous waste pursuant to section 66261.101.

(E) it is a mixture of a hazardous waste that is listed in article 4 of this chapter other than a hazardous waste listed with hazard code (T) or (H), and another waste, unless the resultant mixture no longer exhibits any characteristic of hazardous waste identified in article 3 of this chapter. However, nonwastewater mixtures are still subject to the requirements of chapter 18 of this division, even if they no longer exhibit a characteristic at the point of land disposal;

IS IT A RCRA HAZARDOUS WASTE?



AT THE SOURCE: THE CRITERIA FOR RCRA HAZWASTE

22 CCR § 66261.100

§ 66261.100. RCRA Hazardous Waste.

(a) A hazardous waste is a RCRA hazardous waste if it meets any of the following criteria:

- Characteristic → (1) it exhibits any of the characteristics of ignitability, corrosivity, reactivity, or toxicity identified in sections 66261.21, 66261.22(a)(1), 66261.22(a)(2), 66261.23, and 66261.24(a)(1);
- Listed → (2) it is listed as a hazardous waste in article 4 of this chapter and has not been excluded by the USEPA Administrator from 40 CFR Part 261, Subpart D pursuant to 40 CFR sections 260.20 and 260.22. Wastes excluded by the USEPA Administrator pursuant to 40 CFR sections 260.20 and 260.22 are listed in 40 CFR Part 261, Appendix IX;
- (3) it is identified as a hazardous waste pursuant to section 66261.3(a)(2)(B), section 66261.3(a)(2)(D), section 66261.3(a)(2)(E) or section 66261.3(c)(2).

(b) A hazardous waste is presumed to be a RCRA hazardous waste unless or until the generator determines that the waste is non-RCRA hazardous waste pursuant to section 66261.101.

(2) Waste pickle liquor sludge generated by lime stabilization of spent pickle liquor from the iron and steel industry (SIC Codes 331 and 332) is not hazardous even though it is generated from the treatment, storage, or disposal of a hazardous waste, unless it exhibits one or more of the characteristics of hazardous waste.

IS IT A RCRA HAZARDOUS WASTE?

THE SOURCE; IS IT CHARACTERISTIC OR IS IT LISTED?



22 CCR § 66261.100

§ 66261.100. RCRA Hazardous Waste.

(a) A hazardous waste is a RCRA hazardous waste if it meets any of the following criteria:

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(2) it is listed as a hazardous waste in article 4 of this chapter and has not been excluded by the USEPA Administrator from 40 CFR Part 261, Subpart D pursuant to 40 CFR sections 260.20 and 260.22. Wastes excluded by the USEPA Administrator pursuant to 40 CFR sections 260.20 and 260.22 are listed in 40 CFR Part 261, Appendix IX;

(3) it is identified as a hazardous waste pursuant to section 66261.3(a)(2)(B), section 66261.3(a)(2)(D), section 66261.3(a)(2)(E), or section 66261.3(c)(2).

(b) A hazardous waste is presumed to be a RCRA hazardous waste unless or until the generator determines that the waste is non-RCRA hazardous waste pursuant to section 66261.101.

Characteristic

IS IT A RCRA LISTED WASTE?

GOING TO THE SOURCE



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Article 3. Characteristics of Hazardous Waste

[§ 66261.20. General.](#)

[§ 66261.21. Characteristic of Ignitability.](#)

[§ 66261.22. Characteristic of Corrosivity.](#)

[§ 66261.23. Characteristic of Reactivity.](#)

[§ 66261.24. Characteristic of Toxicity.](#)

IS IT A RCRA HAZARDOUS WASTE?



22 CCR § 66261.100

§ 66261.100. RCRA Hazardous Waste.

(a) A hazardous waste is a RCRA hazardous waste if it meets any of the following criteria:

Characteristic

(1) it exhibits any of the characteristics of **ignitability**, **corrosivity**, **reactivity**, or **toxicity** identified in sections **66261.21**, 66261.22(a)(1), 66261.22(a)(2), 66261.23, and 66261.24(a)(1);

(2) it is listed as a hazardous waste in article 4 of this chapter and has not been excluded by the USEPA Administrator from 40 CFR Part 261, Subpart D pursuant to 40 CFR sections 260.20 and 260.22. Wastes excluded by the USEPA Administrator pursuant to 40 CFR sections 260.20 and 260.22 are listed in 40 CFR Part 261, Appendix IX;

(3) it is identified as a hazardous waste pursuant to section 66261.3(a)(2)(B), section 66261.3(a)(2)(D), section 66261.3(a)(2)(E), or section 66261.3(c)(2).

(b) A hazardous waste is presumed to be a RCRA hazardous waste unless or until the generator determines that the waste is non-RCRA hazardous waste pursuant to section 66261.101.

CHARACTERISTICALLY RCRA HAZARDOUS?



CCR 66261.21 IGNITABLE?

(1) it exhibits any of the characteristics of **ignitability, corrosivity, reactivity, or toxicity identified in sections 66261.21, 66261.22(a)(1), 66261.22(a)(2), 66261.23, and 66261.24(a)(1);**

1-IGNITABILITY (D001): 66261.21

- Liquids with** a flash point less than 60oC (140oF).
- It is not a liquid** and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard;
- Oxidizers.**
- Other criteria listed in 66261.21

IS IT A RCRA HAZARDOUS WASTE?



22 CCR § 66261.100

§ 66261.100. RCRA Hazardous Waste.

(a) A hazardous waste is a RCRA hazardous waste if it meets any of the following criteria:

Characteristic

(1) it exhibits any of the characteristics of ignitability, **corrosivity**, reactivity, or toxicity identified in sections 66261.21, **66261.22(a)(1), 66261.22(a)(2)** 66261.23, and 66261.24(a)(1);

(2) it is listed as a hazardous waste in article 4 of this chapter and has not been excluded by the USEPA Administrator from 40 CFR Part 261, Subpart D pursuant to 40 CFR sections 260.20 and 260.22. Wastes excluded by the USEPA Administrator pursuant to 40 CFR sections 260.20 and 260.22 are listed in 40 CFR Part 261, Appendix IX;

(3) it is identified as a hazardous waste pursuant to section 66261.3(a)(2)(B), section 66261.3(a)(2)(D), section 66261.3(a)(2)(E), or section 66261.3(c)(2).

