



## Test Report

NBF22-001634-02

Date: 22 Mar 2022

Client Name: Xiamen U water Syetem Industry and Trade co., Ltd  
Client Address: Room 601, Factory 1#, No.3 Kengping Road, Jimei District, Xiamen

Sample Name: Survival straw  
Manufacturer: /  
Sample Batch No.: /  
Production Date: /

Above information and sample(s) was/were submitted and certified by the client, SGS quoted the information with no responsibility as to the accuracy, adequacy and/or completeness.

Date of Sample Received: 24 Feb 2022  
Testing Period: 24 Feb 2022 - 22 Mar 2022  
Test Requested: Selected test(s) as requested by client.  
Test Method: Please refer to the next page(s)  
Test Result(s): Please refer to the next page(s)

Chinese shall prevail in this report.

Unless otherwise stated the results shown in this test report refer only to the items tested, and for clients internal use only, not to the society has the proof function. This document cannot be used for improper publicity, without prior written approval of the SGS.

SGS Authorized Signature



SGS-CSTC Standards Technical Services Co., Ltd. Ningbo Branch

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SGS-CSTC Standards Technical Services Co., Ltd.  
Ningbo Branch Agricultural and Food Laboratory

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## Test Report

NBF22-001634-02

Date: 22 Mar 2022

### Sample Description:

Specimen No.	SGS Sample ID	Description
1	NBF22-001634.001	Filter straw

### Test Requested:

Selected test(s) as requested by applicant

### Test Strain(s):

Escherichia coli CICC 10389

Escherichia coli bacteriophage MS2 ATCC 15597-B1—Coliphage

Escherichia coli ATCC 700891—Host bacteria

### Test Method:

Flush the filter straw with 2L sterile pure water, then add spiked water, and test the removal rates of Total coliforms and Escherichia coli bacteriophage MS2 at startup of operating life.

Challenge Testing: Refer to Ministry of Health of the People's Republic of China Standards for Drinking Water Quality Sanitary Standard for Hygienic Safety and Function Evaluation on Treatment Devices of Drinking Water-General Devices

Escherichia coli bacteriophage MS2: Refer to EPA method 1602 Male-specific (F<sup>+</sup>) and somatic coliphage in water by single agar layer (SAL) procedure

Total coliforms: Refer to GB/T 5750.12-2006 Standard examination methods for drinking water-Microbiological parameters

### Test Result(s):

Test item(s)	Unit(s)	Test method(s)	Test result(s)		*Removal rate(s) %
			Influent spiked water	Effluent filtrated water	
Escherichia coli bacteriophage MS2	PFU/mL	EPA Method 1602	$5.5 \times 10^5$	<1	>99.999
Total coliforms	CFU/100mL	GB/T 5750.12-2006	$5.1 \times 10^5$	<1	>99.999

### Remark:

1.\*Removal rate (%) = (test result of Influent spiked water- test result of Effluent filtrated water)/ test result of Influent spiked water×100%

2.The flow rate is 0.5 L/min

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## Test Report

NBF22-001634-02

Date: 22 Mar 2022

### Sample photo:



SGS authenticate the photo on original report only

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# NSF International

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**Ahlstrom Filtration LLC**

**Mount Holly Springs, PA**

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October 5, 2018

Certificate# C0369021 - 01

Tina Yerkes

General Manager, Water Systems



BIOLOGICAL CONSULTING SERVICES  
OF NORTH FLORIDA, INC.

March 16, 2016

Ahlstrom Filtration, LLC  
122 W. Butler Street  
Mt. Holly Springs PA 17065-0238

RE: Microbial filtration efficacy testing of the Ahlstrom Disruptor® based filter media

To whom it may concern,

BCS Laboratories has been conducting waterborne contaminants filtration efficacy studies on advanced filter media provided by Ahlstrom since 2012. The studies conducted include post production quality assurance, efficacy validation, and various custom tailored studies. Ahlstrom media with Disruptor® technology has repeatedly demonstrated effective bacterial, viral, and parasitic contaminant removals from drinking water as per the tested methodology. BCS Laboratory tests on production flat sheets of Disruptor® media demonstrated that the media removed >99.9999% of bacterial challenge, >99.99% of virus challenge, and >99.95% of parasitic cyst challenge from general test water (local municipal water) and reagent grade water as per the laboratory conditions of each test conducted.

Should you have any questions or concerns, please do not hesitate to contact me.

Best Regards,

George Lukasik, Ph.D.  
Laboratory Director

- PAGE 1 OF 1 -

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FILE: LETTER OF MEDIA PERFORMANCE 03 16 2016

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## Certificate of Analysis no. 2203160

Examination of the Bacterial Retention Characteristics

This document replaces the Certificate of Analysis No. 2202477

(Addition of the percentage value of the reduction and Correction of the volume in column 3 of table 3)

<b>Client</b>	:	Surao ist eine Marke der eDampf-Shop GmbH & Co. KG Am Steinkreuz 35 -. 1J, D – 44534 Lünen
<b>Date of request</b>	:	2021-11-18 <b>Samples received:</b> 2022-02-03
<b>Sample collection by</b>	:	Customer
<b>Material</b>	:	Life 2 Go Strohhalmfilter
<b>Sample identification</b>	:	-
<b>Requested test</b>	:	Determining Bacterial Retention of Membrane Filters Utilized for Liquid Filtration referring to ASTM F 838 – 20
<b>Examination following:</b>	:	SOP CUP GMP MIB 219 V01
<b>Sample number (CUP-No.)</b>	:	<b>22-02/0071 (001-002)</b>
<b>Date of examination</b>	:	2022-02-03 – 2022-02-22

### Conclusion:

The examinations for bacterial retention of membrane filters referring to ASTM F 838 – 20 showed retention performances of the tested filters with a reduction of the bacterial count of 5 log units (99.999 %) and 4.7 log units (99.998 %), respectively, for the tested challenge organism *Brevundimonas diminuta*.

