Abbott Analytical

Consulting Scientists to the Disinfectant Industry

Test Report

Product name:	Toucan Eco		
Batch or ref no:			
Manufacturer or supplier:	Centrego Ltd The Coach House, Newbury, Frome, BA11 3RG		
Sample ref:	17K/006	**Date received:**	4 October 2017
Date tested:	4 October 2017	**Certificate date:**	6 October 2017
Certificate no:	17K.006IB.CEG	**Page:**	1 of 6
Analysis required:	EN 1276:2009, Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas - Test method and requirements (phase 2, step 1)		
Storage conditions:	Room temperature in darkness		
Appearance of product (solution):	Clear colourless liquid		
Active substance(s) and their concentration(s):	A solution of Hypochlorous acid generated using a single activation of Centrego's Toucan Electrochemical Activation (ECA) system		

Notes

The test results in this report relate only to the sample(s) tested.
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Experimental conditions

Concentration(s) of product tested:	Neat as received (test concentration 80%)
Product diluent:	N/A
Test organism(s):	*Pseudomonas aeruginosa* (DSM 939) *Escherichia coli* (NCTC 10418) *Staphylococcus aureus* (NCTC 10788) *Enterococcus hirae* (DSM 3320)
Contact time(s):	1 min ± 5s
Test temperature:	20°C ± 1°C
Test conditions:	Clean
Interfering substance:	0.3g/l bovine albumin
Method:	Dilution-neutralisation
Neutralising solution:	30g/l Polysorbate 80 + 3g/l Lecithin + 1g/l L-histidine + 1g/l L-cysteine
Incubation temperature:	36°C ± 1°C

Remarks

Products can only be tested at a concentration of 80% or less as some dilution is always produced by adding the test organisms and interfering substance. To counteract this dilution the product supplied contained active levels at 125% of their normal levels.

Conclusion

When tested neat this sample of Toucan Eco meets the requirements of EN 1276:2009 for bactericidal activity in 1 minute at 20°C, under clean conditions, against the referenced strains of *Pseudomonas aeruginosa*, *Escherichia coli*, *Staphylococcus aureus* and *Enterococcus hirae*.

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Results: *Pseudomonas aeruginosa* (DSM 939)

Validation and controls:

Validation suspension (Nv_o)			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
$Vc1$	61	$\bar{x}$ =	$Vc1$	66	$\bar{x}$ =	$Vc1$	60	$\bar{x}$ =	$Vc1$	60	$\bar{x}$ =
$Vc2$	63	62	$Vc2$	65	65.5	$Vc2$	63	61.5	$Vc2$	60	60
$30 \leq \bar{x}\ (Nv_o) \leq 160$? ☒ yes ☐ no			$\bar{x}\ (A) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no			$\bar{x}\ (B) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no			$\bar{x}\ (C) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no		

Test suspension:
(N and N_o)

N	$Vc1$	$Vc2$	$\bar{x}$(wm) = 4.60 x10^{8} ; lg N = 8.66
10^{-6}	>330	>330	$N_o = N/10$; lg N_o = 7.66
10^{-7}	48	44	$7.17 \leq \lg N_o \leq 7.70$? ☒ yes ☐ no
Control of weighted mean counts (N)			Quotient = N/A Between 5 and 15 ? ☐ yes ☐ no

Test:

Product test conc.	Contact time	$Vc1$	$Vc2$	Na = ($\bar{x}$ x10)	lg Na =	lg R = (lg N_o − lg Na)	Status
Neat	*1 min*	*0*	*0*	< 140	< 2.15	> 5.51	*PASS*

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Results: *Escherichia coli* (NCTC 10418)

Validation and controls:

Validation suspension (Nv_o)			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
$Vc1$	62	$\bar{x}$ =	$Vc1$	63	$\bar{x}$ =	$Vc1$	60	$\bar{x}$ =	$Vc1$	60	$\bar{x}$ =
$Vc2$	61	61.5	$Vc2$	59	61	$Vc2$	60	60	$Vc2$	57	58.5
$30 \leq \bar{x}\ (Nv_o) \leq 160$? ☒ yes ☐ no			$\bar{x}\ (A) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no			$\bar{x}\ (B) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no			$\bar{x}\ (C) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no		

