



# NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

## ENVIRONMENTAL GUIDANCE DOCUMENT

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### Aerosol Can Waste

This Environmental Guidance Document provides general and specific technical waste management guidance on aerosol can wastes. The discussion focuses on “empty” aerosol containers. Empty aerosol cans that are household waste are not considered hazardous waste.

1. What is an empty container?

- Title 128, Chapter 2, §015 gives the definition of *empty containers* as it applies to the Resource Conservation and Recovery Act (RCRA). The next sentence underlines the elements of “RCRA empty.” While the aerosol can might have all its contents removed using practices commonly employed to remove materials from that type of container, the generator must demonstrate that the aerosol can *also* has no more than one inch of residue or no more than 3% by weight of the total capacity remaining. A 16-ounce aerosol can should contain no more than 0.48 ounces of residual hazardous waste in order to be considered “RCRA empty.”

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*Produced by: Nebraska Department of Environmental Quality, P.O. Box 98922, Lincoln, NE 68509-8922; phone (402) 471-2186. To view this, and other information related to our agency, visit our web site at [www.deq.state.ne.us](http://www.deq.state.ne.us). This Material is intended for guidance purposes only. It is not meant to substitute for the regulations found in Title 128 – Nebraska Hazardous Waste Regulations or other applicable Nebraska environmental regulations. This replaces Environmental Guidance Document #00-067 of the same name.*

2. Is the “RCRA empty” aerosol can a hazardous waste?

- “RCRA empty” aerosol cans are usually not hazardous waste due *solely* to the substances they *once* contained. If the empty container held a P-listed hazardous waste then the can would be P-listed (Title 128, Chapter 2, §015.05) until it was rendered empty by triple rinsing the contents (Title 128, Chapter 2, §015.05). A P-listed aerosol product would be very rare.
- The “RCRA empty” aerosol can of and by itself is usually considered hazardous waste because it exhibits the characteristic of reactivity (D003). That is, it is capable of detonation<sup>1</sup> or explosive<sup>2</sup> reaction if it is subjected to a strong initiating source *or it is heated under confinement* (Title 128, Chapter 3, §009.01F). The empty aerosol cans generated in a month would normally need to be included in a facility's monthly hazardous waste totals unless they are managed as scrap metal.
  1. *Webster's Ninth New Collegiate Dictionary* (Springfield, Merriam-Webster, Inc., 1991), 346.
  2. *Ibid.*, 438.
- Title 128, Chapter 2, §015 excludes from hazardous waste regulation hazardous waste remaining in a “RCRA empty” container. If material is removed from the container that material no longer meets the exclusion condition as stated unless it is a U or P listed commercial chemical product. Title 128, Chapter 3, §015.03 states commercial chemical product residue remaining in a “RCRA empty” container cannot be U or P listed hazardous waste.
- **Note:** An aerosol can that is not “RCRA empty” is almost always a D003 reactive waste, but it is also very often a hazardous waste due to the contents of the can. Three examples of cans that are often thought to be “empty” but are not are 1) an aerosol can that has lost its spray cap before the can has been used up, 2) an aerosol can that fails to spray before the contents are used up, or 3) an aerosol can that the user just doesn't want any more before the contents are used up.
- **Scrap Metal.** If the aerosol can is essentially empty (no significant amount of liquid) and is being recycled for scrap metal, then it may be *excluded from being hazardous waste* and the issue of reactivity is moot. An unpunctured aerosol can may be managed as scrap metal if it is “RCRA empty.” Some scrap dealers will not accept “RCRA empty” cans that are not punctured. In this case, the unpunctured “RCRA empty” can may still be managed as scrap metal **prior** to puncturing because the hazardous waste regulations allow altering scrap metal on-site to enhance its value or to improve its handling.

- Puncturing a “RCRA empty” aerosol can is considered processing and creates “excluded scrap metal” that is excluded from the definition of solid waste. (See Title 128, Chapter 2, §002.09, §002.08, and §008.14.)
- An unpunctured “RCRA empty” aerosol can prior to puncturing is unprocessed scrap metal if it will be sent off as scrap metal. That can is also exempt from hazardous waste regulation per Title 128, Chapter 7, §002.03. In this case the scrap metal is still a solid waste with a specific exemption and is subject to speculative accumulation.
- **Caution:** In order for an aerosol can to be eligible for any scrap metal exemption, it **first must be “RCRA empty.”** If any aerosol cans are found in a container or pile of scrap metal that are not “RCRA empty,” there could be an assumption that hazardous waste is being improperly managed and disposed.
- The puncturing of a non-empty aerosol can in order to empty the container is analogous to taking a full can of acetone and placing the contents into a suitable container and then placing the “RCRA-empty” container in the trash as a non-hazardous waste (Title 128, Chapter 2, §015). That said a hazardous waste or a container of hazardous waste commingled with scrap metal is not disallowed so long as appropriate SQG or LQG accumulation requirements are met for the container of commingled scrap and hazardous SQG or LQG waste and the materials are compatible.

