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CHEMISCH-TECHNISCHE SPEZIALPRODUKTE

Antimicrobial efficacy of DIS 500 (article no. 2070)

1 Bactericidal / Fungicidal performance

1.1 Tested according to DGHM now VAH *(Association for Applied Hygiene)*

Surface Disinfection, Bactericidal and Yeasticidal Efficacy

Bactericidal disinfection of non porous hard surfaces in presence of high organic load:

Results:	1.00 %	15 min.
	0.50 %	30 min.
	0.50 %	60 min.
	0.25 %	240 min.

Certificates: Labor L+S, Bad Bocklet (Germany), 5 October 2009
Prof. Dr. R. Schubert, Frankfurt (M), 30 November 2009

Tuberculocidal Efficacy

Test method: DGHM quantitative suspension test
Test organism: *Mycobacterium terrae*

Results:	1.0 %	60 min.

Certificate: Prof. Dr. R. Schubert, Frankfurt (M), 4 June 2010

1.2 Tested according to DVG *(German Veterinary Medical Society)*

Food sector (8th List, DVG food sector)

Disinfectants for handling / processing area regarding:
Sector A - animal based food and Sector C - canteen kitchen
Test strains: P. aeruginosa, S. aureus, E. coli, E. hirae and C. albicans
Low organic load: 0.3 g/l Bovine Albumin serum (BSA)
High organic load: 5.0 g/l Bovine Albumin serum (BSA) + 5.0 g/l Yeast extract

Sector A / C	Temp. °C	Use concentration in volume percent (V-%) for 5 and 30 minutes (')							
		Low organic load				High organic load			
		Bacteria		Yeast		Bacteria		Yeast	
		5'	30'	5'	30'	5'	30'	5'	30'
		5a	5b	6a	6b	9a	9b	10a	10b
A	20	0.75%	0.25%	3.5%	0.75%	1.0%	0.5%	4.0%	1.0%
A	10	0.75%	0.25%	3.5%	0.75%	1.0%	0.75%	4.0%	1.5%
C	20	0.75%	0.25%	3.5%	0.75%	-	-	-	-

Certificates: Prof. Dr. R. Böhm, Stuttgart, 30 April 2011
LABOKLIN, Bad Kissingen, 11 September 2012

1.3 Tested according to European Norms (EN) Food, Industrial and Institutional Areas

EN 1276

Bactericidal results (log 5), in presence of high organic load
Test strains: E. coli, S. aureus, E. hirae, P. aeruginosa

Results:	1.0 %	3.0 g/l	BSA	5 min.
	1.5 %	10.0 g/l	Skimmed milk	5 min.
	1.0 %	10.0 g/l	Sucrose	5 min.
	1.5 %	10.0 g/l	Yeast extract	5 min.

Certificate: Eurofins, 17 June 2011 , Eurofins, 12 July 2016

EN 1650

Yeasticidal result (log 4), in presence of high organic load
Test strains: C. albicans

Result:	0.5 %	3.0 g/l BSA	15 min.

Certificate: Eurofins, 17 June 2011

EN 13697

Bactericidal result (log 4), in presence of high organic load
Test strains: P. aeruginosa, S. aureus, E. coli and E. hirae

Result:	1.5 %	3.0 g/l BSA	5 min.

Certificate: Labor L+S, Germany, 15 December 2010

EN 13697

Yeasticidal result (log 3), in presence of high organic load
Test strains: C. albicans

Result:	1.0 %	3.0 g/l BSA	15 min.

Certificate: Labor L+S, 15 December 2010

1.4 Tested According to European Norms (EN) Medical Areas

EN 13624

Yeasticidal result (log 4), in presence of high organic load
Test strains: C. albicans

Result:	1.0 %	3.0 g/l BSA + Erythrocytes	5 min.
	0.25 %	3.0 g/l BSA + Erythrocytes	60 min.

