



Chlorine Reduction Test to NSF/ANSI 42-2022: Drinking Water Treatment Units

Testing Performed & Reported by NSF International

Model Name/No	British Berkefeld Ultra Sterasyl
Test	Std. 42 - Chlorine Reduction – British Berkefeld SS2 Ultra Sterasyl
Schedule	Gravity; Pour Through Batch System sampling every 300 Litres (79.2 USG) run continuously topped up with a minimum 8-hour overnight rest period
Test Water	240 mg/L TDS, < 1 NTU pH 7.52
Influent Challenge	Nominal; 2 mg/L Free Available Chlorine
Volume Tested	3000 Litres (792.6 USG)
Flushing Volume	17 Litres (4.5 USG)

Test Description:

Two British Berkefeld Ultra Sterasyl Filter Elements tested in a Stainless Steel 2 gravity system under gravity, sampling 300 Litres (79.2 USG) to 3000 Litres (792.6 USG).

Results are summarised below and full test details reported in the attached Appendix.

Table 1

Capacity Tested (L)	Capacity Tested (USG)	Average Chlorine Influent (mg/L)	Average Chlorine Effluent (mg/L)	Average % Chlorine Reduction
start up	start up	1.8	<0.05	97.2
300	79.2	2.1	<0.05	97.6
600	158.5	2.2	<0.05	97.7
900	237.7	1.9	<0.05	97.5
1200	317	2.2	<0.05	97.5
1500	396.3	2.1	<0.05	97.6
1800	475.5	2.0	<0.05	97.6
2100	554.8	1.9	<0.05	97.5
2400	634	2.2	<0.05	97.6
2700	713.3	2.1	<0.05	97.6
3000	792.6	1.9	<0.05	97.5



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Treatment Units
Appendix**

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789 N. Dixboro Rd. Ann Arbor, MI 48105, USA
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TEST REPORT

Send To: 13790

Julie Dolman
Doulton Water Filters
Unit 4 Lymedale Cross Industrial Estate
Newcastle-Under-Lyme
Staffordshire ST5 9BT
United Kingdom

Facility: 13792

Fairey Industrial Ceramics Trading as Doulton
Water Filters
Unit 4 Lymedale Cross Industrial Estate
Newcastle-Under-Lyme
Staffordshire ST5 9BT
United Kingdom

Result	PASS	Report Date	30-APR-2024
Customer Name	Doulton Water Filters		
Tested To	Standard 42 Chlorine Reduction, Free Available PT		
Description	British Berkefeld SS2 Ultrasterasyl		
Test Type	Qualification		
Job Number	J-00460896		
Project Number	W0834390		
Project Manager	Sandra Games		

Thank you for having your product tested by NSF.

Please contact your Project Manager if you have any questions or concerns pertaining to this report.

Report Authorization

Nancy Cole - Director, Analysis Laboratories

Date 30-APR-2024

Standard 42 Chlorine Reduction, Free Available PT: PASS

Manufacturer's Name: Fairey Industrial Ceramics Trading as Doulton Water Filters

Job ID: J-00460896

Date of Job Creation: 12-APR-2023

Date Sample Received: 12-APR-2023

Date Job Placed on Hold: 19-APR-2023

Date Job Released from Hold: 24-APR-2023

Date Test Completed: 30-APR-2024

Sample Type: Qualification

DCC Number: PW09994

§ **Filter Capacity:** 3000 Liters

§ **Flushing Time:** see internal note

§ **Maximum Rated Op. Pressure:** 0 PSI

§ **On Cycle:** 50/50

§ **Percent Capacity:** 100%

§ **Physical Description of Sample:** Pour Through Batch System

§ **Rated Service Flow:** 85 LPD

Standard Version: NSF/ANSI 42-2022: Drinking Water Treatment Units - Aesthetic Effects

Test Description: Std. 42 - Chlorine Reduction – British Berkefeld SS2 Ultrasterasyl – QQ

§ **Trade Designation/Model Number:** British Berkefeld SS2 Ultrasterasyl

Performance Standard: 042

Pass/Fail Criteria (Chlorine, Free Available %A): 50 %

Chlorine, Free Available P/F: PASS

Overall Percent Reduction: >97.5 %

§ Data provided by customer and can affect the validity of the results

Job Note: The lab tested with the manufacturer's use pattern of no rest and to keep the top reservoir full, as testing in this manner would be considered more conservative. Units rested for a minimum 8h for each 24h period.

