



Cathode Ray Tubes (CRTs) Recycling: Recent EPA Interpretations & CT's Policy

1. Legitimate Use/Reuse of CRT Glass in Ceramic Tiles
2. Treatment and Disposal of CRT Glass in Non-HW Landfill
3. Connecticut's Policy on CRT-glass Management

1st EPA Interpretation: Sept 10, 2014 - Sims Recycling Solutions

- ▶ **Question**: Can leaded glass from CRT's be used as an effective substitute for lead oxide in the production of ceramic tiles.
- ▶ EPA's response to Sims: Has to meet 4 legitimate recycling factors:
 - ▶ Hazardous secondary material provides a useful contribution to a recycling process (substitutes up to 15-20% raw material)
 - ▶ Recycling process produces a valuable product (process complies with EU standards of safety and used in wall and flooring tiles)
 - ▶ Hazardous secondary material must be managed as a valuable commodity
 - ▶ Product of the recycling process is comparable to a legitimate product (contaminant levels below EU standards)

http://www.epa.gov/osw/hazard/recycling/electron/fnl_ltr_sims.pdf



▶ EPA Concludes:

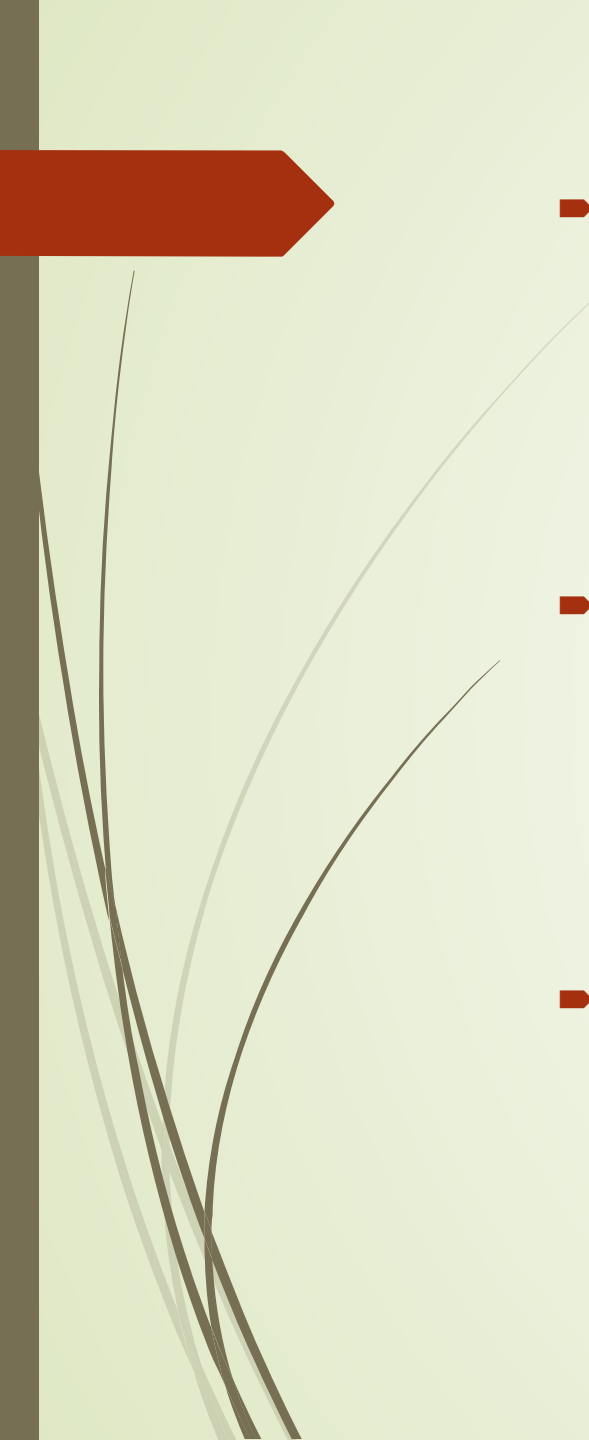
- ▶ Leaded glass can be legitimately used as an effective substitute and the glass would be excluded from solid and hazardous waste regulations under 40 CFR 261.2(e). However,
 - ▶ State regulations may be more stringent (CT adopts 40 CFR 261.2(e) but requires that materials be marked with the accumulation date)
 - ▶ Export rules still apply as OECD lists it as a “hazardous waste” for OECD countries as per 40 CFR 262.82
 - ▶ Case-by-case analysis. EPA’s conclusion was based on the test results for Pb & Cd that support legitimate recycling in Spain (not U.S.)



2nd EPA Interpretation: Sept 10, 2014 – Sony Electronics, Inc.

- ▶ How would does RCRA apply to CRT glass used for Alternate Daily Cover (ADC) at non-RCRA landfills?
- ▶ EPA responded to 4 specific questions posed by Sony
- ▶ EPA's interpretation intended to cover discarded CRT glass from businesses (not homeowner exempt or CESQG wastes (federally))

http://www.epa.gov/osw/hazard/recycling/electron/fnl_itr_%20adc.pdf

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- ▶ **Questions 1&2:** Is grinding and stabilizing CRT glass considered “treatment” and does it require a RCRA Part B permit to treat D008 waste generated from CRT-glass?
 - ▶ Yes, EPA considers it treatment of a solid waste that exhibits D008 characteristic AND RCRA Part B permit required. However, generators may treat in accumulation tanks or containers without a permit if determined to be non-hazardous by EPA method 1311 testing and waste meets LDR standards.

 - ▶ **Question 3:** At which point downstream must a waste determination be done on CRT glass when not managed under CRT rule or other exclusion?
 - ▶ Considered a HW at the point of generation
 - ▶ “point of generation” means – the point at which this material is deemed discarded
 - ▶ Generator required to make a hazardous waste determination when material is considered discarded (and thus a solid waste)

 - ▶ **Question 4:** After treatment/stabilization, can the D008 listing be removed and the waste be disposed in non hazardous landfill such as directly for ADC?
 - ▶ If glass no longer exhibits a hazardous characteristics, and
 - ▶ If glass has been treated in accordance with RCRA’s 40 CFR part 268 LDRs.



Connecticut's Policy on CRT Glass Management

- ▶ Residential/ State Program "CEDs" – prohibits disposal, including components (CRT glass); consistent with CT waste management hierarchy [CGS 22a-228(b)].
- ▶ Non-residential Collection – not prohibited to dispose "non-residential business waste" in RCRA landfill?!!
- ▶ Commingled Residential & Business CRT Glass – mixing residential with business wastes would subject the generator to RCRA regulations.
- ▶ RCRA generators may have their CRT glass treated or generators can treat on-site in RCRA accumulation tanks and containers but must render glass non-haz and meet LDR requirements. Post-treatment may be sent to non-hazardous landfill as ADC.
- ▶ Federal CRT Rule not adopted in CT. CT currently evaluating EPA's rule for usefulness in CT.