

LifeStraw<sup>®</sup> 

GO SERIES

**Performance +  
Test Reports**

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LifeStraw products have a history of use in some of the harshest conditions around the world, from refugee camps to natural disasters to extreme back-country, our products have to work because lives depend on them. Our testing and transparency is unparalleled, as is our commitment to social impact and environmental sustainability.

## WHAT SETS LIFESTRAW APART

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1. Tough and Minimalist: Our products are made with minimal spare parts and are used in the toughest conditions around the world.
2. LifeStraw is the only water filter brand that owns and operates its own fully equipped ISO certified water laboratory
3. 4-step quality control including microbiological testing over every single batch of filters.
4. We give back: We provide a year of safe water to a child in need for every LifeStraw product sold.
5. Transparent testing: We share all internal and external lab reports publicly, on our website.
6. Optimal flow rates: Optimized to operate off of human sucking & last longer in sandy & silty conditions.
7. Sustainable packaging: All packaging is free of plastic and is fully recyclable or compostable
8. It's all about the 9s: We report log removal (99.999999%) data for all of our microbiological claims.



## HOW WE TEST OUR PRODUCTS

LifeStraw's testing and transparency is unparalleled and we use the most trusted performance criteria based on protocols established by the World Health Organization, the US EPA, NSF International and the Water Quality Association.

### ALL LIFESTRAW PRODUCTS REMOVE:

- LOG 8 (99.999999%) for Bacteria
- LOG 5 (99.999%) for parasites/amoebas/cysts
- LOG 5 (99.999%) for microplastics
- BPA FREE
- FDA Food Grade Materials

### 4 STEP QUALITY CONTROL

LifeStraw puts 100% of its filters through a rigorous quality control process.

**STEP 1:** Resistance test at high pressure.

**STEP 2:** Bubble test to confirm pore size.

**STEP 3:** Particle test to ensure nothing the size of bacteria or larger can pass through the filters.

**STEP 4:** We send a sample from every batch for full Bacteria and Protozoa log removal tests.

### MICROBIOLOGICAL TESTING - HOW ITS DONE

The only accepted scientific evaluation of microbiological filtration performance is log values (the number of 9s in 99.999999%). PERIOD. All internationally accepted protocols from ANSI, WQA, NSF International, the US EPA, and the World Health Organization evaluate performance through log removal testing. None of these bodies will certify anyone based on pore size; it is ACTUAL PERFORMANCE that matters. LifeStraw products exceed all log-based performance standards.

**LifeStraw is the only water filter brand that owns and operates its own fully equipped ISO certified water laboratory capable of performing cutting edge tests on microbiological performance longevity, turbidity and other performance indicators. LifeStraw also tests all products through external internationally recognized labs.**



# PERFORMANCE DATA

FOR ALL LIFESTRAW GO SERIES WATER FILTER BOTTLES

### INDEPENDENTLY TESTED

LifeStraw water filters are rigorously tested by independent labs and our own ISO certified lab to meet protocols established by the US Environmental Protection Agency (EPA) and NSF International/ANSI.

### ALL COMPONENTS BPA-FREE

All components of LifeStraw Go Series water bottles have been fully tested for presence of BPA. BPA content was NOT detected in all components: membrane, pipe, bottle, mouthpiece, valves, adaptors, caps, O-rings, connectors, net etc.



### MEMBRANE MICROFILTER LASTS UP TO 1,000 GAL (4,000 L)

- Pore size - 0.2 micron
- Meets NSF/ANSI P231 standard for reduction of bacteria and parasites

### REMOVES 99.999% OF PARASITES

Ascaris lumbricoides	Giardia intestinalis	Taenia saginata
Cryptosporidium spp.	Naegleria gruberi	
Entamoeba histolytica	Schistosoma mansoni	

