

LARQ

LARQ Pitcher Filtration Performance

Performance Summary

Our innovative plant-based filters are independently tested to NSF/ANSI 42 & 53 standards to be effective against a wide range of pollutants.

Contaminants Filtered	LARQ Pitcher	
	Essential Filter Average Removal Rate	Advanced Filter Average Removal Rate
Lead pH=6.5 (NSF/ANSI 53)	N/A	99.3%
Lead pH=8.5 (NSF/ANSI 53)	N/A	99.6%
Benzene (NSF/ANSI 53)	N/A	>95.3%
Chlorine (NSF/ANSI 42)	99.5%	98.6%
Cadmium pH=6.5 (NSF/ANSI 53)	99.8%	>99.8%
Cadmium pH=8.5 (NSF/ANSI 53)	99.6%	>99.8%
Copper pH=6.5 (NSF/ANSI 53)	98.8%	99.8%
Copper pH=8.5 (NSF/ANSI 53)	99.5%	99.2%
Mercury pH=6.5 (NSF/ANSI 53)	>98.9%	98.5%
Mercury pH=8.5 (NSF/ANSI 53)	>98.7%	98.6%
VOCs (NSF/ANSI 53)	97.4%	92.6%
Pesticides (NSF/ANSI 53)	97.4%	92.6%
Alachlor (NSF/ANSI 53)	97.4%	92.6%
Atrazine (NSF/ANSI 53)	97.4%	92.6%
Carbofuran (NSF/ANSI 53)	97.4%	92.6%
Carbon Tetrachloride (NSF/ANSI 53)	97.4%	92.6%
Chlordane (NSF/ANSI 53)	97.4%	92.6%
Chlorobenzene (NSF/ANSI 53)	97.4%	92.6%
2,4-D (2,4-dichlorophenoxyacetic acid) (NSF/ANSI 53)	97.4%	92.6%
Dibromochloropropane (NSF/ANSI 53)	97.4%	92.6%
o-dichlorobenzene (NSF/ANSI 53)	97.4%	92.6%
p-dichlorobenzene (NSF/ANSI 53)	97.4%	92.6%
1,2-dichloroethane (NSF/ANSI 53)	97.4%	92.6%
1,1-dichloroethylene (NSF/ANSI 53)	97.4%	92.6%
cis-1,2-dichloroethylene (NSF/ANSI 53)	97.4%	92.6%
trans-1,2-dichloroethylene (NSF/ANSI 53)	97.4%	92.6%
1,2-dichloropropane (NSF/ANSI 53)	97.4%	92.6%
Dinoseb (NSF/ANSI 53)	97.4%	92.6%
Endrin (NSF/ANSI 53)	97.4%	92.6%
Ethylbenzene (NSF/ANSI 53)	97.4%	92.6%
Ethylene dibromide (NSF/ANSI 53)	97.4%	92.6%
Heptachlor (H-34, heptox) (NSF/ANSI 53)	97.4%	92.6%
Heptachlor epoxide (NSF/ANSI 53)	97.4%	92.6%
Hexachlorocyclopentadiene (NSF/ANSI 53)	97.4%	92.6%
Lindane (NSF/ANSI 53)	97.4%	92.6%
Methoxychlor (NSF/ANSI 53)	97.4%	92.6%
Methyltert-butylether (MTBE) (NSF/ANSI 53)	97.4%	92.6%
Pentachlorophenol (NSF/ANSI 53)	97.4%	92.6%
Polychlorinated biphenyls (PCBs) (NSF/ANSI 53)	97.4%	92.6%
Simazine (NSF/ANSI 53)	97.4%	92.6%
Styrene (NSF/ANSI 53)	97.4%	92.6%
2,4,5-TP (silvex) (NSF/ANSI 53)	97.4%	92.6%
Tetrachloroethylene (NSF/ANSI 53)	97.4%	92.6%
Toluene (NSF/ANSI 53)	97.4%	92.6%
Toxaphene (NSF/ANSI 53)	97.4%	92.6%
1,2,4-trichlorobenzene (NSF/ANSI 53)	97.4%	92.6%
1,1,1-trichloroethane (NSF/ANSI 53)	97.4%	92.6%
1,1,2-trichloroethane (NSF/ANSI 53)	97.4%	92.6%
Trichloroethylene (NSF/ANSI 53)	97.4%	92.6%
TTHM (chloroform) (NSF/ANSI 53)	97.4%	92.6%
Xylenes (NSF/ANSI 53)	97.4%	92.6%
Improves tastes and odor	Yes	Yes
Microplastics	N/A	Yes

*For average removal rate noted with "N/A", the LARQ Essential Filter will not remove the contaminant.