Data Summary Table

Sample Point	Chlorine, Free Available (mg/L)			Accumulated Volume (liters)	
	Influent	Effluent 1	Effluent 2	Effluent 1	Effluent 2
Startup	1.8	ND(0.05)	ND(0.05)	1	1
10%	2.1	ND(0.05)	ND(0.05)	303	305
20%	2.2	ND(0.05)	ND(0.05)	603	606
30%	1.9	ND(0.05)	ND(0.05)	901	903
40%	2.2	ND(0.05)	ND(0.05)	1210	1220
50%	2.1	ND(0.05)	ND(0.05)	1510	1510
60%	2.0	ND(0.05)	ND(0.05)	1840	1850
70%	1.9	ND(0.05)	ND(0.05)	2130	2140
80%	2.2	ND(0.05)	ND(0.05)	2410	2410
90%	2.1	ND(0.05)	ND(0.05)	2710	2720
100%	1.9	ND(0.05)	ND(0.05)	3020	3000

Sample Point	Flow Rate (lpm)	
	Effluent 1	Effluent 2
Startup	0.02	0.02
10%	0.02	0.01
20%	0.02	0.02
30%	0.03	0.03
40%	0.03	0.04
50%	0.21	0.22
60%	0.21	0.21
70%	0.19	0.17
80%	0.23	0.19
90%	0.07	0.06
100%	0.23	0.19

Chlorine, Free Available Detection Limit: 0.05 mg/L

Data Analysis Table

Sample Point	Inf. Average (mg/L)	Average (mg/L)		Eff. % Reduction (Ave. Inf.) (%)		Ave. % Reduction (%)
		Effluent 1	Effluent 2	Effluent 1	Effluent 2	
30%	2.0	ND(0.05)	ND(0.05)	97.5	97.5	97.5
40%	2.0	ND(0.05)	ND(0.05)	97.5	97.5	97.5
50%	2.0	ND(0.05)	ND(0.05)	97.6	97.6	97.6
60%	2.0	ND(0.05)	ND(0.05)	97.6	97.6	97.6
70%	2.0	ND(0.05)	ND(0.05)	97.5	97.5	97.5
80%	2.0	ND(0.05)	ND(0.05)	97.6	97.6	97.6
90%	2.0	ND(0.05)	ND(0.05)	97.6	97.6	97.6
100%	2.0	ND(0.05)	ND(0.05)	97.5	97.5	97.5

Sample Point	Maximum (mg/L)		Met Minimum Criteria
	Effluent 1	Effluent 2	
30%	ND(0.05)	ND(0.05)	YES
40%	ND(0.05)	ND(0.05)	YES
50%	ND(0.05)	ND(0.05)	YES
60%	ND(0.05)	ND(0.05)	YES
70%	ND(0.05)	ND(0.05)	YES
80%	ND(0.05)	ND(0.05)	YES
90%	ND(0.05)	ND(0.05)	YES
100%	ND(0.05)	ND(0.05)	YES

Inf. Average: Influent Average

Average: All Effluent Average

Eff. % Reduction (Ave. Inf.): Effluent percent reduction calculated from average of previous influent values.

Ave. % Reduction: Percent reduction calculated from all prior influents and effluents.

Maximum: Maximum Effluent

Met Minimum Criteria: Ninety percent of prior effluent percent reduction sample points and this sample point are greater than or equal to the pass/fail criteria.

Water Characteristics

Characteristic	Units	Range		
		Minimum	Average	Maximum
Solids, Total Dissolved	mg/L	240	240	240
Temperature	degrees C	22	22	22
Total Organic Carbon	mg/L	1.8	1.8	1.8
Turbidity	NTU	ND(0.1)	ND(0.1)	ND(0.1)
pH		7.52		7.52

All analyses performed at Nsf, 789 N. Dixboro Road, Ann Arbor MI 48105

Unless otherwise indicated, method uncertainties are not applied in any determinations of conformity.
Testing utilizes the requested sections of any referenced standards, which may not be the entire standard.

Dates of Laboratory Activity: 13-APR-2023 to 30-APR-2024

Calculation Definitions

All calculations use values as presented in the Data Summary Table and rounding is performed only at the conclusion of the calculation.

Percent Reduction Calculations

Overall Percent Reduction:

Influent Average includes all influents.
Effluent Average includes all effluents.

$$\% \text{ Reduction} = \frac{\text{Influent Average} - \text{Effluent Average}}{\text{Influent Average}} * 100$$

Influent Average Percent Reduction Calculations

Influent Average Percent Reduction for Current Effluent Point:

Influent Average includes all influents up to and including the current sample point.
Effluent includes the effluent value for the specific sample point.

$$\text{Average } \% \text{ Reduction} = \frac{\text{Influent Average} - \text{Effluent}}{\text{Influent Average}} * 100$$

Average Percent Reduction Calculations

Average Percent Reduction:

Influent Average includes all influents up to and including the current sample point.
Effluent Average includes all effluents up to and including the current sample point.

$$\% \text{ Reduction} = \frac{\text{Influent Average} - \text{Effluent Average}}{\text{Influent Average}} * 100$$



Test Configuration