



Bactericidal Activity

Hospital and Broad Spectrum Effectiveness is demonstrated with Enviroguard 64™ by its germacidal activity against the following organisms when tested by the AOAC use-dilution test. All efficacy testing was carried out in accordance with EPA organic soil contamination requirements (5% blood serum) for one-step disinfectant cleaner/sanitizers.

Test Conditions

Organic Load: 5% serum in the inoculum

Contact Time: 10 minutes

Table 1: Confirmatory Testing With 300 ppm Hard Water

Organism	Positives	Carriers	ATCC #
Pseudomonas aeruginosa	0	20	15442
Salmonella cholerasuis	0	20	10708
Staphylococcus Aureus	0	20	6538

Table 2: Confirmatory Testing With 400 ppm Hard Water

Organism	Positives	Carriers	ATCC #
Staphylococcus Aureus	0	20	6538
Pseudomonas aeruginosa	0	20	15442
Salmonella cholerasuis	0	20	10708



Table 3: Bacteria and Yeast Testing

Test Conditions:

Test Diluent: 300 ppm hard water

Organic Load: 5% serum in the inoculum

Contact Time: 10 minutes

Organism	Positives	Carriers	ATCC #
Acinetobacter calcoaceticus var. anitratus	0	20	Clinical Isolates
Acinetobacter calcoaceticus var. woffii	0	20	Clinical Isolates
Actinobacillus pleuropneumonia	0	20	Clinical Isolates
Actinomyces pyogenes	0	20	19411
Bacillus anthracis	0	20	Soil Isolate
Bordetella bronchiseptica	0	20	Clinical Isolates
Bordetella bronchiseptica	0	20	19359
Brevibacterium ammoniagenes (in DI water)	0	20	Clinical Isolates
Campylobacter jejuni	0	20	29428
Candida albicans	0	20	Clinical Isolates
Corynebacterium pseudotuberculosis	0	20	19410
Cryptococcus neoformans	0	20	Clinical Isolates
Enterobacter aerogenes (in DI water)	0	20	Clinical Isolates
Enterobacter cloacae	0	20	Clinical Isolates
Enterobacter gergoviae	0	20	Clinical Isolates
Enterobacter liquefaciens	0	20	Clinical Isolates
Enterococcus faecalis	0	20	Clinical Isolates
Escherichia coli	0	20	Clinical Isolates



Organism	Positives	Carriers	ATCC #
Escherichia coli 0157 :H7	0	20	Clinical Isolates
Escherichia vulneris	0	20	Clinical Isolates
Flavobacterium meningosepticum	0	20	Clinical Isolates
Hafnia alvei	0	20	Clinical Isolates
Klebsiella oxytoca	0	20	Clinical Isolates
Klebsiella pneumoniae	0	20	Clinical Isolates
Listeria monocytogenes	0	20	984
Micrococcus luteus	0	20	Clinical Isolates
Morganella morganii	0	20	Clinical Isolates
Pasturella haemolyticus	0	20	Clinical Isolates
Proteus mirabilis	0	20	Clinical Isolates
Proteus vulgaris	0	20	Clinical Isolates
Pseudomonas aeruginosa	0	20	Clinical Isolates
Pseudomonas cepacia	0	20	Clinical Isolates
Pseudomonas dimunita	0	20	Clinical Isolates
Pseudomonas fluorescens	0	20	Clinical Isolates
Pseudomonas paucimobilis	0	20	Clinical Isolates
Pseudomonas picketti	0	20	Clinical Isolates
Pseudomonas pseudomallei	0	20	Clinical Isolates
Pseudomonas putida	0	20	Clinical Isolates
Pseudomonas stutzeri	0	20	Clinical Isolates
Rhodococcus equi	0	20	6939
Salmonella schottmuelleri (in DI water)	0	20	Clinical Isolates
Salmonella choleraesuis	0	20	Clinical Isolates
Salmonella typhi	0	20	6539
Salmonella typhosa	0	20	Clinical Isolates



