



Regulatory Basics of Universal Waste

TU-H4

March 25, 2025

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Objectives

- What is a Universal Waste?
- What is NOT a Universal Waste?
- Handler Management Standards
- What constitutes Treatment?
- Transporter and Export Requirements

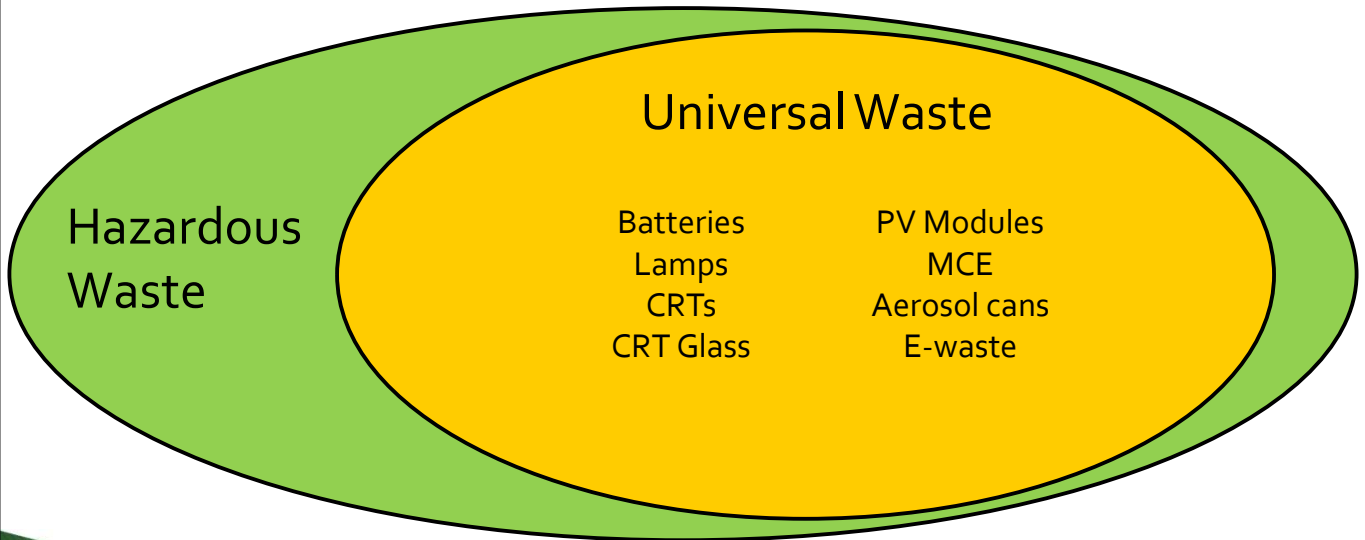


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22 CCR 66273.1

What is a Universal Waste?



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Types of Universal Wastes (UW)

California UW (22 CCR, Div 4.5, Ch 23)	Federal UW (40 CFR, Ch I, Subch I, Part 273)
Batteries	Batteries
Lamps	Lamps
Mercury-Containing Equipment	Mercury-Containing Equipment
Aerosol Cans*	Aerosol Cans
--	Pesticides
Electronic Devices	--
CRTs	--
CRT Glass	--
PV Modules	--

* located in HSC 25201.16



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22 CCR 66273.2
22 CCR 66273.9

Batteries

A device consisting of one or more electrically connected electrochemical cells that is designed to receive, store, and deliver electric energy.



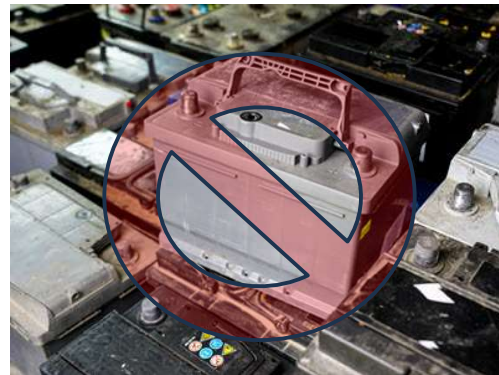
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22 CCR 66266.80-81

Batteries

NOTE: Automotive-type lead-acid batteries are NOT managed as universal waste.