LARQ

Third-party Lab Reports
LARQ Advanced Filter



Client: LARQ, Inc., 950 Tower Lane, STE 2100, Foster City, CA 94404

Test Number: SZ20210525 and SZ20210526

Study: Efficacy of LARQ Advanced Filter Against Lead

Date Received: Feb 19, 2021

Date Analyzed: Feb 28, 2021

Certificate of Analysis

Background:

The objective of this experiment was to test the efficacy of LARQ's Advanced Filter at removing lead based on NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water) testing guidelines. LARQ provided 4 Advanced Filters for testing. For this study, the challenge water was adjusted to pH6.5 and pH8.5 with the lead concentration was 0.15mg/L \pm 10%. The challenge water was passed through the Advanced Filter at a rate of 1 liter with a 30-60-minute interval. Each sample was taken at 0%, 25%, 50%, 75%, 100%, and 120% of the estimated filter life, ending at a net total of 300 liters of water filtered through.

Materials and methods:

Name of Sample	LARQ Advanced Filter	Source of Sample	Delivery
Applicant	LARQ, Inc.	Client	LARQ, Inc.
Producing Company	SIP Topology Environmental Protection & Purification Co.,Ltd.	Trademark	LARQ
Date and Batch Number of Production	2020/12/29	Sample Description	Solid filter
Quantity of Sample	4	Type and specification	PAFR190A
Testing Standard	NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water)		
Items of Analysis	Spiking Test: Lead (pH6.5 and pH8.5)		

Remarks	<p>The test plan is as follows:</p> <ol style="list-style-type: none"> 1. Rated total water volume of 300L, water flow rate of 0.25 L/min; 2. Test method: the LARQ Advanced Filter was tested in individual fills of the hopper. For each fill, 1 liter of the spiked water was used as the input. 10 liters of water per day were processed by the sample product. 30-60 min interval for each fill; 3. Sampling test at 0%, 25%, 50%, 75%, 100%, 120% of rated filter life; 4. The test water condition was tested at pH6.5 and pH8.5, and the lead concentration was 0.15mg/L±10%.
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Results:

Figure 1. Testing results for lead at pH 6.5

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	0.149	0.00102	0.00125	99.3	99.2
62.5	0.154	0.00251	0.00287	98.4	98.1
125	0.156	0.00136	0.00203	99.1	98.7
187.5	0.149	0.00147	0.00159	99.0	98.9
250	0.149	0.00107	0.00092	99.3	99.4
300	0.152	0.00129	0.00120	99.2	99.2

Figure 3. Testing results for lead at pH8.5

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	0.151	0.00038	0.00068	99.7	99.5
62.5	0.149	0.00117	0.00142	99.2	99.0
125	0.159	0.00083	0.00110	99.5	99.3
187.5	0.152	0.00222	0.00224	98.5	98.5
250	0.147	0.00127	0.00126	99.2	99.1
300	0.147	0.00135	0.00133	99.1	99.1



Client: LARQ, Inc., 950 Tower Lane, STE 2100, Foster City, CA 94404

Test Number: SZ20210529

Study: Efficacy of LARQ Advanced Filter Against Chlorine

Date Received: Feb 19, 2021

Date Analyzed: Apr 11, 2021

Certificate of Analysis

Background:

The objective of this experiment was to test the efficacy of LARQ’s Advanced Filter at removing chlorine based on NSF/ANSI42-2015 (Drinking Water Treatment Units – Aesthetic Effects) and GB/T 5750-2006 (Standard examination methods for drinking water) testing guidelines. LARQ provided 2 Advanced Filters for testing. For this study, the chlorine concentration was 2.0mg/L ±10%. The challenge water was passed through the Advanced Filter at a rate of 1 liter with a 30-60-minute interval. Each sample was taken at 0%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, and 100% of the estimated filter life, ending at a net total of 250 liters of water filtered through.

Materials and methods:

Name of Sample	LARQ Advanced Filter	Source of Sample	Delivery
Applicant	LARQ, Inc.	Client	LARQ, Inc.
Producing Company	SIP Topology Environmental Protection & Purification Co.,Ltd.	Trademark	LARQ
Date and Batch Number of Production	2020/12/29	Sample Description	Solid filter
Quantity of Sample	2	Type and specification	PAFR190A
Testing Standard	NSF/ANSI42-2015 (Drinking Water Treatment Units - Aesthetic Effects) and GB/T 5750-2006 (Standard examination methods for drinking water)		
Items of Analysis	Spiking Test: Chlorine		
Remarks	<p>The test plan is as follows:</p> <ol style="list-style-type: none"> 1. Rated total water volume of 250L, water flow rate of 0.25 L/min; 2. Test method: the LARQ Advanced Filter was tested in individual fills of the hopper. For each fill, 1 liter of the spiked water was used as the input. 10 liters of water per day were processed by the sample product. 30-60 min interval for each fill; 3. Sampling test at 0%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, and 100% of rated filter life; 4. The chlorine concentration was 2.0mg/L±10%. 		

