

FAQ: Aerosolv Can Puncturing System

Introduction

AEROSOLV® was developed as a solution to the expense of solid waste disposal of aerosol cans. As empty aerosols are still pressurised containers and are likely to contain residual amounts of flammable liquid and/or gas, they may fall under the Hazardous Waste Regulations 2005 (SI 2005 No 895). With AEROSOLV®, the punctured cans can be fully recyclable.

Puncturing Unit

How is it operated?

The AEROSOLV® unit threads directly to the 2" bung of any 30- to 55-gallon drum. The filter is installed on the 3/4" bung. Insert the aerosol can (inverted) into the AEROSOLV® housing. Lower the sliding cap and lock into place. Push handle down firmly until completely depressed and hold in place while can releases initial pressure and contents. Allow the contents of the can to drain into the collection drum (about 20 seconds). **ALWAYS OPERATE AEROSOLV® SYSTEM OUTDOORS OR IN A WELL VENTILATED AREA.**

Must AEROSOLV® be installed only on 55-gallon drums?

No, all industry standard drums have 2" openings. However, AEROSOLV® should not be installed on a drum smaller than 30-gallon capacity to allow proper displacement of compressed gas released during puncturing.

How long does it take to puncture cans with AEROSOLV®?

It only takes 15-20 seconds for the can to be depleted after puncturing. One AEROSOLV® customer has punctured a many as 500 on a one-man seven hour shift.

Will the Puncturing Unit accept any size aerosol can?

The system is designed to puncture any industry standard aerosol can, regardless of length. Special gaskets are available for smaller diameter cans.

What maintenance does the AEROSOLV® Puncturing Unit require?

Periodic maintenance should include: replacement of gasket which is installed inside the unit that provides a seal against the can and cleaning/lubricating the puncture pin will enhance the unit longevity.

How much can scrap steel recycling be increased with AEROSOLV®?

Generally, four aerosol cans equal one pound of steel. American industry consumes 3 billion aerosol cans per year, amounting to 375,000 tons of steel.

Can the liquids collected into the drums be reclaimed or recycled?

Yes, if chlorinated and non-chlorinated liquids are collected into separate drums. Chlorinated liquids (primarily solvents) can be recycled in-house as "parts cleaning solvent"; non-chlorinated liquids (primarily paints) can be reclaimed. Either method may qualify for "waste minimization credit".

Are there any aerosols that should not be co-mingled when collecting into the drum?

Yes, caustics (such as oven cleaners) and pesticides or insecticides should not be collected into a drum with other liquid residuals. They can, however be collected into segregated single-content drums designated "pesticides only", "insecticides only", or "caustics only". Also, white metals-typically labeled as "cold galvanized" should be separated and not co-mingled with any other aerosol residuals.

How many spent aerosols can be punctured into a drum?

Approximately 4,200 cans can be punctured before the drum is at maximum recommended capacity. The drum should not be filled more than 75% full, to provide proper displacement for released contents.

What do you do with the drum of liquids once it is recommended "full" capacity?

Simply call the waste handler who is handling your other hazardous waste and manifest according to collected contents

Must a waste-profile sample be drawn from each drum, prior to transport by a waste handler?

A waste profile of a "worst-case" scenario, whereby all known aerosol residuals are listed, excluding pesticides and insecticides, is available. Reputable waste handlers should accept this profile for co-mingled residuals, thus avoiding the expense of profiling the drum.

Are all aerosols considered hazardous waste?

Yes, but not because of the primary product they contain. Spent aerosol cans would be considered empty, and therefore exempt from regulation, were it not for the fact that the propellant compressed gas is reactive to heat and is still present in an empty can (40 CFR 261.23 (a) (6)).



New Pig

One Pork Avenue
Tipton, PA 16684-0304

newpig.com

North America: **1-800-468-4647**

Europe: **+31 (0)76 596 92 50**

China: **+86-21-400 921 5178**

PIG, PIG logo are registered trademarks in USA and other countries. See tm.newpig.com

UK: **0800 919 900**

Outside North America: **+1-814-684-0101**

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Is the puncturing of aerosol cans with AEROSOLV® considered treatment?

