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Aerosol Cans as a Universal Waste: Manufacturer's Specification & Instruction

October 1, 2019

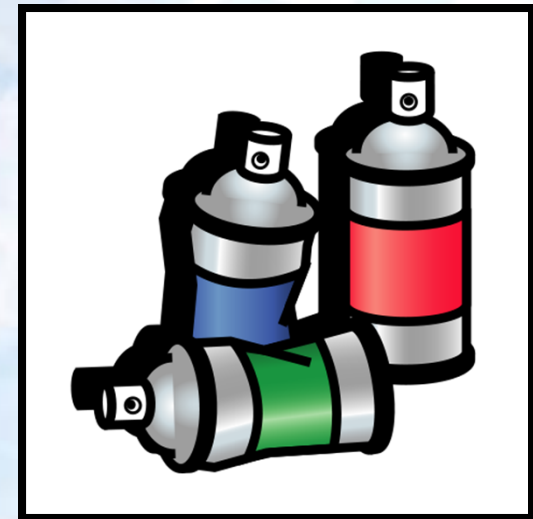
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What is an Aerosol Can?

> A typical aerosol can consists of several components:

- ❖ Can/Container
- ❖ Actuator/Button
- ❖ Valve
- ❖ Propellant
 - ◆ Compressed or liquefied gas
- ❖ Dip tube
- ❖ Product



> EPA proposed definition: *an intact container in which gas under pressure is used to aerate and dispense any material through a valve in the form of a spray or foam*

Waste Determinations - Current Federal

- > Currently, **nonempty** aerosol cans must be treated as RCRA hazardous waste if:
 - ❖ Propellant is flammable (typically); and/or
 - ❖ Contents contain P- or U- listed chemicals
- > “RCRA Empty” aerosol cans are excluded from regulation as hazardous waste under RCRA
 - ❖ State specific rulings may vary!

Waste Determinations - Current

Region VII States

- > Iowa - follows federal rule
- > MDNR
 - ❖ Aerosol can guidance document: PUB1084
 - ❖ RCRA Empty → General Trash
- > KDHE
 - ❖ Aerosol can guidance document: HW-2002-G2
 - ❖ RCRA Empty → General Trash
 - ◆ Exception - P-listed chemical residue
- > NDEE (formerly NDEQ)
 - ❖ Aerosol can guidance document: Doc. # 05-181
 - ❖ RCRA Empty & Punctured → General Trash
 - ◆ Exception - CESOGs may put empty, unpunctured aerosol cans in the trash if they have landfill approval.

New Proposed Rule - Background

- > Proposed adding aerosol cans to the universal waste rule for SQGs and LQGs
 - ❖ Some States already do this: CA, CO, UT, NM, MN, *OH*
- > 83 FR 11654
 - ❖ Rule proposed on March 16th, 2018
 - ❖ Comment period ended May 15th, 2018
 - ❖ **Expected to be finalized in Fall 2019 (?)**
- > Goals:
 - ❖ Ease regulatory burdens for persons who generate, transport, treat, recycle, or dispose of hazardous waste aerosol cans;
 - ❖ Promote the collection and recycling of aerosol cans; and
 - ❖ Encourage the development of municipal and commercial programs to reduce the quantity of these wastes going to municipal solid waste landfills or combustors.

Similar Requirements to Existing UW Regulations

> Container Management

- ❖ Accumulate waste aerosol cans in a container that is structurally sound, compatible with the contents of the aerosol cans, and lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions

> Labeling

- ❖ "Universal Waste - Aerosol Can(s)"
- ❖ "Waste Aerosol Can(s)"
- ❖ "Used Aerosol Can(s)"

> Accumulation Time Limits

- ❖ Up to one (1) year

The diagram shows a black cylindrical waste aerosol can with two labels. The top label is red and white, reading "Waste Aerosol Can(s)". The bottom label is green and white, reading "1/1/2019".

Universal Waste - Aerosol Can(s)
DRAFT - PROPOSED RULE

Keep waste aerosol cans in containers that are **structurally sound**, compatible with contents, and adequate to prevent leakage.

Keep containers **closed** except when adding or removing aerosol cans.

Label containers holding waste aerosol cans one of the following:
"Universal Waste - Aerosol Can(s)",
"Waste Aerosol Can(s)", or
"Used Aerosol Can(s)"

Date the container with the date the first waste aerosol can is placed in the container.

Ship the waste offsite to a recycling or disposal facility within **one year** of the date.

