

Efficacy Data: Published by NO RINSE LABORATORIES (Ohio, USA)
The efficiency of No Rinse Foaming 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:

The active Quaternary Ammonium Chloride exhibited strong germicidal activity against a variety of gram-positive and gram-negative, 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 Grown in TSB	2.0	
<i>Pseudomonas aeruginosa</i>	3.39 x 10 ⁵	-	-	-	99.99
<i>Klebsiella pneumonia</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> ATCC33591	21.2 x 10 ⁵	-	-	-	99.99
<i>Staphylococcus Epidermidis</i>	18.3 x 10 ⁵	-	-	-	99.99
<i>Streptococcus faecalis</i> – ATCC522A	9.8 x 10 ⁵	-	-	-	99.99
<i>Streptococcus agalactae</i>	12.1 x 10 ⁵	-	-	-	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)	-	-	-	-	-
<i>Salmonella Chlorocraesuis</i>	14.1 x 10 ⁵	-	-	-	99.99
<i>Aspergillus Niger</i>	11.8 x 10 ⁵	-	-	-	99.99
Listeria Monocytogenes	17.9 x 10 ⁵	0 CFU/ML (30 seconds)			
Clostridium difficile	1.1 x 10 ⁵	0 CFU/ML (15 seconds)			
Human Coronavirus (Resembles SARS-like virus family)		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.

This study is performed by NO RINSSE LABORATORIES, LLC. 900 E: Franklin Street, Centerville, Ohio 45459 USA



50 ml pump

- ⇒ **PROVEN TO KILL HUMAN CORONAVIRUS**
(resembles the SARS-like virus family)
- ⇒ **EFFECTIVE IN KILLING C. DIFFICILE BACTERIA**
- ⇒ **WILL NOT REMOVE FINGERNAIL POLISH**
- ⇒ **NON DRYING**
- ⇒ **NON-FLAMMABLE**
- ⇒ **INCREASED USE COMPLIANCE**
- ⇒ **Each application requires 65% less volume than alcohol gels**

**NO RINSE
ALCOHOL FREE
HAND
SANITIZER**
Patent Pending
ANTI-MICROBE
DIN#02248351

Approved by Health Canada and Agriculture Canada

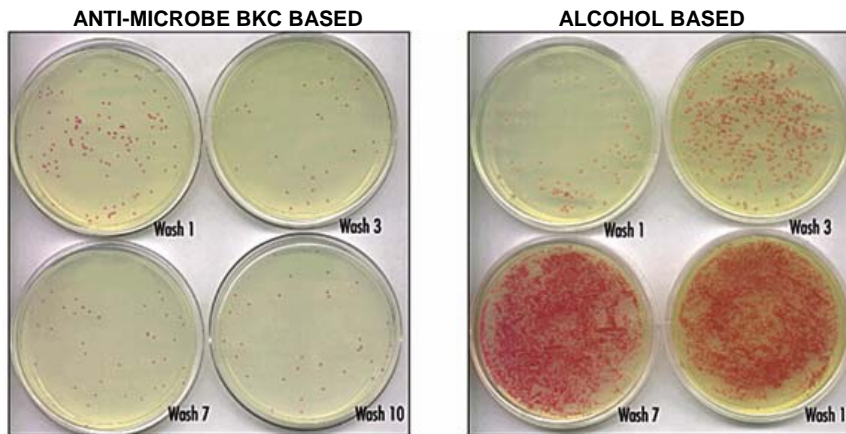


1.5 L wall-mounted pump

	ALCOHOL-BASED HAND SANITIZING GEL	ANTI-MICROBE NO-RINSE ALCOHOL-FREE ANTIBACTERIAL FOAMING HAND SANITIZER
%COMMON BACTERIA KILLED IN 30 SECONDS	99.99	99.99
DRYING TIME	Instantly when rubbed in	Soon after being rubbed in
FLAMMABILITY RATING	4	0
HAZARDOUS MATERIAL	Yes FLAMMABLE	No
POSSIBLE IRRITATION TO HANDS	<ul style="list-style-type: none"> ➤ Drying to skin from repeated use or use during cold whether ➤ May irritates cuts and abrasions ➤ Removes nail polish 	Excessive use may cause temporary dryness
AMMOUNT / APPLICATION	1.5 ml	0.4 ml
PRODUCT FORM	Gel	Foam
MAINTENANCE HAZARDS	➤ Alcohol may harm floor finish	None

COMPARATIVE ANALYSIS BETWEEN ALCOHOL BASED HAND SANITIZER & FOAMING HAND SANITIZER

Woodward Laboratories compared alcohol-based gels with HandClens (foaming hand sanitizer). HandClens has been the subject of four scientific investigations. Two addressed the products efficacy against the Federal Guidelines for antiseptic hand washes and healthcare personnel hand washes. The results of these studies are represented by the charts below. With repeated use of alcohol-based sanitizers germ-killing effectiveness (antimicrobial persistence of activity) is reduced by the drying effect of alcohol which leaves microscopic cracks in the skin that can allow bacteria to become trapped or hidden.



FDA testing protocol listed in Federal Register, Vol 59 (116), June 17, 1994, 21 CFR 333.470. "Effectiveness testing of an antiseptic Handwash or healthcarepersonnel Handwash."

HandClens is 99.99% effective against the most frequent disease and illness causing germs.

Woodward's HandClens Kill Time Study

The following are just some of the pathogens killed within 15 seconds of exposure to HandClens.