### REMOVES 99.999999% OF BACTERIA

Brucella melitensis	Yersinia enterocolitica	Mycoplasma pneumoniae
Campylobacter jejuni	Yersinia pestis	Burkholderia pseudomallei
Francisella tularensis	Enteropathogenic Escherichia coli (E. coli)	Salmonella enterica
Pseudomonas aeruginosa	Haemophilus influenzae	Salmonella typhi (Typhoid)
Shigella	Klebsiella pneumoniae	Streptococcus pneumoniae
Staphylococcus aureus	Legionella pneumophila	Streptococcus pyogenes
Vibrio cholerae (Cholera)	Mycobacterium tuberculosis	Leptospira
Vibrio parahaemolyticus		

### REMOVES 99.999% OF MICROPLASTICS REDUCES TURBIDITY (SILT, SAND, CLOUDINESS)



### ACTIVATED CARBON FILTER LASTS UP TO 26 GAL (100 L)

**IMPROVES TASTE + REMOVES ODOR**  
**REDUCES CHLORINE, ORGANIC CHEMICAL MATTER, + ASBESTOS**

The above is not an exhaustive list of all bacteria, parasites, and other contaminants removed by LifeStraw filters but rather the main waterborne disease-causing contaminants. If you have additional questions about a specific contaminant not included on the list, please email us at [info@lifestraw.com](mailto:info@lifestraw.com).

# Study Report

PHÒNG THÍ NGHIỆM NƯỚC  
Water Laboratory

## Performance on Longevity of LifeStraw New Go Series

Study Number: LSP.22.2001.1

Attention to: Jean Luc Madier	Date of issuance: 06 March 2023
Issued by: Chung Quang Nguyen	Approved by: Le Thu Cao

### Purpose

LifeStraw (LS) New Go Series is the series of water filter product applying Microfiltration (MF) membrane technology for households/outdoor activities to remove the microorganisms in water, and activated carbon fiber (ACF) to remove chlorine and improve the smell/taste of water.

In this study, the longevity (filtration lifetime) of LS New Go Series filter was evaluated, and microbiological removal efficacy was tested along the longevity. The filtration lifetime of product was tested following US EPA (1) and NSF P231 (2) protocols. Filter was cleaned by backwashing using the syringe. Chlorine removal efficacy of the ACF capsule was evaluated following NSF/ANSI 42 – 2021 (4).

Longevity of LS New Go Series reached 4000L under NSF P231 test conditions. At the beginning, average flowrate of LS New Go Series was about 1250ml/min then decreased slowly over the filtrated volume. At the end of its lifetime, the average flowrate was still around 800ml/min.

All tested samples could remove bacteria at higher than 8log reduction and remove protozoa at higher than 5log reduction till 4000L point. The turbidity of filtrated water was lower than 0.5NTU at all sampling points of all tested samples, and it was 0.1 NTU in average. The quality of the filtered water exceeded requirements of WHO (3)/US EPA/NSF P231 on bacteria removal ( $\geq \log 6$ ), protozoa removal ( $\geq \log 4$ ), and turbidity removal ( $\leq 0.5$  NTU).

LS New Go Series with ACF capsule could remove chlorine well up to 100L under NSF/ANSI 42 testing conditions. This capacity met the requirement and claim of ACF lifetime of 100L.



### References

- 1) US EPA Guide Standard and Protocol for Testing Microbiological Water Purifiers. April 1987.
- 2) NSF Protocol P231, Microbiological Water Purifiers. February 2014.



Water Laboratory

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- 3) WHO (2011). Evaluating household water treatment options: Health-based targets and microbiological performance standards, Geneva, World Health Organization.
- 4) NSF/ ANSI 42, Drinking water treatment units – Aesthetic effects, 2021.
- 5) WL.SOP.061.v1 – SOP Validation LS Go 2.0

Procedure/ Testing methods

Following US EPA/ NSF P231 protocols, three replicates of LS New Go series filters were being aged with general test water (using 0.65L plastic bottle version). Every 500L along the aging process, microbial removal efficacy of the product was evaluated by being subjected to a challenging test with challenge test water. Clean the filter frequently by backwashing (backwashing daily in usage) using the syringe, and doing preventive washing with 4ppm chlorine water for every 100L (equal to every one month of usage).