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22 CCR 66273.4
22 CCR 66273.9

Mercury Containing Equipment (MCE)

Certain products listed in the definition in 22 CCR 66273.9 that contain mercury.



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22 CCR 66273.5
22 CCR 66273.9

Lamps



The bulb or tube portion of an electric lighting device. A lamp is specifically designed to produce radiant energy.

- Includes products containing lamps.

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Aerosol Cans

A nonrefillable receptacle that contains a gas under pressure which expels a liquid, paste, or powder and is fitted with a self-closing release.



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Electronic Devices (E-waste)

Any electronic device that is identified as hazardous waste (specifically for toxicity or mercury).



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22 CCR 66260.201

Covered Electronic Devices (CEDs)

Any device listed in 22 CCR 66260.201(e) with screen size >4 inches



Examples:

- CRTs, CRT glass, CRT devices
- Laptops with LCDs, Monitors
- TVs (CRT, LCD, Plasma)
- OLED-containing devices
- LCD-containing tablets, and smart displays

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22 CCR 66273.6

22 CCR 66273.9

Cathode Ray Tubes (CRTs)

A vacuum tube or picture tube used to convert an electrical signal into a visual image.



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22 CCR 66273.7
22 CCR 66273.9

Cathode Ray Tube (CRT) Glass

Any glass released or derived from the treatment or breakage of one or more CRTs or CRT devices.



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22 CCR 66273.7.1
22 CCR 66273.9

Photovoltaic (PV) Modules

A device designed to convert solar radiation into electrical energy. Includes integrated components that cannot be separated without breaking the PV module glass.



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What is NOT a Universal Waste?

Major appliances:

- Mostly metal
- Contain “Materials that Require Special Handling” (MRSH)
- Managed under the Metallic Discards Act
- Must be sent to a Certified Appliance Recycler (CAR) for MRSH removal



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What is NOT a Universal Waste?

“Electrical waste”:

- Waste electronic devices that are not hazardous.

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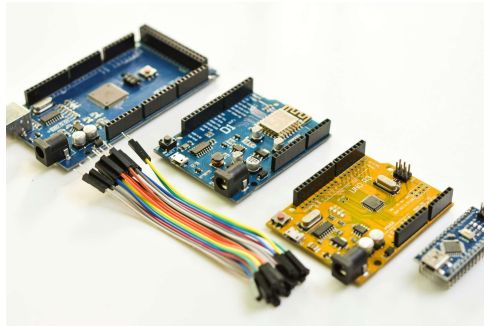


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What is NOT a Universal Waste?

Printed circuit boards:

- Once removed from a universal waste, contain and label as "Residual Printed Circuit Boards"
- May then be managed as scrap metal



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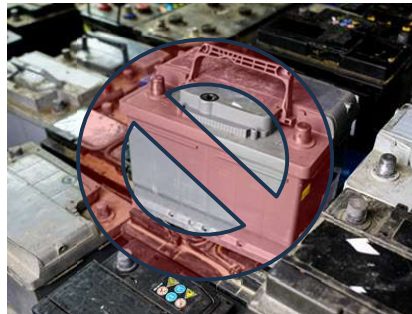
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What is NOT a Universal Waste?

22 CCR 66273.2 (b)(1)(A)
22 CCR 66266.81

Lead-acid car batteries:

- Package according to U.S. DOT standards
- Mark each with accumulation start date
- Track receipt and offsite shipments using bills of lading



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What is NOT a Universal Waste?

