

The Role of All-Carbon Cartridge Filtration in Achieving Solvent Clarity



CUSTOMER BULLETIN #3

Are light colored garments and linings picking up color or looking dull? Maintaining solvent clarity with all-carbon cartridge filtration is the key to solving this common problem.

The importance of solvent clarity cannot be stressed enough when it comes to maintaining the proper color of garments and preventing dye transfer. There are many drycleaning operations that have a light solvent tank (or machine) for whites and light colored garments, and a dark solvent tank (or machine) for dark colored garments only. Unfortunately, a common misconception is that it is acceptable to allow the solvent in the dark tank to become quite dark without having an effect on the cleaning quality. And, a subsequent misconception is that because only dark colored garments are being cleaned in that solvent, the cartridges can be changed less frequently.

While the dark solvent tank does not have to be as clear as the light solvent tank (which should be “water white”), the dark solvent tank does have to maintain solvent clarity that at a minimum meets the Drycleaning and Laundry Institute (DLI) clarity standards, in order to prevent dye transfer problems. ***The proper use and maintenance of all-carbon cartridges is a crucial part of reaching and maintaining proper solvent clarity standards.***

Some dark garments, such as black pants (which may have a white lining, pockets and waistbands), may seem as though they can be processed satisfactorily in darker colored solvent. However, while the dark portions of these garments can be acceptable in appearance on the outside after processing, on the inside where the waist band/pockets used to be white, there is now discoloration and dye transfer, due to poor solvent clarity/dye in the solvent. This problem will be very noticeable to customers. From their perspective, it will look like you made their clothes dirtier rather than cleaner. Any dark colored garments with white trim or components are prone to this discoloration when cleaned in poorly maintained, dye laden, dark solvent. This problem can be avoided by changing filters at the proper times.

While there are a multitude of reasons that lead to fugitive dye problems, this particular segment will focus on the importance of filter changes based on the life/mileage of [all-carbon cartridges](#).



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There are several factors that can affect the dye removal capacity of a cartridge filter and they should all be carefully considered:

- the actual carbon volume of the cartridge filter
- the type and quality of the carbon
- the design of the cartridge
- the amount of dye being released into the solvent
- the flow rate through the filter

Another item that should be taken into consideration is the manufacturer recommended time between filter changes. Many equipment manufacturers' manuals may recommend changing the "decolorizing" (all-carbon) filter at a rate of every 3 months or another time interval. While this is an easy guideline to remember, ***the proper method is changing the filter based on the number of pounds of garments that have been processed through that filter housing, not the length of time the filter cartridges have been in the machine.***

This correct approach mirrors that of changing the oil filter in an automobile; based on miles driven, not the amount of time it has been installed in the vehicle. This means you will need to be keeping track of the weight of the garments processed for both the dark solvent tank and light solvent tank. Using this method ensures that you will know the correct time to change the filter based on the actual garments processed, thus eliminating the guesswork. You should continue to monitor your solvent clarity at all times, as the weight of garments processed between filter changes can fluctuate depending on the degree of loose dye you have entering your machine.

How many pounds of garments cleaned are recommended with an all-carbon cartridge filter?

Based on research that was done several years ago by the Drycleaning and Laundry Institute (DLI), it was determined that one pound of activated carbon would be able to effectively control dye for every 280-300 pounds of textiles cleaned (when supplemented with at least 6 gallons of distilled solvent per 100 pounds of textiles cleaned). However, with today's garments, there is more dye being released in cleaning, thus reducing the actual life of the carbon in a cartridge filter. Also, many machines may be dedicated to processing only dark colored garments, causing more dye to enter and saturate the cleaning solvent.

The newer generation of drycleaning machines may also have smaller base tanks and provide for less dilution of those impurities causing more solvent color, as compared to the older machines being used when the carbon studies were done several years ago. That being said, it is possible that the life of carbon in drycleaning may be as low as 200-250 pounds of textiles per pound of carbon, and that is with the 10-15 gallons of solvent being distilled with the 2-bath processes that are so commonly used. Because a Puritan® All-Carbon Cartridge has approximately 8 pounds of carbon, **you can expect the life of that cartridge to be around 1800 - 2400 pounds of garments cleaned per cartridge on the dark tank.** On the light tank, because of the lack of dye being introduced to the system, filter life can be significantly greater, often as much as 5000 pounds of garments cleaned.

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The good news is, there are a few things that can help to extend the life of your all-carbon cartridges and prevent poor solvent clarity:

- Running a 2-bath program, when machine configurations allow, can help to remove a large amount of loose/fugitive dye and send it to the still, before the filtered wash, thus lengthening the life of the filter.
- Pre-testing garments for loose dye and then running those garments in a “bleeder load” (off filter and directly to the still) or wetcleaning items likely to bleed when possible, can help to prevent large amounts of dye from being introduced into the drycleaning solvent.
- Using effective detergents, such as Pinnacle® or Fabricol®, will better manage moisture in the drycleaning machine and reduce the amount of water-soluble dyes being released into solvent.
- Maintaining a solvent temperature of no more than 80° F. Solvent temperatures above 80° F can lead to higher instances of dye fading, especially in perc.

The lifespan of an all-carbon cartridge filter lifespan can vary, as there are many factors that can affect the mileage you experience from your cartridges. However, changing your all-carbon filters, based on the actual weight of the cleaning processed, will provide for more consistent quality in your drycleaning process and will also provide you with a method to accurately measure the life of the all-carbon cartridge filter to maximize its useful life and optimize the timing of cartridge changes.

Lastly, do not use distillation as a substitute for carbon filtration. Distillation does not occur during the cleaning cycle but instead occurs after the cleaning cycle. Therefore when dye is being released during the wash cycle, **only the carbon that is available in the cartridges can control dye transfer** and help to protect garments while the drycleaning wash cycle is occurring.

Change your **Puritan All-Carbon Cartridge** filters regularly to help achieve the best possible cleaning quality.

If you have questions regarding the life of your cartridge filters, please feel free to contact us at **1-800-4STREET**, techsupport@4streets.com or learn more about Puritan cartridge filtration at <https://4streets.com/products/puritan-cartridge-filtration/>.

For further questions about machine maintenance and operating procedures, please contact your equipment manufacturer. Always follow proper safety recommendations.

For process or product related questions, please contact our technical service department at **1-800-4STREET** or techsupport@4streets.com.



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