

Efficacy Bulletin

hdq C[®] 2

EPA Reg. No. 1839-169-5741

Disinfection

This product is bactericidal according to the EPA Test Guideline 810.2200: AOAC Use Dilution Test method on hard inanimate surfaces modified in the presence of 5% organic serum. All tests are completed under Good Laboratory Practice (GLP) conditions.

Organism	Sample	Carriers Tested	Carriers Showing Growth	Contact Time	Dilution
<i>Pseudomonas aeruginosa</i>	A	60	0	10 minutes	2 oz./gal
	B	60	0		
	C	60	1		
<i>Staphylococcus aureus</i> (ATCC 6538)	A	60	1	10 minutes	2 oz./gal
	B	60	1		
	C	60	1		
<i>Salmonella enterica</i> (ATCC 10708)	A	60	0	10 minutes	2 oz./gal
	B	60	0		
	C	60	1		
Ampicillin Resistant <i>Acinetobacter baumannii</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
Bactrim Resistant <i>Acinetobacter baumannii</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Bordetella bronchiseptica</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
Cefazolin Resistant <i>Acinetobacter baumannii</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
Ceftazidime Resistant <i>Acinetobacter baumannii</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
Ceftriaxone Resistant <i>Acinetobacter baumannii</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
Ciprofloxacin Resistant <i>Acinetobacter baumannii</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Corynebacterium ammoniagenes</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Enterobacter aerogenes</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Enterobacter cloacae</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Enterobacter cloacae</i> (Clinical Isolate)	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Enterococcus faecalis</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Enterococcus faecalis</i> (Clinical Isolate)	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Escherichia coli</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		

Disinfection (continued)

Organism	Sample	Carriers Tested	Carriers Showing Growth	Contact Time	Dilution
<i>Escherichia coli</i> (Clinical Isolate)	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Escherichia coli</i> O111:H8	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Fusobacterium necrophorum</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
Gentamicin Resistant <i>Acinetobacter baumannii</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Klebsiella pneumonia</i> subsp. <i>pneumoniae</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Lactobacillus casei</i> subsp. <i>rhamnosus</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
Levofloxacin Resistant <i>Acinetobacter baumannii</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Listeria monocytogenes</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Pasteurella multocida</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Proteus mirabilis</i> (ATCC 9921)	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Proteus mirabilis</i> (ATCC 25933)	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Proteus vulgaris</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Salmonella enterica</i> subsp. <i>Enterica</i> serotype <i>paratyphi B</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Salmonella enterica</i> subsp. <i>Enterica</i> serotype <i>pullorum</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Salmonella enterica</i> subsp. <i>Enterica</i> serotype <i>typhi</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Salmonella enterica</i> subsp. <i>Enterica</i> serotype <i>typhimurium</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Salmonella enterica</i> subsp. <i>Enterica</i> serotype <i>enteritidis</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Serratia marcescens</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Shigella dysenteriae</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		

Disinfection (continued)

Organism	Sample	Carriers Tested	Carriers Showing Growth	Contact Time	Dilution
<i>Shigella flexneri</i> Type 2b	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Shigella sonnei</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Staphylococcus aureus</i> Methicillin Resistant (MRSA)	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Staphylococcus aureus</i> Community Associated Methicillin Resistant (CA-MRSA) (NRS384)	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Staphylococcus aureus</i> Community Associated Methicillin Resistant (CA-MRSA) (NRS123)	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Staphylococcus aureus</i> Vancomycin Intermediate Resistant (VISA)	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Staphylococcus aureus</i> (Clinical Isolate)	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Staphylococcus epidermidis</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Staphylococcus epidermidis</i> (Clinical Isolate)	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Streptococcus pyogenes</i> Group A	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Streptococcus pyogenes</i> (Clinical, Flesh Eating Strain BIRD M3)	A	10	0	10 minutes	2 oz./gal
	B	10	0		
Tobramycin Resistant <i>Acinetobacter baumannii</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		
Vancomycin Intermediate Resistant <i>Enterococcus faecalis</i> (VRE)	A	10	0	10 minutes	2 oz./gal
	B	10	0		
<i>Xanthomonas maltophilia</i>	A	10	0	10 minutes	2 oz./gal
	B	10	0		

Virucidal

This product is virucidal according to the EPA Test Guideline 810.2200: Virucidal Hard Surface Efficacy Test, in the presence of 5% organic serum. All tests are completed under Good Laboratory Practice (GLP) conditions.

