



KIMCARE* Moisturizing Instant Hand Sanitizer

Technical Bulletin C2008-1168

Features and Benefits

- Effective against a wide range of microorganisms
- Contains Aloe and Skin Conditioners
- Moisturizes Skin
- Meets protocol for health care personnel hand wash

Physical Characteristics

Active Ingredient: 62% v/v Ethyl Alcohol
 Color: White
 Fragrance: Fresh
 pH: 7.0

Antimicrobial Efficacy — In Vitro — Time Kill Study

Test Objective:

The purpose of this test is to determine the germ killing efficacy of KIMCARE* Moisturizing Instant Hand Sanitizer

Test Method: Time Kill Study

Independent Laboratory: Hill Top research, Inc Miami, OH

Test Date: January-March 1999

GRAM POSITIVE BACTERIA	ATCC#	% Reduction 15 seconds	% Reduction 30 seconds	% Reduction 60 seconds
Bacillus subtilis	19659	99.99	99.99	99.99
Micrococcus luteus	7468	99.9	99.93	99.98
Staphylococcus aureus	29213	99.89	99.99	99.99
Staphylococcus aureus (MRSA)	33592	99.95	99.99	99.95
Staphylococcus epidermidis	12228	99.98	99.97	99.99
Staphylococcus haemolyticus	29970	99.99	99.99	99.99
Staphylococcus hominis	27844	99.99	99.91	99.99
Staphylococcus saprophyticus	15305	99.99	99.96	99.99
Streptococcus pneumoniae	6303	99.97	99.91	99.97
Streptococcus pyogenes	19615	99.88	99.92	99.99
Candida albicans	10231	99.999	99.999	99.999
Staphylococcus epidermidis	12228	99.998	99.999	99.999
Salmonella typhi	6539	99.999	99.999	99.999
Staphylococcus aureus MRSA	33592	99.999	99.999	99.998
Streptococcus pyogenes	19615	99.999	99.999	99.999



GRAM NEGATIVE BACTERIA	ATCC#	% Reduction 15 seconds	% Reduction 30 seconds	% Reduction 60 seconds
Acinetobacter Iwoffii	15309	99.99	99.99	99.99
Bacteroides fragilis	23745	99.98	99.99	99.98
E. coli 0157:H7	43895	99.98	99.97	99.99
E. coli	11229	99.94	99.96	99.99
E. coli	25922	99.95	99.99	99.98
Enterobacter aerogenes	13048	99.97	99.89	99.99
Enterococcus faecalis	29212	99.99	99.93	99.95
Enterococcus faecalis (MDR) (VRE)	51299	99.91	99.99	99.98
Enterococcus faecium	19434	99.99	99.99	99.99
Haemophilus influenzae	19418	99.99	99.99	99.99
Klebsiella pneumoniae	10031	99.97	99.96	99.99
Proteus mirabilis	7002	99.98	99.99	99.99
Pseudomonas aeruginosa	15442	99.97	99.98	99.99
Pseudomonas aeruginosa	27853	99.92	99.97	99.99
Salmonella typhi	6539	99.98	99.99	99.99
Serratia marcescens	14756	99.99	99.99	99.99
YEAST				
Candida albicans	10231	99.63	99.97	99.99

Test Description:

A 4.5mL aliquot of undiluted KIMCARE* Moisturizing Instant Hand Sanitizer was placed in a sterile glass jar at 25C. An inoculum of 0.5mL of a broth culture containing approximately 108 CFU/mL of the test organism was added to the jar. The contents of the jar were then mixed.

After the appropriate test time, neutralizer was added to the jar to stop the activity of the antiseptic and the contents were stirred for 60 seconds. Serial dilutions were prepared, plated and incubated. This process was completed for each of the organisms. Listed above and for each exposure time of 15 seconds, 30 seconds and 60 seconds. The percent reduction was determined and reported above.

Conclusions:

KIMCARE* Moisturizing Instant Hand Sanitizer offers effective and fast acting antimicrobial action against a broad spectrum of microorganisms including:

- Gram negative bacteria
- Gram positive bacteria
- Food borne bacterial pathogens
- Yeasts



Antimicrobial Efficacy — In Vitro — Minimum Inhibitory Concentration (MICs)

Test Objective:

The purpose of this test is to determine the minimum concentration of the product which will inhibit growth of bacterial or fungal organisms in a laboratory study.

Test Date: January-March 2009

Independent Laboratory: Hill Top research, Inc Miami, OH

Test Description:

For each organism to be tested, serial dilutions of KIMCARE* Moisturizing Instant Hand Sanitizer were prepared. Each dilution within a series was challenged with approximately 5×10^4 colony forming units of the organism. The plates were then incubated. The Minimum Inhibitory Concentration (MIC) reported is the lowest dilution in which growth of the organism is completely inhibited.

