



POWDER CARTRIDGE FILTER -COST ANALYSIS

After consulting with technical representatives from some of the major manufacturers of powder coating systems and other industry experts, Chemco Manufacturing Co., has calculated a conservative (the projected savings are thought to be understated) cost study. This study illustrates the economic benefits of Chemco polyester filters over the cellulose style cartridges typically furnished by powder coat booth manufacturers.

Three of the primary factors which enter into the buying decision of powder cartridges used in powder coating operations include the following:

1. Reduced air consumption -- lower electrical bills
2. Reduction in discarded powder -- the powder trapped within the cartridge when it is changed.
3. Cellulose cartridges not purchased -- Chemco's polyester cartridges can offer 2 - 4 times the service life since they can be washed and re-used.

To understand the economic impact of these factors, the user must consider the costs associated with compressed air, the cost of the powder sprayed, and the price of the cartridges used.

This first chart provides the monthly savings in electrical energy associated with running a rotary type compressor and a refrigerated dryer to compress and dry the air used to pulse clean one of Chemco's 100% polyester powder cartridges as opposed to a cellulose cartridge. The savings in compressed air expense offered by Chemco filters can be easily calculated by multiplying the \$ figure under the appropriate price per kilowatt hour (KWH) by the number of months it is expected to be used

	A	B	C	D	E	F	G
1	Electric Powder Cost (\$/KWH):	\$0.06	\$0.08	\$0.10	\$0.12	\$0.14	\$0.16
2	Monthly Savings (Per Cartridge):	\$10.96	\$14.61	\$18.27	\$21.92	\$25.57	\$29.23

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The next chart shows the savings available from the significant reduction in the amount of powder that becomes trapped within the respective cartridges and is unrecoverable when the cartridge is changed. (Chemco's polyester filters only retain 2 - 7 lbs. worth of powder over its service life compared to. 15 to 45 lbs. in cellulose style filters). This chart is based on a 20 lb. difference in the amount of powder retained within the respective cartridges at various price levels for the powder paint purchased.

	Powder Costs	\$1.50	\$1.75	\$2.00	\$2.25	\$2.50
	Savings/Change	\$30.00	\$35.0	\$40.00	\$45.00	\$50.00

Note: If Chemco's polyester lasts 2 -3 times as long as the cellulose cartridge it replaces, then the above figures should be multiplied by 2 or 3; respective,ly.

The third factor in this analysis is the cost of the cellulose cartridges the user will no longer have to purchase because of the longer service life offered by Chemco polyester cartridges. (The typical customer buys 50% to 75% less cartridges'per year to keep his booth in top-notch operating condition.)

	A	B	C	D	E	F	G
1	Cartridge Cost:	\$45.00	\$60.00	\$75.00	\$90.00	\$105.0	\$120.0
2	Chemco's Polyester						
3	Savings-Same Life	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4	Savings-Twice Life	\$45.00	\$60.00	\$75.00	\$90.00	\$105.0	\$120.0
5	Savings-Three Times	\$90.00	\$120.0	\$150.0	\$180.0	\$210,0	\$240.0

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Therefore, the total economic impact (\$ savings) is the sum of the appropriate figures from each of these three charts. Consider the following example.

EXAMPLE

(Assume the current cellulose filter is changed every 6 months and Chemco's polyester cartridge lasts 18 months. Electrical energy cost is \$0.10/KWH. Powder paint costs \$2.00/lb and the current, cellulose cartridge costs \$75.00 each).

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|-------------------------------|------------------------------|-------------------|
| 1. Electrical Energy Savings: | (\$18.27 x 18 months life) | =\$328.86 |
| 2. Powder Coat Savings: | (\$40.00/change x 3 changes) | =\$120.00 |
| 3. Cartridges not purchased: | (\$75.00 x 2 not bought) | = <u>\$150.00</u> |

Total- Savings per cartridge = \$598.86