

# GENEFECT One-Step Disinfectant Cleaner



## Efficacy Data

EPA Reg. # 10324-80-85023

### Efficacy: Hospital Disinfection (at 2 ounces per gallon)

GeneFect is bactericidal according to the AOAC Use Dilution Test method on hard inanimate surfaces modified in the presence of 5% organic serum and 400 ppm hard water at 2 ounces of this product per gallon of water (850 ppm active). Treated surfaces must remain wet for 10 minutes.

(Testing is performed per the AOAC UDT/GST method (DIS/TSS-1). Sixty carriers are required on 3 separate lots, one of which must be > 60 days old against *Pseudomonas aeruginosa*, *Salmonella enterica* and *Staphylococcus aureus*. Killing of 59 out of 60 carriers is required (total carriers = 540).)

Organism	Carrier Population	Sample	# Carriers	# Positive
<i>Pseudomonas aeruginosa</i> ATCC #15442	2.3 X 10 <sup>6</sup> CFU/Carrier	A (60 Days Old)	60	0/60
	1.7 X 10 <sup>6</sup> CFU/Carrier	B	60	0/60
	1.3 X 10 <sup>6</sup> CFU/Carrier	C	60	1/60
<i>Salmonella enterica</i> ATCC #10708	1.1 X 10 <sup>5</sup> CFU/Carrier	A (60 Days Old)	60	0/60
	1.5 X 10 <sup>6</sup> CFU/Carrier	B	60	0/60
	2.1 X 10 <sup>6</sup> CFU/Carrier	C	60	0/60
<i>Staphylococcus aureus</i> ATCC #6538	1.5 X 10 <sup>6</sup> CFU/Carrier	A (60 Days Old)	60	0/60
	1.4 X 10 <sup>6</sup> CFU/Carrier	B	60	0/60
	4.7 X 10 <sup>5</sup> CFU/Carrier	C	60	1/60

### Supplemental Organisms

(Testing is performed per the AOAC UDT/GST method. Ten carriers are required on 2 separate lots against each supplemental organism. Killing of 10 out of 10 carriers is required (total carriers = 20).)

Organism	Carrier Population	Sample	# Carriers	# Positive
<i>Burkholderia cepacia</i> ATCC 25416	2.3 X 10 <sup>6</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Campylobacter jejuni</i> ATCC 29428	1.5 X 10 <sup>6</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Corynebacterium ammoniagenes</i> ATCC 6871	1.4 X 10 <sup>6</sup> CFU/Carrier	A	10	0/10
		B	10	0/10

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<b><i>Enterobacter aerogenes</i></b> ATCC 13048	4.1 X 10 <sup>6</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Enterobacter cloacae Clinical Isolate</i></b>	3.9 X 10 <sup>5</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Enterobacteriaceae with extended beta-lactamase resistance</i></b> ATCCBAA-72	6.6 X 10 <sup>4</sup> CFU/Carrier	A	10	0/10
	1.25 X 10 <sup>6</sup> CFU/Carrier	B	10	0/10
<b><i>Enterococcus faecalis</i></b> ATCC 19433	9.4 X 10 <sup>4</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Enterococcus faecium Vancomycin Resistant (VRE)</i></b>	4.5 X 10 <sup>5</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Escherichia coli</i></b> ATCC 11229	3.2 X 10 <sup>5</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Escherichia coli Antibiotic Resistant Clinical Isolate</i></b>	3.9 X 10 <sup>5</sup> CFU/Carrier	A	20	0/20
		B	20	0/20
<b><i>Escherichia coli O157:H7</i></b> ATCC 35150	1.1 X 10 <sup>4</sup> CFU/Carrier	A	20	0/20
		B	20	0/20
<b><i>Klebsiella pneumoniae</i></b> ATCC 4352	9.9 X 10 <sup>4</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Klebsiella pneumoniae Antibiotic Resistant Clinical Isolate</i></b>	2.7 X 10 <sup>5</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Legionella pneumophila</i></b> ATCC 33153	8.2 X 10 <sup>7</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Listeria monocytogenes</i></b> ATCC 984	1.85 X 10 <sup>5</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Proteus mirabilis Clinical Isolate</i></b>	1.9 X 10 <sup>6</sup> CFU/Carrier	A	20	0/20
		B	20	0/20
<b><i>Proteus vulgaris</i></b> ATCC 33420	4.55 X 10 <sup>4</sup> CFU/Carrier	A	20	0/20
		B	20	0/20
<b><i>Pseudomonas aeruginosa Clinical Isolate</i></b>	1.2 X 10 <sup>6</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Salmonella typhi</i></b> ATCC 6539	5.1 X 10 <sup>5</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Serratia marcescens</i></b> ATCC 43861	1.5 X 10 <sup>5</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Shigella dysenteriae</i></b> ATCC 9361	5.45 X 10 <sup>4</sup> CFU/Carrier	A	10	0/10
		B	10	0/10