Certificate: Eurofins, 13 July 2016

EN 13697

Bactericidal result (log 5), in presence of high organic load
Test strains: P. aeruginosa, S. aureus, E. coli and E. hirae

Result:	5.0 %	3.0 g/l BSA + Erythrocytes	5 min.

Certificate: DR Brill + Dr Steinmann, 5 October 2016

EN 13697

Yeasticidal result (log 3), in presence of high organic load
Test strains: C. albicans

Result:	4.0 %	3.0 g/l BSA + Erythrocytes	5 min.
	1.0 %	3.0 g/l BSA + Erythrocytes	60 min.

Certificate: Eurofins, 13 July 2016

EN 13727

Bactericidal result (log 5), in presence of high organic load
Test strains: S. aureus, E. hirae, P. aeruginosa

Result:	1.0 %	3.0 g/l BSA + Erythrocytes	5 min.
	0.25 %	3.0 g/l BSA + Erythrocytes	60 min.

Certificate: Eurofins, 13 July 2016

EN 14348

Mycobactericidal result (log 4), in presence of low and high organic load
Test strains: M. avium, M. terrae

Results:	1.5 %	0.3 g/l BSA	60 min.
	2.0 %	3.0 g/l BSA + Erythrocytes	60 min.

Certificate: Eurofins, 20 January 2015

2 Virucidal performance

2.1 Tested according to RKI and DVV

Vaccinia Virus

Result according RKI and DVV

With soil load	2.0 %	60 min.

Certificate: Mikrolab GmbH, Bremen, 18 April 2011

BVDV (surrogate of Hepatitis C virus (HCV))

Result according BGA (now RKI) and DVV

With soil load	1.0 %	5 min.

Certificate: Mikrolab GmbH, Bremen, 23 March 2011

Summary of Dr. J. Steinmann, MikroLab Bremen

Inactivation of the two test viruses, BVDV and Vaccinia requires the following concentration and exposure time:

2.0 %	60 min.

Based on the aforementioned BVDV and Vaccinia virus expertise's the formulation can be declared as having "limited virucidal" properties (effective against enveloped viruses) according to a recommendation of an expert committee of RKI - Robert Koch Institute (Bundesgesundheitsblatt 2004, 47: 62-66) and is thus deemed able to inactivate all enveloped viruses.

Therefore, the formulation is also effective against the so-called blood-borne viruses including HBV, HCV and HIV as well as against members of other virus families such as Orthomyxoviridae (incl. all human and animal influenza viruses like H5N1 and H1N1), Filoviridae including Ebola virus and Paramyxoviridae including Measles virus.

Certificate: Dr. J. Steinmann, MikroLab Bremen, 8 March 2015

2.2 Tested according to European Norms (EN)

EN 14476

Virucidal result (log 4), in presence of high organic load
Test strain: Modified Vaccinia ankara

Results:	3.0 %	3.0 g/l BSA + Erythrocytes	5 min.

Certificate: Dr. Brill & Dr. Steinmann, 11 October 2015

EN 14476

Virucidal result (log 4), in presence of high organic load
Test strain: Vaccinia Virus Elstree

Results:	2.0 %	3.0 g/l BSA + Erythrocytes	15 min.
	1.5 %	3.0 g/l BSA + Erythrocytes	30 min.

Certificate: Dr. Steinmann, 28 August 2010

EN 14476

Virucidal result (log 4), in presence of high organic load
Test strain: BVDV Strain NADL (surrogate for Hepatitis C virus (HCV))

Results:	1.0 %	3.0 g/l BSA + Erythrocytes	5 min.

Certificate: Dr. J. Steinmann, MikroLab, 26 September 2010

EN 14476:2013 + A1:2015

Virucidal result (log 4), in presence of high organic load
Test strain: Influenza A (H1N1) Virus

Results:	1.0 %	3.0 g/l BSA + Erythrocytes	5 min.

Certificate: Dr. J. Steinmann, Dr. Brill + Partner GmbH, 1 February 2017