

Efficacy Data- **No Rinse[®] Foaming (non-alcohol) Hand Sanitizer**

In-Vitro Antimicrobial Test Procedures and Protocols:

1. Each test organism was grown overnight on Trypticase-soy agar slants at 35°C. Cell suspensions were prepared by adding 10-ml sterile saline (0.9%) to each slant and gently scraping the slant surface. Microbial densities of each cell suspension were estimated using the viable plate count method.
2. Test product (1-ml) was aseptically added to sterile test tubes and then inoculated with a 1:10 dilution of a cell suspension (100uL) of the test organism. At selected time intervals (0.5, 1.0 and 2.0 minutes), aliquots (10uL) were aseptically removed and transferred to a Trypticase-soy broth recovery medium (10-mL). Microbial growth was monitored by the development of turbidity in the recovery medium

Test Results:

No Rinse[®] Foaming Hand Sanitizer with 0.24% Quaternary Ammonium Chloride exhibited strong germicidal activity against a variety of gram-positive and gram-negative bacteria, as well as the yeast *Candida albicans*. In most cases viable cell numbers were reduced by greater than 99.99% after a 30 second exposure period with this product.

Test Microorganisms	Initial Inoculum (cfu/10uL)	Exposure Time (Minutes)			Reduction (percent)*
		0.5	1.0	2.0	
		Grown in TSB			
<i>Pseudomonas aeruginosa</i>	3.39 x 10 ⁵	-	-	-	99.99
<i>Klebsiella pneumoniae</i>	2.76 x 10 ⁵	-	-	-	99.99
<i>Escheria coli</i>	15.8 x 10 ⁵	-	-	-	99.99
<i>Salmonella typhimurium</i>	18.9 x 10 ⁵	-	-	-	99.99
<i>Staphylococcus aureus</i> ATTC33591	21.2 x 10 ⁵	-	-	-	99.99
<i>Staphylococcus Epidermidis</i>	18.3 x 10 ⁵	-	-	-	99.99
<i>Streptococcus faecalis</i> – ATTC522A	9.8 x 10 ⁵	-	-	-	99.99
<i>Streptococcus agalactae</i>	12.1 x 10 ⁵	(Methicillin Resistant / MRSA)			99.99
<i>Micrococcus luteus</i>	14.4 x 10 ⁵	-	-	-	99.99
<i>Candida Albicans</i>	12.6 x 10 ⁵	-	-	-	99.99
<i>Trichophyton</i>	9.6 x 10 ⁵	-	-	-	99.99
<i>Mentogrophytes</i> (Athlete's Foot)		-	-	-	99.99
<i>Salmonella Chlorocraesuis</i>	14.1 x 10 ⁵	-	-	-	99.99
<i>Aspergillus Niger</i>	11.8 x 10 ⁵	-	-	-	99.99
<i>Listeria Monocytogenes</i>	17.9 x 10 ⁵	(Vancomycin resistant enterococci / VRE)			
<i>Clostridium difficile</i>	1.1 x 10 ⁵	0 CFU/ML	(30 seconds)		
Human Coronavirus (Resembles SARS-like virus family)		0 CFU/ML	(15 seconds)		
		0 CFU/ML	(15 seconds)		

(*) Indicates percentage reduction in numbers of viable cells evidenced by lack of growth in Trypticase-soy Broth medium

(-) Indicates no survival of test organisms in the recover medium