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<i>Shigella flexneri</i> ATCC 12022	4.85 X 10 <sup>4</sup> CFU/Carrier	A	20	0/20
		B	20	0/20
<i>Shigella sonnei</i> ATCC 9290	2.75 X 10 <sup>4</sup> CFU/Carrier	A	20	0/20
		B	20	0/20
<i>Staphylococcus aureus (Methicillin Resistant) (MRSA)</i> ATCC 33591	1.45 X 10 <sup>5</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Community Associates Methicillin Resistant Staphylococcus aureus (CA-MRSA) (NRS) (Genotype USA400)</i>	2.77 X 10 <sup>5</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Staphylococcus epidermidis Antibiotic Resistant Clinical Isolate</i>	4.2 X 10 <sup>5</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Streptococcus pyogenes</i> ATCC 19615	3.35 X 10 <sup>6</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Vibrio cholera</i> ATCC 11623	9.3 X 10 <sup>6</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Xanthomonas axonopodis pv. Citri</i> <b>At 2000 ppm quat active</b>	3.26 X 10 <sup>5</sup> CFU/Carrier	A	10	0/10
		B	10	0/10

### General Disinfection (at 1 ¼ ounces per gallon)

GeneFect is bactericidal according to the AOAC Use Dilution Test method on hard inanimate surfaces modified in the presence of 5% organic serum and 400 ppm at 1¼ ounces of this product per gallon of water (540 ppm active) Treated surfaces must remain wet for 10 minutes

(Testing is performed per the AOAC UDT/GST method (DIS/TSS-1). Sixty carriers are required on 3 separate lots, one of which must be > 60 days old against *Salmonella enterica* and *Staphylococcus aureus*. Killing of 59 out of 60 carriers is required (total carriers = 360).)

Organism	Carrier Population	Sample	# Carriers	# Positive
<i>Salmonella enterica</i> ATCC #10708	1.8 X 10 <sup>5</sup> CFU/Carrier	A (60 Days Old)	60	0/60
	8.9 X 10 <sup>4</sup> CFU/Carrier	B	60	0/60
	5.4 X 10 <sup>4</sup> CFU/Carrier	C	60	0/60
<i>Staphylococcus aureus</i> ATCC #6538	1.9 X 10 <sup>6</sup> CFU/Carrier	A (60 Days Old)	60	0/60
	1.6 X 10 <sup>6</sup> CFU/Carrier	B	60	0/60
	1.8 X 10 <sup>6</sup> CFU/Carrier	C	60	0/60

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### Supplemental Organisms (at 1 ¼ ounces per gallon)

(Testing is performed per the AOAC UDT/GST method. Ten carriers are required on 2 separate lots against each supplemental organism. Killing of 10 out of 10 carriers is required (total carriers = 20).)

Organism	Carrier Population	Sample	# Carriers	# Positive
<i>Escherichia coli</i> ATCC 8739	1.2 X 10 <sup>4</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Serratia marcescens</i>	5.7 X 10 <sup>5</sup> CFU/Carrier	A	10	0/10
		B	10	0/10

### Virucidal against (at 2 ounces)

GeneFect was evaluated at 2 ounces per gallon use level (850 ppm quat active), in the presence of 5% serum and 400 ppm hard water with a 10 minute contact time and found to be effective against the following viruses on hard nonporous environmental surfaces.