Results:

Figure 1. Testing results for chlorine

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	2.13	0.03	0.03	98.6	98.6
25	2.07	0.03	0.03	98.6	98.6
50	1.97	0.03	0.04	98.5	98.0
75	1.99	0.04	0.04	98.0	98.0
100	2.01	0.05	0.05	97.5	97.5
125	2.07	0.07	0.08	96.6	96.1
150	2.03	0.09	0.09	95.6	95.6
175	2.11	0.11	0.10	94.8	95.3
200	2.07	0.13	0.14	93.7	93.2
225	2.11	0.16	0.15	92.4	92.9
250	2.03	0.18	0.17	91.1	91.6



Client: LARQ, Inc., 950 Tower Lane, STE 2100, Foster City, CA 94404

Test Number: SZ20210519 and SZ20210520

Study: Efficacy of LARQ Advanced Filter Against Cadmium

Date Received: Feb 19, 2021

Date Analyzed: Feb 22, 2021

Certificate of Analysis

Background:

The objective of this experiment was to test the efficacy of LARQ’s Advanced Filter at removing cadmium based on NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water) testing guidelines. LARQ provided 4 Advanced Filters for testing. For this study, the challenge water was adjusted to pH6.5 and pH8.5 with the cadmium concentration was 0.03mg/L ±10%. The challenge water was passed through the Advanced Filter at a rate of 1 liter with a 30-60-minute interval. Each sample was taken at 0%, 25%, 50%, 75%, 100%, and 120% of the estimated filter life, ending at a net total of 300 liters of water filtered through.

Materials and methods:

Name of Sample	LARQ Advanced Filter	Source of Sample	Delivery
Applicant	LARQ, Inc.	Client	LARQ, Inc.
Producing Company	SIP Topology Environmental Protection & Purification Co.,Ltd.	Trademark	LARQ
Date and Batch Number of Production	2020/12/29	Sample Description	Solid filter
Quantity of Sample	4	Type and specification	PAFR190A
Testing Standard	NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water)		
Items of Analysis	Spiking Test: Cadmium (pH6.5 and pH8.5)		

Remarks	<p>The test plan is as follows:</p> <ol style="list-style-type: none"> 1. Rated total water volume of 300L, water flow rate of 0.25 L/min; 2. Test method: the LARQ Advanced Filter was tested in individual fills of the hopper. For each fill, 1 liter of the spiked water was used as the input. 10 liters of water per day were processed by the sample product. 30-60 min interval for each fill; 3. Sampling test at 0%, 25%, 50%, 75%, 100%, 120% of rated filter life; 4. The test water condition was tested at pH6.5 and pH8.5, and the cadmium concentration was 0.03mg/L\pm10%.
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Results:

Figure 1. Testing results for cadmium at pH 6.5

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	0.0305	<0.00006	<0.00006	>99.8	>99.8
62.5	0.0314	0.00023	0.00009	99.3	99.7
125	0.0299	0.00019	0.00014	99.4	99.5
187.5	0.0322	0.00030	0.00043	99.1	98.7
250	0.0312	0.00059	0.00049	98.1	98.4
300	0.0326	0.00094	0.00095	97.1	97.1

Figure 3. Testing results for cadmium at pH8.5

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	0.0302	<0.00006	<0.00006	>99.8	>99.8
62.5	0.0321	0.00028	0.00034	99.1	98.9
125	0.0297	0.00018	0.00023	99.4	99.2
187.5	0.0318	0.00017	0.00023	99.5	99.3
250	0.0318	0.00033	0.00033	99.0	99.0
300	0.0316	0.00052	0.00046	98.4	98.5



Client: LARQ, Inc., 950 Tower Lane, STE 2100, Foster City, CA 94404

Test Number: SZ20210521 and SZ20210522

Study: Efficacy of LARQ Advanced Filter Against Copper

Date Received: Feb 19, 2021

Date Analyzed: May 17, 2021

Certificate of Analysis

Background:

The objective of this experiment was to test the efficacy of LARQ’s Advanced Filter at removing copper based on NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water) testing guidelines. LARQ provided 4 Advanced Filters for testing. For this study, the challenge water was adjusted to pH6.5 and pH8.5 with the copper concentration was 3.0mg/L ±10%. The challenge water was passed through the Advanced Filter at a rate of 1 liter with a 30-60-minute interval. Each sample was taken at 0%, 25%, 50%, 75%, 100%, and 120% of the estimated filter life, ending at a net total of 300 liters of water filtered through.