Organism	Positives	Carriers	ATCC #
<i>Serratia marcescens</i>	0	20	Clinical Isolates
<i>Shigella paradysenteriae flexnerii</i>	0	20	Clinical Isolates
<i>Stahylococcus aureus</i>	0	20	Clinical Isolates
<i>Staphylococcus aureus</i> (toxic shock)	0	20	Clinical Isolates
<i>Staphylococcus auricularis</i>	0	20	Clinical Isolates
<i>Staphylococcus capitis</i>	0	20	Clinical Isolates
<i>Staphylococcus epidermidis</i>	0	20	Clinical Isolates
<i>Staphylococcus hominis</i>	0	20	Clinical Isolates
<i>Staphylococcus saprophyticus</i>	0	20	Clinical Isolates
<i>Staphylococcus simulans</i>	0	20	Clinical Isolates
<i>Streptococcus agalactiae hemolytica</i>	0	20	Clinical Isolates
<i>Streptococcus haemolyticus</i>	0	20	Clinical Isolates
<i>Streptococcus hominis</i>	0	20	Clinical Isolates
<i>Streptococcus equi</i> var. <i>zooepidermicus</i>	0	20	43079
<i>Streptococcus equi</i> var. <i>equi</i>	0	20	Clinical Isolates
<i>Streptococcus faecalis</i>	0	20	Clinical Isolates
<i>Streptococcus haemolyticus</i>	0	20	Clinical Isolates
<i>Streptococcus haemolyticus</i> (beta)	0	20	Clinical Isolates
<i>Streptococcus pneumoniae</i>	0	20	Clinical Isolates
<i>Streptococcus pyogenes</i>	0	20	Clinical Isolates
<i>Streptococcus salivarius</i>	0	20	Clinical Isolates
<i>Streptococcus simulans</i>	0	20	Clinical Isolates
<i>Treponema pallidum</i>	0	20	81136
<i>Yersinia enterocolitica</i>	0	20	Clinical Isolates



Table 4: Antibiotic Resistant Clinical Isolates

Test Conditions

Test Diluent: 300 ppm hard water

Organic Load: 5% serum in the inoculum

Contact Time: 10 minutes

Organism	Positives	Carriers	Drug
Enterobacter agglomerans	0	20	Ampicillin Sulfanilimide
Enterococcus faecalis	0	20	Vancomycin
Escherichia coli (Wound)	0	20	Tetracycline Ampicillin Sulfa
Escherichia coli (Urinary)	0	20	Sulfa Penicillin
Klebsiella oxytoca	0	20	Sulfanilimide Tetracycline
Klebsiella pneumoniae	0	20	Cephalothin Ampicillin Sulfa Tetracycline
Morganella morganii	0	20	Penicillin Tetracycline
Pseudomonas aeruginosa	0	20	Sulfa Cefatoxime Nitrofurantoin Amikacin Ampicillin Cephalothin Bactrim
Staphylococcus aureus	0	20	Methicillin Penicillin G Ampicillin Cefazolin Cefatoxime Chloramphenicol Ciprofloxacin Clindimycin Erythromycin Oxacillin Rifampin Tetracycline



Organism	Positives	Carriers	Drug
Staphylococcus epidermidis	0	20	Ampicillin Chloramphenicol Erythromycin Oxacillin Bactrim Ciprofloxin

Table 5: Virus Testing

Test Conditions:

Test Diluent: 300 to 400 ppm Hard Water

Organic Load: 5% Serum in the Inoculum

Virucidal activity was confirmed by an EPA Accepted Protocol Against the Following Viruses:

Virus	ATCC#	Contact Time
Adenovirus Type 2 (In DI Water)	Clinical Isolate	10 Minutes
Avian Influenza/Turkey/Wisconsin	VR-798	10 Minutes
Bovine Viral Diarrhea Viruse (BVDV)	Clinical Isolate	10 Minutes
Canine Herpes Virus	Clinical Isolate	10 Minutes
Canine Distemper Virus	Clinical Isolate	10 Minutes
Equine Herpesvirus	Clinical Isolate	10 Minutes
Equine Influenza	Clinical Isolate	10 Minutes
Cytomegalovirus	VR-284	30 Seconds
Duck Hepatitis B Virus	Clinical Isolate	10 Minutes
Echovirus II	Clinical Isolate	30 Minutes
Equine Herpes Virus	Clinical Isolate	10 Minutes
Equine Influenza	Clinical Isolate	10 Minutes
Feline Calicivirus (Norovirus)	Clinical Isolate	10 Minutes
Feline Infectious Peritonis Virus	VR-990	10 Minutes
HBV (Human Hepatitis B Virus)	Clinical Isolate	10 Minutes
HCV (Human Hepatitis C Virus)	BVDV	10 Minutes



