

Doulton Ultracarb Ceramic Candle Lead Reduction Test Report

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Introduction

Doulton Water Care has developed a proprietary drinking water treatment system that utilizes a radial flow activated carbon block filter cartridge in conjunction with a ceramic candle to remove specific contaminants from drinking water. This product is designed for long life filtration and is available directly through Doulton Water Care to distributors and retailers of point of use (POU) home water filtration systems.

The use of activated carbon block filter cartridges incorporating proven sorbent technology is becoming more prevalent in the design and development of drinking water treatment devices as manufacturers seek to combine the contaminant reduction capabilities of both organics and heavy metal removal technology. Ceramic filter cartridges are commonly used for the removal of harmful bacteria and cysts. Each technology has been established as an effective means for specific contaminant reduction under defined operating conditions.

Reliable information on contaminant removal capabilities is important in marketing this product to potential distributors and to the general public. Furthermore, several states have now implemented regulations which govern the sale and marketing of residential water treatment systems. Therefore, it is now necessary to have verification of contaminant reduction claims by a state certified independent third-party laboratory, using an approved protocol. Spectrum Labs, Inc. is pleased to provide this laboratory report as the result of an independent evaluation of the **Doulton HIP undercounter drinking water treatment system containing an Ultracarb filter cartridge (Ultracarb)** for lead reduction.

Low pH and Alkalinity Lead Reduction Studies Test Unit 1

Volume Influent Gallons	Influent Sample Number	Influent Lead Level mg/L	Effluent Sample Number	Effluent Lead Level mg/L	Percent Reduction%	Flow Rate (gpm)
Initial	9312045364	0.15	9401001349	0.002	99%	0.39
150	9312045591	0.16	9312045592	0.003	98%	0.39
300	9312045949	0.16	9312045950	0.004	98%	0.40
450	9312046328	0.13	9312046329	0.001	99%	0.40
600	9312046443	0.12	9312046444	0.005	96%	0.40
720	93120046812	0.14	9312046813	0.002	98%	0.44

Low pH and Alkalinity Lead Reduction Studies Test Unit 2

Initial	9312045364	0.15	9401001349	0.005	97%	0.35
150	9312045591	0.16	9312045592	0.002	99%	0.34
300	9312045949	0.16	9312045950	0.003	98%	0.35
450	9312046328	0.13	9312046329	0.001	99%	0.34
600	9312046443	0.12	9312046444	0.003	98%	0.33
720	9312046812	0.14	9312046813	0.006	96%	0.34

High pH and Alkalinity Lead Reduction Studies Test Unit 1

Volume Influent Gallons	Influent Sample Number	Influent Lead Level mg/L	Effluent Sample Number	Effluent Lead Level mg/L	Percent Reduction%	Flow Rate (gpm)
Initial	9312043561	0.16	9312043559	0.002	99%	0.50
150	9312044316	0.16	9312044317	0.003	98%	0.39
300	9312044642	0.16	9312044643	0.004	98%	0.47
450	9312044749	0.16	9312044750	0.005	97%	0.47
600	9312044752	0.16	9312044753	0.005	97%	0.34
720	9312045367	0.15	9312045368	0.004	97%	0.34

High pH and Alkalinity Lead Reduction Studies Test Unit 2

Initial	9312043561	0.16	9312043560	0.003	98%	0.55
150	9312044316	0.16	9312044318	0.004	98%	0.53
300	9312044642	0.16	9312044644	0.006	96%	0.42
450	9312044749	0.16	9312044751	0.004	98%	0.42
600	9312044752	0.16	9312044754	0.005	97%	0.38
720	9312045367	0.15	9312045369	0.004	97%	0.38

Conclusion

The Doulton HIP undercounter drinking water treatment system containing an **Ultracarb filter cartridge** was found to be very effective at removing lead from the spiked challenge water. Calculated contaminant reduction percentages were 96 percent or greater in both the high and low pH and alkalinity lead reduction evaluations throughout the entire 720 gallon test. Since the Doulton CIF undercounter drinking water treatment system does not contain a flow monitoring device, this set of laboratory results would establish a capacity rating of 600 gallons for lead reduction claims based on the current requirements for compliance under NSF Standard Number 53 for units tested to 120 percent of capacity.

signed by:

Sandra L. Games and Margeret L. Bicking

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