(b) A hazardous waste is presumed to be a RCRA hazardous waste unless or until the generator determines that the waste is non-RCRA hazardous waste pursuant to section 66261.101.

CHARACTERISTICALLY RCRA HAZARDOUS?



CCR 66261.22 CORROSIVE?

(1) it exhibits any of the characteristics of ignitability, corrosivity, reactivity, or toxicity identified in sections 66261.21, 66261.22(a)(1), 66261.22(a)(2), 66261.23, and 66261.24(a)(1);

2-CORROSIVITY(D002): 66261.22(a)(1)and (a)(2):

-(a)(1): It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5

-(a)(2): It is a liquid and corrodes steel at a rate greater than 6.35 mm (0.250 inch) per year

-Other criteria listed in 66261.22 makes it a non-RCRA corrosive hazwaste

CHARACTERISTICALLY RCRA HAZARDOUS?



CCR 66261.22 CORROSIVE?

(1) it exhibits any of the characteristics of ignitability, corrosivity, reactivity, or toxicity identified in sections 66261.21, 66261.22(a)(1), 66261.22(a)(2), 66261.23, and 66261.24(a)(1);

2-CORROSIVITY(D002): 66261.22(a)(1)and (a)(2):

-(a)(1): It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5

-(a)(2): It is a liquid and corrodes steel at a rate greater than 6.35 mm (0.250 inch) per year

-Other criteria listed in 66261.22 makes it a non-RCRA corrosive hazwaste

IS IT A RCRA HAZARDOUS WASTE?



22 CCR § 66261.100

§ 66261.100. RCRA Hazardous Waste.

(a) A hazardous waste is a RCRA hazardous waste if it meets any of the following criteria:

Characteristic

(1) it exhibits any of the characteristics of ignitability, corrosivity, reactivity, or toxicity identified in sections 66261.21, 66261.22(a)(1), 66261.22(a)(2), 66261.23 and 66261.24(a)(1);

(2) it is listed as a hazardous waste in article 4 of this chapter and has not been excluded by the USEPA Administrator from 40 CFR Part 261, Subpart D pursuant to 40 CFR sections 260.20 and 260.22. Wastes excluded by the USEPA Administrator pursuant to 40 CFR sections 260.20 and 260.22 are listed in 40 CFR Part 261, Appendix IX;

(3) it is identified as a hazardous waste pursuant to section 66261.3(a)(2)(B), section 66261.3(a)(2)(D), section 66261.3(a)(2)(E), or section 66261.3(c)(2).

(b) A hazardous waste is presumed to be a RCRA hazardous waste unless or until the generator determines that the waste is non-RCRA hazardous waste pursuant to section 66261.101.

CHARACTERISTICALLY RCRA HAZARDOUS?



CCR 66261.23 REACTIVE?

(1) it exhibits any of the characteristics of ignitability, corrosivity, reactivity, or toxicity identified in sections 66261.21, 66261.22(a)(1), 66261.22(a)(2), 66261.23, and 66261.24(a)(1);

3-REACTIVITY (D003): 66261.23

-A waste exhibits the characteristic of reactivity if representative samples of the waste have any of the following properties:

(1) it is normally unstable and readily undergoes violent change without detonating;

(2) it reacts violently with water;

..

(6) it is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement;

-Other criteria listed in 66261.23.

IS IT A RCRA HAZARDOUS WASTE?



22 CCR § 66261.100

§ 66261.100. RCRA Hazardous Waste.

(a) A hazardous waste is a RCRA hazardous waste if it meets any of the following criteria:

Characteristic

(1) it exhibits any of the characteristics of ignitability, corrosivity, reactivity, or toxicity identified in sections 66261.21, 66261.22(a)(1), 66261.22(a)(2), 66261.23, and 66261.24(a)(1)

(2) it is listed as a hazardous waste in article 4 of this chapter and has not been excluded by the USEPA Administrator from 40 CFR Part 261, Subpart D pursuant to 40 CFR sections 260.20 and 260.22. Wastes excluded by the USEPA Administrator pursuant to 40 CFR sections 260.20 and 260.22 are listed in 40 CFR Part 261, Appendix IX;

(3) it is identified as a hazardous waste pursuant to section 66261.3(a)(2)(B), section 66261.3(a)(2)(D), section 66261.3(a)(2)(E), or section 66261.3(c)(2).

(b) A hazardous waste is presumed to be a RCRA hazardous waste unless or until the generator determines that the waste is non-RCRA hazardous waste pursuant to section 66261.101.

CHARACTERISTICALLY RCRA HAZARDOUS?



CCR 66261.24 TOXIC?

§ 66261.24. Characteristic of Toxicity.

(a) A waste exhibits the characteristic of toxicity if representative samples of the waste have any of the following properties:

(1) when using the Toxicity Characteristic Leaching Procedure (TCLP), test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, third edition and Updates (incorporated by reference in section 66260.11 of this division), the extracts from representative samples of the waste contain any of the contaminants listed in Table I of this section at a concentration equal to or greater than the respective value given in that table unless the waste is excluded from classification as a solid waste or hazardous waste or is exempted from regulation pursuant to 40 CFR section 261.4. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purposes of this section;

CHARACTERISTICALLY RCRA HAZARDOUS?



CCR 66261.24 TOXIC?

(1) it exhibits any of the characteristics of ignitability, corrosivity, reactivity, or toxicity identified in sections 66261.21, 66261.22(a)(1), 66261.22(a)(2), 66261.23, and 66261.24(a)(1);

4-TOXICITY 66261.24(a)(1):

- TCLP value is above Maximum Concentration for Contaminants listed in table I.
- Table I includes contaminants with waste codes D004 to D043: RCRA toxic metals such as lead, mercury as well as other contaminants such as lindane (insecticide)
- Other criteria listed in 66261.24 make the waste **Non-RCRA hazardous**:

Such as fish toxicity

Table II for TTLC STLC thresholds includes Zinc, Vanadium, Thallium.