Materials and methods:

Name of Sample	LARQ Advanced Filter	Source of Sample	Delivery
Applicant	LARQ, Inc.	Client	LARQ, Inc.
Producing Company	SIP Topology Environmental Protection & Purification Co.,Ltd.	Trademark	LARQ
Date and Batch Number of Production	2020/12/29	Sample Description	Solid filter
Quantity of Sample	4	Type and specification	PAFR190A
Testing Standard	NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water)		
Items of Analysis	Spiking Test: Copper (pH6.5 and pH8.5)		

Remarks	<p>The test plan is as follows:</p> <ol style="list-style-type: none"> 1. Rated total water volume of 300L, water flow rate of 0.25 L/min; 2. Test method: the LARQ Advanced Filter was tested in individual fills of the hopper. For each fill, 1 liter of the spiked water was used as the input. 10 liters of water per day were processed by the sample product. 30-60 min interval for each fill; 3. Sampling test at 0%, 25%, 50%, 75%, 100%, 120% of rated filter life; 4. The test water condition was tested at pH6.5 and pH8.5, and the copper concentration was 3.0mg/L\pm10%.
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Results:

Figure 1. Testing results for copper at pH 6.5

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	3.07	0.00818	0.00457	99.7	99.9
62.5	3.08	0.0194	0.0212	99.4	99.3
125	3.12	0.0286	0.0330	99.1	98.9
187.5	3.08	0.0320	0.0465	99.0	98.5
250	2.88	0.0540	0.0652	98.1	97.7
300	3.18	0.0647	0.0734	98.0	97.7

Figure 2. Testing results for copper at pH8.5

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	3.04	0.0229	0.0231	99.2	99.2
62.5	3.25	0.165	0.0849	94.9	97.4
125	3.05	0.224	0.0937	92.7	96.9
187.5	3.10	0.299	0.139	92.6	95.5
250	3.19	0.229	0.140	92.8	95.6
300	3.03	0.237	0.157	92.2	94.8



Client: LARQ, Inc., 950 Tower Lane, STE 2100, Foster City, CA 94404

Test Number: SZ20210523 and SZ20210524

Study: Efficacy of LARQ Advanced Filter Against Mercury

Date Received: Feb 19, 2021

Date Analyzed: Feb 24, 2021

Certificate of Analysis

Background:

The objective of this experiment was to test the efficacy of LARQ's Advanced Filter at removing mercury based on NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water) testing guidelines. LARQ provided 4 Advanced Filters for testing. For this study, the challenge water was adjusted to pH6.5 and pH8.5 with the mercury concentration was 0.006mg/L \pm 10%. The challenge water was passed through the Advanced Filter at a rate of 1 liter with a 30-60-minute interval. Each sample was taken at 0%, 25%, 50%, 75%, 100%, and 120% of the estimated filter life, ending at a net total of 300 liters of water filtered through.

Materials and methods:

Name of Sample	LARQ Advanced Filter	Source of Sample	Delivery
Applicant	LARQ, Inc.	Client	LARQ, Inc.
Producing Company	SIP Topology Environmental Protection & Purification Co.,Ltd.	Trademark	LARQ
Date and Batch Number of Production	2020/12/29	Sample Description	Solid filter
Quantity of Sample	4	Type and specification	PAFR190A
Testing Standard	NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water)		
Items of Analysis	Spiking Test: Mercury (pH6.5 and pH8.5)		

Remarks	<p>The test plan is as follows:</p> <ol style="list-style-type: none"> 1. Rated total water volume of 300L, water flow rate of 0.25 L/min; 2. Test method: the LARQ Advanced Filter was tested in individual fills of the hopper. For each fill, 1 liter of the spiked water was used as the input. 10 liters of water per day were processed by the sample product. 30-60 min interval for each fill; 3. Sampling test at 0%, 25%, 50%, 75%, 100%, 120% of rated filter life; 4. The test water condition was tested at pH6.5 and pH8.5, and the mercury concentration was 0.006mg/L±10%.
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Results:

Figure 1. Testing results for mercury at pH 6.5

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	0.00633	0.00009	0.00011	98.6	98.3
62.5	0.00629	<0.00007	<0.00007	>98.9	>98.9
125	0.00633	0.00014	0.00014	97.8	97.8
187.5	0.00601	0.00014	0.00012	97.7	98.0
250	0.00640	0.00015	0.00015	97.7	97.7
300	0.00617	0.00037	0.00032	94.0	94.8

Figure 3. Testing results for mercury at pH8.5

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	0.00609	0.00010	0.00008	98.4	98.7
62.5	0.0065	0.00007	0.00008	98.9	98.8
125	0.0061	0.00012	0.00016	98.0	97.4
187.5	0.00595	0.00035	0.00021	94.1	96.5
250	0.00662	0.00051	0.00049	92.3	92.6
300	0.00618	0.00050	0.00056	91.9	90.9