Test suspension:
(N and N_o)

N	$Vc1$	$Vc2$	$\bar{x}$(wm) = 4.00 x10^{8} ; lg N = 8.60
10^{-6}	>330	>330	$N_o = N/10$; lg N_o = 7.60
10^{-7}	38	42	$7.17 \leq \lg N_o \leq 7.70$? ☒ yes ☐ no
Control of weighted mean counts (N)			Quotient = N/A Between 5 and 15 ? ☐ yes ☐ no

Test:

Product test conc.	Contact time	$Vc1$	$Vc2$	Na = ($\bar{x}$ x10)	lg Na =	lg R = (lg N_o − lg Na)	Status
Neat	*1 min*	*0*	*0*	< 140	< 2.15	> 5.45	*PASS*

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Results: *Staphylococcus aureus* (NCTC 10788)

Validation and controls:

Validation suspension (Nv_o)			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
$Vc1$	47	$\bar{x}$ =	$Vc1$	46	$\bar{x}$ =	$Vc1$	41	$\bar{x}$ =	$Vc1$	43	$\bar{x}$ =
$Vc2$	48	47.5	$Vc2$	48	47	$Vc2$	45	43	$Vc2$	45	44
$30 \leq \bar{x}\ (Nv_o) \leq 160$? ☒ yes ☐ no			$\bar{x}\ (A) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no			$\bar{x}\ (B) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no			$\bar{x}\ (C) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no		

Test suspension:
(N and N_o)

N	$Vc1$	$Vc2$	$\bar{x}$(wm) = 4.40 x10^{8} ; lg N = 8.64
10^{-6}	>330	>330	$N_o = N/10$; lg N_o = 7.64
10^{-7}	45	43	$7.17 \leq \lg N_o \leq 7.70$? ☒ yes ☐ no
Control of weighted mean counts (N)			Quotient = N/A Between 5 and 15 ? ☐ yes ☐ no

Test:

Product test conc.	Contact time	$Vc1$	$Vc2$	Na = ($\bar{x}$ x10)	lg Na =	lg R = (lg N_o − lg Na)	Status
Neat	*1 min*	*0*	*0*	< 140	< 2.15	> 5.49	*PASS*

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Results: *Enterococcus hirae* (DSM 3320)

Validation and controls:

Validation suspension (Nv_o)			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
$Vc1$	57	$\bar{\kappa}$ =	$Vc1$	61	$\bar{\kappa}$ =	$Vc1$	59	$\bar{\kappa}$ =	$Vc1$	63	$\bar{\kappa}$ =
$Vc2$	56	56.5	$Vc2$	60	60.5	$Vc2$	61	60	$Vc2$	61	62
$30 \leq \bar{\kappa}\ (Nv_o) \leq 160$? ☒ yes ☐ no			$\bar{\kappa}\ (A) \geq 0.5 \times \bar{\kappa}\ (Nv_o)$? ☒ yes ☐ no			$\bar{\kappa}\ (B) \geq 0.5 \times \bar{\kappa}\ (Nv_o)$? ☒ yes ☐ no			$\bar{\kappa}\ (C) \geq 0.5 \times \bar{\kappa}\ (Nv_o)$? ☒ yes ☐ no		

Test suspension:
(N and N_o)

N	$Vc1$	$Vc2$	$\bar{\kappa}$(wm) = 4.55 x10^{8} ; lg N = 8.66
10^{-6}	>330	>330	$N_o = N/10$; lg N_o = 7.66
10^{-7}	46	45	$7.17 \leq \lg N_o \leq 7.70$? ☒ yes ☐ no
Control of weighted mean counts (N)			Quotient = N/A Between 5 and 15 ? ☐ yes ☐ no

Test:

Product test conc.	Contact time	$Vc1$	$Vc2$	Na = ($\bar{\kappa}$ x10)	lg Na =	lg R = (lg N_o – lg Na)	Status
Neat	*1 min*	*0*	*0*	< 140	< 2.15	> 5.51	*PASS*

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