MHC MISS HOME CARE TECHNOLOGY & CONSUMER TRENDS

Test Report N° F-0059/08
Laboratory Tests Filters and Purifiers

Customer Data

Company: Cerâmica Stéfani S/A

Address: Av. Major Hilario T. Pinto, 1388

City: Jaboticabal State: São Paulo Post code: 14871-900

Requested by: Mr. Emílio Garcia Neto

MHC Reference Code: F-0059/08

Free Chlorine Reduction Efficiency Test

Sampling Data - Free Chlorine Reduction Efficiency Test

Collection Responsability: The Customer

Collection date: Not available

Sample identification: Traditional Stéfani Filter

Receiving date : 02/13/2008

Receiving notes: 1 (one) sample of gravity equipament for water qualit improvement. Export Model. Sample duly sealed and without breaking signal.

Reference data of Free Chlorine Reduction Efficiency Test

Product Description: Gravity Filter

Installation Place: Not applicable

Model: Exportation

Declared Flow : 1,2 Liters/hour (0,317 gal/hour)

Work Flow: Not applicable

Work pressure: Not applicable

Life Time: 700 Liters (184,92 gal)

Internal volume: 6,0 Liters (1,58 gal)

Water volume discarded : 12 Liters (3,17 gal)

Test period: from 02/19/2008 up to 04/11/2008.

Principles and Methods Used

The test consists of passage a high chlorine concentration water through the equipment that has granulated coal, in block or powder and verifying its efficiency as for free chlorine reduction, according to NBR 15176:2004 and Internal Methodology MILFP-003.

Measurements Traceability

Code	Description	Calibrated by	Certificate Nº	Calibration Date	Validity
CL.01	Espectrophotometer	Senai/Cetiqt	R-1837	09/25/07	set-08
pH.02	pHmeter	Visomes	LV 17534/07	09/24/07	set-08
TR.01	Turbidimeter	Hexis	005034_01	12/19/07	out-08
TD.01	Indication / Temperature Controller	Visomes	LV 16894/07	9/10/07	set-08

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Ambient Conditions

Test was carried out at an ambient temperature of (21 ± 0) ºC / (69,8 ± 0) ºF .

Result of the Test of Efficiency of Free Chlorine Reduction

Classification	Average of the results (mg/L)	Average of the results (%)	Specified (%)	Expanded uncertainty (U) (mg/L)	Extending Factor k
I	0,75	75,25	≥ 75	0,012	4,53

The equipment tested is in accordance with the NBR 15176:2004 specification.

Bacteriological Efficiency Test

Sampling Data - Bacteriological Efficiency Test

Collection Responsability: The Customer

Collection date: Not available

Sample identification: Traditional Stéfani Filter

Receiving date : 02/13/2008

Receiving notes: 1 (one) sample of gravity equipament for water qualit improvement. Export Model. Sample duly sealed and without breaking signal.

Reference data of Bacteriological Efficiency Test

Product Description: Gravity Filter

Installation Place: Not applicable

Model: Exportation

Declared Flow : 1,2 Liters/hour (0,317 gal/hour)

Work Flow: Not applicable

Work pressure: Not applicable

Life Time: 700 Liters (184,92 gal)

Internal volume: 6,0 Liters (1,58 gal)

Water volume discarded : 12 Liters (3,17 gal)

Test period: from 02/25/2008 up to 04/24/2008.

Principles and Methods Used

Laboratory tests were carried out to evaluate the equipment capacity of reducing the bacterias number. The efficiency is evaluated by a logarithmic reduction of the initial bacterias number in the water, according to NBR 15176:2004 and internal methodology MILFP-004.

Measurements Traceability

Not Applicable to test Bacteriological Efficiency.

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Environment Conditions

The Test was carried out at na ambient temperature of (25 ± 0) ºC / (77 ± 0) ºF .

Bacteriological Efficiency Results

Samples		Results UFC / 100 mL	Specified
Start v.µ	initial Concentration in UFC / 100 mL of water	6,2 x 10^6	Least 10^5 High 10^6
	Outflow	<1	Reducing minimum of 2 logs

Samples		Results UFC / 100 mL	Specified
After 95% v.µ	Initial Concentration in UFC / 100 mL of water	3,4 x 10^6	Least 10^5 High 10^6
	Outflow	<1	Minimum Reduction of 2 logs

According to the results, the equipment tested is according with the NBR 15176:2004 specification.

Microbiological Level Control Test

Sampling Data - Microbiological Level Control Test

Collection Responsability: The Customer

Collection date: Not available

Sample identification: Traditional Stéfani Filter

Receiving date : 02/13/2008

Receiving notes: 1 (one) sample of gravity equipament for water qualit improvement. Export Model. Sample duly sealed and without breaking signal.

Reference data of Microbiological Level Control Test

Product Description: Gravity Filter

Installation Place: Not applicable

Model: Exportation

Declared Flow : 1,2 Liters/hour (0,317 gal/hour)

Work Flow: Not applicable

Work pressure: Not applicable

Life Time: 700 Liters (184,92 gal)

Internal volume: 6,0 Liters (1,58 gal)

Water volume discarded : 12 Liters (3,17 gal)

Test period: from 03/03/2008 to 04/28/2008.