No, however, according to the EPA's Office of Solid Waste: a steel aerosol can that does not contain a significant amount of liquid (e.g., a can that has been punctured and drained) would meet the definition of scrap metal (40 CFR 261.1(c) (6)), and, if it is to be recycled, would be exempt from regulation under 40 CFR 261.6(a) (3) (iv). Scrap metal that is recycled is exempt from RCRA regulation under this provision even if it is hazardous waste, so generators need not make a hazardous waste determination. In 1999 California EPA certified the Aerosolv process to eliminate the classification of treatment.

What does it cost to dispose of the collected liquids in the drum?

A Hazardous Waste handler will charge from \$275 to \$350 per 55-gallon drum for proper transportation and recycling, reclamation and/or disposal. This represents the total disposal cost for the residual liquids of 4,200 spent aerosol cans. This compares to solid waste disposal cost for the residual liquids of 4,200 spent aerosol cans. This compares to solid waste disposal cost of unpunctured aerosol cans of \$650 to \$1,200 per 96 cans! On a direct comparison of 4,200 spent cans, the cost saving with AEROSOLV® ranges from \$28,000 to \$52,000.

Filter

How does the filter work?

It is composed of two parts: a coalescing lower portion and an activated carbon upper portion. The coalescing portion collects microscopic airborne liquids from the gas and combines them into droplets which collect within the filter chamber. The activated carbon adsorbs hydrocarbons and removes odor from the "dry" gas which has passed through the coalescing portion. It effectively reduces VOC's from the escaping gas, resulting in total hydrocarbon emissions 75% less than the 300 ppm desired limitations.

Does any compressed gas remain in the drum?

The compressed gas seeks escape through the point of least resistance, which is the filter. However, a minimal amount of gas may remain in the drum. By leaving the "last" can punctured within the AEROSOLV® housing until puncturing is resumed, an effective prolonged seal can be maintained.

Can pressure build in the drum?

The filter relieves at 3 psi, eliminating the possibility of unsafe pressure within the drum. Additionally, the activated carbon portion of the filter has been designed to serve as a highly efficient flame arrestor.

When does the filter need to be changed?

After 45-60 days OR after puncturing 1,200 spent aerosol cans because the activated carbon will reach its maximum adsorption. If you are a medium to large generator of aerosol cans (ex: puncturing 1000+ cans every 60-90-120 days) you will need to replace the upper portion, the carbon cartridge more frequently. Replacement of the complete filter and/or carbon cartridge depends upon usage.

The newer colorimetric filter has a site window on the carbon cartridge to determine replacement. The indicator is purple and will change to a brown/black when its time for replacement.

Once used, is the filter considered hazardous waste?

The filter is designed to allow draining prior to disposal. To drain the filter, locate drain valve at bottom edge. Remove drain valve cover while holding filter over AEROSOLV® housing. Drain filter through housing directly in to drum. Due to the variety of chemicals used in aerosol cans, some of which are hazardous, fully saturated carbon filters should be considered hazardous waste unless independently tested to the EPA's guidelines and proven non-hazardous. Please dispose of in accordance to local, state, and federal laws and check with authorities having jurisdiction.

Does the procedure require any permitting from the Air Quality Control Board?

No, permitting is only required when processing 15 pounds or more per day, which is not the case with the AEROSOLV® system. Permitting generally applies to gas-filling facilities: welding gases, large gas cylinders, etc.

Anti-Static Wire

Why is the anti-static wire necessary?

In many cases, there is an OSHA requirement for grounding of "vessels" to prevent any build-up of the static electricity being transferred to a drum. The anti-static wire grounds the drum and the AEROSOLV® unit simultaneously. The AEROSOLV® system itself is not capable of generating a static charge. It is non-powered and utilizes a non-sparking puncture pin.



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