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TEST REPORT

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Result: **PASS** Report Date: 31-OCT-2017

Customer Name:	GenEón Technologies LLC
Test Location:	NSF International; 789 N. Dixboro Rd.; Ann Arbor, MI 48105
Tested To:	NSF Protocol P423 w/Deviation 2017-046
Description:	GenEón Wall Unit
Test Type:	Qualification Testing
Job Number:	J-00249700
Project Number:	10056027 (PL01)
Project Manager:	Lisa Yakas

Executive Summary: At the high output setting, the five replicates produced an average of 120.5 mg/L free available chlorine, and after stabilizing for 24 hours the average concentration measured 112.7 mg/L in the included storage containers. No violations to the protocol were noted during the Labeling and Product Information, Sanitizer Production or the Stability portions of the testing.

Thank you for having your product tested by NSF International.

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

Report Authorization: Kevin Schaefer Digitally signed by Kevin Schaefer Date: 2017.10.31 09:35:07 -04'00'

Kevin Schaefer, Group Leader, Engineering Laboratory

Authority:

Paul Anderson, Director, Engineering Laboratory

This report replaces the report with serial number FI20171017000021. It is being reissued to reflect updated product literature and claims. This does not change the overall status of the report.

Scope of Test Report

This test report consists of an evaluation of five (5) samples from GenEón Technologies 'Insta-Flow' wall-mount unit Version 3.5, to sections 6, 7, and 8 of NSF Protocol P423. NSF Deviation 2017-046 was followed, allowing five product water replicates from a single unit under test to be evaluated as opposed to a single product water replicate from five unique test units.

Sample Descriptions

The filter cartridge is defined as all components, including the filter body used during testing. The information and test results contained in this report apply only to the components and assembly listed below:

Test Sample:	GenEón Insta-Flow Version 3.5
Catalyst:	GenEón Sanitizer/Cleaner: 25% NaCl
Storage Container:	2-Gallon container

Figure 1 - GenEón Wall-Mount Test Sample

Figure 2 - Disinfecting Cleaner Storage Container

Figure 3 - Warning Label and Hose Connection Ports

Figure 4 – Sanitizer Catalyst - Front

Figure 5 – Sanitizer Catalyst - Usage and Warnings

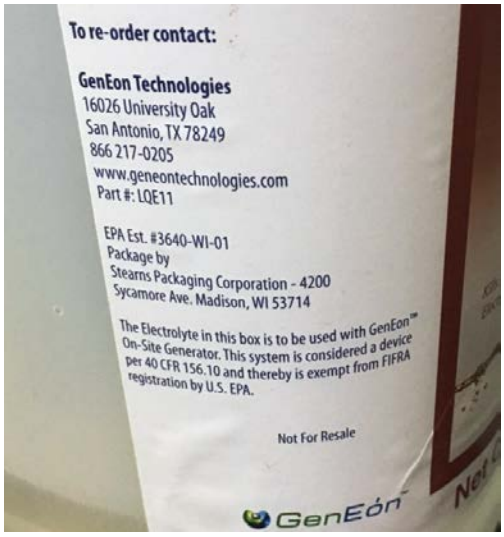

Figure 6 – Sanitizer Catalyst - Contact Information

Product Name: InstaFlow \ Model: InstaFlow

Rated Voltage	120 - 240 Vac 50 -60 Hz	**QC1**	
Electric Consumption	**Max, 120W**	**QC2**	
Generating Method	**Electrolysis**		
Electrode	**Iridium on Titanium**	**MFG.Date**	
Manufacturer /Supplier /Distributor	**Geneon Technologies, LLC / HyunSung E&E**	CE	**Made in KOREA**
ETL LISTED US Intertek **5002391** Conforms to UL STD 979 **EPA EST. #: 088681-KOR-001**	NSF Protocol P423 Electrochemically Activated Sanitizers in Food Service Operations The Device was reviewed under NSF Protocol 423 Set on the **High** setting when making sanitizer for Food Contact Areas 100 – 198 ppm of FAC	**WARNING / AVERTISSEMENT** Connect only to a circuit that is protected by a ground-fault circuit-interrupter (GFCI) Brancher seulement sur un circuit protégé par un disjoncteur de fuite de terre ("GFCI").	

Figure 7 - Wall Unit Label

Labeling and Product Information Requirements

6.1 – Label Contents

PASS

Table 1 – Label Contents

Section	Requirement	Pass	Fail
6.1	Product name, brand, or trademark	X	
	Mfr name, and phone number or website	X	
	Net contents	X	
	EPA Establishment or Registration Number	X	
	Ingredient statement	X	
	Solution preparation instructions	X	
	Use instructions	X	
	Hazard and precautionary statements	X	
	First aid instructions	X	
	Product performance claim	X	
	NSF Mark or reference to NSF certification	X	

6.2 – Operation and Instruction Manual

PASS

Table 2 - Operation and Instruction Manual Contents

Section	Requirement	Pass	Fail
6.2	Product name	X	
	Mfr name, address, phone number and website	X	
	Contents list (to include catalyst)	X	
	Replacement part or electrolyte information	X	
	Solution preparation instructions	X	
	Use instructions	X	
	First aid instructions	X	
	Disposal and/or recycling information for solution and product	X	
	EPA Establishment or Registration Number	X	
	Water quality requirements	X	
	Warranty information	X	
	Troubleshooting information	X	
	NSF Mark and reference to NSF certification	X	

6.3 – Legibility

PASS

Table 3 - Legibility

Section	Requirement	Pass	Fail
6.3	All required information clearly legible, easy to understand, and conspicuous	X	
	Required label text must be 6pt font or larger, on contrasting background, not obscured/crowded	X	
	Required label text must be in language suitable for the country where product is to be used.	X	

Performance

7.1 – Ability to Produce Sanitizer

Purpose

This test is designed to evaluate the ability to produce a sanitizing solution that meets the requirements of the applicable points of Section 7.