RCRA TOXIC CONTAMINANTS CONCENTRATION



CCR 66261.24(a)(1): TABLE I

(B) Table I - Maximum Concentration of Contaminants for the Toxicity Characteristic:

<i>EPA Hazardous Waste Number</i>	<i>Contaminant</i>	<i>Chemical Abstracts Service Number</i>	<i>Regulatory Level Mg/l</i>
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	200.0 ¹
D024	m-Cresol	108-39-4	200.0 ¹
D025	p-Cresol	106-44-5	200.0 ¹
D026	Cresol		200.0 ¹
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	0.13
D033	Hexachlorobutadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	5.0 ²
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

RCRA TOXIC CONTAMINANTS CONCENTRATION



CCR 66261.24(a)(1): TABLE I

(B) Table I - Maximum Concentration of Contaminants for the Toxicity Characteristic:

<i>EPA Hazardous Waste Number</i>	<i>Contaminant</i>	<i>Chemical Abstracts Service Number</i>	<i>Regulatory Level Mg/l</i>
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0

IS IT A RCRA HAZARDOUS WASTE?



IS IT RCRA LISTED?

22 CCR § 66261.100

§ 66261.100. RCRA Hazardous Waste.

(a) A hazardous waste is a RCRA hazardous waste if it meets any of the following criteria:

(1) it exhibits any of the characteristics of ignitability, corrosivity, reactivity, or toxicity identified in sections 66261.21, 66261.22(a)(1), 66261.22(a)(2), 66261.23, and 66261.24(a)(1);

Listed

(2) it is listed as a hazardous waste in article 4 of this chapter and has not been excluded by the USEPA Administrator from 40 CFR Part 261, Subpart D pursuant to 40 CFR sections 260.20 and 260.22. Wastes excluded by the USEPA Administrator pursuant to 40 CFR sections 260.20 and 260.22 are listed in 40 CFR Part 261, Appendix IX;

(3) it is identified as a hazardous waste pursuant to section 66261.3(a)(2)(B), section 66261.3(a)(2)(D), section 66261.3(a)(2)(E), or section 66261.3(c)(2).

(b) A hazardous waste is presumed to be a RCRA hazardous waste unless or until the generator determines that the waste is non-RCRA hazardous waste pursuant to section 66261.101.

Note: Authority cited: Sections 208, 25141 and 25159, Health and Safety Code. Reference: Sections 25117, 25120.2, 25141 and 25159, Health and Safety Code.

IS IT A RCRA LISTED WASTE?

GOING TO THE SOURCE LISTS



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IS IT A RCRA LISTED WASTE?

GOING TO THE SOURCE LISTS



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IS IT A RCRA LISTED WASTE?

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IS IT A RCRA LISTED WASTE?

THE F, K, P, U LISTS



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Article 4. Lists of RCRA Hazardous Wastes

[§ 66261.30. General.](#)

[§ 66261.31. Hazardous Wastes from Non-Specific Sources.](#)

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[§ 66261.32. Hazardous Wastes from Specific Sources.](#)

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[§ 66261.33. Discarded Commercial Chemical Products, off-Specification Species, Container Residues, and Spill Residues Thereof.](#)

U-LISTED

[§ 66261.35. Deletion of Certain Hazardous Waste Codes Following Equipment Cleaning and Replacement.](#)

P-LISTED

IS IT A RCRA LISTED WASTE?

THE F, K, P, U LISTS



§ 66261.30. General.

(a) A waste is a RCRA hazardous waste if it is listed in this article, unless it has been excluded from this list pursuant to 40 CFR sections 260.20 and 260.22 or is categorized as a non-RCRA hazardous waste pursuant to section 66261.101. Wastes shall only be listed in this article if they are listed in 40 CFR Part 261 Subpart D.

(b) The Department will indicate the USEPA Administrator's basis for listing the classes or types of wastes listed in this article by employing one or more of the following Hazard Codes:

Ignitable Waste	(I)
Corrosive Waste	(C)
Reactive Waste	(R)
Acute Hazardous Waste	(H)
Toxic Waste	(T)

F-LISTED RCRA HAZARDOUS WASTE?



LISTED HAZARDOUS WASTE FROM NON-SPECIFIC SOURCES

1. Have waste codes that begin with an “F” followed by a three-digit number.
2. Waste from certain common industrial/manufacturing processes.
3. These wastes are not based on a specific industry.
4. Not dependent on the concentration of the chemicals present in the waste.
5. Generally, if present in the waste, the waste is hazardous.

Some non-specific sources are:

- Spent solvent wastes (F001 – F005)
- Electroplating and metal finishing operations wastes (F006 – F012, F019)
- Dioxin-bearing wastes (F020 – F023, F026 – F028)
- Wood preserving wastes (F032, F034, and F035)

F-LISTED RCRA HAZARDOUS WASTE?



LISTED HAZARDOUS WASTE FROM NON-SPECIFIC SOURCES

§ 66261.31. Hazardous Wastes from Non-Specific Sources.

(a) The following wastes are listed hazardous wastes from non-specific sources unless they are excluded pursuant to 40 CFR sections 260.20 and 260.22:

EPA Hazardous Waste No.	Hazardous Waste	Hazard Code
F001	the following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures;	(T)
F002	the following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures;	(T)
F003	the following spent non-halogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures;	(I) ¹
F004	the following spent non-halogenated solvents: cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures;	(T)

IS IT A RCRA LISTED WASTE?

THE F, K, P, U LISTS



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U-LISTED

[§ 66261.35. Deletion of Certain Hazardous Waste Codes Following Equipment Cleaning and Replacement.](#)

P-LISTED

K-LISTED RCRA HAZARDOUS WASTE?



