

PATHOGEN KILL LIST BROAD SPECTRUM, TUBERCULOCIDAL DISINFECTANT

BACTERIA - 99.9999%

- **Clostridium difficile - (C. Diff)** (ATCC 43598)
- **Escherichia coli (E coli)** (ATCC 11229)
- **Klebsiella pneumoniae** New Delhi Metallo-Beta Lactamase (NDM-1) Carbapenem Resistant (CRE) ((Klebsiella (NDM-1) (CRE)) (KPC) (Carbapenem-Resistant Klebsiella pneumoniae) (CRKP), CDC 10002
- **Listeria monocytogenes** (Listeria) (ATCC 7644)
- **Methicillin-Resistant Staphylococcus aureus (MRSA)** (ATCC 33591)
- **Pseudomonas aeruginosa (Pseudomonas)** (ATCC 15442)
- **Salmonella enterica (Salmonella)** (ATCC 10708)
- **Staphylococcus aureus (Staph)** (ATCC 6538)
- **Vancomycin Resistant Enterococcus faecalis (VRE)** (ATCC 51229)

MYCOBACTERIUM - 99.9999%

- **Mycobacterium bovis, BCG** (Tuberculosis or TB)

VIRUSES (NON-ENVELOPED) - 99.9999%

- **Adenovirus (1 or Type 1) (Strain 71)** (ATCC VR-1)
- **Norovirus or Norwalk Virus (as Feline Calicivirus) (Strain F-9)** (ATCC VR-782)
- **Rhinovirus (16 or Type 16) (Strain 11757)** (ATCC VR-283)
- **Rotavirus (A or Group A) (Strain WA)** (ATCC VR-2018)

BLOODBORNE / VIRUSES (ENVELOPED) - 99.9999%

- **Hepatitis C** (ATCC VR-1422)]
- **Human Immunodeficiency Virus Type 1 (HIV-1)**, strain IIIB (clade B); ZeptoMetrix
- **Influenza A (H1N1) Virus** (ATCC VR-1736)
- **Influenza A Virus (H1N1) A/Swine/1976/31** (ATCC VR-99)
- **Respiratory Syncytial Virus (RSV)** (ATCC VR-1540)
- **Swine Flu Virus (H1N1) A/Swine/1976/31** (ATCC VR-99)

YEAST - 99.9999%

- **Candida albicans** (ATCC 10231)

The AoS generator is manufactured by Annihilare, under the EPA establishment # 92449-NC-1 and produces 500ppm hypochlorous acid - trade named Annihilyte. Annihilyte[-1] is registered under the EPA #92449-1 and is a registered trademark of Annihilare.

