

ENVIROKLEEN FORMULATION: NO RINSE

We are pleased to provide the following information regarding Envirokleen's No-Rinse Cleaner Food Contact Sanitizer. No Rinse is formulated with a combination of food grade phosphoric acid, quaternaries and GRAS detergents. It is designed for cleaning and sanitizing food contact surfaces, especially beverage dispensing equipment, milk shake machines, soft ice cream dispensers and ice machines. It has been accepted by the EPA and sold successfully for this application. It also meets FDA, USDA and NSF guidelines.

Description

No Rinse is an acid cleaner sanitizer for use on food processing and dairy equipment in water up to 600 ppm hardness (as CaCO_3). No Rinse fulfills the criteria of Appendix F of the Grade "A" Pasteurized Milk Ordinances 1978 Recommendations of the U.S. Public Health Services in waters up to 600 ppm of hardness calculated as CaCO_3 , when evaluated by the AOAC Germicidal and Detergent Sanitizer Method against *Escherichia coli* and *Staphylococcus aureus*. No Rinse is a blend of a premium active quaternaries and inerts: phosphoric acid, surfactants and water. Biocidal performance is attained when this product is properly diluted according to label directions.

Regulatory Summary		Physical Properties	
EPA Registered	Yes	pH of Concentrate	0.05 - 0.15
California Status	Registered	Specific Gravity at 25°C	1.16
USDA Authorization	D2	Pounds per gallon @ 25°C	9.63

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Optional Surfactant Summary

1 - Surfactants - *The following surfactants are approved for use in No Rinse at 2.5%*

Nonylphenol polyoxyethylene (9-13) moles Linear alkyl (C_{11} - C_{15}) alcohol (9-13 moles EO)

Summary of Antimicrobial Test Results

No Rinse is a sanitizer intended for use in food service, food processing and dairy operations. Listed below is a summary of the antimicrobial claims and a review of the test results.

Claim: Sanitizer, Food Contact	Organic Soil: 5%	Water Conditions: 660 ppm CaCO ₃
Test Method: Official Method of the AOAC, 13 Edition, Section 4 Disinfectant-Germicidal & Detergent Sanitizer Method		

Organism	ATCC #	Dilution	Replicates	Results, %Reduction
Escherichia coli	11229	150 ppm (0.25 oz/gal)	2, 2, 2	>99.999
Staphylococcus aureus	6538	150 ppm (0.25 oz/gal)	2, 2, 2	>99.999

Conclusion: All lots of No Rinse effectively killed the above listed bacteria as specified in the test performance standards with greater than 99.999% reduction within one minute. No Rinse is an effective sanitizer against the above listed bacteria when diluted at 1:512* (150 ppm, 0.25 oz/gal) in 600 ppm synthetic hard water in the presence of 5% organic soil.

Claim: Sanitizer, Food Contact	Organic Soil: 5%	Water Conditions: 500 ppm CaCO ₃
Test Method: Official Method of the AOAC, 13 Edition, Section 4 Disinfectant-Germicidal & Detergent Sanitizer Method		

Organism	ATCC #	Dilution	Replicates	Results, %Reduction
Escherichia coli	11229	150 ppm (0.25 oz/gal)	2, 2, 2	>99.999
Escherichia coli ₁	35150	150 ppm (0.25 oz/gal)	2, 2, 2	>99.999
Listeria monocytogens	19115	150 ppm (0.25 oz/gal)	2, 2, 2	>99.999
Salmonella choleraesuis	10708	150 ppm (0.25 oz/gal)	2, 2, 2	>99.999
Shigella sonnei	9290	150 ppm (0.25 oz/gal)	2, 2	>99.999
Staphylococcus aureus	6538	150 ppm (0.25 oz/gal)	2, 2, 2	>99.999
Vibrio cholerae	14035	150 ppm (0.25 oz/gal)	2, 2	>99.999
Yersinia enterocolitica	9610	150 ppm (0.25 oz/gal)	2, 2, 2	>99.999

₁ Escherichia coli 0157: H7 - Pathogenic

Conclusion: All lots of No Rinse effectively killed the above listed bacteria as specified in the test performance standards with greater than 99.999% reduction within one minute. No Rinse is an effective sanitizer against the above listed bacteria when diluted at 1:512* (150 ppm, 0.25 oz/gal) in 500ppm synthetic hard water in the presence of 5% organic soil.