GRAM POSITIVE BACTERIA	ATCC#	MIC
Bacillus subtilis	19659	1:8
Micrococcus luteus	7468	<1:4
Staphylococcus aureus	29213	1:8
Staphylococcus aureus (MRSA)	33592	1:8
Staphylococcus epidermidis	12228	1:8
Staphylococcus haemolyticus	29970	1:8
Staphylococcus hominis	27844	1:16
Staphylococcus saprophyticus	15305	1:16
Streptococcus pneumoniae	6303	1:32
Streptococcus pyogenes	19615	1:8

GRAM NEGATIVE BACTERIA	ATCC#	MIC
Acinetobacter lwoffii	15309	1:16
Bacteroides fragilis	23745	1:8
E. coli 0157:H7	43895	1:8
E. coli	11229	1:16
E. coli	25922	1:4
Enterobacter aerogenes	13048	1:8
Enterococcus faecalis	29212	1:32
Enterococcus faecalis (MDR) (VRE)	51299	1:8
Enterococcus faecium	19434	1:8
Haemophilus influenzae	19418	1:16
Klebsiella pneumoniae	10031	1:32
Proteus mirabilis	7002	1:8
Pseudomonas aeruginosa	15442	1:4
Pseudomonas aeruginosa	27853	1:4
Salmonella typhi	6539	1:32
Serratia marcescens	14756	1:16

YEAST	ATCC#	MIC
Candida albicans	10231	<1:4



Antimicrobial Efficacy — in vivo — Glove Juice Test

Test Objective:

The objective of this study is to determine the ability of the product to reduce transient microbial flora on the skin.

Test Method:

Efficacy Evaluation of Health Care personnel Hand Wash Products; Glove Juice Test

Test Description:

1) Pre-Test Period

Subjects refrain from using any antibacterial products for one week prior to the study and wear rubber gloves while doing household chores.

2) Baseline

Three 1.5mL aliquots of *Serratia marcescens* (minimum of 108 organisms per mL) are added to each subjects hands. After each aliquot is added, the suspension is rubbed thoroughly over the surface of both hands for 20 seconds.(application and rubbing) Between each aliquot, hands are allowed to dry.

Plastic bags with low bioburden are placed on each of the subjects hands. A 75mL aliquot of stripping solution is added to each bag. The bag is secured and massaged for 1 minute. An aliquot of the fluid is then aseptically obtained to determine the baseline bacterial count. The subjects hands are then washed thoroughly with a non-medicated soap and dried.

3) Treatment Procedure

Hands are contaminated with *Serratia marcescens* as in step 2 paragraph 1. After the hands have been contaminated, they are treated with the test product. Five mL of the product is applied to the subjects hands and rubbed. Vigorously over hands and lower forearms until dry. A second 2.5mL aliquot is applied and allowed to dry. Particular attention is paid to the nails and interdigital spaces. Water and or toweling are not used in this process.

This procedure is repeated 10 times with at least 5 minutes between each treatment. Within 5 minutes of completion of the first, third, seventh and tenth treatments, hands are sampled as in paragraph 2.

Date Test Run: February 2009

Independent Laboratory: February 2009

Test Results:

NUMBER OF HAND WASHES	1	3	7	10
LOG10 DIFFERENCE FROM BASELINE	3.83	2.84	2.68	2.86

Conclusions:

- KIMCARE* Moisturizing Instant Hand Sanitizer demonstrates effective antimicrobial activity on the skin, reducing transient organisms by as much as 99.98%
- KIMCARE* Moisturizing Instant Hand Sanitizer effectively reduces transient microorganisms from the skin following single and multiple uses
- KIMCARE* Moisturizing Instant Hand Sanitizer meets the requirements of the CDC Guidelines for Hand Washing and Hospital Environmental control (Category III)



Skin Moisturization

Test Objective:

The objective of this study is to evaluate the moisturization potential of a KIMCARE* Moisturizing Instant Hand Sanitizer.

Study Type: Skin Conductance study

Methodology:

Skin conductance values were obtained from testing sites on the volar forearms at baseline (prior to hand sanitizer application), 30 minutes and at 2 hours Using a skin conductance meter. Each subject had an untreated control and they also each tested KIMCARE* Moisturizing Instant Hand Sanitizer and a leading instant hand sanitizer.

Test Results:

SKIN CONDUCTANCE	Baseline	30min	120min
Untreated Site	175	177	166
Leading Instant Hand Sanitizer	166	147	142
KIMCARE* Moisturizing Instant Hand Sanitizer	173	213	198

Conclusions:

At 30 and 120 Minutes, KIMCARE* Moisturizing Instant Hand Sanitizer had significantly higher mean conductance change from baseline when compared to an untreated site and a leading instant hand sanitizer indicating higher skin moisturization than the untreated site and a leading instant hand sanitizer.

Test Date: November 2007

KC Study Number: 31644.00

Ingredient List

Ingredients (INCI Names)

ACTIVE:

Alcohol Denat. (anhydrous) 62% v/v

INACTIVE:

Water

Glycerin

Dimethicone

Carbomer

Petrolatum

Aminomethyl Propanol

Fragrance

Tocopheryl Acetate

Panthenol

Hydroxypropylcellulose

Aloe Barbadosensis Leaf

Ceteth-10

Steareth-21

Poloxamer 335

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