**Annihilyte Multi-Purpose meets Green Seal GS-53 standards, contains no VOCs, fragrances or harsh chemicals.*

Technical Summary – HOCl 500 PPM

Efficacy Case Studies Summary – HOCl 500 PPM

Test Product	Study Type	Test Method	Challenge Organisms	Organism Type	Results	Lab
HOCl 500 PPM	Testing Disinfectant against <i>Pseudomonas aeruginosa</i> and <i>Staphylococcus aureus</i>	AOAC Official Method, 964.02, 955.15, Use-Dilution Method	<i>Staphylococcus aureus</i> , <i>Pseudomonas aeruginosa</i>	Gram-Positive Bacteria Gram-Negative Bacteria	Killed 10 out of 10 treated carriers in 5% organic soil load in 2 minutes	Bioscience
HOCl 500 PPM	Antimicrobial Effectiveness Study using a Time Kill Assay	ASTM Guideline E2315-03	<i>Acinetobacter baumannii</i> ; - Multi Drug Resistant, <i>Enterococcus faecium</i> - Multi Drug Resistant, Methicillin Resistant <i>Staphylococcus aureus</i> (MRSA), Vancomycin Resistant <i>Enterococcus faecalis</i> (VRE)	Gram-Negative Bacteria Gram-Positive Bacteria Gram-Positive Bacteria Gram-Positive Bacteria	Log reduction in 2 mins: <i>A. baumannii</i> > 5.54 <i>E. faecium</i> : > 5.22 MRSA: > 5.72 VRE: > 5.65	ATS Lab
HOCl 500 PPM	Antimicrobial Effectiveness Study using a Time Kill Assay	ASTM Guideline E2315-03	<i>Bacteroides fragilis</i> , <i>Haemophilus influenzae</i> , <i>Streptococcus pyogenes</i>	Gram-Negative Bacteria Gram-Negative Bacteria Gram-positive Bacteria	Log reduction in 2mins: <i>B. fragilis</i> : > 5.89 <i>H. influenzae</i> : 5.02 <i>S. pyogenes</i> : > 5.79	ATS Lab
HOCl 500 PPM	Antimicrobial Effectiveness Study using a Time Kill Assay	ASTM Guideline E2315-03	<i>Staphylococcus epidermidis</i> , <i>Staphylococcus haemolyticus</i> , <i>Staphylococcus hominis</i> , <i>Staphylococcus saprophyticus</i>	All Gram-Positive Bacteria and of the <i>Staphylococcus</i> genus	Log reduction in 2 mins: <i>S. epidermidis</i> : > 5.08 <i>S. haemolyticus</i> : > 5.01 <i>S. hominis</i> : > 5.32 <i>S. saprophyticus</i> : > 5.15	ATS Lab
HOCl 500 PPM	Antimicrobial Effectiveness Study using a Time Kill Assay	ASTM Guideline E2315-03	<i>Enterobacter aerogenes</i> , <i>Escherichia coli</i> , <i>Klebsiella pneumoniae</i> , <i>Micrococcus luteus</i> , <i>Proteus mirabilis</i> , <i>Serratia marcescens</i>	All Gram-Negative Bacteria except for <i>Micrococcus luteus</i> is Gram-Positive to Gram-Variable	Log reduction in 2 mins: <i>E. aerogenes</i> : > 5.88 <i>E. coli</i> : > 5.61 <i>K. pneumoniae</i> : > 5.42 <i>M. luteus</i> : > 4.46 <i>P. mirabilis</i> : 5.92 <i>S. marcescens</i> : > 5.43	ATS Lab
HOCl 500 PPM	Antimicrobial Effectiveness Study using a Time Kill Assay	ASTM Guideline E2315-03	<i>Staphylococcus aureus</i> , <i>Pseudomonas aeruginosa</i> , <i>Escherichia coli</i> , <i>Serratia marcescens</i> / <i>S. pneumoniae</i> , <i>Proteus vulgaris</i> , <i>Acinetobacter baumannii</i>	All Gram-Negative Bacteria except for <i>Staphylococcus aureus</i> , which is Gram Positive	Log reduction in 2 mins: <i>S. aureus</i> : > 5.65 <i>P. aeruginosa</i> : > 5.25 <i>E. coli</i> : > 5.42 <i>S. marcescens</i> : > 5.66 <i>K. pneumoniae</i> : > 5.15 <i>P. vulgaris</i> : > 5.22 <i>A. baumannii</i> : > 5.12	NAMSA
HOCl 500 PPM	Testing Disinfectant against <i>Salmonella enterica</i>	AOAC Official Method, 955.14, Use-Dilution Method	<i>Salmonella enterica</i>	Gram-Negative Bacteria	Killed 10 out of 10 treated carriers in 5% organic soil load in 2 mins	ATS Lab

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HOCI 500 PPM	Antimicrobial Effectiveness Study using a Time Kill Assay	ASTM Guideline E2315-03	Myobacterium - BCG	Bacteria that causes Tuberculosis in humans	> 5.69 log reduction in 2 mins	ATS Lab
Test Product	Study Type	Test Method	Challenge Organisms	Organism Type	Results	Lab
HOCI 500 PPM	Assessment of Virucidal Activity against Viruses in Suspension	ASTM Guideline E1053, E1482	Swine Influenza A (H1N1) Virus	Virus	> 5.65 log reduction in 5% organic soil load in 2 minutes	ATS Lab
HOCI 500 PPM	Assessment of Virucidal Activity against Viruses in Suspension	ASTM Guideline E1053	Human Immunodeficiency Virus Type 1 (HIV-1)	Virus	> 5.25 log reduction in 5% organic soil load in 2 minutes	Bioscience
HOCI 500 PPM	Assessment of Virucidal Activity against Viruses in Suspension	ASTM Guideline E1053	Rhinovirus 16 (Common Cold Agent)	Virus	> 5.25 log reduction in 5% organic soil load in 2 minutes	ATL Lab
HOCI 500 PPM	Standard Quantitative Disk Carrier Test Method for Determining Sporocidal Activities	ASTM Standard Guideline E2197-11, Standard Quantitative Disk Carrier Test Method	Clostridium difficile - spore form	Spore	>5.45 log reduction in 5 minutes in the presents of a 5% organic soil load and a > 6.00 log reduction in 10 minutes in the absence of organic soil load.	ATS Lab