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Client: LARQ, Inc., 950 Tower Lane, STE 2100, Foster City, CA 94404

Test Number: SZ20210528

Study: Efficacy of LARQ Advanced Filter Against Chloroform

Date Received: Feb 19, 2021

Date Analyzed: Apr 15, 2021

Certificate of Analysis

Background:

The objective of this experiment was to test the efficacy of LARQ’s Advanced Filter at removing chloroform based on NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water) testing guidelines. LARQ provided 2 Advanced Filters for testing. For this study, the chloroform concentration was 0.3mg/L ±10%. The challenge water was passed through the Advanced Filter at a rate of 1 liter with a 30-60-minute interval. Each sample was taken at 0%, 25%, 50%, 75%, 100%, and 120% of the estimated filter life, ending at a net total of 300 liters of water filtered through.

Materials and methods:

Name of Sample	LARQ Advanced Filter	Source of Sample	Delivery
Applicant	LARQ, Inc.	Client	LARQ, Inc.
Producing Company	SIP Topology Environmental Protection & Purification Co.,Ltd.	Trademark	LARQ
Date and Batch Number of Production	2020/12/29	Sample Description	Solid filter
Quantity of Sample	2	Type and specification	PAFR190A
Testing Standard	NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water)		
Items of Analysis	Spiking Test: Chloroform		
Remarks	<p>The test plan is as follows:</p> <ol style="list-style-type: none"> Rated total water volume of 300L, water flow rate of 0.25 L/min; Test method: the LARQ Advanced Filter was tested in individual fills of the hopper. For each fill, 1 liter of the spiked water was used as the input. 10 liters of water per day were processed by the sample product. 30-60 min interval for each fill; Sampling test at 0%, 25%, 50%, 75%, 100%, 120% of rated filter life; The chloroform concentration was 0.3mg/L±10%. 		

Results:

Figure 1. Testing results for chloroform

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	285	20.4	21.8	92.8	92.4
25	297	29.9	24.5	89.9	91.8
50	315	57.9	41.0	81.6	87.0
75	350	61.0	52.9	82.6	84.9
100	348	69.3	66.2	80.1	81.0
125	306	75.2	70.9	75.4	76.8
150	311	85.6	81.5	72.5	73.8
175	311	93.1	96.2	70.1	69.1
200	287	91.3	92.4	68.2	67.8
225	322	119	118	63.0	63.4
250	340	127	128	62.6	62.4
275	301	143	119	52.5	60.5
300	315	160	158	49.2	49.8



Client: LARQ, Inc., 950 Tower Lane, STE 2100, Foster City, CA 94404

Test Number: SZ20210527

Study: Efficacy of LARQ Advanced Filter Against Benzene

Date Received: Feb 19, 2021

Date Analyzed: Apr 15, 2021

Certificate of Analysis

Background:

The objective of this experiment was to test the efficacy of LARQ’s Advanced Filter at removing benzene based on NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water) testing guidelines. LARQ provided 2 Advanced Filters for testing. For this study, the benzene concentration was 0.015mg/L ±10%. The challenge water was passed through the Advanced Filter at a rate of 1 liter with a 30-60-minute interval. Each sample was taken at 0%, 25%, 50%, 75%, 100%, and 120% of the estimated filter life, ending at a net total of 300 liters of water filtered through.

Materials and methods:

Name of Sample	LARQ Advanced Filter	Source of Sample	Delivery
Applicant	LARQ, Inc.	Client	LARQ, Inc.
Producing Company	SIP Topology Environmental Protection & Purification Co.,Ltd.	Trademark	LARQ
Date and Batch Number of Production	2020/12/29	Sample Description	Solid filter
Quantity of Sample	2	Type and specification	PAFR190A
Testing Standard	NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water)		
Items of Analysis	Spiking Test: Benzene		
Remarks	<p>The test plan is as follows:</p> <ol style="list-style-type: none"> 1. Rated total water volume of 300L, water flow rate of 0.25 L/min; 2. Test method: the LARQ Advanced Filter was tested in individual fills of the hopper. For each fill, 1 liter of the spiked water was used as the input. 10 liters of water per day were processed by the sample product. 30-60 min interval for each fill; 3. Sampling test at 0%, 25%, 50%, 75%, 100%, 120% of rated filter life; 4. The benzene concentration was 0.015mg/L±10%. 		

