

**Introduction to E-Waste Management in California**

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**What We'll Cover Today**

- CA definitions of universal waste & hazardous waste, and differences from federal definitions
- How CRTs and other e-waste are regulated in CA
- Recent emergency regulations for CRTs and CRT glass

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**Federal Definition of Universal Waste**

According to 40CFR 261.9:

1. Batteries (not from vehicles)
2. Mercury-containing equipment
3. Lamps
4. Pesticides

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**CA Definition of Universal Waste**

According to Title 22, California Code of Regulations, section 66261.9:

1. Batteries (not from vehicles)
2. Mercury-containing equipment
3. Lamps
4. Aerosol cans
5. CRTs
6. CRT glass
7. Electronic devices

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**What is an Electronic Device?**

- Computers
- Telephones
- Answering machines
- Radios and stereos
- TVs
- Tape players
- CD players
- VCRs

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**CA Definition of E-Waste**

There is no official definition.

**E-waste is an electronic device that is discarded**

→ The e-waste must be hazardous waste due to the characteristic of toxicity, or listed in Title 22

→ It is exempt from **full HW regulations** – as long as it is recycled!

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**Is E-Waste a UW under RCRA?**

No; California regulates e-waste differently than U.S. EPA

E-waste is UW in California, so is banned from general landfill disposal

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**E-Waste as Hazardous Waste**

- E-Waste is a subset of UW, *and* a subset of HW in California
- All e-waste is UW, but not all UW is e-waste
  - For example, batteries, lamps, and mercury switches are all UW, *but they are not e-waste*

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**What is E-Waste Hazardous for in CA/ Why is it Regulated?**

- Lead
- Mercury
- Copper
- Cadmium
- Chromium
- Zinc
- Other heavy metals

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### E-Waste Regulations

Found in California Code of Regulations, Title 22, Chapter 23

Require handlers to:

- Notify and report to DTSC
- Label and track e-waste
- Not hold over one year
- Train personnel
- Manage and contain to prevent release
- Some other requirements apply

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### Typical E-Waste Recycling Activities

- E-waste is dismantled and separated into *distinct components* (e.g., printed circuit boards and CRTs)
- Distinct components are further processed
- No heat or chemicals allowed in treatment *except* with an expensive permit

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### Who's Handling All the E-Waste?

- Over 100 recyclers (dismantling or treating)
- Over 1,000 collectors
- Self-storage facilities and e-waste collection events
- Individuals conducting curbside pick-up, scavenging, etc.

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### What about Export?

- CA incorporates the CRT Rule requirements into its regulations, but cannot independently enforce them
- Millions of pounds of e-waste exported from California ports comes from other states

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### Emergency Regulations for CRTs and CRT Glass

- Necessary to address the disposition of an increasingly problematic wastestream
- Primary objective: identify what's happening to all of the CRT glass (i.e., how it is being recycled, or disposed of)
- These emergency regs do not affect other types of UW

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### Industry Practice in CA

1. CRTs are often split by processors into funnel (RCRA) and panel (non-RCRA)
2. There is a demand for quality cullet (processed glass)
3. No CA recyclers have opted to dispose of CRT glass (*so far*)
4. Other uses for CRT panel glass are being pursued

New technologies for recovering lead are being developed (*out of state & out of country*)

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**Emergency Regs: Key Points**

1. The e-waste facility must know where the CRTs or CRT glass is being sent
2. The e-waste facility must know what will happen to the CRTs or CRT glass

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**Emergency Regs Q&A #1**

*Q. Who is subject to the CRTs/CRT glass emergency regs?*

A. Recyclers who dismantle or process CRT devices and CRTs

- Handlers that only accept/accumulate are *not* subject

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**Emergency Regs Q&A #2**

*Q. What expanded disposition options are allowed under the emergency regulations?*

A. CRTs/CRT glass may be recycled by means *other than* CRT glass manufacturing or smelting

- If recycling options don't exist, then CRTs/CRT glass may be disposed of as HW

→ Conditions apply!

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### Emergency Regs Q&A #3

*Q. How are e-waste recyclers regulated if they recycle CRTs or CRT glass by means other than lead smelting, or CRT glass manufacturing?*

A. They're regulated as **generators** of hazardous waste (under Chapter 12 of Title 22)

- Potential exclusions for use or reuse exist!

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### Emergency Regs Q&A #4

*Q. How are e-waste recyclers regulated if they choose to dispose of CRTs or CRT glass?*

A. Like generators of hazardous waste...  
with a potential exclusion for CRT panel glass

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### The Bottom Line

Can e-waste recyclers dispose of certain types of CRT glass in a class II or III landfill?

→ Yes. CRT panel glass may be disposed in a class II or III landfill if it meets **specific waste criteria** and **management and treatment standards**

- Whole CRTs do not qualify

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**What's Next for CRT Management in CA?**

- Current emergency regulations expire in October 2014
- Recycling options will be reevaluated starting early next year
- DTSC (and CalRecycle) continue to listen to industry and other BDOs on what recycling technologies may become available

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**Questions?**

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