

## **Minimizing Aerosol Can Waste**

by Helen Miller, Inspections Support Unit, article from the Spring 2005 "Notifier"

### **Does your business use cleaners, paints, lubricants or other products that are packaged in aerosol cans?**

If your company uses aerosol cans, there are several waste minimization options you can implement to save your company money. Because these cans may contain products or propellants such as butane and propane, they may need to be managed and disposed of as a hazardous waste.

### **Why would the contents cause these cans to be managed as hazardous waste?**

The remaining contents could be hazardous waste. Please refer to an article on pages six and seven of our *Winter 2002 Notifier* called "Regulatory Status of Aerosol Cans: a little can, a lot to think about". It describes five scenarios for managing aerosol cans and explains how the contents could be hazardous.

### **Do you completely empty your aerosol cans?**

A good waste minimization practice is to use the contents of the entire can before opening another, thus minimizing the number of partially empty cans generated. If a nozzle malfunctions or breaks off, try to return the can to the supplier or manufacturer for a replacement. Another good waste minimization practice is to apply the aerosol product directly to a rag, rather than spray it on a piece of equipment. Studies have shown that employees use less aerosol cleaner when employing this method.

### **Do you generate a significant number of cans per month?**

If you generate a significant number of similar waste aerosol cans, you may want to consider purchasing a puncturing unit. This will enable you to separate the liquid contents from the metal can for recycling or disposal. This equipment ranges from approximately \$495 to \$775 for a manually operated unit, to thousands of dollars for an automated unit. Processing capacity for these units ranges from 120 to 2,000 cans per hour. This investment can be recovered over time by reducing start time spent on puncturing.

### **How do puncturing units work?**

Some units attach to a 55-gallon drum and are designed to puncture the aerosol can, filter the propellant and drain the liquid into the drum. More complex units have closed systems that crush the can into half-inch wafers. If your facility uses different products in aerosol cans, you must segregate your waste when puncturing and crushing.

For example, you must puncture and crush paint cans in one batch and do the same with lubricants in the next batch. Types of cans also must be segregated, i.e., separating aluminum from steel for recycling.

### **What are the cost savings and payback of a puncturing unit?**

Several U.S. Navy installations have successfully implemented use of these units. In a cost analysis completed by the Navy, assuming an equipment cost of \$775, a payback of less than two years was calculated. A fact sheet from the Navy includes a link to a

spreadsheet that will allow you to view an active spreadsheet and enter your own data to calculate your payback. You can find it at: [http://p2library.nfesc.navy.mil/P2\\_Opportunity\\_Handbook/7\\_III\\_3.html](http://p2library.nfesc.navy.mil/P2_Opportunity_Handbook/7_III_3.html)

### **Have you considered switching to refillable bottles?**

Spray-on products sold in aerosol cans generally cost twice as much as bulk products. Several types of bottles are available, including metal bottles that use compressed air or plastic bottles that use a hand spray pump. Refillable metal bottles are similar to aerosol cans in their design and performance. For example, brake cleaner from a bulk container placed in these bottles is pressurized with 80 to 200 psi using a compressed air hose. Plastic bottles are operated by pumping a trigger to create a mist or stream of product.

### **What are the cost savings and payback of refillable bottles?**

Air pressurized, refillable bottles cost from \$25 to \$60 each, depending on the type of material used to make the bottle. These bottles are available in 8-, 16- or 32-ounce capacities and are available in aluminum, stainless steel, brass and steel. Chemically resistant plastic bottles cost anywhere from \$1 to \$6 each. Various nozzle types are available, along with nozzle extensions of up to 12 inches for areas that are difficult to reach. Many common spray-on products are available in containers ranging from one to 55 gallons. Check with your vendor to see whether they offer free refillable bottles with their product.

You might wonder how much money your business could save by switching to refillable bottles. A U.S. EPA Region 9 *Refillable Spray Bottles* fact sheet contains a worksheet that you can use to help calculate your cost savings by switching to refillable bottles. This fact sheet is available at [www.epa.gov/region09/cross\\_pr/p2/autofleet/spray.pdf](http://www.epa.gov/region09/cross_pr/p2/autofleet/spray.pdf). According to the fact sheet, if you use more than 20 cans of brake cleaner or carburetor cleaner per month, you can purchase five refillable bottles at \$50 each with a payback of less than one year.

As seen in the original article, the fact sheet also highlights three auto repair shops in California that switched to refillable bottles and noted the following advantages:

- **Cost Savings:** Reduced aerosol product costs by 84 percent for the same brake cleaner.
- **Preferred by Technicians:** They said refillable bottles worked as well or better than aerosol cans.
- **Ease of Use:** Technicians found them easier to use because the bottles provided a more predictable shot of product.

If you decide to switch to refillable bottles, here are some tips:

- use funnels and pumps to minimize spills during refilling;
- stock replacement parts such as nozzle seals, filler caps, valves and nozzles;
- provide every employee a refillable bottle; they will use them if they are as convenient as an aerosol can; and
- if you use the steel refillable bottles, make sure your shop has a water removal device in the air line to prevent corrosion in the bottles.