Test Procedure

One (1) test samples were assembled according to the manufacturer's instructions, with the power supply plugged into a standard 120VAC power outlet. Test water was balanced to meet the requirements of both NSF Protocol P423 and the manufacturer requirements listed in the instruction manual (listed in Tables 4 and 5 below). The test sample was then operated to achieve five (5) replicates of the test solution on the 'HIGH' setting. The test solutions were then measured for free available chlorine (FAC) and pH levels. The test solutions were stored in the provided storage containers.

Table 4 - Test Requirements, Protocol P423

Protocol Requirement	Allowable Range
pH	7.5 ± 0.5
Water Temperature	68 ± 5°F
Room Temperature	73.4 ± 9°F
Total Dissolved Solids (TDS)	200 – 500 mg/L
Total Organic Carbon (TOC)	> 1.0 mg/L
Turbidity	< 1 NTU
Voltage	± 5 Volts from mfr. listed
Salt/Additive	Continuous draw, controlled through test sample

Table 5 - Test Requirements, Manufacturer's Recommendations

Manufacturer Requirement	Allowable Range
pH	2.5 – 7
Water Temperature	41-90°F
Hardness	< 200 ppm
Voltage	120 VAC

Test Data – 'High' Setting **PASS**

The data collected during the Ability to Produce Sanitizer test, and the analysis of the data, are shown below in Tables 6 and 7.

Table 6 - Test Data – 'High' setting

Measured Parameter	Value
pH	6.30
Water Temperature	71.3°F
Room Temperature	72.1°F
Total Dissolved Solids (TDS)	477 mg/L
Total Organic Carbon (TOC)	1.6 mg/L
Turbidity	0.47 NTU

Voltage	119.8 VAC
Hardness	130 mg/L
Initial Free Chlorine	0.31 mg/L
Salt/Additive	Continuous draw, controlled through test sample

Table 7 - Ability to Produce Sanitizer Data – 'High' setting

Sample	Produced FAC (mg/L)	pH	Flow Rate (Lpm) (on Sample)	Amperage (A) (on sample)	FAC Deviation (from average) (%)	pH Deviation (from geometric mean) (%)
1	118.7	4.78	3.0	23	-1.5	-1.7
2	114.7	4.86			-4.8	-0.1
3	117.7	4.87			-2.3	0.1
4	126.7	4.94			5.1	1.6
5	124.7	4.87			3.5	0.1
Average	120.5	4.86				

Performance Requirement

1) Each test replicate shall produce a sanitizer level that achieves a minimum of 100mg/L free available chlorine, or its equivalent.
2) The chlorine concentration from each replicate shall not vary more than +/-20% from the average concentration of all of the replicates
3) Each test replicate shall produce a sanitizer with a pH of 10 or lower
4) The pH of each replicate shall not vary more than +/-20% from the geometric mean concentration of all of the replicates
5) The operating cycle of each replicate must be within +/10% of the average cycle

Test Results

The test sample was able to produce five replicates of a solution that that met the pH requirements and concentration range requirements of the protocol for sanitizers. The test sample is designed for continuous use, and was not tested to the Operating Cycle requirement of the test standard

Active Ingredient Stability — PASS

Purpose

This test is designed to evaluate the concentration of active ingredient in the test solution after a storage period of 24±2 hours.

Test Procedure

Test solution is prepared and activated in accordance to Ability to Produce Sanitizer (7.1.1) section of the test protocol, and the manufacturer's instructions. Half of the test solution is then removed from the storage container, and the test device is sealed with any equipment associated with the device. The half-full containers

are then placed in a storage area for 24±2 hours, at room temperature. At the end of the storage period, the solution is then analyzed for the concentration of the active ingredient and the pH level.

Test Data

The data collected during the Active Ingredient Stability test is shown below in Table 8.

Table 8 - Active Ingredient Stability – 'High' setting

Sample	FAC – Storage Container (@ 24 hrs) (mg/L)	pH (@ 24hrs)	FAC Conc. Deviation – Storage Container (from average) (%)	pH Deviation (from geometric mean) (%)
1	113.7	4.72	0.9	-1.0
2	110.7	4.75	-1.8	-0.3
3	113.7	4.76	0.9	-0.1
4	112.7	4.83	0.0	1.3
5	112.7	4.77	0.0	0.1
Avg.	112.7	4.77		

Performance Requirement

The test solution must meet the requirements of the Ability to Produce Sanitizer test after a storage period of 24 hours.

Test Results

When stored in the supplied Storage Container, the water samples met the requirements of the Ability to Produce Sanitizer test.

Test Results

Label Contents	PASS
Operation and Instruction Manual	PASS
Legibility	PASS
Ability to Produce Sanitizer – 'High'	PASS
Active Ingredient Stability – 'High'	PASS

This product was exempt from sanitizer effectiveness testing, as the active ingredient was chlorine.

The overall status of this report is a PASS.