LISTED HAZARDOUS WASTE FROM SPECIFIC SOURCES

1. Listed hazardous wastes from specific sources have codes beginning with “K” followed by a three-digit number (e.g. K001).
2. Unlike the F listed wastes, they are dependent on the specified industry.
3. Must match industry source and chemical description in the regs.
4. Like the F listed wastes, they are independent of the concentration of chemicals present in the waste.

Some specific industries of K-listed waste are:

- Inorganic pigment manufacturing
- Organic chemicals manufacturing
- Inorganic chemicals manufacturing
- Pesticides manufacturing

IS IT A RCRA LISTED WASTE?

THE F, K, P, U LISTS



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[§ 66261.35. Deletion of Certain Hazardous Waste Codes Following Equipment Cleaning and Replacement.](#) **P-LISTED**

P OR U-LISTED RCRA HAZARDOUS WASTE?

DISCARDED COMMERCIAL CHEMICAL PRODUCTS, OFF-SPECIFICATION SPECIES AND SPILL RESIDUES

1. Codes beginning with a “P” or “U” followed by a three digit number (e.g., P001 or U001)
2. Wastes beginning with a “P” are acutely hazardous wastes, and “U” wastes are toxic hazardous wastes.

To be a P or U waste, the chemical generally:

- Must be unused (can be residual, but not spent for its intended purpose)
- Must be pure (commercial or technical pure grades, or a sole active ingredient in a formulation)
- Cannot have been mixed with other chemicals to form another product

P OR U-LISTED RCRA HAZARDOUS WASTE?

DISCARDED COMMERCIAL CHEMICAL PRODUCTS, OFF-SPECIFICATION SPECIES AND SPILL RESIDUES

EPA Hazardous Waste No.	Chemical Abstracts No.	Substances	EPA Hazardous Waste No.	Chemical Abstracts No.	Substances
P189	55285-14-8	Carbamic acid, [(dibutylamino)-thio]methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester	P058	62-74-8	Fluoroacetic acid, sodium salt
P191	644-64-4	Carbamic acid, dimethyl-, 1-[(dimethyl-amino)carbonyl]-5-methyl-1H-pyrazol-3-yl ester.	P198	23422-53-9	Formetanate hydrochloride.
P192	119-38-0	Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester.	P197	17702-57-7	Formparanate
P190	1129-41-5	Carbamic acid, methyl-, 3-methylphenyl ester.	P065	628-86-4	Fulminic acid, mercury (2+) salt (R,T)
P127	1536-66-2	Carbofuran	P059	76-44-8	Heptachlor
P022	75-15-0	Carbon disulfide	P062	757-58-4	Hexaethyl tetraphosphate
P095	75-44-5	Carbonic dichloride	P116	79-19-6	Hydrazinecarbothioamide
P189	55285-14-8	Carbosulfan	P068	60-34-4	Hydrazine, methyl-
P023	107-20-0	Chloroacetaldehyde	P063	74-90-8	Hydrocyanic acid
P024	106-47-8	p-Chloroaniline	P063	74-90-8	Hydrogen cyanide
P026	5344-82-1	1-(o-Chlorophenyl) thiourea	P096	7803-51-2	Hydrogen phosphide
P027	542-76-7	3-Chloropropionitrile	P060	465-73-6	Isodrin
P029	544-92-3	Copper cyanide Cu(CN)	P192	119-38-0	Isolan
P202	64-00-6	m-Cumenyl methylcarbamate.	P202	64-00-6	3-Isopropylphenyl N-methylcarbamate.
P030		Cyanides (soluble cyanide salts), not otherwise specified	P007	2763-96-4	3(2H)-Isoxazolone, 5-(aminomethyl)-
P031	460-19-5	Cyanogen	P196	15339-36-3	Manganese, bis(dimethylcarbamodithioato-S,S')
P033	506-77-4	Cyanogen chloride (CN)Cl	P196	15339-36-3	Manganese dimethyldithiocarbamate.
P034	131-89-5	2-Cyclohexyl-4,6-dinitrophenol	P092	62-38-4	Mercury, (acetato-O)phenyl-
P016	542-88-1	Dichloromethyl ether	P065	628-86-4	Mercury fulminate (R,T)
P036	696-28-6	Dichlorophenylarsine	P082	62-75-9	Methanamine, N-methyl-N-nitroso-
P037	60-57-1	Dieldrin	P064	624-83-9	Methane, isocyanato-
P038	692-42-2	Diethylarsine	P016	542-88-1	Methane, oxybis(chloro-
P041	311-45-5	Diethyl-p-nitrophenyl phosphate	P112	509-14-8	Methane, tetranitro- (R)
P040	297-97-2	O,O-Diethyl O-pyrazinyl phosphorothioate	P118	75-70-7	Methanethiol, trichloro-
P043	55-91-4	Diisopropyl fluorophosphate (DFF)	P198	23422-53-9	Methanimidamide, N,N-dimethyl-N'-[3-[[[(methylamino)-carbonyl]oxy]phenyl]-, monohydrochloride.
P004	309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4-, 10,10-hexachloro-, 1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4beta,5alpha,8alpha,8beta)-	P197	17702-57-7	Methanimidamide, N,N-dimethyl-N'-2[-methyl-4-[[[(methylamino)carbonyl]oxy]phenyl]-
P060	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-, 1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4beta,5beta,8beta,8beta)-	P050	115-29-7	6,9-Methano-2,4,3-benzodioxathiepen, 6,7,8,9,10,10-hexachloro-, 1,5,5a,6,9,9a-hexahydro-, 3-oxide
P037	60-57-1	2,7,3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-, 1a,2,2a,3,6,6a,7,7a-octahydro-, (1alpha,2beta,2alpha,3beta,6beta,6aalpha,7beta,7aalpha)-	P059	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-, 3a,4,7,7a-tetrahydro-
P051	172-20-8	2,7,3,6-Dimethanonaphth[2,3-b] oxirene,	P199	2032-65-7	Methiocarb
			P066	16752-77-5	Methomyl
			P068	60-34-4	Methyl hydrazine
			P064	624-83-9	Methyl isocyanate
			P069	75-86-5	2-Methylacetonitrile
			P071	298-00-0	Methyl parathion
			P190	1129-41-5	Metolcarb
			P128	315-8-4	Mexacarbate
			P072	86-88-4	alpha-Naphthylthiourea
			P073	13463-39-3	Nickel carbonyl, Ni(CO) ₄ , (T-4)-

FLOWCHART FOR HAZARDOUS WASTE DETERMINATION

THE GOLDEN HAZARDOUS WASTE QUESTIONS



WHO ARE RCRA LQG'S?