Following NSF/ANSI 42 protocol, three replications of LS New Go series ACF capsules were tested (using 0.65L plastic bottle version). Chlorine concentration of influent water was controlled at  $2 \pm 0.2$ mg/L. Chlorine concentration of effluent water was checked frequently to evaluate chlorine removal efficacy.

Test waters were prepared and controlled following US EPA (1), NSF P231 (2) and NSF42 (4). Operating the product during testing was done following WL.SOP.061.v1 (5).

Results and discussions

1. Longevity performance

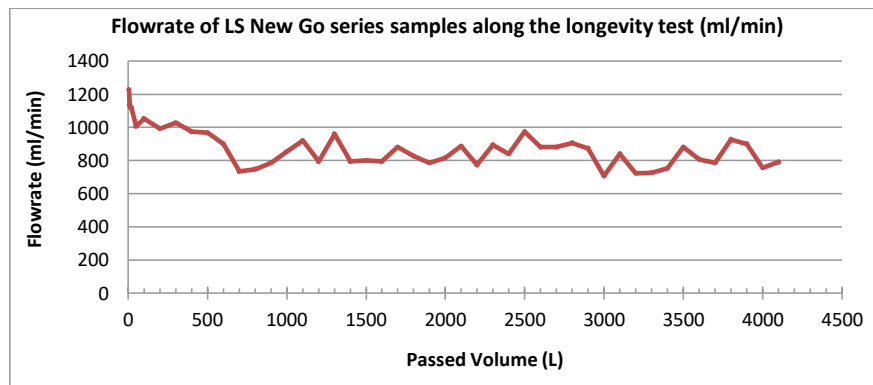


Figure 1. Flowrate of LS New Go series samples on longevity test – up to 4000L

All LifeStraw New Go series samples worked well until more than 4000L. At beginning, flowrate of the tested samples was about 1200ml/min. The flowrate was reduced slowly along the test and was about 800ml/min at 700L point. After that, flowrate of the samples was maintained well at around 800ml/min till 4000L point.

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Turbidity of effluent water was about 0.1NTU in average, and lower than 0.5NTU at all sampling points of all tested samples (table 1 below). This result met NSF 53 and USEPA requirements on turbidity of effluent water.

**Table 1:** Summary of turbidity of effluent water of LS New Go series samples

	Turbidity of effluent water			
	LS.22.322.35	LS.22.322.37	LS.22.322.39	Average
<b>Average</b>	<b>0.10</b>	<b>0.09</b>	<b>0.09</b>	<b>0.10</b>
<b>Min</b>	0.05	0.06	0.06	<b>0.06</b>
<b>Max</b>	0.18	0.15	0.13	<b>0.15</b>

**2. Microbial removal efficacy**

LS New Go series uses hollow fiber microfiltration technology which can remove microorganisms bigger than its pore size of 0.2µm, thus, it can remove *E.coli* bacteria (ca. 0.5x2µm) and protozoa cysts (minimum 3µm).

The *E.coli* removal was tested at the beginning and after every 500L along the longevity test. However, the removal of protozoa was only tested for 1 sample as representation at the beginning and for all samples at the end of the target lifetime - 4000L point (as 3 micron microspheres surrogate) for confirmation. Removal of *E.coli* (the smaller tested organisms) guaranteed removal of protozoa.

The test result was showed in the table 2 below.

**Table 2:** Summary of microorganism log reduction of LS New Go series samples

Challenging point	Log Reduction of <i>E.coli</i> and Microspheres at challenging points										
	Beginning point		500L	1000L	1500L	2000L	2500L	3000L	3500L	Final point (4000L point)	
Samples	<i>E.coli</i>	Spheres*	<i>E.coli</i>	<i>E.coli</i>	<i>E.coli</i>	<i>E.coli</i>	<i>E.coli</i>	<i>E.coli</i>	<i>E.coli</i>	<i>E.coli</i>	Spheres*
LS.22.322.35	9	5.3	8.5	8.6	8.9	8.9	8.7	8.7	8.7	9	5.3
LS.22.322.37	8.8	-	8.5	8.6	8.9	8.9	8.7	8.7	8.7	9	5.3
LS.22.322.39	8.8	-	8.9	8.6	8.9	8.9	8.3	8.5	8.7	9	5.3

(\*) Protozoa cysts were tested with 3µm microspheres surrogate as alternative.

