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Test report no L18/0232.1

Quantitative Non-Porous Surface Test for the evaluation of bactericidal and/or fungicidal activity of
GLOBACID AF med
in Food, Industrial, Domestic, and Institutional Areas according to DIN EN 13697:2015 (Phase 2, step 2)*

In accordance with your order, we tested the preparation **GLOBACID AF med** for its activity in the quantitative surface test according to DIN EN 13697:2015* under clean conditions.

1 General Information and Material

1.1 Client

Client: Goodpoint Chemicals OÜ, Dr. Kallikorm, Vabaohumuseumi tee 3,
EE – 13522 Tallinn, Estonia

Date of order: 09/04/2018

Confirmation no.: 204992

1.2 Identification of Test Laboratory

Location: Dr. Brill + Partner GmbH · Institute for Hygiene and Microbiology,
Stiegstück 34, DE-22339 Hamburg, Germany

Study manager: Dipl.-Biol. Dr. rer. nat. Jan-Hendrik Klock

Scientific assistant: Dipl.-Ing. Dr. rer. nat. Andreas Kampe

Laboratory technicians: Eileen Bruder, Lea Küssner, Martina Müller

1.3 Table of Contents

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1.4 Identification of Sample

Name of product: **GLOBACID AF med**

Batch no.: 170436

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Manufacturer:	Goodpoint Chemicals OÜ, EE – 13522 Tallinn, Estonia
Date of delivery:	12/04/2018
Storage conditions:	room temperature and darkness
Appearance of product:	liquid
Odour:	characteristic
Recommended diluent:	Product is ready for use
Diluent used:	distilled water (DW, pH 7.0)
pH value, concentrate:	7.76
pH value, 50 % (measured in WSH):	7.36
pH value, 10 % (measured in WSH):	6.06
Active agents (Manufacturer's data):	60 % isopropanol 15 % ethanol

1.5 Test Conditions

Test period:	03/05/ - 14/05/2018
Lab tasks no.:	L18/0232.1 and .2
Test pieces:	stainless steel discs
Drying time:	<60 minutes (22.5 min ± 2.5 min)
Product test concentrations:	10 + 50 + 100 %
Exposure time:	1-minute
Test temperature:	20°C ± 1°C
Relative humidity:	45 % ± 5 %
Incubation temperature:	36°C ± 1°C (Bacteria); 30°C ± 1°C (Fungi)
Organic load:	clean conditions (0.3 g/L bovine albumin)
Neutraliser:	30 g/L polysorbate 80, 30 g/L saponine, 3 g/L lecithin, 1 g/L histidine, (TLSH)
Efficacy criterion:	4 log reduction against water control at contact time (Bacteria) 3 log reduction against water control at contact time (fungi)
Test organisms:	<i>Enterococcus hirae</i> ATCC 10541 <i>Candida albicans</i> ATCC 10231

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2 Methods

The tests were carried out according to DIN EN 13697:2015 "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 – Test Method without Mechanical Action (Phase 2, Step 2)".

3 Results

The test results based on DIN EN 13697:2015 are summarised in tables 1.

E. hirae and *C. albicans* were sufficiently (RF >4 bacteria) inactivated with the following concentration-time relationship:

Claim	Organic load	Product concentration	Contact time
<i>Enterococcus hirae</i>	clean conditions	10 %	1 minute
Yeasticidal	clean conditions	100 %	1 minute

Hamburg, 16/05/2018


Dipl.-Biol. Dr. rer. nat. Jan-Hendrik Klock
Deputy Head of Laboratory


Dipl.-Ing. Dr. rer. nat. Andreas Kampe
Quality control



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Table 1.1: Validation, Controls and Evaluation

Product name: **GLOBACID AF med**
Test organism: *Enterococcus hirae*
Organic load: clean conditions
Lab Task no.: L18/0232.1

Batch: 170436
Temperature: 20°C ± 1°C
Neutraliser: TLSH
Contact time: 1 minute

Test and validation suspension (N)			Toxicity control (N _c)			Validation neutralisation medium / Neutralisation control (N _T)		
	x	x'		a	a'	Product	100,00 %	
							a	a'
1,00E-06	192	252	1,00E-04	26	31	1,00E-04	50	62
1,00E-07	18	20	1,00E-05	6	6	1,00E-05	2	4
$\bar{x} = 5,48E+06 = 6,74 \lg$			$\bar{x} = 2,85E+06 = 6,45 \lg$			$\bar{x} = 5,60E+06 = 6,75 \lg$		
6,57 ≤ lg N ≤ 7,1 ?			N _c > 0,5 x N _c ?			N _T > 0,5 x N _c ?		
Yes			Yes			Yes		