Universal waste being disposed of
(e.g., destined to be landfilled)



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22 CCR 66273.9

Universal Waste Handlers

A UW Handler is:

- A generator of UW
- A facility that receives UW and sends it on ("collectors")
- A facility that meets the regulatory authorization requirements for treating UW ("recyclers")

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22 CCR 66273.32 (c)

UW Handlers: Notifications

Notification to DTSC 30+ days **PRIOR** to accepting:

- Electronic Devices, CRTs, and CRT glass
 - Recommend using UWED

<https://hwts.dtsc.ca.gov/uwed/>



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22 CCR 66273.32 (e)

UW Handlers: Notifications

Notification to DTSC 30+ days **PRIOR** to accepting:

- PV modules
 - Recommend using PV module notification form

[Annual Report Form for UW PV modules](#)

[PV modules Additional Shipped-to Location Template for the Annual Report](#)

Submit the written annual report to:

Department of Toxic Substances Control
Universal Waste Notification and Reporting Staff
P.O. Box 806
Sacramento, CA 95812-0806
ATTN: Universal Waste Handling Activities

<https://dtsc.ca.gov/photovoltaic-modules-pv-modules-universal-waste-management-regulations/>



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22 CCR 66273.32 (c), (e)

UW Handlers: Notifications

Include in notification:

- General facility info
- Sources of Universal Waste

Notifications are **location specific**

Notifications do not expire



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22 CCR 66273.32 (a)-(b)

UW Handlers: ID Numbers

When is an ID Number required?

- Before a UW Handler accumulates 5,000 kg of UW

2 Types of ID Number

- EPA → For UW that is also RCRA hazardous waste
- State → For UW that is non-RCRA Hazardous Waste



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Types of Universal Wastes (UW)

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--	Pesticides
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CRTs	--
CRT Glass	--
PV Modules	--

* located in HSC 25201.16

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UW Handlers: General Requirements

22 CCR 66273.33 -
22 CCR 66273.33.6

General requirements for all UW:

- Manage UW in a way that prevents breakage and releases
- Use appropriate containment
- Clean up and contain any accidental breakages
- Determine if residuals from handling or spill cleanups are HW and manage appropriately



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22 CCR 66273.33 -
22 CCR 66273.33.6

UW Handlers: Packaging

Containers must be:

- Structurally sound
- Lack evidence of leakage, spillage, or damage
- Adequate to prevent breakage
- Compatible (especially important for batteries)
- Closed (lamps, aerosol cans)
- Some MCE requires sealed/airtight containment



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22 CCR 66273.33 -
22 CCR 66273.33.6

UW Handlers: Packaging



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UW Handlers: Labeling

Must use specific language

- “Universal Waste – [Regulatory Name]”

Options available:

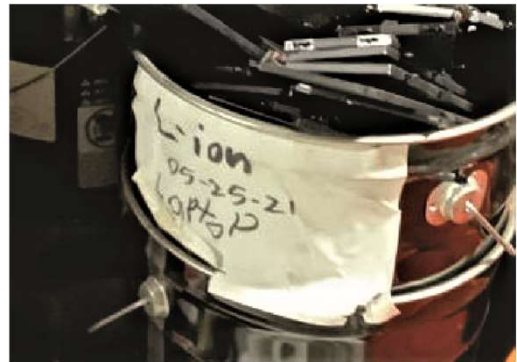
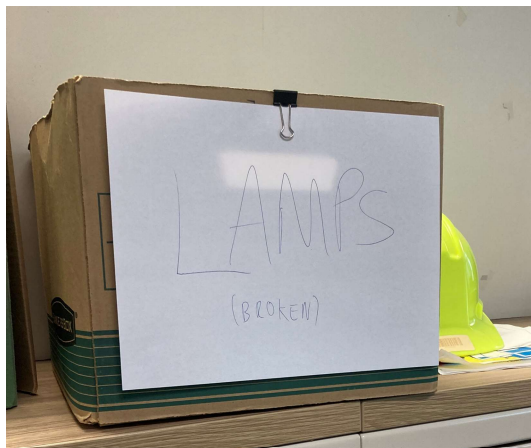
- Label individual items OR containers
- Use printed labels OR handwritten labels
- For Electronic Devices, CRTs, CRT glass, and PV modules, can use overhead signage



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UW Handlers: Improper Labeling Examples



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Handling



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22 CCR 66273.33(a)

UW Handling: Batteries

Allowable handling activities:

- **Sorting** by type
- **Mixing** types in one container
- **Discharging**
- **Regenerating**
- **Disassembling** into individual batteries or cells
- **Removing** from consumer products
- **Removing** electrolyte



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22 CCR 66273.33(b)

UW Handling: Lamps



Allowable handling activities:

- Handlers may remove lamps from items in a way that prevents breakage
- **Handlers MUST store UW lamps in closed containers**

NOPE!