Claim: Sanitizer, Food Contact	Contact Time: 30 seconds	Organic Soil: 5%	Water Conditions: 500 ppm CaCO ₃
Test Method: Official Method of the AOAC, 13 Edition, Section 4 Disinfectant-Germicidal & Detergent Sanitizer Method			

Organism	ATCC #	Dilution	Replicates	Results,%Reduction
Campylobacter jejuni	6538	300 ppm (0.5 oz/gal)	2, 2	>99.999
Escherichia coli	11229	300 ppm (0.5 oz/gal)	2, 2, 2	>99.999
Escherichia coli ₁	35150	300 ppm (0.5 oz/gal)	2, 2, 2	>99.999
Listeria monocytogens	19115	300 ppm (0.5 oz/gal)	2, 2, 2	>99.999
Salmonella choleraesuis	10708	300 ppm (0.5 oz/gal)	2, 2, 2	>99.999
Shigella sonnei	9290	300 ppm (0.5 oz/gal)	2, 2	>99.999
Staphylococcus aureus	6538	300 ppm (0.5 oz/gal)	2, 2, 2	>99.999
Vibrio cholerae	14035	300 ppm (0.5 oz/gal)	2, 2	>99.999
Yersinia enterocolitica	9610	300 ppm (0.5 oz/gal)	2, 2, 2	>99.999

₁ Escherichia coli 0157: H7 - Pathogenic

Conclusion: All lots of No Rinse effectively killed the above listed bacteria as specified in the test performance standards with greater than 99.999% reduction within one minute. No Rinse is an effective sanitizer against the above listed bacteria when diluted at 1:256 (300 ppm, 0.5 oz/gal) in 500 ppm synthetic hard water in the presence of 5% organic soil.

Summary of Antimicrobial Efficacy - Etiology₁

Pathogenic Microorganism	Description
Campylobacter jejuni	Gram negative bacteria associated with acute gastroenteritis. Spread by anal/oral route of infection, resulting in diarrhea outbreaks.
Escherichia coli	Gram negative bacteria spread by anal/oral route of infection, resulting in diarrhea outbreaks. Associated with urinary tract infections and bacteremia. Required for Food Contact Sanitizers.
Listeria monocytogenes	Gram positive (rod shape) bacteria. Considered a potent food pathogen. Found in raw meat and poultry. Infections can result in meningitis or sepsis.
Salmonella choleraesuis	Gram negative bacteria associated with acute gastroenteritis and septicemia. Required for Hospital Disinfectants.
Shigella sonnei	Gram negative bacteria directly spread by anal/oral route of infection; indirectly (including food, hands, flies) spread by contaminated food and inanimate objects resulting in bacillary dysentery.
Staphylococcus aureus	Gram positive bacteria identified as a major cause of hospital acquired (nosocomial) infections. Colonizes food and secretes enterotoxins which cause food poisoning after ingestion. Causes wound infections, septicemia, endocarditis, meningitis, osteomyelitis and pneumonia. Required for Food Contact Sanitizers.
Vibrio cholerae	Gram negative, rod-shaped bacteria; causative agent for cholera – causes severe diarrhea --- often fatal.
Yersinia enterocolitica	Small gram negative coccobacilli. A zoonotic agent, infections can be passed from animals to humans. A potent food pathogen. Infections can cause abdominal pain, diarrhea, and fever.

₁ Microbiology, D. Kingsbury and G. Wagner Harwal Publishing 1990