

Test report: BA LMA-0032/16 R1

Evaluation of the efficacy of biocides incorporated into the test substance against microorganisms *Staphylococcus aureus*, *Salmonella choleraesuis*, *Candida albicans*, *Pseudomonas aeruginosa* and *Trichophyton mentagrophytes*.

Company: GLOBAL SOLUTIONS SHIELD BRAZIL IMPORTS PTY LTD

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Manufacturer: SD Labs

Sample data:

Test Substance: SD – Pro

Lot: 02105161507

Quantity Received 408 g

Manufacture Date: 07/15/2016

Expiration Date: 07/14/2018

Composition: as declared by manufacturer (digital copy of the original document).

*Details of composition omitted from report
due to the proprietary nature of the information*

Bioagri code: SAN-0913/16

Proposal Number: 05225/16

Date Received: 07/26/2016

Start date of test: 09/15/2016

Date of completion of the test: 11/03/2016

Report Date: 11/16/2016

Revision Date: 11/16/2016

Reason for Revision: Reinstatement of test with the correct contact time.

Methodology used: Based on EN13697- Quantitative non-porous surface test for the evaluation of bactericidal and/or fungicidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas (phase 2, step 2). PAS 2424: 2014 - Quantitative surface test for the evaluation of residual antimicrobial (bactericidal and / or fungicidal) efficacy of liquid chemical disinfectants on hard non-porous surfaces - test method, as base for application of abrasiveness on surfaces.

Assay conditions

Objective

The objective of the test was to quantitatively evaluate the residual action through the biocidal effect of the test substance after the successive washes with abrasivity.

Assay Procedure

The test substance was applied in its pure form on 5 cm x 5 cm Formica and stainless steel surfaces. After drying the surfaces were held at room temperature for 5 days. After 5 days of curing, each of the surfaces was subjected to 52 consecutive washes with abrasiveness, detergent and water. After drying the surfaces, 0.400 ml of the suspension of each microorganism per surface treated with the test substance was inoculated, the inoculum being recovered immediately following a contact time of 30 minutes. At the end of this contact time the surfaces were transferred to a neutralizing solution, then serial dilutions were made from the neutralizer of each contact time, aliquots of that mixture were inoculated and plated with specific culture medium. The

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plates were incubated under favorable conditions for growth of the tested microorganisms. After the incubation period the cell numbers of the surviving microorganisms were determined and the reduction was calculated in relation to the controls (surfaces without treatment with the test substance) evaluated in the same way.

Results

Table 1. Disinfectant efficacy evaluation results applied to specimens against *S. aureus* ATCC 6538.

Treatment	Parameters Evaluated	Results obtained for the test substance after application	
		Surface: Steel	Surface: Formica
Surface Control (no treatment)	Cell Number (CFU/sample)	1.10x10E6	1.27x10E6
	Log ₁₀	6.04	6.10
Surfaces Treated after successive washes	Residual activity(after 52 consecutive washes with abrasiveness)		
	Cell Number (CFU/sample)	Surface: Steel	Surface: Formica
		1.10x10E2	8.0x10E1
Log ₁₀	2.0	1.9	
Reduction (compared to control)	Log ₁₀	4.04	4.20
	%	99.99	99.99

Legend: CFU (colony forming units)

Table 2. Disinfectant efficacy evaluation results applied to specimens against *S. choleraesuis* ATCC 10708.

Treatment	Parameters Evaluated	Results obtained for the test substance after application	
		Surface: Steel	Surface: Formica
Surface Control (no treatment)	Cell Number (CFU/sample)	1.82x10E6	1.77x10E6
	Log ₁₀	6.26	6.24
Surfaces Treated after successive washes	Residual activity(after 52 consecutive washes with abrasiveness)		
	Cell Number (CFU/sample)	Surface: Steel	Surface: Formica
		1.50x10E2	1.30x10E2
Log ₁₀	2.17	2.11	
Reduction (compared to control)	Log ₁₀	4.09	4.13
	%	99.99	99.99

Legend: CFU (colony forming units)

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Table 3. Disinfectant efficacy evaluation results applied to specimens against *C. albicans* ATCC 10231.

Treatment	Parameters Evaluated	Results obtained for the test substance after application	
		Surface: Steel	Surface: Formica
Surface Control (no treatment)	Cell Number (CFU/sample)	1.47x10E6	1.66x10E6
	Log ₁₀	6.16	6.22
Surfaces Treated after successive washes	Residual activity(after 52 consecutive washes with abrasiveness)		
	Cell Number (CFU/sample)	Surface: Steel	Surface: Formica
		9.0x10E1	1.1x10E2
	Log ₁₀	1.95	2.04
Reduction (compared to control)	Log ₁₀	4.21	4.18
	%	99.99	99.99

Legend: CFU (colony forming units)

Table 4. Disinfectant efficacy evaluation results applied to specimens against *P. aeruginosa* ATCC 25442.

Treatment	Parameters Evaluated	Results obtained for the test substance after application	
		Surface: Steel	Surface: Formica
Surface Control (no treatment)	Cell Number (CFU/sample)	1.88x10E6	2.02x10E6
	Log ₁₀	6.27	6.30
Surfaces Treated after successive washes	Residual activity(after 52 consecutive washes with abrasiveness)		
	Cell Number (CFU/sample)	Surface: Steel	Surface: Formica
		8.0x10E1	2.0x10E1
	Log ₁₀	1.9	1.3
Reduction (compared to control)	Log ₁₀	4.37	5.0
	%	99.99	99.99

Legend: CFU (colony forming units)

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Table 5. Disinfectant efficacy evaluation results applied to specimens against *T. mentagrophytes* ATCC 9533.

Treatment	Parameters Evaluated	Results obtained for the test substance after application	
		Surface: Steel	Surface: Formica
Surface Control (no treatment)	Cell Number (CFU/sample)	2.17x10E6	2.28x10E6
	Log ₁₀	6.33	6.35
Surfaces Treated after successive washes	Residual activity(after 52 consecutive washes with abrasiveness)		
	Cell Number (CFU/sample)	Surface: Steel	Surface: Formica
	Log ₁₀	7.0x10E1	1.0x10E2
Reduction (compared to control)	Log ₁₀	4.49	4.35
	%	99.99	99.99

Legend: CFU (colony forming units)

Discussion of Results

Based on the methodology and the results obtained, it was observed that the test substance was able to reduce the initial count of the microorganisms after successive washes with abrasiveness, in relation to the control.

Notes:

This report refers only to sample analyzed, and cannot be extended to other lots and/or products.

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Sampling plan not carried out by Bioagri.

Documents and records generated in this trial will be in archived at Bioagro Ltd. for a period of six (6) years.



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Responsável Técnica