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22 CCR 66273.33(c)

UW Handling: MCE

Allowable handling activities:

- Comply with all applicable requirements for handling hazardous materials;
- Disclose mercury handling activities;
- Comply with the location standards and seismic and precipitation design standards;
- Accumulate only in locations zoned commercial or industrial

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22 CCR 66273.33.5(a)

UW Handling: Electronic Waste

Allowable handling activities:

- Handlers must use containment
 - Plastic-wrapped pallets are acceptable
- Handlers can remove user-replaceable parts without notifying as a dismantler
- Removal of non-user replaceable parts is dismantling and requires notification



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22 CCR 66273.33.5(b)

UW Handling: CRTs

Allowable handling activities:

- Handlers must use containment
- Handlers must use packing materials as necessary to prevent breakage



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HSC 25201.16

UW Handling: Aerosol Cans

Allowable handling activities:

- Handlers must use containment
- Containers must remain closed unless cans are being added or removed.



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22 CCR 66273.35

UW Handling: Accumulation Time

Accumulation for up to one year

Must be able to demonstrate accumulation time

1. CLEARLY mark items/containers with accumulation start date; or
2. CLEARLY mark accumulation area with accumulation start date; or
3. Maintain a physical or digital inventory system

NO EXTENSIONS!



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UW Handlers: Staff Training

Staff must be thoroughly familiar with proper universal waste management and emergency response procedures

The training plan must be **location specific**



UW Handlers: Staff Training

Training must include:

- Regulatory requirements for managing UW
- Site-specific UW management practices
- Hazards associated with UW
- Responding to releases

Staff must be retrained annually



22 CCR 66273.39 (d)
22 CCR 66273.36 (d)

UW Handlers: Recordkeeping

Tracking Shipments (in and out)

- 3 years!

Training Records

- 3 years after employee last handled
UW



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22 CCR 66273.9

Treating Universal Waste

What is treatment?

- Changes to physical, chemical, or biological characteristics
- Reduction of harmful properties



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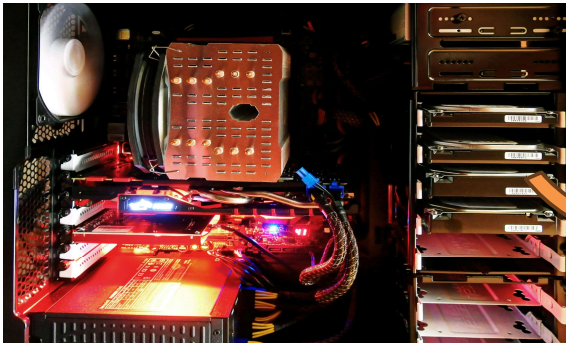
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22 CCR 66273.71

Treating Universal Waste

Three levels of authorized treatment:

1. Removal of user-replaceable parts



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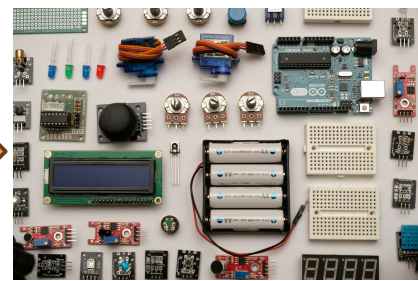


22 CCR 66273.72

Treating Universal Waste

Three levels of authorized treatment:

2. Disassembling/draining
(removing non-replaceable components)



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22 CCR 66273.73

Treating Universal Waste

Three levels of authorized treatment:
3. Processing



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22 CCR 66273.9
22 CCR 66273.73

Treating Universal Waste

Additional notes:

- Cutting chords off devices is treatment
- Using heat and chemicals is **NOT** covered by any of the authorizations

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22 CCR 66273.74 (a)(1)