- The results showed that, microorganism removal efficacy of all LS New Go series samples was higher than 8.3 log reduction of *E.coli*, and 5.3 log reduction of 3 micron microspheres.
- LS New Go series product exceeded the requirements of WHO (3)/ US EPA (1)/ NSF P231 (2) on bacteria removal (≥log6), protozoa removal (≥log4).



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3. Chlorine removal efficacy

LS New Go series with its ACF capsule could remove chlorine very well (higher 60%) up to 100L when tested with chlorine water following the NSF42 protocol (NSF42 required chlorine removal efficacy must be higher than 50%) (see figure 2 below). This chlorine removal capacity exceeded the requirement of NSF42 until the target lifetime of the carbon filter – 100L.

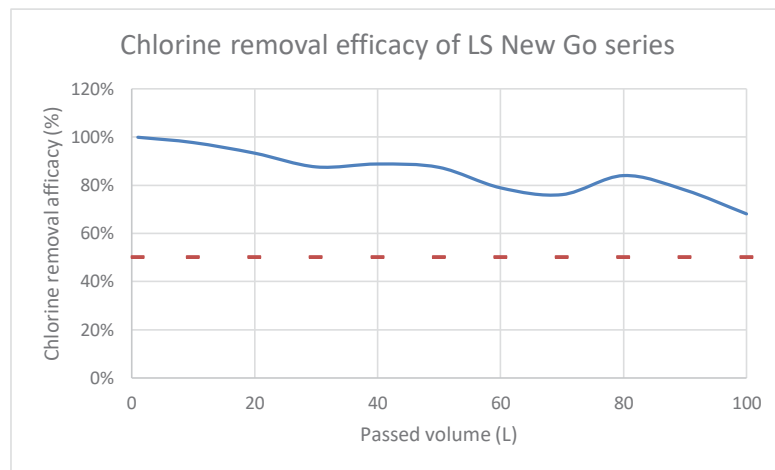


Figure 2: Chlorine removal efficacy of LS New Go series following the NSF42 protocol

Summary/ Conclusions

LifeStraw New Go series product was working well until more than 4000L when tested following USEPA (1) and NSF P231 (2): flowrate of tested samples was around 800ml/min till 4000L, E.coli bacteria removal was higher than log 8.3, protozoan cyst removal was log 5.3, and average turbidity of filtered water of LS New Go series was about 0.1NTU in average.

The quality of the filtered water exceeded requirements of WHO/ US EPA/NSF P231 on bacteria removal ( $\geq \log 6$ ) and protozoan cysts removal ( $\geq \log 4$ ), and turbidity removal ( $\leq 0.5$  NTU).

Regarding to chlorine removal efficacy, LS New Go series with its ACF capsule could remove chlorine well (higher than 60%) up to 100L – exceeded requirement of NSF42 of minimum 50% removal till end of lifetime of 100L.



Water Research & Technology Centre

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TEST REPORT

Report No: AWRTEL/13983A, 13984B & 13985A/17-18

Date: 18.04.2018

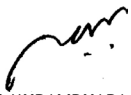
Customer details	Sample details
<b>Name &amp; Address :</b> Le Thu Cao Laboratory manager Life Straw Vietnam	Sample received: 29.03.2018
	Sample code no:- AWRTEL/13983A,13984B & 13985A/17-18
	Sample Description : Life Straw Go - 2stage filtration, Life Straw Play, Life Straw Universal
	No of Samples for Testing: 1 No. each
	Submitted By : Life Straw, Vietnam
	Date of Analysis Started : 04.04.2018
	Date of Analysis Completed : 10.04.2018
	Subcontract : Not Applicable
Condition of Sample when received: Intact.	