### 3. Who is affected?

- Once you’ve determined the aerosol cans are hazardous waste, you need to determine your generator status. Household hazardous waste is not regulated under RCRA. Conditionally exempt small quantity generators (CESQG) are not subject to any of the land disposal restrictions described below. A CESQG generates a total of 220 pounds or less of hazardous waste in a month. CESQGs are not subject to any of the small quantity generator (SQG) or large quantity generator (LQG) hazardous waste accumulation and labeling requirements or the hazardous waste manifesting requirements. A SQG generates over 220 and less than 2,200 pounds of hazardous waste in a month. A LQG generates 2,200 pounds or more of hazardous waste per calendar month.

### 4. What can you put in the trash?

- CESQGs may send up to 43 pounds of hazardous waste to a regulated municipal landfill per day. Check your local landfill first. Some landfills, counties, and municipalities have more restrictive rules regarding waste disposal. *This means a CESQG may place its unpunctured, “RCRA empty” aerosol cans in the trash if they have landfill approval.* The department encourages recycling empty aerosol cans as scrap metal when feasible.

- *Punctured and drained aerosol cans may be disposed in the trash.* This applies to hazardous waste generators of all sizes. This does not apply to aerosol cans that contained acutely hazardous waste (P-listed). The department encourages recycling the empty aerosol cans as scrap metal when feasible.
- Small quantity and large quantity generators of hazardous waste must manage unpunctured, “RCRA empty” and non-empty aerosol cans, at a minimum, as D003 reactive hazardous waste or as scrap metal. *SQGs and LQGs must not place these aerosol cans in the trash.*

#### 5. What about aerosol can puncturing?

- The following discussion applies to aerosol cans not being managed as scrap metal.
- Aerosol can puncturing devices may be used to completely empty aerosol cans and also make them non-reactive. This is an allowed form of treatment if the puncturing operation is performed in a closed container. Most of the commercially available aerosol can puncturing systems meet that criteria. A punctured and drained aerosol can no longer exhibits the characteristic of reactivity and, unless it held “acutely hazardous” waste (this would be extremely unusual), may be disposed in the trash. The department recommends recycling drained aerosol cans rather than disposing them.
  - If a SQG or LQG is treating aerosol cans to remove the characteristic of reactivity, the generator must develop and follow a written waste analysis plan (WAP) according to the land disposal restrictions (LDRs). The plan must be kept on site. See Title 128, Chapter 20, §005.01E1 for the WAP contents. **Note: There is no need for a WAP if only legitimate scrap metal aerosol cans are being punctured – these cans are not hazardous waste.**
  - Puncturing the can causes deactivation of the characteristic of reactivity and meets the DEACT treatment requirement of Title 128, Chapter 20, Table 9, Waste Code D003, “Explosives Subcategory based on Chapter 3, 009.01F through 009.01H.” This is a LDR treatment standard.
    - Since a “RCRA empty” aerosol can, by definition, cannot contain hazardous waste, the can itself does not have any underlying hazardous constituents so there are no Section 012 standards to meet as shown in the Nonwastewaters column for this Subcategory of D003 waste.
    - If the aerosol can was not “RCRA empty” prior to puncturing, the puncturing step creates a “RCRA empty” container that is not reactive and excluded from further hazardous waste regulation. As

a result, there is no requirement to identify or treat for underlying hazardous constituents as stated in the Nonwastewaters column for this Subcategory of D003 waste.

- The WAP should include the above discussion.
- There is no requirement to discuss detailed chemical analysis in the WAP for simple deactivation (DEACT) done by puncturing an aerosol can to render it non-hazardous and to meet LDR treatment standards.
- Once the can no longer exhibits a characteristic of hazardous waste and meets the land disposal restrictions, a one-time notification and certification must be placed in the generator's files and also sent to the NDEQ Waste Management Section if the punctured cans go to a landfill. See Title 128, Chapter 20, §006.04 et al for a full description of the requirements. Do not forget to include in your notification the name of the landfill receiving your waste if you do send the punctured cans to a landfill. **Note: This paragraph does not apply if the punctured cans are managed as scrap metal.**
- The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requires empty pesticide containers be disposed per label instructions. If the label states not to puncture, then do not puncture. Pesticides include insecticides and herbicides. FIFRA applies to all hazardous waste generators including CESQGs.