Results:

Figure 1. Testing results for benzene

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	15.0	<0.7	<0.7	>95.3	>95.3
62.5	15.1	0.9	0.7	94.0	95.3
125	14.7	<0.7	<0.7	>95.3	>95.2
187.5	14.1	<0.7	<0.7	>95.0	>95.0
250	13.5	1.1	1.5	91.8	88.8
300	14.0	1.6	2.2	88.5	84.2

LARQ

Third-party Lab Reports

LARQ Essential Filter



(MA:
202019005395

Client: LARQ, Inc., 950 Tower Lane, STE 2100, Foster City, CA 94404

Test Number: SZ20210537

Study: Efficacy of LARQ Essential Filter Against Chlorine

Date Received: Feb 19, 2021

Date Analyzed: Apr 11, 2021

Certificate of Analysis

Background:

The objective of this experiment was to test the efficacy of LARQ’s Essential Filter at removing chlorine based on NSF/ANSI42-2015 (Drinking Water Treatment Units – Aesthetic Effects) and GB/T 5750-2006 (Standard examination methods for drinking water) testing guidelines. LARQ provided 2 Essential Filters for testing. For this study, the chlorine concentration was 2.0mg/L ±10%. The challenge water was passed through the Essential Filter at a rate of 1 liter with a 30-60-minute interval. Each sample was taken at 0%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, and 100% of the estimated filter life, ending at a net total of 250 liters of water filtered through.

Materials and methods:

Name of Sample	LARQ Essential Filter	Source of Sample	Delivery
Applicant	LARQ, Inc.	Client	LARQ, Inc.
Producing Company	SIP Topology Environmental Protection & Purification Co.,Ltd.	Trademark	LARQ
Date and Batch Number of Production	2020/12/29	Sample Description	Solid filter
Quantity of Sample	2	Type and specification	PEFR190A
Testing Standard	NSF/ANSI42-2015 (Drinking Water Treatment Units - Aesthetic Effects) and GB/T 5750-2006 (Standard examination methods for drinking water)		
Items of Analysis	Spiking Test: Chlorine		
Remarks	<p>The test plan is as follows:</p> <ol style="list-style-type: none"> Rated total water volume of 250L, water flow rate of 0.25 L/min; Test method: the LARQ Essential Filter was tested in individual fills of the hopper. For each fill, 1 liter of the spiked water was used as the input. 10 liters of water per day were processed by the sample product. 30-60 min interval for each fill; Sampling test at 0%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, and 100% of rated filter life; The chlorine concentration was 2.0mg/L±10%. 		

Results:**Figure 1. Testing results for chlorine**

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	2.13	0.01	0.01	99.5	99.5
25	2.07	0.01	0.01	99.5	99.5
50	1.97	0.02	0.01	99.0	99.5
75	1.99	0.03	0.03	98.5	98.5
100	2.01	0.04	0.04	98.0	98.0
125	2.07	0.05	0.05	97.6	97.6
150	2.03	0.05	0.06	97.5	97.0
175	2.11	0.07	0.07	96.7	96.7
200	2.07	0.08	0.08	96.1	96.1
225	2.11	0.08	0.09	96.2	95.7
250	2.03	0.11	0.12	94.6	94.1



Client: LARQ, Inc., 950 Tower Lane, STE 2100, Foster City, CA 94404

Test Number: SZ20210530 and SZ20210531

Study: Efficacy of LARQ Essential Filter Against Cadmium

Date Received: Feb 19, 2021

Date Analyzed: Feb 22, 2021

Certificate of Analysis

Background:

The objective of this experiment was to test the efficacy of LARQ’s Essential Filter at removing cadmium based on NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water) testing guidelines. LARQ provided 4 Essential Filters for testing. For this study, the challenge water was adjusted to pH6.5 and pH8.5 with the cadmium concentration was 0.03mg/L ±10%. The challenge water was passed through the Essential Filter at a rate of 1 liter with a 30-60-minute interval. Each sample was taken at 0%, 25%, 50%, 75%, 100%, and 120% of the estimated filter life, ending at a net total of 300 liters of water filtered through.

Materials and methods:

Name of Sample	LARQ Essential Filter	Source of Sample	Delivery
Applicant	LARQ, Inc.	Client	LARQ, Inc.
Producing Company	SIP Topology Environmental Protection & Purification Co.,Ltd.	Trademark	LARQ
Date and Batch Number of Production	2020/12/29	Sample Description	Solid filter
Quantity of Sample	4	Type and specification	PEFR190A
Testing Standard	NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water)		
Items of Analysis	Spiking Test: Cadmium (pH6.5 and pH8.5)		
Remarks	<p>The test plan is as follows:</p> <ol style="list-style-type: none"> Rated total water volume of 300L, water flow rate of 0.25 L/min; Test method: the LARQ Essential Filter was tested in individual fills of the hopper. For each fill, 1 liter of the spiked water was used as the input. 10 liters of water per day were processed by the sample product. 30-60 min interval for each fill; Sampling test at 0%, 25%, 50%, 75%, 100%, 120% of rated filter life; The test water condition was tested at pH6.5 and pH8.5, and the cadmium concentration was 0.03mg/L±10%. 		

