

Hard Surface Disinfectant

Hard Surface Disinfectant is a broad spectrum, one-step, hard surface disinfectant/cleaner. When used as directed, this product will deliver effective biocidal action against bacteria, fungi, and viruses. The product is “Ready to Use,” without further dilution.

Hard Surface Disinfectant can be used to disinfect a wide variety of hard surfaces such as floors, walls, and countertops in hospitals, households, salons and institutions. Other areas of usage includes but are not limited to restaurants, athletic facilities, schools, restrooms, laboratories, and transportation vehicles and facilities. Defensive Solutions Hard Surface Disinfectant can also be used in federally inspected Meat and Poultry plants. Please see our EPA registered label for complete list of areas of use.

Summary of Antimicrobial Test Results

Hard Surface Disinfectant is a “One-Step”, Hospital-Grade Disinfectant, Virucide, Fungicide, Mildewstat, and Cleaner. Listed below, and in the following pages, is a summary of the Antimicrobial Claims and a review of the test results.

Claim: Disinfectant	Contact Time: 10 Minutes	Organic Soil: 5%	Dilution: None – Ready to use
Test Method: Approved EPA Method			

Organism	ATCC#	Contact Time
Acinetobacter baumannii	19606	10 Minutes
Brevibacterium ammoniagenes	6871	10 Minutes
Campylobacter jejuni	29428	10 Minutes
Enterobacter aerogenes	13408	10 Minutes
Streptococcus faecalis	11700	10 Minutes
Enterococcus faecalis – Vancomycin Res	51299	10 Minutes
Escherichia coli	11229	10 Minutes
Escherichia coli ESBL ²	CU-209	10 Minutes
Klebsiella pneumoniae	4352	10 Minutes
Legionella pneumophila	33153	10 Minutes
Listeria monocytogenes	19117	10 Minutes
Pseudomonas aeruginosa	15442	10 Minutes
Pseudomonas cepacia	17765	10 Minutes
Pseudomonas cepacia	25416	10 Minutes
Pseudomonas cepacia	25608	10 Minutes
Salmonella (choleraesuis) enterica	10708	10 Minutes
Salmonella schottmuelleri	10719	10 Minutes
Salmonella typhi	6539	10 Minutes
Serratia marcescens	274	10 Minutes
Shigella dysenteriae	9380	10 Minutes
Staphylococcus aureus	6539	10 Minutes
Staphylococcus aureus ³	33592	10 Minutes
Staphylococcus aureus ⁴	14154	10 Minutes
Staphylococcus aureus ⁵ (VISA)	CDC HIP- 5836	10 Minutes
Staphylococcus aureus (MRSA) Community Associated	NRS 384 USA 300	10 Minutes
Staphylococcus aureus (MRSA) Community Associated	NRS 123 USA 400	10 Minutes
Streptococcus pyogenes	12344	10 Minutes
Vibrio cholerae	14035	10 Minutes

Conclusion: All lots of Hard Surface Disinfectant effectively killed the above listed bacteria as specified in the test performance standards. Hard Surface Disinfectant meets EPA requirements for hard surface disinfectant claims in hospital and medical environments when used “as is”, (Ready to Use) in the presence of 5% organic soil.

Claim:	Contact Time:	Organic Soil:	Dilution:
Fungicide	10 Minutes	5%	None – Ready to use
Test Method:	Approved EPA Fungicidal Test		

Organism	ATCC#	Contact Time
Trichophyton mentagrophytes	9533	10 Minutes

Conclusion: All lots of **Hard Surface Disinfectant** effectively killed Trichophyton mentagrophytes as specified in the test performance standards. **Hard Surface Disinfectant** is an effective fungicide for nonporous inanimate hard surfaces when used “as is”, (Ready to Use) in the presence of 5% organic soil.

Claim:	Contact Time:	Organic Soil:	Dilution:
Virucide	10 Minutes	5%	None – Ready to use
Test Method:	EPA Guidelines		

Organism	ATCC#	Contact Time
Hepatitis B Virus	Hepadna Virus (DHBV)	10 Minutes
Hepatitis C (HCV)	Bovine Viral Diarrhea Virus	10 Minutes
Herpes Simplex Type 1	HSV-1 Sabin	10 Minutes
Herpes Simplex Type 2	HSV-II (CL-5)	10 Minutes
HIV-1 (AIDS Virus)	HTLV-III _B ; Electronucleonics, Inc.	1 Minute
Human Coronavirus	ATCC VR-740	1 Minute
Influenza A/Brazil	A/Brazil 11/78 (H1N1) E-7 ; CDC	10 Minutes
Influenza Virus Type A/ Hong Kong	VR-544	10 Minutes
Norwalk <i>(Feline Caliciviruses the surrogate for Norwalk virus)</i>	Feline Caliciviruse (FSV) University of Ottawa	10 Minutes
Respiratory Syncytial Virus	VR-26	10 Minutes
Rotavirus	Strain WA	10 Minutes
SARS associated Coronavirus	SARS associated coronavirus strain 200300592	
Vaccinia	Wyeth strain	

Conclusion: All lots of **Hard Surface Disinfectant** effectively inactivated the above listed viruses as specified in the test performance standards. **Hard Surface Disinfectant** meets the EPA requirements for hard surface virucidal claims in hospital and medical environments when used “as is”, (Ready to Use) in the presence of 5% organic soil.