1. Generators of hazardous waste. ✓
2. The hazardous waste must be RCRA. ✓
3. And the generator status must be an LQG. ✓

A LARGE QUANTITY GENERATOR OF HAZARDOUS WASTE
GENERATES 1000KG OR MORE OF HAZARDOUS WASTE AND/OR
1KG OR MORE OF ACUTELY HAZARDOUS WASTE PER MONTH.

ACUTELY HAZARDOUS WASTE



- Listed wastes in accordance with *40 CFR 261.11(a)(2)*.
 - Fatal to humans in low doses.
 - Oral LD 50 toxicity (rat) less than 50mg/kg.
 - Inhalation LC50 toxicity less than 2mg/liter.
 - Dermal LD50 toxicity less than 200mg/kg.
- On the lists are identified with hazard code (H).
 - Per 40 CFR 261.30 or 22 CCR 66261.30(b).
 - F-listed waste: F020, F021, F022, F023, F026, and F027.
 - P-listed wastes are all (H).

ACUTELY HAZARDOUS WASTE



F list: 22 CCR § 66261.31

F023	wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols; (This listing does not include wastes from equipment used only for the production or use of Hexachlorophene from highly purified 2,4,5-trichlorophenol.)	(H)
F024	process wastes, including but not limited to, distillation, residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution; (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in section 66261.31 or 66261.32.)	(T)

(e) the following commercial chemical products, manufacturing chemical intermediates or off-specification commercial chemical products or manufacturing chemical intermediates referred to in subsections (a) through (d) of this section, are Acute Hazardous Wastes (H). The primary hazardous properties of these materials have been indicated by the letters T (Toxicity), and R (Reactivity). Absence of a letter indicates that the compound only is listed for acute toxicity. These wastes and their corresponding EPA hazardous waste numbers are:

EPA Hazardous Waste No.	Chemical Abstracts No.	Substances
P023	107-20-0	Acetaldehyde, chloro-
P002	591-08-2	Acetamide, N-(aminothioxomethyl)-
P057	640-19-7	Acetamide, 2-fluoro-
P058	62-74-8	Acetic acid, fluoro-, sodium salt
P002	591-08-2	1-Acetyl-2-thiourea
P003	107-02-8	Acrolein
P070	116-06-3	Aldicarb
P023	1646-88-4	Aldicarb sulfone
P004	309-00-2	Aldrin

ACUTELY HAZARDOUS WASTE



§ 66261.30. General.

(a) A waste is a RCRA hazardous waste if it is listed in this article, unless it has been excluded from this list pursuant to 40 CFR sections 260.20 and 260.22 or is categorized as a non-RCRA hazardous waste pursuant to section 66261.101. Wastes shall only be listed in this article if they are listed in 40 CFR Part 261 Subpart D.

(b) The Department will indicate the USEPA Administrator's basis for listing the classes or types of wastes listed in this article by employing one or more of the following Hazard Codes:

Ignitable Waste	(I)
Corrosive Waste	(C)
Reactive Waste	(R)
Acute Hazardous Waste	(H)
Toxic Waste	(T)

ACUTELY HAZARDOUS WASTE



(e) the following commercial chemical products, manufacturing chemical intermediates or off-specification commercial chemical products or manufacturing chemical intermediates referred to in subsections (a) through (d) of this section, are Acute Hazardous Wastes (H). The primary hazardous properties of these materials have been indicated by the letters T (Toxicity), and R (Reactivity). Absence of a letter indicates that the compound only is listed for acute toxicity. These wastes and their corresponding EPA hazardous waste numbers are:

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P070	116-06-3	Aldicarb
P023	1646-88-4	Aldicarb sulfone
P004	309-00-2	Aldrin

ACUTELY HAZARDOUS WASTE



- Average rat weight: 8.1oz or ~ 0.23kg
- 50mg/kg for average rat would be ~11.5mg.
- 11.5mg of acutely hazardous waste kills 50% of a test sample population consisting of average rat sizes.
- 1 grain of rice weighs ~29mg.
- Acutely hazardous waste with LD50=50mg/kg \approx $\frac{1}{2}$ grain of rice.

CONDUCTING A HAZARDOUS WASTE DETERMINATION

It is the generators responsibility to make the determination whether a waste is hazardous or not (use golden hazwaste questions) and if hazardous manage it as such.

☐ **DETERMINE THAT THE WASTE IS LISTED BY KNOWLEDGE OF THE PROCESS AND WHETHER IT INCLUDES ANY OF THE LISTED WASTES.**

☐ **DETERMINE THAT THE WASTE IS CHARACTERISTICALLY HAZARDOUS BY:**

1. Lab testing through state accredited lab.
2. Applying generator knowledge of the process.



DETERMINATION MUST BE AT THE POINT OF GENERATION!



CONDUCTING A HAZARDOUS WASTE DETERMINATION

Title 22. Social Security

Division 4.5. Environmental Health Standards for the Management of Hazardous Waste

Chapter 12. Standards Applicable to Generators of Hazardous Waste

Article 1. Applicability

22 CCR § 66262.11

§ 66262.11. Hazardous Waste Determination.

(c) For purposes of compliance with chapter 18 of this division (commencing with section 66268.1), or if the waste is not listed as a hazardous waste in article 4 (commencing with section 66261.30), in article 4.1 (commencing with section 66261.50), or in Appendix X of chapter 11 of this division, the generator shall determine whether the waste exhibits any of the characteristics set forth in article 3 of chapter 11 of this division by either:

(1) testing the waste according to the methods set forth in article 3 (commencing with section 66261.20) of chapter 11 of this division, or according to an equivalent method approved by the Department under section 66260.21; or

(2) applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.