Results:

Figure 1. Testing results for cadmium at pH 6.5

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	0.0305	0.00006	0.00008	99.8	99.7
62.5	0.0314	0.00065	0.00122	97.9	96.1
125	0.0299	0.00055	0.00071	98.2	97.6
187.5	0.0322	0.00086	0.00082	97.3	97.5
250	0.0312	0.00091	0.00136	97.1	96.0
300	0.0326	0.00090	0.00115	97.2	96.5

Figure 3. Testing results for cadmium at pH8.5

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	0.0302	0.00013	0.00014	99.6	99.5
62.5	0.0321	0.00068	0.00104	97.9	96.8
125	0.0297	0.00021	0.00045	99.3	98.5
187.5	0.0318	0.00018	0.00045	99.4	98.6
250	0.0318	0.00033	0.00052	99.0	98.4
300	0.0316	0.00084	0.00120	97.3	96.2



(MA:
202019005395

Client: LARQ, Inc., 950 Tower Lane, STE 2100, Foster City, CA 94404

Test Number: SZ20210532 and SZ20210533

Study: Efficacy of LARQ Essential Filter Against Copper

Date Received: Feb 19, 2021

Date Analyzed: May 17, 2021

Certificate of Analysis

Background:

The objective of this experiment was to test the efficacy of LARQ’s Essential Filter at removing copper based on NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water) testing guidelines. LARQ provided 4 Essential Filters for testing. For this study, the challenge water was adjusted to pH6.5 and pH8.5 with the copper concentration was 3.0mg/L ±10%. The challenge water was passed through the Essential Filter at a rate of 1 liter with a 30-60-minute interval. Each sample was taken at 0%, 25%, 50%, 75%, 100%, and 120% of the estimated filter life, ending at a net total of 300 liters of water filtered through.

Materials and methods:

Name of Sample	LARQ Essential Filter	Source of Sample	Delivery
Applicant	LARQ, Inc.	Client	LARQ, Inc.
Producing Company	SIP Topology Environmental Protection & Purification Co.,Ltd.	Trademark	LARQ
Date and Batch Number of Production	2020/12/29	Sample Description	Solid filter
Quantity of Sample	4	Type and specification	PEFR190A
Testing Standard	NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water)		
Items of Analysis	Spiking Test: Copper (pH6.5 and pH8.5)		
Remarks	<p>The test plan is as follows:</p> <ol style="list-style-type: none"> 1. Rated total water volume of 300L, water flow rate of 0.25 L/min; 2. Test method: the LARQ Essential Filter was tested in individual fills of the hopper. For each fill, 1 liter of the spiked water was used as the input. 10 liters of water per day were processed by the sample product. 30-60 min interval for each fill; 3. Sampling test at 0%, 25%, 50%, 75%, 100%, 120% of rated filter life; 4. The test water condition was tested at pH6.5 and pH8.5, and the copper concentration was 3.0mg/L±10%. 		

Results:**Figure 1. Testing results for copper at pH 6.5**

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	3.07	0.0416	0.0309	98.6	99.0
62.5	3.08	0.0671	0.0702	97.8	97.7
125	3.12	0.0723	0.0884	97.7	97.2
187.5	3.08	0.0814	0.0869	97.4	97.2
250	2.88	0.0861	0.0973	97.0	96.6
300	3.18	0.0946	0.119	97.0	96.3

Figure 3. Testing results for copper at pH8.5

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	3.04	0.0151	0.0181	99.5	99.4
62.5	3.25	0.111	0.176	96.6	94.6
125	3.05	0.0989	0.200	96.8	93.4
187.5	3.10	0.199	0.270	93.6	91.3
250	3.19	0.209	0.265	93.4	91.7
300	3.03	0.215	0.276	92.9	90.9



Client: LARQ, Inc., 950 Tower Lane, STE 2100, Foster City, CA 94404

Test Number: SZ20210534 and SZ20210535

Study: Efficacy of LARQ Essential Filter Against Mercury

Date Received: Feb 19, 2021

Date Analyzed: Feb 24, 2021

Certificate of Analysis

Background:

The objective of this experiment was to test the efficacy of LARQ's Essential Filter at removing mercury based on NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water) testing guidelines. LARQ provided 4 Essential Filters for testing. For this study, the challenge water was adjusted to pH6.5 and pH8.5 with the mercury concentration was 0.006mg/L \pm 10%. The challenge water was passed through the Essential Filter at a rate of 1 liter with a 30-60-minute interval. Each sample was taken at 0%, 25%, 50%, 75%, 100%, and 120% of the estimated filter life, ending at a net total of 300 liters of water filtered through.