Water control

Water control (N _d)	N _c	a	a'	$\bar{x} = 4,45E+06$
	1,00E-04	44	45	lg N _c = 6,65
	1,00E-05	8	4	lg N _c ≥ 6,27 log ? Yes

Test

Concentration of product test solution [%]	Dilution step	a	a'	N _d ($\bar{x}$ v $\bar{x}$ wm) cfu/ml	lg N _d lg ($\bar{x}$ v $\bar{x}$ wm)	R (lgN _c =6,65) lgN _c - lgN _d	Exposure time (min)
10,00	1,00E+00	0	0	< 1,26E+00	< 0,10	≥ 6,55	1
	1,00E-01	2	0				
	1,00E-02	0	0				
	N _{ts} =	0		N _{ts} < 100 ?	Yes		
50,00	1,00E+00	5	1	< 1,40E+02	< 2,15	≥ 4,50	1
	1,00E-01	0	0				
	1,00E-02	0	0				
	N _{ts} =	8		N _{ts} < 100 ?	Yes		
100,00	1,00E+00	0	1	< 1,40E+02	< 2,15	≥ 4,50	1
	1,00E-01	0	0				
	1,00E-02	0	0				
	N _{ts} =	0		N _{ts} < 100 ?	Yes		

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Table 1.2: Validation, Controls and Evaluation

Product name: **GLOBACID AF med**
Test organism: *Candida albicans*
Organic load: clean conditions
Lab Task no.: L18/0232.2

Batch: 170436
Temperature: 20°C ± 1°C
Neutraliser: TLSH
Contact time: 1 minute

Test and validation suspension (N)			Toxicity control (N _c)			Validation neutralisation medium / Neutralisation control (N _T)		
	x	x'		a	a'	Product	a	a'
1,00E-05	>330	>330	1,00E-03	94	75	1,00E-03	98	100
1,00E-06	35	30	1,00E-04	4	12	1,00E-04	6	9
$\bar{x} = 8,13E+05 = 5,91 \lg$			$\bar{x} = 8,45E+05 = 5,93 \lg$			$\bar{x} = 9,90E+05 = 6,00 \lg$		
5,57 ≤ lg N ≤ 6,1? Yes			N _c > 0,5 x N _c ? Yes			N _T > 0,5 x N _c ? Yes		

Water control

Water control (N _d):	N _c	a	a'	$\bar{x} = 8,25E+05$
	1,00E-03	74	91	lg N _c = 5,92
	1,00E-04	0	5	lg N _c ≥ 5,27 log? Yes

Test

Concentration of product test solution [%]	Dilution step	a	a'	N _d ($\bar{x}$ v $\bar{x}$ wm) cfu/ml	lg N _d lg ($\bar{x}$ v $\bar{x}$ wm)	R (lgN _c =5,92) lgN _c - lgN _d	Exposure time (min)
10,00	1,00E+00	>330	>330	> 3,30E+05	> 5,52	≤ 0,40	1
	1,00E-01	>330	>330				
	1,00E-02	>330	>330				
	N _{ts} =	>100	N _{ts} < 100 ?	No			
50,00	1,00E+00	>330	>330	1,09E+05	5,04	0,88	1
	1,00E-01	>330	>330				
	1,00E-02	102	116				
	N _{ts} =	59	N _{ts} < 100 ?	Yes			
100,00	1,00E+00	0	0	< 1,26E+00	< 0,10	≥ 5,82	1
	1,00E-01	0	0				
	1,00E-02	0	0				
	N _{ts} =	0	N _{ts} < 100 ?	Yes			

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4 List of Abbreviations

cfu	=	colony forming units (viable microbial count)
N	=	test suspension
N_c	=	$\log_{10}$ cfu per test surface of water control
N_d	=	$\log_{10}$ cfu per test surface of disinfection test
N_T	=	neutralisation test
N_c	=	neutralisation control
N_{ts}	=	remaining cfu on test surface
R	=	germicidal activity ($N_c - N_d$)
n.t.	=	not tested
x, x'	=	viable microbial count per ml of the test suspension
a, a'	=	viable microbial count per ml of the suspension after examination and validation
$\bar{x}$	=	mean of a and a' and x and x'

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