



C-1000

Disinfectant Sanitizer Deodorizer

VIRUCIDAL DATA:

Test Methods:

- 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.
- * U.S. E.P.A. Pesticide Assessment Guidelines, Subdivision G: Product Performance, 1982, Section 91-30, pp. 72-76.
- † Virucide Assay (EPA, Federal Register 10, No. 123, 6/25/75, p. 26836)

Test Conditions: 3.5 ounces/5 gallons dilution, 10 minute contact time, glass petri dish substrates, 18.5-25°C exposure temperature, tested in the presence of serum

Results:

Test Organism	Sample	Titer Reduction
†Adenovirus <i>Type 5</i>	A	$\geq 3.0 \log_{10}$
	B	$\geq 3.3 \log_{10}$
*Avian Influenza A/Turkey/Wisconsin (ATCC VR-798)	A	$\geq 5.5 \log_{10}$
	B	$\geq 5.5 \log_{10}$
‡Bovine Viral Diarrhea Virus (BVDV)	A	5.93 \log_{10}
	B	5.93 \log_{10}
• Hepatitis B Virus (HBV) (Duck Hepatitis B Virus-DHBV)	A	4.68 \log_{10}
	B	4.68 \log_{10}
‡Hepatitis C Virus (HCV) (Bovine Viral Diarrhea Virus-BVDV)	A	5.93 \log_{10}
	B	5.93 \log_{10}
†Herpes Simplex Type 1 (Sabin)	A	4.0 \log_{10}
	B	4.0 \log_{10}
*Human Coronavirus (ATCC VR-740, strain 229E)	A	$\geq 4.25 \log_{10}$
	B	$\geq 4.25 \log_{10}$
*Human Immunodeficiency Virus, HIV-1, strain HTLV-IIIB, (associated with AIDS)	A	$\geq 3.5 \log_{10}$
	B	$\geq 3.5 \log_{10}$
†Influenza A ₂ (Japan 305/57)	A	7.5 \log_{10}
	B	7.5 \log_{10}
*Laryngotracheitis (LT-IVAX)	A	4.75 \log_{10}
	B	4.75 \log_{10}
*Newcastle Disease Virus (strain H.J. Roakin, 1946)	A	$\geq 5.5 \log_{10}$
	B	$\geq 5.5 \log_{10}$
*Pandemic 2009 H1N1 Influenza A Virus	(Refer to NOTE below)	
*Porcine Respiratory & Reproductive Syndrome Virus (PRRSV) (Strain NVSL)	A	$\geq 5.75 \log_{10}$
	B	$\geq 5.75 \log_{10}$



C-1000

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*SARS associated Coronavirus (ZeptoMetrix)	A	4.03 log ₁₀
	B	4.03 log ₁₀
†Vaccinia (Wyeth)	A	3.5 log ₁₀
	B	3.5 log ₁₀

Conclusion: Under the conditions of this investigation, C-1000 Disinfectant Sanitizer Deodorizer demonstrated virucidal activity against Adenovirus Type 5, Avian Influenza A/Turkey/Wisconsin, Bovine Viral Diarrhea Virus (BVDV), Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), Herpes Simplex Type 1 (Sabin), Human Coronavirus, Human Immunodeficiency Virus (HIV-1), Influenza A2 (Japan 305/57), Laryngotracheitis, Newcastle Disease Virus, Pandemic 2009 H1N1 Influenza A Virus, Porcine Respiratory & Reproductive Syndrome Virus (PRRSV), SARS associated Coronavirus and Vaccinia (Wyeth) 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.

DISINFECTION DATA:

Test Method: AOAC Use Dilution

Test Conditions: 5% organic soil load, 10 minute contact time, stainless steel carrier substrates 20°C exposure temperature.

Results:	Test Organism	Dilution	No. of Carriers		
			Sample	Exposed	Positive
Staphylococcus aureus (ATCC 6538)	3 ounces/5 gallons	A	60	0	
		B	60	0	
Salmonella enterica (ATCC 10708)	3 ounces/5 gallons	A	60	0	
		B	60	0	
Listeria monocytogenes (ATCC 35152)	3 ounces/5 gallons	A	10	0	
		B	10	0	
Yersinia enterocolitica (ATCC 23715)	3 ounces/5 gallons	A	10	0	
		B	10	0	
Pseudomonas aeruginosa (ATCC 15442)	3.5 ounces/5 gallons	A	60	0	
		B	60	0	
Staphylococcus aureus (Vancomycin intermediate resistant) (VISA) (HIP-5836)	3.5 ounces/5 gallons	A	10	0	
		B	10	0	

Conclusion: Under the conditions of these investigations, C-1000 Disinfectant Sanitizer Deodorizer demonstrated **disinfectant** activity against Staphylococcus aureus, Salmonella enterica, Listeria monocytogenes, Yersinia enterocolitica, Pseudomonas aeruginosa and Staphylococcus aureus (Vancomycin intermediate resistant) (VISA), according to criteria established by the U. S. Environmental Protection Agency for registration and labeling of a disinfectant product as a bactericide.