TEST DATA: Table 1 - Microbial reduction @ 800 ml/min Flow Rate

S.No	Sample Number	Volume of Filtration Liters	Microorganisms	Input water	Treated water	% Reduction & Log reduction
				Microbial counts	Microbial counts	
1	AWRTEL/13983A/17-18 Life Straw Go 2 stage	12Lit	E.Coli MTCC-68	5.50x10 <sup>7</sup> cfu/ml ( 7.74 log)	NVC/ml	>99.99999% 7.74 log
		12Lit	3 micron Microspheres	1.73 x 10 <sup>7</sup> /Liter (7.23 log)	< 160 /Liter	> 99.999% 5.03 log
2	AWRTEL/13984B/17-18 Life Straw Play	12Lit	E.Coli MTCC-68	6.0x10 <sup>7</sup> cfu/ml ( 7.77 log)	NVC/ml	>99.99999% 7.77 log
		12 Lit	3 micron Microspheres	1.69 x 10 <sup>7</sup> /Liter (7.22 log)	<160/Liter	>99.999% 5.02 log
3	AWRTEL/13985A/17-18 Life Straw Universal	12Lit	E.Coli MTCC-68	7.0x10 <sup>7</sup> cfu/ml ( 7.84 log)	NVC/ml	>99.99999% 7.84 log
		12 Lit	3 micron Microspheres	1.62 x 10 <sup>7</sup> /Liter (7.20 log)	320/Liter	99.998% 4.70 log

NVC: No viable colonies & <160/Liter: below detection limit

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Dr S.MURALIDHARA RAO  
Head - Laboratory

WE UNDER TAKE ANALYTICAL JOBS FOR WATER, FOOD, BIOCIDAL RESINS, DETERGENTS & SANITIZERS AND SOIL. WE CARRY OUT PERFORMANCE EVALUATION OF DRINKING WATER TREATMENT UNITS AS PER NSF/ANSI SPECIFICATIONS. BASED ON PERFORMANCE WE CAN ARRANGE FOR GOLD SEAL CERTIFICATION FROM WQA - USA

Note:

- The Results pertain only to the tested samples and applicable parameters.
- Samples will be disposed after 15 days from the issue of test certificate unless otherwise specified, Incase of bacteriological tests, the samples will be disposed after 7 days itself from the date of issuing the certificate.
- This report is not to be reproduced either wholly or in parts and cannot be used as evidence in the court of Law and should not be used in any advertising media without prior written permission.
- In case, any reconfirmation of contents of this certificate is required please contact our office.

Mailing Address:

**AQUADIAGNOSTICS WATER RESEARCH & TECHNOLOGY CENTRE LIMITED.**

No. No. 43, PMR Towers, 3rd Floor, Above State Bank of India, Beretena Agrahara, Near Hosa Road Junction, Hosur Main Road, Bangalore - 560 100.

Tel: 080-25743042, email: aquadiagnostics@gmail.com, website: www.aquadiagnostics.com

Registered Office : No. 143 C-4, Bommasandra Layout Area, Hosur Road, Anekal Taluk, Bangalore - 560 099, Karnataka