Materials and methods:

Name of Sample	LARQ Essential Filter	Source of Sample	Delivery
Applicant	LARQ, Inc.	Client	LARQ, Inc.
Producing Company	SIP Topology Environmental Protection & Purification Co.,Ltd.	Trademark	LARQ
Date and Batch Number of Production	2020/12/29	Sample Description	Solid filter
Quantity of Sample	4	Type and specification	PEFR190A
Testing Standard	NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water)		
Items of Analysis	Spiking Test: Mercury (pH6.5 and pH8.5)		

Remarks	<p>The test plan is as follows:</p> <ol style="list-style-type: none"> 1. Rated total water volume of 300L, water flow rate of 0.25 L/min; 2. Test method: the LARQ Essential Filter was tested in individual fills of the hopper. For each fill, 1 liter of the spiked water was used as the input. 10 liters of water per day were processed by the sample product. 30-60 min interval for each fill; 3. Sampling test at 0%, 25%, 50%, 75%, 100%, 120% of rated filter life; 4. The test water condition was tested at pH6.5 and pH8.5, and the mercury concentration was 0.006mg/L±10%.
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Results:

Figure 1. Testing results for mercury at pH 6.5

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	0.00633	<0.00007	<0.00007	>98.9	>98.9
62.5	0.00629	0.00008	<0.00007	98.7	>98.9
125	0.00633	0.00016	0.00008	97.5	98.7
187.5	0.00601	0.00019	0.00012	96.8	98.0
250	0.00640	0.00017	0.00010	97.3	98.4
300	0.00617	0.00033	0.00030	94.7	95.1

Figure 3. Testing results for mercury at pH8.5

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	0.00609	0.00009	<0.00007	98.5	>98.9
62.5	0.0065	<0.00007	<0.00007	>98.9	>98.9
125	0.0061	0.00007	<0.00007	98.9	>98.9
187.5	0.00595	0.00009	0.00008	98.5	98.7
250	0.00662	0.00024	0.00025	96.4	96.2
300	0.00618	0.00042	0.00035	93.2	94.3



(MA:)
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Client: LARQ, Inc., 950 Tower Lane, STE 2100, Foster City, CA 94404

Test Number: SZ20210536

Study: Efficacy of LARQ Essential Filter Against Chloroform

Date Received: Feb 19, 2021

Date Analyzed: Apr 15, 2021

Certificate of Analysis

Background:

The objective of this experiment was to test the efficacy of LARQ’s Essential Filter at removing chloroform based on NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water) testing guidelines. LARQ provided 2 Essential Filters for testing. For this study, the chloroform concentration was 0.3mg/L ±10%. The challenge water was passed through the Essential Filter at a rate of 1 liter with a 30-60-minute interval. Each sample was taken at 0%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%, 110%, and 120% of the estimated filter life, ending at a net total of 300 liters of water filtered through.

Materials and methods:

Name of Sample	LARQ Essential Filter	Source of Sample	Delivery
Applicant	LARQ, Inc.	Client	LARQ, Inc.
Producing Company	SIP Topology Environmental Protection & Purification Co.,Ltd.	Trademark	LARQ
Date and Batch Number of Production	2020/12/29	Sample Description	Solid filter
Quantity of Sample	2	Type and specification	PEFR190A
Testing Standard	NSF/ANSI53-2019 (Drinking Water Treatment Units - Health Effects) and GB/T 5750-2006 (Standard examination methods for drinking water)		
Items of Analysis	Spiking Test: Chloroform		
Remarks	<p>The test plan is as follows:</p> <ol style="list-style-type: none"> 1. Rated total water volume of 300L, water flow rate of 0.25 L/min; 2. Test method: the LARQ Essential Filter was tested in individual fills of the hopper. For each fill, 1 liter of the spiked water was used as the input. 10 liters of water per day were processed by the sample product. 30-60 min interval for each fill; 3. Sampling test at 0%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%, 110%, and 120% of rated filter life; 4. The chloroform concentration was 0.3mg/L±10%. 		

Results:

Figure 1. Testing results for chloroform

Water yield (L)	Concentration before filtration (mg/L)	Concentration after filtration (mg/L)		Removal rate (%)	
		Sample 1	Sample 2	Sample 1	Sample 2
0	285	10.1	5.2	96.5	98.2
25	297	11.8	8.8	96.0	97.0
50	315	18.6	16.6	94.1	94.7
75	350	20.4	16.1	94.2	95.4
100	348	24.3	21.2	93.0	93.9
125	306	20.2	17.0	93.4	94.4
150	311	25.8	27.6	91.7	91.1
175	311	19.9	17.8	93.6	94.3
200	287	21.3	18.2	92.6	93.7
225	322	26.8	25.7	91.7	92.0
250	340	34.8	26.9	89.8	92.1
275	301	36.1	31.1	88.0	89.7
300	315	36.1	33.6	88.5	89.3