Candida albicans	Candida keyfr
Escherichia coli	Enterococcus faecalis
Enterococcus faecium (VRE)	Klebsiella pneumonia
Microcococcus luteus	Pseudomonas aeruginosa
Proteus mirabilis	Salmonella typhimurium
Serratia marcescens	Staphylococcus aureus
Staphylococcus aureus (MRSA)	Salmonella enteritidis
Staphylococcus epidermidis	Staphylococcus haemolyticus
Staphylococcus saprophyticus	Streptococcus pyogenes
Herpes simplex virus Type 1	Human Coronavirus (related to SARS)
Trichophyton mentagrophytes	Trichophyton rubrum
Apergillis niger	Hepatitis A and B

In vitro tests performed by SCI Laboratories, Inc.; revised protocol of CFR 333.470, Woodward Laboratories, Inc.; revised protocol of CFR 333.470, Viomed Laboratories, Inc.; revised protocol of ASTM E1052, and ATS Laboratories, Inc.; protocol of WLI01041603.COR

ANTI-MICROBE (DIN#02248351)

BIOLOGICAL PROPERTIES

Phenol Coefficients

Phenol Coefficients were determined by
the official A.O.A.C procedure

10- Minute Killing Dilution

Organism	Dilution of Anti-microbe in water to get the 10 minute killing	Concentration of Anti-microbe (ml/L) to kill in 10 minutes	Phenol	Phenol Coefficient
<i>Brucella abortus</i>	1/152.6	6.55 ml/L	1/110	1.387
<i>Escherichia coli</i>	1/101.25	9.87 ml/L	1/70	1.446
<i>Klebsiella pneumoniae</i>	1/93.75	10.66 ml/L	1/90	1.042
<i>Lactobacillus casei</i>	1/393.75	2.54 ml/L	1/100	3.937
<i>Listeria monocytogenes</i>	1/270	3.70 ml/L	1/100	2.700
<i>Mycobacterium amegmatis</i>	1/78.75	12.70 ml/L	1/65	1.211
<i>Neisseria caiarbalis</i>	1/64.89	15.41 ml/L	1/70	0.927
<i>Pasteurella multocida</i>	1/202.89	4.92 ml/L	1/110	1.844
<i>Proteus vulgaris</i>	1/45	22.22 ml/L	1/70	0.642
<i>Pseudomonas aeruginosa PRD-10</i>	1/52.25	19.14 ml/L	1/70	0.746
<i>Salmonella gallinarum</i>	1/105	9.52 ml/L	1/80	1.312
<i>Salmonella pullorum</i>	1/93.75	10.66 ml/L	1/90	1.042
<i>Salmonella typhimurium</i>	1/75	13.33 ml/L	1/70	1.071
<i>Salmonella schottumelleri</i>	1/225	4.44 ml/L	1/95	2.368
<i>Salmonella typhosa</i>	1/168.75	5.92 ml/L	1/90	1.875
<i>Shigella sonnei</i>	1/93.75	10.66 ml/L	1/80	1.172
<i>Staphylococcus aureus</i>	1/168.75	5.92 ml/L	1/60	2.812
<i>Streptococcus fecalis</i>	1/562.5	1.77 ml/L	1/70	8.028
<i>Streptococcus pyogenes C-203</i>	1/93.75	10.66 ml/L	1/80	1.172
<i>Streptococcus viridans</i>	1/262.5	3.80 ml/L	1/90	2.916
FUNGI				
<i>Saccharomyces cerevisiae</i>	1/187.5	5.33 ml/L	1/100	1.875
<i>Pityrosporium ovale</i>	1/131.25	7.61 ml/L	1/100	1.312

Microbicidal-Microbiostatic Activity

The antibacterial effectiveness has been measured by an empirical broth dilution procedure in which the highest dilutions capable of inhibiting growth to 48 hours (microbiostatic) and killing all organisms in 24 hours (microbicidal) are determined.

Organism	Microbicidal	Microbiostatic
<i>Brucella abortus</i>	1/3750	1/7500
<i>Penicillium luteum</i>	1/3	1/6
<i>Penicillium notatum</i>	1/12	1/12
<i>Aerobacter aerogenes</i>	1/120	1/240
<i>Bacillus aerus, var. mycoides</i>	-	1/7500
<i>Bacillus subtilis</i>	-	1/7500
<i>Brevibacterium ammonigenes</i>	-	1/7500
<i>Klebsiella pneumoniae</i>	1/120	1/240
<i>Lactobacillus casei</i>	1/750	1/750
<i>Proteus vulgaris</i>	1/60	1/60
<i>Pseudomonas aeruginosa PRD-10</i>	1/30	1/30
<i>Salmonella gallinarum</i>	1/225	1/225
<i>Salmonella pullorum</i>	1/120	1/120
<i>Salmonella typhimurium</i>	1/120	1/240
<i>Salmonella schottumelleri</i>	1/60	1/240
<i>Salmonella typhosa</i>	1/468.75	1/937.5
<i>Salmonella choleraesuis</i>	1/225	1/225
<i>Shigella sonnei</i>	1/120	1/120
<i>Staphylococcus aureus</i>	1/937.5	1/15000
<i>Trichophyton interdigitale</i>	1/150	1/300
<i>Streptococcus pyogenes C-203</i>	1/375	1/375
<i>Streptococcus viridans</i>	1/1500	1/3000
<i>Saccharomyces cerevisiae</i>	1/750	1/1500
<i>Pityrosporum ovale</i>	1/1500	1/3000

These data show that anti-microbe possesses a broad spectrum of effectiveness against a variety of both gram-positive and gram-negative organisms.