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EFFICACY DATA for GERMI-KLEEN Non-Acid Disinfectant Bathroom Cleaner (#1715)

VIRUCIDAL DATA:

Test Methods:

- * U.S. E.P.A. Pesticide Assessment Guidelines, Subdivision G: Product Performance, Section 91-2(f), and Section 91-30 (d), (e), November, 1982.
- † Protocols for Testing the Efficacy of Disinfectants against Hepatitis B Virus (HBV) (EPA, Federal Register, Vol. 65, No. 166, 8/25/2000, p. 51828).
- ‡ Protocol for Testing Disinfectants against Hepatitis C Virus using Bovine Viral Diarrhea Virus as approved by the U.S. EPA on August 15, 2002.
- Modified U.S. E.P.A. Pesticide Assessment Guidelines, Subdivision G: Product Performance, Section 91-2(f), and Section 91-30 (d), (e), November, 1982.

Test Conditions: ready-to-use (RTU), organic soil load, room temperature, glass petri dish substrates

Results:

<u>Test Organism</u>	<u>Sample</u>	<u>Titer</u>	Contact Time
*Avian Influenza A Virus (H3N2) (Avian Reassortant) (ATCC VR-2072)	A&B	$\frac{\text{Reduction}}{\geq 3.0 \log_{10}}$	2 minutes
*Avian Influenza Virus, Type A (Turkey/WIS/66) (H9N2)	A&B	≥4.83 log ₁₀	2 minutes
‡Bovine Viral Diarrhea Virus (BVDV)	A&B	\geq 3.0 \log_{10}	5 minutes
*Canine Parvovirus (ATCC VR-2017)	A&B	\geq 3.0 \log_{10}	10 minutes
•Feline Calicivirus (FCV)	A&B	6.48 log ₁₀	30 seconds
*Hepatitis A Virus (HAV)	A&B	\geq 3.0 \log_{10}	10 minutes
†Hepatitis B Virus (HBV) (Duck Hepatitis B Virus-DHBV)	A&B	≥3.3 log ₁₀	5 minutes
‡Hepatitis C Virus (HCV) (Bovine Viral Diarrhea Virus-BVDV)	A&B	$\geq 3.0 \log_{10}$	5 minutes
*Human Immunodeficiency Virus, HTLV-III _{RF} , strain of HIV-1 (associated with AIDS)	A&B	$\geq 3.5 \log_{10}$	1 minute
*Human Coronavirus (ATCC VR-740, strain 229E)	A&B	\geq 3.0 \log_{10}	2 minutes
•Norovirus (Norwalk Virus)	A&B	6.48 log ₁₀	30 seconds
Pandemic 2009 H1N1 Influenza A Virus	Refer to note on next	6.48 log ₁₀	2 minutes
*Paramyxovirus (Mumps) (ATCC VR-1438)	A&B	$\geq 3.0 \log_{10}$	3 minutes
*Poliovirus Type 1, strain Brunhilde (ATCC VR-1000)	A&B	$\geq 3.25 \log_{10}$	10 minutes
*Rabies Virus (attenuated ERA strain, CDC)	A&B	3.0 log ₁₀	30 seconds
*Rhinovirus Type 39 (ATCC VR-340)	A&B	\geq 3.0 \log_{10}	3 minutes
*Rotovirus	A&B	≥3.0 log ₁₀	3 minutes
*SARS Associated Coronavirus (ZeptoMetrix)	A&B	4.03 log ₁₀	2 minutes

Conclusion: Under the conditions of this investigation, GERMI-KLEEN Non-Acid Disinfectant Bathroom Cleaner demonstrated virucidal



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activity against Avian Influenza A Virus (H3N2), Avian Influenza Virus Type A (H9N2), Bovine Viral Diarrhea Virus (BVDV), Canine Parvovirus, Feline Calicivirus (FCV), Hepatitis A Virus (HAV), Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), Human Immunodeficiency Virus (HIV-1), Human Coronavirus, Norovirus (Norwalk Virus), Pandemic 2009 H1N1 Influenza A Virus, Paramyxovirus (Mumps), Poliovirus Type 1, Rabies, Rhinovirus Type 39, Rotovirus, and SARS Associated Coronavirus according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a virucide.

NOTE: Per the EPA guidance document dated October 21, 2009, disinfectant products that bear label claims against human, avian, or swine influenza A virus, and have submitted and received approval of efficacy data to support these label claims, may include a label claim against the Pandemic 2009 H1N1 Influenza A Virus.

TUBERCULOCIDAL DATA:

Test Method: AOAC Confirmative In Vitro Test for Determining Tuberculocidal Activity

Test Organism: Mycobacterium bovis BCG

Test Conditions: ready-to-use (RTU), organic soil load, 5 minute contact time, glass slide carrier substrates

Results:

Subculture Media	<u>Sample</u>	No. of Exposed Carriers	No. of Carriers Showing Growth
modified Proskauer-Beck Medium	A	10	0
	В	10	0
Middlebrook 7H9 Broth	A	10	0
	В	10	0
Kirchners Medium	A	10	0
	В	10	0

Conclusion: Under the conditions of this investigation, GERMI-KLEEN Non-Acid Disinfectant Bathroom Cleaner was **tuberculocidal** for *Mycobacterium bovis* (BCG) according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a tuberculocide.