### AQUADIAGNOSTICS



Water Research & Technology Centre

### RECOGNISED BY WATER QUALITY ASSOCIATION - USA, NABL ACCREDITED LABORATORY

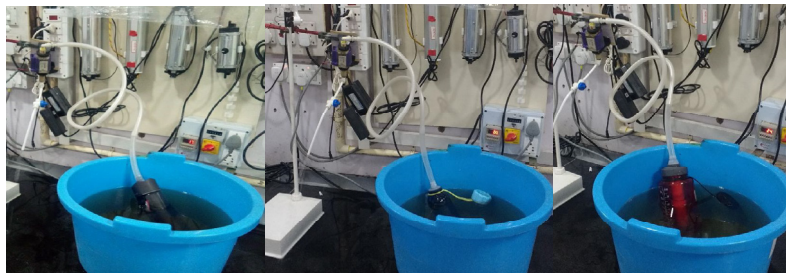
12 Lit of filtration includes 5 Liters of DM water flushing (wetting and removal of entrapped air), 5 Liters of non spiked test water for conditioning of the product and 5 Liters of spiked test water. During 2<sup>nd</sup> spiked water running sampling was done after filtering 2 Liters. Test setup was assembled in the manner as shown in the picture ( next page) . All the tubing, pump etc were first run with DM water to flush out any adhering debris, biological contaminants etc.

**INFERENCE:** Tested Lifestraw namely Lifestraw Go 2 stage, Lifestraw Play, Lifestraw Universal have demonstrated > log 7 reduction with E.coli MTCC- 68 Bacterium and > 4.7 to 5log reduction with 3 micron plastic sphere when tested at flow rate of 800ml/min and thus performs in accordance with NSF P231 for bacterial and cyst reduction.

#### TEST WATER COMPOSITION: Microbial Reduction

Test Characteristic	Recommended Concentration NSF P231 Protocol (CTW#03)	Concentration maintained by the Laboratory		
		Sample Code & Customer Code AWRTCL/13983A/ 17-18 Life Straw Go 2 stage	Sample Code & Customer Code AWRTCL/13984B/ 17-18 Life Straw Play	Sample Code & Customer Code AWRTCL/13985A/ 17-18 Life Straw Universal
pH	9.0±0.2	9.1	9.1	9.1
TDS mg/L	1500±150 mg/L	1530	1530	1530
Turbidity NTU	Not less than 30NTU	31.0	31.0	31.0
TOC mg/L	Not less than 10 mg/L	11 mg/L	11 mg/L	11 mg/L
Temperature °C	4±1 °C	5°C	5°C	5°C
Residual Chlorine mg/L	Not detectable	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L

<0.05 mg/L=Not detected

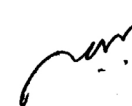


LIFESTRAW GO 2 STAGE

LIFESTRAW PLAY

LIFESTRAW UNIVERSAL

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Dr. S. MURALIDHARA RAO  
Head - Laboratory

WE UNDER TAKE ANALYTICAL JOBS FOR WATER, FOOD, BIOCIDAL RESINS, DETERGENTS & SANITIZERS AND SOIL. WE CARRY OUT PERFORMANCE EVALUATION OF DRINKING WATER TREATMENT UNITS AS PER NSF/ANSI SPECIFICATIONS. BASED ON PERFORMANCE WE CAN ARRANGE FOR GOLD SEAL CERTIFICATION FROM WQA - USA

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Registered Office : No. 143 C-4, Bommasandra Layout Area, Hosur Road, Anekal Taluk, Bangalore - 560 099, Karnataka

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Water Research & Technology Centre

**RECOGNISED BY WATER QUALITY ASSOCIATION - USA, NABL ACCREDITED LABORATORY**

**TEST REPORT**

Report No: AWRCL/13983/ 17-18

Date: 17.04.2018

Customer details	Sample details
Name & Address :	Sample received: 29.03.2018
Kind Attn	Sample code no:- AWRCL/13983 / 17-18
Le Thu Cao	Sample Description : Life Straw Go- 2stage
Laboratory manager	No of Samples for Testing: 1 No.
Life Straw	Submitted By : Life Straw, Vietnam
Vietnam	Date of Analysis Started : 17.04.2018
	Date of Analysis Completed : 17.04.2018
	Subcontract : Not Applicable
	Condition of Sample when received: Intact.

