

AEROSOLV®

Commonly Asked Questions

Introduction

AEROSOLV was developed as a solution to the expense of solid waste disposal of aerosol cans. RCRA regulations require that, unless relieved of pressure, aerosol cans must be packed in a drum and manifested for hazardous waste disposal. A drum holds about 96 cans and costs as much as \$1,500 for proper transportation and disposal. With AEROSOLV®, the punctured cans are fully recyclable.

Puncturing Unit

Q. How it is operated?

A. The AEROSOLV® unit threads directly into the 2” bung of a 55-gallon drum. The filter is installed on the ¾” bung. Insert the aerosol can (inverted) into the AEROSOLV® housing. Lower the sliding cap and lock into place. Then press the handle and release. You will hear the contents of the can being released into the drum.

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

A. No, all industry standard drums have 2” bung openings. However, the AEROSOLV® unit should be used with steel drums, and should not be installed on a drum smaller than 20-gallon capacity, to allow proper displacement of compressed gas released during puncturing.

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

A. It only takes 5-10 seconds for the contents of the can to be depleted after puncturing. One AEROSOLV® customer has punctured as many as 1,200 on a one-man, seven-hour shift.

Q. Will the puncturing unit accept any size aerosol can?

A. The system is designed to puncture any industry standard aerosol can, regardless of the length. The standard unit will not puncture “jumbo” or 1” mini-diameter cans. Special-order units are available for those purposes.

Q. What maintenance does the AEROSOLV® puncturing unit require?

A. Periodic maintenance should include replacement of the gasket that is installed inside the unit and provides a seal where the can is held.

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

A. 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.

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

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

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

A. Yes, caustics (such as oven cleaners) and pesticides or insecticides should not be collected with other liquid residuals. They can, however, be collected into segregated single-content drums designated “pesticides only”, “insecticides only” or “caustics only”.

Q. How many spent aerosols can be punctured into a drum?

A. 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.

Q. What do you do with the drum of liquids once it is at the “recommended full capacity”?

A. Simply call the waste hauler who is handling your other hazardous waste.

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

A. 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 each drum.

Q. Why do the materials listed on the waste profile add up to more than 100%?

A. Not every material listed on the waste profile will be present in the drum. However, the collected residuals in any combination, will not exceed the percentages listed, which are the maximum percentages found in any industrial aerosol product (excluding pesticides, insecticides and caustics.)

Q. Are all aerosols considered hazardous waste?

A. Yes, but not because of the primary product they contained. 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)].

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

A. No. According to the Office of Solid Waste and Emergency Response (OSWER), under federal regulations, “the puncturing, crushing or shredding of non-empty aerosol

cans which contain hazardous waste does not constitute treatment pursuant to 260.10, and a RCRA permit or compliance with other hazardous waste management regulations is not required.” [Source document: OSWER Directive #9432.012(80)]

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

A. A hazardous waste hauler 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 of un-punctured aerosol cans of \$650 to \$1,200 per 96 cans! On a direct comparison of 4,200 spent cans, the cost savings with AEROSOLV® ranges from \$28,000 to \$52,000.

Filter

Q. How does the filter work?

A. It is composed of two parts: a coalescing portion and an activated carbon portion. The coalescing portion screws into the ¾” bung opening of the collection drum, and collects microscopic airborne liquids from the gas and combines them into droplets that collect within the filter chamber. The activated carbon absorbs hydrocarbons and removes odor from the “dry” gas that has passed through the coalescing portion. It effectively reduces VOCs from the escaping gas, resulting in total hydrocarbon emissions 75% less than the 300 ppm desired limitation.

Q. Does any compressed gas remain in the drum?

A. 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.

Q. Can pressure build up in the drum?

A. 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.

Q. When does the filter need to be changed?

A. The carbon filter should be changed every three months, or after puncturing 1,000 spent aerosols, whichever comes first, because the activated carbon will reach its maximum absorption level. The carbon filter is also available with a color metric indicator to help visually gauge the need to change out this filter media.

The coalescing filter should be changed every six months, or after 2,000 cans, whichever comes first.

Q. Once used, is the filter considered hazardous waste?

A. The filter is designed to allow drainage prior to disposal. If drained, the filter would stay below the 3% by weight EPA allowance for non-regulated disposal. To drain the

filter, locate the drain cock at bottom edge. Remove drain cock cover at bottom edge while holding filter over AEROSOLV housing. Drain filter through housing directly into drum.

Q. Does the procedure require any permitting from the Air quality Control Board?

A. Under federal requirements, permitting is only required when processing 50 pounds or more per hour, which is not the case with aerosol cans. Permitting generally applies to gas-filling facilities: welding gases, large gas cylinders, etc.

Anti-Static Wire

Q. Why is the anti-static wire necessary?

A. In many cases, there is an OSHA requirement for grounding of “vessels” to prevent any build-up of 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 carbide puncturing pin.