Claim:	Contact Time:	Organic Soil:	Dilution:
Mildewstat	10 Minutes	5%	None – Ready to use
Test Method:	Approved EPA Test Methods		

Organism	ATCC#	Contact Time
Aspergillus niger	6275	10 Minutes

Conclusion: All lots of **Hard Surface Disinfectant** were effective against Aspergillus niger under the test conditions outlined in EPA test performance standards described above. **Hard Surface Disinfectant** is an effective mildewstat for nonporous inanimate hard surfaces when used “as is”, (Ready to Use) in the presence of 5% organic soil.

Claim: Fungicide	Contact Time: 10 Minutes	Organic Soil: 5%	Dilution: None – Ready to use
Test Method: Approved EPA Fungicidal Test			

Organism	ATCC#	Contact Time
Trichophyton mentagrophytes	9533	10 Minutes

Conclusion: All lots of **Hard Surface Disinfectant** effectively killed *Trichophyton mentagrophytes* as specified in the test performance standards. **Hard Surface Disinfectant** is an effective fungicide for nonporous inanimate hard surfaces when used “as is”, (Ready to Use) in the presence of 5% organic soil.

Claim: Virucide	Contact Time: 10 Minutes	Organic Soil: 5%	Dilution: None – Ready to use
Test Method: EPA Guidelines			

Organism	ATCC#	Contact Time
Hepatitis B Virus	Hepadna Virus (DHBV)	10 Minutes
Hepatitis C (HCV)	Bovine Viral Diarrhea Virus	10 Minutes
Herpes Simplex Type 1	HSV-1 Sabin	10 Minutes
Herpes Simplex Type 2	HSV-II (CL-5)	10 Minutes
HIV-1 (AIDS Virus)	HTLV-III _B ; Electronucleonics, Inc.	1 Minute
Human Coronavirus	ATCC VR-740	1 Minute
Influenza A/Brazil	A/Brazil 11/78 (H1N1) E-7 ; CDC	10 Minutes
Influenza Virus Type A/ Hong Kong	VR-544	10 Minutes
Norwalk <i>(Feline Caliciviruses the surrogate for Norwalk virus)</i>	Feline Calicivirus (FSV) University of Ottawa	10 Minutes
Respiratory Syncytial Virus	VR-26	10 Minutes
Rotavirus	Strain WA	10 Minutes
SARS associated Coronavirus	SARS associated coronavirus strain 200300592	10 Minutes
Vaccinia	Wyeth strain	10 Minutes

Conclusion: All lots of **Hard Surface Disinfectant** effectively inactivated the above listed viruses as specified in the test performance standards. **Hard Surface Disinfectant** meets the EPA requirements for hard surface virucidal claims in hospital and medical environments when used “as is”, (Ready to Use) in the presence of 5% organic soil.

Claim: Mildewstat	Contact Time: 10 Minutes	Organic Soil: 5%	Dilution: None – Ready to use
Test Method: Approved EPA Test Methods			

Organism	ATCC#	Contact Time
Aspergillus niger	6275	10 Minutes

Conclusion: All lots of **Hard Surface Disinfectant** were effective against *Aspergillus niger* under the test conditions outlined in EPA test performance standards described above. **Hard Surface Disinfectant** is an effective mildewstat for nonporous inanimate hard surfaces when used “as is”, (Ready to Use) in the presence of 5% organic soil.

Claim: Virucide	Contact Time: 10 Minutes	Organic Soil: 5%	Dilution: None – Ready to use
Test Method: Approved EPA Test Methods			

Organism	Source of Virus or ATCC#	Contact Time
Avian Influenza (H ₃ N ₂)	Avian Influenza (H ₃ N ₂) Virus ATCC VR 2072 Strain A/Washington/897/80X A/Mallard/New York/6750/78	10 Minutes
Avian Influenza (H5N1)	Strain H5N1-PR8/CDC-RG CDC#2006719965	10 Minutes
Canine Distemper Virus	Canine Distemper Strain Ondesterpoort	10 Minutes
Feline Calicivirus	Feline Calicivirus (FSV) Univ of Ottawa	10 Minutes
Newcastle Disease Virus	NDV Atcc VR-108 Strain B-1 Hitchner and Blacksburg	10 Minutes
Pseudorabies Virus	PRV Strain Aujesczkies PT-1 Origin	10 Minutes

Conclusion: All lots of **Hard Surface Disinfectant** were found to be effective against the above animal viruses as specified in the EPA test performance standards. **Hard Surface Disinfectant** is an effective Virucide for nonporous inanimate hard surfaces when used as a ready to use material.

Regulatory Summary

EPA Registration #:	6836-152-7048
California Status:	Registered
Canadian PCP #:	23764

Physical Properties

pH of Concentrate:	10-12
Specific Gravity at 25°C:	1.008
Weight per Gallon at 25°C:	8.40
Flash Point (PMCC):	> 200°F
% Quat (molecular weight 342):	0.08 – 0.10
% Volatile:	98 - 99