Maintain puncturing device manufacturer's specification onsite

Establish a written procedure for puncturing devices

Train employees on proper puncturing procedures

Trinity Consultants
Contact: Abby Perkins
Phone: (913) 894-4500
Reference: 83 FR 11654
Last Revised: April 19th, 2019

Unique Requirements under the Proposed Rule [40 CFR 273.13(e)(3)]

- > *A small quantity handler of universal waste who punctures and drains their aerosol cans **must recycle the empty punctured aerosol cans** and meet the following requirements while puncturing and draining hazardous waste aerosol cans:*
 - ❖ *Conduct puncturing and draining activities using a device **specifically designed to safely puncture aerosol cans and effectively contain the residual contents and any emissions thereof;***

Unique Requirements under the Proposed Rule [40 CFR 273.13(e)(3)]

- ❖ *Establish a written procedure detailing how to safely puncture and drain universal waste aerosol can (including proper assembly, operation and maintenance of the unit; segregation of incompatible wastes; and proper waste management practices to prevent fires or releases), maintain a copy of the manufacturer's specification and instruction onsite, and ensure employees operating the device are trained in the proper procedures;*

Example Manufacturer's Specification

> Aerosolv® Recycling System - Model 6000



Written Procedure

Written Procedure

Maintenance

Maintenance

Segregation Scheme

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Source: <https://www.aerosolv.com/aerosolv-aerosol-can-recycling-system-6000>

Example Maintenance Requirements

Aerosolv® 6000

- > Is your aerosol can puncturing device routinely checked by the Maintenance Department?

FILTER MAINTENANCE

- Replace the activated carbon filter insert (inside upper portion) and the coalescing filter with pull tab (inside lower housing) every 1000 cans or when the adsorption indicator no longer appears 'RED' when venting aerosol cans. More frequent change-outs may be necessary based on use and volume of the cans processed. (Aerosol cans with 25% or less content may not activate indicator.)



AEROSOLV MAINTENANCE

Periodic cleaning and greasing of the puncture pin will assure years of use. With constant, heavy usage, the puncture pin should be cleaned and greased once a month.

- To clean or replace puncture pin, remove bridge pin at uppermost point of handle. Entire handle mechanism and puncture pin can be removed.

Gasket deterioration will occur when venting aerosol paints and aggressive solvents, requiring periodic gasket replacement. To assure proper seal during Aerosolv usage, check gaskets frequently and replace as required.

- To replace gasket, remove white plastic sleeve from Aerosolv housing, then simply pull out old gasket and snap in replacement.

Example Maintenance Requirements

Aerosolv® 6000

> Do you count your cans punctured?

CAN COUNT	ROUTINE MAINTENANCE & FILTER CHANGES
1000	Replace Activated Carbon Cartridge and internal coalescer
2000	Replace Activated Carbon Cartridge and internal coalescer — check aluminum filter base for collected liquids
3000	Replace Activated Carbon Cartridge and internal coalescer
4000	Replace Activated Carbon Cartridge and internal coalescer — check aluminum filter base for collected liquids
4500	At this point a 55 gallon drum should be 75–80% full and ready for handling. Reset the counter. Mount the Aerosolv 6000 system and new combination filter onto an empty drum. Depending on wear, replace housing o-ring, clean out the system including the filter base, reapply PTFE tape to the threads, and lubricate the rack gear.

Example Segregation Scheme

Aerosolv® 6000

- > Do you separate your aerosol cans using multiple puncturing devices?
- > Example includes 10 categories!

TABLE 1-2
RECOMMENDED AEROSOL PRODUCT
CONSOLIDATION SCHEME

CONSOLIDATION FAMILY	AEROSOL TYPES INCLUDED IN FAMILY	RATIONALE FOR CONSOLIDATING TYPES
1- POL: Petroleum, Oil, and Lubricants	(2) Hydrocarbon product/ flammable propellant (15) Hydrocarbon product/ nonflammable propellant	Recovered POL can be recycled and used for fuel blending. Propellants captured from POL aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as nonregulated refuse.
2- Paints	(13) Compatible paints	Paints are recovered and stored in appropriate containers. Recovered paints are managed as hazardous wastes and either recycled or transferred to an appropriate treatment facility. Propellants captured from paint aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as non-regulated refuse.
3- Adhesives	(14) Compatible adhesives	Adhesives are recovered and stored in compliant containers. Recovered adhesives are managed as hazardous waste and either recycled or transferred to an appropriate treatment facility. Propellants captured from adhesive aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as non-regulated refuse.
4- Compatible Alkaline Cleaners	(8B) Corrosive product/ flammable propellant (9B) Corrosive product/ nonflammable propellant	If compatible, aqueous alkaline products from aerosol cans are recovered and consolidated with similar products. These materials can be transferred to an appropriate treatment facility. Propellants captured from these aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as nonregulated refuse.
5- Compatible Acidic Cleaners	(8A) Corrosive product/ flammable propellant (9A) Corrosive product/ nonflammable propellant	If compatible, aqueous acidic products from aerosol cans are recovered and consolidated with similar products. These materials can be transferred to an appropriate treatment facility. Propellants captured from these aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as nonregulated refuse.

