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**EFFICACY DATA for
AVISTAT-D™ Ready-To-Use Spray Disinfectant Cleaner
(#0252)**

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 Reduction</u>	<u>Contact Time</u>
*Avian Influenza A Virus (H3N2) (Avian Reassortant) (ATCC VR-2072)	A&B	$\geq 3.0 \log_{10}$	2 minutes
*Avian Influenza Virus, Type A (Turkey/WIS/66) (H9N2)	A&B	$\geq 4.83 \log_{10}$	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	$\geq 3.3 \log_{10}$	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 page	$6.48 \log_{10}$	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	$\geq 3.0 \log_{10}$	3 minutes
*SARS Associated Coronavirus (ZeptoMetrix)	A&B	$4.03 \log_{10}$	2 minutes

Conclusion: Under the conditions of this investigation, AVISTAT-D™ Ready-To-Use Spray Disinfectant 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, Rotavirus, 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:

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

Conclusion: Under the conditions of this investigation, AVISTAT-D™ Ready-To-Use Spray Disinfectant 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:

<u>Organism</u>	<u>No. of Carriers</u>			
	<u>Sample</u>	<u>Exposed</u>	<u>Positive</u>	<u>Contact Time</u>
<i>Trichophyton mentagrophytes</i> (ATCC 9533)	A	60	0	10 minutes
	B	60	0	
	C	60	0	

Conclusion: Under the conditions of this investigation, AVISTAT-D™ Ready-To-Use Spray Disinfectant 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:

Organism	Sample	Exposed	No. of Carriers	
			Positive	Contact Time
<i>Staphylococcus aureus</i> (ATCC 6538)	A	60	0	3 minutes
	B	60	1	
<i>Salmonella (choleraesuis) enterica</i> (ATCC 10708)	A	60	0	3 minutes
	B	60	0	
<i>Pseudomonas aeruginosa</i> (ATCC 15442)	A	60	0	3 minutes
	B	60	0	
Community Associated Methicillin Resistant <i>Staphylococcus aureus</i> (CA-MRSA) (NRS 123) Genotype USA400	A	10	0	3 minutes
	B	10	0	
Community Associated Methicillin Resistant <i>Staphylococcus aureus</i> (CA-MRSA) (NRS 384) Genotype USA300	A	10	0	3 minutes
	B	10	0	
<i>Corynebacterium ammoniagenes</i> (ATCC 6871)	A	10	0	3 minutes
	B	10	0	
<i>Enterococcus faecium</i> (ATCC 6569)	A	10	0	3 minutes
	B	10	0	
<i>Escherichia coli</i> (ATCC 11229)	A	10	0	3 minutes
	B	10	0	
<i>Escherichia coli</i> O157:H7 (ATCC 43895)	A	10	0	3 minutes
	B	10	0	
<i>Listeria monocytogenes</i> (ATCC 35152)	A	10	0	3 minutes
	B	10	0	
Methicillin resistant <i>Staphylococcus aureus</i> (MRSA) (ATCC 33593)	A	10	0	3 minutes
	B	10	0	
Methicillin resistant <i>Staphylococcus epidermidis</i> (MRSE) (ATCC 51625)	A	10	0	3 minutes
	B	10	0	
<i>Salmonella (typhi) enterica</i> (ATCC 6539)	A	10	0	3 minutes
	B	10	0	
<i>Streptococcus pyogenes</i> (Necrotizing Fasciitis-Group A) (V.A. Medical Center Isolate 04001)	A	10	0	3 minutes
	B	10	0	
Vancomycin resistant <i>Enterococcus faecalis</i> (VRE) (ATCC 51575)	A	10	0	3 minutes
	B	10	0	
Vancomycin intermediate resistant <i>Staphylococcus aureus</i> (VISA) (CDC Isolate 99287)	A	10	0	3 minutes
	B	10	0	
<i>Yersinia enterocolitica</i> (ATCC 23715)	A	10	0	3 minutes
	B	10	0	

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BACTERICIDAL DATA (continued):

Conclusion: Under the conditions of this investigation, AVISTAT-D™ Ready-To-Use Spray Disinfectant 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>	<u>No. of Exposed Tiles</u>	<u>No. of Tiles Showing Growth</u>
DDPS	10	0
Control	10	10

Conclusion: Under the conditions of this investigation, AVISTAT-D™ Ready-To-Use Spray Disinfectant 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.