CONDUCTING A HAZARDOUS WASTE DETERMINATION

40 CFR PART 262

§ 262.11 Hazardous waste determination and recordkeeping.

A person who generates a solid waste, as defined in 40 CFR 261.2, must make an accurate determination as to whether that waste is a hazardous waste in order to ensure wastes are properly managed according to applicable RCRA regulations. A hazardous waste determination is made using the following steps:

(a) The hazardous waste determination for each solid waste must be made at the point of waste generation, before any dilution, mixing, or other alteration of the waste occurs, and at any time in the course of its management that it has, or may have, changed its properties as a result of exposure to the environment or other factors that may change the properties of the waste such that the RCRA classification of the waste may change.

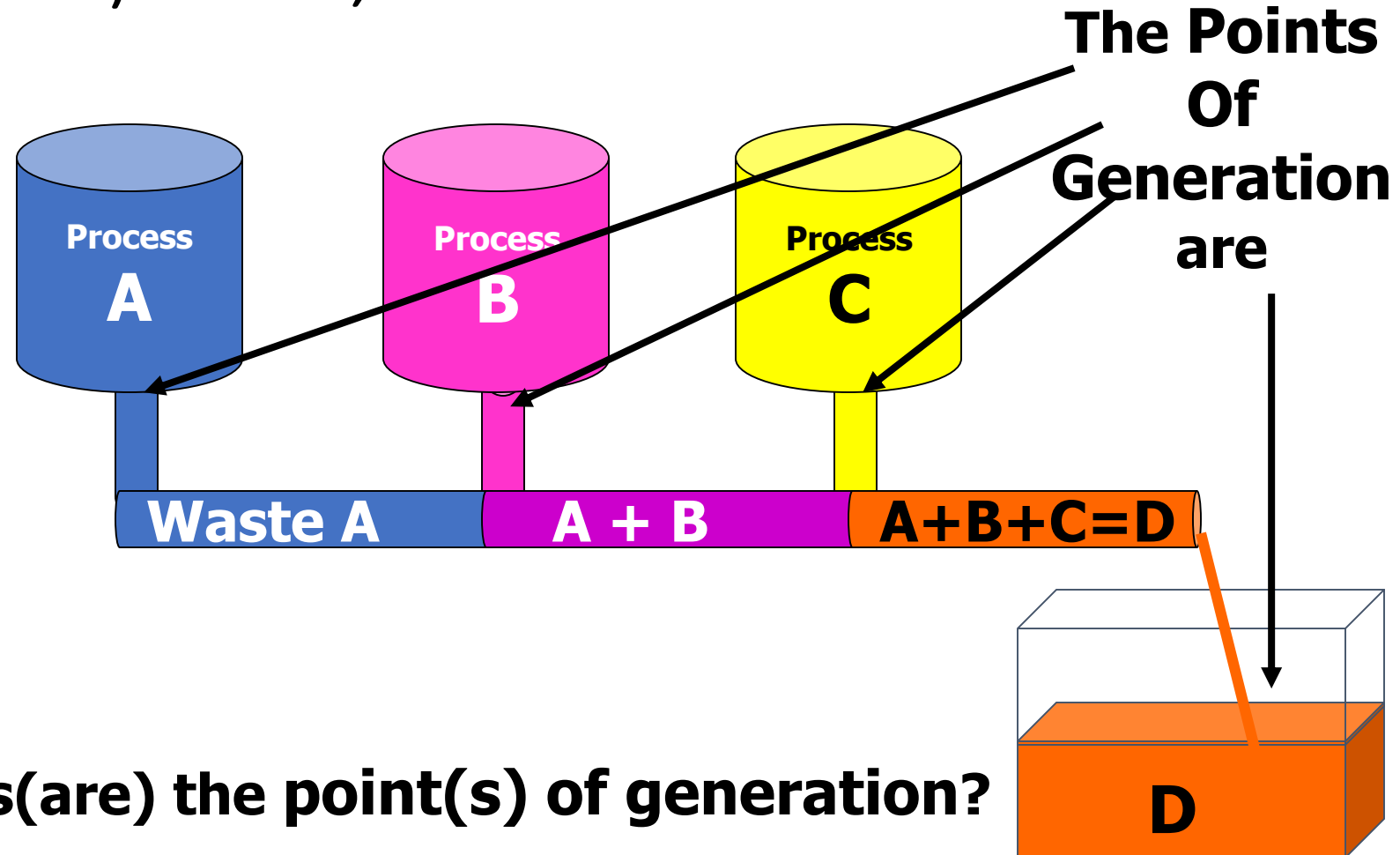


DETERMINATION MUST BE AT THE POINT OF GENERATION!



Points of Generation

(POG) Tanks A, B & C



CONDUCTING A HAZARDOUS WASTE DETERMINATION

METHODS FOR CONDUCTING A HAZARDOUS WASTE DETERMINATION:

1. Generator knowledge of the process.
2. Lab testing through state accredited lab.



DETERMINATION MUST BE AT THE POINT OF GENERATION!



REQUIREMENTS FOR LARGE QUANTITY GENERATORS

- CONDUCT A HAZARDOUS WASTE DETERMINATION ON WASTE.
- ACCUMULATE IN CONTAINERS OR TANKS.
- ACCUMULATION LIMIT: 90 DAYS.
- 30 DAY EXTENTION CAN BE GRANTED BY DTSC [22CCR§66262.34(c)]
- NO QUANTITY ACCUMULATION LIMIT.

CONTAINER REQUIREMENTS FOR LARGE QUANTITY GENERATORS

- Container marking: hazardous waste, accumulation start date, composition, physical state, physical hazard, name and address.
- Close containers when not in use.
- Maintain container condition.
- Use container compatible with waste.
- Container inspection: weekly.
- Store flammable/reactive waste >50ft from property line
- Subpart cc: containers >26gal holding waste >500ppmw. Must accumulate in tightly closed dot container.
- Maintain aisle space.
- Mark empty containers >5gal. Manage within 1 year.