#### 6. More aerosol can puncturing considerations.

- The contents collected in the aerosol can puncturing drainage collection drum need to be correctly characterized. All waste generators must determine the quantity of hazardous waste they generate in a calendar month.
  - A log may be kept listing what chemicals are being placed in the drum. It is important the facility not only be able to state the correct waste codes, but also be able to identify all underlying hazardous constituents (UHCs) when that is appropriate (Title 128, Chapter 20, §006.01). Identification of UHCs is another LDR requirement and does apply to most *characteristic* hazardous waste that is drained into the drainage collection drum.
  - Without a good accounting system, a facility may put itself in the position of violating land disposal restriction regulations. (Conditionally exempt small quantity generators are not required to meet land disposal restrictions.)
- While not required by Title 128, we recommend a volatile organic compound (VOC) filter be used on the collection drum to control VOCs.
  - If used, the filter should be changed before it becomes ineffective.

- The spent filter requires a waste determination. Test for any hazardous waste toxicity characteristic (TC) constituents that are present in the products that are collected from the empty aerosol cans. TC hazardous wastes are those 40 chemicals at Table 3 of Title 128, Chapter 3. For example, if empty aerosol paint cans contained methyl ethyl ketone (MEK), the MEK would normally be expected to be present in the VOC filter at some level. MEK is a TC contaminant, hazardous waste number D035.
- Aerosol can puncturing collection drums may be managed as a satellite accumulation container per Title 128, Chapter 9, §007.04. The waste must be accumulated at or near the point of generation under the control of the operator or operators of the process generating the waste. An aerosol can puncturing operation may meet satellite accumulation requirements if persons assigned to handle empty aerosol cans perform the operation. The collection drum must also be in an area so that the collection container is under their control.
- The collection container must be closed unless adding or removing waste. This is true for all hazardous waste accumulation containers at SQGs and LQGs. The department generally considers such drums closed if the puncturing device lid is closed and secured by the setscrew and a VOC filter is in place.

## 7. Waste codes.

- Material removed from a “RCRA empty” aerosol container.
  - If the removed material exhibits a hazardous waste *characteristic* (ignitable, reactive, corrosive, or toxic), it is considered newly generated characteristic hazardous waste. The waste is considered to be generated at the time the can was punctured. The appropriate waste codes must be used and UHCs identified as appropriate. Even CESQGs must count any hazardous waste generated towards their monthly total.
  - Residue coming from a container that has held a commercial chemical product (CCP) does **not** carry a U or P listing if the container was already “RCRA empty” (Title 128, Chapter 3, §015.03). However, if the residue exhibits a characteristic of hazardous waste such as ignitability or toxicity, then the contents would be hazardous waste due to that characteristic or characteristics regardless of any listing.
- Material removed from an aerosol container that was not “RCRA empty.”
  - If the removed material exhibits a hazardous waste *characteristic* (ignitable, reactive, corrosive, or toxic), it is considered newly generated characteristic hazardous waste. The waste is considered to be generated at the time the can was punctured. The appropriate waste codes must be used and UHCs

identified as appropriate. Even CESQGs must count any hazardous waste generated towards their monthly total.

- If the removed materials are CCPs, these *would be “U” or “P” listed wastes*. For example: If a non empty aerosol can of “Acme Super Solvent” trichloroethylene were punctured, the correct waste code for the disposed residual solvent would be U228, not F001 or F002. (Remember, the solvent coming out of the punctured aerosol can is not a “spent” solvent -- it is unused, but still usable solvent.) Also note that CCPs on the “U” or “P” lists are technical grade (“pure”) or sole active ingredient. Using the same example, if the MSDS of the above “Acme Super Solvent” trichloroethylene aerosol showed both trichloroethylene and carbon dioxide, it would be a U228 because the CO<sub>2</sub> is not an active ingredient -- it is a propellant, and the trichloroethylene is the solvent – the sole solvent. On the other hand, if an aerosol can held two active ingredients, the disposed solvent is not “U” or “P” listed waste. For example, if the aerosol can held spray solvent and the ingredients were xylene, toluene, and CO<sub>2</sub>, the disposed solvent would not be U239, U220, F003, or F005. The disposed solvent would be a D001 hazardous waste for ignitability. Even CESQGs must count any hazardous waste generated towards their monthly total.

8. Note that CESQGs are *not* required to meet hazardous waste storage requirements if the total facility *accumulated* CESQG hazardous waste is less than 2,200 pounds. However, as a best management practice, the department recommends CESQGs routinely manage their hazardous waste as close to SQG requirements as practical. In addition to safer management of hazardous materials, this practice also serves to keep the generator in compliance if it becomes an episodic SQG.

### **HELPFUL WEB SITES:**

- Title 128 – Nebraska Hazardous Waste Regulations: <http://www.deq.state.ne.us/> and click on “Rules and Regulations”
- MSDS information: <http://www.msdssearch.com/>

### **CONTACTS:**

- NDEQ Hazardous Waste Compliance Assistance (402) 471-8308
- NDEQ Waste Management Section (402) 471-4210