

EFFICACY DATA FOR BAC-OFF DETERGENT/DISINFECTANT (EPA Reg. No. 1839-81)

VIRUCIDAL DATA:

Test Methods:

- *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)
- *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.

Test Conditions: 1 oz/gal dilution, 10 minute contact time, glass petri dish substrates, tested in the presence of serum

Results:

<u>Test Organism</u>	<u>Sample</u>	<u>Titer Reduction</u>
+Adenovirus Type 2	A	3.0 log ₁₀
	B	>3.0 log ₁₀
Bovine Viral Diarrhea (BVDV)	A	6.1 log ₁₀
	B	3.8 log ₁₀
+Feline Calicivirus (FCV)	A	5.79 log ₁₀
	B	>6.06 log ₁₀
*Hepatitis B Virus (HBV) (Duck Hepatitis B Virus-DHDV)	A	4.5 log ₁₀
	B	4.5 log ₁₀
•Hepatitis C Virus (HCV) (Bovine Viral Diarrhea Virus-BVDV)	A	6.1 log ₁₀
	B	3.8 log ₁₀
+Herpes Simplex Type 1 (Sabin)	A	≥4.0 log
	B	≥3.7 log ₁₀
+Human Coronavirus (ATCC VR-740, strain 229E)	A	≥3.0 log ₁₀
	B	≥3.0 log ₁₀
+Human Immunodeficiency Virus, HTLV-IIIrf, strain of HIV-1 (associated with ADIS)	A	≥3.0 log ₁₀
	B	≥3.0 log ₁₀
+Influenza A2 (Japan 305/57)	A	>6.5 log ₁₀
	B	>6.0 log ₁₀
+Norwalk Virus (Feline Calicivirus, FCV)	A	5.79 log ₁₀
	B	>6.06 log ₁₀
+Vaccinia (Wyeth)	A	>3.5 log ₁₀
	B	>3.5 log ₁₀

Conclusion: Under the conditions of this investigation, NP 9.0 Detergent /Disinfectant was **virucidal** for Adenovirus Type 2, Bovine Viral Diarrhea Virus (BVDV), Feline Calicivirus (FCV), Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), Herpes Simplex Type 1 (Sabin), Human Coronavirus, Human Immunodeficiency Virus (HIV), Influenza A2 (Japan 305/57), Norwalk Virus and Vaccinia (Wyeth) according to criteria established by the U.S Environmental Protection Agency for registration and labeling of disinfectant product as a virucide.

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MILDEW FUNGISTATIC DATA:

Test Method: Hard Surface Mildew Fungistatic Test (Unofficial Protocol, 10/27/76)

Test Organism: Aspergillus niger

Test Conditions: tile substrates

Results:

<u>Sample</u>	<u>Dilution</u>	<u>No. of Exposed Tiles</u>	<u>No. of Tiles showing Growth</u>
NP 9.0	1 oz/gal	10	0
Control	-	10	10

Conclusion:

Under the conditions of this investigation, NP 9.0 Detergent/Disinfectant was fungistatic for Aspergillus niger according to criteria established by the U.S Environmental Protection Agency for registration and labeling of a disinfectant product as a fungistat.

FUNGICIDAL DATA:

Test Method: AOAC Fungicidal Test

Test Organism: Trichophyton mentagrophytes (ATCC 9533)

Test Conditions: 1 oz.gal dilution
5% blood serum
20°C exposure temperature

Results:

<u>Sample</u>	<u>Exposure Time (Min.) vs. Growth</u>			<u>Dilution</u>	<u>PHENOL RESISTANCE Exposure Time (min.) vs. Growth</u>		
	<u>5</u>	<u>10</u>	<u>15</u>		<u>5</u>	<u>10</u>	<u>15</u>
A	+	0	0	1:60	+	0	0
				1:70	+	+	0
B	+	0	0	1:60	+	0	0
				1:70	+	+	+

+ = growth 0 = no growth

Conclusion:

Under the conditions of this investigation, NP 9.0 Detergent/Disinfectant 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.