TANK REQUIREMENTS FOR LARGE QUANTITY GENERATORS

22 CCR 66265.190->66265.202

- Tank marking: marked with hazardous waste and start date.
 - BONUS: Portable tanks like containers: need to be marked with composition, physical state, physical hazard, name and address of generator. [22 CCR § 66262.34 (f)(3)]
- Tank system requirements prescribed in Title 22, Chapter 15, Article 10, including:
 - Tank design standards and P.E certified tank integrity assessment every 5 years. [22 CCR § 66265.192]
 - Tank secondary containment and leak detection is required. [§ 66265.193]
 - Operator must use controls & practices to prevent spills/overflows such as overfill prevention devices. [§ 66265.194]
 - Tank inspection: daily and maintain records. [§ 66265.195]
 - Appropriate response to leaks, including removing tank from service. [§ 66265.196]
 - Closure requirements including removing and managing all waste residues. [§ 66265.196]
 - Subpart CC air emissions requirements (*more on that later*) [§ 66265.202].

RECORDS REQUIREMENTS FOR LARGE QUANTITY GENERATORS

- Manifests: maintain copies for 3 years.
- Training plan preparation required *[(CCR §66265.16 a,d)]*
- Within 6 months of hire and annual refresher, maintain records for 3 years.
- Emergency procedures, contingency plans required.

REQUIREMENTS OF RCRA LQG'S

IN ADDITION TO THE PREVIOUS NON-RCRA LQG REQUIREMENTS



- OBTAIN A FEDERAL EPA ID NUMBER FROM USEPA.
- FILE A BIENNIAL REPORT ON MARCH 1ST OF EVEN NUMBERED YEARS.
 - Maintain for 3 years

OBTAIN A FEDERAL EPA ID NUMBER

ADDITIONAL REQUIREMENTS FOR RCRA LQG'S

- Must obtain a US-EPA ID number not CA EPA id number.
- ~~Submitting form 1358 to DTSC will not do;~~
- This must be obtained by submitting USEPA's form 8700-12.
- Can be obtained online through USEPA RCRAinfo webpage.

OBTAIN A FEDERAL EPA ID NUMBER

ADDITIONAL REQUIREMENTS FOR RCRA LQG'S

The screenshot shows a web browser window with the URL <https://rcrainfo.dev.epa.gov/rcrainfo/action/public/industry-register/new-account>. The page features the RCRA logo and a "Registration" tab. Below the header, there are three expandable sections: "User Information", "Create a User ID and Password", and "Organization/Contact Information". The "Organization/Contact Information" section is expanded, showing three required fields: "Organization Name", "Mailing Address (line 1)", and "Mailing Address (line 2)". Each field is marked with a red asterisk and a red dot. A legend in the top right corner indicates that a red dot means "required".

RCRA *Info*

Registration

Built on CDX

• = required

User Information

Create a User ID and Password

Organization/Contact Information

Organization Name •

Mailing Address (line 1) •

Mailing Address (line 2)

PURPOSE OF FILING BIENNIAL REPORT?

- Required by law;
- Provides the U.S. EPA and California with a view of current hazardous waste generation and waste management in the United States;
- Shows trends and changes in waste management and quantity when compared to past years' reports;
- Be summarized and provided to the public, primarily through publication of the National Biennial RCRA Hazardous Waste Report.

WHO IS REQUIRED TO FILE BIENNIAL REPORT TO USEPA?

- LQG of RCRA hazardous waste.
- One-time clean-up that generated 100kg (220lbs.) or more of acute RCRA waste.
- TSDF'S: Treatment, Storage, and Disposal Facilities.

FILING A BIENNIAL REPORT TO USEPA

- Required to be filed on March 1st of even numbered years.
- Include waste generated the previous year and reporting year.
- Even if only one month in the year the facility was a RCRA LQG they must file a report.
- This must be done by submitting USEPA's form 8700-13.
- Can be obtained online through USEPA RCRAinfo webpage.

SB14 REPORTING

PURPOSE

The goal is to compel facilities to manage hazardous waste by focusing **primarily** on finding ways to reduce the production of hazardous waste at the source it is generated (waste minimization & source reduction) **before** focusing on other options for hazwaste waste reduction such as recycling or treatment.

To accomplish this facilities are required to prepare the following:

- Source Reduction Evaluation (Plan)
- Hazardous Waste Management (Performance Report)
- Summary Progress Report (SPR)

WHO IS REQUIRED TO FILE SB14?

If facility generates more than 12,000kg of hazardous waste, RCRA or non-RCRA, or 12kg of extremely hazardous waste in the year.

Some of the exempt waste streams per 22 CCR 67100.2:

Motor vehicle fluids, universal waste, lead acid batteries, pesticides, educational and research laboratory wastes and universal wastes are exempt.

FILING SB14

- Based on designated reporting year on a 4-year cycle.
- Due September 1st 2019 for the 2018 reporting year.
- Must be maintained on site.

RCRA Air Emissions - Subpart BB & CC

Applicability:

- RCRA Large Quantity Generators
- Subpart BB
 - Hazardous waste $\geq 10\%$ VOC (i.e. *solvent waste*)
 - equipment
- Subpart CC
 - Hazardous waste ≥ 500 ppmw VOC
 - tanks and containers



22 CCR 66265.1050 to 66265.1090

Method 21

Traverse a calibrated photoionizing or flame ionization detector slowly around all potential leak surfaces as close as possible (~2 inches).



Reading of 10,000 ppm or more = LEAK

Subpart CC: Tanks and Containers

- Tank designation depends on capacity and vapor pressure. Most tanks will be Level 1.
- Container designation depends on capacity. Most containers will be Level 1 or Level 2.

Bottom Line: Keep it closed



The background image shows a complex industrial structure, likely a distillation column or a large-scale chemical reactor, with numerous pipes, valves, and structural supports. A semi-transparent circular overlay is positioned on the left side of the image, containing the title and a list of equipment types.

