Test Report: EN 13610:2002 Chemical disinfectants– Quantitative suspension test for the evaluation of virucidal activity against bacteriophages of chemical disinfectants used in food and industrial areas- Test method and requirements (Phase 2/Step 1)

Test Laboratory	**BluTest Laboratories Ltd** 5 Robroyston Oval, Nova Business Park, Glasgow G33 1AP
Identification of sample	
Name of the product	**F10SC Disinfectant**
Batch number	220309
Client	Health & Hygiene (Pty) Ltd
Client address	PO Box 906, Florida Hills 1716
Project code	BT-HAH-02
Date of delivery	02 July 2020
Storage conditions	Ambient
Active substances	QAC and PHMB 5.8%
Test Method and Neutralisation	
Method	Chemical neutralisation
Neutraliser	Universal neutraliser:
Formulation	Lecithin 3g/l, Polysorbate 80 30g/l, sodium thiosulphate 5g/l, L-histidine 1g/l, sodium chloride 8.5g/l, tryptone 1.0g/l, sterilized by autoclave.
Experimental Conditions	
Period of analysis	01 December 2020 to 02 December 2020
Product diluent used	Sterile synthetic hard water
Product test concentrations	**1:100 v/v; 1:500 v/v; 1:1500 v/v**
Appearance product dilutions	No changes noted
Appearance in test mixture	No changes noted
Contact time	t = 30 mins ± 10 s
Test temperature	20°C ± 1°C
Interfering substance	1.0% acidic whey solution
Temperature of incubation	30°C ± 1°C
Identification of strains	*Lactococcus lactis* subsp. *lactis* P001 DSM 4262 *Lactococcus lactis* subsp. *lactis* P008 DSM 10567

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EN13610:2002 Results

Results for the efficacy of F10SC Disinfectant from Health & Hygiene (Pty) Ltd

Test organisms	Validation test				Bacteriophage Test Suspension (N)		Test procedure at concentration (V/V)		
	Bacteriophage Suspension (Nv)	Experimental Conditions (A)	Neutraliser Toxicity Control (B)	Dilution-Neutralisation Control (C)			1:1500	1:500	1:100
Lactococcus lactis	10^{-1}: >200 ; >200	10^{-0}: >200 ; >200	10^{-0}: 83 ; 103	10^{-0}: 60 ; 46	10^{-6}: 191 ; 182	10^{-0}:	65 ; 55	0 ; 0	0 ; 0
subsp. *lactis* P001	10^{-2}: 47 ; 55	10^{-1}: 40 ; 53	10^{-1}: 11 ; 8	10^{-1}: 5 ; 6	10^{-7}: 13 ; 19	10^{-1}:	3 ; 5	0 ; 0	0 ; 0
					N: 1.87E+09	Na	3.00E+04	<7.50E+03	<7.50E+03
DSM 4262	*N* v: 5.10E+04	A: 4.65E+03	B: 9.32E+02	C: 5.32E+02	Q: 11.66	R	<10(4)	>10(4)	>10(4)
Validation	2.00E+04 ≤ Nv ≤ 1.00E+05 ? yes	A ≥ 0.05 x Nv ? yes	B ≥ 0.01 x Nv ? yes	C ≥ 0.5 x B ? yes	$7.90 \leq \log N^{-1} \leq 8.45$? yes	Test is valid			
Lactococcus lactis	10^{-1}: 266 ; 284	10^{-0}: 183 ; 211	10^{-0}: 51 ; 42	10^{-0}: 56 ; 52	10^{-6}: 113 ; 112	10^{-0}:	>300 ; >300	0 ; 0	0 ; 0
subsp. *lactis* P008	10^{-2}: 33 ; 34	10^{-1}: 21 ; 24	10^{-1}: 3 ; 8	10^{-1}: 6 ; 2	10^{-7}: 13 ; 16	10^{-1}:	73 ; 46	0 ; 0	0 ; 0
					N: 1.13E+09	Na	2.98E+05	<7.50E+03	<7.50E+03
DSM 10567	*N* v: 2.80E+04	A: 2.00E+03	B: 4.73E+02	C: 5.27E+02	Q: 7.76	R	<10(4)	>10(4)	>10(4)
Validation	2.00E+04 ≤ Nv ≤ 1.00E+05 ? yes	A ≥ 0.05 x Nv ? yes	B ≥ 0.01 x Nv ? yes	C ≥ 0.5 x B ? yes	$7.90 \leq \log N^{-1} \leq 8.45$? yes	Test is valid			

Please note: the upper limit for counting bacteriophage P001 plates is 200 pfu. Enter as >200.

Please note: The upper limit for counting bacteriophage P008 plates is 300 pfu. Enter as >300.

Definitions: Vc = viable count; N = number of pfu/ml in the bacteriophage test suspension; Q = quotient of control of weighted mean counts; Nv = number of pfu/ml in the bacteriophage validation suspension; A = number of pfu/ml in the experimental conditions validation; B = number of pfu/ml in the neutraliser toxicity validation; C = number of pfu/ml in the dilution-neutralisation validation; Na = number of pfu/ml in test mixture after contact time; R = reduction in phage activity (Log10)

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Conclusion

According to EN 13610:2002, **F10SC POSSESSES VIRUCIDAL** activity at a concentration of **1:500 V/V** of as tested after **30 MINUTES** at **20°C** in the presence of **1.0% acidic whey solution** against *Lactococcus lactis* subsp. *lactis* P001 DSM 4262 and *Lactococcus lactis* subsp. *lactis* P008 DSM 10567.

Signed

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Date: 03 DECEMBER 2020

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