UW Treatment Notifications: General

Notification to DTSC 30+ days **PRIOR** to dismantling or processing:

- Electronic Devices, CRTs, and CRT glass
 - Recommend using UWED

<https://hwts.dtsc.ca.gov/uwed/>



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22 CCR 66273.74 (a)(4)

UW Treatment Notifications: General

Notification to DTSC 30+ days **PRIOR** to dismantling or processing:

- PV modules
 - Recommend using PV module notification form

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22 CCR 66273.74 (a)(1) & (4)

UW Treatment Notifications: General

For dismantling or processing

Include in notification:

- General facility info
- Sources of universal waste
- Types of universal waste being treated
- Description of treatment processes
- Documentation that property owner was notified

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HSC 25201.16(j)

UW Treatment Notifications: Aerosol Cans

Notification to CUPA to process aerosol cans

Notify **no later than** the date processing begins

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HSC 25201.16(j)

UW Treatment Notifications: Aerosol Cans

Must include:

- General facility info
- Description of processing activities
- Description of residual hazardous characteristics and management

Notifications are **location specific**



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22 CCR 66273.50-
22 CCR 66273.56

UW Transporter Requirements

Easier to discuss what's NOT required!

- No notification
- No ID number
- No hazardous waste transporter registration
- No hazardous waste manifest



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UW Transporter Requirements

Ensure items are appropriately packaged

May hold UW at transfer facility up to 6 days

- 10 days if zoned industrial

Shipping paper required if DOT hazardous material

- DOT Hazardous Materials Table in 49 CFR 172.101



UW Transporter Requirements

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§ 172.102)	(8)			(9)		(10) Vessel stowage	
							Packaging (§ 173.***)			Quantity limitations (see §§ 173.27 and 175.75)		Location	Other
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only		
W	Batteries, nickel-metal hydride see Batteries, dry, sealed, n.o.s. for nickel-metal hydride batteries transported by modes other than vessel	9	UN3496		9	340					A	25	
	Batteries, wet, filled with acid, electric storage	8	UN2794		8	A51	159	159	159	30 kg	400 kg	A	53, 58, 146
	Batteries, wet, filled with alkali, electric storage	8	UN2795		8	A51	159	159	159	30 kg	400 kg	A	52, 146
	Batteries, wet, non-spillable, electric storage	8	UN2800		8		159a	159	159	No limit	No limit	A	
	Battery fluid, acid	8	UN2796		II 8	A3, A7, B2, B15, IB2, N6, N34, T8, TP2	154	202	242	1 L	30 L	B	
	Battery fluid, alkali	8	UN2797		II 8	B2, IB2, N6, T7, TP2, TP28	154	202	242	1 L	30 L	A	29
	Battery lithium type, see Lithium batteries etc												
Battery-powered vehicle or Battery-powered	9	UN3171		9	134, 360	220	220	None	No limit	No limit	A		



Exporting UW out of California

Some California universal wastes are not universal waste in other states

- E.g. PV modules

Once a California UW leaves California, it is subject to all other applicable requirements (federal and other state)



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22 CCR 66273.40
PRC 42476.5

Exporting UW out of the United States

General notification requirement: Export of e-waste, CRTs, CRT glass	Extra notification requirements: Export of CRTs, CRT glass, RCRA Hazardous Waste
<ul style="list-style-type: none"> • DTSC and CUPA Notification-60 days before shipment • Additional CED notification • Submit annual report to UWED (if applicable) by February 1 • Submit electronic export information to Automated Export System by March 1 	<ul style="list-style-type: none"> • RCRAinfo Waste Import Export Tracking System (WIETS) notification-60 days before shipment • Send copy of Acknowledgement of Consent to DTSC-within 30 days of receiving • Submit annual report to RCRAinfo WIETS by March 1



PRC 42476.5

Exporting Waste CEDs

Must notify DTSC **60+ days before** export from CA.

Must show:

- Legitimate recycling/disposal
- Attempts to locate in-state recycler
- Destination facility meets OECD requirements (foreign destination only)

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Any Questions?

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