Organism	Sample	Log Reduction	Contact Time	Dilution
Avian Influenza A (H3N2) virus (Avian Reassortant)	A	$\geq 4.25 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 4.25 \text{ Log}_{10}$		

Virucidal (continued)

Avian Influenza A (H9N2)	A	$\geq 4.0 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 4.0 \text{ Log}_{10}$		
Bovine Rhinotracheitis, Strain LA	A	$\geq 5.0 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 5.0 \text{ Log}_{10}$		
Bovine Viral Diarrhea Virus (BVDV)	A	5.9 Log_{10}	10 minutes	2 oz./gal
	B	5.9 Log_{10}		
Canine Distemper Virus, Strain Lederle	A	$\geq 6.25 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 6.25 \text{ Log}_{10}$		
Feline Picornavirus, Strain FRV	A	$\geq 4.25 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 4.25 \text{ Log}_{10}$		
Hepatitis B Virus	A	4.5 Log_{10}	10 minutes	2 oz./gal
	B	4.7 Log_{10}		
Hepatitis C Virus	A	5.9 Log_{10}	10 minutes	2 oz./gal
	B	5.9 Log_{10}		
Herpes Simplex Type 1	A	$\geq 5.0 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 5.0 \text{ Log}_{10}$		
Herpes Simplex Type 2	A	$\geq 6.0 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 6.0 \text{ Log}_{10}$		
Human Coronavirus	A	$\geq 3.0 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 3.0 \text{ Log}_{10}$		
Human Immunodeficiency Virus Type 1 (HIV-1)	A	$\geq 3.5 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 3.5 \text{ Log}_{10}$		
Human Immunodeficiency Virus Type 2 (HIV-2)	A	$\geq 3.25 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 3.25 \text{ Log}_{10}$		
Influenza A2, Strain Hong Kong	A	$\geq 4.25 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 4.25 \text{ Log}_{10}$		
Paramyovirus Virus	A	$\geq 3.0 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 3.0 \text{ Log}_{10}$		
Porcine Respiratory & Reproductive Syndrome Virus	A	$\geq 5.0 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 5.0 \text{ Log}_{10}$		
Pseudorabies, Strain Aujeszky	A	$\geq 5.25 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 5.25 \text{ Log}_{10}$		
Rabies Virus	A	3.0 Log_{10}	10 minutes	2 oz./gal
	B	3.0 Log_{10}		
Rotavirus	A	4.5 Log_{10}	10 minutes	2 oz./gal
	B	4.5 Log_{10}		
SARS Associated Coronavirus	A	$\geq 3.03 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 3.03 \text{ Log}_{10}$		
Vaccinia, Strain WR	A	$\geq 5.5 \text{ Log}_{10}$	10 minutes	2 oz./gal
	B	$\geq 5.5 \text{ Log}_{10}$		

Fungicidal

This product is fungicidal according to the EPA Test Guideline 810.2200: AOAC Use-Dilution method modified for fungicidal activity on hard inanimate surfaces modified in the presence of 5% organic serum. All tests are completed under Good Laboratory Practice (GLP) conditions.

Organism	Sample	Carriers Showing Growth	Contact Time	Dilution
<i>Trichophyton mentagrophytes</i>	A	0	10 minutes	2 oz./gal
	B	0		
<i>Candida albicans</i>	A	0	10 minutes	2 oz./gal
	B	0		

Mildewcidal

This product is mildewcidal according to the EPA Hard Surface Mildew Fungistatic Test. All tests are completed under Good Laboratory Practice (GLP) conditions.

Organism	Sample	Exposed Tiles	Tiles Showing Growth	Dilution
<i>Aspergillus niger</i>	A	10	0	2 oz./gal
	B	10	0	
	Control	10	10	