Organism	Dried Virus Control;	Sample	Result	Log Reduction
<i>Canine Coronavirus</i> ATCC VR-809	4.75 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥3.25 Log <sub>10</sub>
		B	≤0.5 Log <sub>10</sub>	≥4.25 Log <sub>10</sub>
<i>Hantavirus</i>	5.0 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥3.5 Log <sub>10</sub>
		B	≤1.5 Log <sub>10</sub>	≥3.5 Log <sub>10</sub>
<i>Hepatitis B Virus</i>	5.5 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥4.0 Log <sub>10</sub>
	5.5 Log <sub>10</sub>	B	≤1.5 Log <sub>10</sub>	≥4.5 Log <sub>10</sub>
	4.5 Log <sub>10</sub>	Confirmatory A	≤1.5 Log <sub>10</sub>	≥3.0 Log <sub>10</sub>
<i>Hepatitis C Virus</i> ATCC CCL-22	6.84 Log <sub>10</sub>	A	≤1.51 Log <sub>10</sub>	≥5.33 Log <sub>10</sub>
	6.84 Log <sub>10</sub>	B	≤1.51 Log <sub>10</sub>	≥5.33 Log <sub>10</sub>
	7.14 Log <sub>10</sub>	Confirmatory B	≤1.7 Log <sub>10</sub>	≥5.44 Log <sub>10</sub>
<i>Human Coronavirus</i> ATCC VR-740	4.75 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥3.25 Log <sub>10</sub>
		B	≤1.5 Log <sub>10</sub>	≥3.25 Log <sub>10</sub>

### Virucidal against (at 1¼ ounces)

GeneFect was evaluated at 1¼ ounces per gallon use level (540 ppm quat active), in the presence of 5% serum and 400 ppm hard water with a 10 minute contact time and found to be effective against the following viruses on hard nonporous environmental surfaces.

(Testing is performed per EPA Guidance (DIS/TSS-7). Two separate lots are tested. Inactivation of virus must be demonstrated at all dilutions when no cytotoxicity is observed or at all dilutions above the cytotoxic level when it is observed. The data must demonstrate a 3-log reduction in viral titer for both lots (3 lots for Canada))

Organism	Dried Virus Control;	Sample	Result	Log Reduction
<i>Avian Influenza A (H5N1) Virus</i>	4.5 Log <sub>10</sub>	A	≤0.5 Log <sub>10</sub>	≥4.0 Log <sub>10</sub>
		B	≤0.5 Log <sub>10</sub>	≥4.0 Log <sub>10</sub>

