

# AEROSOL POLLUTION PREVENTION ALTERNATIVES

## COMMONLY OBSERVED PRACTICES

Most vehicle maintenance facilities use disposable aerosol products such as brake cleaner, carburetor cleaner and rust penetrant. Empty aerosol cans are typically landfilled since scrap metal dealers are often reluctant or refuse to accept aerosol cans for recycling.

## POLLUTION PREVENTION OPTIONS

The use of refillable spray cans and bulk product is a waste reduction/pollution prevention alternative to aerosol can products. Refillable spray cans eliminate the need to dispose of aerosol cans in the landfill and the bulk product containers may be reused or recycled for scrap metal once they are emptied. This alternative has the added benefit of eliminating waste management problems associated with defective aerosol cans that become hazardous waste when they cannot be emptied and/or depressurized. Appendix G contains refillable sprayer and bulk product vendor information.

## APPROXIMATE COST/BENEFITS

Information obtained from vendors during the IPPI pilot project indicate the use of bulk product and refillable sprayers is often more economical than disposable aerosol products. Example costs obtained from vendors included the following:

- ❑ Non-chlorinated carburetor and brake cleaner is available in 5- and 55-gallon containers at a cost of approximately \$60 and \$520, respectively.
- ❑ A cost of approximately \$96 was obtained for six gallons of rust penetrant (sold in case quantities of six 1-gallon containers per case).
- ❑ Costs for refillable, air-pressurized aluminum spray cans ranged from approximately \$25 to \$35.

An example cost comparison between aerosol cans of brake cleaner versus a refillable spray can with bulk brake cleaner is presented as Table 3-1 for a vehicle maintenance facility that uses six 13-ounce aerosol cans of brake cleaner per month at a cost of \$2.39 per can. By replacing aerosol cans with a refillable spray can and purchasing brake cleaner in five gallon bulk size containers, the facility would realize a cost savings of approximately \$54 the first year and \$84 each subsequent year.

Similarly, Table 3-2 presents a cost comparison between using rust penetrant in aerosol cans versus a refillable spray can for a vehicle maintenance facility that uses four 11-ounce aerosol cans of rust penetrant per month at a cost of \$2.98 per can. By using a refillable spray can and purchasing rust penetrant in six 1-gallon containers, the vehicle maintenance facility would realize a cost savings of approximately \$47 the first year and \$77 each subsequent year.

Since product usage rates and costs will vary for each vehicle maintenance facility, the worksheet provided as Figure 3-1 should be completed to obtain an estimate of the cost/benefits associated with using refillable sprayers and bulk product. To complete Figure 3-1, locate vendors of equipment and bulk product to obtain pricing information. A list of refillable spray can and bulk product vendors is provided in Appendix G.

**Table 3-1  
Cost Comparison  
Air-Pressurized, Refillable Spray Can with Bulk Product  
vs.  
Aerosol Cans of Brake Cleaner**

<b>AEROSOL PRODUCT</b>	<b>EXPENSES</b>	<b>REFILLABLE SPRAYER AND BULK PRODUCT</b>
<b>\$2.39</b>	<b>Cost per aerosol can</b>	
<b>13</b>	<b>Fluid ounces per aerosol can</b>	
<b>49</b>	<b>Number of aerosol cans equivalent to 5 gallons</b>	
<b>6</b>	<b>Approx. number of cans used per month</b>	
<b>72</b>	<b>Approx. number of cans used per year</b>	
	<b>Cost of air-pressurized spray can</b>	<b>\$30.00</b>
	<b>Number of spray cans required</b>	<b>1</b>
	<b>Total spray can cost</b>	<b>\$30.00</b>
	<b>Cost of bulk product per 5 gallons</b>	<b>\$60.00</b>
	<b>Equivalent number of 5 gallon containers used/year</b>	<b>1.46</b>
	<b>Annual bulk product cost</b>	<b>\$87.75</b>
<b>\$172.08</b>	<b>First Year Costs</b>	<b>\$117.75</b>
	<b>First year cost savings (includes refillable can cost)</b>	<b>\$54.33</b>
	<b>Subsequent annual cost savings (excludes refillable can cost)</b>	<b>\$84.33</b>

Note:

Prices are for non-chlorinated brake cleaner.

Prices do NOT include costs for delivery or tax.

**Table 3-2**  
**Cost Comparison**  
**Air-Pressurized, Refillable Spray Can with Bulk Product**  
**vs.**  
**Aerosol Cans of Rust Penetrant**

<b>AEROSOL PRODUCT</b>	<b>EXPENSES</b>	<b>REFILLABLE SPRAYER AND BULK PRODUCT</b>
<b>\$2.98</b>	<b>Cost per aerosol can</b>	
<b>11</b>	<b>Fluid ounces per aerosol can</b>	
<b>70</b>	<b>Number of aerosol cans equivalent to 6 gallons</b>	
<b>4</b>	<b>Approx. number of cans used per month</b>	
<b>48</b>	<b>Approx. number of cans used per year</b>	
	<b>Cost of air-pressurized spray can</b>	<b>\$30.00</b>
	<b>Number of spray cans required</b>	<b>1</b>
	<b>Total spray can cost</b>	<b>\$30.00</b>
	<b>Cost of bulk product per 6 gallons</b>	<b>\$96.00</b>
	<b>Equivalent number of 6 gallon containers used/year</b>	<b>0.69</b>
	<b>Annual bulk product cost</b>	<b>\$66.00</b>
<b>\$143.04</b>	<b>First Year Costs</b>	<b>\$96.00</b>
	<b>First year cost savings (includes refillable can cost)</b>	<b>\$47.04</b>
	<b>Subsequent annual cost savings (excludes refillable can cost)</b>	<b>\$77.04</b>

Note:  
 Prices do NOT include costs for delivery or tax.

**Figure 3-3**  
**Refillable Spray Can and Bulk Product**  
**Cost/Benefit Estimate Worksheet**

ITEM	VARIABLE	EXAMPLE	YOUR FACILITY
<b>A</b>	<b>Number of gallons in bulk product container</b>	<b>5</b>	
<b>B</b>	<b>Cost of bulk product</b>	<b>\$60.00</b>	
<b>C</b>	<b>Cost per gallon of bulk product = B / A</b>	<b>\$12.00</b>	
<b>D</b>	<b>Number of refillable spray cans required</b>	<b>2</b>	
<b>E</b>	<b>Cost of refillable spray can</b>	<b>\$30.00</b>	
<b>F</b>	<b>Total spray can cost = D x E</b>	<b>\$60.00</b>	
<b>EXISTING CONDITIONS (12 MONTH)</b>			
<b>G</b>	<b>Cost per aerosol can</b>	<b>\$2.39</b>	
<b>H</b>	<b>Fluid ounces per aerosol can</b>	<b>13 oz.</b>	
<b>I</b>	<b>Average number of aerosol cans used each month</b>	<b>10</b>	
<b>J</b>	<b>Number of aerosol cans used per year = 12 x I</b>	<b>120</b>	
<b>K</b>	<b>Gallons of aerosol product used per year = J x H / 128</b>	<b>12.2</b>	
<b>L</b>	<b>Annual aerosol product cost = G x J</b>	<b>\$286.80</b>	
<b>RESULTS</b>			
<b>M</b>	<b>ANNUAL COST OF BULK PRODUCT REQUIRED = C x K</b>	<b>\$146.40</b>	
<b>N</b>	<b>ANNUAL SAVINGS WITH BULK PRODUCT = L - M</b>	<b>\$140.40</b>	
	<b>PAYBACK PERIOD (Years) = F / N</b>	<b>0.43</b>	