C-1000

Disinfectant Sanitizer Deodorizer

SANITIZATION DATA (Food Contact Surfaces):

Test Method: AOAC Germicidal and Detergent Sanitizing Action of Disinfectants

Test Conditions: synthetic hard water as **650 ppm** hardness (as CaCO₃)

200 ppm active quaternary (public eating establishments and dairies)

200-400 ppm active quaternary (food processing equipment/utensils)

1-2 ounces/4 gallon dilution

Results:

TOTAL BACTERIAL COUNTS/% KILL VS. EXPOSURE TIME						
ORGANISM	SAMPLE	30 SECONDS		60 SECONDS		Initial Inoculum Control Count
		TBC*	%KILL†	TBC	%KILL†	
Staphylococcus aureus (ATCC 6538)	A	970	99.999	105	99.999	7.8 x 10 ⁷
	B	1285	99.999	205	99.999	9.2 x 10 ⁷
	C	1145	99.999	130	99.999	9.3 x 10 ⁷
Escherichia coli (ATCC 11229)	A	1125	99.999	50	99.999	1.0 x 10 ⁸
	B	1075	99.999	95	99.999	9.3 x 10 ⁷
	C	835	99.999	75	99.999	8.1 x 10 ⁷
Campylobacter jejuni (ATCC 29428)	A	790	99.999	410	99.999	8.6 x 10 ⁷
	B	780	99.999	470	99.999	8.6 x 10 ⁷
Escherichia coli O157:H7 (ATCC 43895)	A	1220	99.999	110	99.999	9.2 x 10 ⁷
	B	1000	99.999	125	99.999	9.2 x 10 ⁷
Listeria monocytogenes (ATCC 35152)	A	<10	>99.999	<10	>99.999	7.8 x 10 ⁸
	B	<10	>99.999	<10	>99.999	7.8 x 10 ⁸
Methicillin resistant Staphylococcus aureus (ATCC 33592)	A	950	99.999	<10	>99.999	1.0 x 10 ⁸
	B	970	99.999	<10	>99.999	1.0 x 10 ⁸
Salmonella typhi (ATCC 6539)	A	<10	>99.999	<10	>99.999	1.4 x 10 ⁸
	B	<10	>99.999	<10	>99.999	1.4 x 10 ⁸
Shigella sonnei (ATCC 11060)	A	680	99.999	<10	>99.999	9.3 x 10 ⁷
	B	4500	99.999	<10	>99.999	9.3 x 10 ⁷
Vancomycin resistant Enterococcus faecalis (ATCC 51299)	A	<10	>99.999	<10	>99.999	1.2 x 10 ⁸
	B	<10	>99.999	<10	>99.999	1.2 x 10 ⁸
Vibrio cholera (ATCC 14035)	A	<10	>99.999	<10	>99.999	8.3 x 10 ⁷
	B	<10	>99.999	<10	>99.999	8.3 x 10 ⁷
Yersinia enterocolitica (ATCC 23715)	A	108	99.999	<10	>99.999	1.7 x 10 ⁸
	B	1300	99.999	263	99.999	5.9 x 10 ⁸
*TBC = Total Bacterial Count, organisms/ml						
† = % Kill calculation based on Initial Inoculum Control Count.						



C-1000

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Conclusion: Under the conditions of these investigations, C-1000 Disinfectant Sanitizer Deodorizer demonstrated **sanitizing** activity against Staphylococcus aureus, Escherichia coli, Campylobacter jejuni, Escherichia coli O157:H7, Listeria monocytogenes, Methicillin resistant Staphylococcus aureus, Salmonella typhi, Shigella sonnei, Vancomycin resistant Enterococcus faecalis, Vibrio cholera and Yersinia enterocolitica according to criteria established by the U. S. Environmental Protection Agency for registration and labeling of a disinfectant product as a sanitizer.

SANITIZATION DATA (Food Contact Surfaces) (continued):

Test Methods: AOAC Germicidal and Detergent Sanitizing Action of Disinfectants.

Test Conditions: synthetic hard water as **650 ppm** hardness (as CaCO₃)
300-400 ppm active quaternary (food processing equipment/utensils ONLY)
 1.5-2.0 ounces/4 gallon dilution

Results:

TOTAL BACTERIAL COUNTS/% KILL VS. EXPOSURE TIME						
		30 SECONDS		60 SECONDS		
ORGANISM	SAMPLE	TBC*	%KILL†	TBC	%KILL†	Initial Inoculum Control Count
Klebsiella pneumoniae (ATCC 4352)	A	100	99.999	<10	>99.999	9.4 x 10 ⁸
	B	310	99.999	<10	>99.999	9.4 x 10 ⁸
*TBC = Total Bacterial Count, organisms/ml						
† = % Kill calculation based on Initial Inoculum Control Count.						

Conclusion: Under the conditions of these investigations, C-1000 Disinfectant Sanitizer Deodorizer demonstrated **sanitizing** activity against Klebsiella pneumonia at 300 ppm quaternary concentration and 650 ppm water hardness according to criteria established by the U. S. Environmental Protection Agency for registration and labeling of a disinfectant product as a sanitizer.

Test Methods: AOAC Germicidal and Detergent Sanitizing Action of Disinfectants.

Test Conditions: synthetic hard water as **500 ppm** hardness (as CaCO₃)
200 ppm active quaternary (public eating establishments, dairies, and food processing equipment/utensils)
 1 ounce/4 gallon dilution

Results:

TOTAL BACTERIAL COUNTS/% KILL VS. EXPOSURE TIME						
		30 SECONDS		60 SECONDS		
ORGANISM	SAMPLE	TBC*	%KILL†	TBC	%KILL†	Initial Inoculum Control Count
Klebsiella pneumoniae (ATCC 4352)	A	340	99.999	<10	>99.999	1.1 x 10 ⁸
	B	190	99.999	<10	>99.999	1.1 x 10 ⁸
*TBC = Total Bacterial Count, organisms/ml						
† = % Kill calculation based on Initial Inoculum Control Count.						

Conclusion: Under the conditions of these investigations, C-1000 Disinfectant Sanitizer Deodorizer demonstrated **sanitizing** activity against Klebsiella pneumoniae at 200 ppm quaternary concentration and 500 ppm water hardness according to criteria established by the U. S. Environmental Protection Agency for registration and labeling of a disinfectant product as a sanitizer.

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