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<b>Avian influenza /Turkey/Wisconsin</b> ATCC VR-798	6.0 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥4.5 Log <sub>10</sub>
		B	≤1.5 Log <sub>10</sub>	≥4.5 Log <sub>10</sub>
<b>Canine Distemper</b>	5.0 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥3.5 Log <sub>10</sub>
		B	≤1.5 Log <sub>10</sub>	≥3.5 Log <sub>10</sub>
<b>Hantavirus</b>	5.0 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥3.5 Log <sub>10</sub>
		B	≤1.5 Log <sub>10</sub>	≥3.5 Log <sub>10</sub>
<b>Herpes Simplex Type 1</b> ATCC VR-260	5.0 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥3.5 Log <sub>10</sub>
		B	≤1.5 Log <sub>10</sub>	≥3.5 Log <sub>10</sub>
<b>Herpes Simplex Type 2</b> ATCC VR-734	5.0 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥3.5 Log <sub>10</sub>
		B	≤1.5 Log <sub>10</sub>	≥3.5 Log <sub>10</sub>
<b>Human Immunodeficiency Virus type 1 (HIV 1) HTLV-III<sub>RF</sub></b>	6.5 Log <sub>10</sub>	A	≤2.5 Log <sub>10</sub>	≥4.0 Log <sub>10</sub>
		B	≤2.5 Log <sub>10</sub>	≥4.0 Log <sub>10</sub>
<b>Influenza A (H1N1) virus</b> ATCC VR-1469	4.5 Log <sub>10</sub>	A	≤0.5 Log <sub>10</sub>	≥4.0 Log <sub>10</sub>
		B	≤0.5 Log <sub>10</sub>	≥4.0 Log <sub>10</sub>
<b>Influenza A/Brazil Virus</b>	4.8 Log <sub>10</sub>	A	≤0.5 Log <sub>10</sub>	≥4.3 Log <sub>10</sub>
		B	≤0.5 Log <sub>10</sub>	≥4.3 Log <sub>10</sub>
<b>Infectious Bovine Rhinotracheitis virus (IBR) ATCC VR-188</b>	5.0 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥3.5 Log <sub>10</sub>
		B	≤1.5 Log <sub>10</sub>	≥3.5 Log <sub>10</sub>
<b>Newcastle disease virus</b> ATCC VR-109	6.3 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥4.8 Log <sub>10</sub>
	5.8 Log <sub>10</sub>	B	≤1.5 Log <sub>10</sub>	≥4.3 Log <sub>10</sub>
<b>Porcine Respiratory &amp; Reproductive (PRRSV) Strain NVSL</b>	5.5 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥4.0 Log <sub>10</sub>
		B	≤1.5 Log <sub>10</sub>	≥4.0 Log <sub>10</sub>
<b>Porcine Rotavirus</b> ATCC VR-893	4.5 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥3.0 Log <sub>10</sub>
		B	≤1.5 Log <sub>10</sub>	≥3.0 Log <sub>10</sub>
<b>Pseudorabies virus</b> ATCC VR-135	4.5 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥3.0 Log <sub>10</sub>
		B	≤1.5 Log <sub>10</sub>	≥3.0 Log <sub>10</sub>
Respiratory syncytial virus ATCC VR-26, Strain Long	4.5 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥3.0 Log <sub>10</sub>
		B	≤1.5 Log <sub>10</sub>	≥3.0 Log <sub>10</sub>
<b>Transmissible Gastroenteritis (TGE)</b> ATCC VR-742	5.7 Log <sub>10</sub>	A	≤2.5 Log <sub>10</sub>	≥3.2 Log <sub>10</sub>
		B	≤2.5 Log <sub>10</sub>	≥3.2 Log <sub>10</sub>
<b>Vaccinia virus</b>	5.5 Log <sub>10</sub>	A	≤1.5 Log <sub>10</sub>	≥4.0 Log <sub>10</sub>
		B	≤1.5 Log <sub>10</sub>	≥4.0 Log <sub>10</sub>

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## Mold and Mildew Control

Use GeneFect at 1¼ ounces per gallon to control the growth of mold and mildew and their odors on hard, non-porous surfaces. Thoroughly wet all treated surfaces completely. Let air-dry. Repeat application weekly or when growth or odor reappears.

Organism	Tile Number	Untreated After 7 Days	Sample A After 7 Days	Sample B After 7 Days
<b><i>Aspergillus niger</i></b> ATCC #6275	1	Growth 100%	No Growth 0%	No Growth 0%
	2	Growth 80%	No Growth 0%	No Growth 0%
	3	Growth 80%	No Growth 0%	No Growth 0%
	4	Growth 100%	No Growth 0%	No Growth 0%
	5	Growth 80%	No Growth 0%	No Growth 0%
	6	Growth 80%	No Growth 0%	No Growth 0%
	7	Growth 80%	No Growth 0%	No Growth 0%
	8	Growth 80%	No Growth 0%	No Growth 0%
	9	Growth 80%	No Growth 0%	No Growth 0%
	10	Growth 80%	No Growth 0%	No Growth 0%

## Fungicidal against

GeneFect was evaluated at 2 ounces per gallon in the presence of 5% serum and 400 ppm hard water with a 10 minute contact time and found to be effective against the following fungi on hard nonporous environmental surfaces.

*(Testing is performed per the AOAC fungicidal method (DIS/TSS-6). Two separate lots are tested against Trichophyton mentagrophytes in a suspension test. Killing of all fungal spores in 10 minutes is required.)*

Organism	Carrier Population	Sample	# Carriers	# Positive
<b><i>Candida albicans</i></b> ATCC #10231	4.2 X 10 <sup>5</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Dactylium dendroides</i></b> ATCC 6676	2.18 X 10 <sup>4</sup> CFU/Carrier	A	10	0/10
		B	10	0/10
<b><i>Trichophyton mentagrophytes</i></b> ATCC #9533	6.6 X 10 <sup>6</sup> CFU/Carrier	A	10	0/10
		B	10	0/10