

Efficacy Data

NO RINSE SANITIZER

Efficacy tests have demonstrated that this product is an effective Bactericide and Virucide in the presence of organic soil (5% blood serum).

Disinfection Data

Test Method: AOAC Use Dilution

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

Results Test Organism	Number of Carriers			
	Dilution	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
Pseudomonas aeruginosa (ATCC 15442)	3.5 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
Staphylococcus aureus (Vancomycin intermediate resistant) (HIP-5836)	3.5 ounces/5 gallons	A	10	0
		B	10	0
Escherichia coli (ATCC 11229)	*See Sanitization Data Section for information			
Escherichia coli 0157:H7 (ATCC 43895)	*See Sanitization Data Section for information			

Conclusion:

Under the conditions of these investigations, **No Rinse Sanitizer** demonstrated disinfectant activity against Staphylococcus aureus, Salmonella choleraesuis, Listeria monocytogenes, Yersinia enterocolitica, Pseudomonas aeruginosa and Staphylococcus aureus (Vancomycin intermediate resistant)(VISA) according to the criteria established by the US Environmental Protection Agency for registration and labeling of a disinfectant product as a bactericide. The AOAC Use Dilution test method is accepted in Canada.

SANITIZATION DATA

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.

			TOTAL BACTERIAL COUNTS/ % KILL VS. EXPOSURE TIME			
			30 seconds		60 seconds	
Results Test Organism	Sample	TBC*	% Kill	TBC*	% Kill	Inoculum Kill Control Count
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
Escherichia coli 0157: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
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
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
Methicillin resistant Staphylococcus aureus (ATCC 33592, MRSA)	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, VRE)	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

*TBC = Total Bacterial Count

x = % Kill calculation based on Initial Inoculum control count.

Conclusion:

Under the conditions of these investigations, **No Rinse Sanitizer** demonstrated sanitizing activity against Staphylococcus aureus, Escherichia coli, Escherichia coli 0157:H7, Klebsiella pneumoniae, Listeria monocytogenes, Campylobacter jejuni, Salmonella typhi, Shigella sonnei, Vibrio cholera, Methicillin resistant Staphylococcus aureus, Vancomycin resistant Enterococcus faecalis and Yersinia enterocolitica according to the criteria established by the US Environmental Protection Agency for registration and labeling of a disinfectant product as a sanitizer. The AOAC Germicidal and Detergent Sanitizing Action of Disinfectants test method is accepted in Canada.

1. Synthetic hard water as 500 ppm hardness (as CaCO₃).

VIRUCIDAL DATA

Test Methods: *U.S. E.P.A. Pesticide Assessment Guidelines, Subdivision G: Product Performance, Section 91-30, 1982, pp. 72-76.

**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.

~Virucidal Assay (EPA, Federal Register 10, No.123, 6/25/75, p.26836).

Test Conditions: 10-minute contact time, 3.5 oz/5 US gallon dilution, glass petri dish substrates, 18.5-25oC exposure temperature, tested in the presence of serum.

Results Test Organism	Sample	Titer Reduction
~Herpes Simplex Type 1 (Sabin)	A B	4.0 log 4.0 log
*Human Immunodeficiency Virus, HTLV-III _{RF} , strain of HIV-1 (associated with AIDS)	A B	>/= 3.5 log >/= 3.5 log
~Influenza A ₂ (Japan 305/57)	A B	7.5 log 7.5 l
~Adenovirus Type 5	A B	>/= 3.0 log >/= 3.3 log
~Vaccinia (Wyeth)	A B	3.5 log 3.5 log
*Avian Influenza A/Turkey/Wisconsin (ATCC VR-798)	A B	>/= 5.5 log >/= 5.5 log
*Laryngotracheitis (LT-IVAX)	A B	4.75 log >/=4.75 log
Porcine Respiratory & Reproductive Syndrome Virus (PRRSV)	A B	>/=5.75 log >/=5.75 log
*Newcastle Disease virus (strain H.J. Roakin, 1946)	A B	>/=5.5 log >/=5.5 log

Conclusion:

Under the conditions of this investigation, **No Rinse Sanitizer**, was virucidal for Porcine Respiratory & Reproductive Syndrome Virus (PRRSV), Herpes Simplex Type 1 (Sabin), Human Immunodeficiency Virus (HIV-1), Influenza A2 (Japan 305/57), Vaccinia (Wyeth), Adenovirus Type 5, Avian Influenza A/Turkey/Wisconsin, Laryngotracheitis Virus and Newcastle Disease virus according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a virucide.

No Rinse Sanitizer has demonstrated effectiveness against Vaccinia and Influenza A virus and is expected to inactivate all Influenza A viruses including 2009 (H1N1) pandemic Influenza A virus.