**TEST DATA: 1 micron plastic microsphere reduction at 800 ml/min Flow rate**

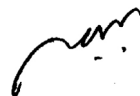
Volume of Filtration Liters	Sample Code & Customer Code AWRCL/13983/17-18 Life Straw Go 2 stage		
	Input Water Microsphere count	Output Water Microsphere count	% Reduction
12 Liters	2.5 x 10 <sup>8</sup> spheres / Liter	<160/Liter	>99.9999 (>6.19 Log)

<160 : Below Detection Limit

**INFERENCE:**

Tested LS Go – 2 stage product reduces 1 micron polystyrene black dyed microspheres to > 99.9999% reduction (>6.19 log)

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Picture of the sample and test setup

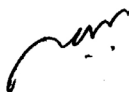


TEST WATER CHARACTERISTICS: CTW#03

Test parameter	Recommended by NSF P231 protocol	Concentration maintained by the Laboratory
pH	9.0±0.2	9.1
TDS mg/L	1500 ±150	1520
TOC mg/L	Not less than 10 mg/L	11 mg/L
Turbidity NTU	Not less than 30 NTU	32.0 NTU
Temperature °C	4±1 °C	4 °C

Note : 12 Lit of filtration includes 5 Liters of DM water flushing (wetting and removal of entrapped air), 5 Liters of non spiked test water for conditioning of the product and 5 Liters of spiked test water. During 2<sup>nd</sup> spiked water running sampling was done after filtering 2 Liters. Test setup was assembled in the manner as shown in the picture. All the tubing, pump etc were first run with DM water to flush out any adhering debris, biological contaminants etc.

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# Certificate of Analysis

PHÒNG THÍ NGHIỆM NƯỚC / Water Laboratory  
ISO/IEC 17025 accredited

## Sample Information

Test	: LifeStraw® Go Series	Requested by	: PARA Membranes Ltd.
Quantity	: 20 pcs	Description	: QC Cartridge
Date of receipt of test sample (dd/mm/yyyy)			: 21/12/2022

## Analysis Results

Parameter	Microbiological log <sub>10</sub> reduction		Physico-chemical characteristics				Conclusion	
	Bacteria (E.coli)	Protozoa (3µm spheres surrogate)	Turbidity of effluent water (NTU)	Flow rate (ml/min)	Chlorine removal at 25L (%)	Chlorine removal at 100L (%)		
Reference method	SMEWW 9222I: 2017 (*)	US EPA 05/9205/EPADWC (Modified) (*)	SMEWW 2130B: 2017 (*)	WL.SOP.133	Hach 8167 - DPD method (*)	Hach 8167 - DPD method (*)		
Specification	Min 8	Min 5	Max 0.5	1200 ± 30%	Min 81	Min 50	PASSED	
1	22152M3	>9.0	>5.2	<0.12	1020	-	-	PASSED
2	22152M3	>9.0	>5.2	0.13	980	-	-	PASSED
3	22152M3	>8.4	>5.2	0.22	1140	-	-	PASSED
4	22152M3	-	-	-	-	95.8%	-	PASSED
5	22152M3	-	-	-	-	99.5%	-	PASSED
6	22162M3	>9.0	>5.2	<0.12	1020	-	-	PASSED
7	22162M3	>9.0	>5.2	<0.12	1100	-	-	PASSED
8	22162M3	>9.0	>5.2	<0.12	1100	-	-	PASSED
9	22162M3	-	-	-	-	96.3%	-	PASSED
10	22162M3	-	-	-	-	99.0%	-	PASSED
11	22172M3	8.3	>5.2	<0.12	1040	-	-	PASSED
12	22172M3	>9.0	>5.2	<0.12	1080	-	-	PASSED
13	22172M3	>8.2	>5.2	<0.12	1140	-	-	PASSED
14	22172M3	-	-	-	-	86.1%	-	PASSED
15	22172M3	-	-	-	-	94.8%	-	PASSED