DISINFECTION DATA:

Test Method: AOAC Use Dilution

Test Conditions: 1 oz/gal dilution, 5% blood serum, 10 minute contact time, 20°C exposure temperature stainless steel carrier substrates

Results:

<u>Test Organism</u>	<u>Sample</u>	<u>No. of Carriers</u>		<u>Dilution</u>	<u>PHENOL RESISTANCE</u>		
					<u>Exposure Time</u>		
					<u>(min.) vs. Growth</u>		
		<u>Exposed</u>	<u>Positive</u>		<u>5</u>	<u>10</u>	<u>15</u>
Staphylococcus aureus (ATCC 6538)	A	60	0	1:60	+	0	0
	B	60	0	1:70	+	+	+
	C	60	0				
Salmonella choleraesuis (ATCC 10708)	A	60	0	1:90	+	0	0
	B	60	0	1:100	+	+	+
	C	60	0				
Pseudomonas aeruginosa (ATCC 15442)	A	59	1	1:80	+	0	0
	B	60	0	1:90	+	+	+
	C	60	0				
Brevibacterium ammoniagenes (ATCC 6871)	A	10	0	1:110	+	0	0
	B	10	0	1:120	+	+	+
Enterobacter aerogenes (ATCC 13048)	A	10	0	1:80	+	0	0
	B	10	0	1:90	+	+	+
Escherichia coli (ATCC 11229)	A	10	0	1:90	+	0	0
	B	10	0	1:100	+	+	+
Klebsiella pneumoniae (ATCC 4352)	A	10	0	1:60	+	0	0
	B	10	0	1:70	+	+	+
Salmonella schottmueller	A	10	0	1:90	+	0	0
	B	10	0	1:100	+	+	+
Shigella dysenteriae (ATCC 12180)	A	10	0	1:90	+	0	0
	B	10	0	1:100	+	+	+
Staphylococcus aureus (methicillin resistant)(MRSA)(ATCC 33593)	A	10	0	Not determined; published information not available.			
	B	10	0				
Staphylococcus aureus (vancomycin intermediate resistant)(VISA)	A	10	0	Not determined; published information not available.			
	B	10	0				
Streptococcus faecalis (ATCC 10541)	A	10	0	1:70	+	0	0
	B	10	0	1:80	+	+	+
Streptococcus pyogenes (clinical- Flesh Eating strain, BIRD M3)	A	10	0	Not determined; published information not available.			
	B	10	0				
Streptococcus salivarius	A	10	0	1:120	+	0	0
	B	10	0	1:130	+	+	+

+ = growth 0 = no growth

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DISINFECTION DATA (continued):

Conclusion:

Under the conditions of these investigations, NP 9.0 Detergent/Disinfectant demonstrated **disinfectant** activity against Staphylococcus aureus, Salmonella choleraesuis, Pseudomonas aeruginosa, Brevibacterium ammoniagenes, Enterobacter aerogenes, Escherichia coli, Klebsiella pneumoniae, Salmonella schottmuelleri, Shigella dysenteriae, Methicillin resistant Staphylococcus aureus (MRSA), Vancomycin intermediate intermediate resistant Staphylococcus aureus (VISA), Streptococcus faecalis, Streptococcus pyogenes (Clinical-Flesh Eating strain, BIRD M3), and Streptococcus salivarius according to criteria established by the U.S Environmental Protection Agency for registration and labeling of disinfectant product as a bactericide.

SANITIZATION DATA:

Test Method: AOAC Germicidal and Detergent Sanitizing Action of Disinfectants

Test Conditions: 200 ppm active quaternary
1 oz/3.5 gal dilution

Results:

<u>Test Organism</u>	<u>Sample</u>	Synthetic Hard Water (ppm)	TOTAL BACTERIAL COUNTS/ <u>% KILL vs. EXPOSURE TIME</u>			
			<u>30 seconds</u>		<u>60 seconds</u>	
			<u>(TBC)*</u>	<u>%KILL</u> †	<u>TBC*</u>	<u>% KILL</u> †
Staphylococcus aureus (ATCC 6538)	A	250	1275	99.999	230	>99.999
	B	300	1290	99.999	75	>99.999
	C	250	985	99.999	110	>99.999
Escherichia coli (ATCC 11229)	A	300	1205	99.999	90	>99.999
	B	300	1095	99.999	65	>99.999
	C	300	1315	99.999	175	>99.999

* TBC = Total Bacterial Count, cfu/ml
† % Kill calculated based on initial inoculum control control count of 92-114 x 10⁶ cfu/ml.

Conclusion:

Under the conditions of these investigations, NP 9.0 Detergent/Disinfectant demonstrated sanitizing activity against Staphylococcus aureus and Escherichia coil according to criteria established by the U.S Environmental Protection Agency for registration and labeling of a disinfectant product as a sanitizer.