Example Segregation Scheme (cont.)

Aerosolv® 6000

> Common categories include:

- ❖ Petroleum, oil, and lubricants
- ❖ Paints
- ❖ Ignitable Solvents

TABLE 1-2 (CONT'D) RECOMMENDED AEROSOL PRODUCT CONSOLIDATION SCHEME		
CONSOLIDATION FAMILY	AEROSOL TYPES INCLUDED IN FAMILY	RATIONALE FOR CONSOLIDATING TYPES
6- Halocarbon Solvent	(3) Halocarbon product/ flammable propellant (4) Halocarbon product/ nonflammable propellant	Recovered halocarbon solvents may be distilled and reutilized or transferred to an appropriate treatment facility. Propellants captured from halocarbon aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as non-regulated refuse.
7- Ignitable Solvents	(1) Ignitable solvent product/ flammable propellant	Recovered ignitable solvents may be distilled and reutilized, recycled as fuel, or transferred to an appropriate treatment facility. Propellants captured from these aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as non-regulated refuse.
8- Listed Products	(11) Listed product/ flammable propellant (12) Listed product/ nonflammable propellant	Listed products may be distilled and reutilized, recycled, or collected in isolated vessels and managed as listed hazardous wastes. Propellants captured from these aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as non-regulated refuse.
9- Toxic Products	(6) Toxic product/ flammable propellant (7) Toxic product/ nonflammable propellant	Toxic products are either recycled or managed as hazardous waste and transferred to an appropriate treatment facility. Propellants captured from these aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as non-regulated refuse.
10- Non-Toxic Products	(10) Non-toxic product/ flammable propellant	Non-toxic products are managed appropriately. Propellants captured from these aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as non-regulated refuse.

Example Segregation Scheme (cont.)

Aerosolv® 6000

> What can I consolidate?

TABLE 1-4
AEROSOL CLASS COMPATIBILITY CHART

	petroleum hydrocarbons	resinous materials	aqueous liquids	halocarbon solvents	alkaline products	acidic product
petroleum hydrocarbons	yes	yes ⁶	yes ⁷	yes ⁶	no ⁸	no ⁸
resinous materials	yes ⁶	yes	no ⁹	yes	no	no
aqueous liquids	yes ⁷	no ⁹	yes	yes ¹⁰	yes	yes
halocarbon solvents	yes ⁶	yes	yes ¹⁰	yes	no ¹¹	no ¹¹
alkaline products	no ⁸	no	yes	no ¹¹	yes	no
acidic product	no ⁸	no	yes	no ¹¹	no	yes

Example Segregation Scheme (cont.)

Aerosolv® 6000

> What can I consolidate?

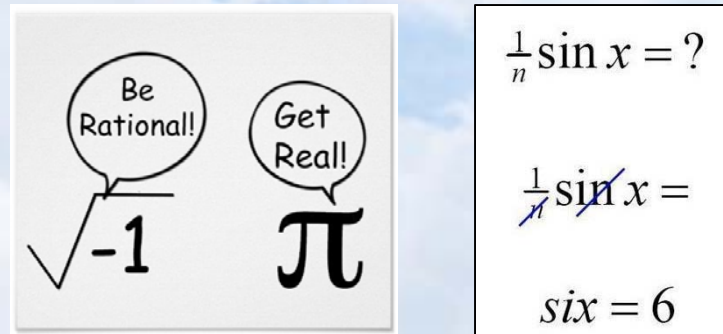
TABLE 1-5
AEROSOL CLASS CONSOLIDATION CHART

	petroleum hydrocarbons	resinous materials	aqueous liquids	halocarbon solvents	alkaline products	acidic product
petroleum hydrocarbons	yes	no	no	no	no	no
resinous materials	no	yes	no	no	no	no
aqueous liquids	no	no	yes	no	no	no
halocarbon solvents	no	no	no	yes	no	no
alkaline products	no	no	no	no	yes	no
acidic product	no	no	no	no	no	yes

Closing Thoughts - Confusion Inevitable?

- > The proposed universal waste regulations for aerosol cans do NOT apply to [40 CFR 273.6(b)(3)]:
 - ❖ Aerosol cans that are not hazardous waste; or
 - ❖ Aerosol cans that meet the standard for empty containers under part 261.7 of this chapter
- > If my cans are RCRA empty, is there a need to follow the UW requirements?
- > Aerosol can residue still subject to HW container management requirements

Questions & Discussion



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