Water Laboratory

Parameter	Microbiological log <sub>10</sub> reduction		Physico-chemical characteristics				Conclusion	
	Bacteria (E.coli)	Protozoa (3µm spheres surrogate)	Turbidity of effluent water (NTU)	Flow rate (ml/min)	Chlorine removal at 25L (%)	Chlorine removal at 100L (%)		
Reference method	SMEWW 92221: 2017 (*)	US EPA 05/9205/EPADWC (Modified) (*)	SMEWW 2130B: 2017 (*)	WL.SOP.133	Hach 8167 - DPD method (*)	Hach 8167 - DPD method (*)		
Specification	Min 8	Min 5	Max 0.5	1200 ± 30%	Min 81	Min 50	PASSED	
16	22192M3	>9.0	>5.2	0.12	1120	-	-	PASSED
17	22192M3	>9.0	>5.2	<0.12	1060	-	-	PASSED
18	22192M3	>9.0	>5.2	<0.12	1140	-	-	PASSED
19	22192M3	-	-	-	-	95.8%	-	PASSED
20	22192M3	-	-	-	-	95.3%	-	PASSED

Note: (\*) ISO/IEC 17025 accredited methods

I, the undersigned, hereby declare that the findings provide a true and accurate record of the results obtained on samples as received.

Date and signature

23/12/2022




Cao Thu Le  
Water Laboratory Manager



TEST REPORT

5001 East Philadelphia Street
Ontario, California – USA 91761-2816
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Report Number: 2585-21002 Project No.: 37135
Report Issued: November 5, 2021
Report To: Vestergaard Frandsen Inc
Source of Samples: Tested by QFT Laboratory Inc. Williamstown NJ
Location of Testing: 1041 Glassboro Rd. Suite D-1 Williamstown NJ 08094
Dates of Evaluation: October 21, 2021
Product Description: LifeStraw Go – Mouth Drawn
Reference Standard: NSF/ANSI 53-2020
Scope of Evaluation: Qualification of the sample for Asbestos Reduction per NSF/ANSI 53-2020.
Conclusion: The samples described in the "Product Description" were evaluated according to the referenced standard, results are below.
Report Status: IN COMPLIANCE

Reviewed By,

Handwritten signature of Sal Aridi

Sal Aridi, Director

All testing and sample preparation for this report was performed under the continuous, direct supervision of IAPMO R&T Lab, unless otherwise stated. The statement of compliance is based on the test results compared to the standard specifications without considering measurement uncertainty. The observations, test results and conclusions in this report apply only to the specific samples tested and are not indicative of the quality or performance of similar or identical products. Only the Client shown above is authorized to copy or distribute the report, and then only in its entirety. Any use of the IAPMO R&T Lab name for the sale or advertisement of the tested material, product or service must first be approved in writing by IAPMO R&T Lab.



**Requirements for Compliance:**

The system shall reduce the influent asbestos fiber concentration in the range of  $10^7$  to  $10^8$  fibers per liter by at least 99%

**Table One:** Specifications of testing

<b>Number of Units</b>	Two
<b>Conditioning</b>	Run for 1 minute
<b>Sampling</b>	Per NSF 53
<b>Flow Rate</b>	0.8 LPM
<b>Filter Capacity</b>	10 L
<b>Unit Volume</b>	0.01 L
<b>Cycle</b>	50/50
<b>PID</b>	None
<b>Deviations from Standard</b>	none

Influent water characteristics:

Sample Point	pH (7.5±0.5)	Temperature (20±2.5°C)	TDS (200 to 500 mg/L)	Hardness (<170 mg/L)	Turbidity: Test Water (<1NTU)	TOC (>1 mg/L)	Turbidity: Dust Loading Water (>10NTU)
10 L	7.55	20.5	250	110	0.45	1.1	11.0
Average	7.55	20.5	250	110	0.45	1.1	11.0

**Filter #1 Data Summary Table**

Sample Point	Influent 1 (fibers/L)	Effluent 1 Concentration (fibers/L)	% Reduction
10 L	$4.7955 \times 10^7$	250	99.99945%

Asbestos Reporting Limit: 10 fibers/L

**Filter #2 Data Summary Table**

Sample Point	Influent 1 (fibers/L)	Effluent 1 Concentration (fibers/L)	% Reduction
10 L	$4.7955 \times 10^7$	220	99.99954%

Asbestos Reporting Limit: 10 fibers/L

LifeStraw® 