Subpart BB: Equipment

- Pumps
- Valves
- Connectors (i.e. flanges)
- Open-ended lines
- Sampling connections

Subpart BB: Pumps

Visually inspected
weekly, monitored
monthly

Exempt from
monthly monitoring
if operated with no
detectable emissions
(>500 ppm above
background)

Pump must be
monitored **annually**
to verify exemption



Subpart BB: Valves



Valves must be monitored on a **monthly** basis, UNLESS...

No detectable emissions



Monitored **annually** to verify exemption

No more than 2% of valves leak in HW system



Monitored **annually** to verify exemption

Employee must be lifted >2m to monitor



Monitored **annually** (and carefully)



Subpart BB: The Rest

- **Connectors:** Monitor **within 5 days** of evidence of a leak (olfactory, visual, audible)
- **Pressure relief devices (non-gas/vapor):** Monitor **within 5 days** of evidence of a leak
- **Sampling connection:** Equip with a closed-purge or closed-vent system that returns the purged hazardous waste to the hazardous waste management line
- **Open-ended line:** Equipped with a cap, plug, second valve, etc.

Subpart BB: In Case of Leak



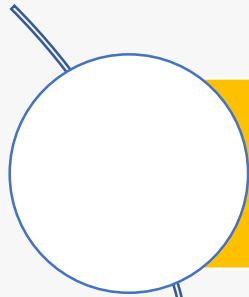
Recordkeeping

- Representative waste determination for all waste streams (worst case)
- All components (tanks, containers, equipment) must be equipped with an identifying tag
- Written monitoring plan (referencing above tags) detailing:
 - Location
 - Type of equipment
 - Waste VOC percentage
 - Emission control method
 - Frequency of inspection
 - Mechanism of compliance
- Vent control devices: Documentation of design and performance

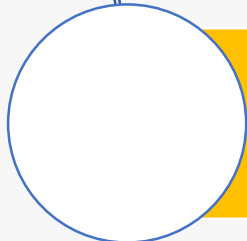
In the event of a leak:

- ☐ Instrument, operator, and equipment identification
- ☐ Date of leak detection (including date evidence of potential leak was found, if applicable)
- ☐ Date of each repair attempt
- ☐ Repair methods applied to each attempt
 - ☐ If delayed, state “repair delayed” and reason for delay
 - ☐ Documentation supporting delay of repair
 - ☐ Expected date of successful repair
- ☐ Date of successful repair

Hazardous Materials Business Plan Outline



Reportable Thresholds



Combustible Metals / Lab Pack



Updating/Recertifying HMBP

Reportable Thresholds

HM Reportable Thresholds...

- ≥ 55 gal of liquid HM
- ≥ 500 lbs of solid HM
- ≥ 200 ft³ of gaseous HM



*HSC, Division 20, Chapter 6.95, Article 1, Section 25507
SDCC, Division 8, Chapter 11, Sections 68.1101-68.1120*

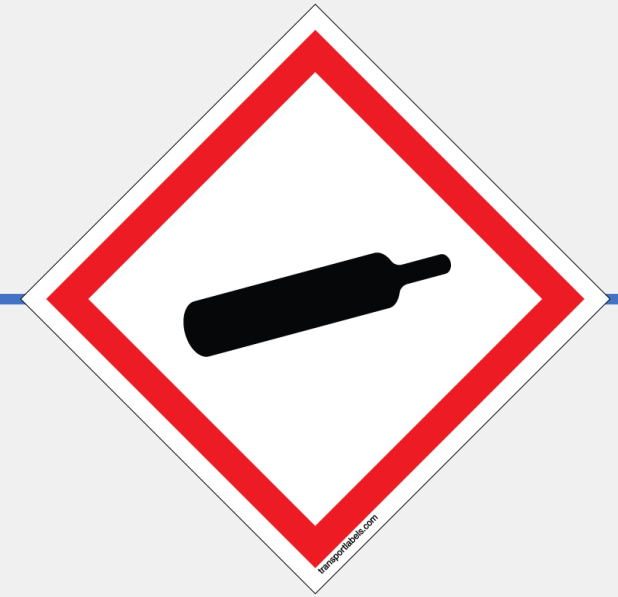
Lower HM Reportable Thresholds...

- Any amount of HW and MW generated
- \geq TPQ of EHS substances
- > 0 of highly toxic compressed gases with a TLV of 10 ppm
- ≥ 100 lbs of combustible metals/alloy
- > 0 pyrophoric/water reactive - metal or alloy *(for example zinc powder/magnesium)*

Reportable Thresholds

Higher Reportable HM Thresholds...

- Inert gases
 - $\geq 1,000 \text{ ft}^3$ (sole health and physical hazard: asphyxiation hazard only and pressure release)
- Irritants/sensitizer
 - $\geq 5,000 \text{ lbs}$ solids or $\geq 550 \text{ gal}$ liquids (sole hazard: irritant or a sensitizer)
- Refrigerant gases
 - $\geq 1,000 \text{ ft}^3$ non-flammable



Reportable Thresholds

Higher Reportable HM Thresholds...



- Lubricating oil
 - Report if volume of each type is > 55 gal OR the total volume for all types > 275 gal
- Fluid in hydraulic systems
 - Report if the combined storage capacity of petroleum products (including hydraulic oil) is $\geq 1,320$ gal
- Oil-filled electrical equipment
 - Report if the combined storage capacity of petroleum products (including oil from electrical equipment) is $\geq 1,320$ gal

Combustible Metals / Lab Pack Reporting

Metals

- Pyrophoric/water reactive: Any amount
- Combustible dust, flammable solid, magnesium: 100 pounds
- Explosive potential molten form: 500 pounds

*Definitions from California Fire Code

In CERS: Combine based on hazard type and physical state

Lab Pack

- Routine disposal of expired/unused reagents and materials (not associated with routine hazardous waste processes)

In CERS: Combine based on physical state

Updating / Recertifying HMBP



Contact Information

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- Darren.Thai@sdcounty.ca.gov - EHS III for North San Diego