Principles and Methods Used

Activities laboratory, experimental, to evaluate the equipment point of use, by measuring its ability to inhibit growth, limit the passage of bacteria or both, as NBR 15176:2004 and Methodology Internal MILFP-005.

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Measurements Traceability

Not Applicable to test of Control Level Microbiological.

Environment Conditions

The Test was carried out at na ambient temperature of (25 ± 0) ºC / (77 ± 0) ºF .

Microbiological Level Control Test Results

Samples		Results UFC / 100 mL	Specified
Start v.µ	initial Concentration in UFC / 100 mL of water	$1,9 \times 10^5$	Least 10^4 High 10^5
	Outflow	<1	≤ Initial concentration, with a superior tolerance up to 10%

Samples		Results UFC / 100 mL	Specified
After 95% v.µ	initial Concentration in UFC / 100 mL of water	$2,3 \times 10^5$	Least 10^4 High 10^5
	Outflow	$4,3 \times 10^3$	≤ Initial concentration, with a superior tolerance up to 10%

According to the results, the equipment tested is according with the NBR 15176:2004 specification.

Extractable Determination Test

Sampling Data - Extractable Determination Test

Collection Responsability: The Customer

Collection date: Not available

Sample identification: Traditional Stéfani Filter

Receiving date : 02/13/2008

Receiving notes: 1 (one) sample of gravity equipament for water qualit improvement. Export Model. Sample duly sealed and without breaking signal.

Reference data of Extractable Determination Test

Product Description: Gravity Filter

Installation Place: Not applicable

Model: Exportation

Declared Flow : 1,2 Liters/hour (0,317 gal/hour)

Work Flow: Not applicable

Work pressure: Not applicable

Life Time: 700 Liters (184,92 gal)

Internal volume: 6,0 Liters (1,58 gal)

Water volume discarded : 12 Liters (3,17 gal)

Test period: from 03/04/2008 to 03/24/2008.

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Principles and Methods Used

The objective of the test is to verify if the construction materials of the equipment are adequate to contact with the water for human being consumption according to NBR 15176:2004 and Internal Methodologies MILFP-006.
Analyses Methodologies references are described in the Bioagri Analyses Report Nº 21393/2008-0.

Measurements Traceability

According to the Bioagri Analysis Report Nº 21393/2008-0.

Environment Conditions

Test was carried out at an ambient temperature of (21 ± 0) ºC / (69,8 ± 0) ºF .

Extractable Determination Test Results

The Analysis results are described below according to the Bioagri Analysis Report No 21393/2008-0.

Parameters	Analytical Results	Allowed Maximum Value
Aluminium (Al)	0,0122 mg/L	0,2 mg/L
Ammonia (NH_3)	<0,1 mg/L	1,5 mg/L
Cadmium (Cd)	<0,0001 mg/L	0,005 mg/L
Lead (Pb)	<0,0005 mg/L	0,01 mg/L
Chloride (Cl^-)	26 mg/L	250 mg/L
Copper (Cu)	<0,0001 mg/L	2 mg/L
Apparent Color	<5,0 uH[1)]	15 uH[1)]
Total Chromium (Cr)	<0,0001 mg/L	0,05 mg/L
Hardness ($CaCO_3$)	60 mg/L	500 mg/L
Ethylbenzene	<0,001 mg/L	0,2 mg/L
Iron (Fe)	0,0150 mg/L	0,3 mg/L
Manganese (Mn)	<0,0001 mg/L	0,1 mg/L
Monochlorobenzene	<0,001 mg/L	0,12 mg/L
Silver (Ag)	<0,0001 mg/L	0,05 mg/L
Sódium (Na)	9,74 mg/L	200 mg/L
Dissolved Total Solids (TDS)	131 mg/L	1000 mg/L
Sulphate $(SO_4)^{--}$	13,7 mg/L	250 mg/L
Hydrogen Sulfide (H_2S)	<0,05 mg/L	0,05 mg/L
Surfactants (LAS)	<0,1 mg/L	0,5 mg/L
Toluene	<0,001 mg/L	0,17 mg/L
Turbidity	0,24 UT[2)]	5 UT[2)]
Xylene	<0,003 mg/L	0,3 mg/L
Zinc (Zn)	0,0353 mg/L	5 mg/L

1) Hazen Unit (mg Pt-Co/L).
2) Unit of Turbit

According to the results, the equipment tested is according with the NBR 15176:2004 specification.

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Genneral Observations

The results presented in this Test Report are exclusively to the product tested, and are not extensive to other lots, even if they are similar.

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Test period: from 02/19/2008 up to 04/28/2008.

Report Issued in: 04/28/2008.

Responsible for the Physical-Chemical Tests:

Cecília M. Santos
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CRQ-IV 58.664

Responsible for the Microbiological tests and the Filters and Purifiers Tests Laboratory:

Michele Bracale
Developments Projects Leader
CRF-SP 28.395

End of Report

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