FUNGICIDAL DATA:

Test Method: AOAC Germicidal Spray Products as Disinfectants

Test Conditions: ready-to-use (RTU), organic soil load, room temperature, glass slide carrier substrates

Results:

No. of Carriers

<u>Organism</u>	<u>Sample</u>	Exposed	<u>Positive</u>	Contact Time
Trichophyton mentagrophytes (ATCC 9533)	A	60	0	10 minutes
	В	60	0	
	C	60	0	

Conclusion: Under the conditions of this investigation, GERMI-KLEEN Non-Acid Disinfectant Bathroom Cleaner was **fungicidal** for *Trichophyton mentagrophytes* according to criteria established by the U. S. Environmental Protection Agency for registration and labeling of a disinfectant product as a fungicide.



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BACTERICIDAL DATA:

Test Method: AOAC Germicidal Spray Products as Disinfectants

Test Conditions: ready-to-use (RTU), organic soil load, room temperature, glass slide carrier substrates

Results:

				Carriers
<u>Organism</u>	Sample	Exposed	<u>Positive</u>	Contact Time
Staphylococcus aureus (ATCC 6538)	A B	60 60	0 1	3 minutes
S. J.	. – – – .		$-\frac{1}{0}$	2
Salmonella (choleraesuis) enterica (ATCC 10708)	A B	60 60	0	3 minutes
Pseudomonas aeruginosa (ATCC 15442)	A	 60	0	3 minutes
,	В	60	0	
Community Associated Methicillin Resistant Staphylococcus aureus	A	10	0	3 minutes
(CA-MRSA) (NRS 123) Genotype USA400	B	10	0	-
Community Associated Methicillin Resistant Staphylococcus aureus	A	10	0	3 minutes
(CA-MRSA) (NRS 384) Genotype USA300	B	10	$ \frac{0}{2}$ $ \frac{1}{2}$	
Corynebacterium ammoniagenes (ATCC 6871)	A B	10 10	0	3 minutes
Enterococcus faecium (ATCC 6569)	. A	10	0	3 minutes
Emerococcus fuectum (ATCC 0309)	В	10	0	3 minutes
Escherichia coli (ATCC 11229)	A	10	0	3 minutes
	В	10	0	
Escherichia coli O157:H7 (ATCC 43895)	A	10	0	3 minutes
	B	10	0	
Listeria monocytogenes (ATCC 35152)	A	10	0	3 minutes
	B	10	$\frac{0}{0}$	
Methicillin resistant Staphylococcus aureus (MRSA) (ATCC 33593)	A B	10 10	0	3 minutes
Mathiaillin maiatant Chambula account and demaidia (MDSE) (ATCC	. – Б – . А	- 10 10	0	3 minutes
Methicillin resistant <i>Staphylococcus epidermidis</i> (MRSE) (ATCC 51625)	A B	10	0	3 illinutes
Salmonella (typhi) enterica (ATCC 6539)	A	10	0	3 minutes
	В	10	0	
Streptococcus pyogenes (Necrotizing Fasciitis-Group A) (V.A.	A	10	0	3 minutes
Medical Center Isolate 04001)	В	10	0	
Vancomycin resistant Enterococcus faecalis (VRE) (ATCC 51575)	A	10	0	3 minutes
	B	10	0	
Vancomycin intermediate resistant <i>Staphylococcus aureus</i> (VISA) (CDC Isolate 99287)	A B	10 10	0 0	3 minutes
	· ·			2 min-t
Yersinia enterocolitica (ATCC 23715)	A B	10 10	0	3 minutes

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BACTERICIDAL DATA (continued):

Conclusion: Under the conditions of this investigation, GERMI-KLEEN Non-Acid Disinfectant Bathroom Cleaner was bactericidal for Staphylococcus aureus, Salmonella (choleraesuis) enterica, Pseudomonas aeruginosa, Community Associated Methicillin Resistant Staphylococcus aureus (CA-MRSA) (NRS 123) Genotype USA400, Community Associated Methicillin Resistant Staphylococcus aureus (CA-MRSA) (NRS 384) Genotype USA300, Corynebacterium ammoniagenes, Enterococcus faecium, Escherichia coli, Escherichia coli O157:H7, Listeria monocytogenes, Methicillin resistant Staphylococcus aureus (MRSA), Methicillin resistant Staphylococcus epidermidis (MRSE), Salmonella (typhi) enterica, Streptococcus pyogenes (Necrotizing Fasciitis-Group A), Vancomycin resistant Enterococcus faecalis (VRE), Vancomycin intermediate resistant Staphylococcus aureus (VISA) and Yersinia enterocolitica according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a bactericide.

MILDEW FUNGISTATIC DATA:

Test Method: EPA Hard Surface Mildew Fungistatic Test

Test Organism: Aspergillus niger (ATCC 6275) **Test Conditions:** glazed ceramic tile substrates

Results:

<u>Sample</u>	No. of Exposed Tiles	No. of Tiles Showing Growth
DDPS	10	0
Control	10	10

Conclusion: Under the conditions of this investigation, GERMI-KLEEN Non-Acid Disinfectant Bathroom Cleaner demonstrated fungistatic activity against Aspergillus niger according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a fungistat.