The filters were exposed to a bacterial load of  $\geq x 10^7$  CFU/cm<sup>2</sup> filter area.

The filter model tested was "Life 2 Go Strohhalmfilter".

### Test instruction:

#### Defined test parameters:

Filter area of the filter cartridge: 144.5 cm<sup>2</sup>

Reference strain: *Brevundimonas diminuta* ATCC 19146

Required bacterial concentration:  $\geq 1 \times 10^7$  cfu/cm<sup>2</sup> effective filter area

Test volume: 50 mL

#### Preparation of the test suspension

1. The test organism *Brevundimonas diminuta* is cultivated on tryptic soy agar and re-suspended in liquid media. The microbial count of this bacterial suspension is determined.
2. Sterile water is inoculated with a defined volume of this bacterial suspension to generate a concentration of  $\geq 1 \times 10^7$  cfu/cm<sup>2</sup> test filter area in 50 mL ( $\geq 1,445 \times 10^9$  cfu/50 mL).
3. The actual concentration of the bacteria in the test suspension is checked by the pour plate method.

#### Performance of the retention test:

Each filter has to be tested as follows:

1. The filter is rinsed with 50 mL sterile water.
2. 50 mL of the test suspension is filtered through the test module followed by 50 mL sterile water.
3. From the resulting 100 mL, 1 mL is transferred to a tryptic soy agar plate and distributed evenly using a Drigalski spatula.
4. The remaining 99 mL are filtered through a 0.45 µm membrane filter.
5. Both approaches are incubated at  $32 \pm 2$  °C for 7 days. Plates are checked daily.

Signum: 

Page 1 of 3 pages

Customer: Surao ist eine Marke der eDampf-Shop GmbH & Co. KG  
 Certificate of Analysis no. 2203160  
 Date 2022-03-10, Signum: *Cole*

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## Assessment of the results:

1. The log reduction is calculated using the following formula:

$$R_{log} = \log(x_0) - \log(x_p)$$

$R_{log}$  – log reduction

$x_0$  – bacterial load per volume

$x_p$  – counted cfu per volume

2. The value reflecting "cfu/1 mL" is only used for calculation of the log reduction if no utilizable value for "cfu/99 mL" could be determined.

## Follow-up work:

After completing the test, the tested filter cartridges have to be autoclaved.

## Quality assurance:

Table 1: Used material

Action, material and media	Batch/description
Sterile water	NM 7326
TSA	1008888940
Cellulose nitrate membrane filter	0321138062007833
Type of filter cartridge	Life 2 Go Strohhalmfilter

Table 2: Used reference strain

Reference strain	Stock culture	Used culture	Microbial concentration [cfu/ml]
<i>Brevundimonas diminuta</i> ATCC 19146	8 B	020222	$9 \times 10^{10}$

## Results

### Test of filter 1:

Filter model : Life 2 Go Strohhalmfilter  
 CUP-No. : 22-02/0071-001  
 Test filter area : 144.5 cm<sup>2</sup>  
 Investigation date : 2022-02-09  
 Concentration of test suspension :  $7.1 \times 10^7$  cfu / mL  
 Test suspension volume : 50 mL  
 Bacterial load per filter unit :  $3.55 \times 10^9$  cfu  
 Rinsing volume : 50 mL

Die Veröffentlichung unserer Prüfberichte sowie deren auszugsweise Verwendung in sonstigen Fällen bedürfen unserer schriftlichen Genehmigung.  
 Die Prüfergebnisse beziehen sich ausschließlich auf die Prüfgegenstände.



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 Certificate of Analysis no. 2203160  
 Date 2022-03-10

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## Test of filter 2:

Filter model : Life 2 Go Strohhalmfilter  
 CUP-No. : 22-02/0071-002  
 Test filter area : 144.5 cm<sup>2</sup>  
 Investigation date : 2022-02-09  
 Concentration of test suspension : 7.1 x 10<sup>7</sup> cfu / mL  
 Test suspension volume : 50 mL  
 Bacterial load per filter unit : 3.55 x 10<sup>9</sup> cfu  
 Rinsing volume : 50 mL

Table 3: Results of the retention test

Filter ID	cfu/ 1 mL	cfu/ 99 mL	Bacterial retention [log units]	Bacterial retention [ % ]
22-02/0071-001	341	n.e.*	5	99.999
22-02/0071-002	796	n.e.*	4.7	99.998
Negative control		0		

\* n. e. – not evaluable due to a high number of micro-organisms on the membrane filter (bacterial lawn)

## Re-identification of the grown microorganisms

Table 4: Re-identification of the grown microorganisms

Reference strain	Target	Actual
<i>Brevundimonas diminuta</i> ATCC 19146	microscopic appearance: straight, slim, medium short, spore-less, motile rods macroscopic appearance: TSA: small, translucent colonies Gram-test: gram-negative	microscopic appearance: straight, slim, medium short, spore-less, motile rods macroscopic appearance: TSA: small, translucent colonies Gram-test: gram-negative

CUP Laboratorien  
 Dr. Freitag GmbH



Severine Protze  
 Head of Laboratory Microbiology

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 prüfen.bewerten.auszeichnen  
 BertelsmannStiftung

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