Virus	ATCC#	Contact Time
Herpes Simplex Type 2 Virus (In DI Water)	VR-734	30 Seconds
Herpes Simplex Type 1 Virus (In DI Water)	Clinical Isolate	10 minutes
HIV-1 (AIDS)	Clinical Isolate	30 Seconds
Infectious Bovine Rhinotracheitis (IBR)	Clinical Isolate	10 Minutes
Influenza A/Brazil Virus	Clinical Isolate	10 Minutes
Influenza A/Victoria (H3N2)	Clinical Isolate	10 Minutes
Influenza A2-Asian Virus (In DI Water)	Clinical Isolate	10 Minutes
Influenza B Virus (Allen Strain)	VR-102	30 Seconds
Influenza C Virus (Taylor Strain)	Clinical Isolate	30 Seconds
Measles Virus	VR-24	30 Seconds
Newcastle Disease Virus	VR-109	10 Minutes
Parainfluenza Type 1 Virus	VR-105	30 Seconds
Poliovirus Type 1 (Chat Strain)	VR-192	30 Seconds
Porcine Parvovirus	Clinical Isolate	10 Minutes
Porcine Poliovirus	VR-742	30 Seconds
Pseudorabies Virus	VR-135	30 Seconds
Rotavirus	Clinical Isolate	30 Seconds
Transmissible Gastroenteritis (TGE)	Clinical Isolate	10 Minutes
Vesicular Stomatitis Virus (VSV)	Clinical Isolate	10 Minutes
Vaccinia Virus	Clinical Isolate	10 Minutes



Table 6: Bacteriophage & Mycoplasma Testing

Test Conditions

Test Diluent: 300 ppm Hard Water

Organic Load 5% Serum in Inoculum

Contact Time: 5 - 10 Minutes

Organism	ATCC #	Log Kill
T1 Bacteriophage	11303-B1	>8 Log Kill in 10 Minutes
T4 Bacteriophage	11303-B4	>9 Log Kill in 10 Minutes

Table 7: Mold and Mildew Testing

Test Conditions

Test Diluent: 300 ppm Hard Water

Organic Load: 5% Serum in the Inoculum

Contact Time: 10 Minutes

Fungistatic (mold and mildew control) activity was confirmed by the Method for Evaluation of Mildewstats on Hard Surfaces.

Organism	ATCC #	Result
Trichophyton menagrophytes (In DI Water)	9533	No Growth
Candida albicans	Clinical Isolate	No Growth
Candida neoformans	Clinical Isolate	No Growth



Table 8: Environmental Mold Testing

Test Conditions

Test Diluent: 400 ppm Hard Water

Organic Load: 5% Serum in the Inoculum

Contact Time: 10 Minutes

Fungistatic activity was confirmed by the AOAC Fungicidal Test

Organism	Contact Time	Results
Aspergillus candidus	10 Minutes	No Growth
Aspergillus niger	5 Minutes	No Growth
Penicillium chermesinum	10 Minutes	No Growth
Penicillium oxalicum	5 Minutes	No Growth
Penicillium spinulosum	5 Minutes	No Growth
Ulocladium sp.	5 Minutes	No Growth

Table 9: Food and Non-Food Contact Sanitizer Activity

Test Conditions:

Test Diluent: 400 ppm Hard Water

Organic Load: 5% Serum in the Inoculum

Organism	ATCC#	Log Reduction/Time
Staphylococcus aureus	6538	>3 Logs in 1 Minute
Enterobacter aerogenes	13048	>3 Logs in 1 Minute